

## **Appendix J**

### Traffic Study and VMT Analysis Report

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# 9<sup>TH</sup> AND VINEYARD WAREHOUSE PROJECT

## Traffic Study

AUGUST 2021

REV. 4

Prepared By:

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## EXECUTIVE SUMMARY

This traffic study has been prepared to evaluate potential operational deficiencies associated with the proposed development of the 9th Street and Vineyard Avenue Warehouse Project located south of E. 9th Street, west of Vineyard Avenue, north of the Burlington Northern Santa Fe (BNSF) Railway, and east of Baker Avenue in the City of Rancho Cucamonga in San Bernardino County, California. The project is also located near the City of Rancho Cucamonga's border with the City of Ontario.

### Project Information

The project would involve the demolition of two existing warehouse buildings (approximately 114,695 square feet combined) and two existing office buildings (approximately 9,300 square feet combined), and the construction of three warehouse buildings with a combined square footage of approximately 1,037,467 square feet. Vehicular access provisions for the project site would consist of six project driveways, one on 9th Street, two on Vineyard Avenue, and three on Baker Avenue. All entrances to the site would be unsignalized.

### Analysis Scenarios

This traffic study has been conducted in accordance with the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP) requirements and provides an evaluation of morning and evening peak hour operations at thirteen study intersections for the following scenarios:

- Existing Conditions
- Project Opening Year (2021)
- Project Opening Year (2021) Plus Project
- Horizon Year (2040)
- Horizon Year (2040) Plus Project

Existing traffic volumes for the study intersections were collected in March 2019. Under Existing Conditions, all study intersections currently operate at an acceptable Level of Service (LOS) with the exception of the following intersection:

- #6 – Baker Avenue and 8th Street: AM – LOS E

Project Opening Year (2021) traffic volumes include a 1% ambient annual growth rate over a two-year period and the addition of Cumulative Project trips. Under the Project Opening Year (2021) conditions, the same intersection would continue to operate at LOS E during the AM peak:

- #6 – Baker Avenue and 8th Street: AM – LOS E

The project is estimated to generate 2,371 daily Passenger Car Equivalents (PCE) trips, 232 PCE trips in the morning peak hour, and 258 PCE trips in the evening peak hour. The existing daily trips from the current land uses generate 454 daily PCE trips, 59 PCE trips in the morning peak hour, and 60 PCE trips in the evening peak hour. The resulting net trips generated for the project is 1,912 daily PCE trips, 172 PCE trips in the morning peak hour, and 198 PCE trips in the evening peak hour.

Project traffic was added to Project Opening Year (2021) traffic volumes to establish the conditions for the Project Opening Year (2021) Plus Project scenario. Under this scenario, the addition of the proposed project traffic would cause the LOS for the following intersection to decrease from LOS E to LOS F:

- #6 – Baker Avenue and 8th Street: AM – LOS F

Based on the City of Rancho Cucamonga and the City of Ontario guidelines, the Baker Avenue and 8<sup>th</sup> Street intersection is considered to have a significant operational deficiency and project mitigation is required. Implementation of the following improvements would mitigate the project operational deficiency at Baker Avenue and 8<sup>th</sup> Street:

- Construct the roadway improvements necessary to widen Baker Avenue in order to stripe southbound left turn lane on Baker Avenue to create left turn and shared through-right turn lanes (required for Opening Year and Horizon Year operational deficiency mitigation).

The San Bernardino Transportation Analysis Model (SBTAM) was used to develop traffic volume forecasts for the Horizon Year (2040) scenario. Under this scenario, the following study intersections would operate at an unacceptable LOS:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8th Street: AM - LOS E & PM - LOS F

Project traffic was added to Horizon Year (2040) traffic forecasts to establish the conditions for the Horizon Year (2040) Plus Project scenario. Under this scenario, the same intersections would continue to operate at an unacceptable LOS:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8th Street: AM & PM – LOS F

The project would result in a significant operational deficiency to the above listed intersections under Horizon Year (2040) Plus Project scenario and project mitigation is required. In addition to the improvement required to mitigate the Opening Year (2021) operational deficiencies, the implementation of the following improvements would mitigate the project operational deficiency under the Horizon Year (2040) scenario:

- Pay fair share contribution to add a southbound right-turn overlap phase and widen westbound approach by 5' to accommodate dual 10' westbound left-turn lanes, three 11' westbound through lanes, a 5' bike lane, and an 11' westbound right-turn lane on Vineyard Avenue and Foothill Boulevard (only required for Horizon Year deficiencies mitigation)
- Pay fair share contribution to widen the westbound approach 10' to add a westbound right-turn pocket on Vineyard Avenue and Arrow Route.
- Pay fair share contribution to stripe additional eastbound and westbound lanes on 8<sup>th</sup> Street to create shared eastbound through-left turn lane, shared eastbound through-right turn lane, shared westbound through-left, westbound through lane, and a westbound right-turn lane (only required for Horizon Year mitigation)



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# 1 INTRODUCTION

This traffic study has been prepared to address evaluate potential operational deficiencies associated with the proposed 9th Street and Vineyard Avenue Warehouse project in the City of Rancho Cucamonga. This traffic study has been conducted in accordance with the study requirements of the San Bernardino Association of Governments (SANBAG) Congestion Management Program (CMP).

This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, future traffic growth, and an assessment of project-related operational deficiencies on the roadway system. Where necessary, circulation system improvements have been identified to mitigate significant project operational deficiencies at the study locations.

## 1.1 PROJECT DESCRIPTION

The project is located in the southwestern area of the City of Rancho Cucamonga, and is shown in its regional setting on **Figure 1-1**. The project is also located near the City of Rancho Cucamonga's border with the City of Ontario. The project site (approximately 47 acres) is bounded by 9th Street and residential, industrial and offices to the north, 8th Street and automotive shops to the south, Baker Avenue and residential to the west, and Vineyard Avenue and vacant land, flood control channel and existing commercial to the east.

The project would involve the demolition of two warehouses with a combined square footage of approximately 114,695 square feet, and two office buildings with a combined square footage of approximately 9,300 square feet. The project would also involve the construction of three warehouse buildings with a combined square footage of approximately 1,037,467 square feet. A copy of the project site plan is provided on **Figure 1-2**.

Vehicular access provisions for the project site would consist of six total driveways: one on 9th Street, two on Vineyard Avenue, and three on Baker Avenue. Passenger vehicles would have the option to access the project site via any of the project driveways. All project driveways would be unsignalized.

Regional access to the site is provided primarily by the San Bernardino Freeway (I-10) and the Ontario Freeway (I-15). The I-10 Freeway is located approximately 1.5 miles to the south of the site and the I-15 Freeway is approximately 4 miles to the east of the site. Other facilities that provide regional access to the site include the Foothill Freeway (SR-210), located approximately 2.7 miles to the north of the site; and the SR-60 Freeway, located approximately 4.2 miles to the south of the project site.

## 1.2 ANALYSIS SCENARIOS

Based on the SANBAG CMP requirements, the project will be evaluated in the morning and evening peak hours for the following conditions:

- Existing (2019)
- Project Opening Year (2021)
- Project Opening Year (2021) Plus Project
- Horizon Year (2040)
- Horizon Year (2040) Plus Project

FIGURE 1-1 REGIONAL VICINITY MAP

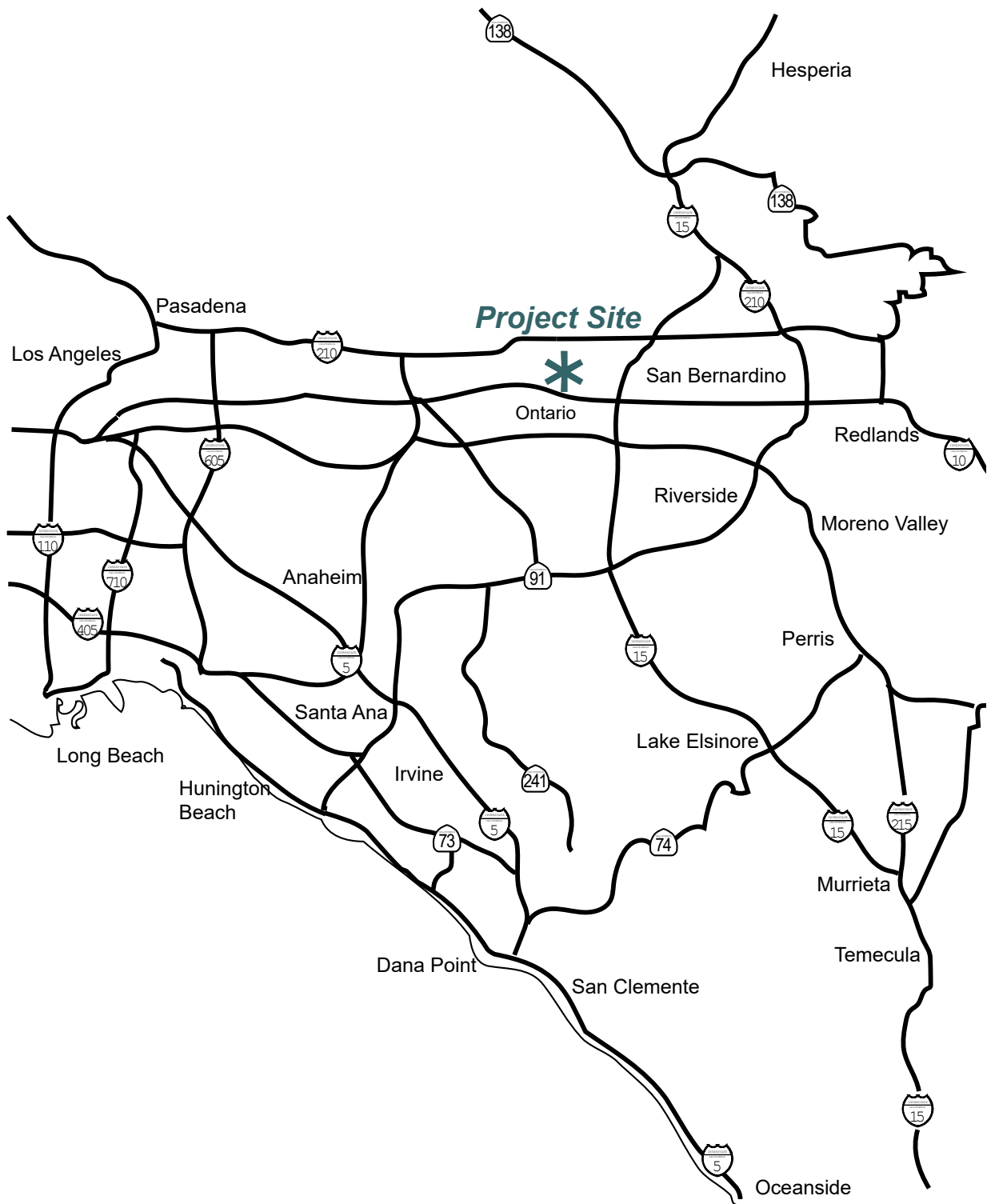
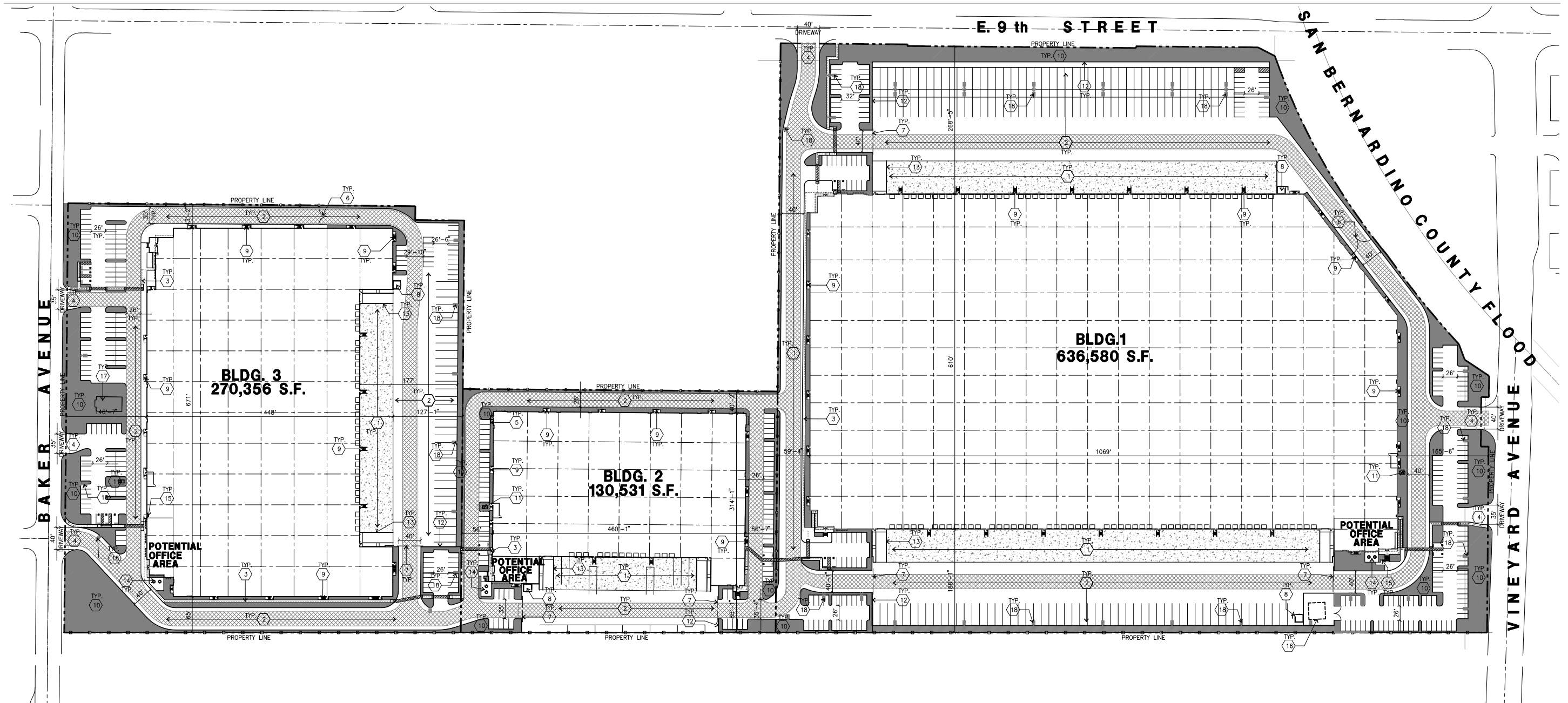


FIGURE 1-2 PROPOSED SITE PLAN



Source: Pannatoni + HPA Architecture  
v(08/27/2019)

## 2 METHODOLOGY

The following section describes the methodology used to determine study intersections, analyze study area conditions, and determine significant traffic operational deficiencies.

### 2.1 STUDY AREA

The study locations were established in consultation with City of Rancho Cucamonga and City of Ontario staff through the Scoping Letter Agreement process. The study area excluded freeway segments and freeway ramps evaluations since Caltrans no longer uses level of service for project operational deficiency determination. A copy of the approved Scoping Letter Agreement is provided in **Appendix A**.

The fourteen roadways identified for evaluation include:

- **Baker Avenue**, between Arrow Route and 9<sup>th</sup> Street;
- **Baker Avenue**, between 9<sup>th</sup> Street and 8<sup>th</sup> Street;
- **Arrow Route**, between Baker Avenue and Vineyard Avenue;
- **9<sup>th</sup> Street**, between Baker Avenue and Vineyard Avenue;
- **8<sup>th</sup> Street**, between Baker Avenue and Vineyard Avenue;
- **Vineyard Avenue**, between Foothill Boulevard and Arrow Route;
- **Vineyard Avenue**, between Arrow Route and 9<sup>th</sup> Street;
- **Vineyard Avenue**, between 9<sup>th</sup> Street and 8<sup>th</sup> Street;
- **Vineyard Avenue**, between 8<sup>th</sup> Street and 6<sup>th</sup> Street;
- **Vineyard Avenue**, between 6<sup>th</sup> Street and 4<sup>th</sup> Street;
- **Vineyard Avenue**, between 4<sup>th</sup> Street and Jay Street;
- **Vineyard Avenue**, between Jay Street and Inland Empire Boulevard;
- **Vineyard Avenue**, between Inland Empire Boulevard and I-10 WB Ramps;
- **Vineyard Avenue**, between I-10 WB Ramps and I-10 EB Ramps.

The thirteen existing intersections and operating jurisdictions are identified for evaluation are listed in **Table 2-1**. For the “with project” conditions, five of the six proposed site driveways were added to the network for analysis, as listed in Table 2-1. For analysis purposes only, the middle and north proposed project driveways along Baker Street were combined as one driveway, since the middle driveway only serves a small parking area. This is a conservative approach and represents worst case scenario where all vehicles accessing the west parking area would use a single point of entrance. **Figure 2-1** illustrates the existing study area intersections where count data was collected, as well as the proposed site driveways that were analyzed.

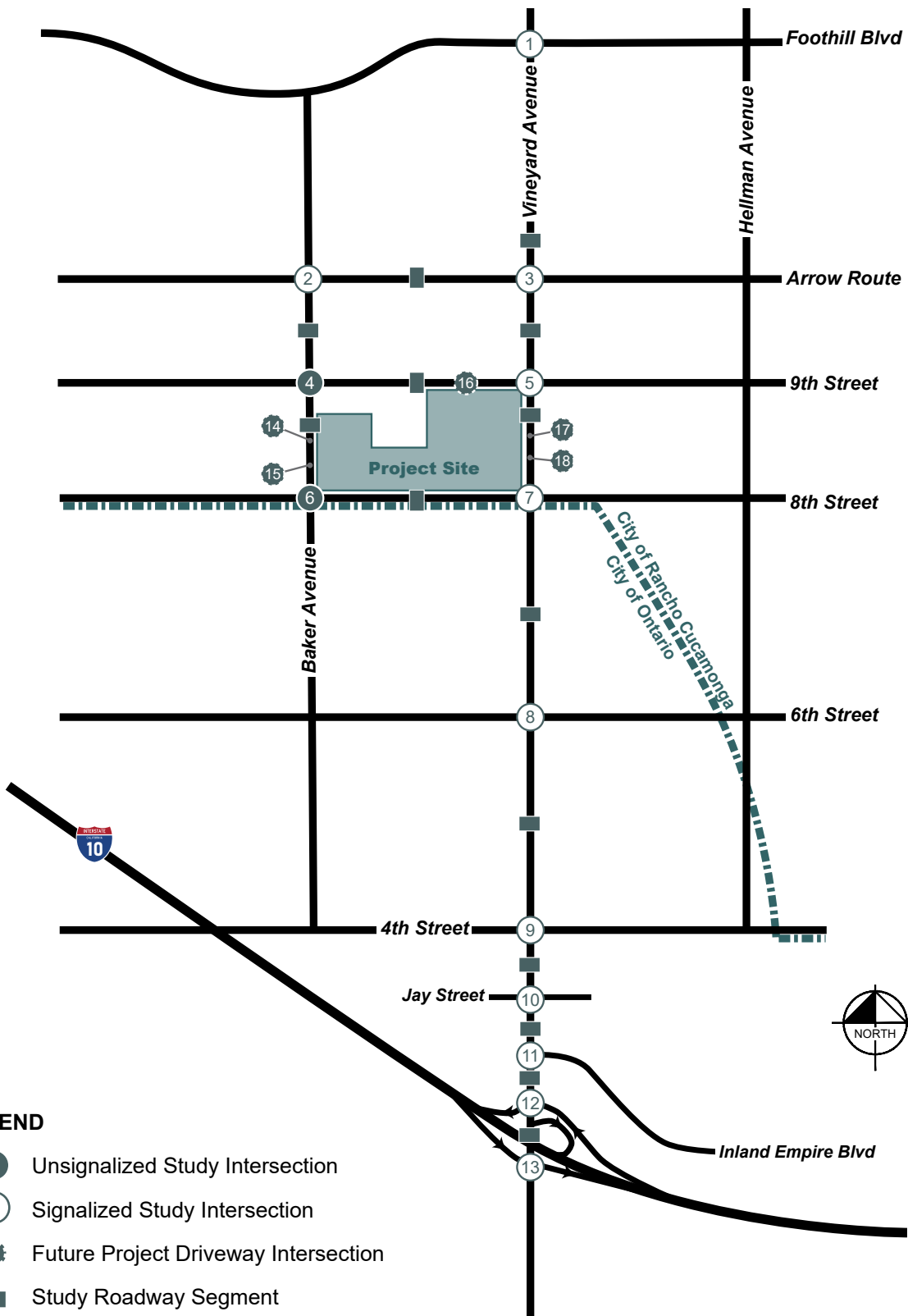


**Table 2-1 Study Intersections**

	<b>Intersection</b>	<b>Traffic Control (a)</b>	<b>Jurisdiction</b>
1	Vineyard Avenue and Foothill Boulevard	Signal	Rancho Cucamonga
2	Baker Avenue and Arrow Route	Signal	Rancho Cucamonga
3	Vineyard Avenue and Arrow Route	Signal	Rancho Cucamonga
4	Baker Avenue and 9th Street	AWSC	Rancho Cucamonga
5	Vineyard Avenue and 9th Street	Signal	Rancho Cucamonga
6	Baker Avenue and 8th Street	AWSC	Rancho Cucamonga
7	Vineyard Avenue and 8th Street	Signal	Rancho Cucamonga
8	Vineyard Avenue and 6th Street	Signal	Ontario
9	Vineyard Avenue and 4th Street	Signal	Ontario
10	Vineyard Avenue and Jay Street	Signal	Ontario
11	Vineyard Avenue and Inland Empire Boulevard	Signal	Ontario
12	Vineyard Avenue and I-10 WB Ramps	Signal	Ontario
13	Vineyard Avenue and I-10 EB Ramps	Signal	Ontario
14	Baker Avenue and North Driveway	Proposed OWSC	Rancho Cucamonga
15	Baker Avenue and South Driveway	Proposed OWSC	Rancho Cucamonga
16	Project Driveway and 9 <sup>th</sup> Street	Proposed OWSC	Rancho Cucamonga
17	Vineyard Avenue and North Driveway	Proposed OWSC	Rancho Cucamonga
18	Vineyard Avenue and South Driveway	Proposed OWSC	Rancho Cucamonga

(a) Signal = Traffic Signal;  
 AWSC = All-Way Stop Control;  
 OWSC = One-Way Stop Control.

**FIGURE 2-1 STUDY AREA**



**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment

## 2.2 ANALYSIS PROCESS

Peak hour intersection operations at signalized and unsignalized intersections were evaluated using the methods prescribed in the Highway Capacity Manual (HCM) 6th Edition (Transportation Research Board Special Report 209), consistent with the requirements of the 2016 San Bernardino County CMP. The San Bernardino County CMP guidelines require analysis of traffic operations to be based on the vehicular delay methodologies of the HCM. The City does not designate a specific software to be used in the analysis, but allows the use of one of several software packages that are consistent with the HCM methodologies. The intersection analysis for the proposed project has been accomplished using Synchro 10.0 software program and using the specified input parameters outlined in the San Bernardino County CMP.

The HCM establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values. The criteria for the various levels of service designations for intersections are given in **Table 2-2**.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, final acceleration time, and stop delay.

LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each movement. At an all-way stop control intersection, the delay reported is the average control delay of all movements at the intersection. At a one-way or two-way stop-controlled intersection, delay is reported for each stop-controlled movement.

The following list contains the assumptions used for the intersection analyses:

- HCM 6<sup>th</sup> Edition methodology
- Peak-hour factor (PHF) = Measured in field PHFs were used for the existing and opening year scenarios, 0.95 used for horizon year scenarios
- Percent of heavy vehicle (PHV) = 2 percent

Trip generation estimates are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10<sup>th</sup> Edition). Passenger vehicle and truck mix rates were derived from the City of Fontana Truck Trip Generation Study (August 2003).

Passenger care equivalent (PCE) factors are as follows:

- 1.5 PCE for 2-axle trucks,
- 2.0 PCE for 3-axle trucks,
- 3.0 PCE for 4+-axle trucks.

**Table 2-2 LOS Criteria for Intersections**

LOS	Control Delay (sec/veh)		Description
	Signalized Intersections (a)	Unsignalized Intersections (b)	
A	≤10.0	≤10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and ≤20.0	>10.0 and ≤15.0	Operations with good progression but with some restricted movement.
C	>20.0 and ≤35.0	>15.0 and ≤25.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and ≤55.0	>25.0 and ≤35.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines
E	>55.0 and ≤80.0	>35.0 and ≤50.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	>50.0	Operations that is unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:

- (a) Highway Capacity Manual 6<sup>th</sup> Edition, Chapter 19, Page 16, Exhibit 19-16
- (b) Highway Capacity Manual 6<sup>th</sup> Edition, Chapter 20, Page 6, Exhibit 20-2

### 2.3 DEFICIENCY DETERMINATION

The Level of Service standard for the intersections located wholly or partially in the City of Rancho Cucamonga is LOS D or better. An operational deficiency caused by the proposed project would occur when the addition of project-related traffic causes an intersection to change from an acceptable LOS D or better to a deficient LOS E or F; or if the project adds a significant delay to an intersection already operating at a deficient Level of Service.

The Level of Service standard for the intersections in the City of Ontario is LOS E or better during the morning and evening peak hours. An operational deficiency caused by the proposed project would occur when the addition of project-related traffic causes an intersection to change from an acceptable LOS (LOS E or better) to a deficient LOS F.

While the City of Rancho Cucamonga requires LOS analysis to identify operational deficiencies and develop improvement options at intersections and roadways to achieve General Plan goals, Vehicle Miles Travel (VMT) is used as the metric for identifying significant project related transportation operational deficiencies. The *9th and Vineyard Warehouse Project Vehicle Mile Traveled (VMT) Assessment* memorandum, dated June, 2021, documents the VMT assessment and is included in **Appendix B**.

## 3 EXISTING CONDITIONS

This section summarizes the existing roadway circulation network, daily and peak-hour traffic volumes, and operations at the study intersections and roadway segments.

### 3.1 ROAD NETWORK

The following provides a description of the existing street system as of July 2019, within the vicinity of the project area.

**9th Street** – 9th Street is a two-lane undivided collector roadway through the study area with a posted speed limit of 40 miles per hour (mph) between Baker Avenue and Vineyard Avenue. Residential driveways have access to 9th Street, and on-street parking is provided on both sides of the roadway. 9th Street forms the northern boundary of the project site and would provide access to the site via a full-movement unsignalized driveway.

**Vineyard Avenue** – Vineyard Avenue is a four-lane divided roadway with a two-way left-turn lane through the study area and left-turn lanes at the arterial intersections. Between 4<sup>th</sup> Street and Inland Empire Boulevard, Vineyard Avenue carries three lanes in each direction with a raised median. The posted speed limit along Vineyard Avenue is 45 mph and on-street parking is not allowed within the City of Rancho Cucamonga and speed limit is 50 mph in the City of Ontario just south of the project site. Vineyard Avenue is designated as a Secondary Arterial on the City of Rancho Cucamonga Circulation Plan, and as a Minor Arterial on the City of Ontario Circulation Plan. Vineyard Avenue forms the eastern boundary of the project site and would provide access to the site via two full-movement unsignalized driveways.

**8th Street** – 8th Street is a two-lane undivided roadway through the study area, with a posted speed limit of 45 mph between Baker Avenue and Vineyard Avenue. 8th Street is designated as a Collector on the City of Rancho Cucamonga Circulation Plan, and as a Minor Arterial on the City of Ontario Circulation Plan. On-street parking is permitted on both sides of the roadway.

**Baker Avenue** – Baker Avenue is a two-lane undivided roadway through the study area, with a posted speed limit of 35 mph between 8th Street and 9th Street. Baker Avenue is designated as a Collector in Rancho Cucamonga and as a Minor Arterial on the City of Ontario Circulation Plan. On-street parking is permitted on both sides of the roadway. Baker Avenue forms the western boundary of the project site and would provide access to the site via three full-movement unsignalized driveways.

**Figure 3-1** shows the existing geometrics of the study intersections within the study area. A copy of the City of Rancho Cucamonga General Plan Circulation Plan is provided on **Appendix C**, and a copy of the City of Ontario Circulation Plan is provided on **Appendix D**.

### 3.2 TRANSIT SERVICE

Transit service to the project area is provided via the OmniTrans transit lines, which serve many San Bernardino cities in the area. Bus stops in the project vicinity are located along Vineyard Avenue, Arrow Highway, and 6th Street. A description of the bus routes serving the project area is provided below.

Route 80 operates between the Ontario International Airport and the Chaffey College Transit Center, traveling through the City of Ontario and the City of Rancho Cucamonga along Vineyard Avenue and

Carnelian Street. Route 80 operates on weekdays from approximately 5:02 AM to 8:42 PM with approximately 1-hour headways (the time between bus arrivals), and on Saturdays and Sundays from approximately 5:40 AM to 7:30 PM with approximately 1-hour headways.

Route 85 operates between the Chino Transit Center and the Chaffey College Transit Center, traveling along Arrow Highway in the project vicinity. Route 81 operates on weekdays from approximately 4:30 AM to 11:00 PM with approximately 30-minute headways, and on Saturdays and Sundays from approximately 6:30 AM to 7:20 PM with approximately 1-hour headways.

Route 86 operates between the southern portion of the City of Ontario and the San Antonio Hospital, traveling along 6th Street in the project vicinity. Route 82 operates on weekdays only from 5:12 AM to 9:46 PM with approximately 1-hour headways.

**Appendix E** provides bus schedules for the bus routes servicing the study area.

### 3.3 TRAFFIC VOLUMES

Peak-Hour intersection turning movement counts and 24-hour roadway segment data were collected by National Data and Surveying Services (NDS) at the study intersections on Tuesday, March 12, 2019.

Intersection count data included vehicle classifications for passenger vehicles and trucks. Vehicle classifications are necessary to compute Passenger Car Equivalent (PCE) volumes, which are used in the traffic analysis to address the effect of truck traffic on intersection and roadway operations. The PCE volumes were developed by applying a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. These factors are consistent with the SANBAG CMP requirements. PCE volume worksheets are provided in **Appendix F**.

**Appendix G** contains the existing traffic volume data at the study intersections and the existing ADT volume data for the roadway segments.

**Figure 3-2** illustrates the existing traffic volumes at the study intersections and ADT volumes along the roadway segments.

### 3.4 INTERSECTION ANALYSIS

**Table 3-1** displays the intersection analysis for the study intersections under Existing (2019) Conditions. As shown in the table, all intersections currently operate at LOS D or better during both peak, with the exception of the following intersection:

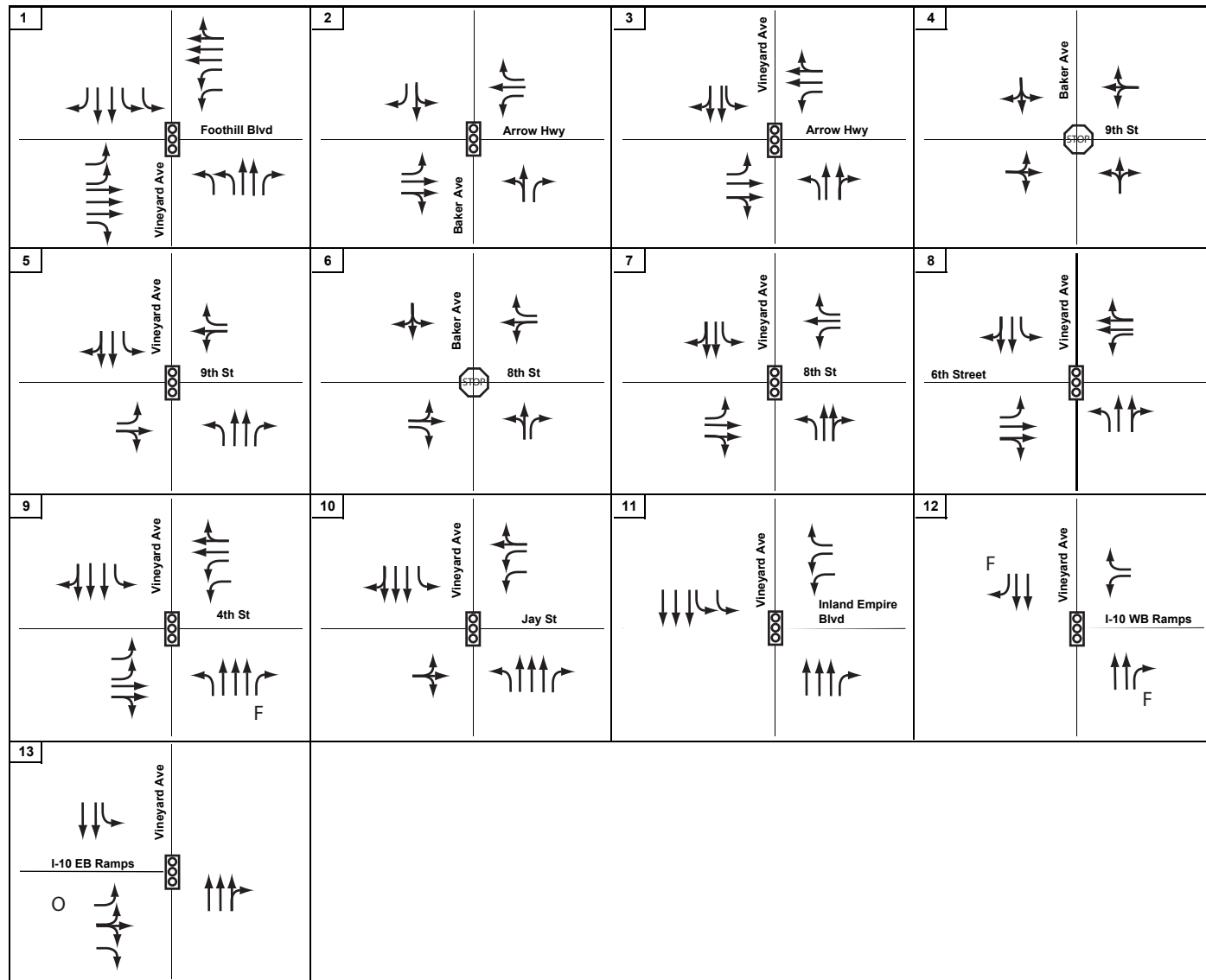
- #6 – Baker Avenue and 8th Street: AM Peak – LOS E

**Appendix H** contains the intersections LOS calculation worksheets.

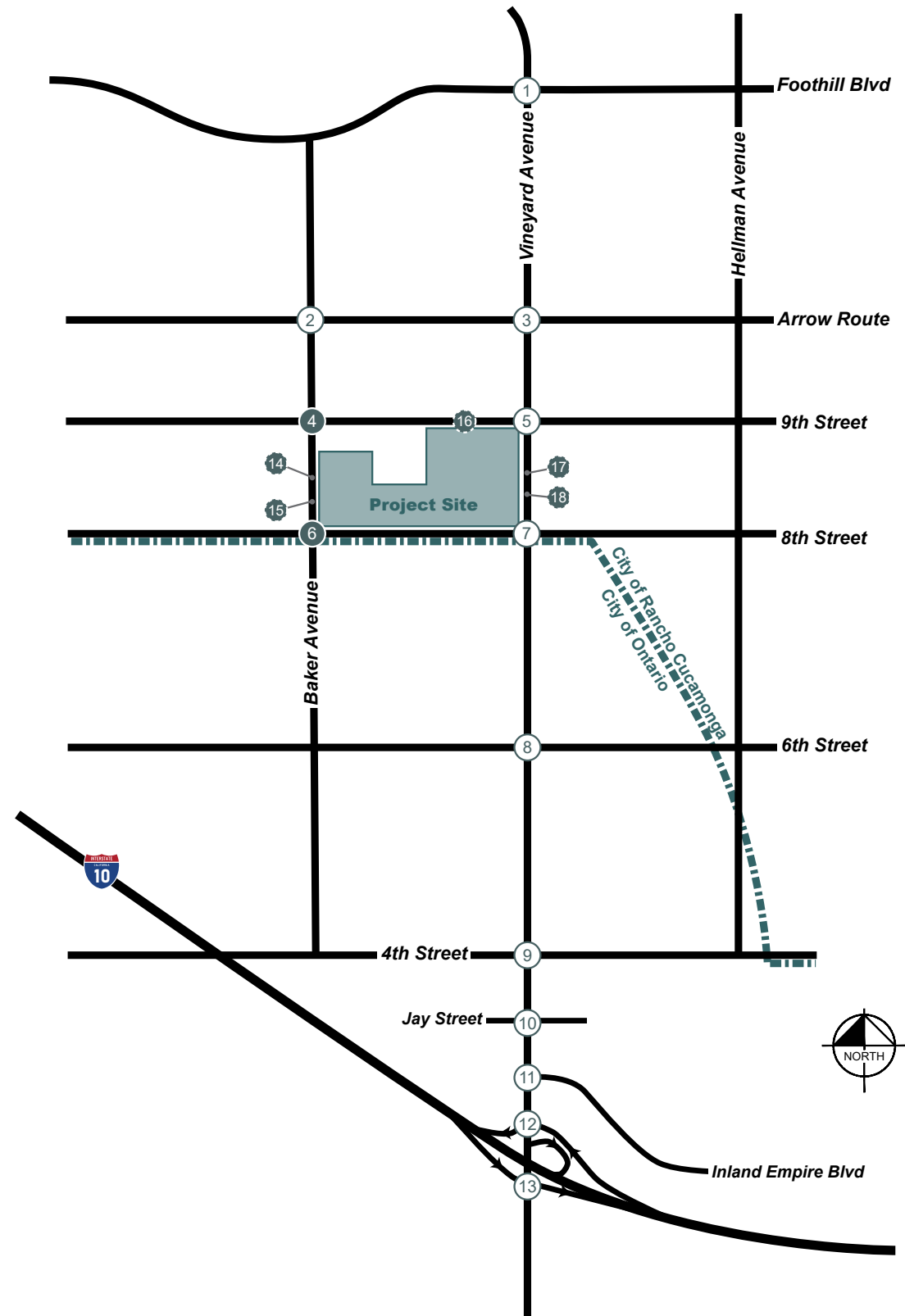
### 3.5 ROADWAY SEGMENT ANALYSIS

**Table 3-2** displays the City roadway segment analysis under Existing (2019) Conditions per San Bernardino County guidelines. As shown in the table, all roadway segments within the study area currently operate at LOS D or better.

**FIGURE 3-1 EXISTING INTERSECTION GEOMETRICS**

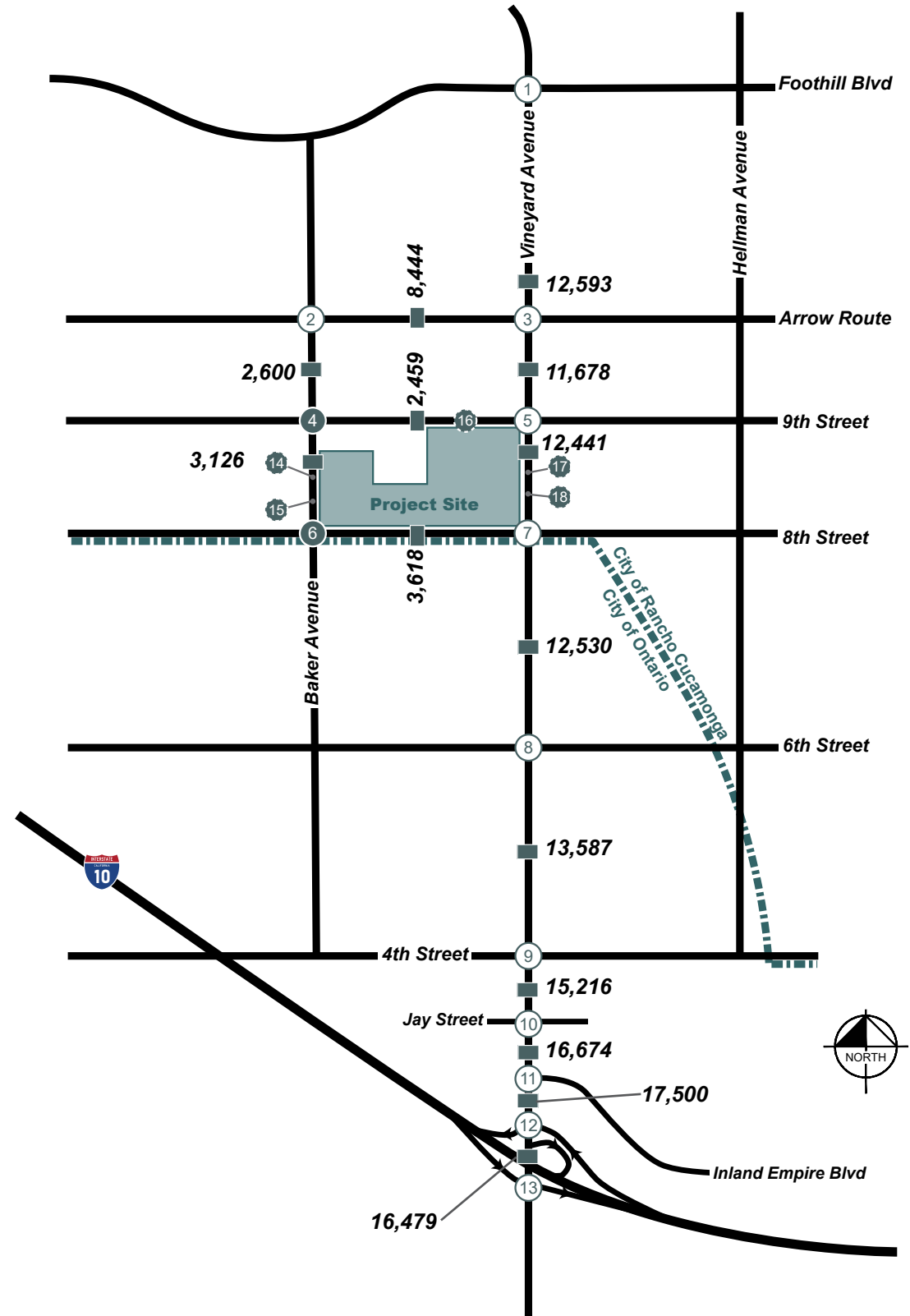


- LEGEND**
- Intersection Control*
- Signalized Intersection
  - Yield Controlled Movement
  - Free Right-Turn
  - Right-Turn Overlap



**FIGURE 3-2 EXISTING TRAFFIC VOLUMES**

<p><b>1</b></p> <p>373 / 265 802 / 539 181 / 192</p> <p>Vineyard Ave</p> <p>102 / 179 898 / 685 147 / 231</p> <p>Foothill Blvd</p> <p>296 / 444 512 / 1051 76 / 135</p> <p>102 / 144 627 / 764 166 / 227</p>	<p><b>2</b></p> <p>55 / 33 89 / 95 78 / 48</p> <p>Baker Ave</p> <p>71 / 93 621 / 524 114 / 10</p> <p>Arrow Rte</p> <p>27 / 42 507 / 699 36 / 23</p> <p>32 / 27 83 / 137 58 / 73</p>	<p><b>3</b></p> <p>120 / 110 836 / 527 192 / 118</p> <p>Vineyard Ave</p> <p>226 / 202 660 / 567 200 / 138</p> <p>Arrow Rte</p> <p>118 / 172 563 / 631 69 / 50</p> <p>57 / 67 448 / 755 108 / 141</p>	<p><b>4</b></p> <p>80 / 17 142 / 165 38 / 2</p> <p>Baker Ave</p> <p>67 / 17 120 / 143 34 / 43</p> <p>9th St</p> <p>59 / 42 127 / 171 6 / 44</p> <p>50 / 39 158 / 199 36 / 25</p>
<p><b>5</b></p> <p>38 / 47 1010 / 645 65 / 26</p> <p>Vineyard Ave</p> <p>29 / 62 86 / 105 68 / 116</p> <p>9th St</p> <p>31 / 45 128 / 119 41 / 28</p> <p>59 / 45 560 / 877 146 / 111</p>	<p><b>6</b></p> <p>49 / 43 188 / 183 69 / 31</p> <p>Baker Ave</p> <p>55 / 50 231 / 244 30 / 39</p> <p>8th St</p> <p>50 / 49 219 / 235 36 / 43</p> <p>76 / 32 136 / 192 41 / 30</p>	<p><b>7</b></p> <p>90 / 67 974 / 701 49 / 29</p> <p>Vineyard Ave</p> <p>39 / 38 178 / 194 23 / 32</p> <p>8th St</p> <p>95 / 100 197 / 194 43 / 54</p> <p>48 / 45 650 / 899 43 / 28</p>	<p><b>8</b></p> <p>76 / 47 882 / 639 80 / 74</p> <p>Vineyard Ave</p> <p>77 / 89 202 / 331 68 / 108</p> <p>6th St</p> <p>62 / 54 187 / 243 63 / 46</p> <p>45 / 51 644 / 919 79 / 93</p>
<p><b>9</b></p> <p>63 / 90 894 / 589 35 / 79</p> <p>Vineyard Ave</p> <p>38 / 64 261 / 462 232 / 336</p> <p>4th St</p> <p>102 / 169 184 / 246 135 / 97</p> <p>93 / 133 627 / 927 122 / 152</p>	<p><b>10</b></p> <p>9 / 24 1221 / 988 21 / 20</p> <p>Vineyard Ave</p> <p>18 / 35 0 / 3 12 / 75</p> <p>Jay St</p> <p>7 / 9 0 / 3 14 / 14</p> <p>49 / 58 877 / 1190 51 / 33</p>	<p><b>11</b></p> <p>1229 / 1031 32 / 22</p> <p>Vineyard Ave</p> <p>28 / 63 85 / 159</p> <p>Inland Empire Blvd</p> <p>937 / 1220 68 / 88</p>	<p><b>12</b></p> <p>322 / 389 1103 / 822</p> <p>Vineyard Ave</p> <p>309 / 381 164 / 208</p> <p>I-10 WB Ramps</p> <p>665 / 956 197 / 350</p>
<p><b>13</b></p> <p>874 / 806 409 / 219</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>227 / 279 4 / 3 334 / 260</p> <p>654 / 1018 321 / 340</p>			



**LEGEND**

- # Unsignalized Study Intersection
- # Signalized Study Intersection
- # Future Project Driveway Intersection
- Study Roadway Segment
- X/Y AM / PM Peak-Hour Traffic Volumes
- X,XXX ADT Traffic Volumes



**Table 3-1** Existing (2019) Conditions Intersection Analysis Summary

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Vineyard Avenue and Foothill Boulevard	S	36.7	D	32.3	C
2	Baker Avenue and Arrow Route	S	36.2	D	9.5	A
3	Vineyard Avenue and Arrow Route	S	51.3	D	41.3	D
4	Baker Avenue and 9th Street	U	16.3	C	12.7	B
5	Vineyard Avenue and 9th Street	S	17.8	B	14.6	B
6	Baker Avenue and 8th Street	U	<b>37.2</b>	<b>E</b>	18.6	C
7	Vineyard Avenue and 8th Street	S	18.8	B	14.7	B
8	Vineyard Avenue and 6th Street	S	15.5	B	17.0	B
9	Vineyard Avenue and 4th Street	S	21.1	C	25.1	C
10	Vineyard Avenue and Jay Street	S	9.9	A	12.0	B
11	Vineyard Avenue and Inland Empire Boulevard	S	5.0	A	6.5	A
12	Vineyard Avenue and I-10 WB Ramps	S	9.1	A	10.2	B
13	Vineyard Avenue and I-10 EB Ramps	S	18.6	B	13.3	B

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service, or a significant operational deficiency, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At the unsignalized all-way stop-controlled intersections, delay refers to the average delay per vehicle for the entire intersection.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6<sup>th</sup> Edition.
- S = Signalized; U = Unsignalized

**Table 3-2 Existing (2019) Conditions Roadway Analysis Summary**

Roadway	Segment	Lane Configuration	LOS E Capacity	Existing ADT	V / C	LOS
<b>Baker Avenue</b>	Arrow Route to 9th Street	2-Lane Undivided	12,500	2,600	0.208	A
	9th Street to 8th Street	2-Lane Undivided	12,500	3,126	0.250	A
<b>Arrow Route</b>	Baker Avenue to Vineyard Avenue	4-Lane Divided	33,000	8,444	0.256	A
<b>9th Street</b>	Baker Avenue to Vineyard Avenue	2-Lane Undivided	12,500	2,459	0.197	A
<b>8th Street</b>	Baker Avenue to Vineyard Avenue	2-Lane Undivided	12,500	3,618	0.289	A
<b>Vineyard Avenue</b>	Foothill Boulevard to Arrow Route	4-Lane Divided	33,000	12,593	0.382	A
	Arrow Route to 9th Street	4-Lane Divided	33,000	11,678	0.354	A
	9th Street to 8th Street	4-Lane Divided	33,000	12,441	0.377	A
	8th Street to 6th Street	4-Lane Divided	33,000	12,530	0.380	A
	6th Street to 4th Street	4-Lane Divided	33,000	13,587	0.412	A
	4th Street to Jay Street	4-Lane Divided	33,000	15,216	0.461	A
	Jay Street to Inland Empire Boulevard	6-Lane Divided	49,000	16,674	0.340	A
	Inland Empire Boulevard to I-10 WB Ramps	6-Lane Divided	49,000	17,500	0.357	A
	I-10 WB Ramps to I-10 EB Ramps	4-Lane Divided	33,000	16,479	0.499	A

**Notes:**

LOS = Level of Service

ADT = Average Daily Traffic

V / C = Volume to Capacity

## 4 OPENING YEAR (2021) BASELINE CONDITIONS

This section provides a description of the Opening Year (2021) Conditions without the project. Year 2021 was selected as the anticipated opening year of the project. This scenario establishes a baseline to compare against plus project scenario to determine project operational deficiencies.

### 4.1 TRAFFIC VOLUMES

The Opening Year (2021) baseline traffic volumes were calculated by applying an ambient growth rate of 1% per year to the existing traffic volumes, per consultation with the City of Rancho Cucamonga, as well as adding the cumulative project traffic from applicable nearby projects.

Information about Cumulative Projects in the area was provided by the City of Rancho Cucamonga and the City of Ontario. Cumulative Projects consist of any project that has been approved but is not yet constructed/ occupied, and projects that are in various stages of the application and approval process, but have not yet been approved. A summary of Cumulative Projects in the project vicinity and the trip generation associated with each is provided in **Table 4-1**. The locations of the Cumulative Projects are shown in **Figure 4-1**.

Trip generation and trip distribution information for Cumulative Projects was derived either from approved traffic studies, where available; or developed by Kimley-Horn if approved traffic studies were not available.

Additional information on the cumulative projects are included in **Appendix I**.

The resulting Opening Year (2021) Baseline traffic volumes are shown in **Figure 4-2**.

### 4.2 INTERSECTION ANALYSIS

**Table 4-2** displays the LOS analysis results for the study intersections under the Opening Year (2021) Conditions. As shown in the table, all intersections within the study area would operate at LOS D or better during both peak periods except for the following intersection:

- #6 – Baker Avenue and 8th Street: AM & PM – LOS E

**Appendix H** contains the intersections LOS calculation worksheets.

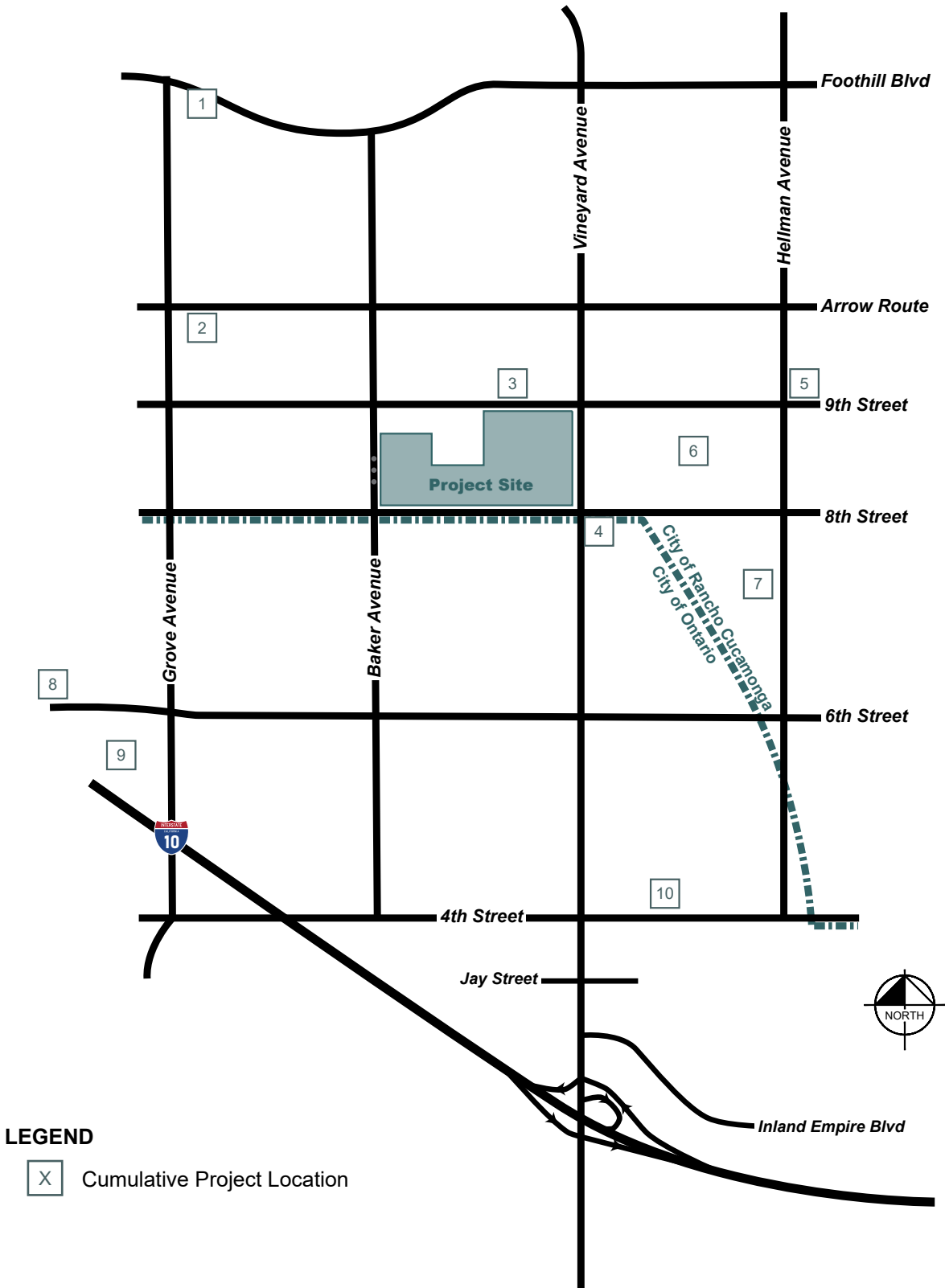
### 4.3 ROADWAY SEGMENT ANALYSIS

**Table 4-3** displays the study area roadway segments analysis under Opening Year (2021) Conditions. As shown in the tables, all roadway segments within the study area would operate at LOS D or better.

**Table 4-1** Cumulative Project List

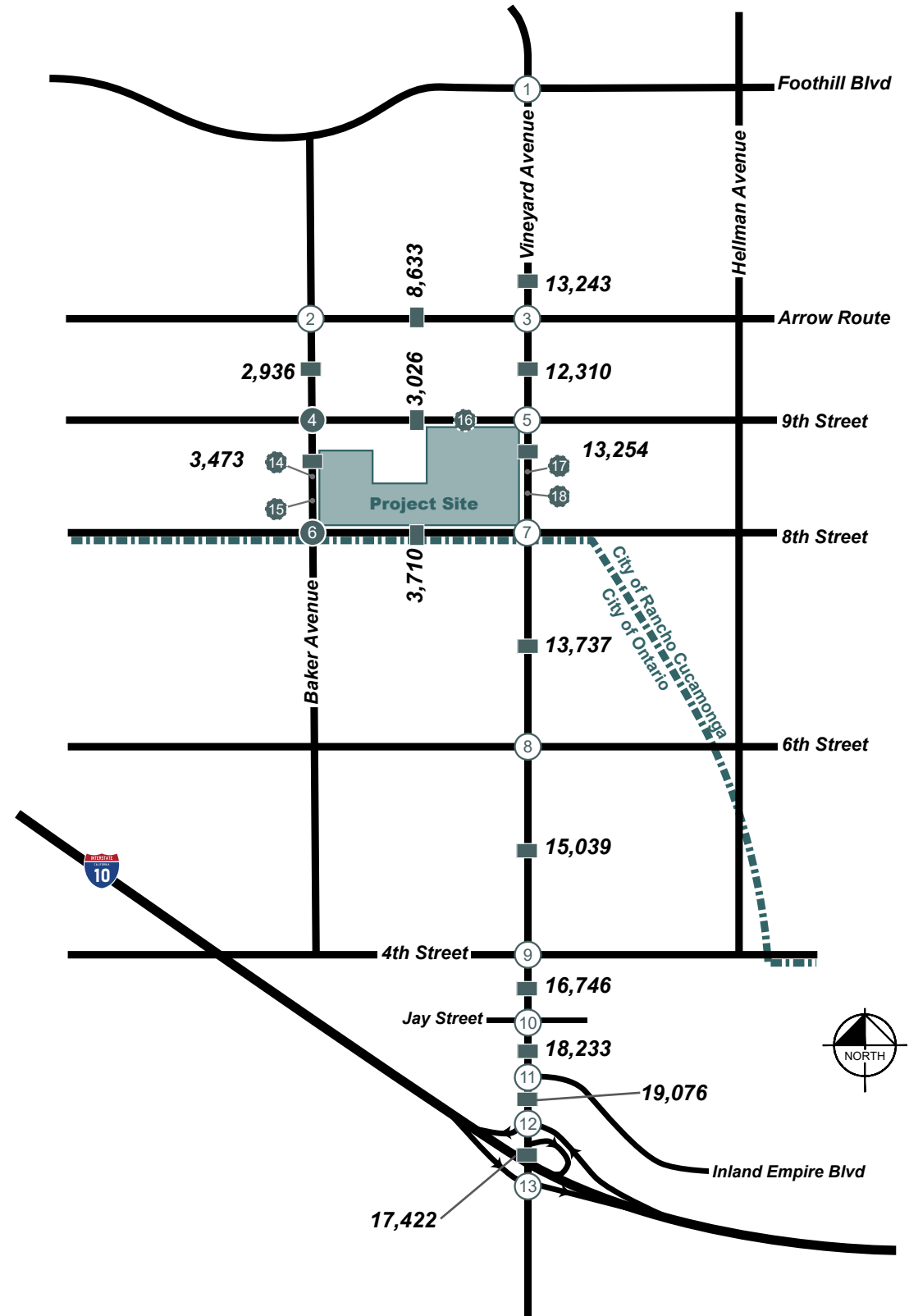
	<b>PROJECT</b>	<b>LOCATION / ADDRESS</b>	<b>LAND USE</b>	<b>CITY</b>
1	Sycamore Heights (Foothill & P&E Trail)	Red Hill Country Club Drive & E. Foothill Blvd	Residential	Rancho Cucamonga
2	DRC2015-00991 WeCare Dialysis	8591 Grove Avenue	Medical Office Building	Rancho Cucamonga
3	DRC2018-00912 Phelan Development	8768 Ninth Street	Industrial Warehouse	Rancho Cucamonga
4	DRC2018-00430 Bonaldo Engineering	Eighth Street & Vineyard Avenue	Industrial	Rancho Cucamonga
5	DRC2018-00594 Lord Constructors	Hellman Avenue & Feron Boulevard	Industrial	Rancho Cucamonga
6	9500 & 9505 Feron Boulevard	9500 Feron Boulevard	Warehouse, Office	Rancho Cucamonga
7	DRC2018-00119 Overton Moore Properties	9000 Hellman Avenue	Industrial Warehouse	Rancho Cucamonga
8	BOB 2.0	8794 Lions Street	Industrial Warehouse	Rancho Cucamonga
9	941 E. Sixth Street	941 E. Sixth Street	Residential (Multifamily)	Ontario
10	1402 N. Virginia Avenue	1402 N. Virginia Ave.	Residential (Apartments)	Ontario
11	2041 E. Fourth Street	2041 E. Fourth Street	Residential (Single- Family)	Ontario

**FIGURE 4-1 CUMULATIVE PROJECT LOCATIONS**



**FIGURE 4-2 OPENING YEAR (2021) TRAFFIC VOLUMES**

<p><b>1</b></p> <p>382 / 276 822 / 552 185 / 196</p> <p>Vineyard Ave</p> <p>104 / 183 924 / 721 159 / 242</p> <p>Foothill Blvd</p> <p>308 / 457 543 / 1085 85 / 145</p> <p>109 / 155 641 / 784 174 / 243</p>	<p><b>2</b></p> <p>56 / 34 105 / 105 80 / 49</p> <p>Baker Ave</p> <p>72 / 95 634 / 535 116 / 10</p> <p>Arrow Rte</p> <p>28 / 43 517 / 714 37 / 23</p> <p>33 / 28 90 / 154 59 / 74</p>	<p><b>3</b></p> <p>122 / 112 874 / 554 196 / 120</p> <p>Vineyard Ave</p> <p>231 / 206 674 / 579 204 / 141</p> <p>Arrow Rte</p> <p>120 / 175 574 / 645 70 / 51</p> <p>58 / 68 468 / 794 110 / 144</p>	<p><b>4</b></p> <p>82 / 17 157 / 175 41 / 3</p> <p>Baker Ave</p> <p>69 / 19 123 / 147 36 / 46</p> <p>9th St</p> <p>60 / 43 130 / 175 6 / 45</p> <p>51 / 40 165 / 215 39 / 27</p>
<p><b>5</b></p> <p>52 / 53 1038 / 669 66 / 27</p> <p>Vineyard Ave</p> <p>30 / 63 89 / 108 69 / 118</p> <p>9th St</p> <p>35 / 60 131 / 122 49 / 56</p> <p>85 / 56 579 / 905 149 / 113</p>	<p><b>6</b></p> <p>50 / 44 205 / 196 70 / 32</p> <p>Baker Ave</p> <p>56 / 51 237 / 250 31 / 40</p> <p>8th St</p> <p>51 / 50 223 / 241 37 / 44</p> <p>78 / 33 145 / 209 42 / 31</p>	<p><b>7</b></p> <p>92 / 68 1008 / 753 50 / 30</p> <p>Vineyard Ave</p> <p>40 / 39 183 / 199 33 / 64</p> <p>8th St</p> <p>97 / 102 201 / 199 44 / 55</p> <p>49 / 46 696 / 937 74 / 40</p>	<p><b>8</b></p> <p>78 / 48 925 / 721 82 / 75</p> <p>Vineyard Ave</p> <p>79 / 91 207 / 339 70 / 113</p> <p>6th St</p> <p>63 / 55 191 / 249 73 / 52</p> <p>49 / 61 720 / 968 84 / 96</p>
<p><b>9</b></p> <p>64 / 92 945 / 670 38 / 88</p> <p>Vineyard Ave</p> <p>45 / 69 269 / 473 246 / 349</p> <p>4th St</p> <p>104 / 172 189 / 254 138 / 99</p> <p>95 / 136 702 / 983 127 / 165</p>	<p><b>10</b></p> <p>9 / 24 1287 / 1083 21 / 20</p> <p>Vineyard Ave</p> <p>18 / 36 0 / 3 12 / 77</p> <p>Jay St</p> <p>7 / 9 0 / 3 14 / 14</p> <p>50 / 59 960 / 1261 52 / 34</p>	<p><b>11</b></p> <p>1296 / 1127 33 / 22</p> <p>Vineyard Ave</p> <p>29 / 64 87 / 162</p> <p>Inland Empire Blvd</p> <p>1021 / 1291 69 / 90</p>	<p><b>12</b></p> <p>347 / 447 1146 / 864</p> <p>Vineyard Ave</p> <p>335 / 412 167 / 212</p> <p>I-10 WB Ramps</p> <p>694 / 987 201 / 357</p>
<p><b>13</b></p> <p>891 / 822 438 / 249</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>278 / 308 4 / 3 341 / 265</p> <p>667 / 1038 327 / 347</p>			



**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $\circ$  X/Y AM / PM Peak-Hour Traffic Volumes
- X,XXX** ADT Traffic Volumes

**Table 4-2** Opening Year (2021) Conditions Intersection Analysis Summary

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Vineyard Avenue and Foothill Boulevard	S	37.0	D	33.3	C
2	Baker Avenue and Arrow Route	S	40.0	D	9.9	A
3	Vineyard Avenue and Arrow Route	S	51.9	D	44.9	D
4	Baker Avenue and 9th Street	U	18.1	C	13.4	B
5	Vineyard Avenue and 9th Street	S	19.5	B	16.4	B
6	Baker Avenue and 8th Street	U	47.4	<b>E</b>	20.6	C
7	Vineyard Avenue and 8th Street	S	19.5	B	15.2	B
8	Vineyard Avenue and 6th Street	S	15.6	B	18.0	B
9	Vineyard Avenue and 4th Street	S	19.9	B	26.3	C
10	Vineyard Avenue and Jay Street	S	10.2	B	12.2	B
11	Vineyard Avenue and Inland Empire Boulevard	S	4.7	A	6.5	A
12	Vineyard Avenue and I-10 WB Ramps	S	9.1	A	11.0	B
13	Vineyard Avenue and I-10 EB Ramps	S	20.3	C	14.3	B

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service, or a significant operational deficiency, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At the unsignalized all-way stop-controlled intersections, delay refers to the average delay per vehicle for the entire intersection.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6<sup>th</sup> Edition.
- S = Signalized; U = Unsignalized

Table 4-3 Opening Year (2021) Conditions Roadway Analysis

Roadway	Segment	LOS E Capacity	Existing ADT	Existing + Growth	Cumulative Project	Opening Year 2021 ADT	V / C	LOS
<b>Baker Avenue</b>	Arrow Route to 9th Street	12,500	2,600	2,652	284	2,936	0.235	A
	9th Street to 8th Street	12,500	3,126	3,189	284	3,473	0.278	A
<b>Arrow Route</b>	Baker Avenue to Vineyard Avenue	33,000	8,444	8,613	20	8,633	0.262	A
<b>9th Street</b>	Baker Avenue to Vineyard Avenue	12,500	2,459	2,508	518	3,026	0.242	A
<b>8th Street</b>	Baker Avenue to Vineyard Avenue	12,500	3,618	3,690	20	3,710	0.297	A
<b>Vineyard Avenue</b>	Foothill Boulevard to Arrow Route	33,000	12,593	12,845	398	13,243	0.401	A
	Arrow Route to 9th Street	33,000	11,678	11,912	398	12,310	0.373	A
	9th Street to 8th Street	33,000	12,441	12,690	564	13,254	0.402	A
	8th Street to 6th Street	33,000	12,530	12,781	956	13,737	0.416	A
	6th Street to 4th Street	33,000	13,587	13,859	1,180	15,039	0.456	A
	4th Street to Jay Street	33,000	15,216	15,520	1,226	16,746	0.507	A
	Jay Street to Inland Empire Boulevard	49,000	16,674	17,007	1,226	18,233	0.372	A
	Inland Empire Boulevard to I-10 WB Ramps	49,000	17,500	17,850	1,226	19,076	0.389	A
	I-10 WB Ramps to I-10 EB Ramps	33,000	16,479	16,809	613	17,422	0.528	A

**Notes:**

- LOS = Level of Service
- ADT = Average Daily Traffic
- V / C = Volume to Capacity



## 5 PROJECT TRAFFIC

The following section describes the trip generation, distribution and assignment related to the proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project.

### 5.1 TRIP GENERATION

Trip generation estimates for the 9th Street and Vineyard Avenue Warehouse Project are based on daily and peak hourly trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). ITE trip generation estimates for the project are based on the trip generation rates for ITE Land Use: Warehousing (Land Use 150).

Trip credits were also applied based on the existing land uses that would be demolished as part of the project. ITE trip generation estimates for the existing land use include: Manufacturing (Land Use 140), Light Warehouse (Land Use 150a), and General Office Building (Land Use 710).

The trip credits were subtracted from the trip generation volumes to obtain the net new project trip volumes. The project would generate a net total of 1,912 daily trips, with 172 trips during the morning peak hour and 198 trips during the evening peak hour.

Passenger vehicle and truck mix rates for the project were derived from the City of Fontana Truck Trip Generation Study, published in August 2003, which indicates that truck trips for a warehouse use make up approximately 20.4% of the project trips on a daily basis.

Passenger car equivalent (PCE) factors were then applied to the truck types, based on number of axles (1.5 PCE for 2-axle trucks, 2.0 PCE for 3-axle trucks, and 3.0 PCE for 4+-axle trucks) to determine the total PCE volumes to be generated by the project.

Trip generation rates, PCE factors, and the resulting trip generation estimates for the 9th Street and Vineyard Avenue Warehouse Project are summarized on **Table 5-1**.

### 5.2 TRIP DISTRIBUTION

Trip distribution assumptions for the project were developed considering the proposed site uses, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. Trip distribution percentages were applied to the project trip generation to determine the project trips through each study intersection.

**Figure 5-1** shows the project traffic distribution within the study area for the Opening Year (2021) with Project, and Horizon Year (2040) with Project scenarios for passenger cars, while **Figure 5-2** shows the traffic distribution throughout the study area intersections for trucks.

### 5.3 TRIP ASSIGNMENT

Based on the project trip generation and trip distribution, project trips for passenger cars and trucks were assigned to the local roadway network, shown in **Figure 5-3** and **Figure 5-4**, respectively. Additionally, the passenger car and truck trips for the existing warehouses and office buildings were removed from the local roadway network as trip credits, shown in **Figure 5-5** and **Figure 5-6**, respectively.

**Figure 5-7** shows the total net trip assignment values for the project under Opening Year (2021) with Project, and Horizon Year (2040) with Project conditions at the study intersections and roadway segments within the study area.

## 5.4 ROADWAY NETWORK CHANGES

With the construction of the proposed project, the south curb along 9<sup>th</sup> Street would be reconstructed near the intersection with Vineyard Avenue and the exclusive eastbound left turn lane would be removed. The eastbound approach on 9<sup>th</sup> Street at Vineyard Avenue would consist of a single shared lane for all movements. This intersection modification was modeled for the Opening Year (2021 with Project and Horizon Year (2040) with Project scenarios.

Table 5-1 Trip Generation Summary

TRIP GENERATION RATES <sup>1</sup>										
ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Manufacturing	140	KSF	3.93	0.48	0.14	0.62	0.21	0.46	0.67	
Warehousing	150	KSF	1.74	0.13	0.04	0.17	0.05	0.14	0.19	
General Office Building	710	KSF	9.74	1.00	0.16	1.16	0.18	0.97	1.15	
PROJECT TRIP GENERATION										
Existing Land Uses										
Project Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Manufacturing	39.375	KSF	155	19	6	25	8	18	26	
<i>Passenger Vehicles</i>	80.3%		124	15	5	20	6	14	20	
<i>Trucks (PCE)</i>	19.7%		73	9	3	12	4	8	12	
Light Warehouse	75.320	KSF	131	10	3	13	4	10	14	
<i>Passenger Vehicles</i>	80.3%		105	8	2	10	3	8	11	
<i>Trucks (PCE)</i>	19.7%		61	5	1	6	1	5	6	
General Office Building	9.300	KSF	91	9	2	11	2	9	11	
<b>Total Existing PCE Trips</b>			<b>454</b>	<b>46</b>	<b>13</b>	<b>59</b>	<b>16</b>	<b>44</b>	<b>60</b>	
Proposed Land Use										
Project Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Heavy Warehouse	1,037.467	KSF	1,805	136	40	176	53	144	197	
<i>Passenger Vehicles</i>	79.6%		1,436	108	32	140	42	115	157	
<i>Trucks</i>	20.4%		369	28	8	36	11	29	40	
PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)										
Vehicle Type	Vehicle Mix <sup>2</sup>	Daily Vehicles	PCE Factor <sup>3</sup>	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	79.6%	1,436	1.0	1,436	108	32	140	42	115	157
2-Axle Trucks	3.5%	62	1.5	93	7	2	9	3	7	10
3-Axle Trucks	4.6%	84	2.0	168	13	4	17	5	13	18
4+ Axle Trucks	12.3%	223	3.0	669	50	15	65	20	53	73
<b>Total Truck PCE Trips</b>				<b>930</b>	<b>70</b>	<b>21</b>	<b>91</b>	<b>28</b>	<b>73</b>	<b>101</b>
<b>Total Proposed PCE Trips</b>				<b>2,366</b>	<b>178</b>	<b>53</b>	<b>231</b>	<b>70</b>	<b>188</b>	<b>258</b>
Project Trip Summary										
<b>Total Proposed PCE Trips</b>				<b>2,366</b>	<b>178</b>	<b>53</b>	<b>231</b>	<b>70</b>	<b>188</b>	<b>258</b>
<b>Total Existing PCE Trips</b>				<b>-454</b>	<b>-46</b>	<b>-13</b>	<b>-59</b>	<b>-16</b>	<b>-44</b>	<b>-60</b>
<b>Total Net New PCE Trips</b>				<b>1,912</b>	<b>132</b>	<b>40</b>	<b>172</b>	<b>54</b>	<b>144</b>	<b>198</b>

<sup>1</sup> Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition

<sup>2</sup> Source: Truck Trip Generation Study - City of Fontana, August 2003.

<sup>3</sup> Source: San Bernardino Congestion Management Program Update (June 2016).

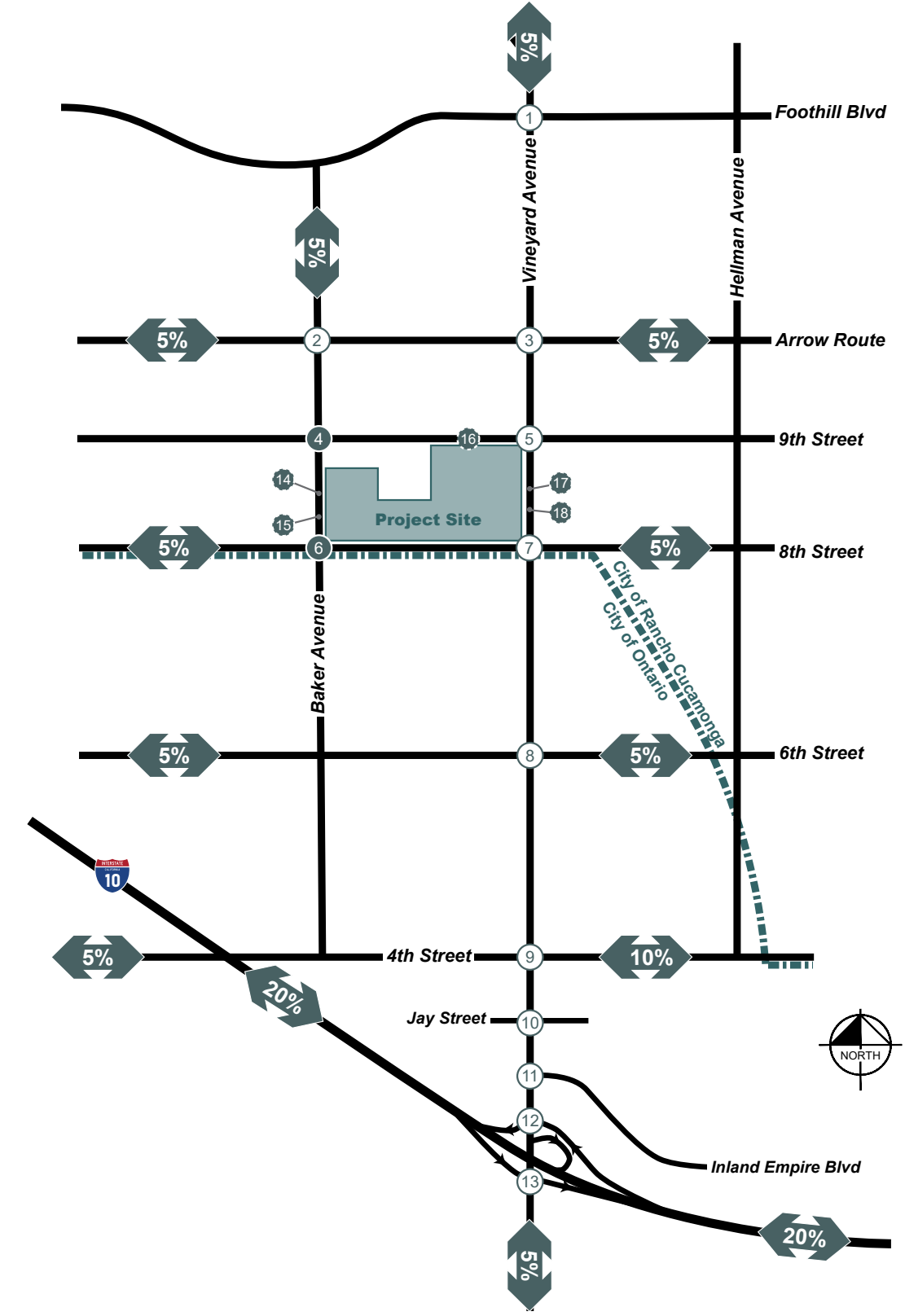
PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

**FIGURE 5-1 PROJECT TRIP DISTRIBUTION - PASSENGER CARS**

1	Vineyard Ave ⇄ 5%	Foothill Blvd	2	Baker Ave ⇄ 5%	Arrow Rte ⇄ (3%) ⇄ 5%	3	Vineyard Ave ⇄ 2%	Arrow Rte ⇄ 2% ⇄ 3%	4	Baker Ave ⇄ 8% ⇄ 4%	9th St ⇄ 4% ⇄ 3%
		(5%) ⇄		3% ⇄ 2% ⇄	(2%) ⇄ (5%) ⇄ (5%) ⇄		(2%) ⇄ (2%) ⇄ 3% ⇄	(3%) ⇄ (3%) ⇄ (3%) ⇄		(8%) ⇄ 3% ⇄	
5	Vineyard Ave ⇄ 5% ⇄ 4%	9th St	6	Baker Ave ⇄ (2%) ⇄ (5%) ⇄ (27%)	8th St ⇄ 27% ⇄ (3%)	7	Vineyard Ave ⇄ (38%) ⇄ (3%)	8th St ⇄ 3% ⇄ 2%	8	Vineyard Ave ⇄ 58% ⇄ (5%)	6th St ⇄ 5%
	(5%) ⇄ (15%) ⇄	15% ⇄ 4% ⇄		(2%) ⇄ (3%) ⇄	5% ⇄		3% ⇄ (2%) ⇄ (25%) ⇄	25% ⇄ 38% ⇄		58% ⇄	
9	Vineyard Ave ⇄ (3%) ⇄ (45%) ⇄ (10%)	4th St ⇄ 10%	10	Vineyard Ave ⇄ (45%)	Jay St ⇄ 45%	11	Vineyard Ave ⇄ (45%)	Inland Empire Blvd ⇄ 45%	12	Vineyard Ave ⇄ (20%) ⇄ (25%)	I-10 WB Ramps ⇄ 20% ⇄ 25%
	3% ⇄	45% ⇄									
13	Vineyard Ave ⇄ (5%) ⇄ (20%)	I-10 EB Ramps ⇄ 5%	14	Baker Ave ⇄ (3%) ⇄ 4%	North Dwy ⇄ 4% ⇄ 20%	15	Baker Ave ⇄ (23%) ⇄ 4%	South Dwy ⇄ (4%) ⇄ (10%)	16		9th St ⇄ 20%
	20% ⇄				20% ⇄		20% ⇄ 10% ⇄	7% ⇄ (7%) ⇄ (20%) ⇄			
			17	Vineyard Ave ⇄ (15%)	North Dwy ⇄ 15%	18	Vineyard Ave ⇄ (15%)	South Dwy ⇄ 15%			

- LEGEND**
- # Unsignalized Study Intersection
  - # Signalized Study Intersection
  - # Study Roadway Segment
  - XX% Daily Percent Distribution (Passenger Cars)



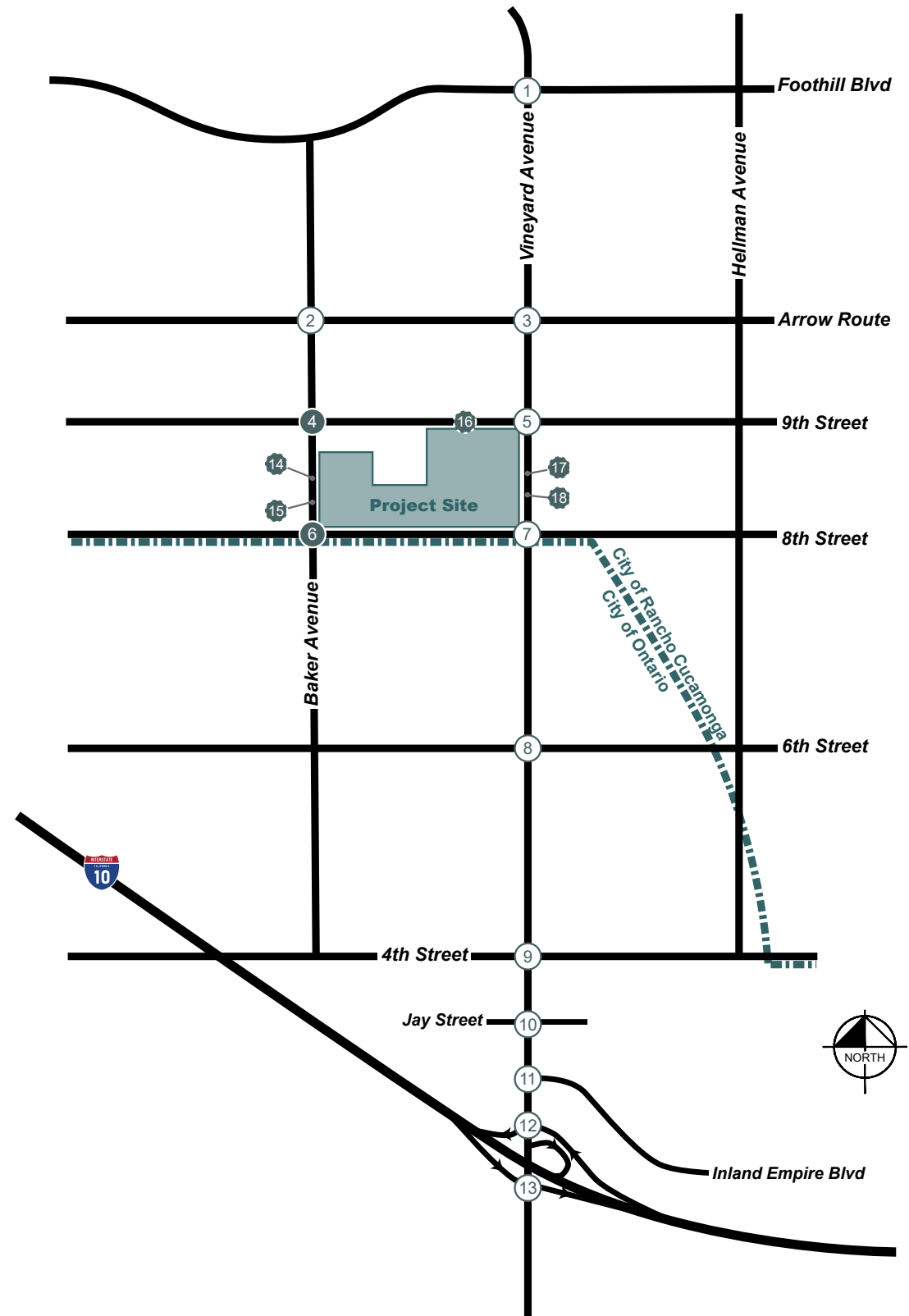


**FIGURE 5-3 PROJECT TRIP ASSIGNMENT - PASSENGER CARS**

<p><b>1</b></p> <p>Vineyard Ave</p> <p>5 / 2</p> <p>⇄</p> <p>Foothill Blvd</p> <p>2 / 6</p>	<p><b>2</b></p> <p>Baker Ave</p> <p>5 / 2</p> <p>⇄</p> <p>Arrow Rte</p> <p>1 / 4 4 / 2</p> <p>1 / 2 2 / 6 2 / 4</p>	<p><b>3</b></p> <p>Vineyard Ave</p> <p>2 / 1 3 / 1</p> <p>⇄</p> <p>Arrow Rte</p> <p>2 / 1 3 / 1</p> <p>1 / 2 1 / 2 3 / 1</p> <p>1 / 4 1 / 4 1 / 4</p>	<p><b>4</b></p> <p>Baker Ave</p> <p>8 / 4 3 / 1</p> <p>⇄</p> <p>9th St</p> <p>1 / 4 1 / 4 3 / 1</p> <p>4 / 8 3 / 1</p>
<p><b>5</b></p> <p>Vineyard Ave</p> <p>3 / 1 6 / 2</p> <p>⇄</p> <p>9th St</p> <p>1 / 4 5 / 18</p> <p>17 / 7 2 / 8</p>	<p><b>6</b></p> <p>Baker Ave</p> <p>1 / 2 3 / 8 6 / 31</p> <p>⇄</p> <p>8th St</p> <p>29 / 10 1 / 4</p> <p>2 / 1 3 / 1</p> <p>7 / 3</p>	<p><b>7</b></p> <p>Vineyard Ave</p> <p>1 / 4 13 / 43 1 / 4</p> <p>⇄</p> <p>8th St</p> <p>3 / 1 2 / 1</p> <p>3 / 1 1 / 2 5 / 29</p> <p>27 / 9 46 / 19</p>	<p><b>8</b></p> <p>Vineyard Ave</p> <p>16 / 66 2 / 6</p> <p>⇄</p> <p>6th St</p> <p>5 / 2</p> <p>68 / 26</p>
<p><b>9</b></p> <p>Vineyard Ave</p> <p>1 / 4 12 / 50 3 / 12</p> <p>⇄</p> <p>4th St</p> <p>3 / 1</p> <p>51 / 20</p>	<p><b>10</b></p> <p>Vineyard Ave</p> <p>12 / 50</p> <p>⇄</p> <p>Jay St</p> <p>51 / 20</p>	<p><b>11</b></p> <p>Vineyard Ave</p> <p>12 / 50</p> <p>⇄</p> <p>Inland Empire Blvd</p> <p>51 / 20</p>	<p><b>12</b></p> <p>Vineyard Ave</p> <p>5 / 23 7 / 27</p> <p>⇄</p> <p>I-10 WB Ramps</p> <p>23 / 9</p> <p>28 / 11</p>
<p><b>13</b></p> <p>Vineyard Ave</p> <p>2 / 6 5 / 21</p> <p>⇄</p> <p>I-10 EB Ramps</p> <p>23 / 9</p> <p>5 / 2</p>	<p><b>14</b></p> <p>Baker Ave</p> <p>7 / 7 2 / 1</p> <p>⇄</p> <p>North Dwy</p> <p>1 / 2 3 / 15</p> <p>6 / 7 13 / 5</p>	<p><b>15</b></p> <p>Baker Ave</p> <p>7 / 28 4 / 2</p> <p>⇄</p> <p>South Dwy</p> <p>2 / 4 3 / 13</p> <p>25 / 9 13 / 5</p>	<p><b>16</b></p> <p>Dwy</p> <p>6 / 2</p> <p>20 / 8</p> <p>9th St</p> <p>2 / 8 6 / 22</p>
<p><b>17</b></p> <p>Vineyard Ave</p> <p>6 / 2 5 / 18</p> <p>⇄</p> <p>North Dwy</p> <p>2 / 8 10 / 33</p> <p>35 / 14 17 / 7</p>	<p><b>18</b></p> <p>Vineyard Ave</p> <p>15 / 51</p> <p>⇄</p> <p>South Dwy</p> <p>52 / 21</p>		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- ⇄ x / y AM / PM Peak-Hour Traffic Volumes

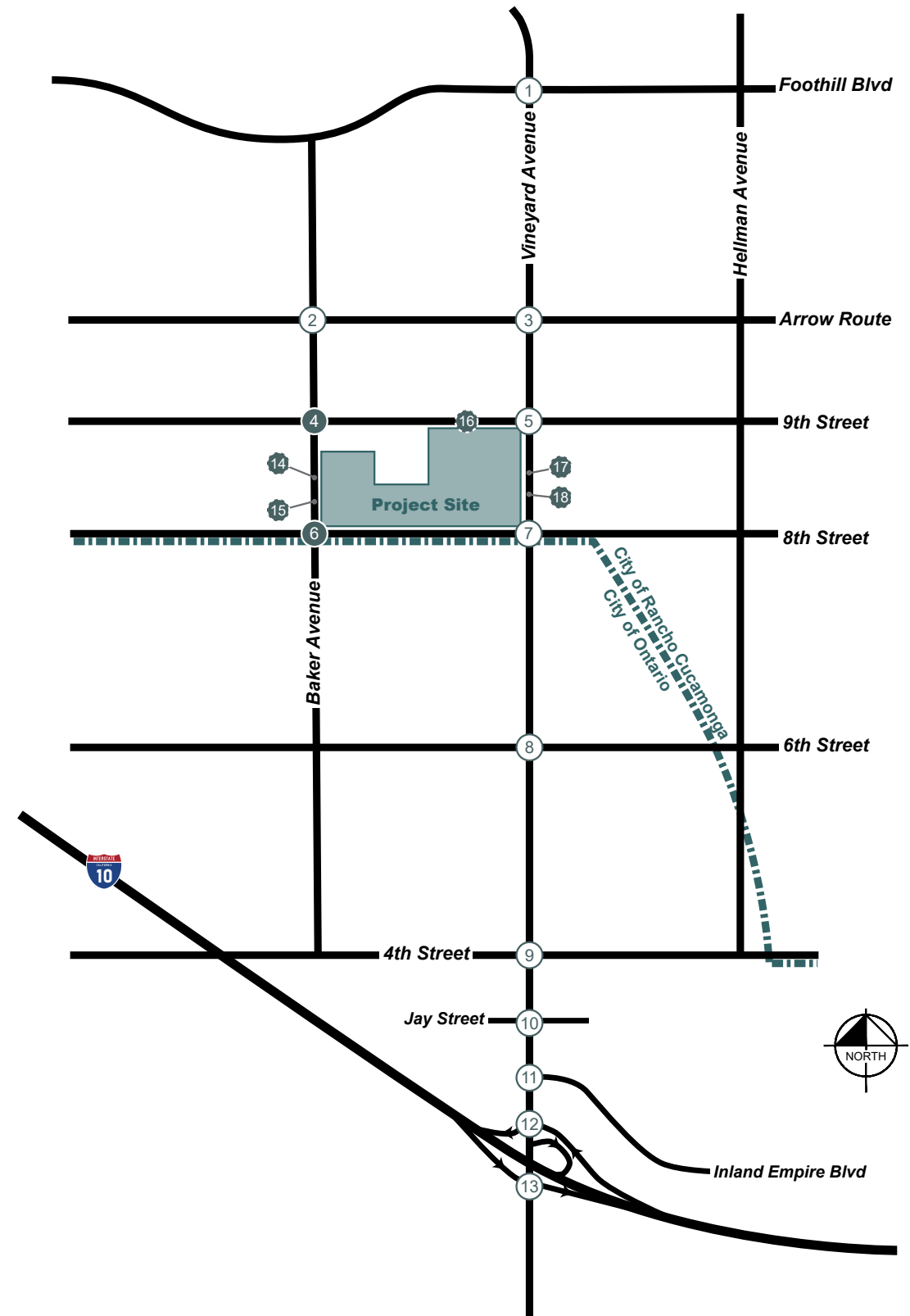


**FIGURE 5-4 PROJECT TRIP ASSIGNMENT - TRUCKS**

1	Vineyard Ave Foothill Blvd	2	Baker Ave Arrow Rte	3	Vineyard Ave Arrow Rte	4	Baker Ave 9th St
5	Vineyard Ave 9th St	6	9 / 30 Baker Ave 28 / 11 8th St	7	12 / 46 Vineyard Ave 8th St	8	21 / 76 Vineyard Ave 6th St
9	5 / 18 Vineyard Ave 17 / 7 4th St	10	21 / 76 Vineyard Ave Jay St	11	21 / 76 Vineyard Ave Inland Empire Blvd	12	12 / 46 9 / 30 Vineyard Ave 28 / 11 I-10 WB Ramps
13	9 / 30 Vineyard Ave 43 / 17 I-10 EB Ramps	14	Baker Ave North Dwy	15	Baker Ave 9 / 30 South Dwy 28 / 11	16	17 / 7 9th St Dwy 5 / 18
		17	5 / 18 Vineyard Ave North Dwy 7 / 28	18	12 / 46 Vineyard Ave South Dwy 26 / 10 17 / 7 43 / 17		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $\circ$  X / Y AM / PM Peak-Hour Traffic Volumes

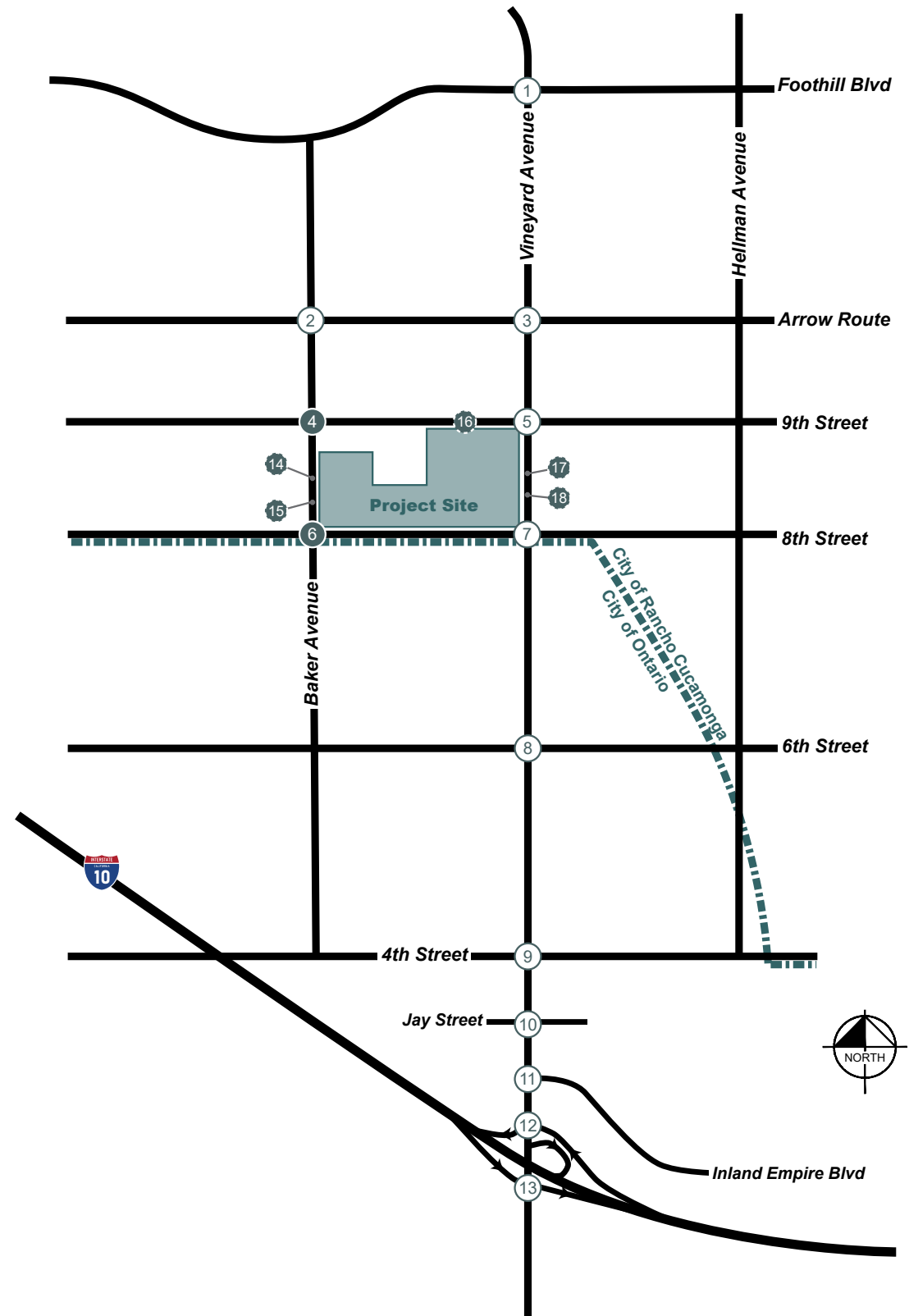


**FIGURE 5-5 EXISTING TRIP CREDITS - PASSENGER CARS**

1 Vineyard Ave Foothill Blvd 0 / -1 ⇄	2 Baker Ave Arrow Rte -1 / 0 ⇄	3 Vineyard Ave Arrow Rte -1 / 0 ⇄	4 Baker Ave 9th St -3 / 0 ⇄
5 Vineyard Ave 9th St -4 / -3 ⇄	6 Baker Ave 8th St -2 / -8 ⇄	7 Vineyard Ave 8th St 0 / -1 ⇄	8 Vineyard Ave 6th St 0 / -1 ⇄
9 Vineyard Ave 4th St 0 / -1 ⇄	10 Vineyard Ave Jay St -8 / -19 ⇄	11 Vineyard Ave Inland Empire Blvd -8 / -19 ⇄	12 Vineyard Ave I-10 WB Ramps -1 / -7 ⇄
13 Vineyard Ave I-10 EB Ramps 0 / -1 ⇄	14 Vineyard Ave North Dwy -3 / 0 ⇄	15 Baker Ave South Dwy -3 / 0 ⇄	16 Dwy 9th St -2 / -8 ⇄
17 Vineyard Ave North Dwy 0 / -4 ⇄	18 Vineyard Ave South Dwy -11 / -22 ⇄		

**LEGEND**

- # Unsignalized Study Intersection
- # Signalized Study Intersection
- # Future Project Driveway Intersection
- Study Roadway Segment
- ⇄ X / Y AM / PM Peak-Hour Traffic Volumes



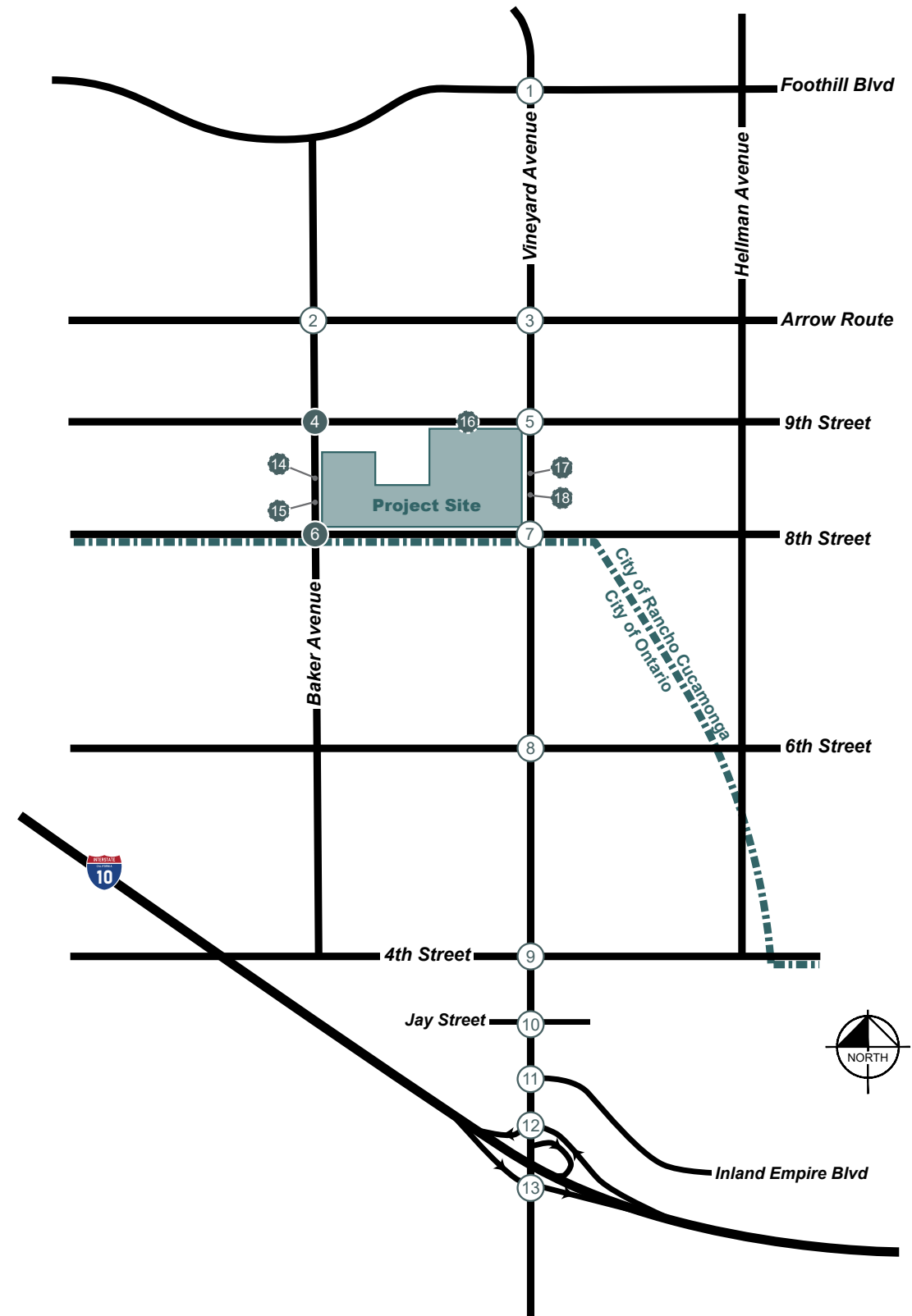


**FIGURE 5-6 EXISTING TRIP CREDITS - TRUCKS**

1	Vineyard Ave Foothill Blvd	2	Baker Ave Arrow Rte	3	Vineyard Ave Arrow Rte	4	Baker Ave 9th St
5	Vineyard Ave 9th St	6	Baker Ave 8th St -1 / -5	7	Vineyard Ave 8th St -3 / -8	8	Vineyard Ave 6th St -4 / -13
9	Vineyard Ave 4th St -4 / -13	10	Vineyard Ave Jay St -4 / -13	11	Vineyard Ave Inland Empire Blvd -4 / -13	12	Vineyard Ave I-10 WB Ramps -3 / -8 -1 / -5 -6 / -2
13	Vineyard Ave I-10 EB Ramps -1 / -5 -8 / -3	14	Baker Ave North Dwy	15	Baker Ave South Dwy -1 / -5 -5 / -1	16	9th St Dwy
		17	Vineyard Ave North Dwy -3 / -8	18	Vineyard Ave South Dwy -3 / -8 -9 / -4		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $\circlearrowleft$  X / Y AM / PM Peak-Hour Traffic Volumes

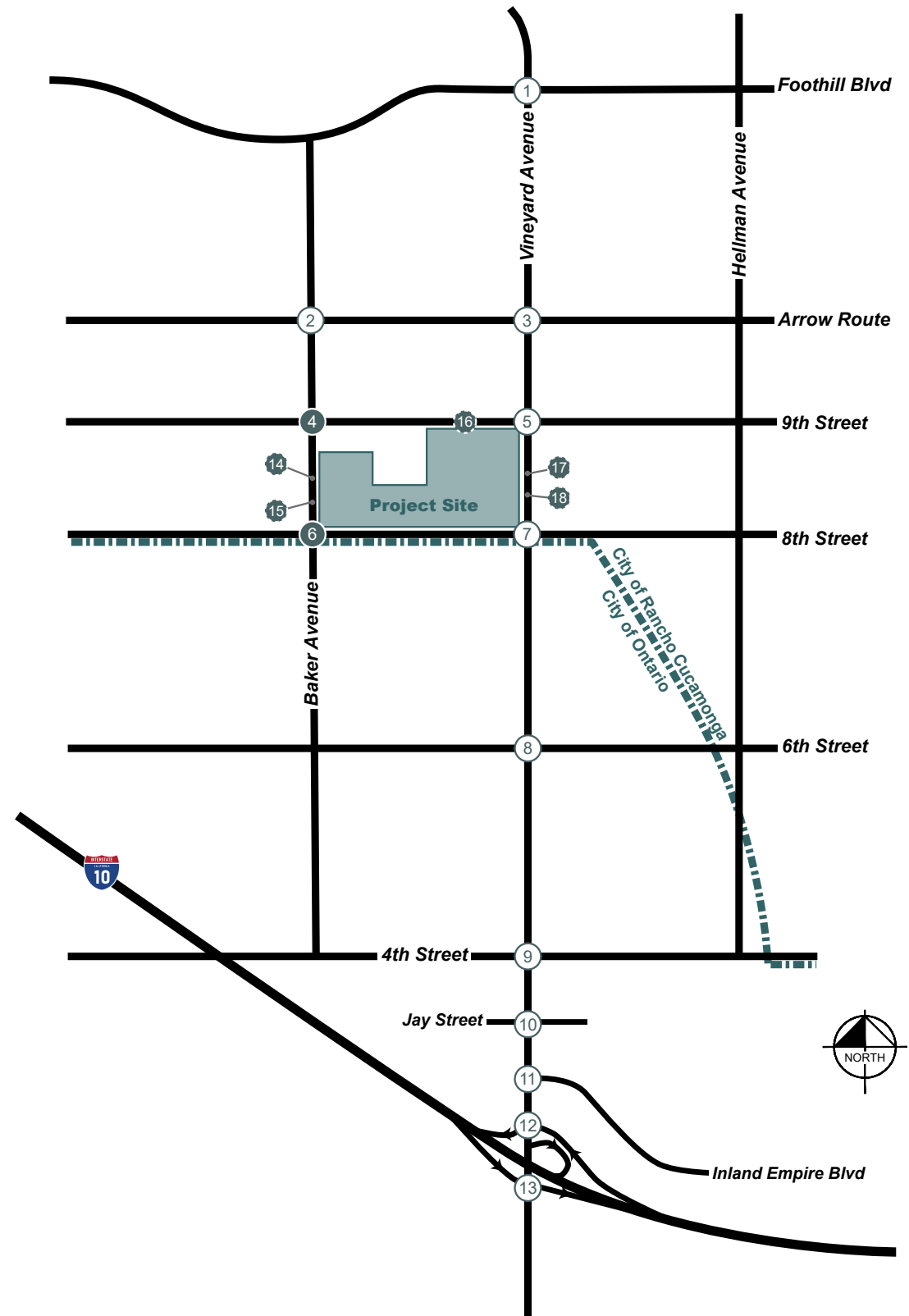


**FIGURE 5-7 TOTAL PROJECT TRIP ASSIGNMENT**

<p><b>1</b></p> <p>3 / 1</p> <p>Vineyard Ave</p> <p>Foothill Blvd</p> <p>2 / 5</p>	<p><b>2</b></p> <p>5 / 2</p> <p>1 / 0</p> <p>Baker Ave</p> <p>Arrow Rte</p> <p>1 / 2</p> <p>2 / 6</p> <p>2 / 4</p>	<p><b>3</b></p> <p>1 / 1</p> <p>2 / 0</p> <p>Vineyard Ave</p> <p>Arrow Rte</p> <p>1 / 2</p> <p>1 / 2</p> <p>1 / 0</p>	<p><b>4</b></p> <p>5 / 4</p> <p>3 / 1</p> <p>Baker Ave</p> <p>9th St</p> <p>4 / 8</p> <p>3 / 1</p>
<p><b>5</b></p> <p>3 / 1</p> <p>2 / -1</p> <p>Vineyard Ave</p> <p>9th St</p> <p>1 / 4</p> <p>10 / 36</p>	<p><b>6</b></p> <p>1 / 2</p> <p>3 / 8</p> <p>12 / 48</p> <p>Baker Ave</p> <p>8th St</p> <p>2 / 1</p> <p>2 / 1</p>	<p><b>7</b></p> <p>1 / 3</p> <p>15 / 64</p> <p>1 / 3</p> <p>Vineyard Ave</p> <p>8th St</p> <p>2 / 1</p> <p>1 / 2</p> <p>11 / 46</p>	<p><b>8</b></p> <p>0 / -1</p> <p>24 / 106</p> <p>2 / 5</p> <p>Vineyard Ave</p> <p>6th St</p> <p>-1 / 0</p> <p>104 / 41</p>
<p><b>9</b></p> <p>1 / 3</p> <p>21 / 94</p> <p>2 / 9</p> <p>Vineyard Ave</p> <p>4th St</p> <p>2 / 1</p>	<p><b>10</b></p> <p>21 / 94</p> <p>Vineyard Ave</p> <p>Jay St</p> <p>92 / 37</p>	<p><b>11</b></p> <p>21 / 94</p> <p>Vineyard Ave</p> <p>Inland Empire Blvd</p> <p>92 / 37</p>	<p><b>12</b></p> <p>13 / 54</p> <p>8 / 40</p> <p>Vineyard Ave</p> <p>I-10 WB Ramps</p> <p>54 / 22</p>
<p><b>13</b></p> <p>2 / 5</p> <p>6 / 35</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>50 / 20</p>	<p><b>14</b></p> <p>4 / 7</p> <p>2 / 1</p> <p>Baker Ave</p> <p>North Dwy</p> <p>6 / 7</p> <p>13 / 5</p>	<p><b>15</b></p> <p>7 / 28</p> <p>1 / 2</p> <p>Baker Ave</p> <p>South Dwy</p> <p>25 / 9</p> <p>31 / 12</p>	<p><b>16</b></p> <p>37 / 15</p> <p>9th Street</p> <p>6 / 2</p> <p>Dwy</p> <p>2 / 8</p> <p>11 / 40</p>
<p><b>17</b></p> <p>2 / -1</p> <p>10 / 36</p> <p>Vineyard Ave</p> <p>North Dwy</p> <p>2 / 4</p> <p>7 / 34</p>	<p><b>18</b></p> <p>17 / 70</p> <p>Vineyard Ave</p> <p>South Dwy</p> <p>32 / 15</p> <p>34 / 14</p>		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $\circ$  X / Y AM / PM Peak-Hour Traffic Volumes



## 6 OPENING YEAR (2021) WITH PROJECT CONDITIONS

This section provides a description of the Opening Year (2021) Conditions with the addition of the proposed project traffic.

### 6.1 TRAFFIC VOLUMES

The project is expected to generate 1,912 daily PCE trips, 172 PCE trips in the morning peak hour, and 198 PCE trips in the evening peak hour. Opening Year (2021) with Project Conditions volumes were determined by adding the project traffic to the Opening Year (2021) Baseline Conditions volumes. These volumes are shown in **Figure 6-1**.

### 6.2 INTERSECTION ANALYSIS

**Table 6-1** displays the LOS analysis results for the study intersections under the Opening Year (2021) with Project Conditions. As shown in the table, all intersections within the study area would operate at LOS D or better with the addition of the proposed project except for the following intersection:

- #6 – Baker Avenue and 8th Street: AM– LOS F

The intersection was found to have a significant traffic related operational deficiency.

**Appendix H** contains the intersections LOS calculation worksheets.

### 6.3 ROADWAY SEGMENT ANALYSIS

**Table 6-2** displays the roadway segment analysis under the Opening Year (2021) with Project Conditions. As shown in the table, all study roadway segments would continue to operate at LOS D or better with the addition of the proposed project traffic. Therefore, the project would not have any traffic-related operational deficiency along the roadway segments in this scenario.

### 6.4 FINDINGS AND CONCLUSIONS

The results of the foregoing analysis indicate that the proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project would have an operational deficiency that require mitigation under the Opening Year (2021) with Project traffic scenario at the following intersection:

- #6 – Baker Avenue and 8th Street: AM – LOS F

To mitigate the proposed project traffic related operational deficiencies, the following improvements are recommended at the Baker Avenue 8<sup>th</sup> Street:

- Construct the roadway improvements necessary to widen Baker Avenue in order to stripe southbound left turn lane on Baker Avenue to create left turn and shared through-right turn lanes (required for Opening Year and Horizon Year mitigation)

**Table 6-3** summarizes the intersection analysis results for the Baker Avenue and 8<sup>th</sup> Street intersection after implementing the mitigation listed above.

**FIGURE 6-1 OPENING YEAR (2021) WITH PROJECT TRAFFIC VOLUMES**

<p><b>1</b></p> <p>382 / 276 826 / 553 185 / 196</p> <p>Vineyard Ave</p> <p>104 / 183 924 / 721 159 / 242</p> <p>Foothill Blvd</p> <p>308 / 457 543 / 1085 85 / 145</p> <p>109 / 155 643 / 789 174 / 243</p>	<p><b>2</b></p> <p>56 / 34 111 / 107 79 / 49</p> <p>Baker Ave</p> <p>72 / 94 635 / 538 118 / 12</p> <p>Arrow Rte</p> <p>28 / 43 520 / 714 38 / 24</p> <p>34 / 30 92 / 160 61 / 78</p>	<p><b>3</b></p> <p>123 / 113 877 / 554 196 / 120</p> <p>Vineyard Ave</p> <p>231 / 206 675 / 580 206 / 141</p> <p>Arrow Rte</p> <p>121 / 177 575 / 647 72 / 51</p> <p>59 / 70 469 / 797 111 / 147</p>	<p><b>4</b></p> <p>82 / 17 162 / 179 45 / 4</p> <p>Baker Ave</p> <p>70 / 23 123 / 147 37 / 50</p> <p>9th St</p> <p>60 / 43 130 / 175 6 / 45</p> <p>51 / 40 169 / 223 42 / 28</p>
<p><b>5</b></p> <p>55 / 54 1014 / 644 66 / 27</p> <p>Vineyard Ave</p> <p>30 / 63 89 / 108 68 / 116</p> <p>9th St</p> <p>36 / 64 131 / 122 52 / 64</p> <p>92 / 58 562 / 881 146 / 111</p>	<p><b>6</b></p> <p>50 / 46 206 / 204 83 / 78</p> <p>Baker Ave</p> <p>98 / 69 238 / 253 31 / 40</p> <p>8th St</p> <p>53 / 51 226 / 242 37 / 44</p> <p>78 / 33 152 / 212 42 / 31</p>	<p><b>7</b></p> <p>93 / 71 1026 / 825 51 / 33</p> <p>Vineyard Ave</p> <p>42 / 40 185 / 200 33 / 64</p> <p>8th St</p> <p>100 / 103 202 / 201 56 / 99</p> <p>89 / 63 763 / 963 74 / 40</p>	<p><b>8</b></p> <p>78 / 47 953 / 833 84 / 80</p> <p>Vineyard Ave</p> <p>83 / 93 207 / 339 70 / 113</p> <p>6th St</p> <p>62 / 55 191 / 249 73 / 52</p> <p>49 / 61 824 / 1009 84 / 96</p>
<p><b>9</b></p> <p>65 / 95 970 / 771 40 / 96</p> <p>Vineyard Ave</p> <p>54 / 72 269 / 473 246 / 349</p> <p>4th St</p> <p>106 / 173 189 / 254 138 / 99</p> <p>95 / 136 795 / 1020 127 / 165</p>	<p><b>10</b></p> <p>9 / 24 1312 / 1184 21 / 20</p> <p>Vineyard Ave</p> <p>18 / 36 0 / 3 12 / 77</p> <p>Jay St</p> <p>7 / 9 0 / 3 14 / 14</p> <p>50 / 59 1053 / 1298 52 / 34</p>	<p><b>11</b></p> <p>1321 / 1228 33 / 22</p> <p>Vineyard Ave</p> <p>29 / 64 87 / 162</p> <p>Inland Empire Blvd</p> <p>1114 / 1328 69 / 90</p>	<p><b>12</b></p> <p>362 / 500 1156 / 912</p> <p>Vineyard Ave</p> <p>373 / 428 167 / 212</p> <p>I-10 WB Ramps</p> <p>749 / 1008 201 / 357</p>
<p><b>13</b></p> <p>892 / 827 447 / 292</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>329 / 327 4 / 3 341 / 265</p> <p>671 / 1040 327 / 347</p>	<p><b>14</b></p> <p>327 / 277 4 / 2</p> <p>Baker Ave</p> <p>2 / 4 6 / 23</p> <p>North Dwy</p> <p>260 / 315 20 / 10</p>	<p><b>15</b></p> <p>332 / 298 5 / 3</p> <p>Baker Ave</p> <p>2 / 4 12 / 51</p> <p>South Dwy</p> <p>278 / 321 46 / 16</p>	<p><b>16</b></p> <p>264 / 223 36 / 14</p> <p>9th St</p> <p>215 / 244 7 / 2</p> <p>Dwy</p> <p>2 / 8 12 / 40</p>
<p><b>17</b></p> <p>4 / 1 1134 / 835</p> <p>Vineyard Ave</p> <p>North Dwy</p> <p>1 / 2 7 / 27</p> <p>59 / 22 819 / 1054</p>	<p><b>18</b></p> <p>4 / 1 1137 / 860</p> <p>Vineyard Ave</p> <p>South Dwy</p> <p>1 / 2 10 / 37</p> <p>876 / 1072</p>		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $x/y$  AM / PM Peak-Hour Traffic Volumes
- X,XXX** ADT Traffic Volumes

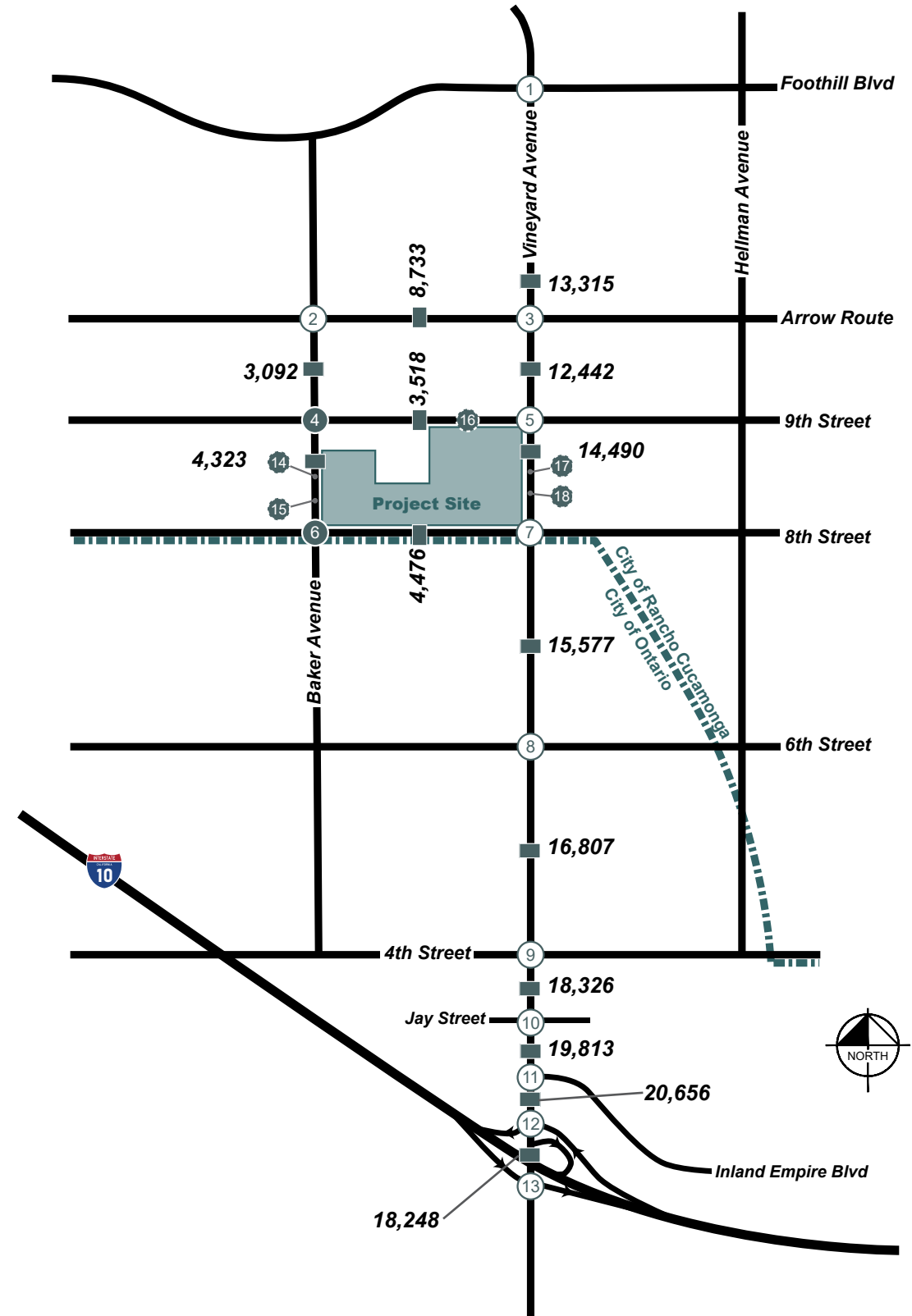


Table 6-1 Opening Year (2021) with Project Conditions Intersection Analysis Summary

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour				Project Impact	Impact Sig?
			Without Project		With Project		Project Impact	Impact Sig?	Without Project		With Project			
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Vineyard Avenue and Foothill Boulevard	S	37.0	D	38.9	D	1.9	No	33.3	C	34.2	C	0.9	No
2	Baker Avenue and Arrow Route	S	40.0	D	41.4	D	1.4	No	9.9	A	10.5	B	0.6	No
3	Vineyard Avenue and Arrow Route	S	51.9	D	55.0	D	3.1	No	44.9	D	45.4	D	0.5	No
4	Baker Avenue and 9th Street	U	18.1	C	19.6	C	1.5	No	13.4	B	14.0	B	0.6	No
5	Vineyard Avenue and 9th Street	S	19.5	B	19.3	B	-0.2	No	16.4	B	15.9	B	-0.5	No
6	Baker Avenue and 8th Street	U	47.4	<b>E</b>	52.3	<b>F</b>	4.9	<b>Yes</b>	20.6	C	25.7	D	5.1	No
7	Vineyard Avenue and 8th Street	S	19.5	B	21.6	C	2.1	No	15.2	B	16.2	B	1.0	No
8	Vineyard Avenue and 6th Street	S	15.6	B	16.5	B	0.9	No	18.0	B	18.8	B	0.8	No
9	Vineyard Avenue and 4th Street	S	19.9	B	21.8	C	1.9	No	26.3	C	27.0	C	0.7	No
10	Vineyard Avenue and Jay Street	S	10.2	B	10.1	B	-0.1	No	12.2	B	12.6	B	0.4	No
11	Vineyard Avenue and Inland Empire Boulevard	S	4.7	A	5.0	A	0.3	No	6.5	A	6.5	A	0.0	No
12	Vineyard Avenue and I-10 WB Ramps	S	9.1	A	10.6	B	1.5	No	11.0	B	11.6	B	0.6	No
13	Vineyard Avenue and I-10 EB Ramps	S	20.3	C	21.8	C	1.5	No	14.3	B	15.8	B	1.5	No
14	Baker Avenue and North Driveway	U	n/a		12.7	B	12.7	No	n/a		13.4	B	13.4	No
15	Baker Avenue and South Driveway	U			14.8	B	14.8	No			16.5	C	16.5	No
16	Baker Avenue and South Driveway	U			10.1	B	10.1	No			10.5	B	10.5	No
17	Driveway D and 9th Street	U			23.7	C	23.7	No			15.7	C	15.7	No
18	Vineyard Avenue and Driveway B	U			13.7	B	13.7	No			11.7	B	11.7	No

**Notes:**

- **Bold** and shaded values indicate intersections operating at an unacceptable Level of Service, or a significant impact to the intersection, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At an unsignalized intersection, delay refers to the average delay per vehicle on the intersection approach with the highest delay.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6th Edition.
- S = Signalized; U = Unsignalized

Table 6-2 Opening Year (2021) with Project Conditions Roadway Analysis Summary

Roadway	Segment	Opening Year + Project ADT	V / C	LOS	Change in V/C	Significant Impact?
<b>Baker Avenue</b>	Arrow Route to 9th Street	3,092	0.247	A	0.012	No
	9th Street to 8th Street	4,323	0.346	A	0.068	No
<b>Arrow Route</b>	Baker Avenue to Vineyard Avenue	8,733	0.265	A	0.003	No
<b>9th Street</b>	Baker Avenue to Vineyard Avenue	3,518	0.281	A	0.039	No
<b>8th Street</b>	Baker Avenue to Vineyard Avenue	4,476	0.358	A	0.061	No
<b>Vineyard Avenue</b>	Foothill Boulevard to Arrow Route	13,315	0.403	A	0.002	No
	Arrow Route to 9th Street	12,442	0.377	A	0.004	No
	9th Street to 8th Street	14,490	0.439	A	0.037	No
	8th Street to 6th Street	15,577	0.472	A	0.056	No
	6th Street to 4th Street	16,807	0.509	A	0.053	No
	4th Street to Jay Street	18,326	0.555	A	0.048	No
	Jay Street to Inland Empire Boulevard	19,813	0.404	A	0.032	No
	Inland Empire Boulevard to I-10 WB Ramps	20,656	0.422	A	0.033	No
	I-10 WB Ramps to I-10 EB Ramps	18,248	0.553	A	0.025	No

**Notes:**

- LOS = Level of Service
- ADT = Average Daily Traffic
- V / C = Volume to Capacity

**Table 6-3** Opening Year (2021) with Project Conditions Mitigated Int. Analysis Summary

Int. #	Intersection and Mitigation	Traffic Control	AM Peak Hour				PM Peak Hour			
			Without Mitigation		With Mitigation		Without Mitigation		With Mitigation	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
6	Baker Avenue and 8th Street									
	Widen the southbound approach to provide an exclusive left turn lane	U	52.3	<b>F</b>	32.1	D	25.7	D	20.3	C

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service, or a significant operational deficiency, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At an unsignalized intersection, delay refers to the average delay per vehicle on the intersection approach with the highest delay.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6<sup>th</sup> Edition.
- S = Signalized; U = Unsignalized

A traffic signal warrant evaluation was completed for the intersection of 8th Street and Baker Avenue to evaluate whether the installation of the traffic signal should be considered as a mitigation measure for the project under the Opening Year (2021) with Project Conditions. A copy of the traffic signal warrant memo is included in **Appendix J**. The signal warrant analysis determined that the installation of the traffic signal would not be warranted under the Opening Year (2021) with Project Conditions.

## 7 HORIZON YEAR (2040) CONDITIONS

This section provides a description of the Horizon Year (2040) Conditions. This scenario establishes a baseline to compare against the Horizon Year (2040) with Project Conditions to determine cumulative project related operational deficiencies.

### 7.1 TRAFFIC VOLUMES

To develop the Horizon Year (2040) intersection turning movement forecasts, the San Bernardino Transportation Analysis Model (SBTAM) base year 2012 and build-out year 2040 future traffic projections were used. The raw forecasts obtained from the model output were post-processed by determining the annual growth between the base model year and the future model year, and applying the resulting growth to existing count volumes. The B-Turns analysis worksheets, developed by the Federal Highway Administration (FHWA), translate the future volumes into peak hour turning movements.

As a conservative approach, if a turning movement volume produced by this model was less than Project Opening Year (2021) volumes for that movement, manual adjustments were made to assure that all forecast horizon year volumes would be equal to or greater than the Project Opening Year (2021) turning movement volumes. Both SBTAM Model plots and B-Turns analysis worksheets are provided in **Appendix K**. The resulting traffic volumes for Horizon Year (2040) condition are shown on **Figure 7-1**.

There are no programmed improvements in the study area based on the 2012-2035 Draft Southern California Association of Governments (SCAG) Regional Transportation Plan. Therefore, lane geometries for the study intersections are assumed to be the same as Existing Conditions, previously shown in Figure 3-1.

### 7.2 INTERSECTION ANALYSIS

**Table 7-1** displays the LOS analysis results for the study intersections under the Horizon Year (2040) Conditions. As shown in the table, all intersections within the study area would operate at LOS D or better during both peak periods except for the following intersection:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8th Street: AM – LOS E & PM – LOS F

**Appendix H** contains the intersections LOS calculation worksheets.

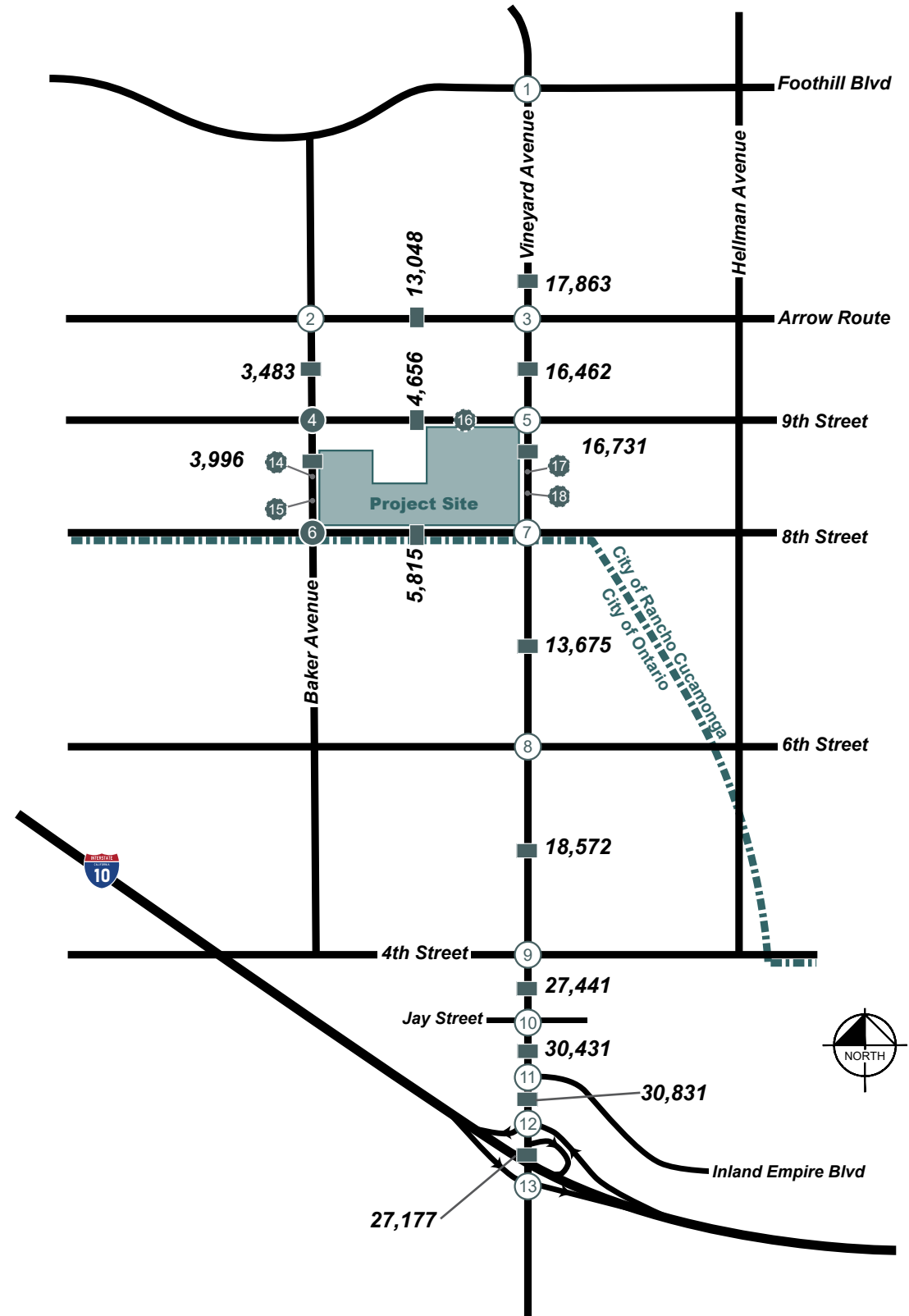
### 7.3 ROADWAY SEGMENT ANALYSIS

**Table 7-2** displays the study area roadway segments analysis under Horizon Year (2040) Conditions. As shown in the tables, all roadway segments within the study area would operate at LOS D or better.



**FIGURE 7-1 HORIZON YEAR (2040) TRAFFIC VOLUMES**

<p><b>1</b></p> <p>382 / 309 937 / 623 326 / 344</p> <p>Vineyard Ave</p> <p>150 / 335 1100 / 1061 206 / 355</p> <p>Foothill Blvd</p> <p>346 / 457 882 / 1343 85 / 145</p> <p>109 / 155 714 / 921 278 / 348</p>	<p><b>2</b></p> <p>76 / 42 105 / 127 86 / 49</p> <p>Baker Ave</p> <p>72 / 95 755 / 773 116 / 15</p> <p>Arrow Rte</p> <p>34 / 77 665 / 949 48 / 81</p> <p>51 / 51 102 / 154 74 / 74</p>	<p><b>3</b></p> <p>151 / 151 957 / 673 199 / 122</p> <p>Vineyard Ave</p> <p>231 / 212 724 / 704 204 / 159</p> <p>Arrow Rte</p> <p>155 / 227 684 / 739 93 / 72</p> <p>85 / 94 595 / 896 133 / 149</p>	<p><b>4</b></p> <p>82 / 21 157 / 267 41 / 3</p> <p>Baker Ave</p> <p>74 / 19 123 / 147 36 / 49</p> <p>9th St</p> <p>64 / 43 130 / 175 6 / 49</p> <p>54 / 40 204 / 219 40 / 27</p>
<p><b>5</b></p> <p>52 / 55 1155 / 828 66 / 31</p> <p>Vineyard Ave</p> <p>35 / 64 89 / 108 69 / 118</p> <p>9th St</p> <p>43 / 60 131 / 122 49 / 56</p> <p>85 / 56 755 / 1051 149 / 113</p>	<p><b>6</b></p> <p>50 / 81 205 / 245 70 / 51</p> <p>Baker Ave</p> <p>59 / 76 237 / 330 33 / 40</p> <p>8th St</p> <p>79 / 65 327 / 250 59 / 44</p> <p>85 / 33 159 / 209 45 / 31</p>	<p><b>7</b></p> <p>92 / 94 1101 / 830 66 / 51</p> <p>Vineyard Ave</p> <p>48 / 63 196 / 298 33 / 64</p> <p>8th St</p> <p>113 / 102 280 / 217 51 / 55</p> <p>52 / 49 798 / 1045 74 / 40</p>	<p><b>8</b></p> <p>92 / 68 1015 / 722 137 / 99</p> <p>Vineyard Ave</p> <p>82 / 135 215 / 532 70 / 135</p> <p>6th St</p> <p>65 / 63 281 / 279 73 / 52</p> <p>55 / 62 786 / 1050 137 / 105</p>
<p><b>9</b></p> <p>64 / 92 1103 / 843 42 / 88</p> <p>Vineyard Ave</p> <p>45 / 69 269 / 537 353 / 588</p> <p>4th St</p> <p>104 / 172 189 / 254 138 / 131</p> <p>95 / 216 981 / 1157 393 / 220</p>	<p><b>10</b></p> <p>10 / 30 1569 / 1546 21 / 20</p> <p>Vineyard Ave</p> <p>18 / 36 0 / 3 13 / 82</p> <p>Jay St</p> <p>29 / 30 0 / 7 69 / 61</p> <p>84 / 79 1459 / 1568 57 / 34</p>	<p><b>11</b></p> <p>1602 / 1632 45 / 26</p> <p>Vineyard Ave</p> <p>32 / 65 87 / 162</p> <p>Inland Empire Blvd</p> <p>1572 / 1637 99 / 90</p>	<p><b>12</b></p> <p>388 / 514 1393 / 1312</p> <p>Vineyard Ave</p> <p>684 / 585 284 / 531</p> <p>I-10 WB Ramps</p> <p>937 / 1152 201 / 357</p>
<p><b>13</b></p> <p>1168 / 1469 528 / 378</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>304 / 308 6 / 5 493 / 417</p> <p>961 / 1263 503 / 770</p>			



**Table 7-1** Horizon Year (2040) Conditions Intersection Analysis Summary

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Vineyard Avenue and Foothill Boulevard	S	41.6	D	58.4	<b>E</b>
2	Baker Avenue and Arrow Route	S	43.4	D	32.9	C
3	Vineyard Avenue and Arrow Route	S	61.4	<b>E</b>	64.7	<b>E</b>
4	Baker Avenue and 9th Street	U	14.1	B	15.4	C
5	Vineyard Avenue and 9th Street	S	18.5	B	17.8	B
6	Baker Avenue and 8th Street	U	45.4	<b>E</b>	55.0	<b>F</b>
7	Vineyard Avenue and 8th Street	S	19.1	B	19.1	B
8	Vineyard Avenue and 6th Street	S	18.3	B	22.8	C
9	Vineyard Avenue and 4th Street	S	24.3	C	36.4	D
10	Vineyard Avenue and Jay Street	S	13.1	B	17.8	B
11	Vineyard Avenue and Inland Empire Boulevard	S	5.4	A	6.6	A
12	Vineyard Avenue and I-10 WB Ramps	S	33.7	C	23.1	C
13	Vineyard Avenue and I-10 EB Ramps	S	44.3	D	43.5	D

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service, or a project related operational deficiency, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At the unsignalized all-way stop-controlled intersections, delay refers to the average delay per vehicle for the entire intersection.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6<sup>th</sup> Edition.
- S = Signalized; U = Unsignalized

Table 7-2 Horizon Year (2040) Conditions Roadway Analysis Summary

Roadway	Segment	Horizon Year 2040 ADT	V / C	LOS
<b>Baker Avenue</b>	Arrow Route to 9th Street	3,483	0.279	A
	9th Street to 8th Street	3,996	0.320	A
<b>Arrow Route</b>	Baker Avenue to Vineyard Avenue	13,048	0.395	A
<b>9th Street</b>	Baker Avenue to Vineyard Avenue	4,656	0.372	A
<b>8th Street</b>	Baker Avenue to Vineyard Avenue	5,815	0.465	A
<b>Vineyard Avenue</b>	Foothill Boulevard to Arrow Route	17,863	0.541	A
	Arrow Route to 9th Street	16,462	0.499	A
	9th Street to 8th Street	16,731	0.507	A
	8th Street to 6th Street	13,675	0.414	A
	6th Street to 4th Street	18,572	0.563	A
	4th Street to Jay Street	27,441	0.832	D
	Jay Street to Inland Empire Boulevard	30,431	0.621	B
	Inland Empire Boulevard to I-10 WB Ramps	30,831	0.629	B
	I-10 WB Ramps to I-10 EB Ramps	27,177	0.824	D

**Notes:**

- LOS = Level of Service
- ADT = Average Daily Traffic
- V / C = Volume to Capacity

## 8 HORIZON YEAR (2040) WITH PROJECT CONDITIONS

This section provides a description of the Horizon Year (2040) with Project Conditions with the addition of the 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project traffic.

### 8.1 INTERSECTION ANALYSIS

The project traffic previously shown in Figure 5-7 was added to the Horizon Year (2040) Baseline Conditions volumes previously shown in Figure 7-1 to determine the Horizon Year (2040) with Project Conditions traffic volumes, shown in **Figure 8-1**. **Table 8-1** displays the LOS analysis results for the study intersections under the Horizon Year (2040) with Project Conditions. As shown in the table, all intersections within the study area would operate at LOS D or better with the addition of the proposed project except for the following intersection:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8th Street: AM & PM – LOS F

These intersections were found to have project related operational deficiency under Horizon Year (2040) with Project Conditions.

As a request from the City, the potential queuing for the northbound left-turn movement at the northern project driveway along Vineyard Avenue was evaluated. **Table 8-2** displays the results of the queuing evaluation. As shown in the table there would be enough storage capacity to accommodate the projected traffic volumes and therefore, the queuing would not extend pass the existing railroad tracks.

**Table 8-2** Horizon Year (2040) with Project Conditions Queuing Analysis Summary

Int #	Intersection	Available Storage	AM Peak		PM Peak	
			50th	95th	50th	95th
17	Vineyard Ave and Driveway C	375'	25'	62'	5'	22'

**Appendix H** contains the intersections LOS calculation worksheets. **Appendix L** contains the queueing calculation worksheets.

### 8.2 ROADWAY SEGMENT ANALYSIS

**Table 8-3** displays the roadway segment analysis under the Horizon Year (2040) with Project Conditions. As shown in the table, all study roadway segments would continue to operate at LOS D or better with the addition of the proposed project traffic. Therefore, the project would not have any traffic-related operational deficiency along the roadway segments in this scenario.

**FIGURE 8-1 HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUMES**

<p><b>1</b></p> <p>382 / 309 941 / 624 326 / 344</p> <p>Vineyard Ave</p> <p>150 / 335 1100 / 1061 206 / 355</p> <p>Foothill Blvd</p> <p>346 / 457 882 / 1343 85 / 145</p> <p>109 / 155 716 / 926 278 / 348</p>	<p><b>2</b></p> <p>76 / 42 111 / 129 85 / 49</p> <p>Baker Ave</p> <p>72 / 94 756 / 776 118 / 17</p> <p>Arrow Rte</p> <p>34 / 77 668 / 949 49 / 82</p> <p>52 / 53 104 / 160 76 / 78</p>	<p><b>3</b></p> <p>152 / 152 960 / 673 199 / 122</p> <p>Vineyard Ave</p> <p>231 / 212 725 / 705 206 / 159</p> <p>Arrow Rte</p> <p>156 / 229 685 / 741 95 / 72</p> <p>86 / 96 596 / 899 134 / 152</p>	<p><b>4</b></p> <p>82 / 17 162 / 179 45 / 4</p> <p>Baker Ave</p> <p>70 / 23 123 / 147 37 / 50</p> <p>9th St</p> <p>60 / 43 130 / 175 6 / 45</p> <p>51 / 40 169 / 223 42 / 28</p>
<p><b>5</b></p> <p>55 / 54 1014 / 644 66 / 27</p> <p>Vineyard Ave</p> <p>30 / 63 89 / 108 68 / 116</p> <p>9th St</p> <p>36 / 64 131 / 122 52 / 64</p> <p>92 / 58 562 / 881 146 / 111</p>	<p><b>6</b></p> <p>50 / 54 206 / 204 83 / 78</p> <p>Baker Ave</p> <p>101 / 69 238 / 253 33 / 40</p> <p>8th St</p> <p>81 / 51 330 / 242 59 / 44</p> <p>85 / 33 166 / 212 45 / 31</p>	<p><b>7</b></p> <p>93 / 71 1026 / 825 51 / 41</p> <p>Vineyard Ave</p> <p>42 / 40 185 / 200 33 / 64</p> <p>8th St</p> <p>100 / 103 202 / 201 56 / 99</p> <p>89 / 63 763 / 963 74 / 40</p>	<p><b>8</b></p> <p>92 / 67 1043 / 834 139 / 104</p> <p>Vineyard Ave</p> <p>86 / 137 215 / 532 70 / 135</p> <p>6th St</p> <p>64 / 63 281 / 279 73 / 52</p> <p>55 / 62 890 / 1091 137 / 105</p>
<p><b>9</b></p> <p>65 / 95 1128 / 944 44 / 96</p> <p>Vineyard Ave</p> <p>54 / 72 269 / 537 353 / 588</p> <p>4th St</p> <p>106 / 173 189 / 254 138 / 131</p> <p>95 / 216 1074 / 1194 393 / 220</p>	<p><b>10</b></p> <p>10 / 30 1594 / 1647 21 / 20</p> <p>Vineyard Ave</p> <p>18 / 36 0 / 3 13 / 82</p> <p>Jay St</p> <p>29 / 30 0 / 7 69 / 61</p> <p>84 / 79 1552 / 1605 57 / 34</p>	<p><b>11</b></p> <p>1627 / 1733 45 / 26</p> <p>Vineyard Ave</p> <p>32 / 65 87 / 162</p> <p>Inland Empire Blvd</p> <p>1665 / 1674 99 / 90</p>	<p><b>12</b></p> <p>403 / 567 1403 / 1360</p> <p>Vineyard Ave</p> <p>722 / 601 284 / 531</p> <p>I-10 WB Ramps</p> <p>992 / 1173 201 / 357</p>
<p><b>13</b></p> <p>### / ### 537 / 421</p> <p>Vineyard Ave</p> <p>I-10 EB Ramps</p> <p>355 / 327 6 / 5 493 / 417</p> <p>965 / 1265 503 / 770</p>	<p><b>14</b></p> <p>308 / 263 4 / 2</p> <p>Baker Ave</p> <p>2 / 4 6 / 23</p> <p>North Dwy</p> <p>249 / 296 20 / 10</p>	<p><b>15</b></p> <p>313 / 284 5 / 3</p> <p>Baker Ave</p> <p>2 / 4 12 / 51</p> <p>South Dwy</p> <p>267 / 302 46 / 16</p>	<p><b>16</b></p> <p>221 / 203 36 / 14</p> <p>9th St</p> <p>201 / 198 7 / 2</p> <p>Dwy</p> <p>2 / 8 12 / 40</p>
<p><b>17</b></p> <p>4 / 1 1138 / 835</p> <p>Vineyard Ave</p> <p>North Dwy</p> <p>1 / 2 7 / 27</p> <p>59 / 22 819 / 1054</p>	<p><b>18</b></p> <p>4 / 1 1137 / 860</p> <p>Vineyard Ave</p> <p>South Dwy</p> <p>1 / 2 10 / 37</p> <p>876 / 1072</p>		

**LEGEND**

- Unsignalized Study Intersection
- Signalized Study Intersection
- Future Project Driveway Intersection
- Study Roadway Segment
- $\circ$  X/Y AM / PM Peak-Hour Traffic Volumes
- X,XXX** ADT Traffic Volumes

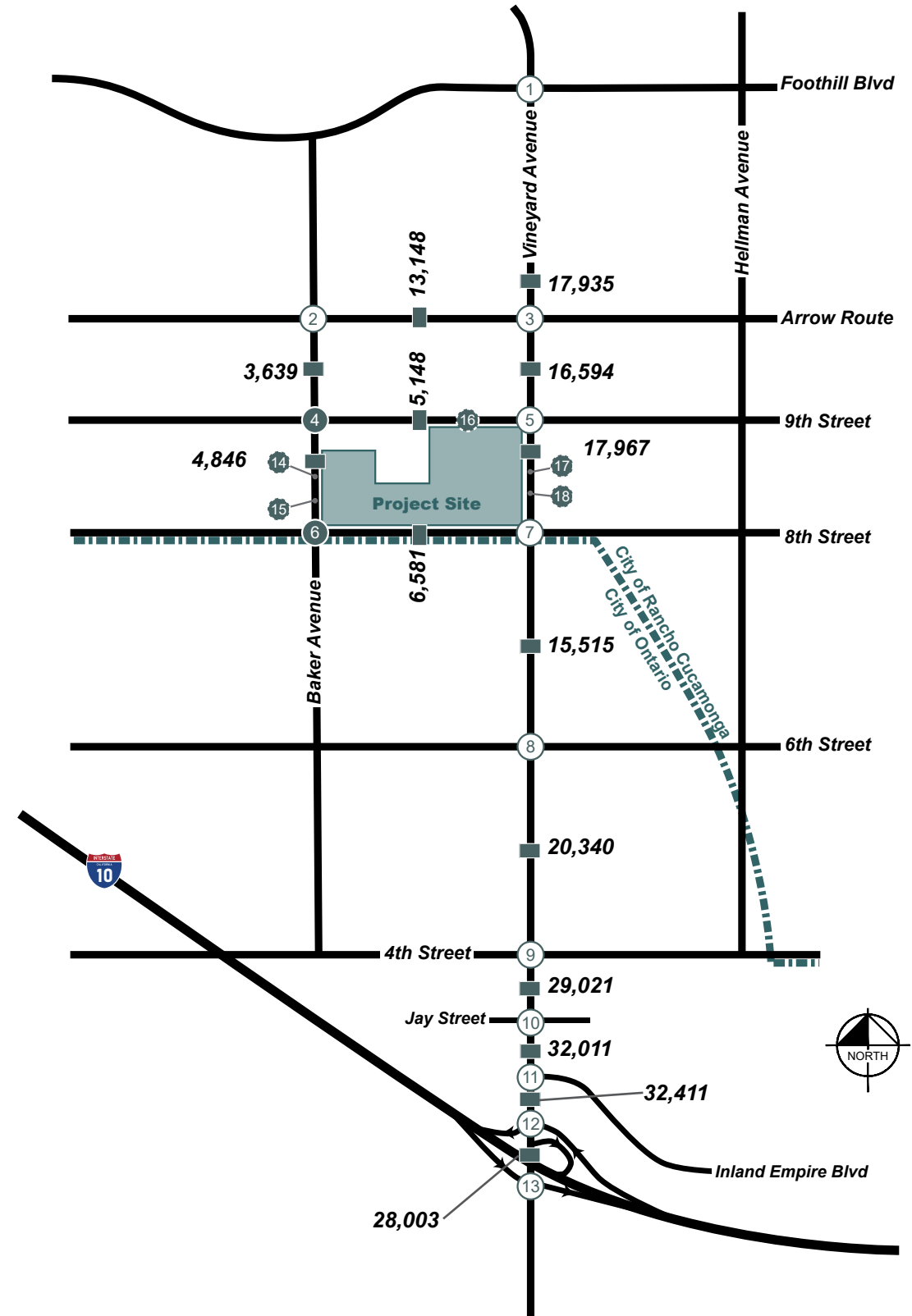


Table 8-1 Horizon Year (2040) with Project Conditions Intersection Analysis Summary

Int. #	Intersection	Traffic Control	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Impact	Impact Sig?	Without Project		With Project		Project Impact	Impact Sig?
			Delay	LOS	Delay	LOS			Delay	LOS	Delay	LOS		
1	Vineyard Avenue and Foothill Boulevard	S	41.6	D	41.9	D	0.3	No	58.4	<b>E</b>	58.8	<b>E</b>	0.4	<b>Yes</b>
2	Baker Avenue and Arrow Route	S	43.4	D	43.4	D	0.0	No	32.9	C	36.0	D	3.1	No
3	Vineyard Avenue and Arrow Route	S	61.4	<b>E</b>	61.6	<b>E</b>	0.2	<b>Yes</b>	64.7	<b>E</b>	65.8	<b>E</b>	1.1	<b>Yes</b>
4	Baker Avenue and 9th Street	U	14.1	B	13.2	B	-0.9	No	15.4	C	13.4	B	-2.0	No
5	Vineyard Avenue and 9th Street	S	18.5	B	25.8	C	7.3	No	17.8	B	23.9	C	6.1	No
6	Baker Avenue and 8th Street	U	45.4	<b>E</b>	51.0	<b>F</b>	5.6	<b>Yes</b>	55.0	<b>F</b>	70.6	<b>F</b>	15.6	<b>Yes</b>
7	Vineyard Avenue and 8th Street	S	19.1	B	18.0	B	-1.1	No	19.1	B	15.7	B	-3.4	No
8	Vineyard Avenue and 6th Street	S	18.3	B	18.8	B	0.5	No	22.8	C	22.9	C	0.1	No
9	Vineyard Avenue and 4th Street	S	24.3	C	24.8	C	0.5	No	36.4	D	34.4	C	-2.0	No
10	Vineyard Avenue and Jay Street	S	13.1	B	13.2	B	0.1	No	17.8	B	21.0	C	3.2	No
11	Vineyard Avenue and Inland Empire Boulevard	S	5.4	A	5.4	A	0.0	No	6.6	A	6.1	A	-0.5	No
12	Vineyard Avenue and I-10 WB Ramps	S	33.7	C	38.1	D	4.4	No	23.1	C	23.8	C	0.7	No
13	Vineyard Avenue and I-10 EB Ramps	S	44.3	D	46.1	D	1.8	No	43.5	D	48.2	D	4.7	No
14	Baker Avenue and North Driveway	U	n/a		12.2	B	12.2	No	n/a		12.8	B	12.8	No
15	Baker Avenue and South Driveway	U			14.1	B	14.1	No			15.4	C	15.4	No
16	Baker Avenue and South Driveway	U			9.9	A	9.9	No			10.0	A	10.0	No
17	Driveway D and 9th Street	U			21.3	C	21.3	No			15.1	C	15.1	No
18	Vineyard Avenue and Driveway B	U			13.2	B	13.2	No			11.7	B	11.7	No

**Notes:**

- **Bold** and shaded values indicate intersections operating at an unacceptable Level of Service, or a significant impact to the intersection, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At an unsignalized intersection, delay refers to the average delay per vehicle on the intersection approach with the highest delay.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6th Edition.
- S = Signalized; U = Unsignalized

Table 8-3 Horizon Year (2040) with Project Conditions Roadway Analysis Summary

Roadway	Segment	Horizon + Project ADT	V / C	LOS	Change in V/C	Significant Impact?
<b>Baker Avenue</b>	Arrow Route to 9th Street	3,639	0.291	A	0.012	No
	9th Street to 8th Street	4,846	0.388	A	0.068	No
<b>Arrow Route</b>	Baker Avenue to Vineyard Avenue	13,148	0.398	A	0.003	No
<b>9th Street</b>	Baker Avenue to Vineyard Avenue	5,148	0.412	A	0.040	No
<b>8th Street</b>	Baker Avenue to Vineyard Avenue	6,581	0.526	A	0.061	No
<b>Vineyard Avenue</b>	Foothill Boulevard to Arrow Route	17,935	0.543	A	0.002	No
	Arrow Route to 9th Street	16,594	0.503	A	0.004	No
	9th Street to 8th Street	17,967	0.544	A	0.037	No
	8th Street to 6th Street	15,515	0.470	A	0.056	No
	6th Street to 4th Street	20,340	0.616	B	0.053	No
	4th Street to Jay Street	29,021	0.879	D	0.047	No
	Jay Street to Inland Empire Boulevard	32,011	0.653	B	0.032	No
	Inland Empire Boulevard to I-10 WB Ramps	32,411	0.661	B	0.032	No
	I-10 WB Ramps to I-10 EB Ramps	28,003	0.849	D	0.025	No

**Notes:**

- LOS = Level of Service
- ADT = Average Daily Traffic
- V / C = Volume to Capacity

## 8.3 FINDINGS AND CONCLUSIONS

The results of the foregoing analysis indicate that the proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project would have operational deficiencies that require mitigation under the Horizon Year (2040) with Project traffic scenario at the following intersections:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8<sup>th</sup> Street: AM & PM – LOS F

To mitigate the proposed project traffic related operational deficiencies, the following improvements are recommended:

Vineyard Avenue and Foothill Boulevard:

- Pay fair share contribution to add a southbound right-turn overlap phase on Vineyard Avenue and Foothill Boulevard.
- Pay fair share contribution to widen the westbound approach 5' to accommodate dual westbound left-turn lanes, three westbound through lanes, a bike lane, and a westbound right-turn lane on Foothill Boulevard.

Vineyard Avenue and Arrow Route:

- Pay fair share contribution to widen the westbound approach 10' to add a westbound right-turn pocket on Vineyard Avenue and Arrow Route.

Baker Avenue 8<sup>th</sup> Street:

- Widen southbound approach on Baker Avenue to create left turn and shared through-right turn lanes (to be completed by project to mitigate Opening Year operational deficiencies), and
- Pay fair share contribution to stripe additional eastbound and westbound lanes on 8<sup>th</sup> Street to create shared eastbound through-left turn lane, a shared eastbound through-right turn lane, shared westbound through-left, westbound through lane, and a westbound right-turn lane.

**Table 8-4** summarizes the intersection analysis results for the deficient intersections after implementing the mitigations listed above.

**Table 8-5** shows the summary of project fair share for horizon year mitigation.

A traffic signal warrant evaluation was completed for the intersection of 8<sup>th</sup> Street and Baker Avenue to evaluate whether the installation of the traffic signal should be considered as a mitigation measure for the project under the Horizon Year (2040) with Project Conditions. A copy of the traffic signal warrant memo is included in **Appendix J**. The signal warrant analysis determined that the installation of the traffic signal would not be warranted under the Horizon Year (2040) with Project Conditions.



**Table 8-4** Horizon Year (2040) with Project Conditions Mitigated Int. Analysis Summary

Int. #	Intersection and Mitigation	Traffic Control	AM Peak Hour				PM Peak Hour			
			Without Mitigation		With Mitigation		Without Mitigation		With Mitigation	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Vineyard Avenue and Foothill Boulevard										
1	Pay Fair Share contribution to add a southbound right-turn overlap phase and widen the westbound approach on by 5' to accommodate dual westbound left-turn lanes, three westbound through lanes, a bike lane, and a westbound right-turn lane	S	41.9	D	37.3	D	58.8	<b>E</b>	52.3	D
Vineyard Avenue and Arrow Route										
3	Pay Fair Share contribution to add a westbound right-turn pocket	S	61.6	<b>E</b>	52.1	D	65.8	<b>E</b>	51.8	D
Baker Avenue and 8th Street										
6	Widen the southbound approach to provide an exclusive left turn lane. Pay Fair Share contribution to restripe EB and WB approaches to provide a shared EB left-through lane, a shared EB through-right lane, a shared WB left-through lane, a WB through lane, and a WB right-turn lane	U	51.0	<b>F</b>	25.8	D	70.6	<b>F</b>	33.6	D

Notes:

- Bold and shaded values indicate intersections operating at an unacceptable Level of Service, or a operational deficiency, per City standards.
- At a signalized intersection, delay refers to the average control delay for the entire intersection, measured in seconds per vehicle.
- At the unsignalized all-way stop-controlled intersections, delay refers to the average delay per vehicle for the entire intersection.
- Delay values are based on the methodology outlined in the Highway Capacity Manual 6th Edition.
- S = Signalized; U = Unsignalized

**Table 8–5** Summary of Project Fair Share for Horizon Year Mitigation

Intersection	AM Peak Hour					PM Peak Hour				
	Total Volumes		Total Growth	Project Trips	%age	Total Volumes		Total Growth	Project Trips	%age
	Existing	2040				Existing	2040			
#1 Vineyard Avenue and Foothill Boulevard	4,282	5,521	1,239	6	0.5%	4,856	6,402	1,546	6	0.4%
#3 Vineyard Avenue and Arrow Route	3,597	4,225	628	12	1.9%	3,478	4,212	734	14	1.9%
#6 Baker Avenue and 8th Street	1,180	1,408	228	75	32.9%	1,171	1,455	284	83	29.2%

## 9 CONCLUSIONS AND RECOMMENDATIONS SUMMARY

This section summarizes the results of the traffic analysis and subsequent off-site, project-frontage, access and on-site recommendations required to mitigate the traffic-related operational deficiencies of the proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project.

### 9.1 PROJECT OPERATIONAL DEFICIENCIES

The 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project would generate a total of 1,912 daily trips, with 172 trips during the morning peak hour and 198 trips during the evening peak hour. Since truck trips for a warehouse land use make up approximately 20.4% of the project trips on a daily basis according to the City of Fontana Truck Trip General Study published in August 2003, traffic volumes were converted to passenger car equivalents (PCE).

The development of the proposed project and resulting trip generation are expected to cause operational deficiencies at the following intersection under Opening Year (2021) and Horizon Year (2040) with Project Conditions and would require mitigation:

- #1 – Vineyard Avenue and Foothill Boulevard: PM – LOS E
- #3 – Vineyard Avenue and Arrow Route: AM & PM – LOS E
- #6 – Baker Avenue and 8<sup>th</sup> Street: AM & PM – LOS F

### 9.2 RECOMMENDATIONS

Implementation of the following improvements would mitigate the project operational deficiencies at the following intersections:

Vineyard Avenue and Foothill Boulevard:

- Pay fair share contribution to add a southbound right-turn overlap phase on Vineyard Avenue and Foothill Boulevard.
- Pay fair share contribution to widen the westbound approach 5' to accommodate dual westbound left-turn lanes, three westbound through lanes, a bike lane, and a westbound right-turn lane on Foothill Boulevard.

Vineyard Avenue and Arrow Route:

- Pay fair share contribution to widen the westbound approach 10' to add a westbound right-turn pocket on Vineyard Avenue and Arrow Route.

Baker Avenue 8<sup>th</sup> Street:

- Widen southbound approach on Baker Avenue to create left turn and shared through-right turn lanes (to be completed by project to mitigate Opening Year operational deficiencies), and
- Pay fair share contribution to stripe additional eastbound and westbound lanes on 8<sup>th</sup> Street to create shared eastbound through-left turn lane, a shared eastbound through-right turn lane, shared westbound through-left, westbound through lane, and a westbound right-turn lane.

# APPENDIX A

## SCOPING LETTER



April 19, 2019

Mr. Albert Espinoza, P.E., T.E.  
Assistant City Engineer, City of Rancho Cucamonga  
10500 Civic Center Drive  
Rancho Cucamonga, CA 91730

**RE: *Scoping Letter Agreement for Traffic Impact Study for the Proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse Project in the City of Rancho Cucamonga***

Dear Mr. Espinoza:

Kimley-Horn and Associates, Inc. is submitting this Scoping Letter Agreement to the City of Rancho Cucamonga to provide a Traffic Impact Study for the proposed 9<sup>th</sup> Street and Vineyard Avenue Warehouse project in the City of Rancho Cucamonga. The proposed Traffic Impact Study scope for the project is presented below. This Scoping Letter Agreement is based on previous communication with the City of Rancho Cucamonga and the City of Ontario (see **Attachments 1A** and **1B**).

#### **PROJECT DESCRIPTION**

The project is located in the southwestern region of Rancho Cucamonga, just south of 9<sup>th</sup> Street between Baker Avenue and Vineyard Avenue. The project site is occupied by two existing warehouse buildings with a combined square footage of approximately 115,000 square feet, and two existing office buildings with a combined square footage of approximately 9,300 square feet. The project will involve demolition of the two existing warehouse buildings and the two existing office buildings, and the construction of four new warehouse buildings with a combined square footage of approximately 1,053,570 square feet. A copy of the project site plan is provided on **Attachment 2**.

Vehicular access provisions for the project site would consist of seven project driveways, two on 9<sup>th</sup> Street, two on Vineyard Avenue, and three on Baker Avenue. All entrances to the site would be unsignalized.

The proposed opening year for the project is Year 2021. The project will be developed in a single project phase. The project site is located near the City of Rancho Cucamonga's border with the City of Ontario.

#### **SCOPE OF TRAFFIC IMPACT STUDY**

This scope is based on the City of Rancho Cucamonga traffic study requirements which follow the 2016 San Bernardino County Congestion Management Program (CMP).

## Study Scenarios

- Existing Conditions
- Project Opening Day (2021) Conditions
- Project Opening Day (2021) Conditions Plus Project
- Future Conditions (Year 2040)
- Future Conditions (Year 2040) Plus Project

## Suggested Study Area

The following is a list of study intersections and roadway segments to be included in the study, as shown on **Attachment 3**:

### Intersections

1. Vineyard Avenue at Foothill Boulevard
2. Baker Avenue at Arrow Route
3. Vineyard Avenue at Arrow Route
4. Baker Avenue at 9th Street
5. Vineyard Avenue at 9th Street
6. Baker Avenue at 8th Street
7. Vineyard Avenue at 8th Street
8. Vineyard Avenue at 6th Street
9. Vineyard Avenue at 4th Street
10. Vineyard Avenue at Jay Street
11. Vineyard Avenue at Inland Empire Boulevard
12. Vineyard Avenue at I-10 WB Ramps
13. Vineyard Avenue at I-10 EB Ramps
14. Baker Avenue and Project Driveway (north)
15. Baker Avenue and Project Driveway (middle)
16. Baker Avenue and Project Driveway (south)
17. Project Driveway and 9th Street (east)
18. Vineyard Avenue and Project Driveway (north)
19. Vineyard Avenue and Project Driveway (south)
20. Project Driveway and 9th Street (west)

### Roadway Segments

1. Baker Avenue – Arrow Route to 9th Street
2. Baker Avenue – 9th Street to 8th Street
3. Arrow Route – Baker Avenue to Vineyard Avenue
4. 9th Street – Baker Avenue to Vineyard Avenue
5. 8th Street – Baker Avenue to Vineyard Avenue
6. Vineyard Avenue – Foothill Boulevard to Arrow Route
7. Vineyard Avenue – Arrow Route to 9th Street
8. Vineyard Avenue – 9th Street to 8th Street
9. Vineyard Avenue – 8th Street to 6th Street

10. Vineyard Avenue – 6th Street to 4th Street
11. Vineyard Avenue – 4th Street to Jay Street
12. Vineyard Avenue – Jay Street to Inland Empire Boulevard
13. Vineyard Avenue – Inland Empire Boulevard to I-10 WB Ramps
14. Vineyard Avenue – I-10 WB Ramps to I-10 EB Ramps

The intersection analysis for the traffic impact study will be accomplished using the Synchro software program. The intersection analysis will include a queuing evaluation for the proposed truck access driveway along Vineyard Avenue approximately 400 feet north of the railroad tracks, and truck turning movements at the following intersections: (1) 9th Street and Vineyard Avenue, (2) 8th Street and Vineyard Avenue, and (3) 8th Street and Baker Avenue.

### **Trip Generation**

Trip generation rates, PCE factors, and the resulting trip generation estimates for the existing uses, proposed use, and the net new trips are summarized on **Attachment 4**.

Trip generation estimates are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (10<sup>th</sup> Edition). Passenger vehicle and truck mix rates were derived from the City of Fontana Truck Trip Generation Study (August 2003).

Passenger car equivalent (PCE) factors are as follows:

- 1.5 PCE for 2-axle trucks,
- 2.0 PCE for 3-axle trucks,
- 3.0 PCE for 4+-axle trucks

After applying PCE factors and existing use trip credits, the proposed project is estimated to generate 1,948 net new PCE trips on a daily basis, with 176 net new PCE trips in the morning peak hour, and 203 net new PCE trips in the evening peak hour.

### **Trip Distribution**

Trip distribution assumptions for the project were developed considering the proposed site uses, and the routes to and from the freeway system for the warehouse trucks. Separate distribution patterns were assumed for passenger car trips and truck trips. Trip distribution assumptions for passenger vehicles and for trucks are shown on Attachment 2 (previously mentioned).

### **Traffic Growth**

For Opening Day scenarios, an annual growth rate of 1% will be applied to existing traffic volumes. In addition, approved and pending project trips will be applied to the Opening Day scenarios. We will obtain information from the City of Rancho Cucamonga concerning

approved and pending project trips. Where approved trip generation and trip distribution information is not available, these assumptions will be developed by Kimley-Horn.

For Future scenarios, forecast volumes for Year 2040 conditions will be developed using the B-Turns post-processing software and will be based on the San Bernardino Transportation Analysis Model (SBTAM) forecasts for base year 2012 and build-out year 2040.

**Significance Determination**

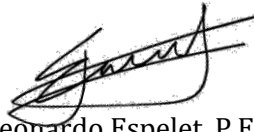
The TIA will be completed following the guidelines in the County of San Bernardino CMP, under the HCM 6th Edition methodology. The threshold of acceptable LOS will be D (or better) for all intersections within the City of Rancho Cucamonga and E (or better) for all intersections within the City of Ontario. For all intersections shared by both jurisdictions, the more stringent threshold is to be used.

Please contact me if you have any questions, comments, or concerns.

Sincerely,

**KIMLEY-HORN AND ASSOCIATES, INC.**

Trevor Briggs, P.E.  
Traffic Engineer



Leonardo Espelet, P.E., T.E.  
Traffic Engineer

**APPROVED:**

By:

---

Albert Espinoza, P.E., T.E.  
Assistant City Engineer, City of Rancho Cucamonga



# ATTACHMENT 1A

**Michael Sizemore**

---

**From:** Ngai, Baldwin <Baldwin.Ngai@cityofrc.us>  
**Sent:** Monday, October 08, 2018 4:27 PM  
**To:** Michael Sizemore  
**Cc:** Espinoza, Albert; Sandona, Brian  
**Subject:** [EXTERNAL] FW: 9th & Vineyard, RC - Current Site Plan  
**Attachments:** Jay Bautista.vcf

Hey Michael,

After some review of the project site located at 9<sup>th</sup> and Vineyard, the City of Rancho Cucamonga would like to see the follow intersections outlined in a scoping agreement to be analyzed. Keep in mind that they will need to be looked at in both volume and truck turning movements. This is only a preliminary list of intersections, since the trip generation and distribution may change exactly which intersections we need to look at.

All project driveways,  
8<sup>th</sup> Street at Vineyard Ave,  
8<sup>th</sup> Street at Baker Ave,  
9<sup>th</sup> Street at Vineyard Ave,  
9<sup>th</sup> Street at Baker Ave,  
Arrow Rte at Vineyard Ave,  
Arrow Rte at Baker Ave, and  
Foothill Blvd at Vineyard Ave,

Please find attached Jay's contact information, and let us know if you have any further questions,  
Thank you,

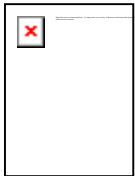
BALDWIN NGAI | Assistant Engineer  
Department of Engineering Services, Land Development and Traffic Management  
City of Rancho Cucamonga | 10500 Civic Center Drive | Rancho Cucamonga, CA 91730  
Office: 909-477-2740 x. 4026  
[baldwin.ngai@cityofrc.us](mailto:baldwin.ngai@cityofrc.us) | [www.cityofrc.us](http://www.cityofrc.us)

---

**From:** Michael Sizemore <[MSizemore@panattoni.com](mailto:MSizemore@panattoni.com)>  
**Sent:** Monday, October 1, 2018 11:09 AM  
**To:** Ngai, Baldwin <[Baldwin.Ngai@cityofrc.us](mailto:Baldwin.Ngai@cityofrc.us)>  
**Subject:** 9th & Vineyard, RC - Current Site Plan

Baldwin,

Per our conversation, please see attached.



**Michael Sizemore** | Development Manager  
Panattoni Development Company, Inc.  
20411 SW Birch Street, Suite 200 | Newport Beach, CA 92660  
Office: 949.296.2989 | Cell: 949.275.4202  
[MSizemore@panattoni.com](mailto:MSizemore@panattoni.com)

# ATTACHMENT 1B

Jacob LeBlanc

---

**From:** Jay Bautista <JBautista@ontarioca.gov>  
**Sent:** Tuesday, October 09, 2018 5:38 PM  
**To:** Michael Sizemore  
**Cc:** 'Albert Espinoza'; 'baldwin.ngai@cityofrc.us'; 'Brian Sandona '; Jacob LeBlanc  
**Subject:** [EXTERNAL] RE: 9th & Vineyard, RC - Current Site Plan

Michael,

Yes, the information in your email below correctly summarizes the list of intersections. I also offer the following general comments for TIA's prepared in the City of Ontario:

- Prepare traffic study in accordance with SBCTA and CMP guidelines
- Evaluate all intersections that are expected to carry 50+ peak-period project trips, including queueing analysis
- Include cumulative projects within Ontario
- The EIR shall calculate fair-share mitigation costs
- If project access is made a part of the TIA, all direct access to City of Ontario streets shall conform to City's access control requirements, per the City's Traffic and Transportation Design Guidelines
- Review feasibility and constructability for all mitigation measures identified in the City of Ontario

Thanks.

Jay Bautista, P.E., T.E.  
Traffic/Transportation Manager  
City of Ontario  
303 East B Street  
Ontario, CA 91764  
(909) 395-2120  
[jbautista@ontarioca.gov](mailto:jbautista@ontarioca.gov)

---

**From:** Michael Sizemore [mailto:MSizemore@panattoni.com]  
**Sent:** Tuesday, October 09, 2018 3:11 PM  
**To:** Jay Bautista  
**Cc:** 'Albert Espinoza'; 'baldwin.ngai@cityofrc.us'; 'Brian Sandona '; Jacob LeBlanc  
**Subject:** RE: 9th & Vineyard, RC - Current Site Plan

Good Afternoon Jay,

Can you please confirm the below information correctly summarizes the study intersections to be required by the City of Ontario for our proposed 9<sup>th</sup> & Vineyard project traffic impact study?

- Intersections Required to be Studied (all signalized intersections between project & I-10 Freeway):
  - 8<sup>th</sup> Street & Vineyard Avenue
  - 6<sup>th</sup> Street & Vineyard Avenue
  - 4<sup>th</sup> Street & Vineyard Avenue
  - Jay Street & Vineyard Avenue
  - Inland Empire Boulevard & Vineyard Avenue
  - Vineyard Avenue & I-10 Freeway/Vineyard Avenue on/off ramp

- NOTE: If the project traffic distribution results in an increase of at least 50 project trips (“Impacted Intersection”) at any intersection not specifically called out above, traffic counts will be required at the Impacted Intersection.

Thanks Jay. I really appreciate your help with this.



**Michael Sizemore** | Development Manager  
Panattoni Development Company, Inc.  
20411 SW Birch Street, Suite 200 | Newport Beach, CA 92660  
Office: 949.296.2989 | Cell: 949.275.4202  
[MSizemore@panattoni.com](mailto:MSizemore@panattoni.com)

---

**From:** Michael Sizemore  
**Sent:** Monday, October 08, 2018 6:26 PM  
**To:** 'Jay Bautista ([jbautista@ci.ontario.ca.us](mailto:jbautista@ci.ontario.ca.us))'  
**Cc:** Albert Espinoza; [baldwin.ngai@cityofrc.us](mailto:baldwin.ngai@cityofrc.us); Brian Sandona  
**Subject:** FW: 9th & Vineyard, RC - Current Site Plan

Good Evening Jay,

I was given your contact information by the City of Rancho Cucamonga Engineering/Traffic Department.

I work for Panattoni Development Company and we are pursuing the potential acquisition and subsequent development of a +/-47 acre land site located at the SWC 9<sup>th</sup> Street & Vineyard Avenue in the City of Rancho Cucamonga (current site plan attached). Due to the competitive nature of the remaining vacant land sites, we will be required to close escrow on the site before we have had enough time to fully process the entitlements.

Given the short timeline we will be given to purchase the site, it is critical that we flush out the major issues of the site as early on in the process as possible. As you can imagine, one of the most critical elements to focus on will be the traffic study.

The City of Rancho Cucamonga Eng. Department has been extremely gracious in their willingness to help me preliminarily identify what intersections will be required for our traffic study so we are in a position to conduct the required traffic counts immediately (see below email from City).

Given (1) the site’s proximity to the City of Ontario, along with (2) the strong likelihood that a fair amount of the trip volumes will be through the City of Ontario along Vineyard Avenue to connect to the I-10 Freeway/Vineyard Avenue on/off ramp, we will be required to provide our traffic study to the City of Ontario for concurrent review and approval.

Would it be possible to have you take a look at the attached site plan for the project and the below list of intersections provided by the City of RC, and add any additional intersections the City of Ontario will require to be analyzed?

My ultimate goal is to arrive at a finalized list of intersections to study that is acceptable to both cities(so that I can kickoff the traffic counts), which will be formally documented through the scoping agreement thereafter.

Thank you very much for your consideration in this matter.

I will call you tomorrow to discuss and answer any questions you may have.

Have a wonderful evening.

---

**From:** Ngai, Baldwin [<mailto:Baldwin.Ngai@cityofrc.us>]  
**Sent:** Monday, October 08, 2018 4:27 PM  
**To:** Michael Sizemore  
**Cc:** Espinoza, Albert; Sandona, Brian  
**Subject:** [EXTERNAL] FW: 9th & Vineyard, RC - Current Site Plan

Hey Michael,

After some review of the project site located at 9<sup>th</sup> and Vineyard, the City of Rancho Cucamonga would like to see the follow intersections outlined in a scoping agreement to be analyzed. Keep in mind that they will need to be looked at in both volume and truck turning movements. This is only a preliminary list of intersections, since the trip generation and distribution may change exactly which intersections we need to look at.

All project driveways,  
8<sup>th</sup> Street at Vineyard Ave,  
8<sup>th</sup> Street at Baker Ave,  
9<sup>th</sup> Street at Vineyard Ave,  
9<sup>th</sup> Street at Baker Ave,  
Arrow Rte at Vineyard Ave,  
Arrow Rte at Baker Ave, and  
Foothill Blvd at Vineyard Ave,

Please find attached Jay's contact information, and let us know if you have any further questions,  
Thank you,

BALDWIN NGAI | Assistant Engineer  
Department of Engineering Services, Land Development and Traffic Management  
City of Rancho Cucamonga | 10500 Civic Center Drive | Rancho Cucamonga, CA 91730  
Office: 909-477-2740 x. 4026  
[baldwin.ngai@cityofrc.us](mailto:baldwin.ngai@cityofrc.us) | [www.cityofrc.us](http://www.cityofrc.us)

---

**From:** Michael Sizemore <[MSizemore@panattoni.com](mailto:MSizemore@panattoni.com)>  
**Sent:** Monday, October 1, 2018 11:09 AM  
**To:** Ngai, Baldwin <[Baldwin.Ngai@cityofrc.us](mailto:Baldwin.Ngai@cityofrc.us)>  
**Subject:** 9th & Vineyard, RC - Current Site Plan

Baldwin,

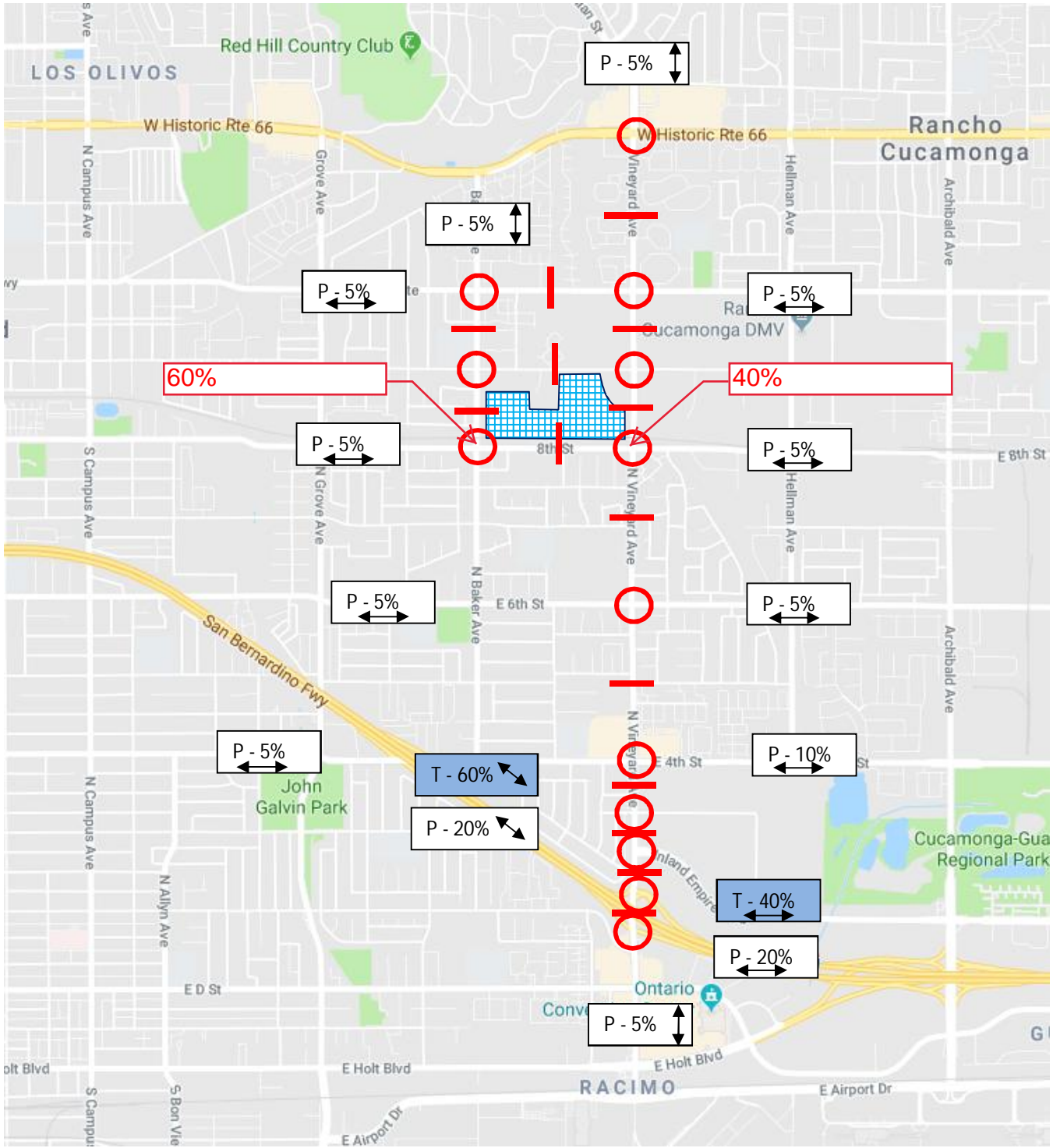
Per our conversation, please see attached.




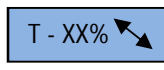
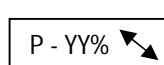


**Michael Sizemore** | Development Manager  
Panattoni Development Company, Inc.  
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Office: 949.296.2989 | Cell: 949.275.4202  
[MSizemore@panattoni.com](mailto:MSizemore@panattoni.com)



# ATTACHMENT 3 PROJECT STUDY AREA AND TRIP DISTRIBUTION



-  STUDY INTERSECTION
-  STUDY ROADWAY SEGMENT
-  PROJECT SITE
-  T - XX% TRUCK TRIP DISTRIBUTION
-  P - YY% PASSENGER CAR TRIP DISTRIBUTION

**ATTACHMENT 4  
SUMMARY OF PROJECT TRIP GENERATION  
9TH ST AND VINEYARD AVE WAREHOUSE**

**TRIP GENERATION RATES <sup>1</sup>**

ITE Land Use	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Manufacturing	140	KSF	3.93	0.48	0.14	0.62	0.21	0.46	0.67
Warehousing	150	KSF	1.74	0.13	0.04	0.17	0.05	0.14	0.19
General Office Building	710	KSF	9.74	1.00	0.16	1.16	0.18	0.97	1.15

**PROJECT TRIP GENERATION**

**Existing Land Uses**

Project Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Manufacturing	39,375	KSF	155	19	6	25	8	18	26
<i>Passenger Vehicles</i>	80.3%		124	15	5	20	6	14	20
<i>Trucks (PCE)</i>	19.7%		73	9	3	12	4	8	12
Light Warehouse	75,320	KSF	131	10	3	13	4	10	14
<i>Passenger Vehicles</i>	80.3%		105	8	2	10	3	8	11
<i>Trucks (PCE)</i>	19.7%		61	5	1	6	1	5	6
General Office Building	9,300	KSF	91	9	2	11	2	9	11
<b>Total Existing PCE Trips</b>			<b>454</b>	<b>46</b>	<b>13</b>	<b>59</b>	<b>16</b>	<b>44</b>	<b>60</b>

**Proposed Land Use**

Project Land Use	Quantity	Unit	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Heavy Warehouse	1,053,570	KSF	1,833	138	41	179	54	146	200
<i>Passenger Vehicles</i>	79.6%		1,459	110	33	143	43	116	159
<i>Trucks</i>	20.4%		374	28	8	36	11	30	41

**PROJECT TRIPS - PASSENGER CAR EQUIVALENTS (PCE)**

Vehicle Type	Vehicle Mix <sup>2</sup>	Daily Vehicles	PCE Factor <sup>3</sup>	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Passenger Vehicles	79.6%	1,459	1.0	1,459	110	33	143	43	116	159
2-Axle Trucks	3.5%	63	1.5	95	7	2	9	3	8	11
3-Axle Trucks	4.6%	85	2.0	170	13	4	17	5	14	19
4+ Axle Trucks	12.3%	226	3.0	678	51	15	66	20	54	74
<b>Total Truck PCE Trips</b>				<b>943</b>	<b>71</b>	<b>21</b>	<b>92</b>	<b>28</b>	<b>76</b>	<b>104</b>
<b>Total Proposed PCE Trips</b>				<b>2,402</b>	<b>181</b>	<b>54</b>	<b>235</b>	<b>71</b>	<b>192</b>	<b>263</b>

**Project Trip Summary**

<b>Total Proposed PCE Trips</b>	<b>2,402</b>	<b>181</b>	<b>54</b>	<b>235</b>	<b>71</b>	<b>192</b>	<b>263</b>
<b>Total Existing PCE Trips</b>	<b>-454</b>	<b>-46</b>	<b>-13</b>	<b>-59</b>	<b>-16</b>	<b>-44</b>	<b>-60</b>
<b>Total Net New PCE Trips</b>	<b>1,948</b>	<b>135</b>	<b>41</b>	<b>176</b>	<b>55</b>	<b>148</b>	<b>203</b>

<sup>1</sup> Source: Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition

<sup>2</sup> Source: Truck Trip Generation Study - City of Fontana, August 2003.

<sup>3</sup> Source: San Bernardino Congestion Management Program Update (June 2016).

PCE = Passenger Car Equivalent

KSF = Thousand Square Feet

# APPENDIX B

## VMT ANALYSIS REPORT



**MEMORANDUM**

**To:** Mr. Baldwin Ngai, Assistant Engineer  
Department of Engineering Services, Land Development and Traffic Management  
City of Rancho Cucamonga

**From:** Pranesh Tarikere, PE

**Date:** December 9, 2021

**Re:** 9<sup>th</sup> and Vineyard Warehouse Project Vehicle Mile Traveled (VMT) Assessment

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The memorandum documents Vehicle Miles Traveled (VMT) Assessment for the proposed 9<sup>th</sup> and Vineyard Warehouse Project (Project) in the City of Rancho Cucamonga.

## Project Description

The Project site is located south of E. 9th Street, west of Vineyard Avenue, north of the Burlington Northern Santa Fe (BNSF) Railway, and east of Baker Avenue in the City of Rancho Cucamonga in San Bernardino County, California. A Regional Vicinity Map is provided on **Figure 1-1**. The Project will involve the demolition of two existing warehouse buildings (approximately 114,695 square feet combined) and two existing office buildings (approximately 9,300 square feet combined), and the construction of three warehouse buildings with a combined square footage of approximately 1,032,090 square feet.<sup>1</sup> A copy of the Project site plan is provided on **Figure 1-2**.

## Senate Bill 743 (SB 743)

SB 743, approved in 2013, endeavors to change the way transportation impacts will be determined according to the California Environmental Quality Act (CEQA). The Governor's Office of Planning and Research (OPR) has recommended the use of VMT as the replacement for automobile delay-based LOS for the purposes of determining a significant transportation impact under CEQA. As of December 2018, the Natural Resources Agency finalized updates to CEQA Guidelines to incorporate SB 743 (i.e., VMT). To assist in the implementation of VMT as the primary measure of a transportation impact under CEQA, the OPR published an updated Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018. Statewide application of the new guidelines went into effect on July 1, 2020.

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<sup>1</sup> The VMT Assessment contained herein assumed a previous iteration of the project site plan which included a total building area of 1,037,467 SF. For purposes of this analysis, the Applicant has conservatively assumed the previous 1,037,467 SF. All calculations and analysis contained herein reflect the former 1,037,467 square footage. The small decrease in proposed square footage will not alter the 706 employees input in the VMT analysis model.

The City of Rancho Cucamonga has adopted VMT thresholds of significance for determining the significance of transportation impacts consistent with City of Rancho Cucamonga Traffic Impact Analysis Guidelines (updated June 2020).

### Low VMT Area Screening

The City’s TIA Guidelines identifies that employment-related land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per worker that is similar to the existing land uses in the low VMT area. A low VMT area is defined as an individual traffic analysis zone (TAZ) where total daily VMT per service population is lower than the City average total daily VMT per service population.

Low VMT Area Screening analysis was conducted based on San Bernardino County Transportation Authority (SBCTA) screening tool, which was developed based on the San Bernardino County Transportation Analysis Model (SBTAM).

The following inputs were used for running the screening tool:

- VMT Metric: Production/Attraction (P/A) VMT per Service Population (SP)
- Baseline Year: 2020
- Threshold: Below City Baseline (0%)

Service Population (SP) is defined as the sum of population and employment. Since the Project does not have any residential component, the Project SP consists of employees only.

The outputs from the VMT screening are summarized in Table 1. Screenshots of the SBCTA tool inputs and outputs are included as an attachment to this memo. As shown in Table 1, the Project TAZ’s P/A VMT per VMT per SP is 8.93 % higher than the Citywide average (See **Attachment A: VMT Screening Results**). As such, the Project’s transportation impact cannot be screened as less than significant based on City of Rancho Cucamonga’s recommended VMT screening criteria of P/A VMT per SP metric.

**TABLE 1: VMT SCREENING**

Threshold Option	Threshold	Project TAZ <sup>2</sup>	% Change in VMT	Screens Out?
P/A VMT per SP	26.5	29.1	8.93%	No

<sup>2</sup> VMT Generated by the current uses in the SBTAM TAZ 53664302 that the Project is proposed to be located.

## VMT Thresholds

The City of Rancho Cucamonga TIA Guidelines (June 2020) recommends VMT thresholds set to Citywide Average VMT per SP.

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

- A significant impact would occur if the project generated VMT per SP exceeds the Citywide average. The project generated VMT significance threshold is applicable to both baseline project-generated VMT per SP and cumulative project-generated VMT per SP per City of Rancho Cucamonga TIA Guidelines.
- A significant impact would occur if the project is determined to be inconsistent with the RTP/SCS and the project causes total daily VMT within the City to be higher than the no project alternative under cumulative conditions. This represents the project effect on VMT and is measured by comparing the link level boundary VMT per SP within the City of Rancho Cucamonga under the No Project and With Project conditions. The project effect on VMT is considered significant if the addition of project increases the VMT per SP within the City.

The proposed Project includes a General Plan Amendment (GPA) of approximately 7.06 net acres of the approximately 12.66 net acres parcel (APN 0207-271-25) located at the southwest corner of the proposed Project site fronting Baker Avenue, between APN No. 0207-271-89 to the north and the BNSF Railway to the south, and parcels 0207-271-39, 0207-271-40, and 0207-271-25, all to be amended from General Industrial to the Industrial Park land use designation. The proposed GPA does not alter the underlying nature of land use (i.e., industrial),

As the project does not satisfy VMT screening criteria for P/A VMT per SP, a VMT analysis has been conducted for the project based on San Bernardino County Transportation Analysis Model (SBTAM) consistent with the City of Rancho Cucamonga guidelines.

For purposes of this VMT assessment the project’s VMT per SP has been compared to citywide average VMT, based on data provided by SBCTA. Table 2 shows the calculated VMT threshold for P/A VMT per SP based on City of Rancho Cucamonga TIA guidelines:

TABLE 2: VMT THRESHOLDS

Threshold Option	Threshold
Project Generated P/A VMT per SP	26.5 <sup>3</sup>
Project Effect on VMT	Increase in Total Daily VMT per SP within the City compared to “No Project”

<sup>3</sup> Threshold based on baseline (2016) VMT per Service Population for the City of Rancho Cucamonga calculated using the P/A method.

## VMT Analysis

A logical way to evaluate this type of facility is to consider the major trip purposes of the site in terms of their trip length and frequency. Given the description, three types of trips were broadly considered for this development given its context: (1) employee commute trips; (2) other trips related to functioning of the business and/or its employees and (3) truck trips related to shipping activities. The following discussion is provided regarding these three broad trip types.

- (1) Employee commute trips.** These are the primary automobile trips associated with employment-generating uses such as the proposed Project. This facility is expected to provide additional jobs and some related trips to the area. The efficiency of VMT associated with employee commute trips has been assessed based on SBTAM consistent with the City's guidelines .
- (2) Other trips.** These are often the smallest number and shortest distance of trips for a facility like this and include a broad range of trip types, such as, employee lunches off-site, maintenance teams for on-site infrastructure, office supply deliveries, etc. As such their impact to the overall VMT of the site and local transportation system is likely minimal, and therefore is secondary to the other two trip types discussed herein. The efficiency of VMT associated with other trips has also been assessed based on SBTAM consistent with the adopted City's guidelines.
- (3) Truck trips related to shipping activities.** CEQA Guidelines Section 15064.3, subdivision (a) states "For the purposes of this section 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." The OPR's 2018 Technical Advisory Section C-1 indicates that, although heavy vehicle traffic can be included for analysis convenience, the provided analysis requirements are specific to passenger-vehicles and light duty trucks. While it may be appropriate to consider heavy vehicle traffic if directed by the lead agency, it is generally understood that Interstate commerce and related heavy vehicle traffic are regulated by the federal government as it relates to commerce. Irrespective of this and considering that the end-user of this facility is unknown at this time (so the nature of the business enterprise and its probably origins and destinations are unknown), it is reasonable to assume that the ultimate end user will select this location, at least in part, as to how it affects their transportation costs. Most often businesses who have shipping as a significant part of their operations are sensitive to transportation costs and their relative proximity to customers and suppliers. Accordingly, it is reasonable to assume that warehouses are often located in a manner to reduce VMT given that it is the interest of the business. As such, heavy truck VMT is not included in the VMT assessment for transportation impacts under CEQA. However, it should be noted that heavy trucks will still be a part of the LOS analysis consistent with the City's LOS policies that set standards for which city infrastructure will strive to maintain. These policies are contained in the General Plan and therefore apply for discretionary approvals.

## Project VMT

The calculation of vehicle miles traveled has two components – the total number of trips generated and the average trip length of each vehicle. SBTAM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population,

households, and employment. Project VMT was calculated using the most current version of SBTAM (SBTAM version 2.2 files received in June 2020 from SBCTA for 2016 base year and 2040 future year). Adjustments in socio-economic data (households, population, and employment) were made to the appropriate traffic analysis zone (TAZ) within the SBTAM model to reflect the project’s proposed land use. The estimated employment for the project was isolated in TAZ 53664302. The employment estimate was based on 1 employee per 1,471 square feet of general industrial consistent with the current General Plan. The Project was estimated to generate approximately 706 employees. The 706 employees were input into “Transportation Employment” category in the SBTAM socio economic data inputs.

***Project Generated VMT per Service Population (SP)***

The Project P/A VMT per SP is the total VMT (including all trip purposes) divided by the number of employees and residents derived from the SBTAM model. The P/A VMT per SP is used to measure efficiency of VMT generated by all trip purposes. The Project P/A VMT per SP calculated based on SBTAM Base Year (2016) and Horizon Year (2040) models are shown on Table 3.

The project generated VMT was calculated by multiplying the trips for each trip purpose extracted from the production-attraction matrix with the non-toll distance for drive alone trips. To calculate the P/A VMT per SP, the Project Generated VMT was divided by the TAZ Service Population (With Project).

TABLE 3: Project Generated VMT

VMT Metric	Base Year (2016)	Horizon Year (2040)
TAZ Service Population (No Project)	311	692
TAZ Service Population (With Project)*	706	706
Project Generated VMT	18,054	18,207
P/A VMT per SP	25.57	25.78

\*Note: In order to estimate project generated VMT, 706 employees with project were isolated in a separate TAZ

***Project Effect on VMT***

The results of the link level boundary VMT per SP within the City of Rancho Cucamonga was under the No Project and With Project conditions using the SBTAM model are summarized in Table 4.

TABLE 4: Project Effect on VMT within City of Rancho Cucamonga

	No Project	With Project
Link Level VMT*	3,753,091	3,754,127
Service Population	260,980	261,375
VMT per SP	14.38	14.36

\*Note: VMT for the roadway links within the boundary of the City of Rancho Cucamonga calculated for “No project” conditions and “With Project” conditions to determine project effect on the total VMT within the City.

**Heavy Truck VMT**

Consistent with air quality and greenhouse gas analyses, the average trip length for heavy trucks were based on the data provided in Forecasting Metropolitan Commercial and Freight Travel (NCHRP Synthesis 384, Transportation Research Board, 2008) document. The document cites average internal trip lengths of 5.92 miles for light truck, 13.06 for medium truck, and 24.11 for heavy trucks. As a conservative measure, a trip length of 25 miles has been utilized for all trucks multiplied by the daily truck trips (369) estimated in the TIA based on Institute of Transportation Engineer (ITE) trip rates, resulting in a heavy truck daily VMT of 9,225. As noted previously, heavy truck VMT is not included in the VMT assessment for transportation impacts under CEQA, but are provided here for informational purposes only.

**Potential Impacts**

As shown in Table 5, the Project’s Year 2016 P/A VMT per SP is less than City baseline P/A VMT per SP. The Project’s Year 2040 P/A VMT per SP would exceed citywide average threshold. As such, the Project generated VMT is less than significant based on City of Rancho Cucamonga’s recommended thresholds.

TABLE 5: VMT IMPACT EVALUATION

Threshold Option	Threshold	Project TAZ	Change in VMT	Potentially Significant?
P/A VMT per SP (2016)	26.5	25.57	-0.93	No
P/A VMT per SP (2040)	26.5	25.78	-0.72	No

The link level boundary VMT per SP within the City of Rancho Cucamonga does not increase under With Project conditions when compared to the No Project conditions. As such, the Project effect on VMT is considered less than significant.

## Conclusion

The Project was evaluated based on SBCTA VMT screening tool and was found not meet screening criteria based on P/A VMT per Service Population metric. Consistent with the City of Rancho Cucamonga Guidelines, a project level VMT analysis was performed with the SBTAM model for the proposed warehouse use. The Project's VMT was found to be less than significant based on City of Rancho Cucamonga's recommended thresholds based on P/A VMT per SP metric for both baseline and cumulative conditions. The Project's transportation impact is therefore presumed to be less than significant.

FIGURE 1-1 REGIONAL VICINITY MAP

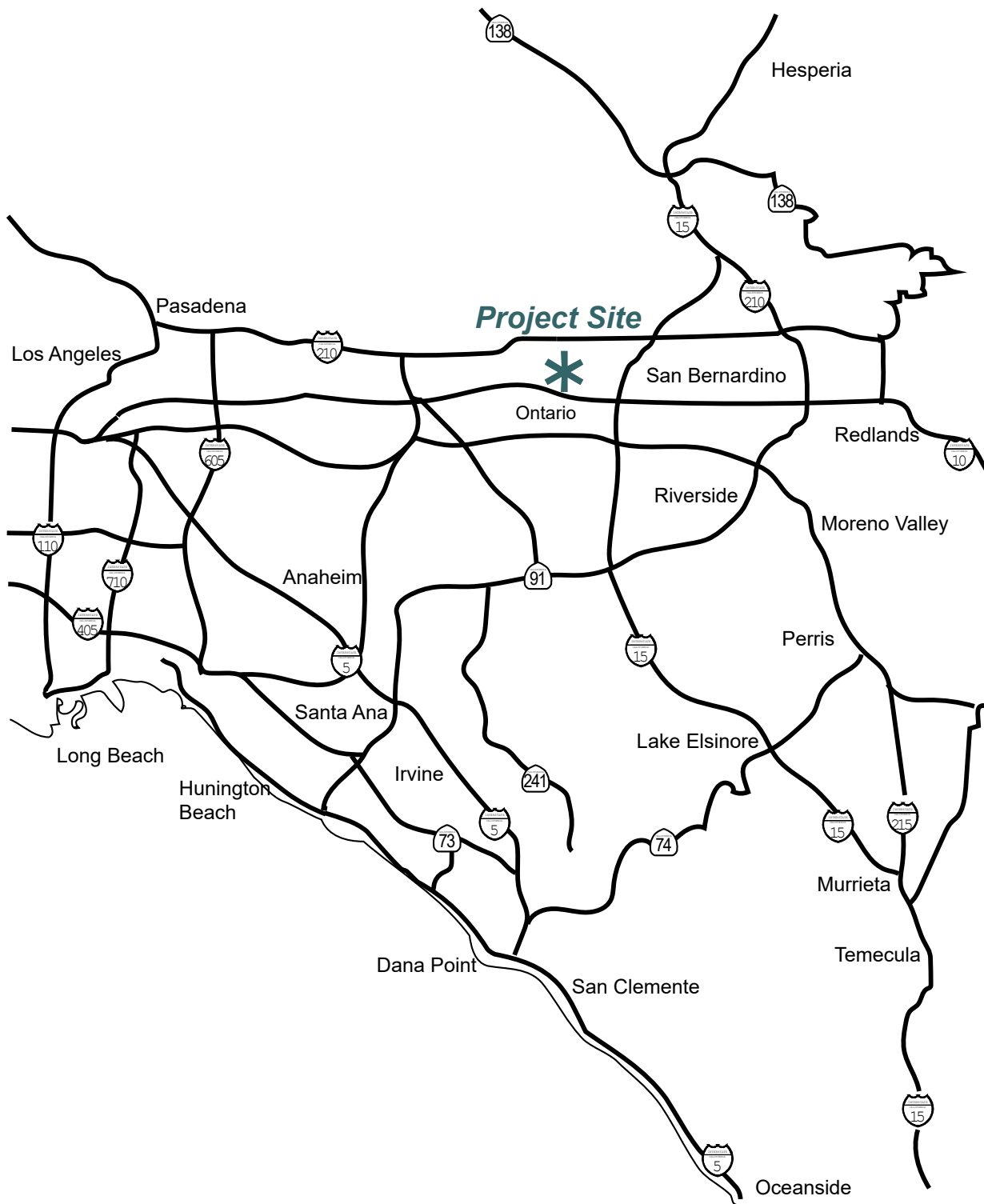
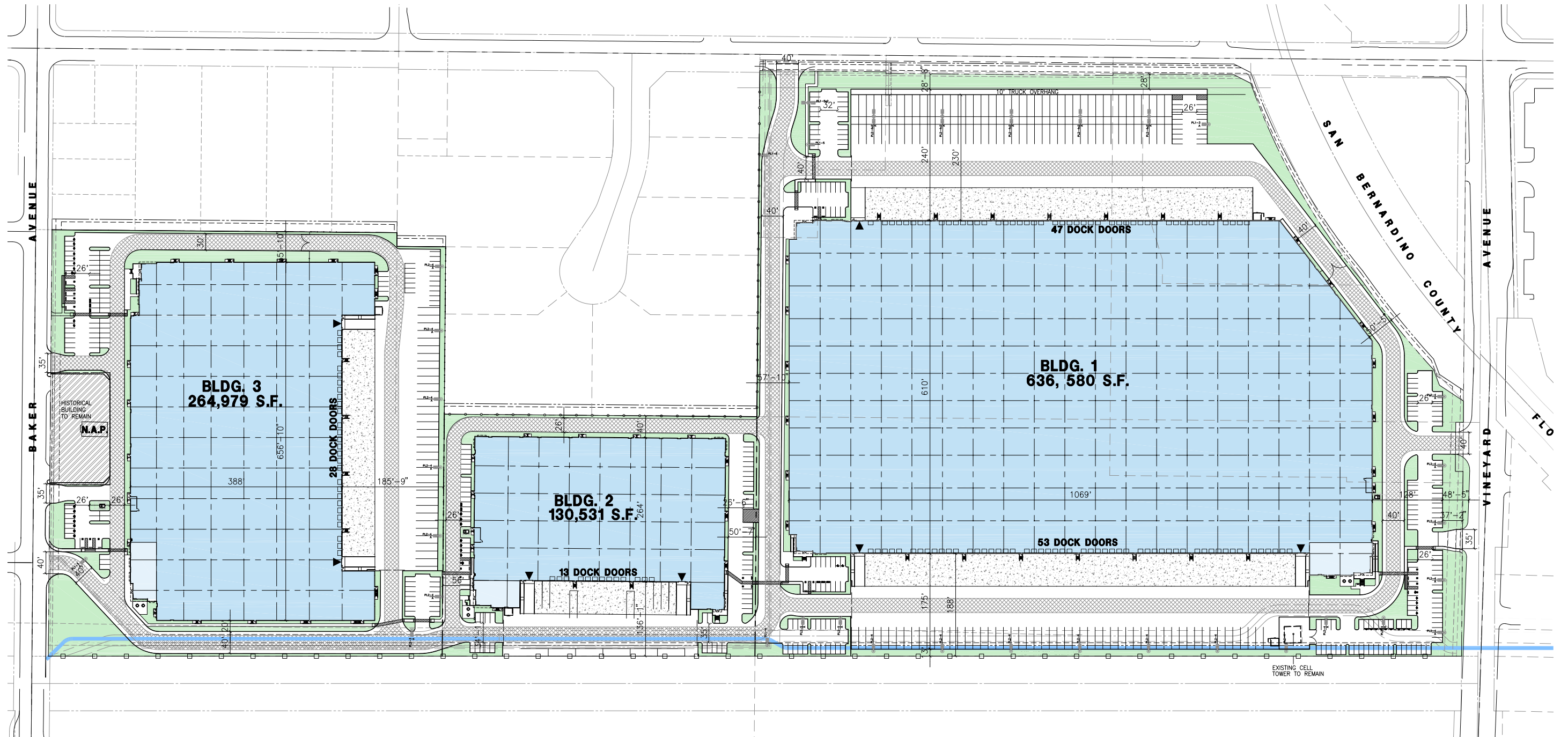


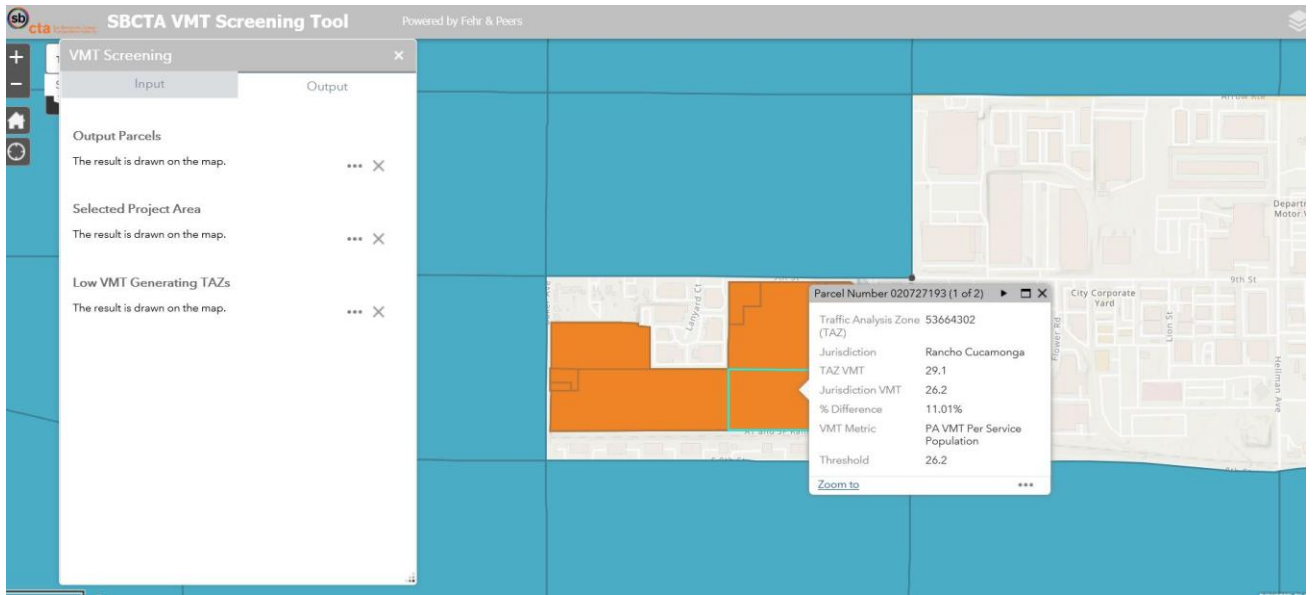


FIGURE 1-2 PROPOSED SITE PLAN



Source: HPA Architecture  
Scheme 27 Site Plan dated (10/29/2021)

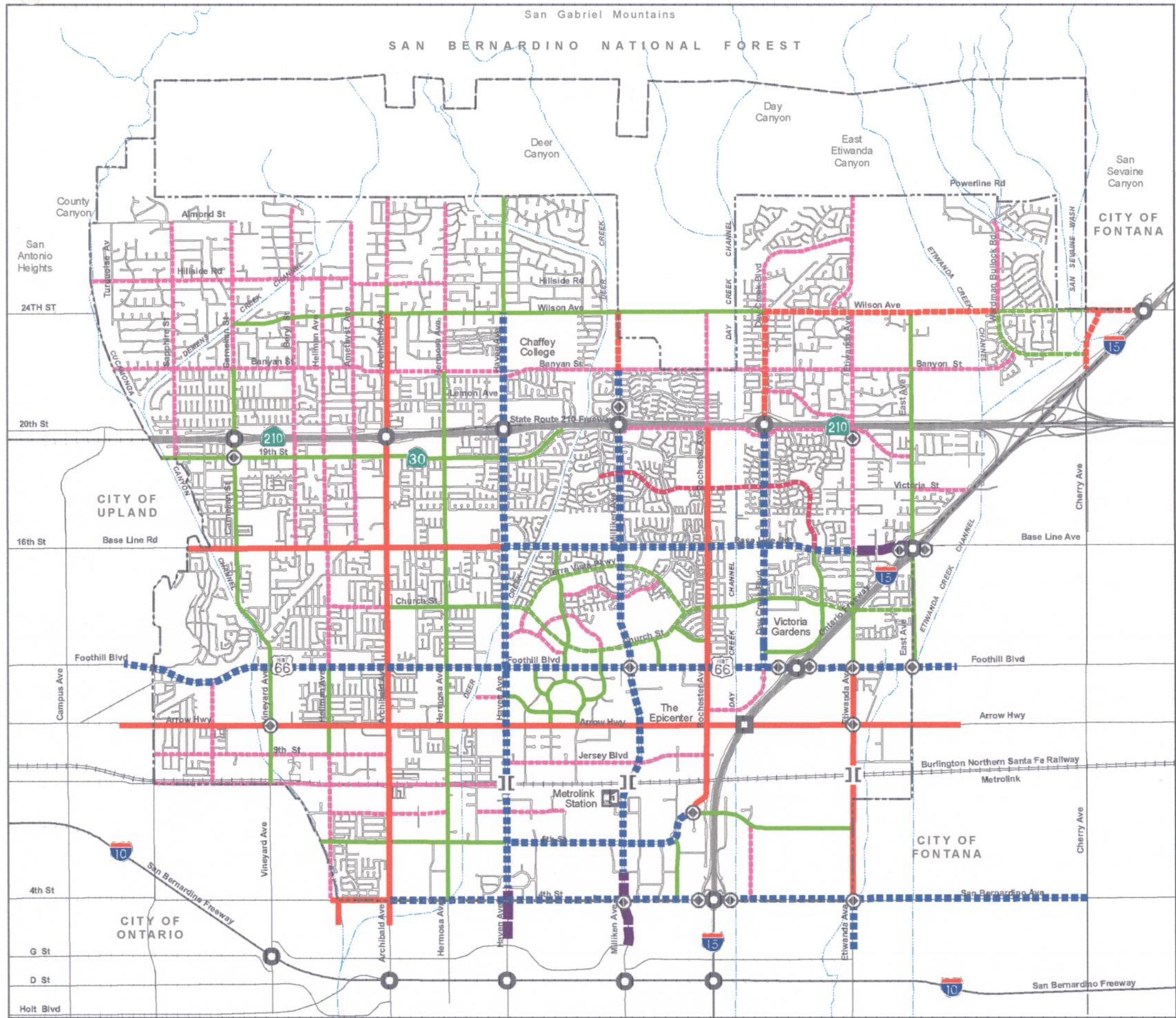
## ATTACHMENT A: VMT SCREENING RESULTS



# APPENDIX C

## CITY OF RANCHO CUCAMONGA GENERAL PLAN CIRCULATION ELEMENT





- Circulation Plan**
- - - - - Collector
  - - - - - Modified Collector with Median
  - - - - - Secondary
  - - - - - Modified Secondary with Median
  - - - - - Major Arterial
  - - - - - Modified Major with Median
  - - - - - Major Divided Arterial
  - - - - - Major Divided Highway
  - - - - - Freeway
  - Intersections Widened beyond Standards
  - Railroad Grade Separation
  - Freeway Interchange
  - Proposed Freeway Interchange
  - - - - - Rancho Cucamonga City Boundary
  - - - - - Sphere of Influence
  - - - - - Waterways

Source: Rancho Cucamonga, 2009 and The Mobility Group, 2009.

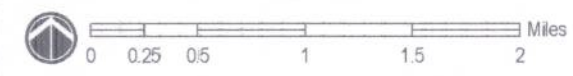


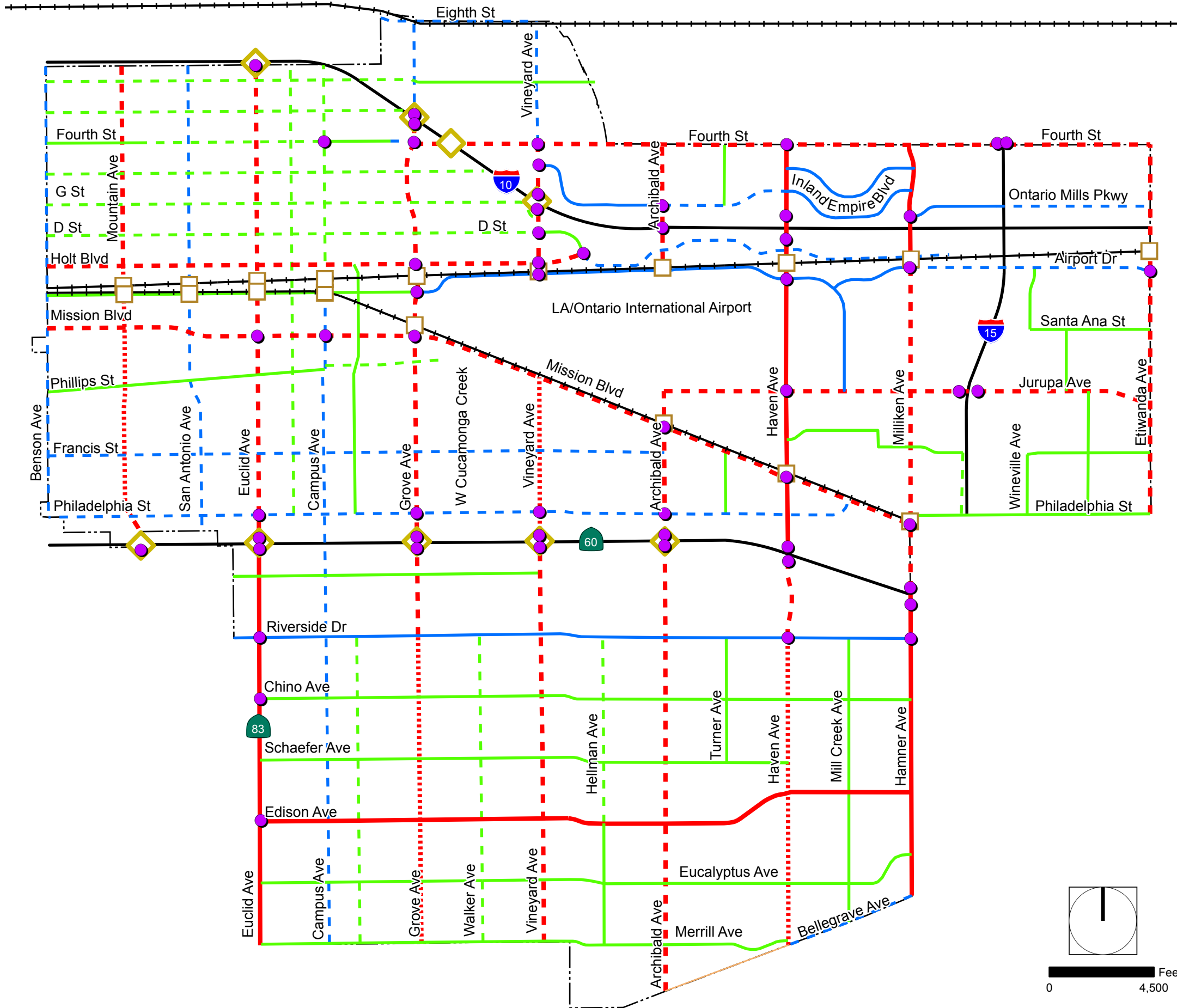
Figure CM-2:  
Circulation Plan

# APPENDIX D

## CITY OF ONTARIO CIRCULATION PLAN



# Figure M-2 Functional Roadway Classification Plan



- Freeways
- +— Railroads
- Other Principal Arterial
  - 8 Lanes
  - - - 6 Lanes
  - · · · 4 Lanes
- Minor Arterial
  - 6 Lanes
  - - - 4 Lanes
- Collector Street
  - 4 Lanes
  - - - 2 Lanes
- ◆ Freeway Interchange
- Grade-Separated Rail Crossings
- Enhanced Intersections

- 1) All streets not shown on the map and legend are classified as local streets.
- 2) Enhanced Intersections allow flexibility from the standard intersection configuration to increase capacity, improve operation, and respond to local conditions. Enhancements may include additional lanes, reduced median width, increased right-of-way width, removal of on-street bike lanes, or reduction of parkway width. Detailed engineering studies are necessary to identify the most effective types of improvements.
- 3) The Functional Roadway Classification Plan depicts the maximum number of lanes and does not preclude the use of fewer lanes. The goal is to use the minimum number of lanes necessary to achieve the LOS standard while minimizing pavement and right-of-way width. Detailed traffic studies are necessary to identify the necessary number of lanes.
- 4) The Functional Roadway Classification Plan is a generalized representation of the roadway system. See the Master Plan of Streets and Highways to determine the exact right-of-way, number of lanes, and roadway configuration.
- 5) State Street and Holt Boulevard, which are parallel roadways, are related and improvements to one roadway enhance conditions on the other. Due to this fact and physical constraints, the actual classification of each roadway may vary depending upon the results of further, more detailed analysis.

# APPENDIX E

## BUS ROUTE SCHEDULES



# ONT AIRPORT-VINEYARD-CHAFFEY COLLEGE

[View In Website Mode](#)

The 80 bus line (ONT AIRPORT-VINEYARD-CHAFFEY COLLEGE) has 2 routes. For regular weekdays, their operation hours are:

(1) Nb-Ont Airport-Vineyard-Chaffey Collge: 5:02 AM - 7:52 PM (2) Sb-Ont Airport-Vineyard-Chaffey Collge: 5:07 AM - 8:07 PM

Use the Moovit App to find the closest 80 bus station near you and find out when is the next 80 bus arriving.

## Direction: Nb-Ont Airport-Vineyard-Chaffey Collge

27 stops

[VIEW LINE SCHEDULE](#)

Vineyard @ Holt Nb FS

Vinyard At D Street

Vineyard @ Inland Empire Nb FS

1895 Plaza Serena, Ontario

Vineyard At 4th Street

1903 E 4th St, Ontario

Vineyard @ 5th Street Nb FS

1903 E 5th St, Ontario

Vineyard @ 6th Nb FS

1903 La Deney Ct, Ontario

Vineyard @ 7th Nb FS

1903 E 7th St, Ontario

Vineyard @ 8th Nb Ns

8890 8th St, Rancho Cucamonga

Vineyard @ 9th Nb FS

Vineyard At Arrow

8477 Snowview Pl, Upland

Vineyard @ Orangewood Nb FS

Vineyard @ Foothill Nb FS

8880 Foothill Bl, Upland

Carnelian At Calle Del Prado

7446 Arroyo Vista Ave, Claremont

## 80 bus Time Schedule

Nb-Ont Airport-Vineyard-Chaffey Collge Route

Timetable:

Sunday	5:40 AM - 6:40 PM
Monday	5:02 AM - 7:52 PM
Tuesday	5:02 AM - 7:52 PM
Wednesday	5:02 AM - 7:52 PM
Thursday	5:02 AM - 7:52 PM
Friday	5:02 AM - 7:52 PM
Saturday	5:40 AM - 6:40 PM

## 80 bus Info

**Direction:** Nb-Ont Airport-Vineyard-Chaffey Collge

**Stops:** 27

**Trip Duration:** 32 min

**Line Summary:** Vineyard @ Holt Nb FS, Vinyard At D Street, Vineyard @ Inland Empire Nb FS, Vineyard At 4th Street, Vineyard @ 5th Street Nb FS, Vineyard @ 6th Nb FS, Vineyard @ 7th Nb FS, Vineyard @ 8th Nb Ns, Vineyard @ 9th Nb FS, Vineyard At Arrow, Vineyard @ Orangewood Nb FS, Vineyard @ Foothill Nb FS, Carnelian At Calle Del Prado, Carnelian At Baseline, Carnelian @ Avalon Nb FS, 19th Street @ Carnelian Eb FS, 19th @ Beryl Eb FS, 19th @ Hellman Eb FS, 19th @ Amethyst Eb Ns, 19th @ Archibald Eb FS, 19th @ Ramona Eb FS, 19th @ Hermosa Eb FS, 19th Street At Cartilla, Haven At 19th Street, Haven At Alta Loma, Haven At Banyan, Chaffey College Wb FS



**Carnelian At Baseline**

8700 Baseline St, Claremont

**Carnelian @ Avalon Nb FS**

8714 Avalon St, Claremont

**19th Street @ Carnelian Eb FS**

6701 Carnelian St, Claremont

**19th @ Beryl Eb FS**

6691 Beryl Ave, Upland

**19th @ Hellman Eb FS**

9307 19th St, Rancho Cucamonga

**19th @ Amethyst Eb Ns**

6715 Meriwether Ct, Rancho Cucamonga

**19th @ Archibald Eb FS**

6714 Shaded Wood Pl, Rancho Cucamonga

**19th @ Ramona Eb FS**

6721 Ramona Av, Rancho Cucamonga

**19th @ Hermosa Eb FS**

10123 Chambord Dr, Rancho Cucamonga

**19th Street At Cartilla**

10394 Gala Av, Rancho Cucamonga

**Haven At 19th Street**

6676 Dakota Ave, Rancho Cucamonga

**Haven At Alta Loma**

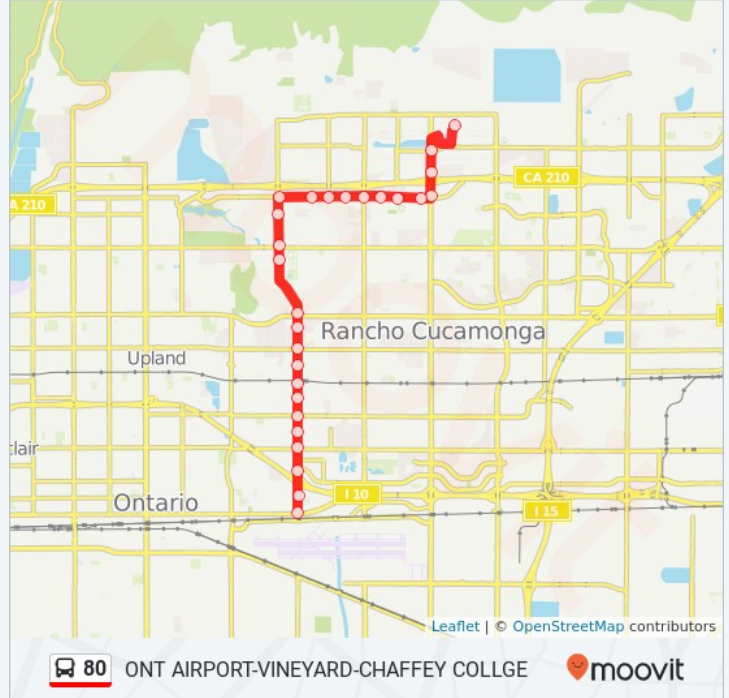
6381 Haven Av, Rancho Cucamonga

**Haven At Banyan**

10519 Merlot Ct, Rancho Cucamonga

**Chaffey College Wb FS**

Magnolia Way, Rancho Cucamonga



## Direction: Sb-Ont Airport-Vineyard-Chaffey Collge

30 stops

[VIEW LINE SCHEDULE](#)

### Chaffey College Wb FS

Magnolia Way, Rancho Cucamonga

### Haven @ Banyan Sb FS

### Haven At Lemon

Lemon Avenue, Rancho Cucamonga

### 19th @ Haven Wb FS

19th Street, Rancho Cucamonga

### 19th @ Mayberry Wb FS

10361 Ring Ave, Rancho Cucamonga

### 19th @ Hermosa Wb FS

6695 Auburn Pl, Rancho Cucamonga

### 19th @ Archibald Wb Ns

9700 19th St, Rancho Cucamonga

### 19th @ Amethyst Wb FS

6715 Meriwether Ct, Rancho Cucamonga

### 19th @ Hellman Wb FS

9275 19th St, Claremont

### 19th @ Beryl Wb FS

6691 Beryl Ave, Upland

### Carnelian @ 19th Sb FS

8691 19th St, Claremont

### Carnelian @ Monte Vista Sb FS

8691 Monte Vista St, Claremont

### Carnelian At Baseline

8687 Base Line Rd, Claremont

### Carnelian @ Calle Del Prado Sb Ns

7478 Carnelian St, Claremont

### Vineyard @ Foothill Sb FS

8130 Vineyard Av, Upland

### Vineyard At Arrow

8879 Bayberry Dr, Upland

### Vineyard @ 9th Sb FS

### Vineyard @ 8th Sb FS

8890 8th St, Rancho Cucamonga

## 80 bus Time Schedule

Sb-Ont Airport-Vineyard-Chaffey Collge Route

Timetable:

Sunday	5:57 AM - 6:57 PM
Monday	5:07 AM - 8:07 PM
Tuesday	5:07 AM - 8:07 PM
Wednesday	5:07 AM - 8:07 PM
Thursday	5:07 AM - 8:07 PM
Friday	5:07 AM - 8:07 PM
Saturday	5:57 AM - 6:57 PM

## 80 bus Info

**Direction:** Sb-Ont Airport-Vineyard-Chaffey Collge

**Stops:** 30

**Trip Duration:** 41 min

**Line Summary:** Chaffey College Wb FS, Haven @ Banyan Sb FS, Haven At Lemon, 19th @ Haven Wb FS, 19th @ Mayberry Wb FS, 19th @ Hermosa Wb FS, 19th @ Archibald Wb Ns, 19th @ Amethyst Wb FS, 19th @ Hellman Wb FS, 19th @ Beryl Wb FS, Carnelian @ 19th Sb FS, Carnelian @ Monte Vista Sb FS, Carnelian At Baseline, Carnelian @ Calle Del Prado Sb Ns, Vineyard @ Foothill Sb FS, Vineyard At Arrow, Vineyard @ 9th Sb FS, Vineyard @ 8th Sb FS, Vineyard @ 7th Sb FS, Vineyard @ 6th Sb FS, Vineyard @ 5th Street Sb FS, Vineyard At 4th Street, Vineyard @ Plaza Serena Sb Ns, Vineyard At D Street, Vineyard @ Holt Sb Ns, Airport At Terminal Way, Ontario Airport @ Terminal Way 2, Ontario Airport @ Terminal Way 4, Airport @ Terminal Way Wb FS, Vineyard @ Holt Nb FS

**Vineyard @ 7th Sb FS**

1902 E 7th St, Ontario

**Vineyard @ 6th Sb FS**

1458 San Diego Pl, Ontario

**Vineyard @ 5th Street Sb FS**

1880 E 5th St, Ontario

**Vineyard At 4th Street**

1880 E 4th St, Ontario

**Vineyard @ Plaza Serena Sb Ns**

1895 Plaza Serena, Ontario

**Vineyard At D Street**

Vineyard Avenue, Ontario

**Vineyard @ Holt Sb Ns**

101 N Vineyard Ave, Ontario

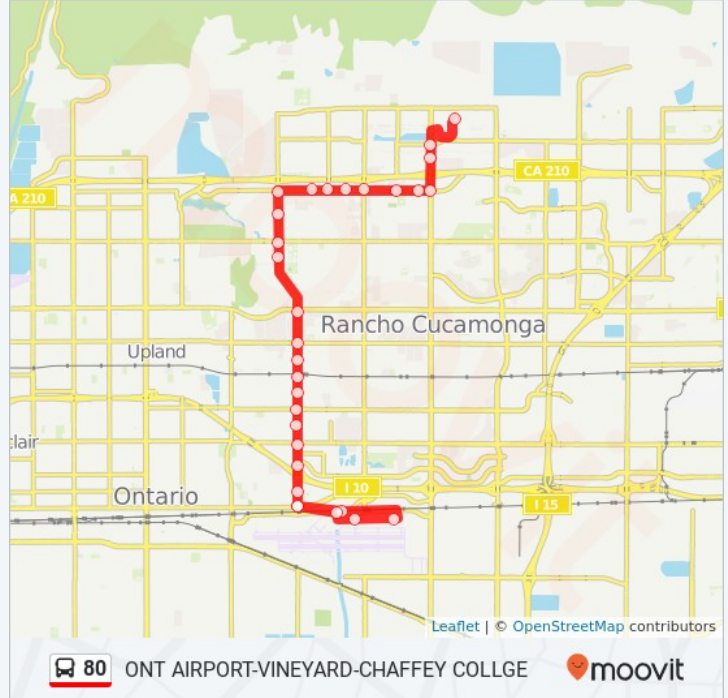
**Airport At Terminal Way**

**Ontario Airport @ Terminal Way 2**

**Ontario Airport @ Terminal Way 4**

**Airport @ Terminal Way Wb FS**

**Vineyard @ Holt Nb FS**



80 bus time schedules and route maps are available in an offline PDF at moovit.com. Use the [Moovit App](#) to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Los Angeles.

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## Check Live Arrival Times





# CHINO-HAVEN-CHAFFEY COLLGE

[View In Website Mode](#)

The 81 bus line (CHINO-HAVEN-CHAFFEY COLLGE) has 2 routes. For regular weekdays, their operation hours are: (1) Nb-Chino-Haven-Chaffey Collge: 4:25 AM - 9:25 PM (2) Sb-Chino-Haven-Chaffey Collge: 5:40 AM - 8:55 PM Use the Moovit App to find the closest 81 bus station near you and find out when is the next 81 bus arriving.

## Direction: Nb-Chino-Haven-Chaffey Collge

53 stops

[VIEW LINE SCHEDULE](#)

Chino Transit Center

Central At C St

13071 Central Ave, Chino

Riverside At 9th St

5343 Riverside Dr, Chino

Riverside At Benson

5701 Riverside Dr, Chino

Riverside And Oaks

5913 Riverside Dr, Ontario

Riverside At Magnolia

12901 Magnolia Ave, Ontario

Riverside @ Mountain Eb FS

6301 Riverside Dr, Ontario

Riverside @ Cypress Eb FS

12901 Cypress Ave, Ontario

Riverside @ San Antonio Eb FS

6701 Riverside Dr, Chino

Riverside @ Euclid Eb FS

2951 S Euclid Ave, Ontario

Riverside @ Sultana Eb FS

Riverside @ Campus Eb Ns

East Riverside Drive, Ontario

Riverside @ Bon View Eb FS

916 E Cottonwood St, Ontario

Riverside @ Grove Eb FS

## 81 bus Time Schedule

Nb-Chino-Haven-Chaffey Collge Route Timetable:

Sunday	Not Operational
Monday	4:25 AM - 9:25 PM
Tuesday	4:25 AM - 9:25 PM
Wednesday	4:25 AM - 9:25 PM
Thursday	4:25 AM - 9:25 PM
Friday	4:25 AM - 9:25 PM
Saturday	6:26 AM - 7:26 PM

## 81 bus Info

**Direction:** Nb-Chino-Haven-Chaffey Collge

**Stops:** 53

**Trip Duration:** 61 min

**Line Summary:** Chino Transit Center, Central At C St, Riverside At 9th St, Riverside At Benson, Riverside And Oaks, Riverside At Magnolia, Riverside @ Mountain Eb FS, Riverside @ Cypress Eb FS, Riverside @ San Antonio Eb FS, Riverside @ Euclid Eb FS, Riverside @ Sultana Eb FS, Riverside @ Campus Eb Ns, Riverside @ Bon View Eb FS, Riverside @ Grove Eb FS, Riverside @ Walker Eb FS, Riverside @ Vineyard Eb FS, Riverside @ Wispering Lakes Eb Ns, Riverside @ Ontario Eb Ns, Riverside @ Colonial Eb FS, Riverside @ Archibald Eb FS, Riverside @ Turner Eb FS, Haven @ Riverside Nb FS, Haven @ Creekside Nb FS, Haven @ Philadelphia Nb FS, Haven @ Francis Nb FS, Haven @ Jurupa Nb FS, Haven @ Airport Dr, Haven And Guasti Nb Ns, Haven And Concours, Concours And Duesenburg, Concours And Mercedes, Inland Empire At Ferrari, Ontario Mills Nb FS, 4th And Milliken, 4th @ Empire Court Wb FS, 4th And Cleveland, 4th And Utica, Haven And 4th, Haven And Trademark, Haven And 6th, Haven And Acacia, Haven And Jersey, Haven And Arrow, Haven And Foothill, Haven And Town Center, Haven And Church,

1201 E Riverside Dr, Ontario

### Riverside @ Walker Eb FS

2945 S Walker Ave, Ontario

### Riverside @ Vineyard Eb FS

### Riverside @ Wispering Lakes Eb Ns

East Riverside Drive, Ontario

### Riverside @ Ontario Eb Ns

### Riverside @ Colonial Eb FS

2959 Colonial Ave, Ontario

### Riverside @ Archibald Eb FS

3015 S Archibald Ave, Ontario

### Riverside @ Turner Eb FS

3165 Joshua Tree St, Ontario

### Haven @ Riverside Nb FS

### Haven @ Creekside Nb FS

Creekside Drive, Ontario

### Haven @ Philadelphia Nb FS

3501 Philadelphia St, Ontario

### Haven @ Francis Nb FS

Haven Avenue, Ontario

### Haven @ Jurupa Nb FS

### Haven @ Airport Dr

### Haven And Guasti Nb Ns

Guasti Road, Ontario

### Haven And Concours

4th Street East Access, Ontario

### Concours And Duesenburg

3546 Concours St, Ontario

### Concours And Mercedes

Concours Street, Ontario

### Inland Empire At Ferrari

Inland Empire Boulevard, Ontario

### Ontario Mills Nb FS

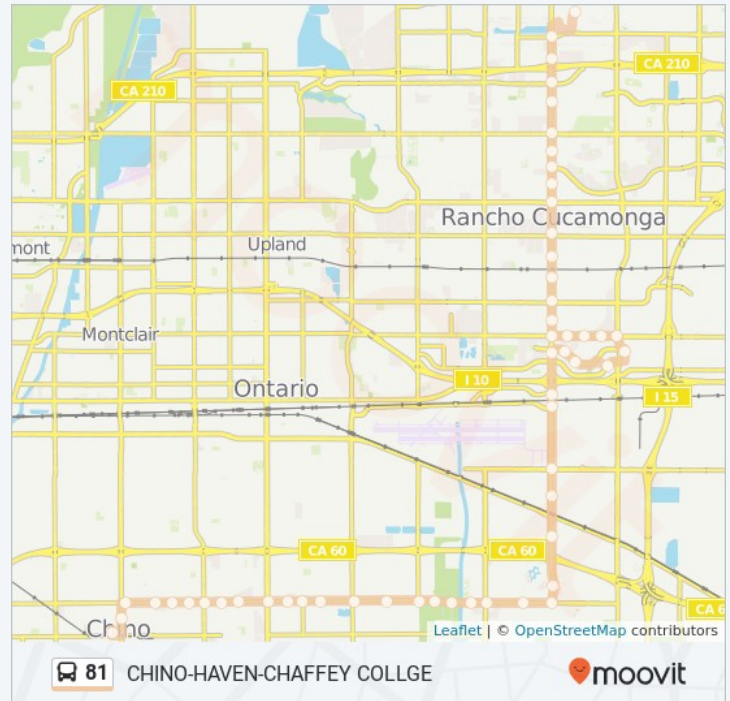
### 4th And Milliken

### 4th @ Empire Court Wb FS

Empire Court, Rancho Cucamonga

### 4th And Cleveland

Haven And Creekbridge, Haven And Baseline, Haven And Victoria, Haven At 19th Street, Haven At Alta Loma, Haven At Banyan, Chaffey College Wb FS



#### **4th And Utica**

#### **Haven And 4th**

#### **Haven And Trademark**

9485 Haven Ave, Rancho Cucamonga

#### **Haven And 6th**

9280 Haven Avenue, Rancho Cucamonga

#### **Haven And Acacia**

#### **Haven And Jersey**

8777 Haven Av, Rancho Cucamonga

#### **Haven And Arrow**

8463 Haven Av, Rancho Cucamonga

#### **Haven And Foothill**

#### **Haven And Town Center**

10550 Town Center Dr, Rancho Cucamonga

#### **Haven And Church**

7697 Haven Av, Rancho Cucamonga

#### **Haven And Creekbridge**

7508 Villa Crest Pl, Rancho Cucamonga

#### **Haven And Baseline**

7269 Haven Ave, Rancho Cucamonga

#### **Haven And Victoria**

6902 Dakota Ave, Rancho Cucamonga

#### **Haven At 19th Street**

6676 Dakota Ave, Rancho Cucamonga

#### **Haven At Alta Loma**

6381 Haven Av, Rancho Cucamonga

#### **Haven At Banyan**

10519 Merlot Ct, Rancho Cucamonga

#### **Chaffey College Wb FS**

Magnolia Way, Rancho Cucamonga



## Direction: Sb-Chino-Haven-Chaffey Collge

55 stops

[VIEW LINE SCHEDULE](#)

### Chaffey College Wb FS

Magnolia Way, Rancho Cucamonga

### Haven @ Banyan Sb FS

### Haven At Lemon

Lemon Avenue, Rancho Cucamonga

### Haven And 19th

19th Street, Rancho Cucamonga

### Haven And Victoria

Haven Avenue, Rancho Cucamonga

### Haven And Baseline

10476 Pepper St, Rancho Cucamonga

### Haven And Creekbridge

10487 Palo Alto St, Rancho Cucamonga

### Haven And Church

10487 Nutmeg St, Rancho Cucamonga

### Haven And Town Center

7900 Haven Av, Rancho Cucamonga

### Haven And Foothill

Haven Avenue, Rancho Cucamonga

### Haven @ Civic Center Sb FS

### Haven And Arrow

Arrow Route, Rancho Cucamonga

### Haven @ 7th Sb FS

9120 Haven Avenue, Rancho Cucamonga

### Haven @ 6th Sb FS

### Haven @ Trademark Sb FS

9660 Haven Ave, Rancho Cucamonga

### 4th @ Haven Eb FS

### 4th @ Duesenburg Eb FS

### 4th @ Cleveland Eb Lat

### 4th @ Via Turin

### Milliken And 4th St

## 81 bus Time Schedule

Sb-Chino-Haven-Chaffey Collge Route Timetable:

Sunday	Not Operational
Monday	5:40 AM - 8:55 PM
Tuesday	5:40 AM - 8:55 PM
Wednesday	5:40 AM - 8:55 PM
Thursday	5:40 AM - 8:55 PM
Friday	5:40 AM - 8:55 PM
Saturday	5:40 AM - 7:40 PM

## 81 bus Info

**Direction:** Sb-Chino-Haven-Chaffey Collge

**Stops:** 55

**Trip Duration:** 60 min

**Line Summary:** Chaffey College Wb FS, Haven @ Banyan Sb FS, Haven At Lemon, Haven And 19th, Haven And Victoria, Haven And Baseline, Haven And Creekbridge, Haven And Church, Haven And Town Center, Haven And Foothill, Haven @ Civic Center Sb FS, Haven And Arrow, Haven @ 7th Sb FS, Haven @ 6th Sb FS, Haven @ Trademark Sb FS, 4th @ Haven Eb FS, 4th @ Duesenburg Eb FS, 4th @ Cleveland Eb Lat, 4th @ Via Turin, Milliken And 4th St, Ontario Mills Nb FS, Concourses @ Target Wb FS, Concourses And Duesenburg, Haven And Inland Empire, Haven And Guasti, Haven @ Airport Dr, Haven @ Jurupa Sb FS, Haven @ Francis Sb FS, Haven @ Mission Sb FS, Haven @ Philadelphia Sb FS, Haven @ Creekside Dr Sb FS, Haven @ Riverside Sb Ns, Riverside @ Turner Wb FS, Riverside @ Archibald Wb FS, Riverside @ Colonial Wb FS, Riverside @ Ontario Wb FS, Riverside @ Wispering Lake Wb FS, Riverside @ Vineyard Wb FS, Riverside @ Baker Wb FS, Riverside @ Walker Wb Ns, Riverside @ Grove Wb FS, Riverside @ Bon View Wb Ns, Riverside @ Campus Wb Ns, Riverside @ Sultana Wb Ns, Riverside @ Euclid Wb FS, Riverside @ San Antonio Wb Ns, Riverside @ Cypress Wb FS, Riverside @ Mountain Wb Ns, Riverside And Magnolia, Riverside And Oaks, Riverside And Benson, Riverside And 11th St, Central And Riverside, Central And Cst, Chino Transit Center



**Ontario Mills Nb FS**

**Concours @ Target Wb FS**

4295 E Concours, Ontario

**Concours And Dusenberg**

**Haven And Inland Empire**

**Haven And Guasti**

Guasti Road, Ontario

**Haven @ Airport Dr**

**Haven @ Jurupa Sb FS**

**Haven @ Francis Sb FS**

**Haven @ Mission Sb FS**

Haven Avenue, Ontario

**Haven @ Philadelphia Sb FS**

2200 Haven Ave, Ontario

**Haven @ Creekside Dr Sb FS**

Creekside Drive, Ontario

**Haven @ Riverside Sb Ns**

**Riverside @ Turner Wb FS**

3099 Riverside Dr, Ontario

**Riverside @ Archibald Wb FS**

**Riverside @ Colonial Wb FS**

2960 Colonial Ave, Ontario

**Riverside @ Ontario Wb FS**

**Riverside @ Wispering Lake Wb FS**

East Riverside Drive, Ontario

**Riverside @ Vineyard Wb FS**

**Riverside @ Baker Wb FS**

2946 Baker Ave, Ontario

**Riverside @ Walker Wb Ns**

2945 S Walker Ave, Ontario

**Riverside @ Grove Wb FS**

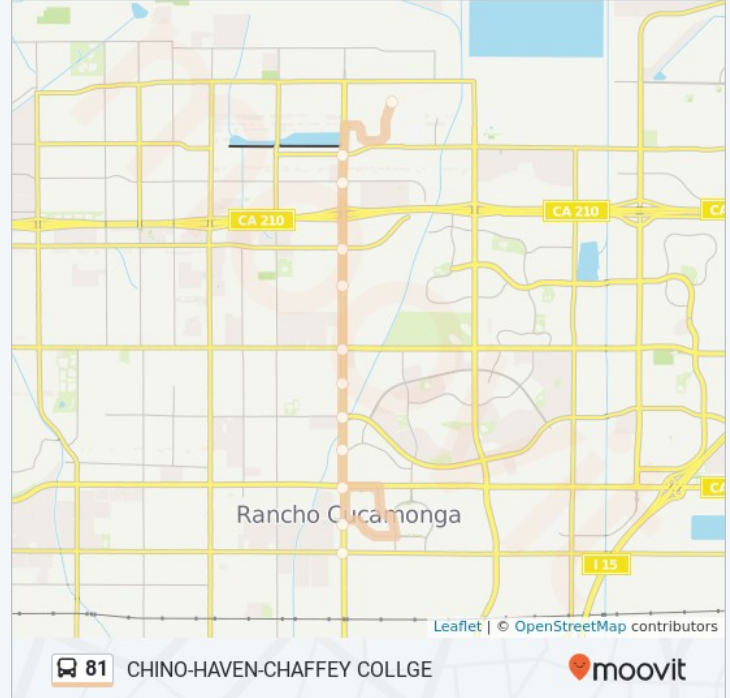
1194 E Cottonwood Ct, Ontario

**Riverside @ Bon View Wb Ns**

916 E Cottonwood St, Ontario

**Riverside @ Campus Wb Ns**

East Riverside Drive, Ontario



**Riverside @ Sultana Wb Ns**

**Riverside @ Euclid Wb FS**

Riverside Drive, Chino

**Riverside @ San Antonio Wb Ns**

6700 Riverside Dr, Chino

**Riverside @ Cypress Wb FS**

12898 Cypress Ave, Ontario

**Riverside @ Mountain Wb Ns**

6300 Riverside Dr, Ontario

**Riverside And Magnolia**

12899 Magnolia Ave, Ontario

**Riverside And Oaks**

5913 Riverside Dr, Ontario

**Riverside And Benson**

5700 Riverside Dr, Chino

**Riverside And 11th St**

5458 Riverside Dr, Chino

**Central And Riverside**

12900 Central Ave, Chino

**Central And Cst**

13106 Central Ave, Chino

**Chino Transit Center**

81 bus time schedules and route maps are available in an offline PDF at moovit.com. Use the [Moovit App](#) to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Los Angeles.

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## Check Live Arrival Times





# RANCHO CUCAMONGA-FONTANA

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The 82 bus line (RANCHO CUCAMONGA-FONTANA) has 2 routes. For regular weekdays, their operation hours are: (1) Eb-Rancho Cucamonga-Fontana: 4:25 AM - 7:35 PM (2) Wb-Rancho Cucamonga-Fontana: 4:33 AM - 8:45 PM Use the Moovit App to find the closest 82 bus station near you and find out when is the next 82 bus arriving.

**Direction: Eb-Rancho Cucamonga-Fontana**

74 stops

[VIEW LINE SCHEDULE](#)

Day Creek At Foothill

Day Creek @ North Main Nb FS

7745 Hess Pl, Rancho Cucamonga

Church @ Day Creek Wb FS

12268 Chantrelle Dr, Rancho Cucamonga

Church @ Rochester Wb FS

11881 Gloucester Ct, Rancho Cucamonga

Church @ Malaga Wb FS

Milliken @ Church Sb FS

Milliken @ Foothill Sb FS

Milliken Avenue, Rancho Cucamonga

Milliken @ Arrow Sb FS

Arrow Route, Rancho Cucamonga

Milliken @ Jersey Sb FS

Rancho Cucamonga Metrolink Sb FS

-- --, Rancho Cucamonga

Milliken @ 6th Sb FS

Milliken @ 5th Sb FS

Milliken And 4th St

Ontario Mills Nb FS

Milliken @ Airport Sb FS

Milliken @ Santa Ana Sb FS

**82 bus Time Schedule**

Eb-Rancho Cucamonga-Fontana Route Timetable:

Sunday	6:14 AM - 6:09 PM
Monday	4:25 AM - 7:35 PM
Tuesday	4:25 AM - 7:35 PM
Wednesday	4:25 AM - 7:35 PM
Thursday	4:25 AM - 7:35 PM
Friday	4:25 AM - 7:35 PM
Saturday	6:14 AM - 6:40 PM

**82 bus Info**

**Direction:** Eb-Rancho Cucamonga-Fontana

**Stops:** 74

**Trip Duration:** 56 min

**Line Summary:** Day Creek At Foothill, Day Creek @ North Main Nb FS, Church @ Day Creek Wb FS, Church @ Rochester Wb FS, Church @ Malaga Wb FS, Milliken @ Church Sb FS, Milliken @ Foothill Sb FS, Milliken @ Arrow Sb FS, Milliken @ Jersey Sb FS, Rancho Cucamonga Metrolink Sb FS, Milliken @ 6th Sb FS, Milliken @ 5th Sb FS, Milliken And 4th St, Ontario Mills Nb FS, Milliken @ Airport Sb FS, Milliken @ Santa Ana Sb FS, Milliken @ Lowell Sb FS, Jurupa @ Milliken, Jurupa @ Rockefeller Eb FS, Jurupa @ Auto Ctr, Jurupa @ Vintage Eb FS, Jurupa @ Vintage Eb FS, Jurupa @ Champagne Eb FS, Jurupa @ Etiwanda Eb FS, Jurupa @ Pacific Eb FS, Mulberry @ Jurupa Sb FS, Mulberry @ Marley Sb FS, Cherry @ Mulberry Eb Lat, Cherry @ Rancherias Eb FS, Cherry @ Banana Eb FS, Cherry @ Live Oak Eb FS, Cherry @ Canyon Crest Eb FS, Cherry @ Live Oak Nb FS, Cherry @ Village Eb FS, Cherry @ Southwood Eb FS, Jurupa @ Cherry Eb FS, Jurupa @ Live Oak Eb FS, Jurupa @ Hemlock Eb FS, Jurupa @ Beech Eb FS, Jurupa @ Eb FS Elm, Jurupa @ Poplar Eb FS, Jurupa @ Catwaba Eb FS, Jurupa @ Citrus Eb FS, Jurupa @

South Milliken Avenue, Ontario

**Milliken @ Lowell Sb FS**

Lowell Street, Ontario

**Jurupa @ Milliken**

**Jurupa @ Rockefeller Eb FS**

**Jurupa @ Auto Ctr**

**Jurupa @ Vintage Eb FS**

**Jurupa @ Vintage Eb FS**

**Jurupa @ Champagne Eb FS**

**Jurupa @ Etiwanda Eb FS**

**Jurupa @ Pacific Eb FS**

**Mulberry @ Jurupa Sb FS**

**Mulberry @ Marley Sb FS**

Marlay Avenue, Fontana

**Cherry @ Mulberry Eb Lat**

12010 Countryside Dr, Fontana

**Cherry @ Rancherias Eb FS**

13964 Hillcrest Dr, Fontana

**Cherry @ Banana Eb FS**

11837 Banana Ave, Fontana

**Cherry @ Live Oak Eb FS**

Cherry Avenue East, Fontana

**Cherry @ Canyon Crest Eb FS**

14545 El Contenido Ave, Fontana

**Cherry @ Live Oak Nb FS**

**Cherry @ Village Eb FS**

**Cherry @ Southwood Eb FS**

14520 Southwood Dr, Fontana

**Jurupa @ Cherry Eb FS**

14560 Woodland Dr, Fontana

**Jurupa @ Live Oak Eb FS**

14918 Colby Pl, Fontana

**Jurupa @ Hemlock Eb FS**

**Jurupa @ Beech Eb FS**

11328 Fremontia Way, Fontana

Oleander Eb Lat, Jurupa @ Cypress Eb FS, Jurupa @ Juniper Eb FS, Sierra @ Jurupa Nb FS, Sierra @ Underwood Nb FS, Sierra @ Santa Ana Nb FS, Sierra @ Technology Nb Ns, Slover @ Sierra Eb FS, Palm Court Eb FS, Sierra And Permanete, Sierra At Marygold, Sierra At San Bernardino, Sierra At Holly, Sierra At Randall, Sierra At Merrill, Fontana Metrolink, Sierra At Arrow, Sierra At Civic Center, Sierra And Foothill, Sierra And Reed, Sierra @ Miller Nb FS, Sierra And San Jacinto, Sierra And Baseline, Sierra At Walnut, Sierra @ Highland Nb Ns, Sierra Lakes @ Sierra Wb FS, Sierra Lakes @ Tiburon Wb FS, Citrus @ Sierra Lakes Pkwy, Citrus @ Muirfield, Summit @ Citrus, Summit @ Lytle Creek



**Jurupa @ Eb FS Elm**

11310 Melba Ct, Fontana

**Jurupa @ Poplar Eb FS****Jurupa @ Catwaba Eb FS**

15882 Del Obispo Rd, Fontana

**Jurupa @ Citrus Eb FS**

16128 Coleen St, Fontana

**Jurupa @ Oleander Eb Lat**

16308 Windcrest Dr, Fontana

**Jurupa @ Cypress Eb FS**

16526 Windcrest Dr, Fontana

**Jurupa @ Juniper Eb FS**

16716 Windcrest Dr, Fontana

**Sierra @ Jurupa Nb FS****Sierra @ Underwood Nb FS**

11068 White Oak Ln, Fontana

**Sierra @ Santa Ana Nb FS****Sierra @ Technology Nb Ns**

16890 Ash Dr, Fontana

**Slover @ Sierra Eb FS****Palm Court Eb FS****Sierra And Permanete****Sierra At Marygold**

9885 Sierra Ave, Fontana

**Sierra At San Bernardino**

9699 Sierra Ave, Fontana

**Sierra At Holly**

9511 Sierra Ave, Fontana

**Sierra At Randall**

9291 Sierra Ave, Fontana

**Sierra At Merrill**

8921 Sierra Ave, Fontana

**Fontana Metrolink**

Orange Way, Fontana

**Sierra At Arrow**

8521 Sierra Ave, Fontana

**Sierra At Civic Center**

8413 Sierra Ave, Fontana

**Sierra And Foothill**

16925 Foothill Blvd, Fontana

**Sierra And Reed**

7926 Sierra Ave, Fontana

**Sierra @ Miller Nb FS**

7695 Sierra Ave, Fontana

**Sierra And San Jacinto**

7502 Sleepy Creek Ave, Fontana

**Sierra And Baseline****Sierra At Walnut**

6894 Wheeler Ct, Fontana

**Sierra @ Highland Nb Ns**

6665 Sierra Ave, Fontana

**Sierra Lakes @ Sierra Wb FS**

16877 Somerset Ln, Fontana

**Sierra Lakes @ Tiburon Wb FS**

16605 Canyon Lake Ln, Fontana

**Citrus @ Sierra Lakes Pkwy**

16126 Lake Padden Ln, Fontana

**Citrus @ Muirfield**

6004 Forest Oaks Pl, Fontana

**Summit @ Citrus****Summit @ Lytle Creek**

## Direction: Wb-Rancho Cucamonga-Fontana

71 stops

[VIEW LINE SCHEDULE](#)

Summit @ Lytle Creek

Summit @ Falcon Ridge Wb Ns

Falcon Ridge, Fontana

Beech @ Summit Sb FS

5833 Opal Ct, Fontana

Curtis @ Vanessa

15386 Rochelle St, Fontana

Curtis @ Citrus

16119 Anthem Ct, Fontana

Sierra Lakes Parkway @ Citrus Eb FS

Sierra Lakes Pkwy @ Tiburon Eb FS

16263 Starfire Ln, Fontana

Sierra Lakes Pkwy @ Augusta Eb FS

16815 Somerset Ln, Fontana

Sierra @ Highland Sb FS

Sierra @ Walnut

6923 Alderwood Dr, Fontana

Sierra & Baseline Sb Ns

Sierra And Baseline

Sierra And San Jacinto

7520 Sleepy Creek Ave, Fontana

Sierra @ Miller Sb FS

16889 Miller Ave, Fontana

Sierra And Barbee

7980 Sierra Ave, Fontana

Sierra At Foothill

Foothill Boulevard, Fontana

Sierra At Upland

Sierra At Spring/Arrow

8456 Sierra Ave, Fontana

Fontana Metrolink

Orange Way, Fontana

Sierra @ Merrill Sb FS

## 82 bus Time Schedule

Wb-Rancho Cucamonga-Fontana Route Timetable:

Sunday	7:16 AM - 6:09 PM
Monday	4:33 AM - 8:45 PM
Tuesday	4:33 AM - 8:45 PM
Wednesday	4:33 AM - 8:45 PM
Thursday	4:33 AM - 8:45 PM
Friday	4:33 AM - 8:45 PM
Saturday	7:14 AM - 6:35 PM

## 82 bus Info

**Direction:** Wb-Rancho Cucamonga-Fontana

**Stops:** 71

**Trip Duration:** 67 min

**Line Summary:** Summit @ Lytle Creek, Summit @ Falcon Ridge Wb Ns, Beech @ Summit Sb FS, Curtis @ Vanessa, Curtis @ Citrus, Sierra Lakes Parkway @ Citrus Eb FS, Sierra Lakes Pkwy @ Tiburon Eb FS, Sierra Lakes Pkwy @ Augusta Eb FS, Sierra @ Highland Sb FS, Sierra @ Walnut, Sierra & Baseline Sb Ns, Sierra And Baseline, Sierra And San Jacinto, Sierra @ Miller Sb FS, Sierra And Barbee, Sierra At Foothill, Sierra At Upland, Sierra At Spring/Arrow, Fontana Metrolink, Sierra @ Merrill Sb FS, Sierra At Athol, Sierra At Randall, Sierra At Holly, Sierra At Marygold, Sierra Across Kaiser Sb FS, Slover @ Sierra Eb FS, Palm Court Eb FS, Sierra @ Slover Sb FS, Sierra @ Ash Sb Ns, Sierra @ Santa Ana Sb FS, Sierra @ Underwood Sb Ns, Jurupa @ Sierra Wb FS, Jurupa @ Cypress Wb Ns, Jurupa @ Oleander Wb FS, Jurupa @ Citrus Wb FS, Jurupa @ Catawba Wb FS, Jurupa @ Poplar Wb FS, Jurupa @ Elm Wb FS, Jurupa @ Beech Wb FS, Jurupa @ Hemlock Wb FS, Jurupa @ Live Oak Wb FS, Cherry @ Jurupa Sb FS, Cherry @ Southwood Sb FS, Cherry @ Village Sb FS, Cherry @ Live Oak Sb FS, Cherry @ Canyon Crest Sb FS, Cherry @ Live Oak Wb FS, Cherry @ Banana Wb FS, Cherry @ Rancherias Wb FS, Cherry @ Southridge Wb FS, Mulberry @ El Contento Nb FS, Mulberry @ Marlay, Jurupa @ Mulberry Wb FS, Jurupa @ Pacific Wb Ns, Jurupa @ Etiwanda, Jurupa @ Champagne Wb FS, Jurupa @ Vinatage Wb Ns, Jurupa @ Auto Ctr, Jurupa @ Rockefeller Wb Ns, Milliken @ Jurupa Nb FS, Milliken @ Santa Ana Nb FS, Milliken @ Airport Nb FS, Ontario Mills Nb FS, Milliken At 4th Street, Milliken @ 6th St Nb FS, Rancho Cucamonga Metrolink Sb FS, Milliken At Jersey, Milliken @ Arrow Nb FS, Foothill And Milliken, Foothill At Masi, Day Creek At Foothill



8921 Sierra Ave, Fontana

**Sierra At Athol**

**Sierra At Randall**

9311 Sierra Ave, Fontana

**Sierra At Holly**

9559 Sierra Ave, Fontana

**Sierra At Marygold**

**Sierra Across Kaiser Sb FS**

**Slover @ Sierra Eb FS**

**Palm Court Eb FS**

**Sierra @ Slover Sb FS**

**Sierra @ Ash Sb Ns**

16890 Ash Dr, Fontana

**Sierra @ Santa Ana Sb FS**

10918 Sierra Ave, Fontana

**Sierra @ Underwood Sb Ns**

**Jurupa @ Sierra Wb FS**

11290 Sierra Ave, Fontana

**Jurupa @ Cypress Wb Ns**

**Jurupa @ Oleander Wb FS**

16300 Windcrest Dr, Fontana

**Jurupa @ Citrus Wb FS**

**Jurupa @ Catawba Wb FS**

15882 Del Obispo Rd, Fontana

**Jurupa @ Poplar Wb FS**

**Jurupa @ Elm Wb FS**

**Jurupa @ Beech Wb FS**

**Jurupa @ Hemlock Wb FS**

**Jurupa @ Live Oak Wb FS**

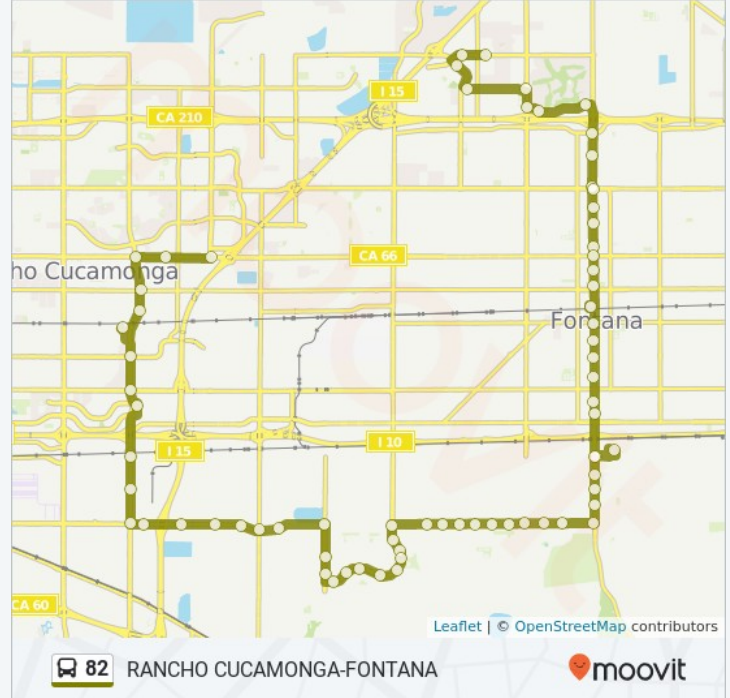
**Cherry @ Jurupa Sb FS**

11335 Dogwood Ct, Fontana

**Cherry @ Southwood Sb FS**

11455 Dogwood Ct, Fontana

**Cherry @ Village Sb FS**



**Cherry @ Live Oak Sb FS**

14558 Autumn Pl, Fontana

**Cherry @ Canyon Crest Sb FS**

14541 El Contento Ave, Fontana

**Cherry @ Live Oak Wb FS**

11891 Safiro Ct, Fontana

**Cherry @ Banana Wb FS**

14116 Hillcrest Dr, Fontana

**Cherry @ Rancherias Wb FS**

13961 El Contento Ave, Fontana

**Cherry @ Southridge Wb FS**

13803 Mesquite Dr, Fontana

**Mulberry @ El Contento Nb FS**

11920 Cactus Ct, Fontana

**Mulberry @ Marlay**

Marlay Avenue, Fontana

**Jurupa @ Mulberry Wb FS****Jurupa @ Pacific Wb Ns****Jurupa @ Etiwanda****Jurupa @ Champagne Wb FS****Jurupa @ Vinatage Wb Ns****Jurupa @ Auto Ctr****Jurupa @ Rockefeller Wb Ns**

4525 East Jurupa Street, Ontario

**Milliken @ Jurupa Nb FS****Milliken @ Santa Ana Nb FS**

South Milliken Avenue, Ontario

**Milliken @ Airport Nb FS****Ontario Mills Nb FS****Milliken At 4th Street****Milliken @ 6th St Nb FS****Rancho Cucamonga Metrolink Sb FS**

-- --, Rancho Cucamonga

**Milliken At Jersey****Milliken @ Arrow Nb FS**

Arrow Route, Rancho Cucamonga

## **Foothill And Milliken**

Milliken Avenue, Rancho Cucamonga

## **Foothill At Masi**

## **Day Creek At Foothill**

82 bus time schedules and route maps are available in an offline PDF at moovit.com. Use the [Moovit App](#) to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Los Angeles.

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## Check Live Arrival Times





# CHINO-MONTCLAIR-CHAFFEY COLLEGE

[View In Website Mode](#)

The 85 bus line (CHINO-MONTCLAIR-CHAFFEY COLLEGE) has 2 routes. For regular weekdays, their operation hours are: (1) Nb-Chino-Montclair-Chaffey Collge: 4:20 AM - 9:50 PM (2) Sb-Chino-Montclair-Chaffey Collge: 4:32 AM - 10:04 PM Use the Moovit App to find the closest 85 bus station near you and find out when is the next 85 bus arriving.

## Direction: Nb-Chino-Montclair-Chaffey Collge

74 stops

[VIEW LINE SCHEDULE](#)

Chino Transit Center

Central At C St

13071 Central Ave, Chino

Central And Riverside

12899 Central Ave, Chino

Central @ Washington Nb FS

12713 Central Ave, Chino

Central @ Walnut Nb FS

12445 Central Ave, Ontario

Central @ Philadelphia Nb FS

Philadelphia Street, Ontario

Central @ Country Fair Nb Mid

11901 Central Ave, Chino

Central @ Francis Nb FS

Central @ Phillips Nb Ns

Central And Phillips

Central @ Howard Nb Ns

11115 Central Ave, San Bernardino County

Central @ Mission Nb FS

5300 Mission Blvd, San Bernardino County

Central @ Holt Nb FS

Central @ Kinglsey Nb FS

10285 Central Ave, Montclair

Central @ Orchard Nb FS

## 85 bus Time Schedule

Nb-Chino-Montclair-Chaffey Collge Route Timetable:

Sunday	6:00 AM - 6:00 PM
Monday	4:20 AM - 9:50 PM
Tuesday	4:20 AM - 9:50 PM
Wednesday	4:20 AM - 9:50 PM
Thursday	4:20 AM - 9:50 PM
Friday	4:20 AM - 9:50 PM
Saturday	6:00 AM - 6:00 PM

## 85 bus Info

**Direction:** Nb-Chino-Montclair-Chaffey Collge

**Stops:** 74

**Trip Duration:** 81 min

**Line Summary:** Chino Transit Center, Central At C St, Central And Riverside, Central @ Washington Nb FS, Central @ Walnut Nb FS, Central @ Philadelphia Nb FS, Central @ Country Fair Nb Mid, Central @ Francis Nb FS, Central @ Phillips Nb Ns, Central And Phillips, Central @ Howard Nb Ns, Central @ Mission Nb FS, Central @ Holt Nb FS, Central @ Kinglsey Nb FS, Central @ Orchard Nb FS, Central @ Benito Nb FS, San Bernardino @ Central Wb FS, San Bernardino @ Fremont Wb FS, San Bernardino @ Monte Vista Wb Ns, Monte Vista @ Palo Verde Nb Ns, Monte Vista @ Plaza Lane Nb FS, Monte Vista And Moreno, Montclair Trans Center Eb FS, Central @ 9th St Nb FS, Arrow And Drake, Arrow And Benson, Arrow And Fairwood, Arrow And Silverwood, Arrow And Mountain, Arrow And Coventry Sq, Arrow And San Antonio, Arrow @ Palm Eb FS, Arrow And Euclid, Arrow And 2nd, Arrow And 5th, San Bernardino And Arrow, San Bernardino @ 11th Eb FS, San Bernardino And Thirteenth, Grove And San Bernardino, Arrow @ Grove Eb FS, Arrow And Sierra Madre, Arrow And Hyacinth, Arrow @ Madrone Eb FS, Arrow @

10087 Central Ave, Montclair

**Central @ Benito Nb FS**

9885 Central Ave, Montclair

**San Bernardino @ Central Wb FS**

9690 Central Ave, Montclair

**San Bernardino @ Fremont Wb FS**

9712 Fremont Ave, Montclair

**San Bernardino @ Monte Vista Wb Ns**

9711 Monte Vista Ave, Montclair

**Monte Vista @ Palo Verde Nb Ns**

4886 Yale St, Montclair

**Monte Vista @ Plaza Lane Nb FS**

4910 S Plaza Ln, Montclair

**Monte Vista And Moreno**

9042 Sycamore Ave, Montclair

**Montclair Trans Center Eb FS**

**Central @ 9th St Nb FS**

8720 Central Ave, Montclair

**Arrow And Drake**

462 Drake, Upland

**Arrow And Benson**

1589 Corte Hacienda, Upland

**Arrow And Fairwood**

1424 W Arrow Way, Upland

**Arrow And Silverwood**

492 Silverwood Ave, Upland

**Arrow And Mountain**

**Arrow And Coventry Sq**

960 W Arrow Hwy, Upland

**Arrow And San Antonio**

795 West Arrow Highway, Upland

**Arrow @ Palm Eb FS**

78 W Arrow, Upland

**Arrow And Euclid**

101 Arrow Hwy, Upland

**Arrow And 2nd**

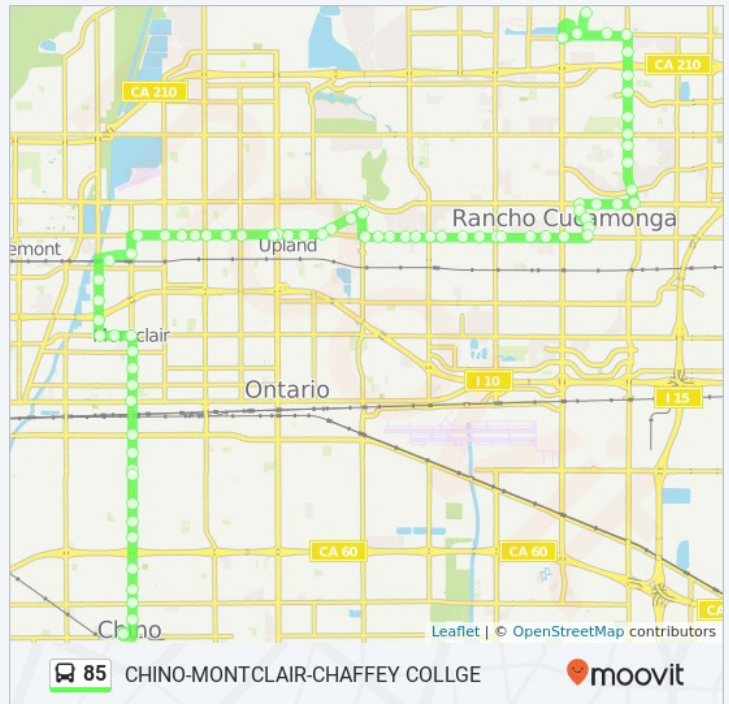
234 Arrow Hwy, Upland

**Arrow And 5th**

524 E Arrow, Upland

**San Bernardino And Arrow**

Highridge Eb Ns, Arrow And Vineyard, Arrow And Bear Gulch, Hellman And Arrow, Arrow Route @ Business Center Eb Ns, Arrow And Archibald, Arrow @ Malvern Eb Ns, Arrow @ Hermosa Eb FS, Arrow @ Center Eb Ns, Arrow @ Haven Eb FS, Red Oak @ Arrow Nb FS, Red Oak @ Civic Center Nb FS, Aspen @ Red Oak Wb FS, Aspen @ Laurel Nb Ns, Foothill @ Aspen Eb FS, Foothill And Spruce, Foothill @ Elm Eb FS, Milliken @ Foothill Nb FS, Milliken @ Church Nb FS, Milliken @ Mountain View Nb FS, Milliken @ Terra Vista Nb FS, Milliken @ Baseline Nb FS, Milliken @ Pacific Electric Trail N, Milliken @ Victoria Park Nb FS, Milliken @ Kenyon Nb FS, Milliken @ Vintage Nb FS, Banyan @ Milliken Wb FS, Banyan @ Fredericksburg Wb FS, Banyan @ Muscat Wb FS, Haven At Banyan, Chaffey College Wb FS



900 San Bernardino Rd, Upland

**San Bernardino @ 11th Eb FS**

**San Bernardino And Thirteenth**

Warder Circle, Upland

**Grove And San Bernardino**

**Arrow @ Grove Eb FS**

8132 Arrow, Upland

**Arrow And Sierra Mardre**

8289 Arrow Rt, Upland

**Arrow And Hyacinth**

8511 Hyacinth St, Upland

**Arrow @ Madrone Eb FS**

8631 Arrow, Upland

**Arrow @ Highridge Eb Ns**

-- --, Upland

**Arrow And Vineyard**

**Arrow And Bear Gulch**

9047 Arrow Rt, Rancho Cucamonga

**Hellman And Arrow**

9325 Calle Vejar, Rancho Cucamonga

**Arrow Route @ Business Center Eb Ns**

9507 Arrow Rt, Rancho Cucamonga

**Arrow And Archibald**

8522 Archibald Av, Rancho Cucamonga

**Arrow @ Malvern Eb Ns**

9759 Arrow Rt, Rancho Cucamonga

**Arrow @ Hermosa Eb FS**

10151 Arrow Rte Unit 133, Rancho Cucamonga

**Arrow @ Center Eb Ns**

10312 Sparkling Dr, Rancho Cucamonga

**Arrow @ Haven Eb FS**

8575 Haven Ave, Rancho Cucamonga

**Red Oak @ Arrow Nb FS**

8480 Red Oak St, Rancho Cucamonga

**Red Oak @ Civic Center Nb FS**

**Aspen @ Red Oak Wb FS**

Red Oak Street, Rancho Cucamonga

**Aspen @ Laurel Nb Ns**

**Foothill @ Aspen Eb FS****Foothill And Spruce**

Spruce Avenue, Rancho Cucamonga

**Foothill @ Elm Eb FS****Milliken @ Foothill Nb FS**

Milliken Avenue, Rancho Cucamonga

**Milliken @ Church Nb FS**

11450 Church St, Rancho Cucamonga

**Milliken @ Mountain View Nb FS**

7612 Merlin Ct, Rancho Cucamonga

**Milliken @ Terra Vista Nb FS**

7385 Milliken Ave, Rancho Cucamonga

**Milliken @ Baseline Nb FS**

11331 Broken Branch Dr, Rancho Cucamonga

**Milliken @ Pacific Electric Trail N**

-- --, Rancho Cucamonga

**Milliken @ Victoria Park Nb FS**

6790 Sommerstone Ct, Rancho Cucamonga

**Milliken @ Kenyon Nb FS**

Kenyon Way, Rancho Cucamonga

**Milliken @ Vintage Nb FS**

11313 Mt Wallace Ct, Rancho Cucamonga

**Banyan @ Milliken Wb FS**

11290 Crestridge Ct, Rancho Cucamonga

**Banyan @ Fredericksburg Wb FS**

11021 Appomattox Ct, Rancho Cucamonga

**Banyan @ Muscat Wb FS**

-- --, Rancho Cucamonga

**Haven At Banyan**

10519 Merlot Ct, Rancho Cucamonga

**Chaffey College Wb FS**

Magnolia Way, Rancho Cucamonga



## Direction: Sb-Chino-Montclair-Chaffey Collge

74 stops

[VIEW LINE SCHEDULE](#)

### Chaffey College Wb FS

Magnolia Way, Rancho Cucamonga

### Banyan @ Haven Eb FS

6124 Dakota Av, Rancho Cucamonga

### Banyan @ Muscat

6071 Muscat Pl, Rancho Cucamonga

### Banyan @ Fredericksberg Eb FS

6095 Haven Ave, Rancho Cucamonga

### Milliken @ Banyan Sb FS

11290 Crestridge Ct, Rancho Cucamonga

### Milliken @ Vintage Sb FS

6301 Silverwood Pl, Rancho Cucamonga

### Milliken @ Kenyon Sb FS

Kenyon Way, Rancho Cucamonga

### Milliken @ Victoria Sb FS

6825 Shelton Ct, Rancho Cucamonga

### Milliken @ Pacific Electric Trail S

-- --, Rancho Cucamonga

### Milliken @ Baseline Sb FS

### Milliken @ Terra Vista Sb FS

11266 Terra Vista Pkwy, Rancho Cucamonga

### Milliken @ Mountain View Sb FS

-- --, Rancho Cucamonga

### Milliken @ Church Sb FS

### Foothill And Milliken

Milliken Avenue, Rancho Cucamonga

### Foothill @ Elm Wb FS

11096 Foothill Blvd, Rancho Cucamonga

### Foothill @ Spruce Wb FS

Spruce Avenue, Rancho Cucamonga

### Aspen @ Laurel Sb FS

8153 Aspen Avenue, Rancho Cucamonga

### Red Oak @ Aspen Sb FS

Red Oak Street, Rancho Cucamonga

### Arrow @ Red Oak Wb FS

## 85 bus Time Schedule

Sb-Chino-Montclair-Chaffey Collge Route Timetable:

Sunday	6:32 AM - 6:32 PM
Monday	4:32 AM - 10:04 PM
Tuesday	4:32 AM - 10:04 PM
Wednesday	4:32 AM - 10:04 PM
Thursday	4:32 AM - 10:04 PM
Friday	4:32 AM - 10:04 PM
Saturday	6:30 AM - 6:30 PM

## 85 bus Info

**Direction:** Sb-Chino-Montclair-Chaffey Collge

**Stops:** 74

**Trip Duration:** 81 min

**Line Summary:** Chaffey College Wb FS, Banyan @ Haven Eb FS, Banyan @ Muscat, Banyan @ Fredericksberg Eb FS, Milliken @ Banyan Sb FS, Milliken @ Vintage Sb FS, Milliken @ Kenyon Sb FS, Milliken @ Victoria Sb FS, Milliken @ Pacific Electric Trail S, Milliken @ Baseline Sb FS, Milliken @ Terra Vista Sb FS, Milliken @ Mountain View Sb FS, Milliken @ Church Sb FS, Foothill And Milliken, Foothill @ Elm Wb FS, Foothill @ Spruce Wb FS, Aspen @ Laurel Sb FS, Red Oak @ Aspen Sb FS, Arrow @ Red Oak Wb FS, Arrow @ Haven Eb FS, Arrow And Center, Arrow And Hermosa, Arrow @ Malvern Wb FS, Archibald And Arrow, Arrow Route @ Malachite Wb Ns, Arrow @ Hellman Wb FS, Arrow And Bear Gulch, Arrow And Vineyard, Arrow @ Manola Wb Ns, Arrow And Comet, Arrow And Sierra Madre, Grove @ Arrow Nb FS, San Bernardino At Grove, San Bernardino At 13th, San Antonio Hospital Wb FS, San Bernardino And Arrow, Arrow And 5th, Arrow And 2nd, Arrow And Euclid, Arrow And Shasta, Arrow And San Antonio, Arrow And Maple, Arrow And Mountain, Arrow And Mountain, Arrow And Silverwood, Arrow And Fairwood, Arrow And Benson, Arrow And Loma, Central And Arrow, Richton And Central, Montclair Trans Center Eb FS, Monte Vista @ Arrow Sb FS, Monte Vista @ Moreno Sb FS, Monte Vista @ San Jose Sb Ns, Monte Vista @ Princeton Sb FS, San Bernardino @ Monte Vista Eb FS, San Bernardino @ Fremont Eb FS, Central @ San Bernardino Sb FS, Central And Benito, Central @ Orchard Sb FS, Central @ Kingsley Sb FS, Central @ Holt Sb FS, Central And Mission, Central @ Howard Sb FS, Central @ Phillips Sb FS, Central @ Francis Sb FS, Central @ Country Fair Sb Mid, Central @ Philadelphia Sb FS, Central @ Columbus Sb FS, Central @ Walnut Sb FS, Central @ Park Sb FS, Central And Riverside, Central And Cst, Chino Transit Center

8480 Red Oak St, Rancho Cucamonga

### Arrow @ Haven Eb FS

Arrow Route, Rancho Cucamonga

### Arrow And Center

-- --, Rancho Cucamonga

### Arrow And Hermosa

10080 Arrow Rt, Rancho Cucamonga

### Arrow @ Malvern Wb FS

9759 Arrow Rt, Rancho Cucamonga

### Archibald And Arrow

8520 Archibald Ave, Rancho Cucamonga

### Arrow Route @ Malachite Wb Ns

9531 Calle Vejar, Rancho Cucamonga

### Arrow @ Hellman Wb FS

9292 Arrow, Rancho Cucamonga

### Arrow And Bear Gulch

### Arrow And Vineyard

8879 Bayberry Dr, Upland

### Arrow @ Manola Wb Ns

8495 Manola Pl, Upland

### Arrow And Comet

8488 Comet St, Upland

### Arrow And Sierra Madre

8262 Arrow Route, Upland

### Grove @ Arrow Nb FS

8111 Avenida Vejar, Upland

### San Bernardino At Grove

### San Bernardino At 13th

1310 San Bernardino Rd, Upland

### San Antonio Hospital Wb FS

### San Bernardino And Arrow

506 N 8th Ave, Upland

### Arrow And 5th

510 E 10th St, Upland

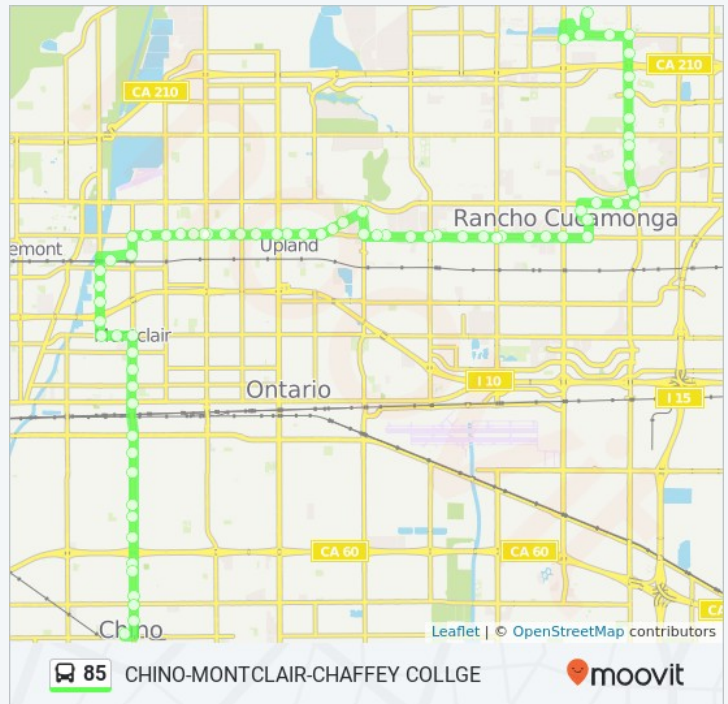
### Arrow And 2nd

177 E Arrow Hwy, Upland

### Arrow And Euclid

100 Arrow Hwy, Upland

### Arrow And Shasta



499 Arrow Rte, Upland

**Arrow And San Antonio**

795 West Arrow Highway, Upland

**Arrow And Maple**

983 W Arrow, Upland

**Arrow And Mountain**

530 Mountain Ave, Upland

**Arrow And Mountain**

519 Mountain Ave, Upland

**Arrow And Silverwood**

1319 W Arrow Hwy, Upland

**Arrow And Fairwood**

1457 W Arrow Hwy, Upland

**Arrow And Benson**

1589 Corte Hacienda, Upland

**Arrow And Loma**

8484 Loma Pl, Upland

**Central And Arrow**

499 N Central Ave, Upland

**Richton And Central**

8720 Central Ave, Montclair

**Montclair Trans Center Eb FS**

**Monte Vista @ Arrow Sb FS**

4877 Arrow Hwy, Montclair

**Monte Vista @ Moreno Sb FS**

9142 Monte Vista Ave, Montclair

**Monte Vista @ San Jose Sb Ns**

9305 Mesa Verde Dr, Montclair

**Monte Vista @ Princeton Sb FS**

4886 Cambridge St, Montclair

**San Bernardino @ Monte Vista Eb FS**

9711 Monte Vista Ave, Montclair

**San Bernardino @ Fremont Eb FS**

9701 Fremont Ave, Montclair

**Central @ San Bernardino Sb FS**

9700 Central Ave, Montclair

**Central And Benito**

9916 Central Ave, Montclair

**Central @ Orchard Sb FS**

10120 Central Ave, Montclair

**Central @ Kingsley Sb FS**

10310 Central Ave, Montclair

**Central @ Holt Sb FS**

5295 Holt Blvd, Montclair

**Central And Mission****Central @ Howard Sb FS**

11115 Ada Ave, Montclair

**Central @ Phillips Sb FS**

5276 Phillips Blvd, Montclair

**Central @ Francis Sb FS**

5290 Francis St, Chino

**Central @ Country Fair Sb Mid**

11844 Central Ave, Chino

**Central @ Philadelphia Sb FS**

Philadelphia Street, Ontario

**Central @ Columbus Sb FS**

12400 Central Ave, Ontario

**Central @ Walnut Sb FS**

12510 Central Ave, Ontario

**Central @ Park Sb FS**

12794 Central Ave, Chino

**Central And Riverside**

12900 Central Ave, Chino

**Central And Cst**

13106 Central Ave, Chino

**Chino Transit Center**

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## Check Live Arrival Times





# S.ONTARIO-CAMPUS-SAN ANTONIO HOSP

[View In Website Mode](#)

The 86 bus line (S.ONTARIO-CAMPUS-SAN ANTONIO HOSP) has 2 routes. For regular weekdays, their operation hours are:

(1) Nb-S.Ontario-Campus-San Antonio Hosp: 4:57 AM - 8:57 PM (2) Sb-S.Ontario-Campus-San Antonio Hosp: 5:12 AM - 8:08 PM

Use the Moovit App to find the closest 86 bus station near you and find out when is the next 86 bus arriving.

**Direction: Nb-S.Ontario-Campus-San Antonio Hosp**

46 stops

[VIEW LINE SCHEDULE](#)

Riverside @ Vineyard Wb FS

Walnut @ Baker Eb FS  
2620 Quaker Ridge Pl, Ontario

Vineyard @ Raymond Kay Way

Vineyard @ Cedar Nb FS  
1957 Vineyard Ave, Ontario

Francis @ Vineyard Wb FS

Francis @ Baker Wb FS

Francis And Parco  
E Francis St, Ontario

Francis @ Grove Wb Ns

Francis @ Cucamonga Wb FS

Bon View @ Francis Nb FS

Baldy View Rop Nb Mid

Bon View @ Woodlawn Nb Ns

Bon View @ Maitland Nb Lat  
933 Bon View Ave, Ontario

Mission @ Bon View Wb FS  
814 Bon View Ave, Ontario

Mission @ Campus Wb FS

**86 bus Time Schedule**

Nb-S.Ontario-Campus-San Antonio Hosp Route  
Timetable:

Sunday	Not Operational
Monday	4:57 AM - 8:57 PM
Tuesday	4:57 AM - 8:57 PM
Wednesday	4:57 AM - 8:57 PM
Thursday	4:57 AM - 8:57 PM
Friday	4:57 AM - 8:57 PM
Saturday	Not Operational

**86 bus Info**

**Direction:** Nb-S.Ontario-Campus-San Antonio Hosp  
**Stops:** 46

**Trip Duration:** 50 min

**Line Summary:** Riverside @ Vineyard Wb FS, Walnut @ Baker Eb FS, Vineyard @ Raymond Kay Way, Vineyard @ Cedar Nb FS, Francis @ Vineyard Wb FS, Francis @ Baker Wb FS, Francis And Parco, Francis @ Grove Wb Ns, Francis @ Cucamonga Wb FS, Bon View @ Francis Nb FS, Baldy View Rop Nb Mid, Bon View @ Woodlawn Nb Ns, Bon View @ Maitland Nb Lat, Mission @ Bon View Wb FS, Mission @ Campus Wb FS, Mission @ Sultana Wb FS, Euclid @ Holt, D St @ Euclid Eb FS, D St @ Sultana Eb Ns, Campus @ Dst Nb FS, Campus At Est, Campus @ G Nb FS, Campus @ I St Nb FS, Campus @ 4th Nb Ns, 4th @ Allyn Eb FS, 4th @ Cucamonga Eb FS, 4th @ Calaveras Eb Ns, Baker @ 4th Nb FS, Baker @ 5th Nb FS, 6th @ Baker Wb FS, 6th @ Grove Wb FS, 6th @ Holmes Wb Ns, 6th @ Hope Wb FS, Campus @ 6th Nb FS, Campus @ 7th Nb FS, Campus @ 8th Nb FS, Campus At 9th St, Campus At Arrow, Campus @ 11th Nb FS, Campus @ Mesa Nb FS, Foothill At Hospital Pkwy, Foothill At

West Mission Boulevard, Ontario

**Mission @ Sultana Wb FS**

426 E California St, Ontario

**Euclid @ Holt**

North Euclid Avenue, Ontario

**D St @ Euclid Eb FS**

334 N Euclid Ave, Ontario

**D St @ Sultana Eb Ns**

423 E D St, Ontario

**Campus @ Dst Nb FS**

703 E D St, Ontario

**Campus At Est**

703 E E St, Ontario

**Campus @ G Nb FS**

703 E G St, Upland

**Campus @ I St Nb FS**

706 Plaza Serena, Upland

**Campus @ 4th Nb Ns**

668 E 4th St, Upland

**4th @ Allyn Eb FS**

908 E 4th St, Ontario

**4th @ Cucamonga Eb FS**

**4th @ Calaveras Eb Ns**

1053 Calaveras Ave, Ontario

**Baker @ 4th Nb FS**

1625 E 4th St, Ontario

**Baker @ 5th Nb FS**

1617 E 5th St, Ontario

**6th @ Baker Wb FS**

1504 Baker Ave, Ontario

**6th @ Grove Wb FS**

1513 Amador Ave, Ontario

**6th @ Holmes Wb Ns**

1034 E 6th St, Upland

**6th @ Hope Wb FS**

831 E 6th St, Ontario

**Campus @ 6th Nb FS**

705 E 6th St, Ontario

**Campus @ 7th Nb FS**

379 N Campus Ave, Upland

Memorial Park, Grove At Foothill, San Bernardino At Grove, San Bernardino At 13th, San Antonio Hospital Wb FS

**Campus @ 8th Nb FS**

208 S Campus Ave, Upland

**Campus At 9th St**

711 E 9th St, Upland

**Campus At Arrow**

504 Campus Ave, Upland

**Campus @ 11th Nb FS**

701 11th St, Upland

**Campus @ Mesa Nb FS**

710 E Foothill Blvd, Upland

**Foothill At Hospital Pkwy****Foothill At Memorial Park****Grove At Foothill**

1490 E Foothill Blvd, Upland

**San Bernardino At Grove****San Bernardino At 13th**

1310 San Bernardino Rd, Upland

**San Antonio Hospital Wb FS**



**Direction: Sb-S.Ontario-Campus-San Antonio Hosp**

41 stops

[VIEW LINE SCHEDULE](#)

**San Antonio Hospital Wb FS**

**San Bernardino And Arrow**

506 N 8th Ave, Upland

**Campus And Arrow**

690 E Arrow, Upland

**Campus @ A Sb Ns**

125 N Campus Ave, Upland

**Campus @ 8th Sb FS**

208 S Campus Ave, Upland

**Campus @ 7th Sb FS**

694 E 7th St, Upland

**6th @ Campus Eb FS**

1456 N Campus Ave, Ontario

**6th @ Hope Eb FS**

850 E 6th St, Ontario

**6th @ Holmes Eb FS**

1034 E 6th St, Upland

**6th St @ Grove Eb FS**

1513 Amador Ave, Ontario

**Baker @ 6th Sb FS**

1620 E 6th St, Ontario

**Baker @ 5th Sb FS**

1578 E 5th St, Ontario

**4th @ Baker Wb FS**

1565 E 4th St, Ontario

**4th @ El Dorado Wb FS**

1431 E 4th St, Ontario

**4th @ Grove Wb FS**

1245 E 4th St, Ontario

**4th @ Cucamonga Wb FS**

1066 E 4th St, Ontario

**4th @ Berlyn Wb FS**

4th Street, Ontario

**Campus @ I St Sb Ns**

666 E I St, Upland

**86 bus Time Schedule**

Sb-S.Ontario-Campus-San Antonio Hosp Route

Timetable:

Sunday	Not Operational
Monday	5:12 AM - 8:08 PM
Tuesday	5:12 AM - 8:08 PM
Wednesday	5:12 AM - 8:08 PM
Thursday	5:12 AM - 8:08 PM
Friday	5:12 AM - 8:08 PM
Saturday	Not Operational

**86 bus Info**

**Direction:** Sb-S.Ontario-Campus-San Antonio Hosp

**Stops:** 41

**Trip Duration:** 47 min

**Line Summary:** San Antonio Hospital Wb FS, San Bernardino And Arrow, Campus And Arrow, Campus @ A Sb Ns, Campus @ 8th Sb FS, Campus @ 7th Sb FS, 6th @ Campus Eb FS, 6th @ Hope Eb FS, 6th @ Holmes Eb FS, 6th St @ Grove Eb FS, Baker @ 6th Sb FS, Baker @ 5th Sb FS, 4th @ Baker Wb FS, 4th @ El Dorado Wb FS, 4th @ Grove Wb FS, 4th @ Cucamonga Wb FS, 4th @ Berlyn Wb FS, Campus @ I St Sb Ns, Campus And F St, Campus @ Dst, D @ Lemon Wb FS, Euclid And Dst, Euclid And Holt, Mission @ Euclid Eb FS, Mission @ Sultana Eb Ns, Mission @ Campus Eb Ns, Mission @ Hope Eb Ns, Dorothy A. Quesada Comm Ctr, Bon View @ Woodlawn Sb FS, Bon View @ Woodlawn Sb Mid, Bon View @ Francis Sb Ns, Francis @ Cucamonga Eb Ns, Francis @ Grove Eb Ns, Francis And Parco, Francis @ Baker Eb FS, Vineyard @ Francis Sb FS, Vineyard @ Cedar Sb FS, Vineyard @ Raymond Kay Way, Vineyard @ Walnut Sb Ns, Vineyard @ Merion Sb Ns, Riverside @ Vineyard Wb FS

**Campus And F St**

Campus Avenue, Upland

**Campus @ Dst**

653 E D St, Ontario

**D @ Lemon Wb FS**

North Lemon Avenue, Ontario

**Euclid And Dst**

325 N Euclid Ave, Ontario

**Euclid And Holt**

West Holt Boulevard, Ontario

**Mission @ Euclid Eb FS**

903 S Euclid Ave, Ontario

**Mission @ Sultana Eb Ns**

428 E Carlton St, Ontario

**Mission @ Campus Eb Ns**

909 S Monterey Ave, Ontario

**Mission @ Hope Eb Ns**

838 S Hope Ave, Ontario

**Dorothy A. Quesada Comm Ctr**

1017 Bon View Ave, Ontario

**Bon View @ Woodlawn Sb FS**

862 Woodlawn St, Ontario

**Bon View @ Woodlawn Sb Mid**

**Bon View @ Francis Sb Ns**

**Francis @ Cucamonga Eb Ns**

**Francis @ Grove Eb Ns**

**Francis And Parco**

E Francis St, Ontario

**Francis @ Baker Eb FS**

1706 Francis St, Ontario

**Vineyard @ Francis Sb FS**

**Vineyard @ Cedar Sb FS**

2010 S Vineyard Ave, Ontario

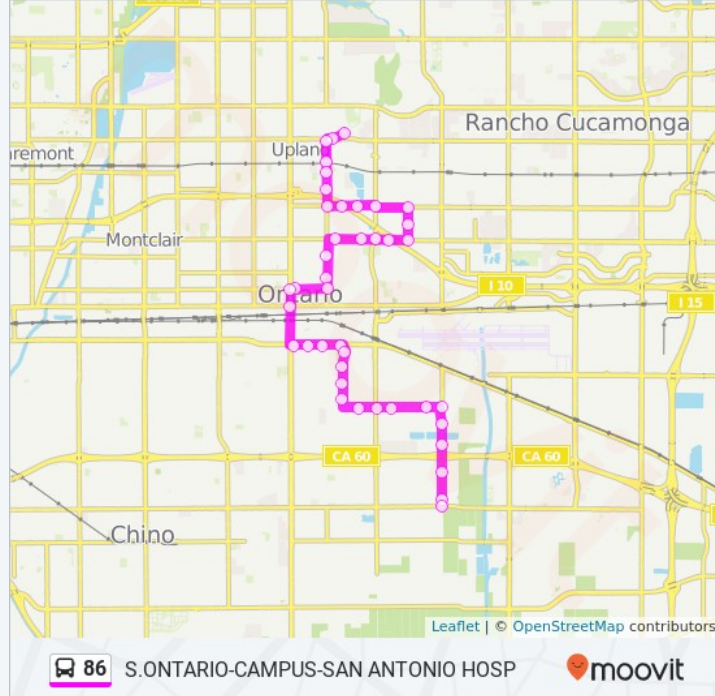
**Vineyard @ Raymond Kay Way**

**Vineyard @ Walnut Sb Ns**

1901 E Boca Raton Ct, Ontario

**Vineyard @ Merion Sb Ns**

1901 Merion Dr, Ontario





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## Check Live Arrival Times



# APPENDIX F

## PASSENGER CAR EQUIVALENT (PCE) VOLUME WORKSHEET

Existing Peak Hour Volumes - Classification Counts

1 Vineyard Ave at Foothill Blvd

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes					Average PCE	Total PCE Volume		
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age				
NL	94	3	0	1	4	4.1%	8	2.0	102	139	3	0	0	3	2.1%	5	1.7	144
NT	614	7	1	0	8	1.3%	13	1.6	627	748	7	1	1	9	1.2%	16	1.8	764
NR	160	4	0	0	4	2.4%	6	1.5	166	218	4	0	1	5	2.2%	9	1.8	227
SL	179	1	0	0	1	0.6%	2	2.0	181	190	1	0	0	1	0.5%	2	2.0	192
ST	790	6	0	1	7	0.9%	12	1.7	802	524	6	0	2	8	1.5%	15	1.9	539
SR	361	4	0	2	6	1.6%	12	2.0	373	259	4	0	0	4	1.5%	6	1.5	265
EL	281	6	0	2	8	2.8%	15	1.9	296	435	6	0	0	6	1.4%	9	1.5	444
ET	484	15	1	1	17	3.4%	28	1.6	512	1,023	15	1	1	17	1.6%	28	1.6	1,051
ER	71	2	1	0	3	4.1%	5	1.7	76	127	2	1	1	4	3.1%	8	2.0	135
WL	144	2	0	0	2	1.4%	3	1.5	147	228	2	0	0	2	0.9%	3	1.5	231
WT	875	15	0	0	15	1.7%	23	1.5	898	662	15	0	0	15	2.2%	23	1.5	685
WR	97	1	0	1	2	2.0%	5	2.5	102	177	1	0	0	1	0.6%	2	2.0	179
									4,282									4,856
North Leg Volumes																		
Approach	1,330	11	0	3	14		26		1,356	973	11	0	2	13		23		996
Depart	992	14	1	3	18		33		1,025	1,360	14	1	1	16		27		1,387
Total	2,322	25	1	6	32	1.4%	59	1.8	2,381	2,333	25	1	3	29	1.2%	50	1.7	2,383
South Leg Volumes																		
Approach	868	14	1	1	16		27		895	1,105	14	1	2	17		30		1,135
Depart	1,005	10	1	1	12		20		1,025	879	10	1	3	14		26		905
Total	1,873	24	2	2	28	1.5%	47	1.7	1,920	1,984	24	2	5	31	1.5%	56	1.8	2,040
East Leg Volumes																		
Approach	1,116	18	0	1	19		31		1,147	1,067	18	0	0	18		28		1,095
Depart	823	20	1	1	22		36		859	1,431	20	1	2	23		39		1,470
Total	1,939	38	1	2	41	2.1%	67	1.6	2,006	2,498	38	1	2	41	1.6%	67	1.6	2,565
West Leg Volumes																		
Approach	836	23	2	3	28		48		884	1,585	23	2	2	27		45		1,630
Depart	1,330	22	0	3	25		43		1,373	1,060	22	0	0	22		34		1,094
Total	2,166	45	2	6	53	2.4%	91	1.7	2,257	2,645	45	2	2	49	1.8%	79	1.6	2,724
All Legs																		
Approach	4,150	66	3	8	77		132		4,282	4,730	66	3	6	75		126		4,856
Depart	4,150	66	3	8	77		132		4,282	4,730	66	3	6	75		126		4,856
Total	8,300	132	6	16	154	1.8%	264	1.7	8,564	9,460	132	6	12	150	1.6%	252	1.7	9,712

Existing Peak Hour Volumes - Classification Counts

2 Baker Ave at Arrow Rte

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	32	0	0	0	0	0.0%	0	0.0	32	27	0	0	0	0	0.0%	0	0.0	27
NT	80	2	0	0	2	2.4%	3	1.5	83	137	0	0	0	0	0.0%	0	0.0	137
NR	56	1	0	0	1	1.8%	2	2.0	58	73	0	0	0	0	0.0%	0	0.0	73
SL	78	0	0	0	0	0.0%	0	0.0	78	46	1	0	0	1	2.1%	2	2.0	48
ST	89	0	0	0	0	0.0%	0	0.0	89	93	1	0	0	1	1.1%	2	2.0	95
SR	53	1	0	0	1	1.9%	2	2.0	55	33	0	0	0	0	0.0%	0	0.0	33
EL	25	1	0	0	1	3.8%	2	2.0	27	42	0	0	0	0	0.0%	0	0.0	42
ET	488	10	2	0	12	2.4%	19	1.6	507	692	2	2	0	4	0.6%	7	1.8	699
ER	36	0	0	0	0	0.0%	0	0.0	36	21	1	0	0	1	4.5%	2	2.0	23
WL	112	1	0	0	1	0.9%	2	2.0	114	10	0	0	0	0	0.0%	0	0.0	10
WT	604	11	0	0	11	1.8%	17	1.5	621	513	7	0	0	7	1.3%	11	1.6	524
WR	69	1	0	0	1	1.4%	2	2.0	71	93	0	0	0	0	0.0%	0	0.0	93
									1,771									1,804
North Leg Volumes																		
Approach	220	1	0	0	1		2		222	172	2	0	0	2		4		176
Depart	174	4	0	0	4		7		181	272	0	0	0	0		0		272
Total	394	5	0	0	5	1.3%	9	1.8	403	444	2	0	0	2	0.4%	4	2.0	448
South Leg Volumes																		
Approach	168	3	0	0	3		5		173	237	0	0	0	0		0		237
Depart	237	1	0	0	1		2		239	124	2	0	0	2		4		128
Total	405	4	0	0	4	1.0%	7	1.8	412	361	2	0	0	2	0.6%	4	2.0	365
East Leg Volumes																		
Approach	785	13	0	0	13		21		806	616	7	0	0	7		11		627
Depart	622	11	2	0	13		21		643	811	3	2	0	5		9		820
Total	1,407	24	2	0	26	1.8%	42	1.6	1,449	1,427	10	2	0	12	0.8%	20	1.7	1,447
West Leg Volumes																		
Approach	549	11	2	0	13		21		570	755	3	2	0	5		9		764
Depart	689	12	0	0	12		19		708	573	7	0	0	7		11		584
Total	1,238	23	2	0	25	2.0%	40	1.6	1,278	1,328	10	2	0	12	0.9%	20	1.7	1,348
All Legs																		
Approach	1,722	28	2	0	30		49		1,771	1,780	12	2	0	14		24		1,804
Depart	1,722	28	2	0	30		49		1,771	1,780	12	2	0	14		24		1,804
Total	3,444	56	4	0	60	1.7%	98	1.6	3,542	3,560	24	4	0	28	0.8%	48	1.7	3,608

Existing Peak Hour Volumes - Classification Counts

3 Vineyard Ave at Arrow Rte

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	54	2	0	0	2	3.6%	3	1.5	57	67	0	0	0	0	0.0%	0	0.0	67
NT	434	8	1	0	9	2.0%	14	1.6	448	746	2	0	2	4	0.5%	9	2.3	755
NR	103	1	0	1	2	1.9%	5	2.5	108	139	1	0	0	1	0.7%	2	2.0	141
SL	187	2	1	0	3	1.6%	5	1.7	192	114	1	1	0	2	1.7%	4	2.0	118
ST	823	5	1	1	7	0.8%	13	1.9	836	511	3	1	3	7	1.4%	16	2.3	527
SR	117	2	0	0	2	1.7%	3	1.5	120	107	2	0	0	2	1.8%	3	1.5	110
EL	116	1	0	0	1	0.9%	2	2.0	118	170	1	0	0	1	0.6%	2	2.0	172
ET	549	9	0	0	9	1.6%	14	1.6	563	621	4	2	0	6	1.0%	10	1.7	631
ER	67	1	0	0	1	1.5%	2	2.0	69	50	0	0	0	0	0.0%	0	0.0	50
WL	177	7	0	4	11	5.9%	23	2.1	200	132	2	0	1	3	2.2%	6	2.0	138
WT	648	8	0	0	8	1.2%	12	1.5	660	562	3	0	0	3	0.5%	5	1.7	567
WR	215	7	0	0	7	3.2%	11	1.6	226	200	1	0	0	1	0.5%	2	2.0	202
									3,597									3,478
North Leg Volumes																		
Approach	1,127	9	2	1	12		21		1,148	732	6	2	3	11		23		755
Depart	765	16	1	0	17		27		792	1,116	4	0	2	6		13		1,129
Total	1,892	25	3	1	29	1.5%	48	1.7	1,940	1,848	10	2	5	17	0.9%	36	2.1	1,884
South Leg Volumes																		
Approach	591	11	1	1	13		22		613	952	3	0	2	5		11		963
Depart	1,067	13	1	5	19		38		1,105	693	5	1	4	10		22		715
Total	1,658	24	2	6	32	1.9%	60	1.9	1,718	1,645	8	1	6	15	0.9%	33	2.2	1,678
East Leg Volumes																		
Approach	1,040	22	0	4	26		46		1,086	894	6	0	1	7		13		907
Depart	839	12	1	1	14		24		863	874	6	3	0	9		16		890
Total	1,879	34	1	5	40	2.1%	70	1.8	1,949	1,768	12	3	1	16	0.9%	29	1.8	1,797
West Leg Volumes																		
Approach	732	11	0	0	11		18		750	841	5	2	0	7		12		853
Depart	819	12	0	0	12		18		837	736	5	0	0	5		8		744
Total	1,551	23	0	0	23	1.5%	36	1.6	1,587	1,577	10	2	0	12	0.8%	20	1.7	1,597
All Legs																		
Approach	3,490	53	3	6	62		107		3,597	3,419	20	4	6	30		59		3,478
Depart	3,490	53	3	6	62		107		3,597	3,419	20	4	6	30		59		3,478
Total	6,980	106	6	12	124	1.7%	214	1.7	7,194	6,838	40	8	12	60	0.9%	118	2.0	6,956



Existing Peak Hour Volumes - Classification Counts

4 Baker Ave at 9th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	50	0	0	0	0	0.0%	0	0.0	50	39	0	0	0	0	0.0%	0	0.0	39
NT	153	3	0	0	3	1.9%	5	1.7	158	199	0	0	0	0	0.0%	0	0.0	199
NR	34	0	1	0	1	2.9%	2	2.0	36	25	0	0	0	0	0.0%	0	0.0	25
SL	36	0	1	0	1	2.7%	2	2.0	38	2	0	0	0	0	0.0%	0	0.0	2
ST	139	2	0	0	2	1.4%	3	1.5	142	162	2	0	0	2	1.2%	3	1.5	165
SR	80	0	0	0	0	0.0%	0	0.0	80	17	0	0	0	0	0.0%	0	0.0	17
EL	57	1	0	0	1	1.7%	2	2.0	59	40	1	0	0	1	2.4%	2	2.0	42
ET	124	2	0	0	2	1.6%	3	1.5	127	169	1	0	0	1	0.6%	2	2.0	171
ER	0	4	0	0	4	100.0%	6	1.5	6	44	0	0	0	0	0.0%	0	0.0	44
WL	31	2	0	0	2	6.1%	3	1.5	34	39	1	1	0	2	4.9%	4	2.0	43
WT	117	2	0	0	2	1.7%	3	1.5	120	143	0	0	0	0	0.0%	0	0.0	143
WR	63	1	1	0	2	3.1%	4	2.0	67	17	0	0	0	0	0.0%	0	0.0	17
									917									907
North Leg Volumes																		
Approach	255	2	1	0	3		5		260	181	2	0	0	2		3		184
Depart	273	5	1	0	6		11		284	256	1	0	0	1		2		258
Total	528	7	2	0	9	1.7%	16	1.8	544	437	3	0	0	3	0.7%	5	1.7	442
South Leg Volumes																		
Approach	237	3	1	0	4		7		244	263	0	0	0	0		0		263
Depart	170	8	0	0	8		12		182	245	3	1	0	4		7		252
Total	407	11	1	0	12	2.9%	19	1.6	426	508	3	1	0	4	0.8%	7	1.8	515
East Leg Volumes																		
Approach	211	5	1	0	6		10		221	199	1	1	0	2		4		203
Depart	194	2	2	0	4		7		201	196	1	0	0	1		2		198
Total	405	7	3	0	10	2.4%	17	1.7	422	395	2	1	0	3	0.8%	6	2.0	401
West Leg Volumes																		
Approach	181	7	0	0	7		11		192	253	2	0	0	2		4		257
Depart	247	2	0	0	2		3		250	199	0	0	0	0		0		199
Total	428	9	0	0	9	2.1%	14	1.6	442	452	2	0	0	2	0.4%	4	2.0	456
All Legs																		
Approach	884	17	3	0	20		33		917	896	5	1	0	6		11		907
Depart	884	17	3	0	20		33		917	896	5	1	0	6		11		907
Total	1,768	34	6	0	40	2.2%	66	1.7	1,834	1,792	10	2	0	12	0.7%	22	1.8	1,814

Existing Peak Hour Volumes - Classification Counts

5 Vineyard Ave at 9th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	59	0	0	0	0	0.0%	0	0.0	59	45	0	0	0	0	0.0%	0	0.0	45
NT	538	11	1	1	13	2.4%	22	1.7	560	871	2	0	1	3	0.3%	6	2.0	877
NR	125	3	2	4	9	6.7%	21	2.3	146	79	3	0	9	12	13.2%	32	2.7	111
SL	59	0	0	2	2	3.3%	6	3.0	65	20	2	0	1	3	13.0%	6	2.0	26
ST	981	13	0	3	16	1.6%	29	1.8	1,010	630	3	2	2	7	1.1%	15	2.1	645
SR	34	1	1	0	2	5.6%	4	2.0	38	47	0	0	0	0	0.0%	0	0.0	47
EL	31	0	0	0	0	0.0%	0	0.0	31	45	0	0	0	0	0.0%	0	0.0	45
ET	121	3	1	0	4	3.2%	7	1.8	128	114	3	0	0	3	2.6%	5	1.7	119
ER	39	0	1	0	1	2.5%	2	2.0	41	28	0	0	0	0	0.0%	0	0.0	28
WL	34	3	1	9	13	27.7%	34	2.6	68	87	3	0	8	11	11.2%	29	2.6	116
WT	84	1	0	0	1	1.2%	2	2.0	86	103	0	1	0	1	1.0%	2	2.0	105
WR	27	1	0	0	1	3.6%	2	2.0	29	57	1	0	1	2	3.4%	5	2.5	62
									2,261									2,226
North Leg Volumes																		
Approach	1,074	14	1	5	20		39		1,113	697	5	2	3	10		21		718
Depart	596	12	1	1	14		24		620	973	3	0	2	5		11		984
Total	1,670	26	2	6	34	2.0%	63	1.9	1,733	1,670	8	2	5	15	0.9%	32	2.1	1,702
South Leg Volumes																		
Approach	722	14	3	5	22		43		765	995	5	0	10	15		38		1,033
Depart	1,054	16	2	12	30		65		1,119	745	6	2	10	18		44		789
Total	1,776	30	5	17	52	2.8%	108	2.1	1,884	1,740	11	2	20	33	1.9%	82	2.5	1,822
East Leg Volumes																		
Approach	145	5	1	9	15		38		183	247	4	1	9	14		36		283
Depart	305	6	3	6	15		34		339	213	8	0	10	18		43		256
Total	450	11	4	15	30	6.3%	72	2.4	522	460	12	1	19	32	6.5%	79	2.5	539
West Leg Volumes																		
Approach	191	3	2	0	5		9		200	187	3	0	0	3		5		192
Depart	177	2	1	0	3		6		183	195	0	1	0	1		2		197
Total	368	5	3	0	8	2.1%	15	1.9	383	382	3	1	0	4	1.0%	7	1.8	389
All Legs																		
Approach	2,132	36	7	19	62		129		2,261	2,126	17	3	22	42		100		2,226
Depart	2,132	36	7	19	62		129		2,261	2,126	17	3	22	42		100		2,226
Total	4,264	72	14	38	124	2.8%	258	2.1	4,522	4,252	34	6	44	84	1.9%	200	2.4	4,452

Existing Peak Hour Volumes - Classification Counts

6 Baker Ave at 8th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	76	0	0	0	0	0.0%	0	0.0	76	32	0	0	0	0	0.0%	0	0.0	32
NT	133	2	0	0	2	1.5%	3	1.5	136	189	2	0	0	2	1.0%	3	1.5	192
NR	41	0	0	0	0	0.0%	0	0.0	41	28	1	0	0	1	3.4%	2	2.0	30
SL	66	2	0	0	2	2.9%	3	1.5	69	31	0	0	0	0	0.0%	0	0.0	31
ST	183	3	0	0	3	1.6%	5	1.7	188	178	3	0	0	3	1.7%	5	1.7	183
SR	44	3	0	0	3	6.4%	5	1.7	49	39	1	1	0	2	4.9%	4	2.0	43
EL	48	0	1	0	1	2.0%	2	2.0	50	49	0	0	0	0	0.0%	0	0.0	49
ET	217	1	0	0	1	0.5%	2	2.0	219	231	1	1	0	2	0.9%	4	2.0	235
ER	36	0	0	0	0	0.0%	0	0.0	36	41	1	0	0	1	2.4%	2	2.0	43
WL	30	0	0	0	0	0.0%	0	0.0	30	36	2	0	0	2	5.3%	3	1.5	39
WT	226	3	0	0	3	1.3%	5	1.7	231	242	1	0	0	1	0.4%	2	2.0	244
WR	55	0	0	0	0	0.0%	0	0.0	55	47	0	0	1	1	2.1%	3	3.0	50
									1,180									1,171
North Leg Volumes																		
Approach	293	8	0	0	8		13		306	248	4	1	0	5		9		257
Depart	236	2	1	0	3		5		241	285	2	0	1	3		6		291
Total	529	10	1	0	11	2.0%	18	1.6	547	533	6	1	1	8	1.5%	15	1.9	548
South Leg Volumes																		
Approach	250	2	0	0	2		3		253	249	3	0	0	3		5		254
Depart	249	3	0	0	3		5		254	255	6	0	0	6		10		265
Total	499	5	0	0	5	1.0%	8	1.6	507	504	9	0	0	9	1.8%	15	1.7	519
East Leg Volumes																		
Approach	311	3	0	0	3		5		316	325	3	0	1	4		8		333
Depart	324	3	0	0	3		5		329	290	2	1	0	3		6		296
Total	635	6	0	0	6	0.9%	10	1.7	645	615	5	1	1	7	1.1%	14	2.0	629
West Leg Volumes																		
Approach	301	1	1	0	2		4		305	321	2	1	0	3		6		327
Depart	346	6	0	0	6		10		356	313	2	1	0	3		6		319
Total	647	7	1	0	8	1.2%	14	1.8	661	634	4	2	0	6	0.9%	12	2.0	646
All Legs																		
Approach	1,155	14	1	0	15		25		1,180	1,143	12	2	1	15		28		1,171
Depart	1,155	14	1	0	15		25		1,180	1,143	12	2	1	15		28		1,171
Total	2,310	28	2	0	30	1.3%	50	1.7	2,360	2,286	24	4	2	30	1.3%	56	1.9	2,342

Existing Peak Hour Volumes - Classification Counts

7 Vineyard Ave at 8th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	45	0	0	1	1	2.2%	3	3.0	48	37	1	0	2	3	7.5%	8	2.7	45
NT	616	12	2	4	18	2.8%	34	1.9	650	863	6	0	9	15	1.7%	36	2.4	899
NR	34	0	3	1	4	10.5%	9	2.3	43	28	0	0	0	0	0.0%	0	0.0	28
SL	49	0	0	0	0	0.0%	0	0.0	49	27	0	1	0	1	3.6%	2	2.0	29
ST	912	12	1	14	27	2.9%	62	2.3	974	660	6	1	10	17	2.5%	41	2.4	701
SR	85	3	0	0	3	3.4%	5	1.7	90	67	0	0	0	0	0.0%	0	0.0	67
EL	93	1	0	0	1	1.1%	2	2.0	95	95	1	0	1	2	2.1%	5	2.5	100
ET	191	2	0	1	3	1.5%	6	2.0	197	192	1	0	0	1	0.5%	2	2.0	194
ER	40	2	0	0	2	4.8%	3	1.5	43	52	0	1	0	1	1.9%	2	2.0	54
WL	17	1	2	0	3	15.0%	6	2.0	23	32	0	0	0	0	0.0%	0	0.0	32
WT	178	0	0	0	0	0.0%	0	0.0	178	191	2	0	0	2	1.0%	3	1.5	194
WR	33	1	2	0	3	8.3%	6	2.0	39	38	0	0	0	0	0.0%	0	0.0	38
									2,429									2,381
North Leg Volumes																		
Approach	1,046	15	1	14	30		67		1,113	754	6	2	10	18		43		797
Depart	742	14	4	4	22		42		784	996	7	0	10	17		41		1,037
Total	1,788	29	5	18	52	2.8%	109	2.1	1,897	1,750	13	2	20	35	2.0%	84	2.4	1,834
South Leg Volumes																		
Approach	695	12	5	6	23		46		741	928	7	0	11	18		44		972
Depart	969	15	3	14	32		71		1,040	744	6	2	10	18		43		787
Total	1,664	27	8	20	55	3.2%	117	2.1	1,781	1,672	13	2	21	36	2.1%	87	2.4	1,759
East Leg Volumes																		
Approach	228	2	4	0	6		12		240	261	2	0	0	2		3		264
Depart	274	2	3	2	7		15		289	247	1	1	0	2		4		251
Total	502	4	7	2	13	2.5%	27	2.1	529	508	3	1	0	4	0.8%	7	1.8	515
West Leg Volumes																		
Approach	324	5	0	1	6		11		335	339	2	1	1	4		9		348
Depart	308	3	0	1	4		8		316	295	3	0	2	5		11		306
Total	632	8	0	2	10	1.6%	19	1.9	651	634	5	1	3	9	1.4%	20	2.2	654
All Legs																		
Approach	2,293	34	10	21	65		136		2,429	2,282	17	3	22	42		99		2,381
Depart	2,293	34	10	21	65		136		2,429	2,282	17	3	22	42		99		2,381
Total	4,586	68	20	42	130	2.8%	272	2.1	4,858	4,564	34	6	44	84	1.8%	198	2.4	4,762

Existing Peak Hour Volumes - Classification Counts

8 Vineyard Ave at 6th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	45	0	0	0	0	0.0%	0	0.0	45	51	0	0	0	0	0.0%	0	0.0	51
NT	601	12	5	5	22	3.5%	43	2.0	644	873	5	1	12	18	2.0%	46	2.6	919
NR	73	2	0	1	3	3.9%	6	2.0	79	90	2	0	0	2	2.2%	3	1.5	93
SL	80	0	0	0	0	0.0%	0	0.0	80	72	0	1	0	1	1.4%	2	2.0	74
ST	811	15	3	14	32	3.8%	71	2.2	882	593	3	4	11	18	2.9%	46	2.6	639
SR	76	0	0	0	0	0.0%	0	0.0	76	44	2	0	0	2	4.3%	3	1.5	47
EL	59	2	0	0	2	3.3%	3	1.5	62	52	1	0	0	1	1.9%	2	2.0	54
ET	187	0	0	0	0	0.0%	0	0.0	187	240	2	0	0	2	0.8%	3	1.5	243
ER	63	0	0	0	0	0.0%	0	0.0	63	46	0	0	0	0	0.0%	0	0.0	46
WL	65	2	0	0	2	3.0%	3	1.5	68	108	0	0	0	0	0.0%	0	0.0	108
WT	197	3	0	0	3	1.5%	5	1.7	202	327	1	1	0	2	0.6%	4	2.0	331
WR	74	0	0	1	1	1.3%	3	3.0	77	86	0	0	1	1	1.1%	3	3.0	89
									2,465									2,694
North Leg Volumes																		
Approach	967	15	3	14	32		71		1,038	709	5	5	11	21		51		760
Depart	734	14	5	6	25		49		783	1,011	6	1	13	20		51		1,062
Total	1,701	29	8	20	57	3.2%	120	2.1	1,821	1,720	11	6	24	41	2.3%	102	2.5	1,822
South Leg Volumes																		
Approach	719	14	5	6	25		49		768	1,014	7	1	12	20		49		1,063
Depart	939	17	3	14	34		74		1,013	747	3	4	11	18		46		793
Total	1,658	31	8	20	59	3.4%	123	2.1	1,781	1,761	10	5	23	38	2.1%	95	2.5	1,856
East Leg Volumes																		
Approach	336	5	0	1	6		11		347	521	1	1	1	3		7		528
Depart	340	2	0	1	3		6		346	402	4	1	0	5		8		410
Total	676	7	0	2	9	1.3%	17	1.9	693	923	5	2	1	8	0.9%	15	1.9	938
West Leg Volumes																		
Approach	309	2	0	0	2		3		312	338	3	0	0	3		5		343
Depart	318	3	0	0	3		5		323	422	3	1	0	4		7		429
Total	627	5	0	0	5	0.8%	8	1.6	635	760	6	1	0	7	0.9%	12	1.7	772
All Legs																		
Approach	2,331	36	8	21	65		134		2,465	2,582	16	7	24	47		112		2,694
Depart	2,331	36	8	21	65		134		2,465	2,582	16	7	24	47		112		2,694
Total	4,662	72	16	42	130	2.7%	268	2.1	4,930	5,164	32	14	48	94	1.8%	224	2.4	5,388

Existing Peak Hour Volumes - Classification Counts

9 Vineyard Ave at 4th St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %age	PCE		
NL	87	2	0	1	3	3.3%	6	2.0	93	127	2	0	1	3	2.3%	6	2.0	133
NT	586	14	4	4	22	3.6%	41	1.9	627	898	5	0	7	12	1.3%	29	2.4	927
NR	113	4	0	1	5	4.2%	9	1.8	122	150	1	0	0	1	0.7%	2	2.0	152
SL	31	1	1	0	2	6.1%	4	2.0	35	74	0	1	1	2	2.6%	5	2.5	79
ST	829	16	1	13	30	3.5%	65	2.2	894	547	5	2	10	17	3.0%	42	2.5	589
SR	57	2	0	1	3	5.0%	6	2.0	63	87	0	0	1	1	1.1%	3	3.0	90
EL	102	0	0	0	0	0.0%	0	0.0	102	152	1	0	5	6	3.8%	17	2.8	169
ET	176	3	0	1	4	2.2%	8	2.0	184	241	1	0	1	2	0.8%	5	2.5	246
ER	127	0	1	2	3	2.3%	8	2.7	135	97	0	0	0	0	0.0%	0	0.0	97
WL	224	1	0	2	3	1.3%	8	2.7	232	332	1	1	0	2	0.6%	4	2.0	336
WT	242	9	1	1	11	4.3%	19	1.7	261	456	2	0	1	3	0.7%	6	2.0	462
WR	36	0	1	0	1	2.7%	2	2.0	38	64	0	0	0	0	0.0%	0	0.0	64
									2,786									3,344
North Leg Volumes																		
Approach	917	19	2	14	35		75		992	708	5	3	12	20		50		758
Depart	724	14	5	4	23		43		767	1,114	6	0	12	18		46		1,160
Total	1,641	33	7	18	58	3.4%	118	2.0	1,759	1,822	11	3	24	38	2.0%	96	2.5	1,918
South Leg Volumes																		
Approach	786	20	4	6	30		56		842	1,175	8	0	8	16		37		1,212
Depart	1,180	17	2	17	36		81		1,261	976	6	3	10	19		46		1,022
Total	1,966	37	6	23	66	3.2%	137	2.1	2,103	2,151	14	3	18	35	1.6%	83	2.4	2,234
East Leg Volumes																		
Approach	502	10	2	3	15		29		531	852	3	1	1	5		10		862
Depart	320	8	1	2	11		21		341	465	2	1	2	5		12		477
Total	822	18	3	5	26	3.1%	50	1.9	872	1,317	5	2	3	10	0.8%	22	2.2	1,339
West Leg Volumes																		
Approach	405	3	1	3	7		16		421	490	2	0	6	8		22		512
Depart	386	13	1	3	17		31		417	670	4	0	3	7		15		685
Total	791	16	2	6	24	2.9%	47	2.0	838	1,160	6	0	9	15	1.3%	37	2.5	1,197
All Legs																		
Approach	2,610	52	9	26	87		176		2,786	3,225	18	4	27	49		119		3,344
Depart	2,610	52	9	26	87		176		2,786	3,225	18	4	27	49		119		3,344
Total	5,220	104	18	52	174	3.2%	352	2.0	5,572	6,450	36	8	54	98	1.5%	238	2.4	6,688

Existing Peak Hour Volumes - Classification Counts

10 Vineyard Ave at Jay St

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE		
NL	47	1	0	0	1	2.1%	2	2.0	49	58	0	0	0	0	0.0%	0	0.0	58
NT	817	17	5	8	30	3.5%	60	2.0	877	1,153	7	1	8	16	1.4%	37	2.3	1,190
NR	36	2	0	4	6	14.3%	15	2.5	51	21	0	0	4	4	16.0%	12	3.0	33
SL	19	1	0	0	1	5.0%	2	2.0	21	20	0	0	0	0	0.0%	0	0.0	20
ST	1,140	16	3	17	36	3.1%	81	2.3	1,221	941	7	3	10	20	2.1%	47	2.4	988
SR	9	0	0	0	0	0.0%	0	0.0	9	24	0	0	0	0	0.0%	0	0.0	24
EL	5	1	0	0	1	16.7%	2	2.0	7	9	0	0	0	0	0.0%	0	0.0	9
ET	0	0	0	0	0	0.0%	0	0.0	0	3	0	0	0	0	0.0%	0	0.0	3
ER	14	0	0	0	0	0.0%	0	0.0	14	14	0	0	0	0	0.0%	0	0.0	14
WL	6	4	0	0	4	40.0%	6	1.5	12	44	1	1	9	11	20.0%	31	2.8	75
WT	0	0	0	0	0	0.0%	0	0.0	0	3	0	0	0	0	0.0%	0	0.0	3
WR	8	3	1	1	5	38.5%	10	2.0	18	33	1	0	0	1	2.9%	2	2.0	35
									2,279									2,452
North Leg Volumes																		
Approach	1,168	17	3	17	37		83		1,251	985	7	3	10	20		47		1,032
Depart	830	21	6	9	36		72		902	1,195	8	1	8	17		39		1,234
Total	1,998	38	9	26	73	3.5%	155	2.1	2,153	2,180	15	4	18	37	1.7%	86	2.3	2,266
South Leg Volumes																		
Approach	900	20	5	12	37		77		977	1,232	7	1	12	20		49		1,281
Depart	1,160	20	3	17	40		87		1,247	999	8	4	19	31		78		1,077
Total	2,060	40	8	29	77	3.6%	164	2.1	2,224	2,231	15	5	31	51	2.2%	127	2.5	2,358
East Leg Volumes																		
Approach	14	7	1	1	9		16		30	80	2	1	9	12		33		113
Depart	55	3	0	4	7		17		72	44	0	0	4	4		12		56
Total	69	10	1	5	16	18.8%	33	2.1	102	124	2	1	13	16	11.4%	45	2.8	169
West Leg Volumes																		
Approach	19	1	0	0	1		2		21	26	0	0	0	0		0		26
Depart	56	1	0	0	1		2		58	85	0	0	0	0		0		85
Total	75	2	0	0	2	2.6%	4	2.0	79	111	0	0	0	0	0.0%	0	0.0	111
All Legs																		
Approach	2,101	45	9	30	84		178		2,279	2,323	16	5	31	52		129		2,452
Depart	2,101	45	9	30	84		178		2,279	2,323	16	5	31	52		129		2,452
Total	4,202	90	18	60	168	3.8%	356	2.1	4,558	4,646	32	10	62	104	2.2%	258	2.5	4,904

Existing Peak Hour Volumes - Classification Counts

11 Vineyard Ave at Inland Empire Blvd

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE		
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
NT	864	21	4	11	36	4.0%	73	2.0	937	1,178	6	0	11	17	1.4%	42	2.5	1,220
NR	52	3	1	3	7	11.9%	16	2.3	68	68	8	1	2	11	13.9%	20	1.8	88
SL	30	1	0	0	1	3.2%	2	2.0	32	22	0	0	0	0	0.0%	0	0.0	22
ST	1,141	19	4	17	40	3.4%	88	2.2	1,229	966	7	3	16	26	2.6%	65	2.5	1,031
SR	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WL	67	2	0	5	7	9.5%	18	2.6	85	152	1	1	1	3	1.9%	7	2.3	159
WT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WR	28	0	0	0	0	0.0%	0	0.0	28	58	1	0	1	2	3.3%	5	2.5	63
									2,379									2,583
North Leg Volumes																		
Approach	1,171	20	4	17	41		90		1,261	988	7	3	16	26		65		1,053
Depart	892	21	4	11	36		73		965	1,236	7	0	12	19		47		1,283
Total	2,063	41	8	28	77	3.6%	163	2.1	2,226	2,224	14	3	28	45	2.0%	112	2.5	2,336
South Leg Volumes																		
Approach	916	24	5	14	43		89		1,005	1,246	14	1	13	28		62		1,308
Depart	1,208	21	4	22	47		106		1,314	1,118	8	4	17	29		72		1,190
Total	2,124	45	9	36	90	4.1%	195	2.2	2,319	2,364	22	5	30	57	2.4%	134	2.4	2,498
East Leg Volumes																		
Approach	95	2	0	5	7		18		113	210	2	1	2	5		12		222
Depart	82	4	1	3	8		18		100	90	8	1	2	11		20		110
Total	177	6	1	8	15	7.8%	36	2.4	213	300	10	2	4	16	5.1%	32	2.0	332
West Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Total	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
All Legs																		
Approach	2,182	46	9	36	91		197		2,379	2,444	23	5	31	59		139		2,583
Depart	2,182	46	9	36	91		197		2,379	2,444	23	5	31	59		139		2,583
Total	4,364	92	18	72	182	4.0%	394	2.2	4,758	4,888	46	10	62	118	2.4%	278	2.4	5,166



Existing Peak Hour Volumes - Classification Counts

12 Vineyard Ave at I-10 WB Ramps

	AM Peak Hour Volumes									PM Peak Hour Volumes								
	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume	Passenger Vehicles	Truck Volumes						Average PCE	Total PCE Volume
		2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE				2-Axle 1.5	3-Axle 2.0	4-Axle 3.0	Total Trucks	Truck %-age	PCE		
NL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0.0%	0	0.0	0	
NT	608	17	2	9	28	4.4%	57	2.0	665	895	16	2	11	29	3.1%	61	2.1	956
NR	187	1	1	2	4	2.1%	10	2.5	197	344	2	0	1	3	0.9%	6	2.0	350
SL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ST	1,048	16	2	9	27	2.5%	55	2.0	1,103	763	5	3	15	23	2.9%	59	2.6	822
SR	279	4	2	11	17	5.7%	43	2.5	322	361	7	1	5	13	3.5%	28	2.2	389
EL	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ET	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
ER	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WL	162	1	0	0	1	0.6%	2	2.0	164	203	1	0	1	2	1.0%	5	2.5	208
WT	0	0	0	0	0	0.0%	0	0.0	0	0	0	0	0	0	0.0%	0	0.0	0
WR	275	6	2	7	15	5.2%	34	2.3	309	355	1	0	8	9	2.5%	26	2.9	381
									2,760									3,106
North Leg Volumes																		
Approach	1,327	20	4	20	44		98		1,425	1,124	12	4	20	36		87		1,211
Depart	883	23	4	16	43		91		974	1,250	17	2	19	38		87		1,337
Total	2,210	43	8	36	87	3.8%	189	2.2	2,399	2,374	29	6	39	74	3.0%	174	2.4	2,548
South Leg Volumes																		
Approach	795	18	3	11	32		67		862	1,239	18	2	12	32		67		1,306
Depart	1,210	17	2	9	28		57		1,267	966	6	3	16	25		64		1,030
Total	2,005	35	5	20	60	2.9%	124	2.1	2,129	2,205	24	5	28	57	2.5%	131	2.3	2,336
East Leg Volumes																		
Approach	437	7	2	7	16		36		473	558	2	0	9	11		31		589
Depart	187	1	1	2	4		10		197	344	2	0	1	3		6		350
Total	624	8	3	9	20	3.1%	46	2.3	670	902	4	0	10	14	1.5%	37	2.6	939
West Leg Volumes																		
Approach	0	0	0	0	0		0		0	0	0	0	0	0		0		0
Depart	279	4	2	11	17		43		322	361	7	1	5	13		28		389
Total	279	4	2	11	17	5.7%	43	2.5	322	361	7	1	5	13	3.5%	28	2.2	389
All Legs																		
Approach	2,559	45	9	38	92		201		2,760	2,921	32	6	41	79		185		3,106
Depart	2,559	45	9	38	92		201		2,760	2,921	32	6	41	79		185		3,106
Total	5,118	90	18	76	184	3.5%	402	2.2	5,520	5,842	64	12	82	158	2.6%	370	2.3	6,212

# APPENDIX G

## EXISTING TRAFFIC VOLUME DATA

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Foothill Blvd  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-001  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Foothill Blvd				Foothill Blvd				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	2	2	1	0	2	2	1	0	2	3	1	0	2	3	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	17	104	15	0	20	145	53	0	41	68	9	2	27	131	19	2	653
7:15 AM	26	121	19	0	31	145	63	0	53	79	9	5	30	220	23	1	825
7:30 AM	31	186	29	0	36	178	87	0	90	105	13	8	33	258	34	3	1091
7:45 AM	20	219	43	0	51	259	101	0	77	144	33	7	38	213	34	6	1245
8:00 AM	24	108	43	0	58	212	103	0	57	121	17	9	42	187	15	2	998
8:15 AM	23	109	49	0	35	148	76	0	35	131	11	6	18	232	16	4	893
8:30 AM	27	100	35	0	26	136	73	0	26	98	20	5	27	185	13	2	773
8:45 AM	31	97	36	0	17	97	64	0	43	140	20	4	16	180	19	9	773
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	199	1044	269	0	274	1320	620	0	422	886	132	46	231	1606	173	29	7251
	13.16%	69.05%	17.79%	0.00%	12.38%	59.62%	28.00%	0.00%	28.40%	59.62%	8.88%	3.10%	11.33%	78.76%	8.48%	1.42%	
<b>PEAK HR:</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL:</b>	98	622	164	0	180	797	367	0	259	501	74	30	131	890	99	15	4227
<b>PEAK HR FACTOR:</b>	0.790	0.710	0.837	0.000	0.776	0.769	0.891	0.000	0.719	0.870	0.561	0.833	0.780	0.862	0.728	0.625	0.849
	0.784				0.818				0.828				0.865				
PM	2	2	1	0	2	2	1	0	2	3	1	0	2	3	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	27	165	50	0	44	115	66	0	99	217	25	13	38	155	39	11	1064
4:15 PM	33	170	51	0	32	145	56	0	100	215	14	8	35	174	43	12	1088
4:30 PM	37	187	47	0	40	125	60	0	94	217	20	19	51	176	27	16	1116
4:45 PM	33	185	50	0	46	126	68	0	109	250	20	17	38	138	35	14	1129
5:00 PM	21	195	60	0	54	111	73	0	102	237	27	18	45	168	38	14	1163
5:15 PM	37	186	48	0	44	145	66	0	89	257	38	13	39	192	42	14	1210
5:30 PM	43	191	55	0	44	148	52	0	91	285	33	15	51	165	49	10	1232
5:45 PM	38	184	56	0	49	128	71	0	86	251	32	21	41	148	48	14	1167
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	269	1463	417	0	353	1043	512	0	770	1929	209	124	338	1316	321	105	9169
	12.52%	68.08%	19.40%	0.00%	18.50%	54.66%	26.83%	0.00%	25.40%	63.62%	6.89%	4.09%	16.25%	63.27%	15.43%	5.05%	
<b>PEAK HR:</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL:</b>	139	756	219	0	191	532	262	0	368	1030	130	67	176	673	177	52	4772
<b>PEAK HR FACTOR:</b>	0.808	0.969	0.913	0.000	0.884	0.899	0.897	0.000	0.902	0.904	0.855	0.798	0.863	0.876	0.903	0.929	0.968
	0.964				0.966				0.940				0.939				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Foothill Blvd  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-001  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Foothill Blvd				Foothill Blvd				
<b>AM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	17	101	14	0	20	141	53	0	41	63	9	2	27	130	19	2	639
7:15 AM	22	118	19	0	30	143	63	0	50	77	8	5	29	215	23	1	803
7:30 AM	31	185	28	0	35	176	85	0	86	101	13	8	33	255	33	3	1072
7:45 AM	18	216	42	0	51	257	100	0	77	139	31	7	38	210	34	6	1226
8:00 AM	23	105	41	0	58	211	102	0	54	119	16	8	40	184	15	2	978
8:15 AM	22	108	49	0	35	146	74	0	35	125	11	6	18	226	15	4	874
8:30 AM	25	99	35	0	26	135	72	0	26	97	19	5	27	182	12	2	762
8:45 AM	29	95	36	0	17	95	61	0	43	134	19	4	15	176	18	9	751
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	187	1027	264	0	272	1304	610	0	412	855	126	45	227	1578	169	29	7105
<b>APPROACH %'s :</b>	12.65%	69.49%	17.86%	0.00%	12.44%	59.65%	27.90%	0.00%	28.65%	59.46%	8.76%	3.13%	11.33%	78.78%	8.44%	1.45%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	94	614	160	0	179	790	361	0	252	484	71	29	129	875	97	15	4150
<b>PEAK HR FACTOR :</b>	0.76	0.711	0.816	0.000	0.772	0.768	0.885	0.000	0.733	0.871	0.573	0.906	0.806	0.858	0.713	0.625	0.846
	0.786				0.815				0.823				0.861				
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	26	164	50	0	44	113	65	0	99	214	23	13	38	153	39	11	1052
4:15 PM	33	166	50	0	32	142	56	0	100	212	14	8	35	171	43	12	1074
4:30 PM	37	186	46	0	40	123	60	0	92	215	15	19	49	174	27	16	1099
4:45 PM	33	185	50	0	46	126	68	0	107	250	20	17	38	136	35	14	1125
5:00 PM	21	191	60	0	54	107	71	0	102	236	26	18	45	163	38	14	1146
5:15 PM	37	185	47	0	43	144	65	0	89	256	36	13	39	190	42	14	1200
5:30 PM	43	190	55	0	44	146	52	0	91	283	33	15	51	163	49	10	1225
5:45 PM	38	182	56	0	49	127	71	0	86	248	32	21	41	146	48	14	1159
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	268	1449	414	0	352	1028	508	0	766	1914	199	124	336	1296	321	105	9080
<b>APPROACH %'s :</b>	12.58%	68.00%	19.43%	0.00%	18.64%	54.45%	26.91%	0.00%	25.51%	63.74%	6.63%	4.13%	16.33%	62.97%	15.60%	5.10%	
<b>PEAK HR :</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	139	748	218	0	190	524	259	0	368	1023	127	67	176	662	177	52	4730
<b>PEAK HR FACTOR :</b>	0.81	0.979	0.908	0.000	0.880	0.897	0.912	0.000	0.902	0.904	0.882	0.798	0.863	0.871	0.903	0.929	0.965
	0.959				0.965				0.939				0.936				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Foothill Blvd  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-001  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Foothill Blvd				Foothill Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	3	1	0	0	4	0	0	0	5	0	0	0	1	0	0	0	14
7:15 AM	2	3	0	0	1	2	0	0	0	1	2	0	0	1	4	0	0	16
7:30 AM	0	1	1	0	1	2	2	0	0	2	4	0	0	0	3	1	0	17
7:45 AM	1	2	1	0	0	1	1	0	0	0	5	2	0	0	3	0	0	16
8:00 AM	1	3	2	0	0	1	0	0	0	3	2	0	1	2	3	0	0	18
8:15 AM	1	1	0	0	0	2	1	0	0	0	4	0	0	0	6	0	0	15
8:30 AM	2	1	0	0	0	1	0	0	0	0	1	1	0	0	2	0	0	8
8:45 AM	1	2	0	0	0	1	1	0	0	0	5	1	0	0	3	1	0	15
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	8	16	5	0	2	14	5	0	6	28	4	1	3	25	2	0	119	
<b>APPROACH %'s :</b>	27.59%	55.17%	17.24%	0.00%	9.52%	66.67%	23.81%	0.00%	15.38%	71.79%	10.26%	2.56%	10.00%	83.33%	6.67%	0.00%		
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	3	7	4	0	1	6	4	0	5	15	2	1	2	15	1	0	66	
<b>PEAK HR FACTOR :</b>	0.750	0.583	0.500	0.000	0.250	0.750	0.500	0.000	0.417	0.750	0.250	0.250	0.250	0.625	0.250	0.000	0.917	
			0.583				0.550				0.821				0.750			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	1	1	0	0	0	2	1	0	0	3	0	0	0	2	0	0	0	10
4:15 PM	0	2	0	0	0	2	0	0	0	2	0	0	0	0	3	0	0	9
4:30 PM	0	1	1	0	0	1	0	0	0	1	2	0	0	2	2	0	0	10
4:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3
5:00 PM	0	4	0	0	0	2	2	0	0	1	0	0	0	0	4	0	0	13
5:15 PM	0	1	0	0	1	1	1	0	0	1	1	0	0	0	2	0	0	8
5:30 PM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	1	0	0	5
5:45 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	4
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	1	11	1	0	1	10	4	0	3	12	1	0	2	16	0	0	62	
<b>APPROACH %'s :</b>	7.69%	84.62%	7.69%	0.00%	6.67%	66.67%	26.67%	0.00%	18.75%	75.00%	6.25%	0.00%	11.11%	88.89%	0.00%	0.00%		
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	7	0	0	1	5	3	0	0	5	1	0	0	8	0	0	30	
<b>PEAK HR FACTOR :</b>	0.00	0.438	0.000	0.000	0.250	0.625	0.375	0.000	0.000	0.625	0.250	0.000	0.000	0.500	0.000	0.000	0.577	
			0.438				0.563				0.750				0.500			

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & Foothill Blvd  
 City: Rancho Cucamonga  
 Control: Signalized

Project ID: 19-06034-001  
 Date: 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Foothill Blvd				Foothill Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0
8:45 AM	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	2	1	0	0	0	1	3	0	0	1	2	0	0	1	1	0	0
	66.67%	33.33%	0.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000
	0.250																0.750
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				<b>TOTAL</b>
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	0	0	0	0	3	0	0	0	1	8	0	0	3	0	0	0
	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	11.11%	88.89%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	0	1	0	0	0	1	1	0	0	3	0	0	0
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.750	0.000	0.000	0.000
	0.250																0.750

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & Foothill Blvd  
 City: Rancho Cucamonga  
 Control: Signalized

Project ID: 19-06034-001  
 Date: 3/12/2019

## 4axle

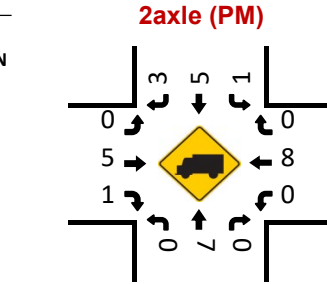
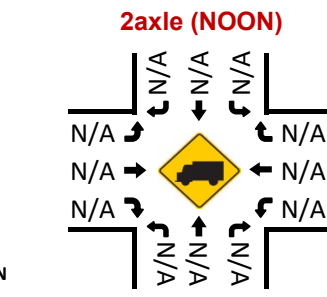
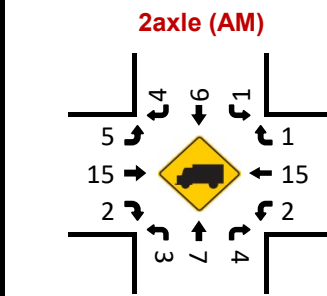
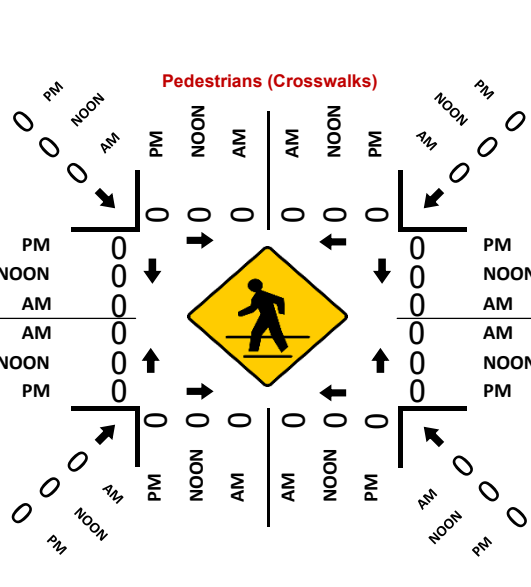
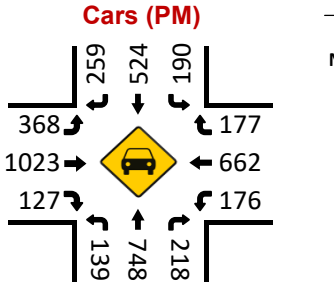
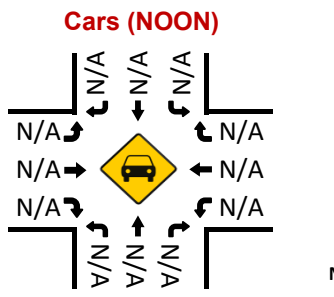
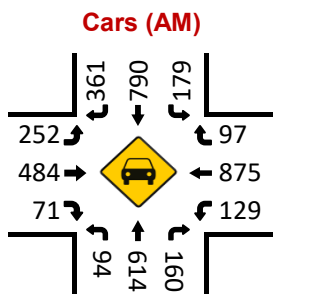
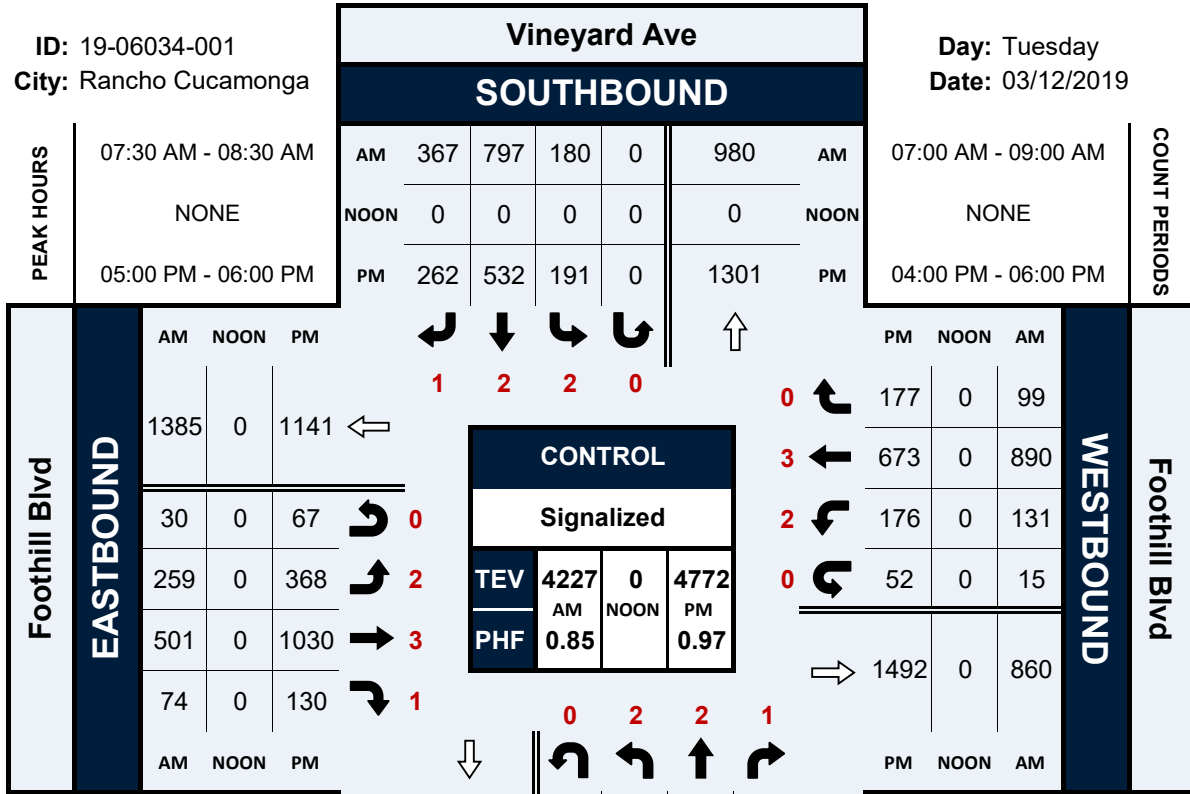
NS/EW Streets:	Vineyard Ave				Vineyard Ave				Foothill Blvd				Foothill Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
7:45 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	3
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
<b>APPROACH %'s :</b>	100.00%	0.00%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	66.67%	33.33%	0.00%	0.00%	25.00%	50.00%	25.00%	0.00%	15	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	1	0	0	0	0	1	2	0	2	1	0	0	0	0	1	0	8	
<b>PEAK HR FACTOR :</b>	0.250	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.667	
			0.250			0.750				0.375				0.250				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
<b>APPROACH %'s :</b>	0.00%	60.00%	40.00%	0.00%	0.00%	100.00%	0.00%	0.00%	25.00%	50.00%	25.00%	0.00%	0.00%	100.00%	0.00%	0.00%	12	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	1	1	0	0	2	0	0	0	1	1	0	0	0	0	0	6	
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.750	
			0.500			0.500				0.500								

# Vineyard Ave & Foothill Blvd

## Peak Hour Turning Movement Count

ID: 19-06034-001  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019





# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-002  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Baker Ave				Baker Ave				Arrow Route				Arrow Route				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	2	6	12	0	10	15	6	0	5	65	2	0	14	98	14	0	249
7:15 AM	5	17	9	0	14	21	12	0	8	90	7	0	36	132	16	0	367
7:30 AM	8	23	22	0	16	24	23	0	6	143	10	0	31	179	13	0	498
7:45 AM	12	20	18	0	25	27	10	0	7	161	16	0	28	150	22	0	496
8:00 AM	7	22	8	0	23	17	9	0	5	105	3	0	18	154	19	0	390
8:15 AM	2	13	9	0	18	14	8	0	2	94	4	0	4	158	25	0	351
8:30 AM	5	15	12	0	12	25	10	0	8	94	3	0	14	142	15	0	355
8:45 AM	5	16	3	0	11	7	7	0	5	83	2	0	10	124	13	0	286
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	46	132	93	0	129	150	85	0	46	835	47	0	155	1137	137	0	2992
	16.97%	48.71%	34.32%	0.00%	35.44%	41.21%	23.35%	0.00%	4.96%	89.98%	5.06%	0.00%	10.85%	79.57%	9.59%	0.00%	
<b>PEAK HR:</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL:</b>	32	82	57	0	78	89	54	0	26	499	36	0	113	615	70	0	1751
<b>PEAK HR FACTOR:</b>	0.667	0.891	0.648	0.000	0.780	0.824	0.587	0.000	0.813	0.775	0.563	0.000	0.785	0.859	0.795	0.000	0.879
	0.807				0.877				0.762				0.895				
PM	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	7	24	31	0	13	20	5	0	7	149	8	0	10	95	20	0	389
4:15 PM	5	25	15	0	10	25	10	0	11	155	6	0	18	94	17	0	391
4:30 PM	5	31	19	0	18	16	5	0	8	134	6	0	25	127	16	0	410
4:45 PM	6	38	22	0	11	21	8	0	7	164	8	0	20	125	18	0	448
5:00 PM	8	28	22	0	14	23	9	0	10	183	4	0	21	117	21	0	460
5:15 PM	4	36	11	0	12	27	7	0	13	173	3	0	14	164	25	0	489
5:30 PM	9	35	18	0	10	23	9	0	12	176	7	0	15	114	29	0	457
5:45 PM	6	34	16	0	11	20	3	0	11	161	5	0	11	129	18	0	425
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	50	251	154	0	99	175	56	0	79	1295	47	0	134	965	164	0	3469
	10.99%	55.16%	33.85%	0.00%	30.00%	53.03%	16.97%	0.00%	5.56%	91.13%	3.31%	0.00%	10.61%	76.41%	12.98%	0.00%	
<b>PEAK HR:</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL:</b>	27	137	73	0	47	94	33	0	42	696	22	0	70	520	93	0	1854
<b>PEAK HR FACTOR:</b>	0.750	0.901	0.830	0.000	0.839	0.870	0.917	0.000	0.808	0.951	0.688	0.000	0.833	0.793	0.802	0.000	0.948
	0.898				0.946				0.964				0.841				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-002  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Baker Ave				Baker Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	6	11	0	10	15	6	0	4	61	2	0	14	95	14	0	240
7:15 AM	5	17	9	0	14	21	12	0	8	87	7	0	35	129	16	0	360
7:30 AM	8	23	22	0	16	24	22	0	5	137	10	0	31	176	12	0	486
7:45 AM	12	20	18	0	25	27	10	0	7	161	16	0	28	148	22	0	494
8:00 AM	7	20	7	0	23	17	9	0	5	103	3	0	18	151	19	0	382
8:15 AM	1	12	9	0	18	14	7	0	2	94	4	0	4	157	24	0	346
8:30 AM	5	15	12	0	12	24	10	0	7	90	3	0	14	140	15	0	347
8:45 AM	5	16	3	0	11	7	7	0	5	81	2	0	9	121	13	0	280
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	45	129	91	0	129	149	83	0	43	814	47	0	153	1117	135	0	2935
<b>APPROACH %'s :</b>	16.98%	48.68%	34.34%	0.00%	35.73%	41.27%	22.99%	0.00%	4.76%	90.04%	5.20%	0.00%	10.89%	79.50%	9.61%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL :</b>	32	80	56	0	78	89	53	0	25	488	36	0	112	604	69	0	1722
<b>PEAK HR FACTOR :</b>	0.67	0.870	0.636	0.000	0.780	0.824	0.602	0.000	0.781	0.758	0.563	0.000	0.800	0.858	0.784	0.000	0.871
	0.792				0.887				0.746				0.896				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	23	31	0	13	20	5	0	7	145	8	0	10	94	20	0	382
4:15 PM	5	24	15	0	10	25	10	0	11	151	6	0	18	93	17	0	385
4:30 PM	5	31	19	0	18	16	5	0	8	132	6	0	25	126	16	0	407
4:45 PM	6	38	22	0	10	21	8	0	7	164	7	0	20	123	18	0	444
5:00 PM	8	28	22	0	14	22	9	0	10	181	4	0	21	116	21	0	456
5:15 PM	4	36	11	0	12	27	7	0	13	172	3	0	14	162	25	0	486
5:30 PM	9	35	18	0	10	23	9	0	12	175	7	0	15	112	29	0	454
5:45 PM	6	34	16	0	11	20	3	0	11	157	5	0	11	128	18	0	420
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	49	249	154	0	98	174	56	0	79	1277	46	0	134	954	164	0	3434
<b>APPROACH %'s :</b>	10.84%	55.09%	34.07%	0.00%	29.88%	53.05%	17.07%	0.00%	5.63%	91.08%	3.28%	0.00%	10.70%	76.20%	13.10%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	27	137	73	0	46	93	33	0	42	692	21	0	70	513	93	0	1840
<b>PEAK HR FACTOR :</b>	0.75	0.901	0.830	0.000	0.821	0.861	0.917	0.000	0.808	0.956	0.750	0.000	0.833	0.792	0.802	0.000	0.947
	0.898				0.935				0.968				0.841				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-002  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Baker Ave				Baker Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	1	0	0	0	0	0	1	4	0	0	0	3	0	0	9
7:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	0	6
7:30 AM	0	0	0	0	0	0	1	0	1	6	0	0	0	3	1	0	12
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:00 AM	0	2	1	0	0	0	0	0	0	2	0	0	0	3	0	0	8
8:15 AM	1	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	5
8:30 AM	0	0	0	0	0	1	0	0	1	3	0	0	0	2	0	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	3	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	16.67%	50.00%	33.33%	0.00%	0.00%	33.33%	66.67%	0.00%	14.29%	85.71%	0.00%	0.00%	8.33%	83.33%	8.33%	0.00%	54
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	2	1	0	0	0	1	0	1	10	0	0	1	11	1	0	28
<b>PEAK HR FACTOR :</b>	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.417	0.000	0.000	0.250	0.917	0.250	0.000	0.583
			0.250				0.250				0.393				0.813		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	1	1	0	0	0	0	0	0	0	3	0	0	0	1	0	0	6
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	0	4
5:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	33.33%	66.67%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	90.91%	9.09%	0.00%	0.00%	100.00%	0.00%	0.00%	27
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	1	1	0	0	0	2	1	0	0	7	0	0	12
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.875	0.000	0.000	0.750
							0.500				0.750				0.875		

# National Data & Surveying Services Intersection Turning Movement Count

Location: Baker Ave & Arrow Route  
 City: Rancho Cucamonga  
 Control: Signalized

Project ID: 19-06034-002  
 Date: 3/12/2019

## 3axle

NS/EW Streets:	Baker Ave				Baker Ave				Arrow Route				Arrow Route					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
	0.250																	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	
	0.500																	

# National Data & Surveying Services Intersection Turning Movement Count

Location: Baker Ave & Arrow Route  
 City: Rancho Cucamonga  
 Control: Signalized

Project ID: 19-06034-002  
 Date: 3/12/2019

**4axle**

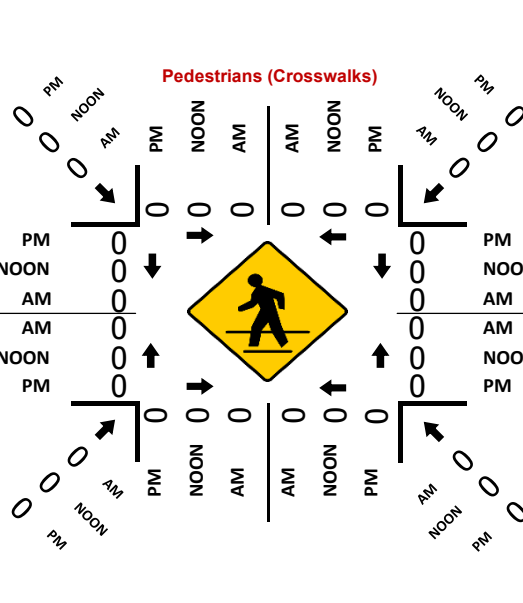
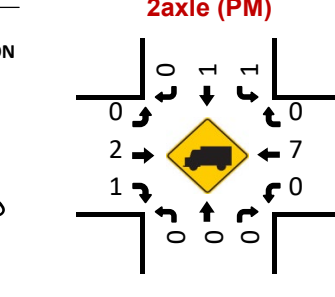
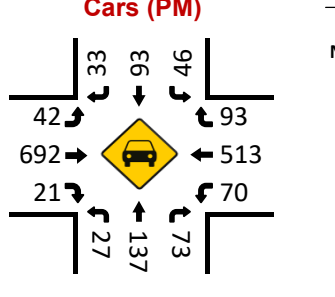
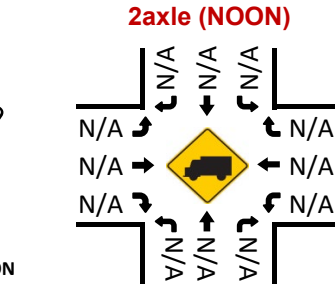
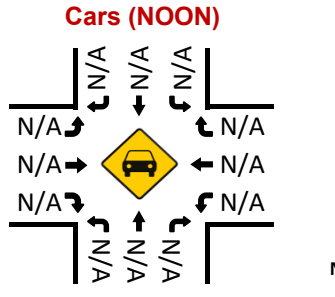
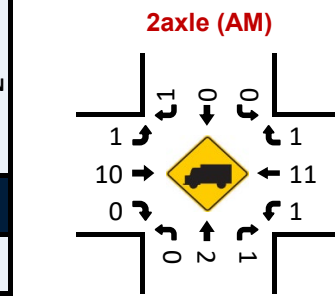
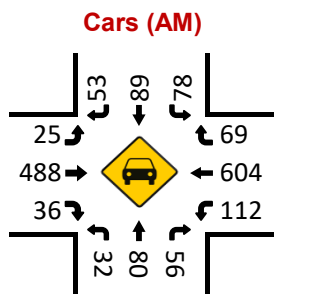
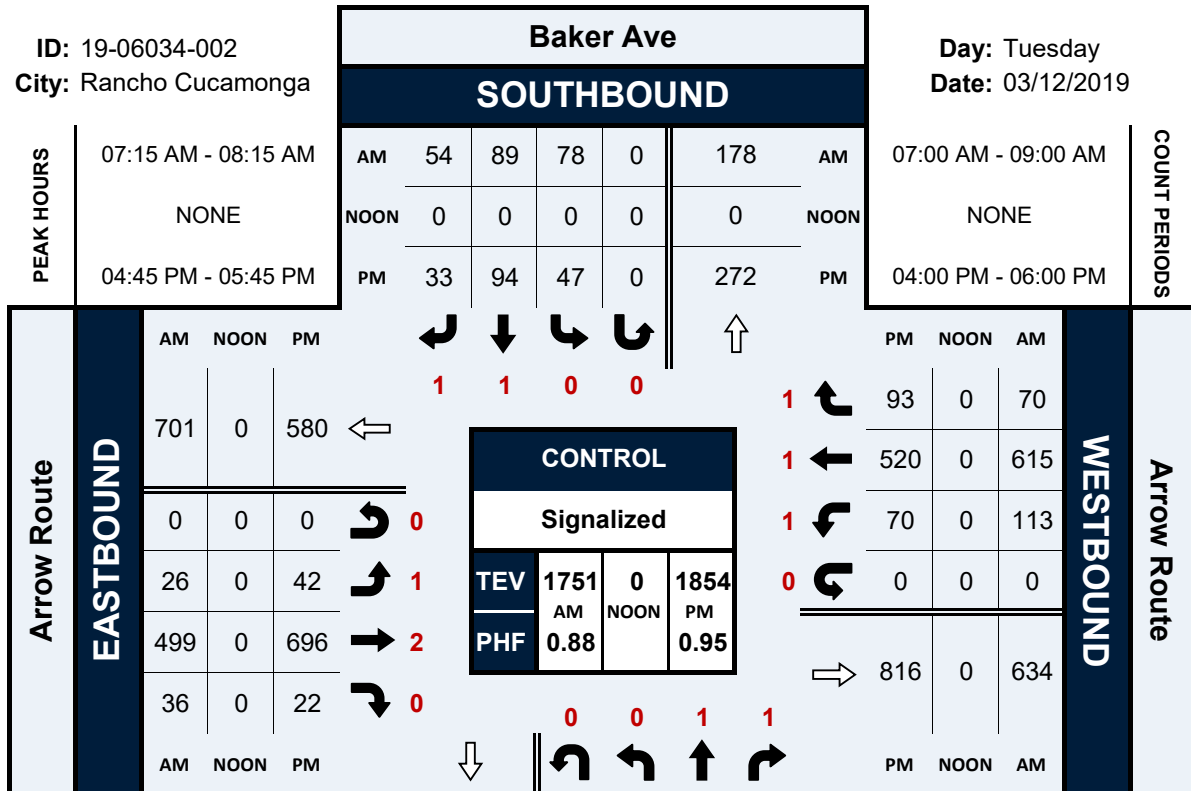
NS/EW Streets:	Baker Ave				Baker Ave				Arrow Route				Arrow Route				
<b>AM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	1	0	1	2	0	0	1	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR :</b>	<b>04:45 PM - 05:45 PM</b>																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

# Baker Ave & Arrow Route

## Peak Hour Turning Movement Count

ID: 19-06034-002  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-003  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Arrow Route				Arrow Route				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	13	77	14	0	23	159	33	0	21	63	9	0	26	83	17	0	538
7:15 AM	7	88	21	0	16	158	20	0	24	104	16	0	29	158	24	0	665
7:30 AM	14	124	18	0	34	204	26	0	44	131	16	0	43	171	45	0	870
7:45 AM	10	124	32	0	42	239	42	0	39	172	27	0	52	179	69	0	1027
8:00 AM	20	97	33	0	68	219	29	0	12	132	13	0	52	139	51	0	865
8:15 AM	12	98	22	0	46	168	22	0	22	123	12	0	41	167	57	0	790
8:30 AM	8	84	27	0	31	124	23	0	14	92	10	0	42	150	50	0	655
8:45 AM	12	107	24	0	25	108	21	0	16	91	6	0	21	113	30	0	574
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	96	799	191	0	285	1379	216	0	192	908	109	0	306	1160	343	0	5984
	8.84%	73.57%	17.59%	0.00%	15.16%	73.35%	11.49%	0.00%	15.88%	75.10%	9.02%	0.00%	16.92%	64.12%	18.96%	0.00%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	56	443	105	0	190	830	119	0	117	558	68	0	188	656	222	0	3552
<b>PEAK HR FACTOR :</b>	0.700	0.893	0.795	0.000	0.699	0.868	0.708	0.000	0.665	0.811	0.630	0.000	0.904	0.916	0.804	0.000	0.865
	0.910				0.882				0.780				0.888				
PM	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	10	163	32	0	21	102	26	0	33	159	12	0	26	104	49	0	737
4:15 PM	6	189	30	0	33	131	30	0	34	124	8	0	37	108	34	0	764
4:30 PM	19	187	24	0	27	123	19	0	37	146	13	0	30	154	62	0	841
4:45 PM	20	191	37	0	35	116	28	0	38	145	11	0	35	116	49	0	821
5:00 PM	17	178	36	0	31	117	20	0	47	172	15	0	27	131	51	0	842
5:15 PM	14	184	32	0	23	111	36	0	48	143	14	0	31	173	50	0	859
5:30 PM	17	195	37	0	32	149	36	0	38	167	12	0	33	144	59	0	919
5:45 PM	19	193	35	0	30	141	17	0	38	145	9	0	44	117	41	0	829
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	122	1480	263	0	232	990	212	0	313	1201	94	0	263	1047	395	0	6612
	6.54%	79.36%	14.10%	0.00%	16.18%	69.04%	14.78%	0.00%	19.47%	74.69%	5.85%	0.00%	15.43%	61.41%	23.17%	0.00%	
<b>PEAK HR :</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	67	750	140	0	116	518	109	0	171	627	50	0	135	565	201	0	3449
<b>PEAK HR FACTOR :</b>	0.882	0.962	0.946	0.000	0.906	0.869	0.757	0.000	0.891	0.911	0.833	0.000	0.767	0.816	0.852	0.000	0.938
	0.961				0.856				0.906				0.887				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-003  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	12	73	13	0	23	155	32	0	19	61	9	0	26	82	15	0	520
7:15 AM	7	84	20	0	15	156	18	0	24	101	16	0	27	155	23	0	646
7:30 AM	14	122	18	0	34	201	26	0	43	126	16	0	40	168	45	0	853
7:45 AM	10	120	31	0	40	237	41	0	39	171	26	0	51	178	66	0	1010
8:00 AM	18	96	33	0	68	217	29	0	12	130	13	0	48	137	48	0	849
8:15 AM	12	96	21	0	45	168	21	0	22	122	12	0	38	165	56	0	778
8:30 AM	7	81	25	0	31	120	23	0	14	90	10	0	40	147	49	0	637
8:45 AM	12	103	23	0	24	106	21	0	16	86	6	0	19	110	30	0	556
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	92	775	184	0	280	1360	211	0	189	887	108	0	289	1142	332	0	5849
<b>APPROACH %'s :</b>	8.75%	73.74%	17.51%	0.00%	15.13%	73.47%	11.40%	0.00%	15.96%	74.92%	9.12%	0.00%	16.39%	64.78%	18.83%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	54	434	103	0	187	823	117	0	116	549	67	0	177	648	215	0	3490
<b>PEAK HR FACTOR :</b>	0.75	0.889	0.780	0.000	0.688	0.868	0.713	0.000	0.674	0.803	0.644	0.000	0.868	0.910	0.814	0.000	0.864
	0.918				0.886				0.775				0.881				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	10	161	31	0	20	100	25	0	33	156	11	0	25	103	49	0	724
4:15 PM	6	185	30	0	32	129	29	0	34	120	7	0	37	108	34	0	751
4:30 PM	19	185	22	0	22	118	19	0	37	143	13	0	30	153	62	0	823
4:45 PM	19	191	35	0	35	116	28	0	38	144	11	0	35	115	49	0	816
5:00 PM	17	177	36	0	31	114	20	0	47	171	15	0	26	130	50	0	834
5:15 PM	14	181	32	0	21	109	35	0	48	141	14	0	31	172	50	0	848
5:30 PM	17	195	37	0	32	147	35	0	38	167	12	0	33	143	59	0	915
5:45 PM	19	193	34	0	30	141	17	0	37	142	9	0	42	117	41	0	822
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	121	1468	257	0	223	974	208	0	312	1184	92	0	259	1041	394	0	6533
<b>APPROACH %'s :</b>	6.55%	79.52%	13.92%	0.00%	15.87%	69.32%	14.80%	0.00%	19.65%	74.56%	5.79%	0.00%	15.29%	61.45%	23.26%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	67	746	139	0	114	511	107	0	170	621	50	0	132	562	200	0	3419
<b>PEAK HR FACTOR :</b>	0.88	0.956	0.939	0.000	0.891	0.869	0.764	0.000	0.885	0.908	0.833	0.000	0.786	0.817	0.847	0.000	0.934
	0.956				0.855				0.902				0.883				



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-003  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	1	4	1	0	0	3	1	0	2	2	0	0	0	1	2	0	17
7:15 AM	0	1	1	0	1	1	2	0	0	2	0	0	2	3	0	0	13
7:30 AM	0	2	0	0	0	2	0	0	1	5	0	0	2	3	0	0	15
7:45 AM	0	3	1	0	2	1	1	0	0	1	1	0	1	1	3	0	15
8:00 AM	2	1	0	0	0	2	0	0	0	2	0	0	2	2	3	0	14
8:15 AM	0	2	0	0	0	0	1	0	0	1	0	0	2	2	1	0	9
8:30 AM	1	3	2	0	0	4	0	0	0	1	0	0	1	3	1	0	16
8:45 AM	0	3	1	0	1	1	0	0	0	4	0	0	1	1	0	0	12
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	4	19	6	0	4	14	5	0	3	18	1	0	11	16	10	0	111
	13.79%	65.52%	20.69%	0.00%	17.39%	60.87%	21.74%	0.00%	13.64%	81.82%	4.55%	0.00%	29.73%	43.24%	27.03%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	2	8	1	0	2	5	2	0	1	9	1	0	7	8	7	0	53
<b>PEAK HR FACTOR :</b>	0.250	0.667	0.250	0.000	0.250	0.625	0.500	0.000	0.250	0.450	0.250	0.000	0.875	0.667	0.583	0.000	0.883
	0.688				0.563				0.458				0.786				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	2	1	0	0	2	0	0	0	2	1	0	1	1	0	0	10
4:15 PM	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	4
4:30 PM	0	2	1	0	0	4	0	0	0	1	0	0	0	1	0	0	9
4:45 PM	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	4
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	1	1	1	0	6
5:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	1	0	0	5
5:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3
5:45 PM	0	0	1	0	0	0	0	0	1	3	0	0	1	0	0	0	6
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	1	7	4	0	1	10	3	0	1	9	1	0	3	6	1	0	47
	8.33%	58.33%	33.33%	0.00%	7.14%	71.43%	21.43%	0.00%	9.09%	81.82%	9.09%	0.00%	30.00%	60.00%	10.00%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	2	1	0	1	3	2	0	1	4	0	0	2	3	1	0	20
<b>PEAK HR FACTOR :</b>	0.00	0.500	0.250	0.000	0.250	0.375	0.500	0.000	0.250	0.333	0.000	0.000	0.500	0.750	0.250	0.000	0.833
	0.750				0.750				0.313				0.500				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & Arrow Route  
 City: Rancho Cucamonga  
 Control: Signalized

Project ID: 19-06034-003  
 Date: 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	0	1	0	0	0	1	0	0	0	0	1	0	5
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	4	0	0	1	2	0	0	0	3	0	0	0	2	1	0	13
<b>APPROACH %'s :</b>	0.00%	100.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3
<b>PEAK HR FACTOR :</b>	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3
4:15 PM	0	0	0	0	1	1	0	0	0	3	1	0	0	0	0	0	6
4:30 PM	0	0	0	0	5	1	0	0	0	2	0	0	0	0	0	0	8
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	0	0	0	8	3	1	0	0	8	1	0	0	0	0	0	21
<b>APPROACH %'s :</b>	0.00%	0.00%	0.00%	0.00%	66.67%	25.00%	8.33%	0.00%	0.00%	88.89%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	4
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.333

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Arrow Route  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-003  
**Date:** 3/12/2019

## 4axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Arrow Route				Arrow Route				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
<b>TOTAL VOLUMES :</b>	0	1	1	0	0	3	0	0	0	0	0	0	6	0	0	0	TOTAL
<b>APPROACH %'s :</b>	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0	0	0	0	100.00%	0.00%	0.00%	0.00%	11
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	0	6
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.750
	0.250				0.250								0.500				

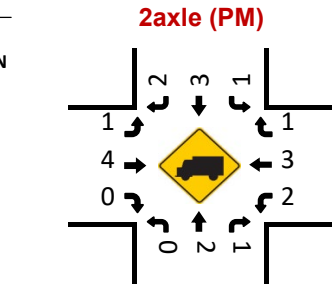
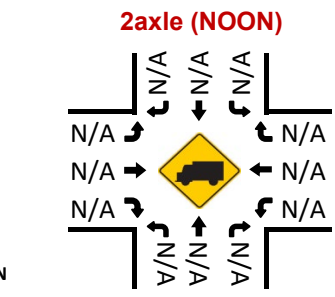
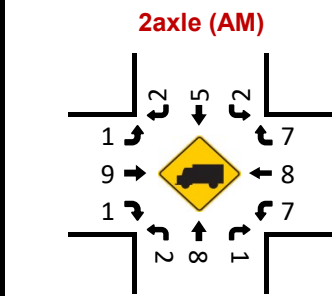
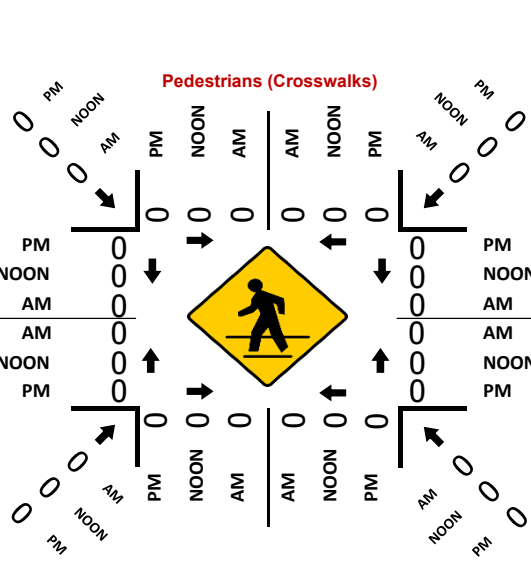
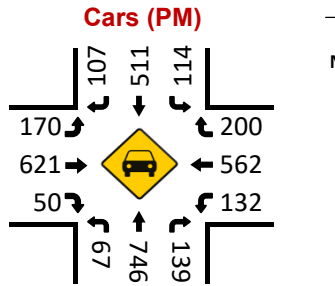
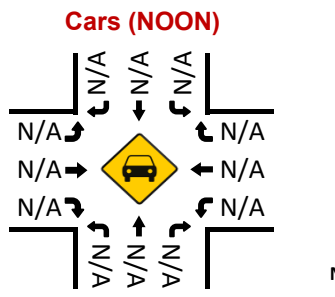
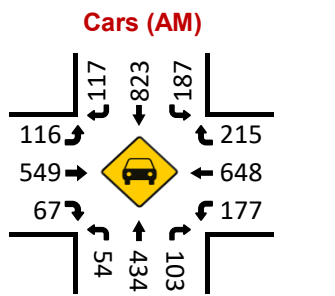
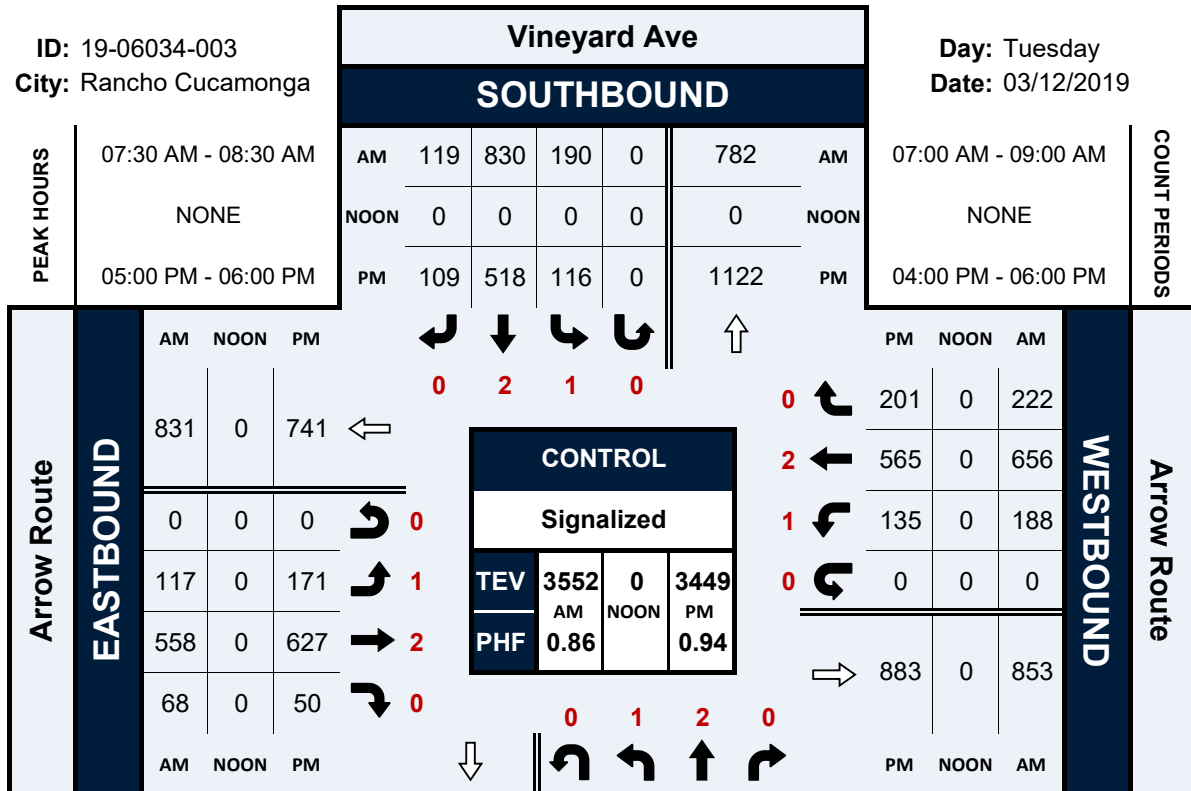
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>TOTAL VOLUMES :</b>	0	5	2	0	0	3	0	0	0	0	0	0	1	0	0	0	TOTAL
<b>APPROACH %'s :</b>	0.00%	71.43%	28.57%	0.00%	0.00%	100.00%	0.00%	0.00%	0	0	0	0	100.00%	0.00%	0.00%	0.00%	11
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	2	0	0	0	3	0	0	0	0	0	0	1	0	0	0	6
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500
	0.250				0.750								0.250				

# Vineyard Ave & Arrow Route

## Peak Hour Turning Movement Count

ID: 19-06034-003  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-004  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Baker Ave				Baker Ave				9th St				9th St				TOTAL					
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND									
AM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU						
7:00 AM	6	13	15	0	3	20	8	0	5	19	8	0	12	13	3	0					125	
7:15 AM	3	31	7	0	7	34	15	0	12	23	11	0	9	27	6	0					185	
7:30 AM	13	42	8	0	12	44	29	0	20	38	23	0	8	27	23	0					287	
7:45 AM	15	46	11	0	10	35	27	0	21	37	28	0	6	47	32	0					315	
8:00 AM	19	37	9	0	8	28	9	0	5	28	28	0	10	18	4	0					203	
8:15 AM	8	18	5	0	0	19	5	0	8	26	21	0	7	15	4	0					136	
8:30 AM	5	17	5	0	1	32	4	0	5	15	7	0	3	18	2	0					114	
8:45 AM	0	22	5	0	3	19	3	0	2	36	3	0	7	20	0	0					120	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>					
<b>APPROACH %'s :</b>	69	226	65	0	44	231	100	0	78	222	129	0	62	185	74	0	1485					
	19.17%	62.78%	18.06%	0.00%	11.73%	61.60%	26.67%	0.00%	18.18%	51.75%	30.07%	0.00%	19.31%	57.63%	23.05%	0.00%						
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>					
<b>PEAK HR VOL :</b>	50	156	35	0	37	141	80	0	58	126	90	0	33	119	65	0	990					
<b>PEAK HR FACTOR :</b>	0.658	0.848	0.795	0.000	0.771	0.801	0.690	0.000	0.690	0.829	0.804	0.000	0.825	0.633	0.508	0.000	0.786					
			0.837				0.759				0.797				0.638							
PM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL					
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU						
4:00 PM	8	45	8	0	3	32	12	0	14	36	8	0	11	28	6	0	211					
4:15 PM	9	49	10	0	2	34	4	0	5	40	9	0	7	20	2	0	191					
4:30 PM	9	37	15	0	1	33	6	0	10	39	9	0	15	38	7	0	219					
4:45 PM	12	55	4	0	0	44	6	0	9	41	10	0	14	28	5	0	228					
5:00 PM	4	51	7	0	2	38	4	0	14	33	10	0	6	41	4	0	214					
5:15 PM	5	45	10	0	0	35	5	0	10	47	14	0	10	35	2	0	218					
5:30 PM	18	48	4	0	0	47	2	0	8	49	10	0	11	39	6	0	242					
5:45 PM	5	55	10	0	0	33	2	0	3	32	14	0	6	29	3	0	192					
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>					
<b>APPROACH %'s :</b>	70	385	68	0	8	296	41	0	73	317	84	0	80	258	35	0	1715					
	13.38%	73.61%	13.00%	0.00%	2.32%	85.80%	11.88%	0.00%	15.40%	66.88%	17.72%	0.00%	21.45%	69.17%	9.38%	0.00%						
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>					
<b>PEAK HR VOL :</b>	39	199	25	0	2	164	17	0	41	170	44	0	41	143	17	0	902					
<b>PEAK HR FACTOR :</b>	0.542	0.905	0.625	0.000	0.250	0.872	0.708	0.000	0.732	0.867	0.786	0.000	0.732	0.872	0.708	0.000	0.932					
			0.926				0.915				0.898				0.897							

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-004  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Baker Ave				Baker Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	123
7:15 AM	5	13	15	0	3	20	8	0	5	19	8	0	11	13	3	0	177
7:30 AM	3	30	7	0	7	32	15	0	11	23	10	0	8	25	6	0	284
7:45 AM	13	42	8	0	12	44	29	0	20	38	20	0	8	27	23	0	312
8:00 AM	15	46	10	0	10	35	27	0	21	36	28	0	5	47	32	0	197
8:15 AM	19	35	9	0	7	28	9	0	5	27	28	0	10	18	2	0	131
8:30 AM	8	16	5	0	0	19	5	0	6	25	21	0	7	15	4	0	110
8:45 AM	5	17	4	0	1	32	3	0	5	15	5	0	3	18	2	0	116
8:55 AM	0	22	5	0	3	18	3	0	2	33	3	0	7	20	0	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	68	221	63	0	43	228	99	0	75	216	123	0	59	183	72	0	1450
	19.32%	62.78%	17.90%	0.00%	11.62%	61.62%	26.76%	0.00%	18.12%	52.17%	29.71%	0.00%	18.79%	58.28%	22.93%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL :</b>	50	153	34	0	36	139	80	0	57	124	86	0	31	117	63	0	970
<b>PEAK HR FACTOR :</b>	0.66	0.832	0.850	0.000	0.750	0.790	0.690	0.000	0.679	0.816	0.768	0.000	0.775	0.622	0.492	0.000	0.777
	0.835				0.750				0.785				0.628				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	208
4:15 PM	8	43	8	0	3	32	12	0	14	35	8	0	11	28	6	0	189
4:30 PM	9	47	10	0	2	34	4	0	5	40	9	0	7	20	2	0	219
4:45 PM	9	37	15	0	1	33	6	0	10	39	9	0	15	38	7	0	227
5:00 PM	12	55	4	0	0	43	6	0	9	41	10	0	14	28	5	0	212
5:15 PM	4	51	7	0	2	37	4	0	13	33	10	0	6	41	4	0	215
5:30 PM	5	45	10	0	0	35	5	0	10	46	14	0	8	35	2	0	242
5:45 PM	18	48	4	0	0	47	2	0	8	49	10	0	11	39	6	0	189
5:55 PM	5	54	10	0	0	33	2	0	3	30	14	0	6	29	3	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	70	380	68	0	8	294	41	0	72	313	84	0	78	258	35	0	1701
	13.51%	73.36%	13.13%	0.00%	2.33%	85.71%	11.95%	0.00%	15.35%	66.74%	17.91%	0.00%	21.02%	69.54%	9.43%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	39	199	25	0	2	162	17	0	40	169	44	0	39	143	17	0	896
<b>PEAK HR FACTOR :</b>	0.54	0.905	0.625	0.000	0.250	0.862	0.708	0.000	0.769	0.862	0.786	0.000	0.696	0.872	0.708	0.000	0.926
	0.926				0.923				0.904				0.888				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-004  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Baker Ave				Baker Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	0	1	0	0	0	2	0	0	1	0	1	0	1	2	0	0	8
7:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	
8:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	4	
8:15 AM	0	2	0	0	0	0	0	0	2	1	0	0	0	0	0	5	
8:30 AM	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	4	
8:45 AM	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	4	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	1	5	1	0	0	3	1	0	3	6	6	0	3	2	1	0	32
	14.29%	71.43%	14.29%	0.00%	0.00%	75.00%	25.00%	0.00%	20.00%	40.00%	40.00%	0.00%	50.00%	33.33%	16.67%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	3	0	0	0	2	0	0	1	2	4	0	2	2	1	0	17
<b>PEAK HR FACTOR :</b>	0.000	0.375	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.500	0.333	0.000	0.500	0.250	0.250	0.000	0.531
	0.375				0.250				0.583				0.417				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	5	0	0	0	2	0	0	1	4	0	0	1	0	0	0	13
	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	20.00%	80.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	0	2	0	0	1	1	0	0	1	0	0	0	5
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.625
	0.000				0.500				0.500				0.250				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-004  
**Date:** 3/12/2019

## 3axle

NS/EW Streets:	Baker Ave				Baker Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3
	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL :</b>	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	3
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.375
			0.250				0.250								0.250		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250
													0.250				



# National Data & Surveying Services Intersection Turning Movement Count

Location: Baker Ave & 9th St  
 City: Rancho Cucamonga  
 Control: 4-Way Stop

Project ID: 19-06034-004  
 Date: 3/12/2019

**4axle**

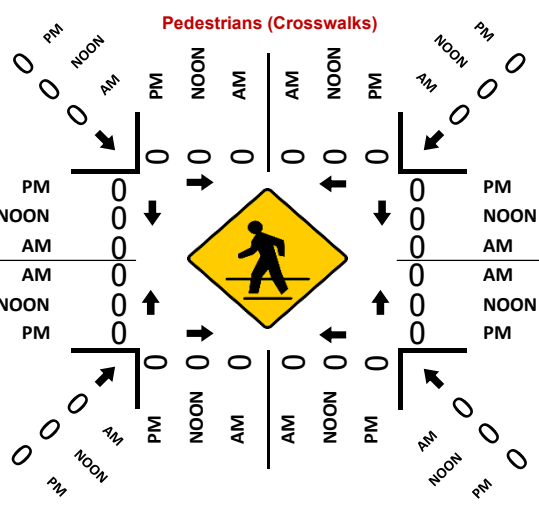
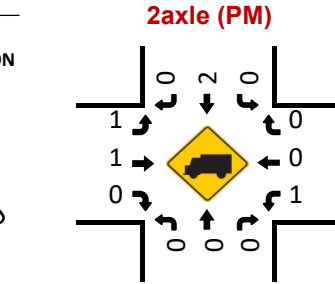
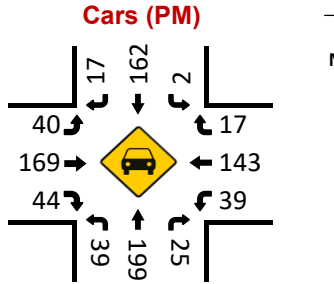
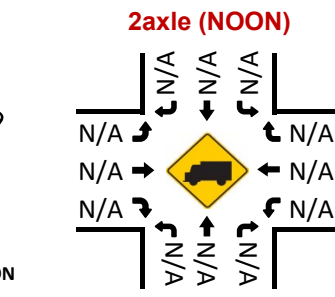
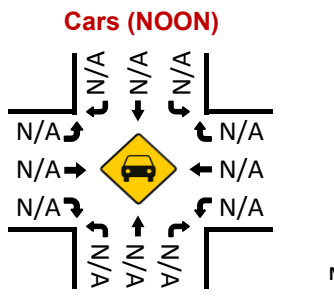
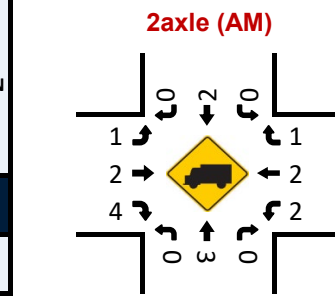
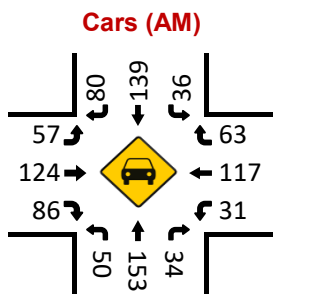
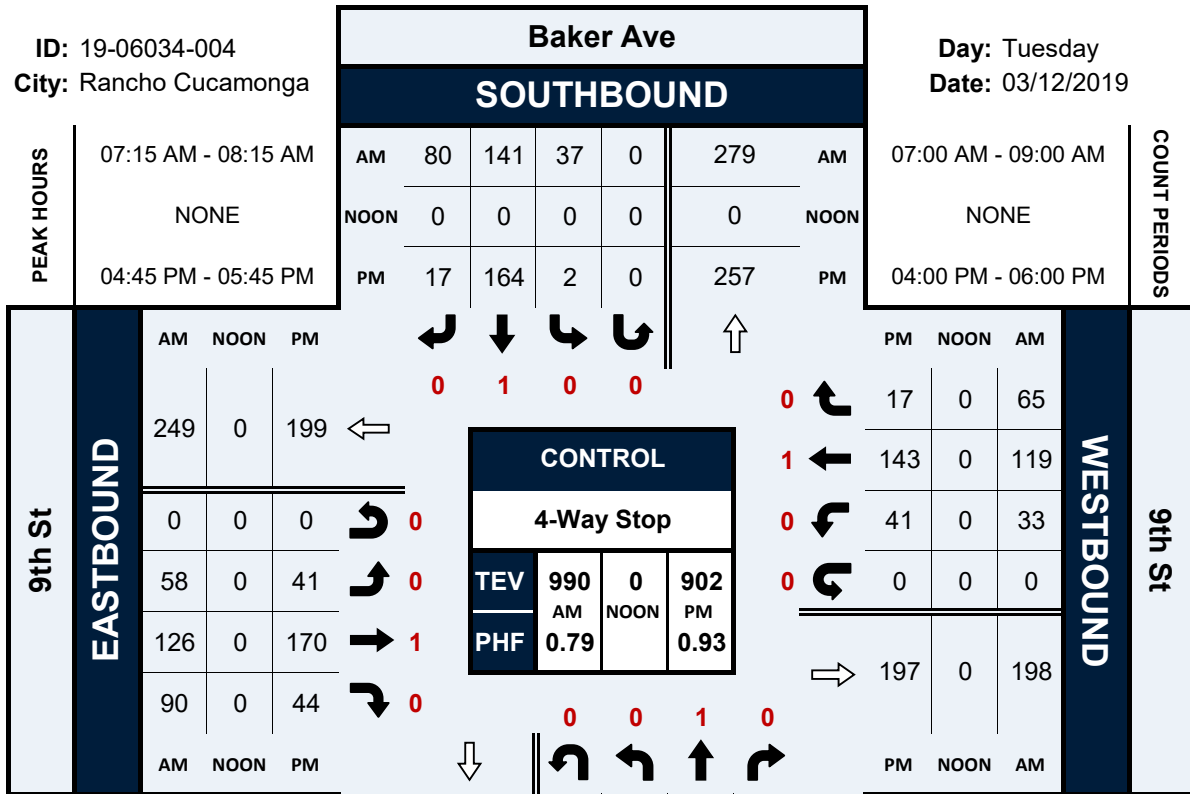
NS/EW Streets:	Baker Ave				Baker Ave				9th St				9th St								
<b>AM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																				TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					0.000
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																				TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					0
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					0.000

# Baker Ave & 9th St

## Peak Hour Turning Movement Count

ID: 19-06034-004  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-005  
**Date:** 3/12/2019

## Total

NS/EW Streets:		Vineyard Ave				Vineyard Ave				9th St				9th St				TOTAL	
		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
AM		1	2	1	0	1	2	0	0	1	1	0	0	0	1	1	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM		11	80	16	0	6	171	14	0	5	10	12	0	8	11	8	0	352	
7:15 AM		8	116	24	0	10	167	13	0	2	29	8	0	8	30	4	0	419	
7:30 AM		12	156	37	0	11	250	10	0	12	39	12	0	14	28	6	0	587	
7:45 AM		35	138	45	0	22	288	10	0	9	32	9	0	16	37	6	0	647	
8:00 AM		5	137	20	0	13	266	5	0	7	29	16	0	12	9	9	0	528	
8:15 AM		7	120	32	0	15	193	11	0	3	25	3	0	5	11	7	0	432	
8:30 AM		2	114	31	0	9	150	4	0	3	17	4	0	13	18	3	0	368	
8:45 AM		6	134	33	0	9	128	7	0	8	30	2	0	10	10	7	0	384	
<b>TOTAL VOLUMES :</b>		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
<b>APPROACH %'s :</b>		86	995	238	0	95	1613	74	0	49	211	66	0	86	154	50	0	3717	
		6.52%	75.44%	18.04%	0.00%	5.33%	90.52%	4.15%	0.00%	15.03%	64.72%	20.25%	0.00%	29.66%	53.10%	17.24%	0.00%		
<b>PEAK HR :</b>		07:30 AM - 08:30 AM																	TOTAL
<b>PEAK HR VOL :</b>		59	551	134	0	61	997	36	0	31	125	40	0	47	85	28	0	2194	
<b>PEAK HR FACTOR :</b>		0.421	0.883	0.744	0.000	0.693	0.865	0.818	0.000	0.646	0.801	0.625	0.000	0.734	0.574	0.778	0.000	0.848	
		0.853				0.855				0.778				0.678					
PM		1	2	1	0	1	2	0	0	1	1	0	0	0	1	1	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM		7	171	30	0	8	127	11	0	15	33	10	0	26	22	24	0	484	
4:15 PM		5	186	30	0	6	156	9	0	15	25	12	0	23	18	14	0	499	
4:30 PM		9	224	32	0	8	148	10	0	16	23	9	0	22	36	19	0	556	
4:45 PM		10	202	28	0	9	144	10	0	9	26	11	0	20	29	13	0	511	
5:00 PM		9	224	23	0	5	146	9	0	12	28	4	0	28	34	24	0	546	
5:15 PM		12	190	22	0	9	138	13	0	11	32	5	0	31	25	13	0	501	
5:30 PM		14	240	20	0	1	174	13	0	14	30	12	0	21	28	13	0	580	
5:45 PM		10	220	26	0	8	179	12	0	8	27	7	0	18	17	9	0	541	
<b>TOTAL VOLUMES :</b>		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
<b>APPROACH %'s :</b>		76	1657	211	0	54	1212	87	0	100	224	70	0	189	209	129	0	4218	
		3.91%	85.24%	10.85%	0.00%	3.99%	89.58%	6.43%	0.00%	25.38%	56.85%	17.77%	0.00%	35.86%	39.66%	24.48%	0.00%		
<b>PEAK HR :</b>		05:00 PM - 06:00 PM																	TOTAL
<b>PEAK HR VOL :</b>		45	874	91	0	23	637	47	0	45	117	28	0	98	104	59	0	2168	
<b>PEAK HR FACTOR :</b>		0.804	0.910	0.875	0.000	0.639	0.890	0.904	0.000	0.804	0.914	0.583	0.000	0.790	0.765	0.615	0.000	0.934	
		0.922				0.888				0.848				0.759					

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-005  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
7:00 AM	9	75	16	0	6	168	14	0	5	10	12	0	6	9	7	0	337
7:15 AM	8	111	22	0	9	165	12	0	2	29	8	0	6	30	4	0	406
7:30 AM	12	153	32	0	11	245	9	0	12	39	12	0	8	28	6	0	567
7:45 AM	35	133	43	0	21	285	9	0	9	32	9	0	13	37	5	0	631
8:00 AM	5	135	19	0	13	261	5	0	7	27	15	0	10	8	9	0	514
8:15 AM	7	117	31	0	14	190	11	0	3	23	3	0	3	11	7	0	420
8:30 AM	2	109	30	0	9	144	4	0	2	17	4	0	11	18	3	0	353
8:45 AM	6	129	31	0	8	126	7	0	7	28	2	0	8	10	7	0	369
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	84	962	224	0	91	1584	71	0	47	205	65	0	65	151	48	0	3597
	6.61%	75.75%	17.64%	0.00%	5.21%	90.72%	4.07%	0.00%	14.83%	64.67%	20.50%	0.00%	24.62%	57.20%	18.18%	0.00%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	59	538	125	0	59	981	34	0	31	121	39	0	34	84	27	0	2132
<b>PEAK HR FACTOR :</b>	0.42	0.879	0.727	0.000	0.702	0.861	0.773	0.000	0.646	0.776	0.650	0.000	0.654	0.568	0.750	0.000	0.845
	0.855				0.852				0.758				0.659				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	7	170	25	0	8	122	11	0	13	32	10	0	22	21	23	0	464
4:15 PM	5	185	26	0	6	153	9	0	15	25	12	0	22	18	12	0	488
4:30 PM	9	220	24	0	8	143	10	0	16	23	9	0	20	36	19	0	537
4:45 PM	9	202	20	0	8	144	10	0	9	26	11	0	15	29	11	0	494
5:00 PM	9	223	16	0	4	144	9	0	12	28	4	0	26	34	24	0	533
5:15 PM	12	189	21	0	8	136	13	0	11	31	5	0	24	24	11	0	485
5:30 PM	14	240	19	0	1	172	13	0	14	30	12	0	21	28	13	0	577
5:45 PM	10	219	23	0	7	178	12	0	8	25	7	0	16	17	9	0	531
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	75	1648	174	0	50	1192	87	0	98	220	70	0	166	207	122	0	4109
	3.95%	86.87%	9.17%	0.00%	3.76%	89.69%	6.55%	0.00%	25.26%	56.70%	18.04%	0.00%	33.54%	41.82%	24.65%	0.00%	
<b>PEAK HR :</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	45	871	79	0	20	630	47	0	45	114	28	0	87	103	57	0	2126
<b>PEAK HR FACTOR :</b>	0.80	0.907	0.859	0.000	0.625	0.885	0.904	0.000	0.804	0.919	0.583	0.000	0.837	0.757	0.594	0.000	0.921
	0.911				0.885				0.835				0.735				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-005  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
7:00 AM	2	5	0	0	0	2	0	0	0	0	0	0	0	2	1	0	12
7:15 AM	0	2	1	0	1	1	1	0	0	0	0	0	1	0	0	0	7
7:30 AM	0	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	4	1	0	0	3	1	0	0	0	0	0	1	0	1	0	11
8:00 AM	0	2	1	0	0	3	0	0	0	2	0	0	1	1	0	0	10
8:15 AM	0	2	0	0	0	3	0	0	0	1	0	0	1	0	0	0	7
8:30 AM	0	5	1	0	0	5	0	0	1	0	0	0	1	0	0	0	13
8:45 AM	0	4	1	0	0	1	0	0	1	2	0	0	0	0	0	0	9
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	2	27	6	0	1	22	2	0	2	5	0	0	5	3	2	0	77
	5.71%	77.14%	17.14%	0.00%	4.00%	88.00%	8.00%	0.00%	28.57%	71.43%	0.00%	0.00%	50.00%	30.00%	20.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	11	3	0	0	13	1	0	0	3	0	0	3	1	1	0	36
<b>PEAK HR FACTOR :</b>	0.000	0.688	0.750	0.000	0.000	0.813	0.250	0.000	0.000	0.375	0.000	0.000	0.750	0.250	0.250	0.000	0.818
			0.700				0.875				0.375				0.625		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	0	1	2	0	0	5	0	0	2	1	0	0	3	1	1	0	16
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
4:30 PM	0	3	3	0	0	4	0	0	0	0	0	0	1	0	0	0	11
4:45 PM	1	0	1	0	1	0	0	0	0	0	0	0	1	0	2	0	6
5:00 PM	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	5
5:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	2	0	1	0	5
5:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	1	0	1	0	0	0	0	2	0	0	0	0	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	1	6	9	0	3	13	0	0	2	4	0	0	9	1	4	0	52
	6.25%	37.50%	56.25%	0.00%	18.75%	81.25%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	64.29%	7.14%	28.57%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	2	3	0	2	3	0	0	0	3	0	0	3	0	1	0	17
<b>PEAK HR FACTOR :</b>	0.00	0.500	0.750	0.000	0.500	0.750	0.000	0.000	0.000	0.375	0.000	0.000	0.375	0.000	0.250	0.000	0.850
			0.625				0.625				0.375				0.333		



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 9th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-005  
**Date:** 3/12/2019

## 4axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				9th St				9th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	4
7:30 AM	0	0	3	0	0	1	0	0	0	0	0	0	6	0	0	0	10
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3
8:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3
8:15 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
8:45 AM	0	0	1	0	1	1	0	0	0	0	0	0	2	0	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	2	6	0	3	7	0	0	0	0	0	0	14	0	0	0	32
<b>APPROACH %'s :</b>	0.00%	25.00%	75.00%	0.00%	30.00%	70.00%	0.00%	0.00%	0	0	0	0	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	1	4	0	2	3	0	0	0	0	0	0	9	0	0	0	19
<b>PEAK HR FACTOR :</b>	0.000	0.250	0.333	0.000	0.500	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.475
	0.417				0.625								0.375				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	1 ET	0 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4
4:15 PM	0	1	3	0	0	1	0	0	0	0	0	0	0	0	2	0	7
4:30 PM	0	1	4	0	0	0	0	0	0	0	0	0	1	0	0	0	6
4:45 PM	0	0	7	0	0	0	0	0	0	0	0	0	4	0	0	0	11
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	1	0	0	0	7
5:15 PM	0	1	1	0	1	0	0	0	0	0	0	0	5	0	1	0	9
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	2	0	0	1	0	0	0	0	0	0	2	0	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	3	26	0	1	3	0	0	0	0	0	0	14	0	3	0	50
<b>APPROACH %'s :</b>	0.00%	10.34%	89.66%	0.00%	25.00%	75.00%	0.00%	0.00%	0	0	0	0	82.35%	0.00%	17.65%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	1	9	0	1	2	0	0	0	0	0	0	8	0	1	0	22
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.375	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.000	0.250	0.000	0.611
	0.417				0.750								0.375				





# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-006  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	11	26	3	0	3	27	8	0	8	33	6	0	4	26	2	0	157
7:15 AM	23	23	9	0	11	46	9	0	5	46	8	0	6	45	7	0	238
7:30 AM	25	33	9	0	21	49	18	0	19	52	12	0	5	69	15	0	327
7:45 AM	17	48	11	0	24	41	15	0	15	77	11	0	7	67	24	0	357
8:00 AM	11	31	12	0	12	50	5	0	10	43	5	0	12	48	9	0	248
8:15 AM	10	15	8	0	8	30	11	0	4	54	2	0	2	45	5	0	194
8:30 AM	5	22	2	0	0	41	6	0	8	33	3	0	4	54	2	0	180
8:45 AM	11	18	6	0	3	22	9	0	4	40	3	0	3	31	2	0	152
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	113	216	60	0	82	306	81	0	73	378	50	0	43	385	66	0	1853
	29.05%	55.53%	15.42%	0.00%	17.48%	65.25%	17.27%	0.00%	14.57%	75.45%	9.98%	0.00%	8.70%	77.94%	13.36%	0.00%	
<b>PEAK HR:</b>	<b>07:15 AM - 08:15 AM</b>																TOTAL
<b>PEAK HR VOL:</b>	76	135	41	0	68	186	47	0	49	218	36	0	30	229	55	0	1170
<b>PEAK HR FACTOR:</b>	0.760	0.703	0.854	0.000	0.708	0.930	0.653	0.000	0.645	0.708	0.750	0.000	0.625	0.830	0.573	0.000	0.819
	0.829				0.855				0.735				0.801				
PM	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	6	47	4	0	9	35	8	0	9	62	8	0	8	49	9	0	254
4:15 PM	5	43	6	0	1	43	9	0	13	55	10	0	7	38	11	0	241
4:30 PM	9	40	4	0	8	46	6	0	17	53	3	0	12	63	8	0	269
4:45 PM	6	51	5	0	8	48	13	0	15	44	8	0	10	63	13	0	284
5:00 PM	9	48	11	0	7	41	5	0	11	60	11	0	10	64	14	0	291
5:15 PM	9	37	8	0	8	45	9	0	15	61	12	0	9	59	11	0	283
5:30 PM	8	55	5	0	8	47	14	0	8	68	11	0	9	57	10	0	300
5:45 PM	6	49	11	0	5	39	5	0	14	70	9	0	9	45	7	0	269
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s:</b>	58	370	54	0	54	344	69	0	102	473	72	0	74	438	83	0	2191
	12.03%	76.76%	11.20%	0.00%	11.56%	73.66%	14.78%	0.00%	15.77%	73.11%	11.13%	0.00%	12.44%	73.61%	13.95%	0.00%	
<b>PEAK HR:</b>	<b>04:45 PM - 05:45 PM</b>																TOTAL
<b>PEAK HR VOL:</b>	32	191	29	0	31	181	41	0	49	233	42	0	38	243	48	0	1158
<b>PEAK HR FACTOR:</b>	0.889	0.868	0.659	0.000	0.969	0.943	0.732	0.000	0.817	0.857	0.875	0.000	0.950	0.949	0.857	0.000	0.965
	0.926				0.917				0.920				0.935				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-006  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St				
<b>AM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	11	26	2	0	3	26	8	0	8	32	6	0	4	26	0	0	152
7:15 AM	23	23	9	0	11	44	7	0	5	45	8	0	6	44	7	0	232
7:30 AM	25	33	9	0	20	48	18	0	19	52	12	0	5	69	15	0	325
7:45 AM	17	47	11	0	23	41	14	0	14	77	11	0	7	67	24	0	353
8:00 AM	11	30	12	0	12	50	5	0	10	43	5	0	12	46	9	0	245
8:15 AM	10	13	8	0	8	30	11	0	4	52	2	0	2	43	5	0	188
8:30 AM	4	22	1	0	0	39	6	0	7	31	2	0	4	52	2	0	170
8:45 AM	11	18	5	0	3	22	8	0	4	40	2	0	3	30	2	0	148
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	112	212	57	0	80	300	77	0	71	372	48	0	43	377	64	0	1813
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL :</b>	76	133	41	0	66	183	44	0	48	217	36	0	30	226	55	0	1155
<b>PEAK HR FACTOR :</b>	0.76	0.707	0.854	0.000	0.717	0.915	0.611	0.000	0.632	0.705	0.750	0.000	0.625	0.819	0.573	0.000	0.818
	0.833				0.852				0.738				0.793				
<b>PM</b>	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	6	45	4	0	9	35	8	0	9	62	8	0	7	48	9	0	250
4:15 PM	5	42	6	0	1	43	9	0	12	52	10	0	7	38	11	0	236
4:30 PM	9	40	4	0	8	46	6	0	17	51	3	0	12	61	8	0	265
4:45 PM	6	50	5	0	8	48	12	0	15	44	8	0	8	63	13	0	280
5:00 PM	9	48	11	0	7	39	5	0	11	59	11	0	10	64	14	0	288
5:15 PM	9	37	7	0	8	44	8	0	15	60	11	0	9	59	11	0	278
5:30 PM	8	54	5	0	8	47	14	0	8	68	11	0	9	56	9	0	297
5:45 PM	6	49	11	0	5	39	5	0	14	68	9	0	9	43	7	0	265
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	58	365	53	0	54	341	67	0	101	464	71	0	71	432	82	0	2159
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	32	189	28	0	31	178	39	0	49	231	41	0	36	242	47	0	1143
<b>PEAK HR FACTOR :</b>	0.89	0.875	0.636	0.000	0.969	0.927	0.696	0.000	0.817	0.849	0.932	0.000	0.900	0.945	0.839	0.000	0.962
	0.915				0.899				0.922				0.923				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-006  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St						
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU			
7:00 AM	0	1	1	0	0	1	0	0	0	1	0	0	0	0	1	1	0	0	5
7:15 AM	0	0	0	0	0	2	2	0	0	0	1	0	0	0	0	1	0	0	6
7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3
8:15 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	4
8:30 AM	0	0	1	0	0	2	0	0	0	1	2	1	0	0	1	0	0	0	8
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>		33
<b>APPROACH %'s :</b>	0.00%	57.14%	42.86%	0.00%	16.67%	50.00%	33.33%	0.00%	14.29%	71.43%	14.29%	0.00%	0.00%	71.43%	28.57%	0.00%			
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>		
<b>PEAK HR VOL :</b>	0	2	0	0	2	3	3	0	0	1	0	0	0	3	0	0			14
<b>PEAK HR FACTOR :</b>	0.000	0.500	0.000	0.000	0.500	0.375	0.375	0.000	0.000	0.250	0.000	0.000	0.000	0.375	0.000	0.000			0.583
			0.500			0.500				0.250				0.375					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU			
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	4	
4:15 PM	0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	4	
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	
4:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	4	
5:00 PM	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	3	
5:15 PM	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3	
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	3	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>		25
<b>APPROACH %'s :</b>	0.00%	83.33%	16.67%	0.00%	0.00%	75.00%	25.00%	0.00%	14.29%	71.43%	14.29%	0.00%	37.50%	62.50%	0.00%	0.00%			
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>		
<b>PEAK HR VOL :</b>	0	2	1	0	0	3	1	0	0	1	1	0	2	1	0	0			12
<b>PEAK HR FACTOR :</b>	0.00	0.500	0.250	0.000	0.000	0.375	0.250	0.000	0.000	0.250	0.250	0.000	0.250	0.250	0.000	0.000			0.750
			0.750			0.500				0.500				0.375					

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-006  
**Date:** 3/12/2019

## 3axle

NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	1	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0	5
	100.00%	0.00%	0.00%	0.00%					50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	5
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250

# National Data & Surveying Services Intersection Turning Movement Count

Location: Baker Ave & 8th St  
 City: Rancho Cucamonga  
 Control: 4-Way Stop

Project ID: 19-06034-006  
 Date: 3/12/2019

## 4axle

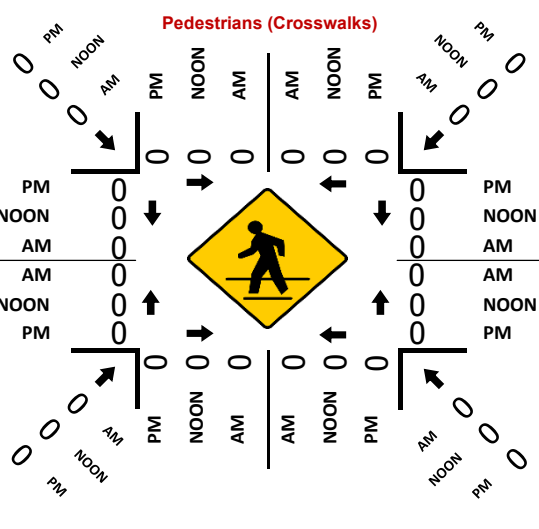
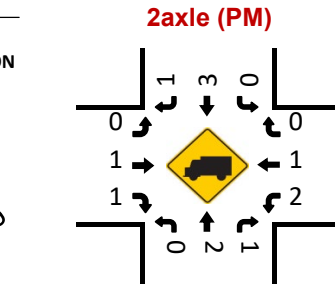
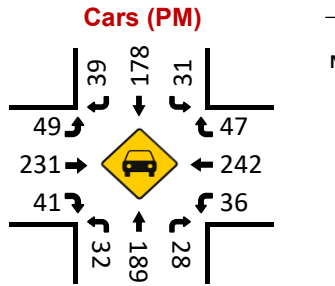
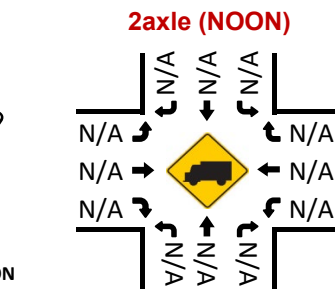
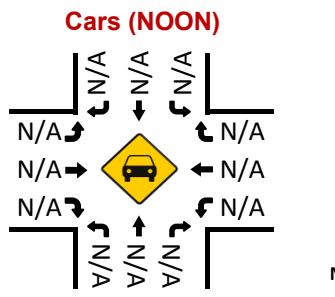
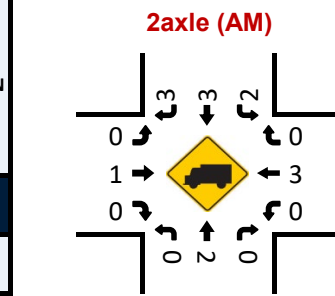
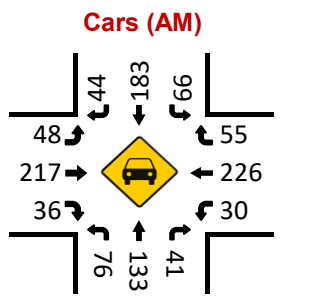
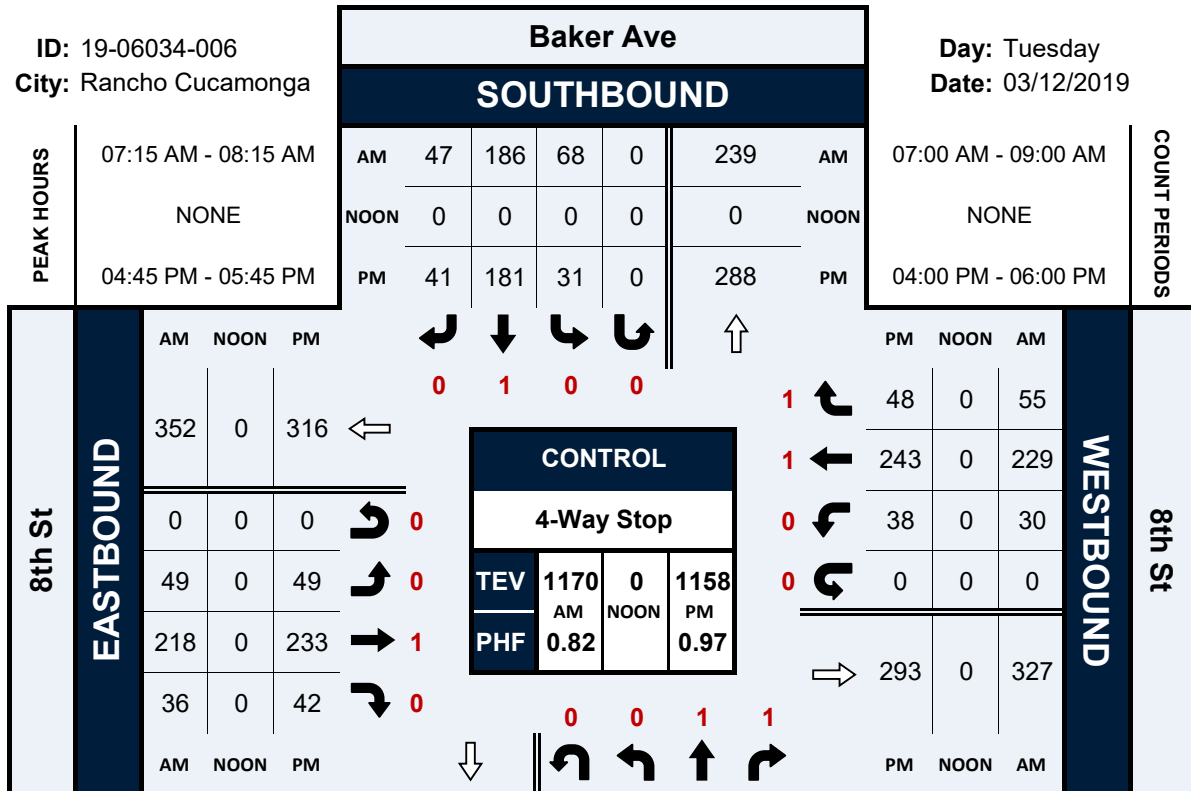
NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St								
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					2
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																				TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					TOTAL
<b>APPROACH %'s :</b>	0	0	0	0	0	0	0	0	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%					2
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																				TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.250

# Baker Ave & 8th St

## Peak Hour Turning Movement Count

ID: 19-06034-006  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-007  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				8th St				8th St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
7:00 AM	6	102	5	0	4	176	15	0	8	31	5	0	4	14	8	0	
7:15 AM	7	115	5	0	4	166	10	0	17	37	9	0	6	39	7	0	
7:30 AM	15	178	14	0	7	251	17	0	26	44	8	0	5	52	14	0	
7:45 AM	10	176	7	0	14	265	25	0	26	73	14	0	8	70	11	0	
8:00 AM	10	142	9	0	21	250	28	0	17	37	16	0	2	28	6	0	
8:15 AM	11	138	8	0	7	173	18	0	25	40	4	0	5	28	5	0	
8:30 AM	8	113	2	0	9	150	9	0	10	21	3	0	8	41	10	0	
8:45 AM	10	152	7	0	6	118	13	0	10	31	7	0	6	23	7	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
<b>APPROACH %'s :</b>	77	1116	57	0	72	1549	135	0	139	314	66	0	44	295	68	0	
	6.16%	89.28%	4.56%	0.00%	4.10%	88.21%	7.69%	0.00%	26.78%	60.50%	12.72%	0.00%	10.81%	72.48%	16.71%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																
<b>PEAK HR VOL :</b>	46	634	38	0	49	939	88	0	94	194	42	0	20	178	36	0	
<b>PEAK HR FACTOR :</b>	0.767	0.890	0.679	0.000	0.583	0.886	0.786	0.000	0.904	0.664	0.656	0.000	0.625	0.636	0.643	0.000	
	0.867				0.885				0.730				0.657				
<b>TOTAL</b>																	2358
																	0.843
PM	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	
4:00 PM	7	162	11	0	7	129	19	0	26	39	16	0	7	47	10	0	
4:15 PM	10	230	11	0	5	178	21	0	19	40	8	0	5	30	5	0	
4:30 PM	13	221	8	0	7	149	21	1	27	36	5	0	7	51	8	0	
4:45 PM	10	202	5	0	9	148	18	0	22	33	7	0	5	57	4	0	
5:00 PM	13	204	5	0	9	144	9	0	24	50	13	0	5	63	8	0	
5:15 PM	13	237	3	0	4	174	16	0	16	51	11	0	12	52	13	0	
5:30 PM	10	237	13	0	6	178	25	0	23	47	15	0	7	44	8	0	
5:45 PM	4	200	7	0	9	181	17	0	34	45	14	0	8	34	9	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
<b>APPROACH %'s :</b>	80	1693	63	0	56	1281	146	1	191	341	89	0	56	378	65	0	
	4.36%	92.21%	3.43%	0.00%	3.77%	86.32%	9.84%	0.07%	30.76%	54.91%	14.33%	0.00%	11.22%	75.75%	13.03%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																
<b>PEAK HR VOL :</b>	40	878	28	0	28	677	67	0	97	193	53	0	32	193	38	0	
<b>PEAK HR FACTOR :</b>	0.769	0.926	0.538	0.000	0.778	0.935	0.670	0.000	0.713	0.946	0.883	0.000	0.667	0.766	0.731	0.000	
	0.910				0.923				0.922				0.854				
<b>TOTAL</b>																	2324
																	0.948

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-007  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				8th St				8th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	5	93	5	0	4	170	15	0	8	30	4	0	4	13	7	0	358
7:15 AM	7	109	4	0	4	163	10	0	17	37	9	0	6	38	7	0	411
7:30 AM	15	173	13	0	7	239	17	0	26	43	8	0	4	52	12	0	609
7:45 AM	10	169	7	0	14	260	25	0	26	72	14	0	8	70	11	0	686
8:00 AM	10	140	8	0	21	242	26	0	16	37	16	0	2	28	6	0	552
8:15 AM	10	134	6	0	7	171	17	0	25	39	2	0	3	28	4	0	446
8:30 AM	8	110	2	0	9	144	8	0	10	21	2	0	7	40	6	0	367
8:45 AM	10	147	6	0	6	112	13	0	10	30	7	0	5	22	7	0	375
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	75	1075	51	0	72	1501	131	0	138	309	62	0	39	291	60	0	3804
	6.24%	89.51%	4.25%	0.00%	4.23%	88.09%	7.69%	0.00%	27.11%	60.71%	12.18%	0.00%	10.00%	74.62%	15.38%	0.00%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	45	616	34	0	49	912	85	0	93	191	40	0	17	178	33	0	2293
<b>PEAK HR FACTOR :</b>	0.75	0.890	0.654	0.000	0.583	0.877	0.817	0.000	0.894	0.663	0.625	0.000	0.531	0.636	0.688	0.000	0.836
	0.864				0.875				0.723				0.640				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	7	155	9	0	6	123	18	0	26	39	16	0	7	46	10	0	462
4:15 PM	10	223	10	0	4	174	20	0	19	38	8	0	5	30	5	0	546
4:30 PM	13	210	8	0	7	143	20	1	25	34	5	0	6	50	8	0	530
4:45 PM	10	195	5	0	9	143	18	0	22	32	7	0	5	55	3	0	504
5:00 PM	13	196	5	0	8	141	9	0	24	49	13	0	5	63	8	0	534
5:15 PM	12	235	3	0	4	165	16	0	15	51	10	0	12	52	13	0	588
5:30 PM	9	235	13	0	6	176	25	0	23	47	15	0	7	43	8	0	607
5:45 PM	3	197	7	0	9	178	17	0	33	45	14	0	8	33	9	0	553
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	77	1646	60	0	53	1243	143	1	187	335	88	0	55	372	64	0	4324
	4.32%	92.32%	3.37%	0.00%	3.68%	86.32%	9.93%	0.07%	30.66%	54.92%	14.43%	0.00%	11.20%	75.76%	13.03%	0.00%	
<b>PEAK HR :</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	37	863	28	0	27	660	67	0	95	192	52	0	32	191	38	0	2282
<b>PEAK HR FACTOR :</b>	0.71	0.918	0.538	0.000	0.750	0.927	0.670	0.000	0.720	0.941	0.867	0.000	0.667	0.758	0.731	0.000	0.940
	0.903				0.911				0.921				0.847				



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-007  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				8th St				8th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	TOTAL
7:00 AM	1	8	0	0	0	2	0	0	0	1	1	0	0	1	1	0	15
7:15 AM	0	2	1	0	0	2	0	0	0	0	0	0	0	1	0	0	6
7:30 AM	0	3	0	0	0	4	0	0	0	1	0	0	1	0	0	0	9
7:45 AM	0	5	0	0	0	3	0	0	0	1	0	0	0	0	0	0	9
8:00 AM	0	2	0	0	0	3	2	0	1	0	0	0	0	0	0	0	8
8:15 AM	0	2	0	0	0	2	1	0	0	0	2	0	0	0	1	0	8
8:30 AM	0	3	0	0	0	4	1	0	0	0	1	0	0	0	3	0	12
8:45 AM	0	4	0	0	0	2	0	0	0	1	0	0	0	0	0	0	7
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	1	29	1	0	0	22	4	0	1	4	4	0	1	2	5	0	74
<b>APPROACH %'s :</b>	3.23%	93.55%	3.23%	0.00%	0.00%	84.62%	15.38%	0.00%	11.11%	44.44%	44.44%	0.00%	12.50%	25.00%	62.50%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	12	0	0	0	12	3	0	1	2	2	0	1	0	1	0	34
<b>PEAK HR FACTOR :</b>	0.000	0.600	0.000	0.000	0.000	0.750	0.375	0.000	0.250	0.500	0.250	0.000	0.250	0.000	0.250	0.000	0.944
	0.600				0.750				0.625				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	TOTAL
4:00 PM	0	4	1	0	1	5	1	0	0	0	0	0	0	1	0	0	13
4:15 PM	0	1	1	0	0	3	0	0	0	1	0	0	0	0	0	0	6
4:30 PM	0	5	0	0	0	5	0	0	1	1	0	0	0	1	0	0	13
4:45 PM	0	2	0	0	0	1	0	0	0	1	0	0	0	2	1	0	7
5:00 PM	0	2	0	0	0	2	0	0	0	1	0	0	0	0	0	0	5
5:15 PM	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	5
5:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	1	18	2	0	1	20	1	0	2	4	0	0	0	6	1	0	56
<b>APPROACH %'s :</b>	4.76%	85.71%	9.52%	0.00%	4.55%	90.91%	4.55%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	85.71%	14.29%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	1	6	0	0	0	6	0	0	1	1	0	0	0	2	0	0	17
<b>PEAK HR FACTOR :</b>	0.25	0.750	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.850
	0.875				0.500				0.500				0.500				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-007  
**Date:** 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				8th St				8th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	4
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	3
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	4	4	0	0	3	0	0	0	0	0	0	2	2	3	0	18
<b>APPROACH %'s :</b>	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.57%	28.57%	42.86%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	2	3	0	0	1	0	0	0	0	0	0	2	0	2	0	10
<b>PEAK HR FACTOR :</b>	0.000	0.250	0.375	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.625
			0.625			0.250									0.500		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	4
4:30 PM	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1	0	0	2	1	2	0	1	2	1	0	0	0	0	0	10
<b>APPROACH %'s :</b>	0.00%	100.00%	0.00%	0.00%	40.00%	20.00%	40.00%	0.00%	25.00%	50.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	3
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.375
						0.500					0.250						

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** Signalized

**Project ID:** 19-06034-007  
**Date:** 3/12/2019

## 4axle

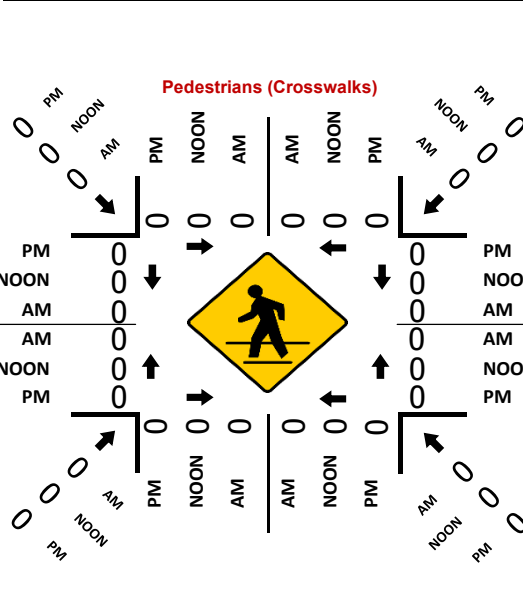
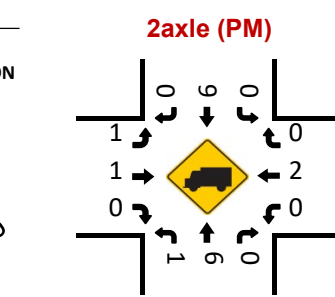
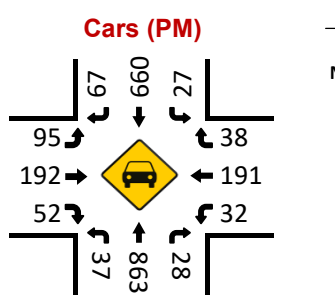
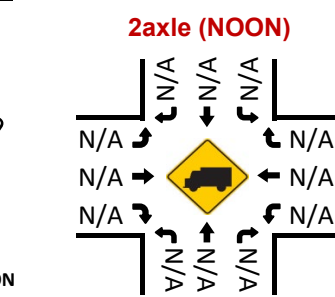
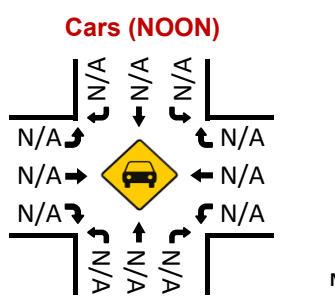
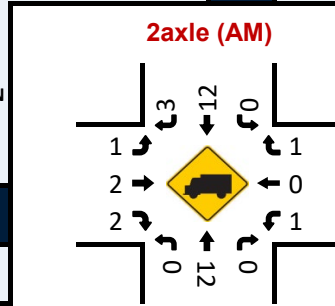
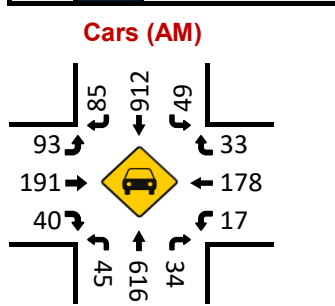
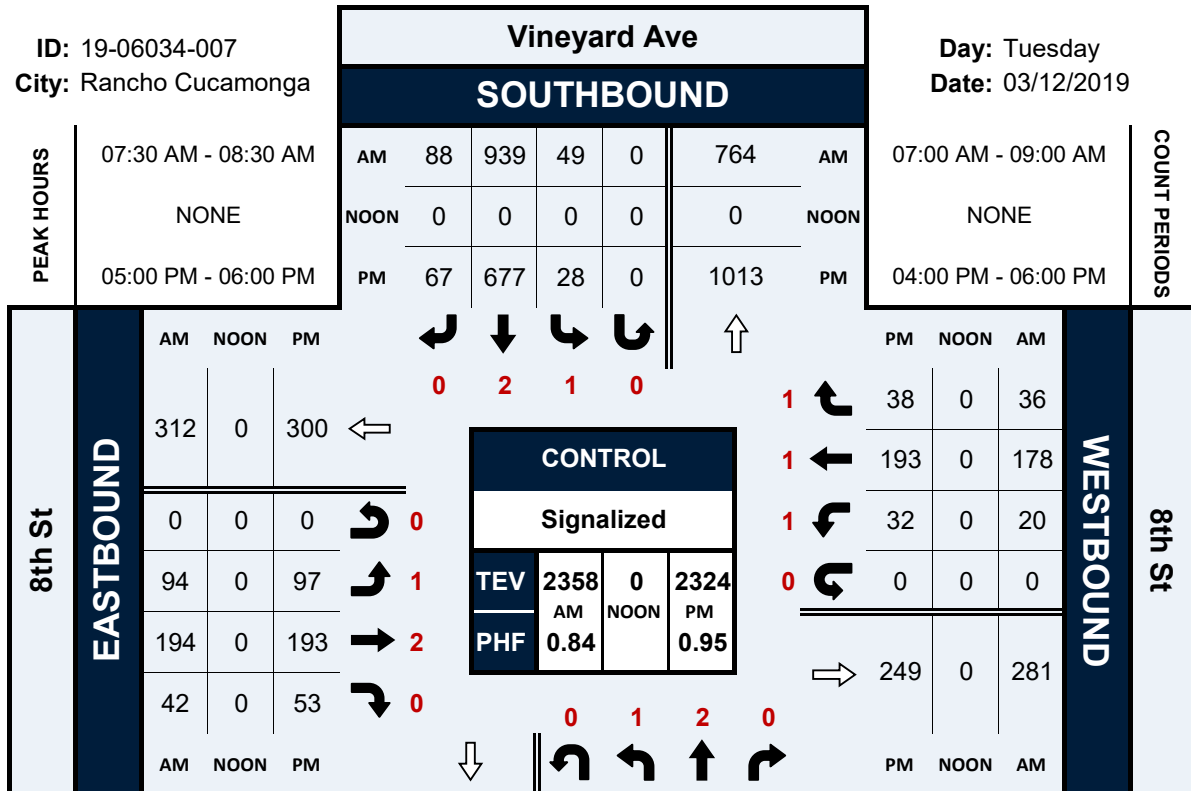
NS/EW Streets:	Vineyard Ave				Vineyard Ave				8th St				8th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	TOTAL
7:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
7:30 AM	0	2	1	0	0	8	0	0	0	0	0	0	0	0	0	0	11
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	1	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
8:45 AM	0	1	0	0	0	4	0	0	0	0	0	0	1	0	0	0	6
<b>TOTAL VOLUMES :</b>	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	<b>TOTAL</b>
<b>APPROACH %'s :</b>	10.00%	80.00%	10.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	36
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	1	4	1	0	0	14	0	0	0	1	0	0	0	0	0	0	21
<b>PEAK HR FACTOR :</b>	0.250	0.500	0.250	0.000	0.000	0.438	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.477
			0.500				0.438				0.250						
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	1 WT	1 WR	0 WU	TOTAL
4:00 PM	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	6	0	0	0	1	0	0	0	0	0	0	1	0	0	0	8
4:45 PM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9
5:00 PM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	1	1	0	0	0	3	0	0	1	0	0	0	0	0	0	0	6
<b>TOTAL VOLUMES :</b>	1	2	0	0	1	2	0	0	1	2	0	0	1	1	1	0	<b>TOTAL</b>
<b>APPROACH %'s :</b>	6.45%	90.32%	3.23%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	50
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	2	9	0	0	0	10	0	0	1	0	0	0	0	0	0	0	22
<b>PEAK HR FACTOR :</b>	0.50	0.375	0.000	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.786
			0.458				0.500				0.250						

# Vineyard Ave & 8th St

## Peak Hour Turning Movement Count

ID: 19-06034-007  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 6th St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-008  
**Date:** 3/12/2019

## Total

NS/EW Streets:		Vineyard Ave				Vineyard Ave				6th St				6th St				TOTAL
		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
<b>AM</b>		1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	TOTAL
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM		7	110	8	0	15	152	16	0	5	22	4	0	18	39	13	0	409
7:15 AM		8	133	20	0	14	176	10	0	9	40	8	0	13	50	17	0	498
7:30 AM		12	175	17	0	23	225	18	0	14	43	18	0	17	53	28	0	643
7:45 AM		11	150	25	0	28	224	24	0	16	55	20	0	16	60	29	0	658
8:00 AM		17	139	15	0	18	212	18	0	18	50	10	0	14	50	5	0	566
8:15 AM		5	159	19	0	11	182	16	0	13	39	15	0	20	37	13	0	529
8:30 AM		6	111	17	0	14	124	17	0	8	30	7	0	14	32	13	0	393
8:45 AM		6	132	22	0	13	114	6	0	11	36	4	0	24	44	11	0	423
<b>TOTAL VOLUMES :</b>		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>		72	1109	143	0	136	1409	125	0	94	315	86	0	136	365	129	0	4119
		5.44%	83.76%	10.80%	0.00%	8.14%	84.37%	7.49%	0.00%	18.99%	63.64%	17.37%	0.00%	21.59%	57.94%	20.48%	0.00%	
<b>PEAK HR :</b>		07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>		45	623	76	0	80	843	76	0	61	187	63	0	67	200	75	0	2396
<b>PEAK HR FACTOR :</b>		0.662	0.890	0.760	0.000	0.714	0.937	0.792	0.000	0.847	0.850	0.788	0.000	0.838	0.833	0.647	0.000	0.910
				0.912			0.905				0.854				0.814			
<b>PM</b>		1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	TOTAL
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM		10	180	23	0	27	131	12	0	12	50	10	0	23	63	13	0	554
4:15 PM		11	228	33	0	25	145	10	0	9	54	11	0	23	68	17	0	634
4:30 PM		11	248	22	0	18	123	13	0	8	48	13	0	23	68	7	0	602
4:45 PM		15	202	29	0	14	145	8	0	15	60	6	0	21	60	22	0	597
5:00 PM		10	211	23	0	17	150	14	0	11	62	13	0	29	75	23	0	638
5:15 PM		13	242	23	0	16	160	11	0	11	62	16	0	35	110	17	0	716
5:30 PM		13	236	17	0	26	156	13	0	16	58	11	0	23	84	25	0	678
5:45 PM		19	196	18	0	14	163	25	0	14	44	8	0	15	59	16	0	591
<b>TOTAL VOLUMES :</b>		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>		102	1743	188	0	157	1173	106	0	96	438	88	0	192	587	140	0	5010
		5.02%	85.74%	9.25%	0.00%	10.93%	81.69%	7.38%	0.00%	15.43%	70.42%	14.15%	0.00%	20.89%	63.87%	15.23%	0.00%	
<b>PEAK HR :</b>		04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>		51	891	92	0	73	611	46	0	53	242	46	0	108	329	87	0	2629
<b>PEAK HR FACTOR :</b>		0.850	0.920	0.793	0.000	0.702	0.955	0.821	0.000	0.828	0.976	0.719	0.000	0.771	0.748	0.870	0.000	0.918
				0.930			0.936				0.958				0.809			

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 6th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-008  
 Date: 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	7	105	7	0	15	146	16	0	5	22	3	0	18	39	12	0	395
7:15 AM	8	127	18	0	14	169	8	0	8	40	8	0	11	48	17	0	476
7:30 AM	12	170	17	0	23	214	18	0	14	43	18	0	17	52	27	0	625
7:45 AM	11	144	25	0	28	218	24	0	15	55	20	0	14	59	29	0	642
8:00 AM	17	136	14	0	18	203	18	0	17	50	10	0	14	49	5	0	551
8:15 AM	5	151	17	0	11	176	16	0	13	39	15	0	20	37	13	0	513
8:30 AM	6	107	15	0	14	119	17	0	8	29	7	0	14	31	13	0	380
8:45 AM	6	127	22	0	13	106	6	0	11	36	4	0	23	43	11	0	408
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	72	1067	135	0	136	1351	123	0	91	314	85	0	131	358	127	0	3990
	5.65%	83.75%	10.60%	0.00%	8.45%	83.91%	7.64%	0.00%	18.57%	64.08%	17.35%	0.00%	21.27%	58.12%	20.62%	0.00%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	45	601	73	0	80	811	76	0	59	187	63	0	65	197	74	0	2331
<b>PEAK HR FACTOR :</b>	0.66	0.884	0.730	0.000	0.714	0.930	0.792	0.000	0.868	0.850	0.788	0.000	0.813	0.835	0.638	0.000	0.908
	0.903				0.895				0.858				0.824				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	10	171	22	0	26	125	11	0	12	50	10	0	23	63	13	0	536
4:15 PM	11	219	32	0	25	142	10	0	9	53	11	0	23	68	17	0	620
4:30 PM	11	237	22	0	18	115	13	0	8	46	13	0	23	68	7	0	581
4:45 PM	15	193	29	0	14	141	7	0	15	60	6	0	21	60	22	0	583
5:00 PM	10	207	22	0	17	147	14	0	10	61	13	0	29	74	23	0	627
5:15 PM	13	240	22	0	16	151	10	0	11	62	16	0	35	110	17	0	703
5:30 PM	13	233	17	0	25	154	13	0	16	57	11	0	23	83	24	0	669
5:45 PM	19	192	18	0	14	160	25	0	14	44	8	0	15	59	16	0	584
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	102	1692	184	0	155	1135	103	0	95	433	88	0	192	585	139	0	4903
	5.16%	85.54%	9.30%	0.00%	11.13%	81.48%	7.39%	0.00%	15.42%	70.29%	14.29%	0.00%	20.96%	63.86%	15.17%	0.00%	
<b>PEAK HR :</b>	<b>04:45 PM - 05:45 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	51	873	90	0	72	593	44	0	52	240	46	0	108	327	86	0	2582
<b>PEAK HR FACTOR :</b>	0.85	0.909	0.776	0.000	0.720	0.963	0.786	0.000	0.813	0.968	0.719	0.000	0.771	0.743	0.896	0.000	0.918
	0.922				0.923				0.949				0.804				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 6th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-008  
 Date: 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	TOTAL
7:00 AM	0	3	1	0	0	1	0	0	0	1	0	0	0	0	0	0	6
7:15 AM	0	2	2	0	0	5	2	0	1	0	0	0	2	2	0	0	16
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	1	0	0	7
7:45 AM	0	4	0	0	0	4	0	0	1	0	0	0	2	1	0	0	12
8:00 AM	0	2	1	0	0	4	0	0	1	0	0	0	0	1	0	0	9
8:15 AM	0	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	8
8:30 AM	0	4	0	0	0	3	0	0	0	1	0	0	0	1	0	0	9
8:45 AM	0	4	0	0	0	2	0	0	0	0	0	0	1	1	0	0	8
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	25	5	0	0	26	2	0	3	1	1	0	5	7	0	0	75
<b>APPROACH %'s :</b>	0.00%	83.33%	16.67%	0.00%	0.00%	92.86%	7.14%	0.00%	60.00%	20.00%	20.00%	0.00%	41.67%	58.33%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																
<b>PEAK HR VOL :</b>	0	12	2	0	0	15	0	0	2	0	0	0	2	3	0	0	36
<b>PEAK HR FACTOR :</b>	0.000	0.750	0.500	0.000	0.000	0.938	0.000	0.000	0.500	0.000	0.000	0.000	0.250	0.750	0.000	0.000	0.750
	0.875				0.938				0.500				0.417				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	TOTAL
4:00 PM	0	5	1	0	0	5	1	0	0	0	0	0	0	0	0	0	12
4:15 PM	0	3	0	0	0	2	0	0	0	1	0	0	0	0	0	0	6
4:30 PM	0	5	0	0	0	6	0	0	0	1	0	0	0	0	0	0	12
4:45 PM	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	1	0	0	0	0	0	1	1	0	0	0	1	0	0	5
5:15 PM	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	19	3	0	0	16	3	0	1	4	0	0	0	1	0	0	47
<b>APPROACH %'s :</b>	0.00%	86.36%	13.64%	0.00%	0.00%	84.21%	15.79%	0.00%	20.00%	80.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																
<b>PEAK HR VOL :</b>	0	5	2	0	0	3	2	0	1	2	0	0	0	1	0	0	16
<b>PEAK HR FACTOR :</b>	0.00	0.625	0.500	0.000	0.000	0.375	0.500	0.000	0.250	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.800
	0.875				0.417				0.375				0.250				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 6th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-008  
 Date: 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	TOTAL
7:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	8	2	0	0	5	0	0	0	0	0	0	0	0	1	0	16
	0.00%	80.00%	20.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
<b>PEAK HR FACTOR :</b>	0.000	0.625	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
			0.625				0.375										
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	1	0	0	1	4	0	0	0	1	0	0	0	1	0	0	8
	0.00%	100.00%	0.00%	0.00%	20.00%	80.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	0	1	0	0	1	4	0	0	0	0	0	0	0	1	0	0	7
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.583
			0.250				0.625								0.250		



# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 6th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-008  
 Date: 3/12/2019

## 4axle

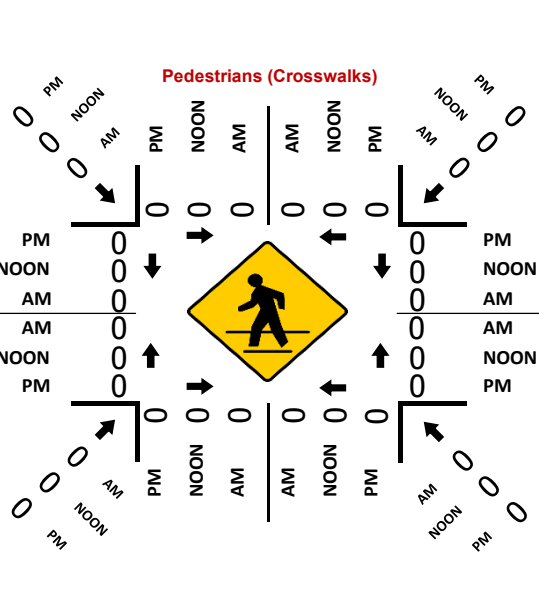
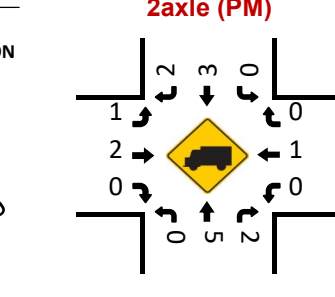
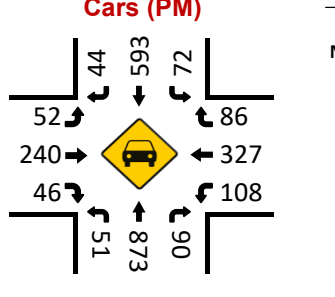
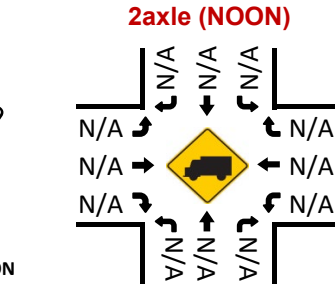
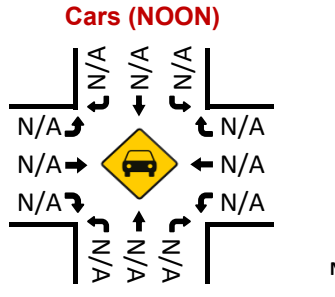
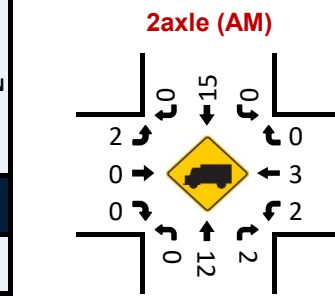
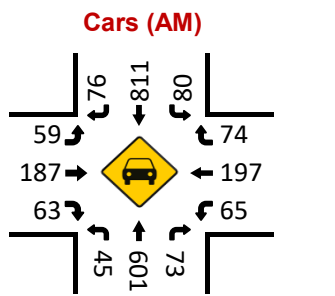
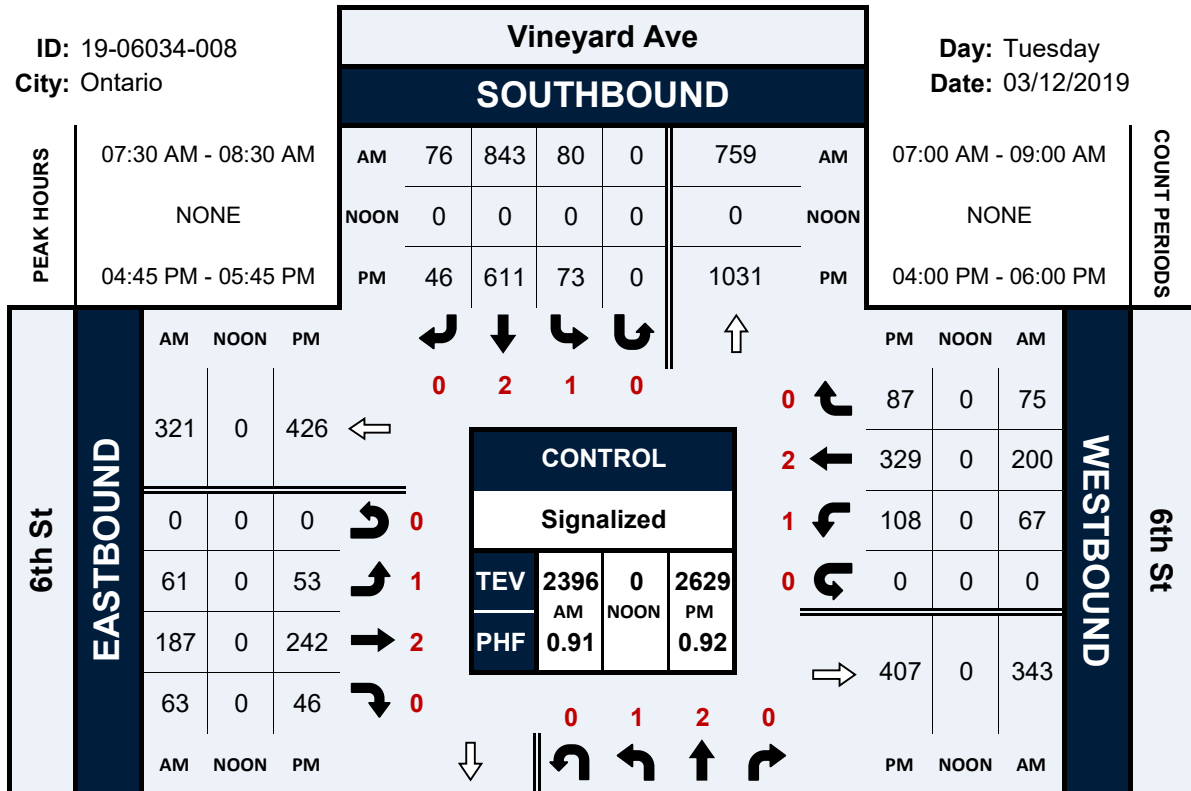
NS/EW Streets:	Vineyard Ave				Vineyard Ave				6th St				6th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
7:30 AM	0	2	0	0	0	8	0	0	0	0	0	0	0	0	1	0	11
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7
<b>TOTAL VOLUMES :</b>	0	9	1	0	0	27	0	0	0	0	0	0	0	0	1	0	38
<b>APPROACH %'s :</b>	0.00%	90.00%	10.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%		
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																21
<b>PEAK HR VOL :</b>	0	5	1	0	0	14	0	0	0	0	0	0	0	0	1	0	21
<b>PEAK HR FACTOR :</b>	0.000	0.417	0.250	0.000	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.477	
			0.375			0.438									0.250		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	0	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6
4:15 PM	0	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	8
4:30 PM	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	7	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11
5:00 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
5:45 PM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
<b>TOTAL VOLUMES :</b>	0	31	1	0	1	18	0	0	0	0	0	0	0	0	1	0	52
<b>APPROACH %'s :</b>	0.00%	96.88%	3.13%	0.00%	5.26%	94.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%		
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																24
<b>PEAK HR VOL :</b>	0	12	0	0	0	11	0	0	0	0	0	0	0	0	1	0	24
<b>PEAK HR FACTOR :</b>	0.00	0.429	0.000	0.000	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.545	
			0.429			0.550									0.250		

# Vineyard Ave & 6th St

## Peak Hour Turning Movement Count

ID: 19-06034-008  
City: Ontario

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 4th St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-009  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				4th St				4th St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1	2	0	0	1	2	0	0	2	2	1	0	2	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	11	96	25	0	6	179	12	0	17	18	28	0	46	48	5	0	491
7:15 AM	17	157	19	0	7	203	23	0	14	30	25	0	59	65	7	0	626
7:30 AM	19	157	21	0	6	223	12	0	35	57	37	0	54	71	8	0	700
7:45 AM	29	152	40	0	12	238	11	0	23	46	35	0	50	58	15	0	709
8:00 AM	25	142	38	0	8	195	14	0	30	47	33	0	64	59	7	0	662
8:15 AM	28	151	29	0	14	183	19	0	30	42	22	0	52	45	5	0	620
8:30 AM	37	119	17	0	10	136	13	0	23	41	13	0	50	69	8	0	536
8:45 AM	16	129	34	0	9	122	12	0	26	20	23	0	35	56	7	0	489
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	182	1103	223	0	72	1479	116	0	198	301	216	0	410	471	62	0	4833
<b>APPROACH %'s:</b>	12.07%	73.14%	14.79%	0.00%	4.32%	88.72%	6.96%	0.00%	27.69%	42.10%	30.21%	0.00%	43.48%	49.95%	6.57%	0.00%	
<b>PEAK HR:</b>	07:15 AM - 08:15 AM																TOTAL
<b>PEAK HR VOL:</b>	90	608	118	0	33	859	60	0	102	180	130	0	227	253	37	0	2697
<b>PEAK HR FACTOR:</b>	0.776	0.968	0.738	0.000	0.688	0.902	0.652	0.000	0.729	0.789	0.878	0.000	0.887	0.891	0.617	0.000	0.951
	0.923				0.912				0.798				0.972				
PM	1	2	0	0	1	2	0	0	2	2	1	0	2	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	32	184	36	0	16	117	9	0	38	67	17	0	69	93	12	0	690
4:15 PM	30	263	49	0	8	145	22	0	39	55	26	0	50	88	17	0	792
4:30 PM	32	219	22	0	19	107	23	0	54	65	18	0	74	82	23	0	738
4:45 PM	37	235	39	0	15	134	26	0	38	56	25	0	62	84	16	0	767
5:00 PM	38	226	35	0	21	146	19	0	52	55	27	0	90	104	11	0	824
5:15 PM	36	228	31	0	30	158	21	0	43	75	18	0	92	138	14	0	884
5:30 PM	19	221	46	0	10	126	22	0	25	57	27	0	90	133	23	0	799
5:45 PM	39	227	36	0	15	118	19	0	37	49	22	0	55	88	17	0	722
<b>TOTAL VOLUMES:</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	263	1803	294	0	134	1051	161	0	326	479	180	0	582	810	133	0	6216
<b>APPROACH %'s:</b>	11.14%	76.40%	12.46%	0.00%	9.96%	78.08%	11.96%	0.00%	33.10%	48.63%	18.27%	0.00%	38.16%	53.11%	8.72%	0.00%	
<b>PEAK HR:</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL:</b>	130	910	151	0	76	564	88	0	158	243	97	0	334	459	64	0	3274
<b>PEAK HR FACTOR:</b>	0.855	0.968	0.821	0.000	0.633	0.892	0.846	0.000	0.760	0.810	0.898	0.000	0.908	0.832	0.696	0.000	0.926
	0.957				0.871				0.915				0.871				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & 4th St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-009  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
7:00 AM	11	89	25	0	6	170	12	0	16	18	26	0	44	47	5	0	469
7:15 AM	17	150	19	0	6	198	21	0	14	30	25	0	58	61	7	0	606
7:30 AM	19	150	19	0	6	213	12	0	35	57	37	0	53	69	8	0	678
7:45 AM	27	149	38	0	12	231	10	0	23	46	34	0	49	58	14	0	691
8:00 AM	24	137	37	0	7	187	14	0	30	43	31	0	64	54	7	0	635
8:15 AM	26	141	29	0	12	179	19	0	29	42	21	0	51	43	5	0	597
8:30 AM	34	116	17	0	9	133	13	0	21	40	12	0	48	65	8	0	516
8:45 AM	16	124	32	0	9	114	9	0	24	20	23	0	35	53	7	0	466
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	12.03%	73.03%	14.94%	0.00%	4.18%	88.95%	6.87%	0.00%	27.55%	42.47%	29.99%	0.00%	44.03%	49.29%	6.68%	0.00%	4658
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	87	586	113	0	31	829	57	0	102	176	127	0	224	242	36	0	2610
<b>PEAK HR FACTOR :</b>	0.81	0.977	0.743	0.000	0.646	0.897	0.679	0.000	0.729	0.772	0.858	0.000	0.875	0.877	0.643	0.000	0.944
	0.918				0.906				0.785				0.965				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
4:00 PM	31	176	36	0	16	114	9	0	37	64	17	0	67	90	12	0	669
4:15 PM	29	251	49	0	8	141	22	0	38	55	26	0	48	88	17	0	772
4:30 PM	32	213	22	0	19	101	23	0	52	64	18	0	74	81	23	0	722
4:45 PM	36	228	39	0	15	129	25	0	34	56	25	0	62	84	16	0	749
5:00 PM	37	225	35	0	21	144	19	0	51	54	27	0	90	103	11	0	817
5:15 PM	35	225	31	0	28	150	21	0	43	74	18	0	91	138	14	0	868
5:30 PM	19	220	45	0	10	124	22	0	24	57	27	0	89	131	23	0	791
5:45 PM	39	223	35	0	15	117	19	0	36	49	22	0	54	88	17	0	714
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	11.16%	76.20%	12.64%	0.00%	10.06%	77.74%	12.20%	0.00%	32.54%	48.86%	18.60%	0.00%	38.05%	53.14%	8.80%	0.00%	6102
<b>PEAK HR :</b>	<b>04:45 PM - 05:45 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	127	898	150	0	74	547	87	0	152	241	97	0	332	456	64	0	3225
<b>PEAK HR FACTOR :</b>	0.86	0.985	0.833	0.000	0.661	0.912	0.870	0.000	0.745	0.814	0.898	0.000	0.912	0.826	0.696	0.000	0.929
	0.969				0.889				0.907				0.877				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 4th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-009  
 Date: 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	6	0	0	0	2	0	0	1	0	1	0	1	1	0	0	12
7:15 AM	0	3	0	0	1	4	1	0	0	0	0	0	0	2	0	0	11
7:30 AM	0	5	1	0	0	3	0	0	0	0	0	0	1	2	0	0	12
7:45 AM	2	2	2	0	0	5	1	0	0	0	0	0	0	0	0	0	12
8:00 AM	0	4	1	0	0	4	0	0	0	3	0	0	0	5	0	0	17
8:15 AM	2	2	0	0	2	2	0	0	0	0	0	0	1	1	0	0	10
8:30 AM	2	3	0	0	1	1	0	0	1	0	0	0	1	4	0	0	13
8:45 AM	0	3	1	0	0	1	2	0	1	0	0	0	0	3	0	0	11
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	6	28	5	0	4	22	4	0	3	3	1	0	4	18	0	0	98
	15.38%	71.79%	12.82%	0.00%	13.33%	73.33%	13.33%	0.00%	42.86%	42.86%	14.29%	0.00%	18.18%	81.82%	0.00%	0.00%	
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	2	14	4	0	1	16	2	0	0	3	0	0	1	9	0	0	52
<b>PEAK HR FACTOR :</b>	0.250	0.700	0.500	0.000	0.250	0.800	0.500	0.000	0.000	0.250	0.000	0.000	0.250	0.450	0.000	0.000	0.765
	0.833				0.792				0.250				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	3	0	0	0	2	0	0	1	3	0	0	1	2	0	0	12
4:15 PM	1	5	0	0	0	3	0	0	0	0	0	0	1	0	0	0	10
4:30 PM	0	1	0	0	0	5	0	0	1	0	0	0	0	0	0	0	7
4:45 PM	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	1	1	0	0	0	3	0	0	0	1	0	0	1	0	0	0	7
5:30 PM	0	1	1	0	0	1	0	0	1	0	0	0	0	2	0	0	6
5:45 PM	0	2	1	0	0	-1	0	0	0	0	0	0	1	0	0	0	3
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	3	16	2	0	0	14	0	0	3	4	0	0	4	4	0	0	50
	14.29%	76.19%	9.52%	0.00%	0.00%	100.00%	0.00%	0.00%	42.86%	57.14%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
<b>PEAK HR :</b>	<b>04:45 PM - 05:45 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	2	5	1	0	0	5	0	0	1	1	0	0	1	2	0	0	18
<b>PEAK HR FACTOR :</b>	0.50	0.417	0.250	0.000	0.000	0.417	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.643
	0.500				0.417				0.500				0.375				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 4th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-009  
 Date: 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
7:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8:00 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3
8:15 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
8:30 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	0	8	0	0	1	6	0	0	1	0	2	0	0	1	1	0	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0.00%	100.00%	0.00%	0.00%	14.29%	85.71%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	0.00%	50.00%	50.00%	0.00%	20
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	4	0	0	1	1	0	0	0	0	1	0	0	1	1	0	9
<b>PEAK HR FACTOR :</b>	0.000	1.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.750
	1.000				0.500				0.250				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	2 EL	2 ET	1 ER	0 EU	2 WL	2 WT	0 WR	0 WU	
4:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	1	2	0	0	1	2	0	0	0	0	0	0	2	1	0	0	<b>TOTAL</b>
<b>APPROACH %'s :</b>	33.33%	66.67%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0	0	0	0	66.67%	33.33%	0.00%	0.00%	9
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	4
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500
	1.000				0.375				0.250				0.250				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & 4th St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-009  
 Date: 3/12/2019

## 4axle

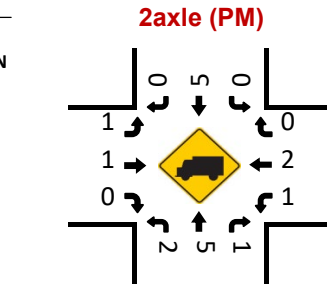
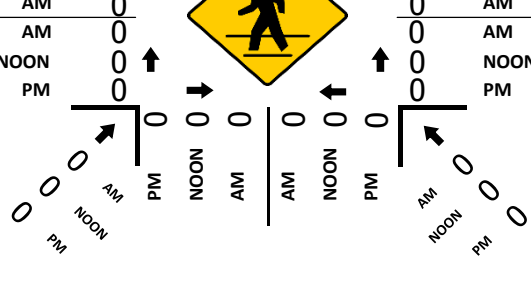
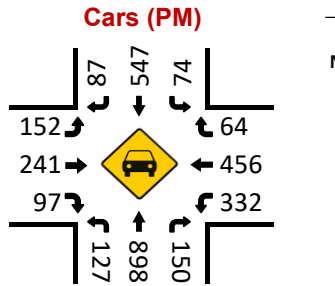
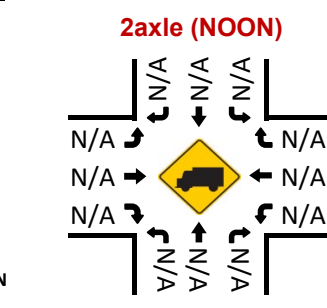
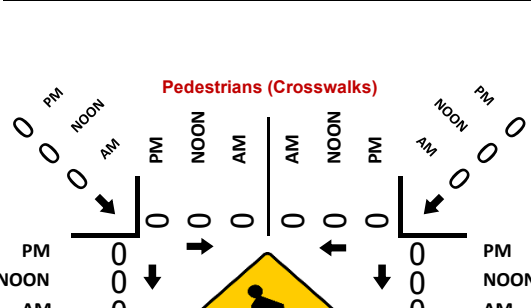
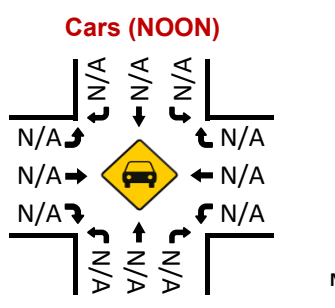
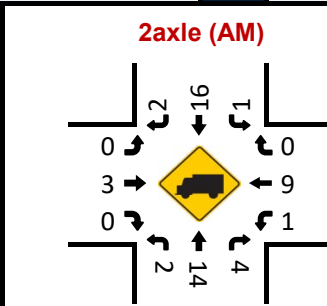
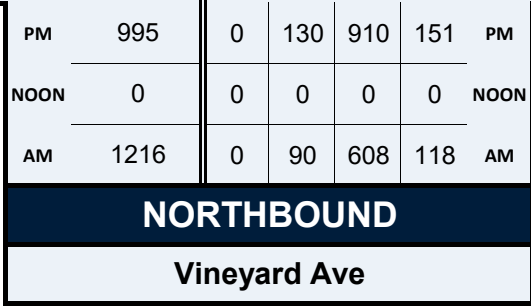
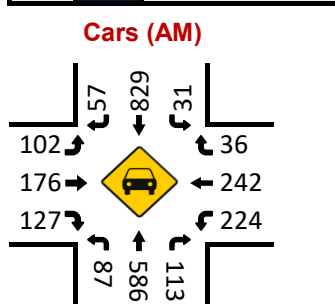
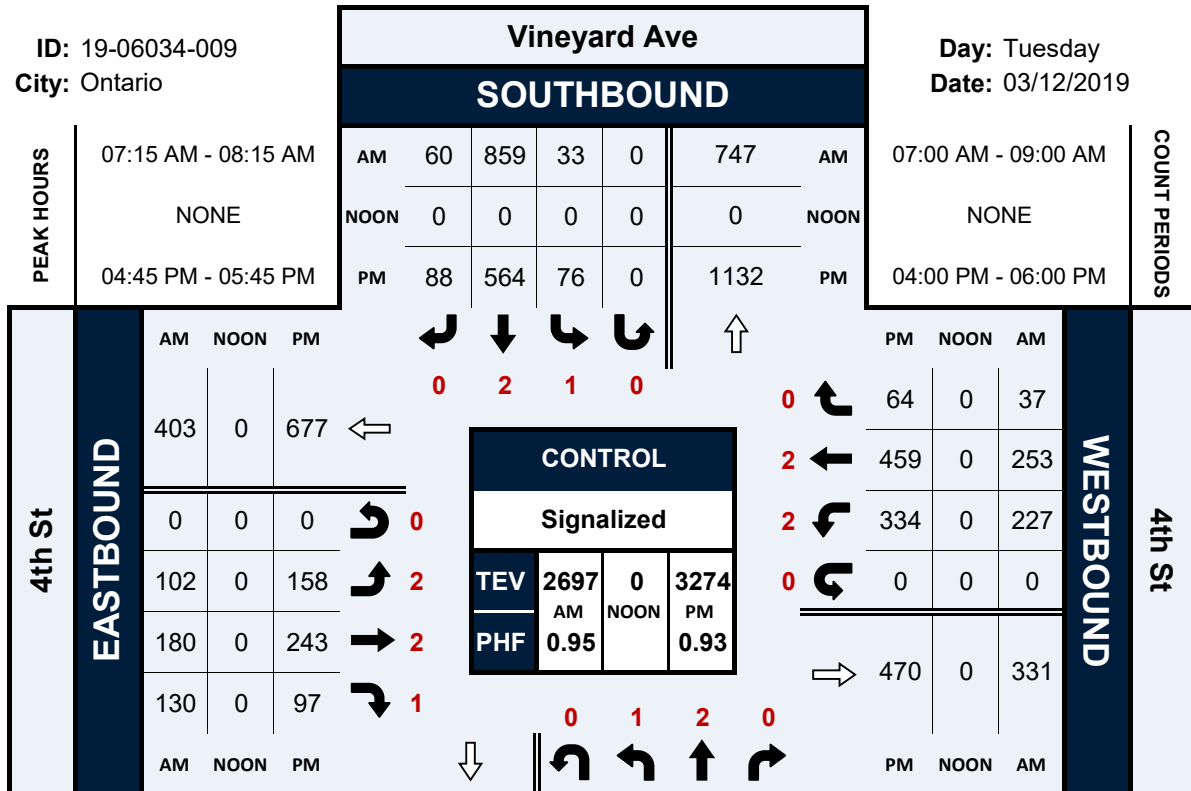
NS/EW Streets:	Vineyard Ave				Vineyard Ave				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	2	2	1	0	2	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	6	0	0	0	0	1	0	1	0	0	0	8
7:15 AM	0	3	0	0	0	1	1	0	0	0	0	0	1	1	0	0	7
7:30 AM	0	1	1	0	0	6	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	4
8:00 AM	1	0	0	0	0	4	0	0	0	1	1	0	0	0	0	0	7
8:15 AM	0	5	0	0	0	0	0	0	1	0	1	0	0	1	0	0	8
8:30 AM	1	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	5
8:45 AM	0	2	1	0	0	6	1	0	0	0	0	0	0	0	0	0	10
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	2	11	2	0	0	26	2	0	2	2	4	0	4	2	0	0	57
	13.33%	73.33%	13.33%	0.00%	0.00%	92.86%	7.14%	0.00%	25.00%	25.00%	50.00%	0.00%	66.67%	33.33%	0.00%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	1	4	1	0	0	13	1	0	0	1	2	0	2	1	0	0	26
<b>PEAK HR FACTOR :</b>	0.250	0.333	0.250	0.000	0.000	0.542	0.250	0.000	0.000	0.250	0.500	0.000	0.500	0.250	0.000	0.000	0.813
			0.500				0.583				0.375				0.375		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	2	2	1	0	2	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	6	0	0	0	1	0	0	1	0	0	0	1	0	0	0	9
4:30 PM	0	5	0	0	0	1	0	0	1	1	0	0	0	1	0	0	9
4:45 PM	0	4	0	0	0	4	1	0	4	0	0	0	0	0	0	0	13
5:00 PM	1	1	0	0	0	1	0	0	1	1	0	0	0	1	0	0	6
5:15 PM	0	2	0	0	1	4	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	1	24	0	0	1	15	1	0	8	2	0	0	1	2	0	0	55
	4.00%	96.00%	0.00%	0.00%	5.88%	88.24%	5.88%	0.00%	80.00%	20.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	1	7	0	0	1	10	1	0	5	1	0	0	0	1	0	0	27
<b>PEAK HR FACTOR :</b>	0.25	0.438	0.000	0.000	0.250	0.625	0.250	0.000	0.313	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.519
			0.500				0.600				0.375				0.250		

# Vineyard Ave & 4th St

## Peak Hour Turning Movement Count

ID: 19-06034-009  
City: Ontario

Day: Tuesday  
Date: 03/12/2019





# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Jay St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-010  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Jay St				Jay St				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1	2	1	0	1	3	0	0	0	1	0	0	2	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	2	139	23	7	1	257	1	1	0	0	2	0	2	0	1	0	436
7:15 AM	4	176	8	0	3	284	3	0	3	0	5	0	4	0	5	0	495
7:30 AM	4	211	10	2	6	320	3	0	0	0	1	0	1	0	3	0	561
7:45 AM	6	205	10	3	8	299	2	1	3	0	7	0	4	0	3	0	551
8:00 AM	10	214	12	4	1	303	2	0	2	0	4	0	2	0	4	0	558
8:15 AM	14	217	10	5	4	254	2	0	3	0	2	0	3	0	3	0	515
8:30 AM	2	158	9	2	3	199	2	1	2	0	1	0	7	0	6	0	392
8:45 AM	2	164	19	4	7	175	1	3	1	0	4	0	5	0	2	0	387
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	44	1484	101	27	33	2091	16	6	12	0	26	0	28	0	27	0	3895
	2.66%	89.61%	6.10%	1.63%	1.54%	97.44%	0.75%	0.28%	31.58%	0.00%	68.42%	0.00%	50.91%	0.00%	49.09%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	34	847	42	14	19	1176	9	1	6	0	14	0	10	0	13	0	2185
<b>PEAK HR FACTOR :</b>	0.607	0.976	0.875	0.700	0.594	0.919	0.750	0.250	0.500	0.000	0.500	0.000	0.625	0.000	0.813	0.000	0.974
			0.952				0.916				0.500				0.821		
PM	1	2	1	0	1	3	0	0	0	1	0	0	2	1	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	10	267	13	3	7	192	4	3	1	0	3	0	7	1	3	0	514
4:15 PM	12	316	11	8	0	207	3	0	1	1	8	0	13	0	7	0	587
4:30 PM	16	264	6	2	3	184	3	2	2	0	4	0	9	0	11	0	506
4:45 PM	15	316	10	1	2	231	7	0	1	0	5	0	16	0	8	0	612
5:00 PM	11	279	4	4	1	251	5	2	0	1	3	0	16	1	10	0	588
5:15 PM	11	292	3	3	4	247	6	3	4	1	4	0	8	1	9	0	596
5:30 PM	8	282	8	5	5	232	6	3	4	1	2	0	15	1	7	0	579
5:45 PM	12	310	10	8	5	197	3	0	1	0	1	0	10	0	7	0	564
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	95	2326	65	34	27	1741	37	13	14	4	30	0	94	4	62	0	4546
	3.77%	92.30%	2.58%	1.35%	1.49%	95.76%	2.04%	0.72%	29.17%	8.33%	62.50%	0.00%	58.75%	2.50%	38.75%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																TOTAL
<b>PEAK HR VOL :</b>	45	1169	25	13	12	961	24	8	9	3	14	0	55	3	34	0	2375
<b>PEAK HR FACTOR :</b>	0.750	0.925	0.625	0.650	0.600	0.957	0.857	0.667	0.563	0.750	0.700	0.000	0.859	0.750	0.850	0.000	0.970
			0.915				0.966				0.722				0.852		

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Jay St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-010  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Jay St				Jay St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	1	0	1	3	0	0	0	1	0	0	2	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	2	132	20	7	1	244	1	1	0	0	2	0	1	0	1	0	412
7:15 AM	4	169	7	0	2	279	3	0	3	0	5	0	3	0	5	0	480
7:30 AM	4	203	9	2	5	309	3	0	0	0	1	0	1	0	1	0	538
7:45 AM	6	200	9	3	8	292	2	1	3	0	7	0	1	0	1	0	533
8:00 AM	10	206	10	3	1	292	2	0	1	0	4	0	2	0	4	0	535
8:15 AM	14	208	8	5	4	247	2	0	1	0	2	0	2	0	2	0	495
8:30 AM	2	154	7	1	2	195	2	1	2	0	1	0	3	0	5	0	375
8:45 AM	2	157	15	4	6	168	1	3	1	0	4	0	3	0	2	0	366
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	44	1429	85	25	29	2026	16	6	11	0	26	0	16	0	21	0	3734
<b>APPROACH %'s :</b>	2.78%	90.27%	5.37%	1.58%	1.40%	97.54%	0.77%	0.29%	29.73%	0.00%	70.27%	0.00%	43.24%	0.00%	56.76%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	34	817	36	13	18	1140	9	1	5	0	14	0	6	0	8	0	2101
<b>PEAK HR FACTOR :</b>	0.61	0.982	0.900	0.650	0.563	0.922	0.750	0.250	0.417	0.000	0.500	0.000	0.750	0.000	0.500	0.000	0.976
	0.957				0.921				0.475				0.583				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1	2	1	0	1	3	0	0	0	1	0	0	2	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	10	258	9	3	7	188	4	3	1	0	3	0	7	1	3	0	497
4:15 PM	12	306	8	8	0	200	3	0	1	0	8	0	9	0	6	0	561
4:30 PM	16	256	5	2	3	179	3	2	2	0	4	0	8	0	11	0	491
4:45 PM	15	309	9	1	2	225	7	0	1	0	5	0	13	0	7	0	594
5:00 PM	11	274	2	4	1	249	5	2	0	1	3	0	10	1	10	0	573
5:15 PM	11	290	3	3	4	239	6	3	4	1	4	0	6	1	9	0	584
5:30 PM	8	280	7	5	5	228	6	3	4	1	2	0	15	1	7	0	572
5:45 PM	12	305	7	8	5	195	3	0	1	0	1	0	9	0	7	0	553
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	95	2278	50	34	27	1703	37	13	14	3	30	0	77	4	60	0	4425
<b>APPROACH %'s :</b>	3.87%	92.71%	2.04%	1.38%	1.52%	95.67%	2.08%	0.73%	29.79%	6.38%	63.83%	0.00%	54.61%	2.84%	42.55%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	45	1153	21	13	12	941	24	8	9	3	14	0	44	3	33	0	2323
<b>PEAK HR FACTOR :</b>	0.75	0.933	0.583	0.650	0.600	0.945	0.857	0.667	0.563	0.750	0.700	0.000	0.733	0.750	0.825	0.000	0.978
	0.922				0.958				0.722				0.870				

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & Jay St  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-010  
 Date: 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Jay St				Jay St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	3 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	2 WL	1 WT	0 WR	0 WU	
7:00 AM	0	6	2	0	0	4	0	0	0	0	0	0	0	0	0	0	TOTAL
7:15 AM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	6	0	0	1	3	0	0	0	0	0	0	0	0	1	0	11
7:45 AM	0	4	0	0	0	4	0	0	0	0	0	0	3	0	2	0	13
8:00 AM	0	4	1	1	0	5	0	0	1	0	0	0	0	0	0	0	12
8:15 AM	0	3	1	0	0	4	0	0	0	0	0	0	1	0	0	0	9
8:30 AM	0	3	1	1	0	1	0	0	0	0	0	0	1	0	0	0	7
8:45 AM	0	6	0	0	0	1	0	0	0	0	0	0	2	0	0	0	9
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	35	5	2	1	26	0	0	1	0	0	0	7	0	3	0	80
<b>APPROACH %'s :</b>	0.00%	83.33%	11.90%	4.76%	3.70%	96.30%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	70.00%	0.00%	30.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	17	2	1	1	16	0	0	1	0	0	0	4	0	3	0	45
<b>PEAK HR FACTOR :</b>	0.000	0.708	0.500	0.250	0.250	0.800	0.000	0.000	0.250	0.000	0.000	0.000	0.333	0.000	0.375	0.000	0.865
			0.833				0.850				0.250				0.350		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	3 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	2 WL	1 WT	0 WR	0 WU	
4:00 PM	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0	0	TOTAL
4:15 PM	0	5	0	0	0	5	0	0	0	1	0	0	2	0	0	0	7
4:30 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	13
4:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	6
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5
5:15 PM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	21	1	0	0	18	0	0	0	1	0	0	3	0	1	0	45
<b>APPROACH %'s :</b>	0.00%	95.45%	4.55%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	75.00%	0.00%	25.00%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	7	0	0	0	7	0	0	0	0	0	0	1	0	1	0	16
<b>PEAK HR FACTOR :</b>	0.00	0.583	0.000	0.000	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.800
			0.583				0.438								0.500		



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Jay St  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-010  
**Date:** 3/12/2019

## 4axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Jay St				Jay St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	3 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	2 WL	1 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	8	0	0	0	0	0	0	1	0	0	0	9
7:15 AM	0	3	1	0	1	1	0	0	0	0	0	0	1	0	0	0	7
7:30 AM	0	1	1	0	0	7	0	0	0	0	0	0	0	0	1	0	10
7:45 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	3	1	0	0	5	0	0	0	0	0	0	0	0	0	0	9
8:15 AM	0	4	1	0	0	2	0	0	0	0	0	0	0	0	0	0	7
8:30 AM	0	1	1	0	0	1	0	0	0	0	0	0	3	0	1	0	7
8:45 AM	0	1	4	0	0	6	0	0	0	0	0	0	0	0	0	0	11
<b>TOTAL VOLUMES :</b>	0	13	10	0	1	33	0	0	0	0	0	0	5	0	2	0	64
<b>APPROACH %'s :</b>	0.00%	56.52%	43.48%	0.00%	2.94%	97.06%	0.00%	0.00%	0	0	0	0	71.43%	0.00%	28.57%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	8	4	0	0	17	0	0	0	0	0	0	0	0	1	0	30
<b>PEAK HR FACTOR :</b>	0.000	0.500	1.000	0.000	0.000	0.607	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.750
	0.600				0.607								0.250				

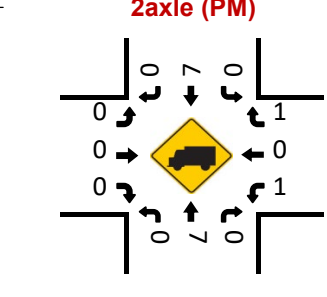
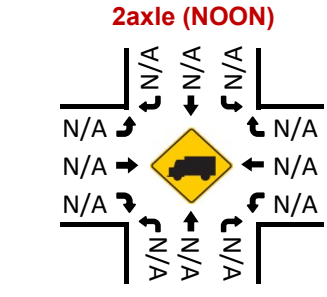
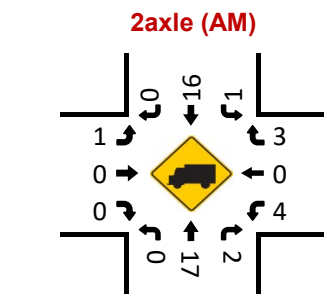
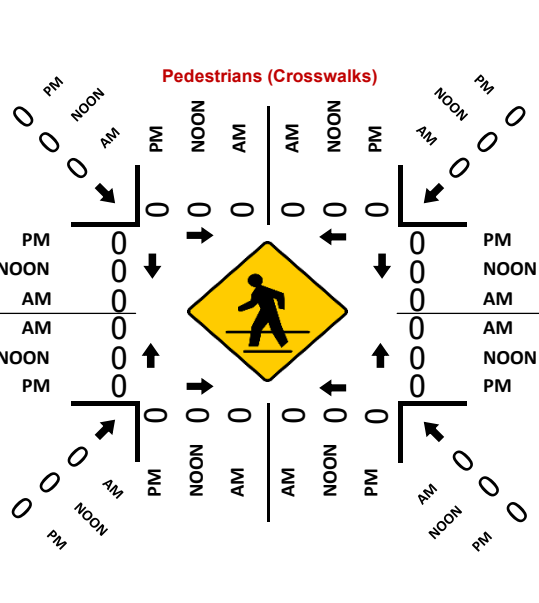
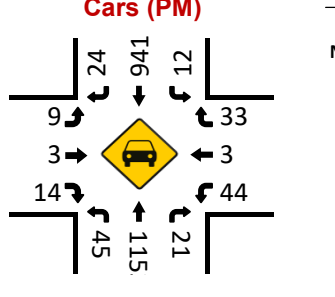
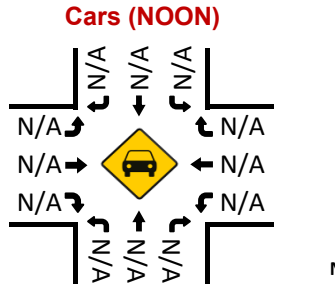
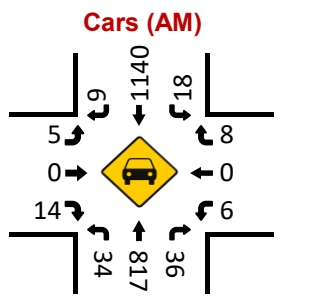
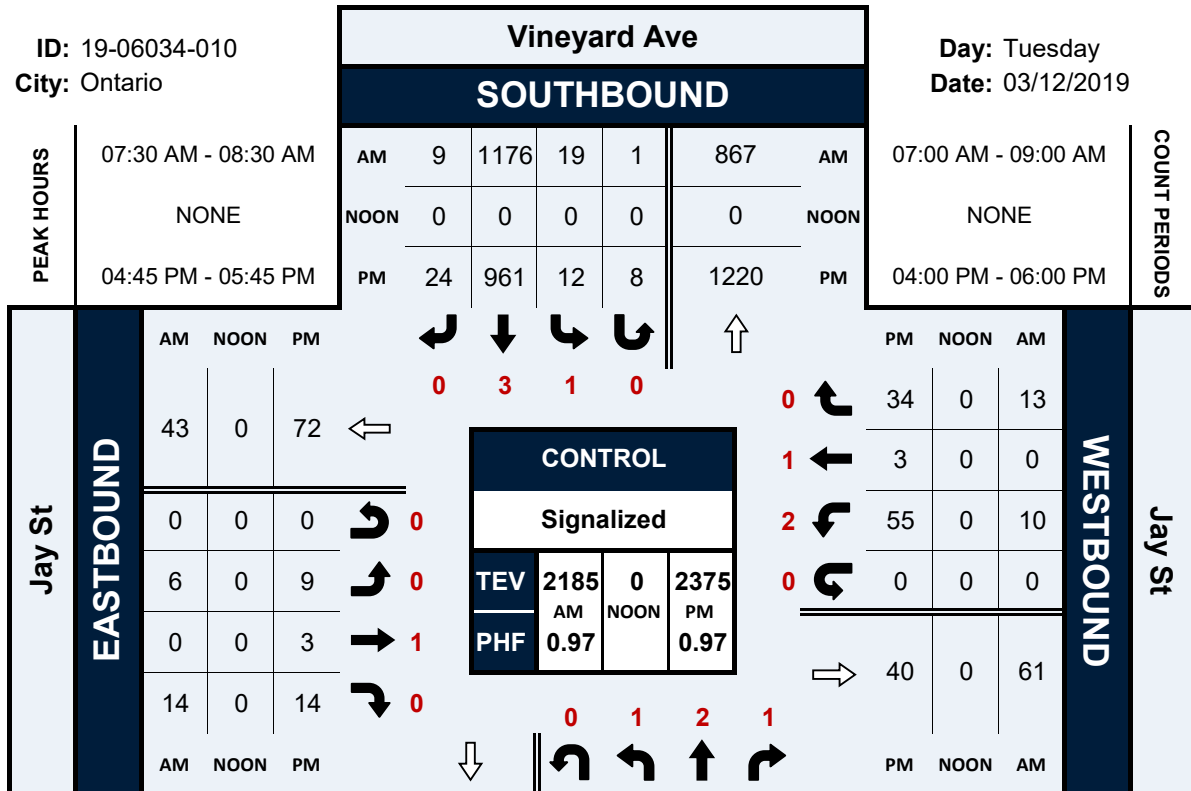
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	3 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	2 WL	1 WT	0 WR	0 WU	
	4:00 PM	0	4	3	0	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	4	3	0	0	2	0	0	0	0	0	0	2	0	1	0	12
4:30 PM	0	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	4	1	0	0	4	0	0	0	0	0	0	3	0	0	0	12
5:00 PM	0	3	2	0	0	1	0	0	0	0	0	0	5	0	0	0	11
5:15 PM	0	1	0	0	0	3	0	0	0	0	0	0	1	0	0	0	5
5:30 PM	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	2	3	0	0	2	0	0	0	0	0	0	1	0	0	0	8
<b>TOTAL VOLUMES :</b>	0	24	14	0	0	16	0	0	0	0	0	0	12	0	1	0	67
<b>APPROACH %'s :</b>	0.00%	63.16%	36.84%	0.00%	0.00%	100.00%	0.00%	0.00%	0	0	0	0	92.31%	0.00%	7.69%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	8	4	0	0	10	0	0	0	0	0	0	9	0	0	0	31
<b>PEAK HR FACTOR :</b>	0.00	0.500	0.500	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.450	0.000	0.000	0.000	0.646
	0.600				0.625								0.450				

# Vineyard Ave & Jay St

## Peak Hour Turning Movement Count

ID: 19-06034-010  
City: Ontario

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Inland Empire Blvd  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-011  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Inland Empire Blvd				Inland Empire Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	159	18	0	4	265	0	0	0	0	0	0	8	0	3	0	457
7:15 AM	0	192	9	0	9	284	0	0	0	0	0	0	14	0	7	0	515
7:30 AM	0	225	13	0	4	317	0	0	0	0	0	0	16	0	3	0	578
7:45 AM	0	218	20	0	10	310	0	0	0	0	0	0	18	0	6	0	582
8:00 AM	0	229	17	0	11	303	0	0	0	0	0	0	19	0	12	0	591
8:15 AM	0	228	9	0	6	251	0	0	0	0	0	0	21	0	7	0	522
8:30 AM	0	173	11	0	6	199	0	4	0	0	0	0	11	0	10	0	414
8:45 AM	0	171	9	0	4	182	0	0	0	0	0	0	13	0	8	0	387
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	1595	106	0	54	2111	0	4	0	0	0	0	120	0	56	0	4046
	0.00%	93.77%	6.23%	0.00%	2.49%	97.33%	0.00%	0.18%	0.00%	0.00%	0.00%	0.00%	68.18%	0.00%	31.82%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	900	59	0	31	1181	0	0	0	0	0	0	74	0	28	0	2273
<b>PEAK HR FACTOR :</b>	0.000	0.983	0.738	0.000	0.705	0.931	0.000	0.000	0.000	0.000	0.000	0.000	0.881	0.000	0.583	0.000	0.962
			0.975				0.944								0.823		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	286	17	0	5	195	0	0	0	0	0	0	24	0	9	0	536
4:15 PM	0	335	16	0	4	241	0	0	0	0	0	0	16	0	8	0	620
4:30 PM	0	292	16	0	3	199	0	0	0	0	0	0	29	0	11	0	550
4:45 PM	0	319	29	0	7	231	0	0	0	0	0	0	27	0	9	0	622
5:00 PM	0	277	16	0	3	275	0	0	0	0	0	0	44	0	18	0	633
5:15 PM	0	319	21	0	8	258	0	0	0	0	0	0	34	0	12	0	652
5:30 PM	0	274	19	0	5	234	0	0	0	0	0	0	45	0	7	0	584
5:45 PM	0	325	23	0	6	225	0	0	0	0	0	0	32	0	23	0	634
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
<b>APPROACH %'s :</b>	0	2427	157	0	41	1858	0	0	0	0	0	0	251	0	97	0	4831
	0.00%	93.92%	6.08%	0.00%	2.16%	97.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	72.13%	0.00%	27.87%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1195	79	0	22	992	0	0	0	0	0	0	155	0	60	0	2503
<b>PEAK HR FACTOR :</b>	0.000	0.919	0.859	0.000	0.688	0.902	0.000	0.000	0.000	0.000	0.000	0.000	0.861	0.000	0.652	0.000	0.960
			0.915				0.912								0.867		

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Inland Empire Blvd  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-011  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Inland Empire Blvd				Inland Empire Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	2	1	0	1	3	0	0	0	0	0	0	2	0	1	0	433
7:15 AM	0	150	16	0	4	252	0	0	0	0	0	0	8	0	3	0	493
7:30 AM	0	181	7	0	9	277	0	0	0	0	0	0	12	0	7	0	555
7:45 AM	0	218	10	0	4	306	0	0	0	0	0	0	14	0	3	0	563
8:00 AM	0	211	19	0	9	301	0	0	0	0	0	0	17	0	6	0	567
8:00 AM	0	219	16	0	11	291	0	0	0	0	0	0	18	0	12	0	497
8:15 AM	0	216	7	0	6	243	0	0	0	0	0	0	18	0	7	0	396
8:30 AM	0	166	10	0	6	192	0	4	0	0	0	0	9	0	9	0	365
8:45 AM	0	163	7	0	4	173	0	0	0	0	0	0	11	0	7	0	
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	1524	92	0	53	2035	0	4	0	0	0	0	107	0	54	0	3869
<b>APPROACH %'s :</b>	0.00%	94.31%	5.69%	0.00%	2.53%	97.28%	0.00%	0.19%	0.00%	0.00%	0.00%	0.00%	66.46%	0.00%	33.54%	0.00%	
<b>PEAK HR :</b>	<b>07:30 AM - 08:30 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	864	52	0	30	1141	0	0	0	0	0	0	67	0	28	0	2182
<b>PEAK HR FACTOR :</b>	0.00	0.986	0.684	0.000	0.682	0.932	0.000	0.000	0.000	0.000	0.000	0.000	0.931	0.000	0.583	0.000	0.962
	0.974				0.944								0.792				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	272	15	0	5	190	0	0	0	0	0	0	24	0	9	0	515
4:15 PM	0	323	13	0	4	229	0	0	0	0	0	0	16	0	8	0	593
4:30 PM	0	284	11	0	3	195	0	0	0	0	0	0	28	0	11	0	532
4:45 PM	0	309	26	0	7	223	0	0	0	0	0	0	26	0	9	0	600
5:00 PM	0	271	14	0	3	266	0	0	0	0	0	0	42	0	18	0	614
5:15 PM	0	317	18	0	8	248	0	0	0	0	0	0	34	0	12	0	637
5:30 PM	0	271	18	0	5	230	0	0	0	0	0	0	44	0	7	0	575
5:45 PM	0	319	18	0	6	222	0	0	0	0	0	0	32	0	21	0	618
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	2366	133	0	41	1803	0	0	0	0	0	0	246	0	95	0	4684
<b>APPROACH %'s :</b>	0.00%	94.68%	5.32%	0.00%	2.22%	97.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	72.14%	0.00%	27.86%	0.00%	
<b>PEAK HR :</b>	<b>05:00 PM - 06:00 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1178	68	0	22	966	0	0	0	0	0	0	152	0	58	0	2444
<b>PEAK HR FACTOR :</b>	0.00	0.923	0.944	0.000	0.688	0.908	0.000	0.000	0.000	0.000	0.000	0.000	0.864	0.000	0.690	0.000	0.959
	0.924				0.918								0.875				



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Inland Empire Blvd  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-011  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Inland Empire Blvd				Inland Empire Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	7	2	0	0	4	0	0	0	0	0	0	0	0	0	0	13
7:15 AM	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	0	9
7:30 AM	0	6	1	0	0	3	0	0	0	0	0	0	0	0	0	0	10
7:45 AM	0	4	1	0	1	6	0	0	0	0	0	0	1	0	0	0	13
8:00 AM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
8:15 AM	0	5	1	0	0	5	0	0	0	0	0	0	1	0	0	0	12
8:30 AM	0	6	1	0	0	2	0	0	0	0	0	0	1	0	0	0	10
8:45 AM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	42	6	0	1	32	0	0	0	0	0	0	4	0	0	0	85
<b>APPROACH %'s :</b>	0.00%	87.50%	12.50%	0.00%	3.03%	96.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	21	3	0	1	19	0	0	0	0	0	0	2	0	0	0	46
<b>PEAK HR FACTOR :</b>	0.000	0.875	0.750	0.000	0.250	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.885
	0.857				0.714								0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	5	1	0	0	3	0	0	0	0	0	0	0	0	0	0	9
4:15 PM	0	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	14
4:30 PM	0	2	5	0	0	3	0	0	0	0	0	0	1	0	0	0	11
4:45 PM	0	3	2	0	0	1	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	0	1	2	0	0	1	0	0	0	0	0	0	1	0	0	0	5
5:15 PM	0	1	1	0	0	5	0	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	2	4	0	0	0	0	0	0	0	0	0	0	0	1	0	7
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	21	18	0	0	21	0	0	0	0	0	0	2	0	1	0	63
<b>APPROACH %'s :</b>	0.00%	53.85%	46.15%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	33.33%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	6	8	0	0	7	0	0	0	0	0	0	1	0	1	0	23
<b>PEAK HR FACTOR :</b>	0.00	0.750	0.500	0.000	0.000	0.350	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.821
	0.583				0.350								0.500				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Inland Empire Blvd  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-011  
**Date:** 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				Inland Empire Blvd				Inland Empire Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	4
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	8	1	0	0	6	0	0	0	0	0	0	1	0	0	0	16
<b>APPROACH %'s :</b>	0.00%	88.89%	11.11%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	4	1	0	0	4	0	0	0	0	0	0	0	0	0	0	9
<b>PEAK HR FACTOR :</b>	0.000	0.500	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.563
	0.417				0.500												
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	2	3	0	0	6	0	0	0	0	0	0	1	0	0	0	13
<b>APPROACH %'s :</b>	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																TOTAL
<b>PEAK HR VOL :</b>	0	0	1	0	0	3	0	0	0	0	0	0	1	0	0	0	5
<b>PEAK HR FACTOR :</b>	0.00	0.000	0.250	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.625
	0.250				0.750								0.250				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & Inland Empire Blvd  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-011  
**Date:** 3/12/2019

## 4axle

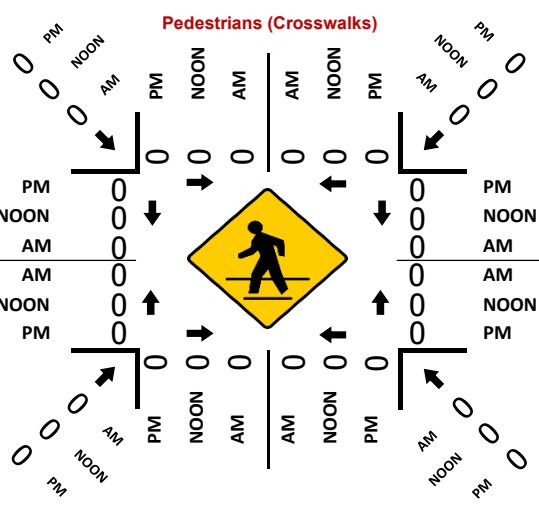
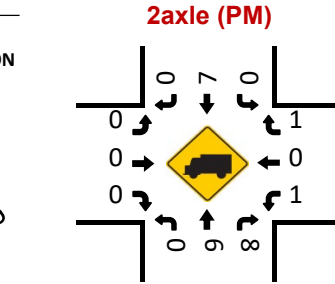
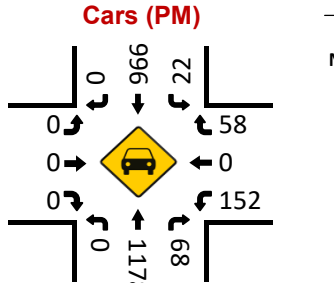
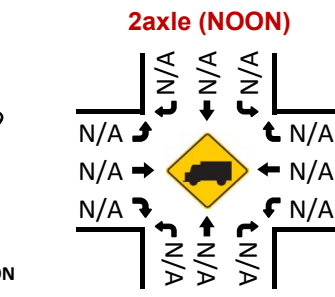
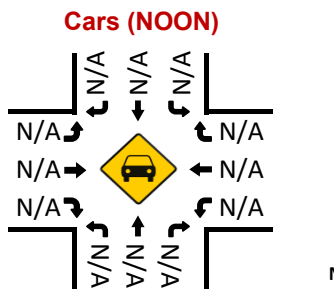
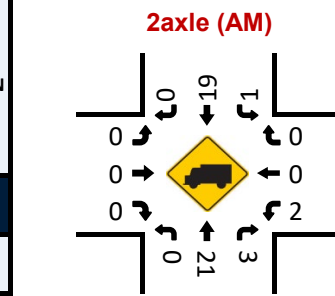
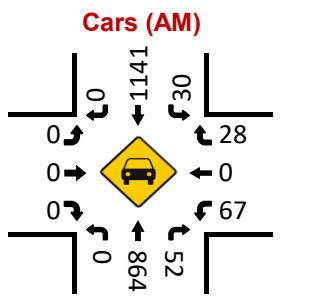
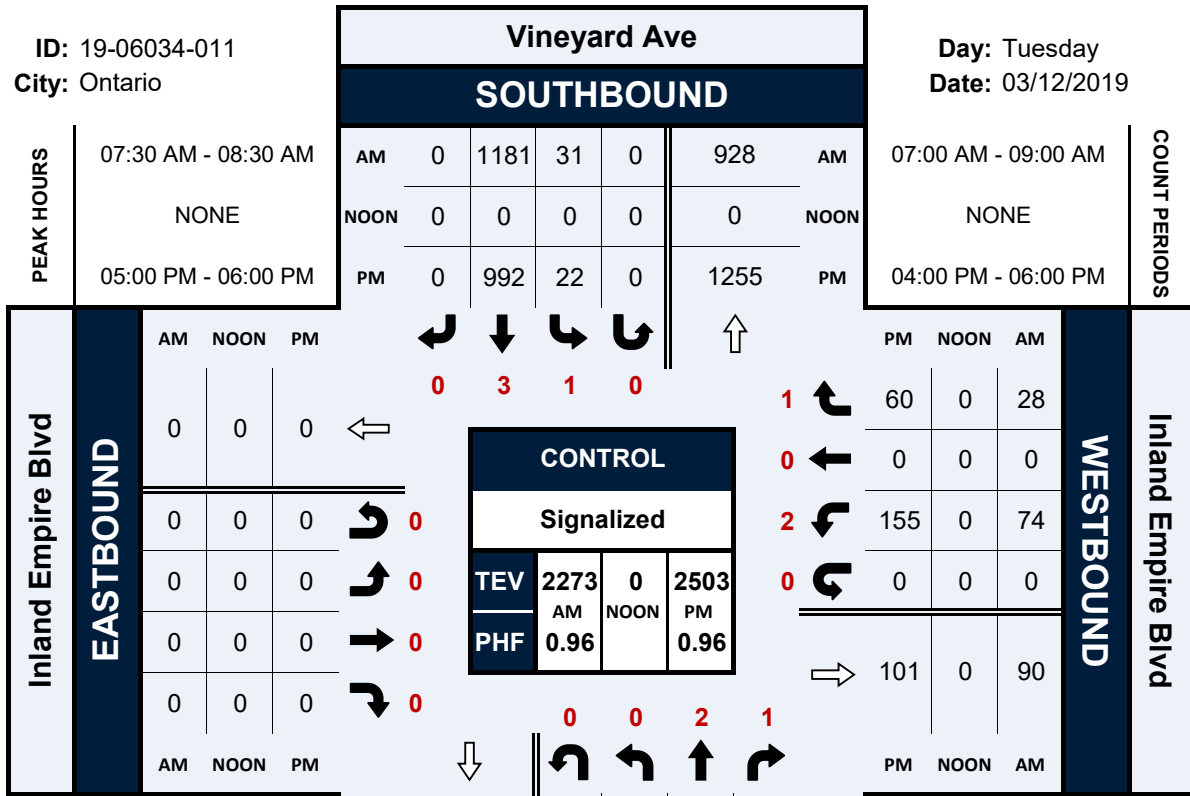
NS/EW Streets:	Vineyard Ave				Vineyard Ave				Inland Empire Blvd				Inland Empire Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	9
7:15 AM	0	5	2	0	0	2	0	0	0	0	0	0	0	0	0	0	9
7:30 AM	0	1	2	0	0	7	0	0	0	0	0	0	2	0	0	0	12
7:45 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	3	1	0	0	5	0	0	0	0	0	0	1	0	0	0	10
8:15 AM	0	5	0	0	0	2	0	0	0	0	0	0	2	0	0	0	9
8:30 AM	0	1	0	0	0	4	0	0	0	0	0	0	1	0	1	0	7
8:45 AM	0	4	2	0	0	6	0	0	0	0	0	0	2	0	1	0	15
<b>TOTAL VOLUMES :</b>	0	21	7	0	0	38	0	0	0	0	0	0	8	0	2	0	76
<b>APPROACH %'s :</b>	0.00%	75.00%	25.00%	0.00%	0.00%	100.00%	0.00%	0.00%					80.00%	0.00%	20.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	11	3	0	0	17	0	0	0	0	0	0	5	0	0	0	36
<b>PEAK HR FACTOR :</b>	0.000	0.550	0.375	0.000	0.000	0.607	0.000	0.000					0.625	0.000	0.000	0.000	0.750
	0.700				0.607								0.625				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	8	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9
4:15 PM	0	6	1	0	0	4	0	0	0	0	0	0	0	0	0	0	11
4:30 PM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
4:45 PM	0	6	0	0	0	6	0	0	0	0	0	0	1	0	0	0	13
5:00 PM	0	5	0	0	0	7	0	0	0	0	0	0	1	0	0	0	13
5:15 PM	0	1	1	0	0	4	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	4	1	0	0	3	0	0	0	0	0	0	0	0	1	0	9
<b>TOTAL VOLUMES :</b>	0	37	3	0	0	28	0	0	0	0	0	0	2	0	1	0	71
<b>APPROACH %'s :</b>	0.00%	92.50%	7.50%	0.00%	0.00%	100.00%	0.00%	0.00%					66.67%	0.00%	33.33%	0.00%	
<b>PEAK HR :</b>	05:00 PM - 06:00 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	11	2	0	0	16	0	0	0	0	0	0	1	0	1	0	31
<b>PEAK HR FACTOR :</b>	0.00	0.550	0.500	0.000	0.000	0.571	0.000	0.000					0.250	0.000	0.250	0.000	0.596
	0.650				0.571								0.500				

# Vineyard Ave & Inland Empire Blvd

## Peak Hour Turning Movement Count

ID: 19-06034-011  
City: Ontario

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 WB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-012  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 WB Ramps				I-10 WB Ramps				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	120	48	0	0	216	75	0	0	0	0	0	31	0	64	0	554
7:15 AM	0	136	50	0	0	235	83	0	0	0	0	0	32	0	62	0	598
7:30 AM	0	160	58	0	0	236	76	0	0	0	0	0	43	0	79	0	652
7:45 AM	0	171	48	0	0	303	70	0	0	0	0	0	39	0	67	0	698
8:00 AM	0	169	35	0	0	301	67	0	0	0	0	0	49	0	82	0	703
8:15 AM	0	168	42	0	0	238	32	0	0	0	0	0	35	0	68	0	583
8:30 AM	0	108	45	0	0	213	0	0	0	0	0	0	51	0	59	0	476
8:45 AM	0	118	47	0	0	215	0	0	0	0	0	0	37	0	63	0	480
<b>TOTAL VOLUMES :</b>	0	1150	373	0	0	1957	403	0	0	0	0	0	317	0	544	0	4744
<b>APPROACH %'s :</b>	0.00%	75.51%	24.49%	0.00%	0.00%	82.92%	17.08%	0.00%					36.82%	0.00%	63.18%	0.00%	
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																
<b>PEAK HR VOL :</b>	0	636	191	0	0	1075	296	0	0	0	0	0	163	0	290	0	2651
<b>PEAK HR FACTOR :</b>	0.000	0.930	0.823	0.000	0.000	0.887	0.892	0.000	0.000	0.000	0.000	0.000	0.832	0.000	0.884	0.000	0.943
	0.944				0.919				0.865								
PM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	229	75	0	0	166	62	0	0	0	0	0	50	0	84	0	666
4:15 PM	0	228	66	0	0	178	72	0	0	0	0	0	62	0	111	0	717
4:30 PM	0	221	96	0	0	176	79	0	0	0	0	0	43	0	88	0	703
4:45 PM	0	256	74	0	0	183	82	0	0	0	0	0	55	0	95	0	745
5:00 PM	0	226	85	0	0	206	108	0	0	0	0	0	51	0	73	0	749
5:15 PM	0	221	92	0	0	221	105	0	0	0	0	0	56	0	108	0	803
5:30 PM	0	204	55	0	0	186	92	0	0	0	0	0	49	0	96	0	682
5:45 PM	0	224	66	0	0	176	87	0	0	0	0	0	49	0	111	0	713
<b>TOTAL VOLUMES :</b>	0	1809	609	0	0	1492	687	0	0	0	0	0	415	0	766	0	5778
<b>APPROACH %'s :</b>	0.00%	74.81%	25.19%	0.00%	0.00%	68.47%	31.53%	0.00%					35.14%	0.00%	64.86%	0.00%	
<b>PEAK HR :</b>	<b>04:30 PM - 05:30 PM</b>																
<b>PEAK HR VOL :</b>	0	924	347	0	0	786	374	0	0	0	0	0	205	0	364	0	3000
<b>PEAK HR FACTOR :</b>	0.000	0.902	0.904	0.000	0.000	0.889	0.866	0.000	0.000	0.000	0.000	0.000	0.915	0.000	0.843	0.000	0.934
	0.963				0.890				0.867								

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 WB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-012  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 WB Ramps				I-10 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	0	2	1	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	114	47	0	0	207	70	0	0	0	0	0	31	0	59	0	528
7:15 AM	0	128	50	0	0	230	80	0	0	0	0	0	32	0	58	0	578
7:30 AM	0	153	56	0	0	229	70	0	0	0	0	0	43	0	75	0	626
7:45 AM	0	165	47	0	0	298	67	0	0	0	0	0	38	0	66	0	681
8:00 AM	0	162	34	0	0	291	62	0	0	0	0	0	49	0	76	0	674
8:15 AM	0	158	40	0	0	226	32	0	0	0	0	0	33	0	65	0	554
8:30 AM	0	104	45	0	0	206	0	0	0	0	0	0	48	0	56	0	459
8:45 AM	0	111	45	0	0	203	0	0	0	0	0	0	36	0	59	0	454
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1095	364	0	0	1890	381	0	0	0	0	0	310	0	514	0	4554
<b>APPROACH %'s :</b>	0.00%	75.05%	24.95%	0.00%	0.00%	83.22%	16.78%	0.00%					37.62%	0.00%	62.38%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																
<b>PEAK HR VOL :</b>	0	608	187	0	0	1048	279	0	0	0	0	0	162	0	275	0	TOTAL
<b>PEAK HR FACTOR :</b>	0.00	0.921	0.835	0.000	0.000	0.879	0.872	0.000	0.000	0.000	0.000	0.000	0.827	0.000	0.905	0.000	0.939
	0.938				0.909								0.874				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	1	0	0	2	1	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	219	73	0	0	162	61	0	0	0	0	0	49	0	79	0	643
4:15 PM	0	217	63	0	0	173	66	0	0	0	0	0	62	0	106	0	687
4:30 PM	0	210	94	0	0	175	75	0	0	0	0	0	43	0	86	0	683
4:45 PM	0	248	73	0	0	174	81	0	0	0	0	0	54	0	90	0	720
5:00 PM	0	219	85	0	0	198	107	0	0	0	0	0	51	0	72	0	732
5:15 PM	0	218	92	0	0	216	98	0	0	0	0	0	55	0	107	0	786
5:30 PM	0	199	55	0	0	181	92	0	0	0	0	0	48	0	96	0	671
5:45 PM	0	213	66	0	0	174	86	0	0	0	0	0	49	0	111	0	699
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1743	601	0	0	1453	666	0	0	0	0	0	411	0	747	0	5621
<b>APPROACH %'s :</b>	0.00%	74.36%	25.64%	0.00%	0.00%	68.57%	31.43%	0.00%					35.49%	0.00%	64.51%	0.00%	
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																
<b>PEAK HR VOL :</b>	0	895	344	0	0	763	361	0	0	0	0	0	203	0	355	0	TOTAL
<b>PEAK HR FACTOR :</b>	0.00	0.902	0.915	0.000	0.000	0.883	0.843	0.000	0.000	0.000	0.000	0.000	0.923	0.000	0.829	0.000	0.929
	0.965				0.895								0.861				

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 WB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-012  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 WB Ramps				I-10 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	2	1	0	0	4	0	0	0	0	0	0	0	0	0	0	14
7:15 AM	0	5	0	0	0	4	1	0	0	0	0	0	0	0	0	0	10
7:30 AM	0	4	0	0	0	3	0	0	0	0	0	0	0	2	0	0	9
7:45 AM	0	5	1	0	0	3	2	0	0	0	0	0	1	0	0	0	12
8:00 AM	0	3	0	0	0	6	1	0	0	0	0	0	0	0	4	0	14
8:15 AM	0	3	2	0	0	6	0	0	0	0	0	0	1	0	2	0	14
8:30 AM	0	3	0	0	0	2	0	0	0	0	0	0	1	0	3	0	9
8:45 AM	0	5	1	0	0	4	0	0	0	0	0	0	1	0	0	0	11
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	34	5	0	0	32	4	0	0	0	0	0	4	0	14	0	93
<b>APPROACH %'s :</b>	0.00%	87.18%	12.82%	0.00%	0.00%	88.89%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	22.22%	0.00%	77.78%	0.00%	
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	17	1	0	0	16	4	0	0	0	0	0	1	0	6	0	45
<b>PEAK HR FACTOR :</b>	0.000	0.850	0.250	0.000	0.000	0.667	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.375	0.000	0.804
	0.750				0.714								0.438				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	2	1	0	0	2	1	0	0	0	0	0	0	0	1	0	10
4:15 PM	0	5	2	0	0	3	4	0	0	0	0	0	0	0	2	0	16
4:30 PM	0	7	2	0	0	1	3	0	0	0	0	0	0	0	0	0	13
4:45 PM	0	4	0	0	0	1	0	0	0	0	0	0	1	0	1	0	7
5:00 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	2	0	0	0	1	4	0	0	0	0	0	0	0	0	0	7
5:30 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	35	5	0	0	11	12	0	0	0	0	0	1	0	4	0	68
<b>APPROACH %'s :</b>	0.00%	87.50%	12.50%	0.00%	0.00%	47.83%	52.17%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	80.00%	0.00%	
<b>PEAK HR :</b>	<b>04:30 PM - 05:30 PM</b>																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	16	2	0	0	5	7	0	0	0	0	0	1	0	1	0	32
<b>PEAK HR FACTOR :</b>	0.00	0.571	0.250	0.000	0.000	0.625	0.438	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.615
	0.500				0.600								0.250				





# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 WB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-012  
**Date:** 3/12/2019

## 4axle

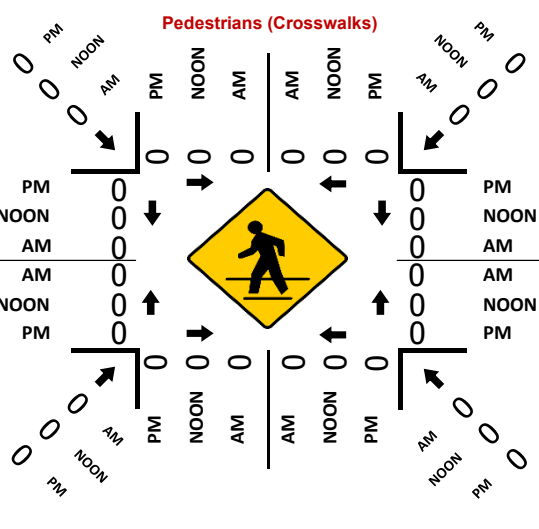
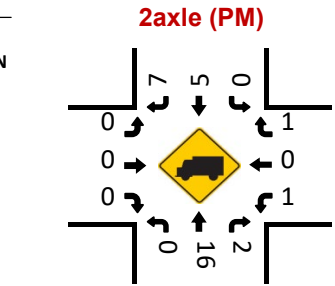
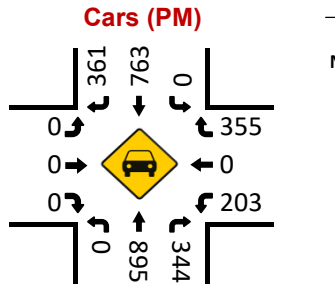
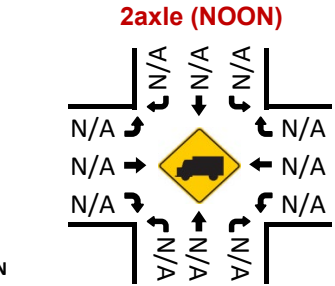
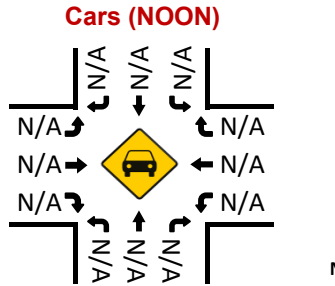
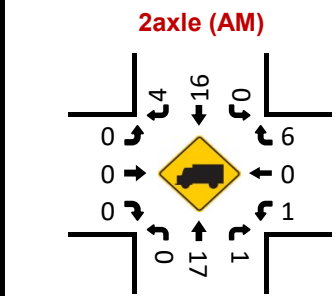
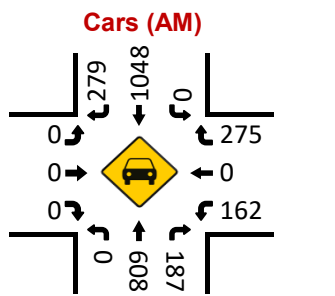
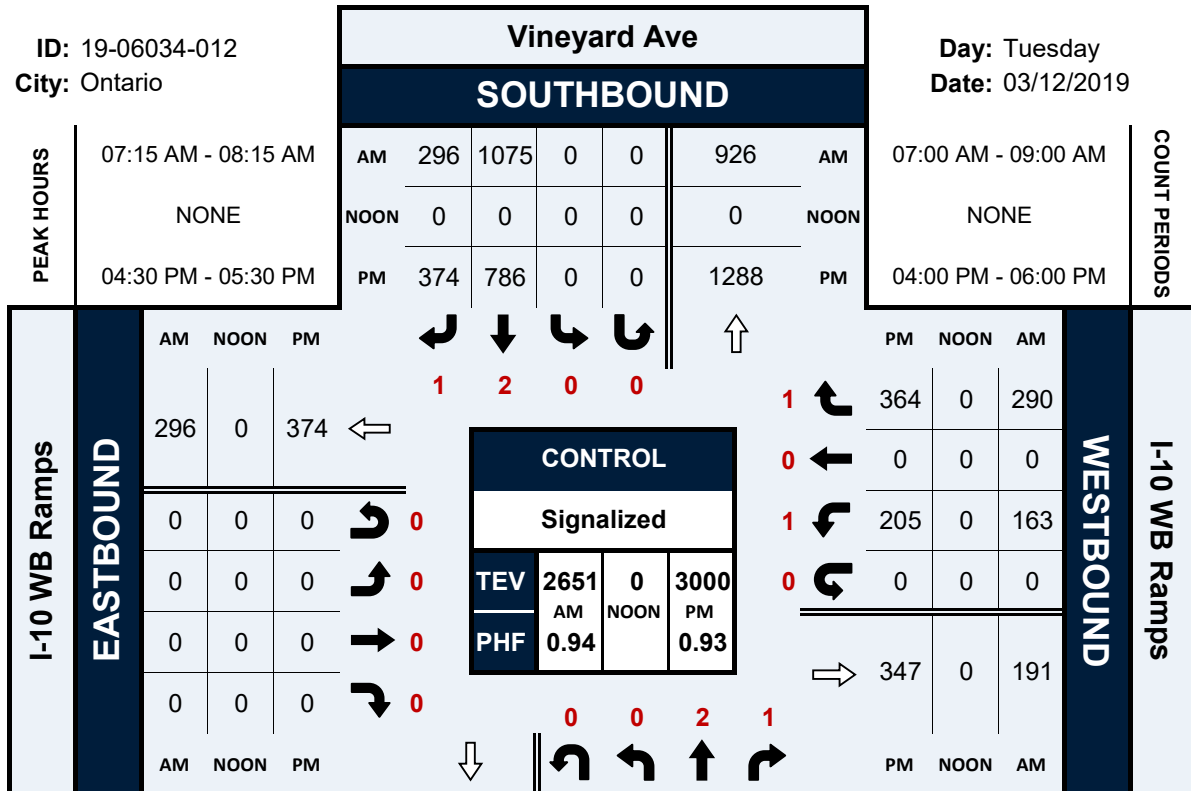
NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 WB Ramps				I-10 WB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0	0	9
7:15 AM	0	3	0	0	0	1	1	0	0	0	0	0	0	0	3	0	8
7:30 AM	0	2	1	0	0	4	5	0	0	0	0	0	0	2	0	0	14
7:45 AM	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	3	1	0	0	2	4	0	0	0	0	0	0	2	0	0	12
8:15 AM	0	4	0	0	0	5	0	0	0	0	0	0	1	0	1	0	11
8:30 AM	0	1	0	0	0	4	0	0	0	0	0	0	1	0	0	0	6
8:45 AM	0	2	1	0	0	8	0	0	0	0	0	0	0	0	4	0	15
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	16	3	0	0	31	15	0	0	0	0	0	2	0	12	0	79
<b>APPROACH %'s :</b>	0.00%	84.21%	15.79%	0.00%	0.00%	67.39%	32.61%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	85.71%	0.00%	
<b>PEAK HR :</b>	07:15 AM - 08:15 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	9	2	0	0	9	11	0	0	0	0	0	0	0	7	0	38
<b>PEAK HR FACTOR :</b>	0.000	0.750	0.500	0.000	0.000	0.563	0.550	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.679
	0.688				0.556								0.583				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	4	1	0	0	1	0	0	0	0	0	0	0	0	4	0	10
4:15 PM	0	4	1	0	0	2	2	0	0	0	0	0	0	0	3	0	12
4:30 PM	0	4	0	0	0	0	1	0	0	0	0	0	0	0	2	0	7
4:45 PM	0	2	1	0	0	6	1	0	0	0	0	0	0	0	4	0	14
5:00 PM	0	4	0	0	0	6	1	0	0	0	0	0	0	0	1	0	12
5:15 PM	0	1	0	0	0	3	2	0	0	0	0	0	1	0	1	0	8
5:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	4
5:45 PM	0	5	0	0	0	2	1	0	0	0	0	0	0	0	0	0	8
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	25	3	0	0	22	8	0	0	0	0	0	2	0	15	0	75
<b>APPROACH %'s :</b>	0.00%	89.29%	10.71%	0.00%	0.00%	73.33%	26.67%	0.00%	0.00%	0.00%	0.00%	0.00%	11.76%	0.00%	88.24%	0.00%	
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	11	1	0	0	15	5	0	0	0	0	0	1	0	8	0	41
<b>PEAK HR FACTOR :</b>	0.00	0.688	0.250	0.000	0.000	0.625	0.625	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.732
	0.750				0.714								0.563				

# Vineyard Ave & I-10 WB Ramps

## Peak Hour Turning Movement Count

ID: 19-06034-012  
City: Ontario

Day: Tuesday  
Date: 03/12/2019



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 EB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-013  
**Date:** 3/12/2019

## Total

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 EB Ramps				I-10 EB Ramps				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	122	79	0	112	140	0	0	49	0	72	0	0	0	0	0	574
7:15 AM	0	142	72	0	97	166	0	0	48	0	76	0	0	0	0	0	601
7:30 AM	0	163	81	0	93	178	0	0	50	1	67	0	0	0	0	0	633
7:45 AM	0	168	103	0	112	235	0	0	52	1	74	0	0	0	0	0	745
8:00 AM	0	152	71	0	104	246	0	0	54	0	87	0	0	0	0	0	714
8:15 AM	0	155	61	0	76	201	0	0	49	1	105	0	0	0	0	0	648
8:30 AM	0	117	59	1	66	195	0	0	38	0	84	0	0	0	0	0	560
8:45 AM	0	121	63	0	68	185	0	0	41	0	82	0	0	0	0	0	560
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	1140	589	1	728	1546	0	0	381	3	647	0	0	0	0	0	5035
	0.00%	65.90%	34.05%	0.06%	32.01%	67.99%	0.00%	0.00%	36.95%	0.29%	62.75%	0.00%					
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	638	316	0	385	860	0	0	205	3	333	0	0	0	0	0	2740
<b>PEAK HR FACTOR :</b>	0.000	0.949	0.767	0.000	0.859	0.874	0.000	0.000	0.949	0.750	0.793	0.000	0.000	0.000	0.000	0.000	0.919
			0.880				0.889				0.873						
PM	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	234	87	0	48	169	0	0	65	0	74	0	0	0	0	0	677
4:15 PM	0	238	70	0	38	197	0	0	62	0	63	0	0	0	0	0	668
4:30 PM	0	251	79	0	52	171	0	0	64	0	67	0	0	0	0	0	684
4:45 PM	0	265	89	0	51	183	0	0	69	0	59	0	0	0	0	0	716
5:00 PM	0	253	92	0	43	214	0	0	53	1	56	0	0	0	0	0	712
5:15 PM	0	236	76	0	51	221	0	0	72	2	74	0	0	0	0	0	732
5:30 PM	0	190	63	0	56	184	0	0	72	0	68	0	0	0	0	0	633
5:45 PM	0	241	67	0	42	190	0	0	53	0	79	0	0	0	0	0	672
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
<b>APPROACH %'s :</b>	0	1908	623	0	381	1529	0	0	510	3	540	0	0	0	0	0	5494
	0.00%	75.39%	24.61%	0.00%	19.95%	80.05%	0.00%	0.00%	48.43%	0.28%	51.28%	0.00%					
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																TOTAL
<b>PEAK HR VOL :</b>	0	1005	336	0	197	789	0	0	258	3	256	0	0	0	0	0	2844
<b>PEAK HR FACTOR :</b>	0.000	0.948	0.913	0.000	0.947	0.893	0.000	0.000	0.896	0.375	0.865	0.000	0.000	0.000	0.000	0.000	0.971
			0.947				0.906				0.873						

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 EB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-013  
**Date:** 3/12/2019

## Cars

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 EB Ramps				I-10 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	115	78	0	107	136	0	0	48	0	70	0	0	0	0	0	554
7:15 AM	0	138	72	0	96	162	0	0	44	0	75	0	0	0	0	0	587
7:30 AM	0	158	80	0	91	174	0	0	48	1	67	0	0	0	0	0	619
7:45 AM	0	162	101	0	109	233	0	0	49	1	74	0	0	0	0	0	729
8:00 AM	0	148	70	0	99	241	0	0	51	0	87	0	0	0	0	0	696
8:15 AM	0	150	59	0	67	196	0	0	43	0	104	0	0	0	0	0	619
8:30 AM	0	114	56	1	62	188	0	0	37	0	83	0	0	0	0	0	541
8:45 AM	0	111	59	0	61	178	0	0	41	0	82	0	0	0	0	0	532
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1096	575	1	692	1508	0	0	361	2	642	0	0	0	0	0	4877
<b>APPROACH %'s :</b>	0.00%	65.55%	34.39%	0.06%	31.45%	68.55%	0.00%	0.00%	35.92%	0.20%	63.88%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																TOTAL
<b>PEAK HR VOL :</b>	0	618	310	0	366	844	0	0	191	2	332	0	0	0	0	0	2663
<b>PEAK HR FACTOR :</b>	0.00	0.954	0.767	0.000	0.839	0.876	0.000	0.000	0.936	0.500	0.798	0.000	0.000	0.000	0.000	0.000	0.913
			0.882			0.885				0.893							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
	4:00 PM	0	225	86	0	47	166	0	0	61	0	72	0	0	0	0	0
4:15 PM	0	229	68	0	37	193	0	0	57	0	60	0	0	0	0	0	644
4:30 PM	0	244	78	0	52	169	0	0	58	0	67	0	0	0	0	0	668
4:45 PM	0	258	89	0	46	177	0	0	67	0	57	0	0	0	0	0	694
5:00 PM	0	252	89	0	40	210	0	0	48	1	56	0	0	0	0	0	696
5:15 PM	0	236	75	0	47	219	0	0	68	2	74	0	0	0	0	0	721
5:30 PM	0	188	62	0	54	180	0	0	70	0	68	0	0	0	0	0	622
5:45 PM	0	232	67	0	41	189	0	0	50	0	78	0	0	0	0	0	657
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1864	614	0	364	1503	0	0	479	3	532	0	0	0	0	0	5359
<b>APPROACH %'s :</b>	0.00%	75.22%	24.78%	0.00%	19.50%	80.50%	0.00%	0.00%	47.24%	0.30%	52.47%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																TOTAL
<b>PEAK HR VOL :</b>	0	990	331	0	185	775	0	0	241	3	254	0	0	0	0	0	2779
<b>PEAK HR FACTOR :</b>	0.00	0.959	0.930	0.000	0.889	0.885	0.000	0.000	0.886	0.375	0.858	0.000	0.000	0.000	0.000	0.000	0.964
			0.952			0.902				0.865							

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 EB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-013  
**Date:** 3/12/2019

## 2axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 EB Ramps				I-10 EB Ramps					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	7	1	0	1	3	0	0	1	0	0	0	0	0	0	0	0	13
7:15 AM	0	3	0	0	0	4	0	0	1	0	1	0	0	0	0	0	0	9
7:30 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	0	6	1	0	2	2	0	0	1	0	0	0	0	0	0	0	0	12
8:00 AM	0	3	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0	10
8:15 AM	0	2	1	0	4	3	0	0	2	1	1	0	0	0	0	0	0	14
8:30 AM	0	2	1	0	2	2	0	0	1	0	0	0	0	0	0	0	0	8
8:45 AM	0	7	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	12
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	0	33	6	0	13	23	0	0	6	1	2	0	0	0	0	0	84	
<b>APPROACH %'s :</b>	0.00%	84.62%	15.38%	0.00%	36.11%	63.89%	0.00%	0.00%	66.67%	11.11%	22.22%	0.00%						
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																	<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	14	3	0	9	11	0	0	3	1	1	0	0	0	0	0	0	42
<b>PEAK HR FACTOR :</b>	0.000	0.583	0.750	0.000	0.563	0.917	0.000	0.000	0.375	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.750
			0.607				0.714				0.313							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	5	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	8
4:15 PM	0	5	2	0	1	2	0	0	2	0	3	0	0	0	0	0	0	15
4:30 PM	0	6	0	0	0	2	0	0	3	0	0	0	0	0	0	0	0	11
4:45 PM	0	4	0	0	1	2	0	0	1	0	0	0	0	0	0	0	0	8
5:00 PM	0	1	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	6
5:15 PM	0	0	1	0	0	1	0	0	3	0	0	0	0	0	0	0	0	5
5:30 PM	0	1	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0	5
5:45 PM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	0	28	7	0	2	10	0	0	13	0	4	0	0	0	0	0	64	
<b>APPROACH %'s :</b>	0.00%	80.00%	20.00%	0.00%	16.67%	83.33%	0.00%	0.00%	76.47%	0.00%	23.53%	0.00%						
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																	<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	11	4	0	1	6	0	0	8	0	0	0	0	0	0	0	0	30
<b>PEAK HR FACTOR :</b>	0.00	0.458	0.333	0.000	0.250	0.750	0.000	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.682
			0.625				0.583				0.667							

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Vineyard Ave & I-10 EB Ramps  
**City:** Ontario  
**Control:** Signalized

**Project ID:** 19-06034-013  
**Date:** 3/12/2019

## 3axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 EB Ramps				I-10 EB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	3
8:15 AM	0	2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	5
8:30 AM	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3
8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	3	5	0	1	4	0	0	3	0	2	0	0	0	0	0	18
<b>APPROACH %'s :</b>	0.00%	37.50%	62.50%	0.00%	20.00%	80.00%	0.00%	0.00%	60.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	3	3	0	1	2	0	0	2	0	0	0	0	0	0	0	11
<b>PEAK HR FACTOR :</b>	0.000	0.375	0.750	0.000	0.250	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.550
	0.500				0.375				0.500								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	2	1	0	0	2	0	0	0	0	1	0	0	0	0	0	6
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>
	0	2.5	0.5	0	1	2	0	0	1.3	0.3	1.3	0	0	0	0	0	16
<b>APPROACH %'s :</b>	0.00%	83.33%	16.67%	0.00%	14.29%	85.71%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	0.00%	0.00%	0.00%	0.00%	
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	1	0	0	1	2	0	0	1	0	0	0	0	0	0	0	5
<b>PEAK HR FACTOR :</b>	0.00	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.313
	0.250				0.375				0.250								

# National Data & Surveying Services Intersection Turning Movement Count

Location: Vineyard Ave & I-10 EB Ramps  
 City: Ontario  
 Control: Signalized

Project ID: 19-06034-013  
 Date: 3/12/2019

## 4axle

NS/EW Streets:	Vineyard Ave				Vineyard Ave				I-10 EB Ramps				I-10 EB Ramps					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	0	0	0	4	1	0	0	0	0	1	0	0	0	0	0	0	6
7:15 AM	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	4
7:30 AM	0	1	0	0	2	1	0	0	0	2	0	0	0	0	0	0	0	6
7:45 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	3
8:00 AM	0	1	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	5
8:15 AM	0	1	0	0	5	1	0	0	0	3	0	0	0	0	0	0	0	10
8:30 AM	0	1	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0	8
8:45 AM	0	3	1	0	6	4	0	0	0	0	0	0	0	0	0	0	0	14
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	0	8	3	0	22	11	0	0	11	0	1	0	0	0	0	0	56	
<b>APPROACH %'s :</b>	0.00%	72.73%	27.27%	0.00%	66.67%	33.33%	0.00%	0.00%	91.67%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%		
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	3	0	0	9	3	0	0	9	0	0	0	0	0	0	0	24	
<b>PEAK HR FACTOR :</b>	0.000	0.750	0.000	0.000	0.450	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.600	
			0.750				0.500				0.750							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	2	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	6
4:15 PM	0	3	0	0	0	2	0	0	3	0	0	0	0	0	0	0	0	8
4:30 PM	0	1	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0	5
4:45 PM	0	2	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	10
5:00 PM	0	0	0	0	3	3	0	0	4	0	0	0	0	0	0	0	0	10
5:15 PM	0	0	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0	5
5:30 PM	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	2	0	0	1	1	0	0	3	0	0	0	0	0	0	0	0	7
<b>TOTAL VOLUMES :</b>	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	<b>TOTAL</b>	
	0	11	1	0	14	10	0	0	17	0	2	0	0	0	0	0	55	
<b>APPROACH %'s :</b>	0.00%	91.67%	8.33%	0.00%	58.33%	41.67%	0.00%	0.00%	89.47%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%		
<b>PEAK HR :</b>	04:30 PM - 05:30 PM																<b>TOTAL</b>	
<b>PEAK HR VOL :</b>	0	3	1	0	10	6	0	0	8	0	2	0	0	0	0	0	30	
<b>PEAK HR FACTOR :</b>	0.00	0.375	0.250	0.000	0.625	0.500	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.750	
			0.500				0.667				0.625							





**CLASSIFICATION**  
Baker Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_001n

**North Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
00:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
00:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
00:45	0	1	2	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
05:15	0	3	2	0	0	0	0	0	0	0	0	0	0	5
05:30	0	4	2	0	0	0	0	0	0	0	0	0	0	6
05:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
06:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
06:15	0	8	1	0	1	0	0	0	0	0	0	0	0	10
06:30	0	14	3	0	0	0	0	0	0	0	0	0	0	17
06:45	0	10	4	1	0	0	0	0	0	0	0	0	0	15
07:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
07:15	0	35	11	0	0	0	0	0	0	0	0	0	0	46
07:30	0	60	14	0	2	0	0	0	0	0	0	0	0	76
07:45	0	57	13	0	4	1	0	0	0	0	0	0	0	75
08:00	0	24	11	1	2	1	0	0	0	0	0	0	0	39
08:15	0	19	6	0	2	0	0	0	0	0	0	0	0	27
08:30	0	17	4	0	2	0	0	0	0	0	0	0	0	23
08:45	0	20	3	0	1	0	0	0	0	0	0	0	0	24
09:00	0	21	2	1	1	0	0	0	0	0	0	0	0	25
09:15	0	23	3	0	1	0	0	0	0	0	0	0	0	27
09:30	0	20	7	0	1	0	0	0	0	0	0	0	0	28
09:45	0	26	2	0	0	0	0	0	0	0	0	0	0	28
10:00	0	25	6	1	0	0	0	0	0	0	0	0	0	32
10:15	1	19	3	0	0	0	0	0	0	0	0	0	0	23
10:30	0	14	6	0	0	0	0	0	0	0	0	0	0	20
10:45	0	22	4	0	1	0	0	0	0	0	0	0	0	27
11:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
11:15	0	10	5	0	2	1	0	0	0	0	0	0	0	18
11:30	0	14	3	0	0	0	0	1	0	0	0	0	0	18
11:45	0	21	8	0	1	0	0	1	0	0	0	0	0	31
12:00 PM	0	27	6	0	2	0	0	0	0	0	0	0	0	35
12:15	0	28	7	0	0	1	0	0	0	0	0	0	0	36
12:30	0	20	4	0	0	0	0	0	0	0	0	0	0	24
12:45	0	18	5	0	0	0	0	0	0	0	0	0	0	23
13:00	0	21	1	0	1	1	0	0	0	0	0	0	0	24
13:15	0	13	7	0	1	0	0	0	0	0	0	0	0	21
13:30	0	26	5	0	1	0	0	0	0	0	0	0	0	32
13:45	0	26	7	0	3	0	0	0	0	0	0	0	0	36
14:00	0	35	6	0	2	0	0	0	0	0	0	0	0	43
14:15	0	26	4	0	0	0	0	0	0	0	0	0	0	30
14:30	0	39	10	0	0	0	0	0	0	0	0	0	0	49
14:45	0	42	8	0	1	0	0	0	0	0	0	0	0	51
15:00	0	42	7	1	2	0	0	1	0	0	0	0	0	53
15:15	0	39	5	2	0	0	0	0	0	0	0	0	0	46
15:30	0	38	11	0	2	0	0	0	0	0	0	0	0	51
15:45	0	39	10	0	1	0	0	0	0	0	0	0	0	50
16:00	1	52	12	2	1	0	0	0	0	0	0	0	0	68
16:15	0	40	7	0	2	0	0	0	0	0	0	0	0	49
16:30	0	50	4	0	0	0	0	0	0	0	0	0	0	54
16:45	0	51	12	0	1	0	0	0	0	0	0	0	0	64
17:00	0	55	8	0	0	1	0	0	0	0	0	0	0	64
17:15	0	43	7	0	2	0	0	0	0	0	0	0	0	52
17:30	0	44	13	0	1	0	0	0	0	0	0	0	0	58
17:45	0	51	5	0	1	0	0	1	0	0	0	0	0	58
18:00	0	43	6	0	1	0	0	0	0	0	0	0	0	50
18:15	0	38	8	0	0	0	0	0	0	0	0	0	0	46
18:30	0	39	8	0	1	0	0	0	0	0	0	0	0	48
18:45	0	21	6	0	0	0	0	0	0	0	0	0	0	27
19:00	0	30	5	0	1	0	0	0	0	0	0	0	0	36
19:15	0	29	5	0	0	0	0	0	0	0	0	0	0	34
19:30	0	24	2	0	0	0	0	0	0	0	0	0	0	26
19:45	0	35	4	0	0	0	0	0	0	0	0	0	0	39
20:00	0	23	3	0	0	0	0	0	0	0	0	0	0	26
20:15	0	19	0	0	0	0	0	0	0	0	0	0	0	19
20:30	0	9	5	0	1	0	0	0	0	0	0	0	0	15
20:45	0	17	5	0	0	0	0	0	0	0	0	0	0	22
21:00	0	19	5	0	0	0	0	0	0	0	0	0	0	24
21:15	0	19	4	0	0	0	0	0	0	0	0	0	0	23
21:30	0	16	1	0	0	0	0	0	0	0	0	0	0	17
21:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14
22:00	0	13	3	0	0	0	0	0	0	0	0	0	0	16
22:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
22:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
22:45	0	10	0	0	0	0	0	0	0	0	0	0	0	10
23:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
23:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:30	0	6	3	0	0	0	0	0	0	0	0	0	0	9
23:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
<b>Totals</b>	<b>2</b>	<b>1903</b>	<b>388</b>	<b>9</b>	<b>50</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2362</b>
% of Totals	0%	81%	16%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	100%

AM Peak Hour	Volume	% AM	PM Peak Hour	Volume	% PM	NOON 12-2	Volume	%	PM 4-6	Volume	%	Off Peak Volumes	Volume	%
09:30	1	25%	07:15	1	25%	07:30	1	25%	11:00	1	25%	15:15	1	25%
Volume	1	176	49	1	10	2	2	2	2	2	2	1645	238	14%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

**CLASSIFICATION**  
Baker Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_001s

South Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
00:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:30	0	1	1	0	1	0	0	0	0	0	0	0	0	3
00:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	1	2	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	4	2	0	0	0	0	0	0	0	0	0	0	6
04:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
04:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
04:30	0	12	4	0	1	0	0	0	0	0	0	0	0	17
04:45	0	10	5	0	0	0	0	0	0	0	0	0	0	15
05:00	0	10	4	0	1	0	0	0	0	0	0	0	0	15
05:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
05:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
05:45	0	17	1	0	0	0	0	0	0	0	0	0	0	18
06:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
06:15	0	12	1	0	0	0	0	0	0	0	0	0	0	13
06:30	0	15	2	0	1	0	0	0	0	0	0	0	0	18
06:45	0	20	3	0	0	0	0	0	0	0	0	0	0	23
07:00	0	29	1	0	0	0	0	0	0	0	0	0	0	30
07:15	0	40	5	2	2	0	0	0	0	0	0	0	0	49
07:30	0	38	6	0	0	0	0	0	0	0	0	0	0	44
07:45	0	33	15	0	0	0	0	0	0	0	0	0	0	48
08:00	0	33	6	0	0	0	0	0	0	0	0	0	0	39
08:15	0	21	1	1	0	0	0	0	0	0	0	0	0	23
08:30	0	29	6	0	0	0	0	0	0	0	0	0	0	35
08:45	0	19	7	0	0	0	0	0	0	0	0	0	0	26
09:00	0	27	3	0	0	0	0	0	0	0	0	0	0	30
09:15	0	16	6	0	1	0	0	0	0	0	0	0	0	23
09:30	0	16	10	0	0	0	0	0	0	0	0	0	0	26
09:45	0	19	6	0	2	0	0	0	0	0	0	0	0	27
10:00	0	19	2	1	0	0	0	0	0	0	0	0	0	22
10:15	0	23	7	0	1	0	0	0	0	0	0	0	0	31
10:30	0	25	9	0	1	0	0	0	0	0	0	0	0	35
10:45	0	23	8	1	0	0	0	0	0	0	0	0	0	32
11:00	0	27	11	0	0	0	0	0	0	0	0	0	0	38
11:15	0	23	3	0	0	0	0	0	0	0	0	0	0	26
11:30	0	23	3	0	0	0	0	0	0	0	0	0	0	26
11:45	0	25	6	0	0	0	0	0	0	0	0	0	0	31
12:00 PM	0	28	6	0	0	0	0	0	0	0	0	0	0	34
12:15	0	24	6	0	1	0	0	0	0	0	0	0	0	31
12:30	0	31	10	0	2	0	0	0	0	0	0	0	0	43
12:45	0	23	5	0	0	0	0	0	0	0	0	0	0	28
13:00	0	20	6	0	0	0	0	0	0	0	0	0	0	26
13:15	0	32	5	0	1	0	0	0	0	0	0	0	0	38
13:30	0	22	6	0	0	0	0	0	0	0	0	0	0	28
13:45	0	19	6	0	2	0	0	0	0	0	0	0	0	27
14:00	0	29	7	1	1	0	0	0	0	0	0	0	0	38
14:15	0	32	12	0	2	0	0	0	0	0	0	0	0	46
14:30	0	32	4	0	2	0	0	0	0	0	0	0	0	38
14:45	3	20	5	0	2	1	0	0	0	0	0	0	0	31
15:00	0	36	7	0	2	0	0	0	0	0	0	0	0	45
15:15	0	21	11	1	1	0	0	0	0	0	0	0	0	34
15:30	0	25	6	2	0	0	0	0	0	0	0	0	0	33
15:45	0	28	1	0	1	1	0	0	0	0	0	0	0	31
16:00	0	23	9	0	0	0	0	0	0	0	0	0	0	32
16:15	0	38	4	0	2	0	0	0	0	0	0	0	0	44
16:30	0	30	9	0	0	0	0	0	0	0	0	0	0	39
16:45	0	40	5	0	3	0	0	0	0	0	0	0	0	48
17:00	0	32	8	0	1	0	0	0	0	0	0	0	0	41
17:15	0	36	6	0	0	0	0	0	0	0	0	0	0	42
17:30	0	37	12	0	0	0	0	0	0	0	0	0	0	49
17:45	0	30	4	0	1	0	0	0	0	0	0	0	0	35
18:00	0	38	6	0	1	0	0	0	0	0	0	0	0	45
18:15	0	33	7	0	0	0	0	0	0	0	0	0	0	40
18:30	0	28	11	0	1	0	0	0	0	0	0	0	0	40
18:45	0	31	5	0	0	0	0	0	0	0	0	0	0	36
19:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
19:15	0	23	2	0	0	0	0	0	0	0	0	0	0	25
19:30	0	21	5	0	0	0	0	0	0	0	0	0	0	26
19:45	0	16	2	0	0	0	0	0	0	0	0	0	0	18
20:00	0	19	3	0	0	0	0	0	0	0	0	0	0	22
20:15	0	22	1	0	0	0	0	0	0	0	0	0	0	23
20:30	0	27	4	0	0	0	0	0	0	0	0	0	0	31
20:45	0	18	6	0	0	0	0	0	0	0	0	0	0	24
21:00	0	23	7	0	0	0	0	0	0	0	0	0	0	30
21:15	0	13	3	0	0	0	0	0	0	0	0	0	0	16
21:30	0	14	1	0	0	0	0	0	0	0	0	0	0	15
21:45	0	15	4	0	0	0	0	0	0	0	0	0	0	19
22:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
22:15	0	8	0	0	0	0	0	0	0	0	0	0	0	8
22:30	0	8	1	0	0	0	0	0	0	0	0	0	0	9
22:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
23:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
23:15	0	8	2	0	1	0	0	0	0	0	0	0	0	11
23:30	0	5	0	0	0	0	0	0	0	0	0	0	0	5
23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Totals	3	1774	393	9	38	2								2213
% of Totals	0%	80%	18%	0%	2%	0%								100%

AM Volumes	0	674	155	5	11	0	0	0	0	0	0	0	0	845
% AM		30%	7%	0%	0%									38%
AM Peak Hour		07:15	10:15	06:30	09:45									07:15
Volume		144	35	2	4									180
PM Volumes	3	1100	238	4	27	2	0	0	0	0	0	0	0	1374
% PM	0%	60%	11%	0%	1%	0%								62%
PM Peak Hour	14:00	16:45	13:30	14:45	14:15	14:00								16:45
Volume		3	145	31	3	8								180

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

Prepared by National Data & Surveying Services  
**CLASSIFICATION**  
 Baker Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
 Date: 3/12/2019

City: Rancho Cucamonga  
 Project #: CA19\_6035\_001

Summary

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	9	1	0	0	0	0	0	0	0	0	0	0	10
00:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
00:30	0	2	2	0	1	0	0	0	0	0	0	0	0	5
00:45	0	3	3	0	0	0	0	0	0	0	0	0	0	6
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	2	3	0	0	0	0	0	0	0	0	0	0	5
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
04:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
04:15	0	11	1	0	0	0	0	0	0	0	0	0	0	12
04:30	0	14	4	0	1	0	0	0	0	0	0	0	0	19
04:45	0	10	6	0	0	0	0	0	0	0	0	0	0	16
05:00	0	12	4	0	2	0	0	0	0	0	0	0	0	18
05:15	0	9	4	0	0	0	0	0	0	0	0	0	0	13
05:30	0	14	4	0	0	0	0	0	0	0	0	0	0	18
05:45	0	25	3	0	0	0	0	0	0	0	0	0	0	28
06:00	0	21	3	0	0	0	0	0	0	0	0	0	0	24
06:15	0	20	2	0	1	0	0	0	0	0	0	0	0	23
06:30	0	29	5	0	1	0	0	0	0	0	0	0	0	35
06:45	0	30	7	1	0	0	0	0	0	0	0	0	0	38
07:00	0	48	3	0	0	0	0	0	0	0	0	0	0	51
07:15	0	75	16	2	2	0	0	0	0	0	0	0	0	95
07:30	0	98	20	0	2	0	0	0	0	0	0	0	0	120
07:45	0	90	28	0	4	1	0	0	0	0	0	0	0	123
08:00	0	57	17	1	2	1	0	0	0	0	0	0	0	78
08:15	0	40	7	1	2	0	0	0	0	0	0	0	0	50
08:30	0	46	10	0	2	0	0	0	0	0	0	0	0	58
08:45	0	39	10	0	1	0	0	0	0	0	0	0	0	50
09:00	0	48	5	1	1	0	0	0	0	0	0	0	0	55
09:15	0	39	9	0	2	0	0	0	0	0	0	0	0	50
09:30	0	36	17	0	1	0	0	0	0	0	0	0	0	54
09:45	0	45	8	0	2	0	0	0	0	0	0	0	0	55
10:00	0	44	8	2	0	0	0	0	0	0	0	0	0	54
10:15	1	42	10	0	1	0	0	0	0	0	0	0	0	54
10:30	0	39	15	0	1	0	0	0	0	0	0	0	0	55
10:45	0	45	12	1	1	0	0	0	0	0	0	0	0	59
11:00	0	47	14	0	0	0	0	0	0	0	0	0	0	61
11:15	0	33	8	0	2	1	0	0	0	0	0	0	0	44
11:30	0	37	6	0	0	0	0	1	0	0	0	0	0	44
11:45	0	46	14	0	1	0	0	1	0	0	0	0	0	62
12:00 PM	0	55	12	0	2	0	0	0	0	0	0	0	0	69
12:15	0	52	13	0	1	1	0	0	0	0	0	0	0	67
12:30	0	51	14	0	2	0	0	0	0	0	0	0	0	67
12:45	0	41	10	0	0	0	0	0	0	0	0	0	0	51
13:00	0	41	7	0	1	1	0	0	0	0	0	0	0	50
13:15	0	45	12	0	2	0	0	0	0	0	0	0	0	59
13:30	0	48	11	0	1	0	0	0	0	0	0	0	0	60
13:45	0	45	13	0	5	0	0	0	0	0	0	0	0	63
14:00	0	64	13	1	3	0	0	0	0	0	0	0	0	81
14:15	0	58	16	0	2	0	0	0	0	0	0	0	0	76
14:30	0	71	14	0	2	0	0	0	0	0	0	0	0	87
14:45	3	62	13	0	3	1	0	0	0	0	0	0	0	82
15:00	0	78	14	1	4	0	0	1	0	0	0	0	0	98
15:15	0	60	16	3	1	0	0	0	0	0	0	0	0	80
15:30	0	63	17	2	2	0	0	0	0	0	0	0	0	84
15:45	0	67	11	0	2	1	0	0	0	0	0	0	0	81
16:00	1	75	21	2	1	0	0	0	0	0	0	0	0	100
16:15	0	78	11	0	4	0	0	0	0	0	0	0	0	93
16:30	0	80	13	0	0	0	0	0	0	0	0	0	0	93
16:45	0	91	17	0	4	0	0	0	0	0	0	0	0	112
17:00	0	87	16	0	1	1	0	0	0	0	0	0	0	105
17:15	0	79	13	0	2	0	0	0	0	0	0	0	0	94
17:30	0	81	25	0	1	0	0	0	0	0	0	0	0	107
17:45	0	81	9	0	2	0	0	1	0	0	0	0	0	93
18:00	0	81	12	0	2	0	0	0	0	0	0	0	0	95
18:15	0	71	15	0	0	0	0	0	0	0	0	0	0	86
18:30	0	67	19	0	2	0	0	0	0	0	0	0	0	88
18:45	0	52	11	0	0	0	0	0	0	0	0	0	0	63
19:00	0	49	7	0	1	0	0	0	0	0	0	0	0	57
19:15	0	52	7	0	0	0	0	0	0	0	0	0	0	59
19:30	0	45	7	0	0	0	0	0	0	0	0	0	0	52
19:45	0	51	6	0	0	0	0	0	0	0	0	0	0	57
20:00	0	42	6	0	0	0	0	0	0	0	0	0	0	48
20:15	0	41	1	0	0	0	0	0	0	0	0	0	0	42
20:30	0	36	9	0	1	0	0	0	0	0	0	0	0	46
20:45	0	35	11	0	0	0	0	0	0	0	0	0	0	46
21:00	0	42	12	0	0	0	0	0	0	0	0	0	0	54
21:15	0	32	7	0	0	0	0	0	0	0	0	0	0	39
21:30	0	30	2	0	0	0	0	0	0	0	0	0	0	32
21:45	0	28	5	0	0	0	0	0	0	0	0	0	0	33
22:00	0	25	6	0	0	0	0	0	0	0	0	0	0	31
22:15	0	15	1	0	0	0	0	0	0	0	0	0	0	16
22:30	0	16	1	0	0	0	0	0	0	0	0	0	0	17
22:45	0	15	0	0	0	0	0	0	0	0	0	0	0	15
23:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
23:15	0	12	2	0	1	0	0	0	0	0	0	0	0	15
23:30	0	11	3	0	0	0	0	0	0	0	0	0	0	14
23:45	0	9	1	0	0	0	0	0	0	0	0	0	0	10
Totals	5	3677	781	18	88	8	4							4581
% of Totals	0%	80%	17%	0%	2%	0%	0%							100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
AM Volumes	1	1254	294	9
% AM	0%	27%	6%	1%
AM Peak Hour	09:30	07:15	06:30	07:15
Volume	1	320	81	3
PM Volumes	4	2423	487	9
% PM	0%	53%	11%	0%
PM Peak Hour	14:00	16:45	16:45	15:15
Volume	3	338	71	12

**CLASSIFICATION**

Baker Ave Bet. Arrow Hwy &amp; 9th St

Day: Tuesday  
Date: 3/12/2019City: Rancho Cucamonga  
Project #: CA19\_6035\_001n**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	9	4	0	0	0	0	0	0	0	0	0	0	13
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
05:00	0	17	6	0	1	0	0	0	0	0	0	0	0	24
06:00	0	41	10	1	1	0	0	0	0	0	0	0	0	53
07:00	0	171	40	0	6	1	0	0	0	0	0	0	0	218
08:00	0	80	24	1	7	1	0	0	0	0	0	0	0	113
09:00	0	90	14	1	3	0	0	0	0	0	0	0	0	108
10:00	1	80	19	1	1	0	0	0	0	0	0	0	0	102
11:00	0	65	19	0	3	1	0	2	0	0	0	0	0	90
12:00 PM	0	93	22	0	2	1	0	0	0	0	0	0	0	118
13:00	0	86	20	0	6	1	0	0	0	0	0	0	0	113
14:00	0	142	28	0	3	0	0	0	0	0	0	0	0	173
15:00	0	158	33	3	5	0	0	1	0	0	0	0	0	200
16:00	1	193	35	2	4	0	0	0	0	0	0	0	0	235
17:00	0	193	33	0	4	1	0	1	0	0	0	0	0	232
18:00	0	141	28	0	2	0	0	0	0	0	0	0	0	171
19:00	0	118	16	0	1	0	0	0	0	0	0	0	0	135
20:00	0	68	13	0	1	0	0	0	0	0	0	0	0	82
21:00	0	67	11	0	0	0	0	0	0	0	0	0	0	78
22:00	0	38	4	0	0	0	0	0	0	0	0	0	0	42
23:00	0	26	6	0	0	0	0	0	0	0	0	0	0	32
<b>Totals</b>	<b>2</b>	<b>1903</b>	<b>388</b>	<b>9</b>	<b>50</b>	<b>6</b>		<b>4</b>						<b>2362</b>
<b>% of Totals</b>	<b>0%</b>	<b>81%</b>	<b>16%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>		<b>0%</b>						<b>100%</b>

1905

447

4

1.0

1.5

3.0

**1905****671****12****2600**

<b>AM Volumes</b>	1	580	139	4	22	3	0	2	0	0	0	0	0	751
<b>% AM</b>	0%	25%	6%	0%	1%	0%		0%						32%
<b>AM Peak Hour</b>	10:00	07:00	07:00	06:00	08:00	07:00		11:00						07:00
<b>Volume</b>	1	171	40	1	7	1		2						218
<b>PM Volumes</b>	1	1323	249	5	28	3	0	2	0	0	0	0	0	1611
<b>% PM</b>	0%	56%	11%	0%	1%	0%		0%						68%
<b>PM Peak Hour</b>	16:00	16:00	16:00	15:00	13:00	12:00		15:00						16:00
<b>Volume</b>	1	193	35	3	6	1		1						235

**Directional Peak Periods**  
**All Classes****AM 7-9**Volume  
331 ↔ 14%**NOON 12-2**Volume  
231 ↔ 10%**PM 4-6**Volume  
467 ↔ 20%**Off Peak Volumes**Volume  
1333 ↔ 56%**Classification Definitions**

Motorcycles

4 Buses

7 &gt;=4-Axle Single Units

10 &gt;=6-Axle Single Trailers

13 &gt;=7-Axle Multi-Trailers

# CLASSIFICATION

Baker Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_001s

## South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	8	2	0	1	0	0	0	0	0	0	0	0	11
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
03:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
04:00	0	37	10	0	1	0	0	0	0	0	0	0	0	48
05:00	0	43	9	0	1	0	0	0	0	0	0	0	0	53
06:00	0	59	7	0	1	0	0	0	0	0	0	0	0	67
07:00	0	140	27	2	2	0	0	0	0	0	0	0	0	171
08:00	0	102	20	1	0	0	0	0	0	0	0	0	0	123
09:00	0	78	25	0	3	0	0	0	0	0	0	0	0	106
10:00	0	90	26	2	2	0	0	0	0	0	0	0	0	120
11:00	0	98	23	0	0	0	0	0	0	0	0	0	0	121
12:00 PM	0	106	27	0	3	0	0	0	0	0	0	0	0	136
13:00	0	93	23	0	3	0	0	0	0	0	0	0	0	119
14:00	3	113	28	1	7	1	0	0	0	0	0	0	0	153
15:00	0	110	25	3	4	1	0	0	0	0	0	0	0	143
16:00	0	131	27	0	5	0	0	0	0	0	0	0	0	163
17:00	0	135	30	0	2	0	0	0	0	0	0	0	0	167
18:00	0	130	29	0	2	0	0	0	0	0	0	0	0	161
19:00	0	79	11	0	0	0	0	0	0	0	0	0	0	90
20:00	0	86	14	0	0	0	0	0	0	0	0	0	0	100
21:00	0	65	15	0	0	0	0	0	0	0	0	0	0	80
22:00	0	33	4	0	0	0	0	0	0	0	0	0	0	37
23:00	0	19	5	0	1	0	0	0	0	0	0	0	0	25
<b>Totals</b>	<b>3</b>	<b>1774</b>	<b>393</b>	<b>9</b>	<b>38</b>	<b>2</b>								<b>2219</b>
% of Totals	0%	80%	18%	0%	2%	0%								100%

AM Volumes	0	674	155	5	11	0	0	0	0	0	0	0	0	845
% AM		30%	7%	0%	0%									38%
AM Peak Hour		07:00	07:00	07:00	09:00									07:00
Volume		140	27	2	3									171
PM Volumes	3	1100	238	4	27	2	0	0	0	0	0	0	0	1374
% PM	0%	50%	11%	0%	1%	0%								62%
PM Peak Hour	14:00	17:00	17:00	15:00	14:00	14:00								17:00
Volume	3	135	30	3	7	1								167

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	294	↔ 13%	255	↔ 11%	330	↔ 15%	1340	↔ 60%

### Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi Trailer

# CLASSIFICATION

Baker Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_001

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	17	6	0	1	0	0	0	0	0	0	0	0	24
01:00	0	16	0	0	0	0	0	0	0	0	0	0	0	16
02:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
03:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
04:00	0	45	12	0	1	0	0	0	0	0	0	0	0	58
05:00	0	60	15	0	2	0	0	0	0	0	0	0	0	77
06:00	0	100	17	1	2	0	0	0	0	0	0	0	0	120
07:00	0	311	67	2	8	1	0	0	0	0	0	0	0	389
08:00	0	182	44	2	7	1	0	0	0	0	0	0	0	236
09:00	0	168	39	1	6	0	0	0	0	0	0	0	0	214
10:00	1	170	45	3	3	0	0	0	0	0	0	0	0	222
11:00	0	163	42	0	3	1	0	2	0	0	0	0	0	211
12:00 PM	0	199	49	0	5	1	0	0	0	0	0	0	0	254
13:00	0	179	43	0	9	1	0	0	0	0	0	0	0	232
14:00	3	255	56	1	10	1	0	0	0	0	0	0	0	326
15:00	0	268	58	6	9	1	0	1	0	0	0	0	0	343
16:00	1	324	62	2	9	0	0	0	0	0	0	0	0	398
17:00	0	328	63	0	6	1	0	1	0	0	0	0	0	399
18:00	0	271	57	0	4	0	0	0	0	0	0	0	0	332
19:00	0	197	27	0	1	0	0	0	0	0	0	0	0	225
20:00	0	154	27	0	1	0	0	0	0	0	0	0	0	182
21:00	0	132	26	0	0	0	0	0	0	0	0	0	0	158
22:00	0	71	8	0	0	0	0	0	0	0	0	0	0	79
23:00	0	45	11	0	1	0	0	0	0	0	0	0	0	57
<b>Totals</b>	<b>5</b>	<b>3677</b>	<b>781</b>	<b>18</b>	<b>88</b>	<b>8</b>		<b>4</b>						<b>4581</b>
% of Totals	0%	80%	17%	0%	2%	0%		0%						100%

AM Volumes	1	1254	294	9	33	3	0	2	0	0	0	0	0	1596
% AM	0%	27%	6%	0%	1%	0%		0%						35%
AM Peak Hour	10:00	07:00	07:00	10:00	07:00	07:00		11:00						07:00
Volume	1	311	67	3	8	1		2						389
PM Volumes	4	2423	487	9	55	5	0	2	0	0	0	0	0	2985
% PM	0%	53%	11%	0%	1%	0%		0%						65%
PM Peak Hour	14:00	17:00	17:00	15:00	14:00	12:00		15:00						17:00
Volume	3	328	63	6	10	1		1						399

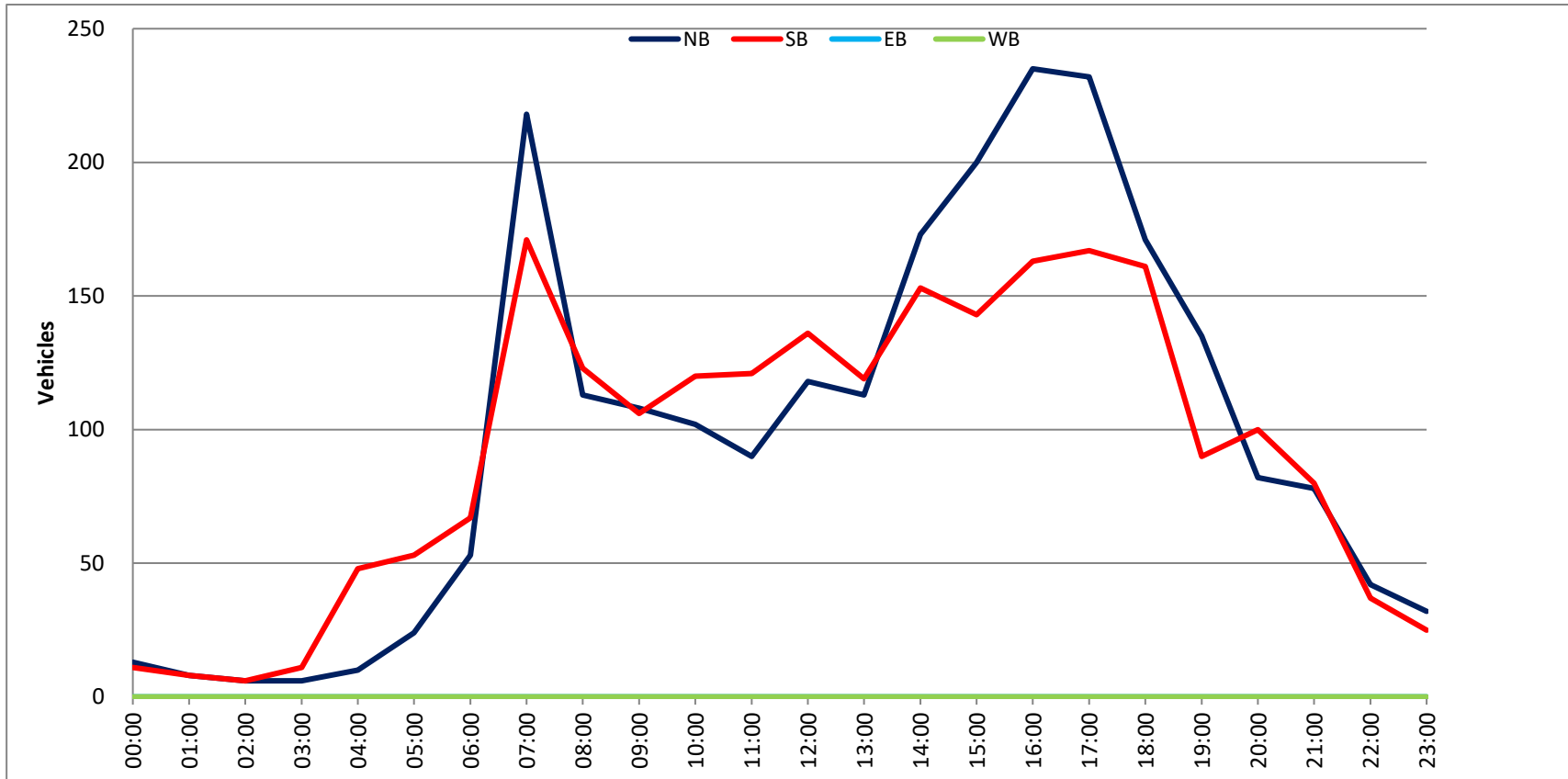
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	625	↔ 14%	486	↔ 11%	797	↔ 17%	2673	↔ 58%

## Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 3 Axle Multi-Trailer

DAILY TOTALS					NB	SB	EB	WB	To			
					2,362	2,219	0	0	4,5			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	6	4	0	0	10	12:00	35	34	0	0	69	
00:15	2	1	0	0	3	12:15	36	31	0	0	67	
00:30	2	3	0	0	5	12:30	24	43	0	0	67	
00:45	3	13	3	11	0	12:45	23	118	28	136	0	51
01:00	3	3	0	0	6	13:00	24	26	0	0	50	
01:15	2	0	0	0	2	13:15	21	38	0	0	59	
01:30	2	2	0	0	4	13:30	32	28	0	0	60	
01:45	1	8	3	8	0	13:45	36	113	27	119	0	63
02:00	2	1	0	0	3	14:00	43	38	0	0	81	
02:15	0	2	0	0	2	14:15	30	46	0	0	76	
02:30	2	0	0	0	2	14:30	49	38	0	0	87	
02:45	2	6	3	6	0	14:45	51	173	31	153	0	82
03:00	2	2	0	0	4	15:00	53	45	0	0	98	
03:15	0	2	0	0	2	15:15	46	34	0	0	80	
03:30	0	1	0	0	1	15:30	51	33	0	0	84	
03:45	4	6	6	11	0	15:45	50	200	31	143	0	81
04:00	3	8	0	0	11	16:00	68	32	0	0	100	
04:15	4	8	0	0	12	16:15	49	44	0	0	93	
04:30	2	17	0	0	19	16:30	54	39	0	0	93	
04:45	1	10	15	48	0	16:45	64	235	48	163	0	112
05:00	3	15	0	0	18	17:00	64	41	0	0	105	
05:15	5	8	0	0	13	17:15	52	42	0	0	94	
05:30	6	12	0	0	18	17:30	58	49	0	0	107	
05:45	10	24	18	53	0	17:45	58	232	35	167	0	93
06:00	11	13	0	0	24	18:00	50	45	0	0	95	
06:15	10	13	0	0	23	18:15	46	40	0	0	86	
06:30	17	18	0	0	35	18:30	48	40	0	0	88	
06:45	15	53	23	67	0	18:45	27	171	36	161	0	63
07:00	21	30	0	0	51	19:00	36	21	0	0	57	
07:15	46	49	0	0	95	19:15	34	25	0	0	59	
07:30	76	44	0	0	120	19:30	26	26	0	0	52	
07:45	75	218	48	171	0	19:45	39	135	18	90	0	57
08:00	39	39	0	0	78	20:00	26	22	0	0	48	
08:15	27	23	0	0	50	20:15	19	23	0	0	42	
08:30	23	35	0	0	58	20:30	15	31	0	0	46	
08:45	24	113	26	123	0	20:45	22	82	24	100	0	46
09:00	25	30	0	0	55	21:00	24	30	0	0	54	
09:15	27	23	0	0	50	21:15	23	16	0	0	39	
09:30	28	26	0	0	54	21:30	17	15	0	0	32	
09:45	28	108	27	106	0	21:45	14	78	19	80	0	33
10:00	32	22	0	0	54	22:00	16	15	0	0	31	
10:15	23	31	0	0	54	22:15	8	8	0	0	16	
10:30	20	35	0	0	55	22:30	8	9	0	0	17	
10:45	27	102	32	120	0	22:45	10	42	5	37	0	15
11:00	23	38	0	0	61	23:00	11	7	0	0	18	
11:15	18	26	0	0	44	23:15	4	11	0	0	15	
11:30	18	26	0	0	44	23:30	9	5	0	0	14	
11:45	31	90	31	121	0	23:45	8	32	2	25	0	10
<b>TOTALS</b>	<b>751</b>	<b>845</b>			<b>1596</b>	<b>TOTALS</b>	<b>1611</b>	<b>1374</b>				
<b>SPLIT %</b>	<b>47.1%</b>	<b>52.9%</b>			<b>34.8%</b>	<b>SPLIT %</b>	<b>54.0%</b>	<b>46.0%</b>				

DAILY TOTALS					NB	SB	EB	WB	To	
					2,362	2,219	0	0	4,5	
AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	16:45	16:45		
AM Pk Volume	236	180			416	PM Pk Volume	238	180		
Pk Hr Factor	0.776	0.918			0.846	Pk Hr Factor	0.930	0.918		
7 - 9 Volume	331	294	0	0	625	4 - 6 Volume	467	330	0	0
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:45	16:45		
7 - 9 Pk Volume	236	180	0	0	416	4 - 6 Pk Volume	238	180	0	0
Pk Hr Factor	0.776	0.918	0.000	0.000	0.846	Pk Hr Factor	0.930	0.918	0.000	0.000





**CLASSIFICATION**  
Baker Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_002n

**North Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	5
00:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
00:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
00:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
04:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:45	0	6	4	0	0	0	0	0	0	0	0	0	0	10
05:00	0	3	2	0	1	0	0	0	0	0	0	0	0	6
05:15	0	5	3	0	0	0	0	0	0	0	0	0	0	8
05:30	0	4	4	0	0	0	0	0	0	0	0	0	0	8
05:45	0	11	2	0	0	0	0	0	0	0	0	0	0	13
06:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
06:15	0	9	3	0	1	2	0	0	0	0	0	0	0	15
06:30	0	17	5	0	0	0	0	0	0	0	0	0	0	22
06:45	0	20	5	0	1	0	0	0	0	0	0	0	0	26
07:00	0	23	4	0	1	0	0	0	0	0	0	0	0	28
07:15	0	27	10	0	1	0	0	0	0	0	0	0	0	38
07:30	0	52	6	0	2	0	0	0	0	0	0	0	0	60
07:45	0	71	12	1	5	0	0	0	0	0	0	0	0	89
08:00	0	41	7	1	0	0	0	0	0	0	0	0	0	49
08:15	1	20	3	0	3	0	0	0	0	0	0	0	0	27
08:30	0	18	6	0	2	0	0	0	0	0	0	0	0	26
08:45	0	22	3	0	2	0	0	0	0	0	0	0	0	27
09:00	0	26	3	1	2	0	0	0	0	0	0	0	0	32
09:15	0	22	4	0	1	0	0	0	0	0	0	0	0	27
09:30	0	24	11	0	1	0	1	0	0	0	0	0	0	37
09:45	0	33	4	0	0	0	0	0	0	0	0	0	0	37
10:00	0	26	7	0	0	0	0	0	0	0	0	0	0	33
10:15	0	29	4	0	1	0	0	0	0	0	0	0	0	34
10:30	0	18	9	0	0	0	0	0	0	0	0	0	0	27
10:45	0	23	9	0	2	0	0	0	0	0	0	0	0	34
11:00	0	24	8	0	0	2	0	0	0	0	0	0	0	33
11:15	0	12	6	0	2	0	0	0	0	0	0	0	0	20
11:30	0	22	7	0	0	0	1	0	0	0	0	0	0	30
11:45	0	27	9	0	2	0	0	0	0	0	0	0	0	38
12:00 PM	0	36	7	0	1	0	0	0	0	0	0	0	0	44
12:15	0	36	6	0	3	1	0	1	0	0	0	0	0	47
12:30	0	25	6	0	0	0	0	0	0	0	0	0	0	31
12:45	0	20	7	0	0	0	0	0	0	0	0	0	0	27
13:00	1	28	5	0	2	0	0	0	0	0	0	0	0	36
13:15	0	19	11	0	2	0	0	0	0	0	0	0	0	32
13:30	0	29	9	0	3	0	0	0	0	0	0	0	0	41
13:45	0	31	12	0	3	0	0	0	0	0	0	0	0	46
14:00	0	38	7	0	4	0	0	0	0	0	0	0	0	49
14:15	0	48	6	0	3	0	0	0	0	0	0	0	0	57
14:30	0	57	16	0	0	0	0	0	0	0	0	0	0	73
14:45	0	52	10	2	1	0	0	0	0	0	0	0	0	65
15:00	0	42	12	0	0	0	0	1	0	0	0	0	0	55
15:15	0	38	7	1	0	0	0	0	0	0	0	0	0	46
15:30	0	43	12	0	1	0	0	0	0	0	0	0	0	56
15:45	0	59	9	0	1	0	0	0	0	0	0	0	0	69
16:00	1	45	7	2	2	0	0	0	0	0	0	0	0	57
16:15	0	56	9	0	2	0	0	0	0	0	0	0	0	67
16:30	1	52	8	0	0	0	0	0	0	0	0	0	0	61
16:45	0	60	9	0	1	0	0	0	0	0	0	0	0	70
17:00	0	57	7	0	0	0	0	0	0	0	0	0	0	64
17:15	0	50	8	0	3	0	0	0	0	0	0	0	0	61
17:30	0	51	14	0	1	0	0	0	0	0	0	0	0	66
17:45	0	58	8	0	2	0	0	0	0	0	0	0	0	68
18:00	0	51	6	0	2	0	0	0	0	0	0	0	0	59
18:15	0	38	8	0	0	0	0	0	0	0	0	0	0	46
18:30	0	45	11	0	2	0	0	0	0	0	0	0	0	58
18:45	0	29	5	0	0	0	0	0	0	0	0	0	0	34
19:00	0	27	6	0	1	0	0	0	0	0	0	0	0	34
19:15	0	38	9	0	0	0	0	0	0	0	0	0	0	47
19:30	0	28	3	0	0	0	0	0	0	0	0	0	0	31
19:45	0	44	5	0	0	0	0	0	0	0	0	0	0	49
20:00	0	33	1	0	0	0	0	0	0	0	0	0	0	34
20:15	0	18	0	0	0	0	0	0	0	0	0	0	0	18
20:30	0	16	3	0	1	0	0	0	0	0	0	0	0	20
20:45	0	23	6	0	0	0	0	0	0	0	0	0	0	29
21:00	0	24	8	0	0	0	0	0	0	0	0	0	0	32
21:15	0	18	6	0	0	0	0	0	0	0	0	0	0	24
21:30	0	18	1	0	0	0	0	0	0	0	0	0	0	19
21:45	0	14	3	0	0	0	0	0	0	0	0	0	0	17
22:00	0	14	6	0	0	0	0	0	0	0	0	0	0	20
22:15	0	11	1	0	0	0	0	0	0	0	0	0	0	12
22:30	0	11	0	0	0	0	0	0	0	0	0	0	0	11
22:45	0	10	1	0	0	0	0	0	0	0	0	0	0	11
23:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
23:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
23:30	0	8	3	0	0	0	0	0	0	0	0	0	0	11
23:45	0	11	3	0	0	0	0	0	0	0	0	0	0	14
<b>Totals</b>	<b>4</b>	<b>2267</b>	<b>479</b>	<b>8</b>	<b>71</b>	<b>3</b>	<b>1</b>	<b>3</b>						<b>2836</b>
<b>% of Totals</b>	<b>0%</b>	<b>80%</b>	<b>17%</b>	<b>0%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>						<b>100%</b>

AM Volumes	1	689	170	3	30	2	1	1	0	0	0	0	0	897
% AM	0%	24%	6%	0%	1%	0%	0%	0%						31%
AM Peak Hour	07:30	07:15	07:15	07:30	05:30	08:45	11:30							07:15
Volume	1	191	35	2	10	2	1	2						236
PM Volumes	3	1578	309	5	41	1	0	2	0	0	0	0	0	1939
% PM	0%	65%	21%	0%	1%	0%	0%	0%						68%
PM Peak Hour	15:45	16:15	14:30	14:30	13:30	12:00	12:00							16:15
Volume	2	225	45	3	13	1	1							262

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

**CLASSIFICATION**  
Baker Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_002s

**South Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	8
00:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
00:30	0	5	2	0	0	0	0	0	0	0	0	0	0	7
00:45	0	4	1	0	0	0	0	0	0	0	0	0	0	5
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	1	3	0	0	0	0	0	0	0	0	0	0	4
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
03:45	0	3	5	0	0	0	0	0	0	0	0	0	0	8
04:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
04:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:30	0	10	6	0	1	0	0	0	1	0	0	0	0	18
04:45	0	14	7	0	1	0	0	0	0	0	0	0	0	22
05:00	0	10	6	0	1	0	0	0	0	0	0	0	0	17
05:15	0	8	2	0	0	0	0	0	0	0	0	0	0	10
05:30	0	10	4	0	0	0	0	0	0	0	0	0	0	14
05:45	0	21	2	0	2	0	0	0	0	0	0	0	0	25
06:00	0	23	3	0	1	0	0	0	0	0	0	0	0	27
06:15	0	22	7	0	2	0	0	0	0	0	0	0	0	31
06:30	0	21	1	0	0	0	0	0	0	0	0	0	0	22
06:45	0	33	3	0	0	0	0	0	0	0	0	0	0	36
07:00	0	30	1	1	0	0	0	0	0	0	0	0	0	32
07:15	0	38	4	4	0	0	0	0	0	0	0	0	0	54
07:30	0	61	10	4	4	0	0	0	0	0	0	0	0	75
07:45	0	55	14	0	2	0	0	0	0	0	0	0	0	71
08:00	0	54	9	0	0	0	0	0	0	0	0	0	0	63
08:15	0	40	5	0	1	0	0	0	0	0	0	0	0	46
08:30	0	37	4	2	1	0	0	0	0	0	0	0	0	44
08:45	0	24	6	0	0	0	0	0	0	0	0	0	0	30
09:00	0	30	3	0	0	0	0	0	0	0	0	0	0	33
09:15	0	22	3	0	1	0	0	0	0	0	0	0	0	26
09:30	0	27	10	0	1	0	0	0	0	0	0	0	0	38
09:45	0	27	10	0	0	1	0	0	0	0	0	0	0	38
10:00	0	24	3	1	0	0	0	0	0	0	0	0	0	28
10:15	0	31	5	0	1	0	0	0	1	0	0	0	0	38
10:30	0	30	11	1	1	0	0	0	0	0	0	0	0	43
10:45	0	28	8	2	0	0	0	0	0	0	0	0	0	38
11:00	1	31	3	0	1	0	0	0	0	0	0	0	0	42
11:15	0	24	5	0	1	0	0	0	0	0	0	0	0	30
11:30	0	26	6	0	0	0	0	0	0	0	0	0	0	32
11:45	0	32	6	0	0	0	0	0	0	0	0	0	0	38
12:00 PM	0	39	10	0	0	0	0	0	0	0	0	0	0	49
12:15	0	29	8	0	1	0	0	0	0	0	0	0	0	38
12:30	0	38	9	0	0	0	0	0	0	0	0	0	0	47
12:45	0	34	8	0	0	0	0	0	0	0	0	0	0	42
13:00	0	26	3	0	1	0	0	0	0	0	0	0	0	30
13:15	0	33	6	1	4	0	0	0	0	0	0	0	0	44
13:30	0	26	6	0	0	0	0	0	0	0	0	0	0	32
13:45	0	23	7	0	2	0	0	0	0	0	0	0	0	32
14:00	1	28	3	1	0	0	0	0	0	0	0	0	0	33
14:15	0	35	10	0	3	0	0	0	1	0	0	0	0	49
14:30	0	40	3	0	2	0	0	0	0	0	0	0	0	53
14:45	0	62	6	0	1	0	0	0	0	0	0	0	0	69
15:00	0	55	10	0	4	0	0	0	0	0	0	0	0	69
15:15	0	33	8	1	2	0	0	0	0	0	0	0	0	44
15:30	0	36	9	2	0	0	0	0	0	0	0	0	0	47
15:45	0	37	5	0	1	0	0	0	0	0	0	0	0	43
16:00	1	40	9	0	0	0	0	0	0	0	0	0	0	50
16:15	0	44	3	0	2	0	0	0	0	0	0	0	0	49
16:30	0	49	8	0	0	0	0	0	0	0	0	0	0	57
16:45	1	58	5	0	4	0	0	0	0	0	0	0	0	68
17:00	0	41	10	0	2	0	0	0	0	0	0	0	0	53
17:15	0	48	8	0	2	1	0	0	0	0	0	0	0	59
17:30	0	55	12	0	0	0	0	0	0	0	0	0	0	67
17:45	0	43	6	0	0	0	0	0	0	0	0	0	0	49
18:00	0	51	9	0	1	0	0	0	0	0	0	0	0	61
18:15	0	40	6	0	0	0	0	0	0	0	0	0	0	46
18:30	0	35	8	0	1	0	0	0	0	0	0	0	0	44
18:45	0	38	6	0	0	0	0	0	0	0	0	0	0	44
19:00	0	24	5	0	0	0	0	0	0	0	0	0	0	29
19:15	0	30	2	0	0	0	0	0	0	0	0	0	0	32
19:30	0	15	7	0	0	0	0	0	0	0	0	0	0	22
19:45	0	17	6	0	1	0	0	0	0	0	0	0	0	24
20:00	0	27	7	0	0	0	0	0	0	0	0	0	0	34
20:15	0	28	0	0	0	0	0	0	0	0	0	0	0	28
20:30	0	35	2	0	0	0	0	0	0	0	0	0	0	37
20:45	0	20	4	0	0	0	0	0	0	0	0	0	0	24
21:00	0	28	7	0	0	0	0	0	0	0	0	0	0	35
21:15	0	14	8	0	0	0	0	0	0	0	0	0	0	22
21:30	0	20	0	0	1	0	0	0	0	0	0	0	0	21
21:45	1	17	3	0	0	0	0	0	0	0	0	0	0	21
22:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
22:15	0	9	0	0	0	0	0	0	0	0	0	0	0	9
22:30	0	10	0	0	0	0	0	0	0	0	0	0	0	10
22:45	0	9	0	0	0	0	0	0	0	0	0	0	0	9
23:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
23:15	0	11	2	0	0	0	0	0	0	0	0	0	0	13
23:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
23:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
<b>Totals</b>	<b>5</b>	<b>2363</b>	<b>469</b>	<b>16</b>	<b>61</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2918</b>
<b>% of Totals</b>	<b>0%</b>	<b>81%</b>	<b>16%</b>	<b>1%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>AM Volumes</b>	1	902	203	11
<b>% AM</b>	0%	31%	7%	0%
<b>AM Peak Hour</b>	10:15	07:30	07:15	06:30
<b>Volume</b>	1	210	41	5
<b>PM Volumes</b>	4	1461	266	5
<b>% PM</b>	0%	50%	9%	0%
<b>PM Peak Hour</b>	16:00	16:45	17:00	14:45
<b>Volume</b>	2	202	36	3

**CLASSIFICATION**  
Baker Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_002

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	9	4	0	0	0	0	0	0	0	0	0	0	13
00:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
00:30	0	8	3	0	0	0	0	0	0	0	0	0	0	11
00:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
01:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
01:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	2	4	0	0	0	0	0	0	0	0	0	0	6
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
03:45	0	7	5	0	0	0	0	0	0	0	0	0	0	12
04:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
04:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
04:30	0	11	7	0	1	0	0	0	1	0	0	0	0	20
04:45	0	20	11	0	1	0	0	0	0	0	0	0	0	32
05:00	0	13	8	0	2	0	0	0	0	0	0	0	0	23
05:15	0	13	5	0	0	0	0	0	0	0	0	0	0	18
05:30	0	14	8	0	0	0	0	0	0	0	0	0	0	22
05:45	0	32	4	0	2	0	0	0	0	0	0	0	0	38
06:00	0	35	6	0	1	0	0	0	0	0	0	0	0	42
06:15	0	31	10	0	3	2	0	0	0	0	0	0	0	46
06:30	0	38	6	0	0	0	0	0	0	0	0	0	0	44
06:45	0	53	8	0	1	0	0	0	0	0	0	0	0	62
07:00	0	53	5	1	1	0	0	0	0	0	0	0	0	60
07:15	0	65	18	4	5	0	0	0	0	0	0	0	0	92
07:30	0	113	15	0	6	0	0	0	0	0	0	0	0	135
07:45	0	126	26	1	7	0	0	0	0	0	0	0	0	160
08:00	0	95	16	1	0	0	0	0	0	0	0	0	0	112
08:15	1	60	8	0	4	0	0	0	0	0	0	0	0	73
08:30	0	55	10	2	3	0	0	0	0	0	0	0	0	70
08:45	0	46	9	0	2	0	0	0	0	0	0	0	0	57
09:00	0	56	6	1	2	0	0	0	0	0	0	0	0	65
09:15	0	44	13	0	2	0	0	0	0	0	0	0	0	59
09:30	0	51	21	0	2	0	1	0	0	0	0	0	0	75
09:45	0	60	14	0	0	1	0	0	0	0	0	0	0	75
10:00	0	50	10	1	0	0	0	0	0	0	0	0	0	61
10:15	0	60	9	0	2	0	0	0	1	0	0	0	0	72
10:30	0	48	20	1	1	0	0	0	0	0	0	0	0	70
10:45	0	51	17	2	2	0	0	0	0	0	0	0	0	72
11:00	1	55	18	0	1	0	0	0	0	0	0	0	0	75
11:15	0	36	11	0	3	0	0	0	0	0	0	0	0	50
11:30	0	48	13	0	0	0	0	1	0	0	0	0	0	62
11:45	0	59	15	0	2	0	0	0	0	0	0	0	0	76
12:00 PM	0	75	17	0	1	0	0	0	0	0	0	0	0	93
12:15	0	65	14	0	4	1	0	1	0	0	0	0	0	85
12:30	0	63	15	0	0	0	0	0	0	0	0	0	0	78
12:45	0	54	15	0	0	0	0	0	0	0	0	0	0	69
13:00	1	54	8	0	3	0	0	0	0	0	0	0	0	66
13:15	0	52	17	1	6	0	0	0	0	0	0	0	0	76
13:30	0	55	15	0	3	0	0	0	0	0	0	0	0	73
13:45	0	54	19	0	5	0	0	0	0	0	0	0	0	78
14:00	1	66	10	1	4	0	0	0	0	0	0	0	0	82
14:15	0	83	16	0	6	0	0	0	1	0	0	0	0	106
14:30	0	97	25	0	2	0	0	0	0	0	0	0	0	124
14:45	0	114	16	2	2	0	0	0	0	0	0	0	0	134
15:00	0	97	22	0	4	0	0	1	0	0	0	0	0	124
15:15	0	71	15	2	2	0	0	0	0	0	0	0	0	90
15:30	0	79	21	2	1	0	0	0	0	0	0	0	0	103
15:45	0	96	14	0	2	0	0	0	0	0	0	0	0	112
16:00	2	85	16	2	2	0	0	0	0	0	0	0	0	107
16:15	0	100	12	0	4	0	0	0	0	0	0	0	0	116
16:30	1	101	15	0	0	0	0	0	0	0	0	0	0	118
16:45	1	118	14	0	5	0	0	0	0	0	0	0	0	138
17:00	0	98	17	0	2	0	0	0	0	0	0	0	0	117
17:15	0	98	16	0	5	1	0	0	0	0	0	0	0	120
17:30	0	106	26	0	1	0	0	0	0	0	0	0	0	133
17:45	0	101	14	0	2	0	0	0	0	0	0	0	0	117
18:00	0	102	15	0	3	0	0	0	0	0	0	0	0	120
18:15	0	78	14	0	0	0	0	0	0	0	0	0	0	92
18:30	0	80	19	0	3	0	0	0	0	0	0	0	0	102
18:45	0	67	11	0	0	0	0	0	0	0	0	0	0	78
19:00	0	51	11	0	1	0	0	0	0	0	0	0	0	63
19:15	0	68	11	0	0	0	0	0	0	0	0	0	0	79
19:30	0	43	10	0	0	0	0	0	0	0	0	0	0	53
19:45	0	61	11	0	1	0	0	0	0	0	0	0	0	73
20:00	0	60	8	0	0	0	0	0	0	0	0	0	0	68
20:15	0	46	0	0	0	0	0	0	0	0	0	0	0	46
20:30	0	51	5	0	1	0	0	0	0	0	0	0	0	57
20:45	0	43	10	0	0	0	0	0	0	0	0	0	0	53
21:00	0	52	15	0	0	0	0	0	0	0	0	0	0	67
21:15	0	32	14	0	0	0	0	0	0	0	0	0	0	46
21:30	0	38	1	0	1	0	0	0	0	0	0	0	0	40
21:45	1	31	5	0	0	0	0	0	0	0	0	0	0	38
22:00	0	27	8	0	0	0	0	0	0	0	0	0	0	35
22:15	0	20	1	0	0	0	0	0	0	0	0	0	0	21
22:30	0	21	0	0	0	0	0	0	0	0	0	0	0	21
22:45	0	19	1	0	0	0	0	0	0	0	0	0	0	20
23:00	0	18	4	0	0	0	0	0	0	0	0	0	0	22
23:15	0	17	2	0	0	0	0	0	0	0	0	0	0	19
23:30	0	18	4	0	0	0	0	0	0	0	0	0	0	22
23:45	0	14	4	0	0	0	0	0	0	0	0	0	0	18
<b>Totals</b>	<b>9</b>	<b>4639</b>	<b>948</b>	<b>24</b>	<b>132</b>	<b>8</b>	<b>1</b>	<b>3</b>	<b>3</b>					<b>5755</b>
<b>% of Totals</b>	<b>0%</b>	<b>80%</b>	<b>16%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>					<b>100%</b>

AM Volumes	2	1591	373	14	56	9	1	1	2	0	0	0	0	2043
% AM	0%	34%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	35%
<b>AM Peak Hour</b>	<b>07:30</b>	<b>07:15</b>	<b>07:00</b>	<b>07:00</b>	<b>05:30</b>	<b>08:45</b>	<b>11:30</b>	<b>03:45</b>						<b>07:15</b>
Volume	1	399	76	6	19	2	1	2	1					491
<b>PM Volumes</b>	<b>7</b>	<b>3039</b>	<b>575</b>	<b>10</b>	<b>76</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3732</b>
% PM	0%	53%	10%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	65%
<b>PM Peak Hour</b>	<b>16:00</b>	<b>16:45</b>	<b>14:15</b>	<b>14:45</b>	<b>13:15</b>	<b>12:00</b>	<b>12:00</b>	<b>13:30</b>						<b>16:45</b>
Volume	4	420	79	6	18	1	1	1						508

Directional Peak Periods				AM 7-9				NOON 12-2				PM 4-6				Off Peak Volumes			
All Classes	Volume	%		Volume	%			Volume	%			Volume	%			Volume	%		

# CLASSIFICATION

Baker Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_002n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	14	2	0	0	0	0	0	0	0	0	0	0	16
01:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	14	6	0	0	0	0	0	0	0	0	0	0	20
05:00	0	23	11	0	1	0	0	0	0	0	0	0	0	35
06:00	0	58	16	0	2	2	0	0	0	0	0	0	0	78
07:00	0	173	32	1	9	0	0	0	0	0	0	0	0	215
08:00	1	101	19	1	7	0	0	0	0	0	0	0	0	129
09:00	0	105	22	1	4	0	1	0	0	0	0	0	0	133
10:00	0	96	29	0	3	0	0	0	0	0	0	0	0	128
11:00	0	85	31	0	4	0	0	1	0	0	0	0	0	121
12:00 PM	0	117	26	0	4	1	0	1	0	0	0	0	0	149
13:00	1	107	37	0	10	0	0	0	0	0	0	0	0	155
14:00	0	195	39	2	8	0	0	0	0	0	0	0	0	244
15:00	0	182	40	1	2	0	0	1	0	0	0	0	0	226
16:00	2	213	33	2	5	0	0	0	0	0	0	0	0	255
17:00	0	216	37	0	6	0	0	0	0	0	0	0	0	259
18:00	0	163	30	0	4	0	0	0	0	0	0	0	0	197
19:00	0	137	23	0	1	0	0	0	0	0	0	0	0	161
20:00	0	90	10	0	1	0	0	0	0	0	0	0	0	101
21:00	0	74	18	0	0	0	0	0	0	0	0	0	0	92
22:00	0	46	8	0	0	0	0	0	0	0	0	0	0	54
23:00	0	38	8	0	0	0	0	0	0	0	0	0	0	46
<b>Totals</b>	<b>4</b>	<b>2267</b>	<b>479</b>	<b>8</b>	<b>71</b>	<b>3</b>	<b>1</b>	<b>3</b>						<b>2836</b>
% of Totals	0%	80%	17%	0%	3%	0%	0%	0%						100%

2271.00 558.00 3.00 4.00  
1.00 1.50 2.00 3.00

**2271.00 837.00 6.00 12.00 3126.00**

AM Volumes	1	689	170	3	30	2	1	1	0	0	0	0	0	897
% AM	0%	24%	6%	0%	1%	0%	0%	0%						32%
AM Peak Hour	08:00	07:00	07:00	07:00	07:00	06:00	09:00	11:00						07:00
Volume	1	173	32	1	9	2	1	1						215
PM Volumes	3	1578	309	5	41	1	0	2	0	0	0	0	0	1939
% PM	0%	56%	11%	0%	1%	0%		0%						68%
PM Peak Hour	16:00	17:00	15:00	14:00	13:00	12:00		12:00						17:00
Volume	2	216	40	2	10	1		1						259

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	344	↔ 12%	304	↔ 11%	514	↔ 18%	1674	↔ 59%

**Classification Definitions**

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers



# CLASSIFICATION

Baker Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_002

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	30	8	0	0	0	0	0	0	0	0	0	0	38
01:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
02:00	0	10	5	0	0	0	0	0	0	0	0	0	0	15
03:00	0	17	7	0	0	0	0	0	0	0	0	0	0	24
04:00	0	54	22	0	2	0	0	0	1	0	0	0	0	79
05:00	0	72	25	0	4	0	0	0	0	0	0	0	0	101
06:00	0	157	30	0	5	2	0	0	0	0	0	0	0	194
07:00	0	357	65	6	19	0	0	0	0	0	0	0	0	447
08:00	1	256	43	3	9	0	0	0	0	0	0	0	0	312
09:00	0	211	54	1	6	1	1	0	0	0	0	0	0	274
10:00	0	209	56	4	5	0	0	0	1	0	0	0	0	275
11:00	1	198	57	0	6	0	0	1	0	0	0	0	0	263
12:00 PM	0	257	61	0	5	1	0	1	0	0	0	0	0	325
13:00	1	215	59	1	17	0	0	0	0	0	0	0	0	293
14:00	1	360	67	3	14	0	0	0	1	0	0	0	0	446
15:00	0	343	72	4	9	0	0	1	0	0	0	0	0	429
16:00	4	404	58	2	11	0	0	0	0	0	0	0	0	479
17:00	0	403	73	0	10	1	0	0	0	0	0	0	0	487
18:00	0	327	59	0	6	0	0	0	0	0	0	0	0	392
19:00	0	223	43	0	2	0	0	0	0	0	0	0	0	268
20:00	0	200	23	0	1	0	0	0	0	0	0	0	0	224
21:00	1	153	36	0	1	0	0	0	0	0	0	0	0	191
22:00	0	87	10	0	0	0	0	0	0	0	0	0	0	97
23:00	0	67	14	0	0	0	0	0	0	0	0	0	0	81
<b>Totals</b>	<b>9</b>	<b>4630</b>	<b>948</b>	<b>24</b>	<b>132</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>3</b>					<b>5755</b>
% of Totals	0%	80%	16%	0%	2%	0%	0%	0%	0%					100%

AM Volumes	2	1591	373	14	56	3	1	1	2	0	0	0	0	2043
% AM	0%	28%	6%	0%	1%	0%	0%	0%	0%					35%
AM Peak Hour	08:00	07:00	07:00	07:00	07:00	06:00	09:00	11:00	04:00					07:00
Volume	1	357	65	6	19	2	1	1	1					447
PM Volumes	7	3039	575	10	76	2	0	2	1	0	0	0	0	3712
% PM	0%	53%	10%	0%	1%	0%		0%	0%					65%
PM Peak Hour	16:00	16:00	17:00	15:00	13:00	12:00		12:00	14:00					17:00
Volume	4	404	73	4	17	1		1	1					487

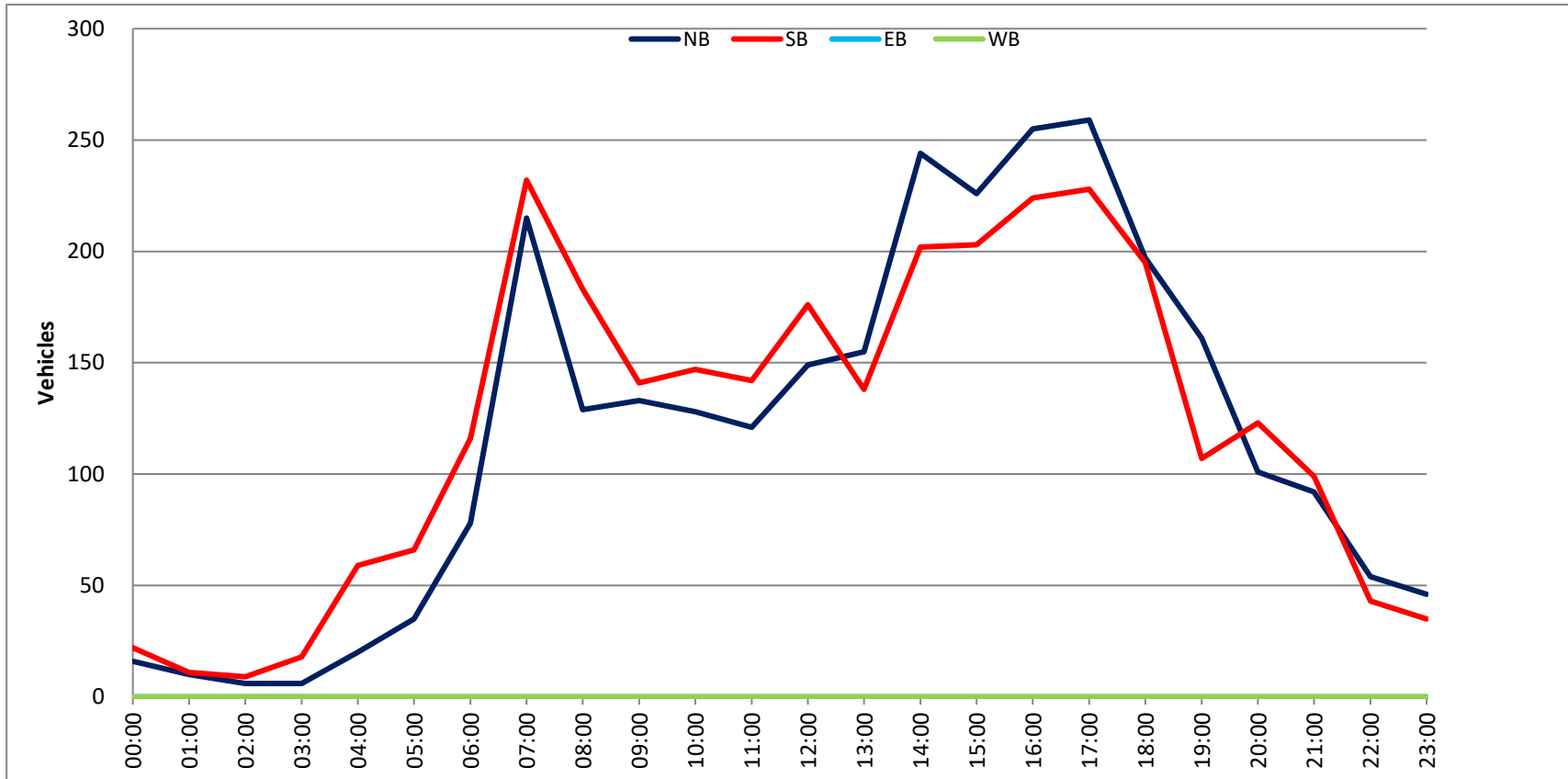
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	759	↔ 13%	618	↔ 11%	966	↔ 17%	3412	↔ 59%

## Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 3 Axle Multi-Trailer

DAILY TOTALS					NB	SB	EB	WB	To			
					2,836	2,919	0	0	5,7			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	5	8	0	0	13	12:00	44	49	0	0	93	
00:15	4	2	0	0	6	12:15	47	38	0	0	85	
00:30	4	7	0	0	11	12:30	31	47	0	0	78	
00:45	3	16	5	22	0	12:45	27	149	42	176	0	69
01:00	4	4	0	0	8	13:00	36	30	0	0	66	
01:15	2	0	0	0	2	13:15	32	44	0	0	76	
01:30	3	2	0	0	5	13:30	41	32	0	0	73	
01:45	1	10	5	11	0	13:45	46	155	32	138	0	78
02:00	2	3	0	0	5	14:00	49	33	0	0	82	
02:15	0	2	0	0	2	14:15	57	49	0	0	106	
02:30	2	0	0	0	2	14:30	73	51	0	0	124	
02:45	2	6	4	9	0	14:45	65	244	69	202	0	134
03:00	1	3	0	0	4	15:00	55	69	0	0	124	
03:15	0	3	0	0	3	15:15	46	44	0	0	90	
03:30	1	4	0	0	5	15:30	56	47	0	0	103	
03:45	4	6	8	18	0	15:45	69	226	43	203	0	112
04:00	3	9	0	0	12	16:00	57	50	0	0	107	
04:15	5	10	0	0	15	16:15	67	49	0	0	116	
04:30	2	18	0	0	20	16:30	61	57	0	0	118	
04:45	10	20	22	59	0	16:45	70	255	68	224	0	138
05:00	6	17	0	0	23	17:00	64	53	0	0	117	
05:15	8	10	0	0	18	17:15	61	59	0	0	120	
05:30	8	14	0	0	22	17:30	66	67	0	0	133	
05:45	13	35	25	66	0	17:45	68	259	49	228	0	117
06:00	15	27	0	0	42	18:00	59	61	0	0	120	
06:15	15	31	0	0	46	18:15	46	46	0	0	92	
06:30	22	22	0	0	44	18:30	58	44	0	0	102	
06:45	26	78	36	116	0	18:45	34	197	44	195	0	78
07:00	28	32	0	0	60	19:00	34	29	0	0	63	
07:15	38	54	0	0	92	19:15	47	32	0	0	79	
07:30	60	75	0	0	135	19:30	31	22	0	0	53	
07:45	89	215	71	232	0	19:45	49	161	24	107	0	73
08:00	49	63	0	0	112	20:00	34	34	0	0	68	
08:15	27	46	0	0	73	20:15	18	28	0	0	46	
08:30	26	44	0	0	70	20:30	20	37	0	0	57	
08:45	27	129	30	183	0	20:45	29	101	24	123	0	53
09:00	32	33	0	0	65	21:00	32	35	0	0	67	
09:15	27	32	0	0	59	21:15	24	22	0	0	46	
09:30	37	38	0	0	75	21:30	19	21	0	0	40	
09:45	37	133	38	141	0	21:45	17	92	21	99	0	38
10:00	33	28	0	0	61	22:00	20	15	0	0	35	
10:15	34	38	0	0	72	22:15	12	9	0	0	21	
10:30	27	43	0	0	70	22:30	11	10	0	0	21	
10:45	34	128	38	147	0	22:45	11	54	9	43	0	20
11:00	33	42	0	0	75	23:00	15	7	0	0	22	
11:15	20	30	0	0	50	23:15	6	13	0	0	19	
11:30	30	32	0	0	62	23:30	11	11	0	0	22	
11:45	38	121	38	142	0	23:45	14	46	4	35	0	18
<b>TOTALS</b>	<b>897</b>	<b>1146</b>			<b>2043</b>	<b>TOTALS</b>	<b>1939</b>	<b>1773</b>				
<b>SPLIT %</b>	<b>43.9%</b>	<b>56.1%</b>			<b>35.5%</b>	<b>SPLIT %</b>	<b>52.2%</b>	<b>47.8%</b>				

DAILY TOTALS					NB	SB	EB	WB	To	
					2,836	2,919	0	0	5,7	
AM Peak Hour	07:15	07:15			07:15	PM Peak Hour	16:15	16:45		
AM Pk Volume	236	263			499	PM Pk Volume	262	247		
Pk Hr Factor	0.663	0.877			0.780	Pk Hr Factor	0.936	0.908		
7 - 9 Volume	344	415	0	0	759	4 - 6 Volume	514	452	0	0
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	16:15	16:45		
7 - 9 Pk Volume	236	263	0	0	499	4 - 6 Pk Volume	262	247	0	0
Pk Hr Factor	0.663	0.877	0.000	0.000	0.780	Pk Hr Factor	0.936	0.908	0.000	0.000









**CLASSIFICATION**

Arrow Hwy Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_003

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	22	3	0	0	0	0	0	0	0	0	0	0	25
00:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
00:30	0	17	4	0	0	0	0	0	0	0	0	0	0	21
00:45	0	11	1	0	0	0	0	0	0	0	0	0	0	12
01:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
01:15	0	11	1	0	0	0	0	0	0	0	0	0	0	12
01:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
01:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
02:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:30	0	10	1	0	0	0	0	0	0	0	0	0	0	11
02:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
03:15	0	14	1	0	0	0	0	0	0	0	0	0	0	15
03:30	0	10	2	0	0	0	0	0	0	0	0	0	0	12
03:45	0	20	5	0	0	0	0	0	0	0	0	0	0	25
04:00	0	22	4	0	0	0	0	0	0	0	0	0	0	26
04:15	0	30	5	0	0	0	0	0	0	0	0	0	0	35
04:30	0	31	5	0	1	0	0	0	0	0	0	0	0	37
04:45	0	34	7	0	0	0	0	0	0	0	0	0	0	41
05:00	0	45	6	2	1	0	0	0	0	0	0	0	0	54
05:15	0	42	7	0	1	0	0	0	0	0	0	0	0	50
05:30	0	69	9	0	2	0	0	0	0	0	0	0	0	80
05:45	0	91	14	0	2	0	0	0	0	0	0	0	0	107
06:00	0	74	17	1	4	0	0	0	0	0	0	0	0	96
06:15	0	96	17	0	3	0	0	0	0	0	0	0	0	116
06:30	0	118	22	0	4	0	0	0	0	0	0	0	0	144
06:45	0	177	33	1	7	0	0	0	0	0	0	0	0	218
07:00	0	190	27	0	4	0	0	0	0	0	0	0	0	221
07:15	0	259	41	2	6	0	0	0	0	0	0	0	0	308
07:30	0	336	51	3	8	0	0	0	0	0	0	0	0	398
07:45	0	346	62	2	7	0	0	0	0	0	0	0	0	417
08:00	0	258	40	1	8	0	0	0	0	0	0	0	0	307
08:15	0	257	38	1	10	0	0	0	0	0	0	0	0	306
08:30	0	229	42	2	5	1	0	0	0	0	0	0	0	279
08:45	0	196	34	1	6	0	0	0	0	0	0	0	0	237
09:00	0	166	30	0	5	0	0	0	0	0	0	0	0	201
09:15	0	162	26	1	4	0	0	0	1	0	0	0	0	194
09:30	0	150	28	0	6	0	0	0	1	0	0	0	0	184
09:45	0	155	32	2	6	0	0	0	0	0	0	0	0	195
10:00	0	145	23	2	6	0	0	0	0	0	0	0	0	176
10:15	0	151	22	0	4	0	0	0	0	0	0	0	0	177
10:30	0	159	25	2	5	0	0	1	0	0	0	0	0	192
10:45	0	163	24	1	6	0	0	0	0	0	0	0	0	194
11:00	0	158	32	2	3	0	0	0	0	0	0	0	0	195
11:15	0	146	24	0	6	0	0	0	0	0	0	0	0	176
11:30	0	161	31	1	4	1	0	0	0	0	0	0	0	198
11:45	0	179	29	3	4	1	0	0	0	0	0	0	0	216
12:00 PM	0	173	31	1	7	1	0	0	0	0	0	0	0	213
12:15	0	186	25	1	6	0	0	0	0	0	0	0	0	218
12:30	0	141	26	2	4	0	0	0	0	0	0	0	0	173
12:45	0	175	32	1	8	1	0	0	0	0	0	0	0	217
13:00	0	175	31	2	4	0	0	0	0	0	0	0	0	212
13:15	0	182	30	1	6	0	0	0	0	0	0	0	0	219
13:30	0	182	29	1	6	0	0	0	0	0	0	0	0	218
13:45	0	231	37	0	7	1	0	0	0	0	0	0	0	276
14:00	0	203	38	0	5	0	0	0	0	0	0	0	0	246
14:15	0	245	30	2	7	0	0	0	0	0	0	0	0	284
14:30	0	247	38	3	7	0	0	0	0	0	0	0	0	295
14:45	0	271	39	2	5	0	0	0	0	0	0	0	0	317
15:00	0	334	54	1	9	0	0	0	0	0	0	0	0	398
15:15	0	281	37	1	6	1	0	0	0	0	0	0	0	326
15:30	0	280	47	1	9	1	0	0	0	0	0	0	0	338
15:45	0	253	45	2	9	0	0	0	0	0	0	0	0	309
16:00	0	273	43	1	5	0	0	0	0	0	0	0	0	322
16:15	0	255	37	1	7	0	0	0	0	0	0	0	0	300
16:30	0	308	43	0	8	0	0	0	0	0	0	0	0	359
16:45	0	287	41	1	9	1	0	0	0	0	0	0	0	339
17:00	0	322	42	1	7	0	0	0	0	0	0	0	0	372
17:15	0	334	51	2	9	0	0	0	0	0	0	0	0	396
17:30	0	315	46	1	7	1	0	0	0	0	0	0	0	370
17:45	0	278	49	1	6	0	0	0	0	0	0	0	0	334
18:00	0	257	33	0	4	1	0	0	0	0	0	0	0	295
18:15	0	259	42	1	7	0	0	0	0	0	0	0	0	309
18:30	0	211	29	1	4	0	0	0	0	0	0	0	0	245
18:45	0	181	21	0	4	0	0	0	0	0	0	0	0	206
19:00	0	163	23	2	2	0	0	0	0	0	0	0	0	190
19:15	0	151	21	0	2	1	0	0	0	0	0	0	0	175
19:30	0	139	20	1	2	0	0	0	0	0	0	0	0	162
19:45	0	122	14	1	1	0	0	0	0	0	0	0	0	138
20:00	0	108	16	1	3	0	0	0	0	0	0	0	0	128
20:15	0	105	15	0	3	0	0	0	0	0	0	0	0	123
20:30	0	95	15	0	3	0	0	0	0	0	0	0	0	113
20:45	0	99	16	0	2	0	0	0	0	0	0	0	0	117
21:00	0	92	16	1	2	0	0	0	0	0	0	0	0	111
21:15	0	102	20	0	1	0	0	0	0	0	0	0	0	123
21:30	0	51	8	0	2	0	0	0	0	0	0	0	0	61
21:45	0	57	8	1	3	0	0	0	0	0	0	0	0	70
22:00	0	63	9	0	2	0	0	0	0	0	0	0	0	74
22:15	0	65	7	0	1	0	0	0	0	0	0	0	0	73
22:30	0	46	6	0	2	0	0	0	0	0	0	0	0	54
22:45	0	42	5	0	0	0	0	0	0	0	0	0	0	47
23:00	0	33	3	0	1	0	0	0	0	0	0	0	0	37
23:15	0	32	7	0	0	0	0	0	0	0	0	0	0	39
23:30	0	37	6	0	0	0	0	0	0	0	0	0	0	43
23:45	0	18	2	0	0	0	0	0	0	0	0	0	0	20
<b>Totals</b>	<b>13437</b>	<b>2119</b>	<b>68</b>	<b>352</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>15998</b>
<b>% of Totals</b>		<b>84%</b>	<b>13%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

AM Volumes	AM % AM	PM Volumes	PM % PM	PM Peak Hour	Off Peak Volumes
0	4978	835	30	138	3
0	31%	5%	0%	1%	0%
0	07:15	07:15	07:15	07:30	09:45
0	1199	194	8	33	3
0	8459	1284	38	214	9
0	53%	8%	0%	1%	0%
0	16:45	17:00	14:15	15:00	12:00
0	1258	188	8	33	2

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

# CLASSIFICATION

Arrow Hwy Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_003e

**East Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	36	4	0	0	0	0	0	0	0	0	0	0	40
01:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
02:00	0	17	1	0	0	0	0	0	0	0	0	0	0	18
03:00	0	28	4	0	0	0	0	0	0	0	0	0	0	32
04:00	0	59	9	0	0	0	0	0	0	0	0	0	0	68
05:00	0	114	11	1	1	0	0	0	0	0	0	0	0	127
06:00	0	182	30	2	8	0	0	0	0	0	0	0	0	222
07:00	0	528	62	2	7	0	0	0	0	0	0	0	0	599
08:00	0	407	46	4	11	1	0	0	0	0	0	0	0	469
09:00	0	275	46	1	9	0	0	0	0	0	0	0	0	331
10:00	0	292	35	4	8	0	0	0	0	0	0	0	0	339
11:00	0	323	44	4	6	2	0	0	0	0	0	0	0	379
12:00 PM	0	336	43	3	13	2	0	0	0	0	0	0	0	397
13:00	0	404	51	2	10	0	0	0	0	0	0	0	0	467
14:00	0	507	65	3	11	0	0	0	0	0	0	0	0	586
15:00	0	621	77	3	14	1	0	0	0	0	0	0	0	716
16:00	0	658	76	2	16	1	0	0	0	0	0	0	0	753
17:00	0	702	84	2	15	1	0	0	0	0	0	0	0	804
18:00	0	548	58	2	10	1	0	0	0	0	0	0	0	619
19:00	0	324	35	2	5	0	0	0	0	0	0	0	0	366
20:00	0	191	23	1	6	0	0	0	0	0	0	0	0	221
21:00	0	136	20	2	4	0	0	0	0	0	0	0	0	162
22:00	0	108	11	0	2	0	0	0	0	0	0	0	0	121
23:00	0	61	6	0	0	0	0	0	0	0	0	0	0	67
<b>Totals</b>		<b>6869</b>	<b>842</b>	<b>40</b>	<b>156</b>	<b>9</b>								<b>7916</b>
<b>% of Totals</b>		87%	11%	1%	2%	0%								100%

6869 1038 9 0  
1.0 1.5 2.0 3.0

<b>6869</b>	<b>1557</b>	<b>18</b>	<b>0</b>	<b>8444</b>
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<b>AM Volumes</b>	0	2273	293	18	50	3	0	0	0	0	0	0	0	2637
<b>% AM</b>		29%	4%	0%	1%	0%								33%
<b>AM Peak Hour</b>		07:00	07:00	08:00	08:00	11:00								07:00
<b>Volume</b>		528	62	4	11	2								599
<b>PM Volumes</b>	0	4596	549	22	106	6	0	0	0	0	0	0	0	5279
<b>% PM</b>		58%	7%	0%	1%	0%								67%
<b>PM Peak Hour</b>		17:00	17:00	12:00	16:00	12:00								17:00
<b>Volume</b>		702	84	3	16	2								804

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1068	↔ 13%	864	↔ 11%	1557	↔ 20%	4427	↔ 56%

Classification Definitions				
Motorcycles	4	Buses	7	>=4-Axle Single Units
			10	>=6-Axle Single Trailers
			13	>=7-Axle Multi-Trailers

# CLASSIFICATION

## Arrow Hwy Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_003w

### West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	23	5	0	0	0	0	0	0	0	0	0	0	28
01:00	0	27	5	0	0	0	0	0	0	0	0	0	0	32
02:00	0	17	3	0	0	0	0	0	0	0	0	0	0	20
03:00	0	23	5	0	0	0	0	0	0	0	0	0	0	28
04:00	0	58	12	0	1	0	0	0	0	0	0	0	0	71
05:00	0	133	25	1	5	0	0	0	0	0	0	0	0	164
06:00	0	283	59	0	10	0	0	0	0	0	0	0	0	352
07:00	0	603	119	5	18	0	0	0	0	0	0	0	0	745
08:00	0	533	108	1	18	0	0	0	0	0	0	0	0	660
09:00	0	358	70	2	12	0	0	0	1	0	0	0	0	443
10:00	0	326	59	1	13	0	0	1	0	0	0	0	0	400
11:00	0	321	72	2	11	0	0	0	0	0	0	0	0	406
12:00 PM	0	339	71	2	12	0	0	0	0	0	0	0	0	424
13:00	0	366	76	2	13	1	0	0	0	0	0	0	0	458
14:00	0	459	80	4	13	0	0	0	0	0	0	0	0	556
15:00	0	527	106	2	19	1	0	0	0	0	0	0	0	655
16:00	0	465	88	1	13	0	0	0	0	0	0	0	0	567
17:00	0	547	104	3	14	0	0	0	0	0	0	0	0	668
18:00	0	360	67	0	9	0	0	0	0	0	0	0	0	436
19:00	0	251	43	2	2	1	0	0	0	0	0	0	0	299
20:00	0	216	39	0	5	0	0	0	0	0	0	0	0	260
21:00	0	166	33	0	4	0	0	0	0	0	0	0	0	203
22:00	0	108	16	0	3	0	0	0	0	0	0	0	0	127
23:00	0	59	12	0	1	0	0	0	0	0	0	0	0	72
<b>Totals</b>		<b>6568</b>	<b>1277</b>	<b>28</b>	<b>196</b>	<b>3</b>		<b>1</b>	<b>1</b>					<b>8074</b>
% of Totals		81%	16%	0%	2%	0%		0%	0%					100%

AM Volumes	0	2705	542	12	88	0	0	1	1	0	0	0	0	3349
% AM		34%	7%	0%	1%			0%	0%					41%
AM Peak Hour		07:00	07:00	07:00	07:00			10:00	09:00					07:00
Volume		603	119	5	18			1	1					745
PM Volumes	0	3863	735	16	108	3	0	0	0	0	0	0	0	4725
% PM		48%	9%	0%	1%	0%								59%
PM Peak Hour		17:00	15:00	14:00	15:00	13:00								17:00
Volume		547	106	4	19	1								668

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1405	↔ 17%	882	↔ 11%	1235	↔ 15%	4552	↔ 56%

### Classification Definitions

1 Motorcycles      4 Buses      7 Trucks 4 Axle Single Unit      10 6 Axle Single Trailer      13 7 Axle Multi Trailer

# CLASSIFICATION

Arrow Hwy Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_003

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	59	9	0	0	0	0	0	0	0	0	0	0	68
01:00	0	39	6	0	0	0	0	0	0	0	0	0	0	45
02:00	0	34	4	0	0	0	0	0	0	0	0	0	0	38
03:00	0	51	9	0	0	0	0	0	0	0	0	0	0	60
04:00	0	117	21	0	1	0	0	0	0	0	0	0	0	139
05:00	0	247	36	2	6	0	0	0	0	0	0	0	0	291
06:00	0	465	89	2	18	0	0	0	0	0	0	0	0	574
07:00	0	1131	181	7	25	0	0	0	0	0	0	0	0	1344
08:00	0	940	154	5	29	1	0	0	0	0	0	0	0	1129
09:00	0	633	116	3	21	0	0	0	1	0	0	0	0	774
10:00	0	618	94	5	21	0	0	1	0	0	0	0	0	739
11:00	0	644	116	6	17	2	0	0	0	0	0	0	0	785
12:00 PM	0	675	114	5	25	2	0	0	0	0	0	0	0	821
13:00	0	770	127	4	23	1	0	0	0	0	0	0	0	925
14:00	0	966	145	7	24	0	0	0	0	0	0	0	0	1142
15:00	0	1148	183	5	33	2	0	0	0	0	0	0	0	1371
16:00	0	1123	164	3	29	1	0	0	0	0	0	0	0	1320
17:00	0	1249	188	5	29	1	0	0	0	0	0	0	0	1472
18:00	0	908	125	2	19	1	0	0	0	0	0	0	0	1055
19:00	0	575	78	4	7	1	0	0	0	0	0	0	0	665
20:00	0	407	62	1	11	0	0	0	0	0	0	0	0	481
21:00	0	302	53	2	8	0	0	0	0	0	0	0	0	365
22:00	0	216	27	0	5	0	0	0	0	0	0	0	0	248
23:00	0	120	18	0	1	0	0	0	0	0	0	0	0	139
<b>Totals</b>		<b>13437</b>	<b>2119</b>	<b>68</b>	<b>352</b>	<b>12</b>		<b>1</b>	<b>1</b>					<b>15990</b>
% of Totals		84%	13%	0%	2%	0%		0%	0%					100%

AM Volumes	0	4978	835	30	138	3	0	1	1	0	0	0	0	5986
% AM		31%	5%	0%	1%	0%		0%	0%					37%
AM Peak Hour		07:00	07:00	07:00	08:00	11:00		10:00	09:00					07:00
Volume		1131	181	7	29	2		1	1					1344
PM Volumes	0	8459	1284	38	214	9	0	0	0	0	0	0	0	10004
% PM		53%	8%	0%	1%	0%								63%
PM Peak Hour		17:00	17:00	14:00	15:00	12:00								17:00
Volume		1249	188	7	33	2								1472

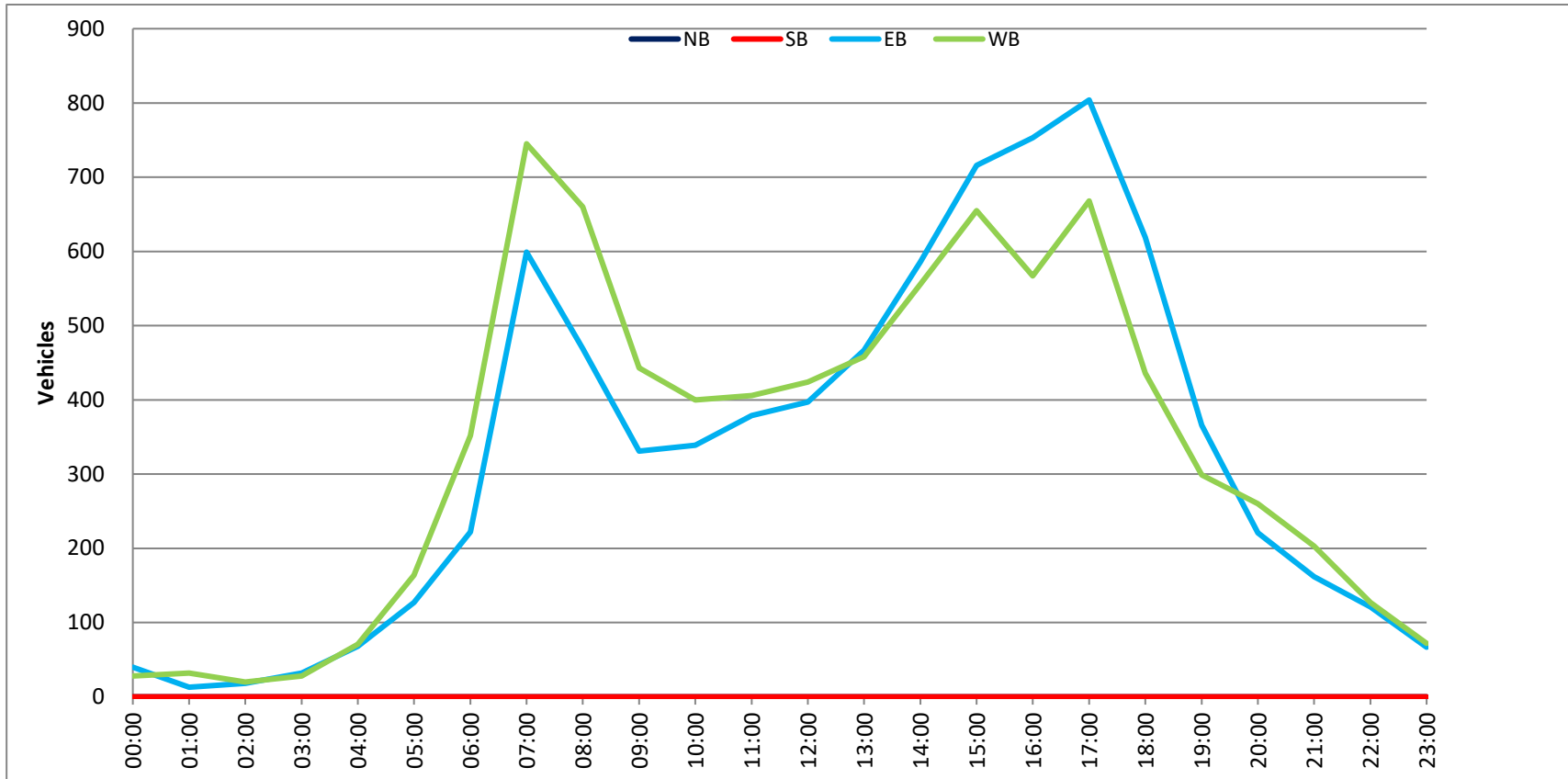
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2473	↔ 15%	1746	↔ 11%	2792	↔ 17%	8979	↔ 56%

## Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 Bicycles, 8 Bicycles, 9 Bicycles, 10 Bicycles, 11 Bicycles, 12 Bicycles, 13 Bicycles, 14 Bicycles, 15 Bicycles, 16 Bicycles, 17 Bicycles, 18 Bicycles, 19 Bicycles, 20 Bicycles, 21 Bicycles, 22 Bicycles, 23 Bicycles, 24 Bicycles, 25 Bicycles, 26 Bicycles, 27 Bicycles, 28 Bicycles, 29 Bicycles, 30 Bicycles, 31 Bicycles, 32 Bicycles, 33 Bicycles, 34 Bicycles, 35 Bicycles, 36 Bicycles, 37 Bicycles, 38 Bicycles, 39 Bicycles, 40 Bicycles, 41 Bicycles, 42 Bicycles, 43 Bicycles, 44 Bicycles, 45 Bicycles, 46 Bicycles, 47 Bicycles, 48 Bicycles, 49 Bicycles, 50 Bicycles, 51 Bicycles, 52 Bicycles, 53 Bicycles, 54 Bicycles, 55 Bicycles, 56 Bicycles, 57 Bicycles, 58 Bicycles, 59 Bicycles, 60 Bicycles, 61 Bicycles, 62 Bicycles, 63 Bicycles, 64 Bicycles, 65 Bicycles, 66 Bicycles, 67 Bicycles, 68 Bicycles, 69 Bicycles, 70 Bicycles, 71 Bicycles, 72 Bicycles, 73 Bicycles, 74 Bicycles, 75 Bicycles, 76 Bicycles, 77 Bicycles, 78 Bicycles, 79 Bicycles, 80 Bicycles, 81 Bicycles, 82 Bicycles, 83 Bicycles, 84 Bicycles, 85 Bicycles, 86 Bicycles, 87 Bicycles, 88 Bicycles, 89 Bicycles, 90 Bicycles, 91 Bicycles, 92 Bicycles, 93 Bicycles, 94 Bicycles, 95 Bicycles, 96 Bicycles, 97 Bicycles, 98 Bicycles, 99 Bicycles, 100 Bicycles

DAILY TOTALS					NB	SB	EB				WB	To		
					0	0	7,916				8,074	15,		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO			
00:00	0	0	17	8	25	12:00	0	0	106	107	213			
00:15	0	0	5	5	10	12:15	0	0	108	110	218			
00:30	0	0	9	12	21	12:30	0	0	88	85	173			
00:45	0	0	9	40	3	28	12:45	0	0	95	397	122	424	217
01:00	0	0	2	13	15	13:00	0	0	98	114	212			
01:15	0	0	2	10	12	13:15	0	0	103	116	219			
01:30	0	0	6	6	12	13:30	0	0	120	98	218			
01:45	0	0	3	13	3	32	13:45	0	0	146	467	130	458	276
02:00	0	0	4	5	9	14:00	0	0	134	112	246			
02:15	0	0	2	8	10	14:15	0	0	152	132	284			
02:30	0	0	9	2	11	14:30	0	0	126	169	295			
02:45	0	0	3	18	5	20	14:45	0	0	174	586	143	556	317
03:00	0	0	6	2	8	15:00	0	0	185	213	398			
03:15	0	0	6	9	15	15:15	0	0	165	161	326			
03:30	0	0	8	4	12	15:30	0	0	193	145	338			
03:45	0	0	12	32	13	28	15:45	0	0	173	716	136	655	309
04:00	0	0	15	11	26	16:00	0	0	202	120	322			
04:15	0	0	15	20	35	16:15	0	0	174	126	300			
04:30	0	0	13	24	37	16:30	0	0	185	174	359			
04:45	0	0	25	68	16	71	16:45	0	0	192	753	147	567	339
05:00	0	0	23	31	54	17:00	0	0	220	152	372			
05:15	0	0	19	31	50	17:15	0	0	198	198	396			
05:30	0	0	37	43	80	17:30	0	0	198	172	370			
05:45	0	0	48	127	59	164	17:45	0	0	188	804	146	668	334
06:00	0	0	39	57	96	18:00	0	0	182	113	295			
06:15	0	0	39	77	116	18:15	0	0	170	139	309			
06:30	0	0	52	92	144	18:30	0	0	146	99	245			
06:45	0	0	92	222	126	352	18:45	0	0	121	619	85	436	206
07:00	0	0	92	129	221	19:00	0	0	96	94	190			
07:15	0	0	119	189	308	19:15	0	0	105	70	175			
07:30	0	0	185	213	398	19:30	0	0	83	79	162			
07:45	0	0	203	599	214	745	19:45	0	0	82	366	56	299	138
08:00	0	0	137	170	307	20:00	0	0	62	66	128			
08:15	0	0	123	183	306	20:15	0	0	50	73	123			
08:30	0	0	109	170	279	20:30	0	0	57	56	113			
08:45	0	0	100	469	137	660	20:45	0	0	52	221	65	260	117
09:00	0	0	84	117	201	21:00	0	0	48	63	111			
09:15	0	0	82	112	194	21:15	0	0	63	60	123			
09:30	0	0	75	109	184	21:30	0	0	26	35	61			
09:45	0	0	90	331	105	443	21:45	0	0	25	162	45	203	70
10:00	0	0	76	100	176	22:00	0	0	33	41	74			
10:15	0	0	91	86	177	22:15	0	0	37	36	73			
10:30	0	0	85	107	192	22:30	0	0	23	31	54			
10:45	0	0	87	339	107	400	22:45	0	0	28	121	19	127	47
11:00	0	0	83	112	195	23:00	0	0	14	23	37			
11:15	0	0	90	86	176	23:15	0	0	19	20	39			
11:30	0	0	90	108	198	23:30	0	0	24	19	43			
11:45	0	0	116	379	100	406	23:45	0	0	10	67	10	72	20
<b>TOTALS</b>			2637	3349	<b>5986</b>	<b>TOTALS</b>			5279	4725				
<b>SPLIT %</b>			44.1%	55.9%	<b>37.4%</b>	<b>SPLIT %</b>			52.8%	47.2%				

DAILY TOTALS					NB	SB	EB				WB	To
					0	0	7,916				8,074	15,
AM Peak Hour			07:30	07:15	07:15	PM Peak Hour			16:45	14:30		
AM Pk Volume			648	786	1430	PM Pk Volume			808	686		
Pk Hr Factor			0.798	0.918	0.857	Pk Hr Factor			0.918	0.805		
7 - 9 Volume	0	0	1068	1405	2473	4 - 6 Volume	0	0	1557	1235		
7 - 9 Peak Hour			07:30	07:15	07:15	4 - 6 Peak Hour			16:45	16:30		
7 - 9 Pk Volume	0	0	648	786	1430	4 - 6 Pk Volume	0	0	808	671		
Pk Hr Factor	0.000	0.000	0.798	0.918	0.857	Pk Hr Factor	0.000	0.000	0.918	0.847		









**CLASSIFICATION**

9th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_004

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	7	2	0	0	0	0	0	0	0	0	0	0	9
00:15	0	6	0	0	0	0	0	0	0	0	0	0	0	6
00:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
00:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	1	2	0	0	0	0	0	0	0	0	0	0	3
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:30	0	5	3	0	0	0	0	1	0	0	0	0	0	9
04:45	0	14	7	0	1	0	0	0	0	0	0	0	0	22
05:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
05:15	0	10	7	0	1	0	0	0	0	0	0	0	0	18
05:30	0	13	2	1	0	0	0	0	0	0	0	0	0	16
05:45	0	19	7	0	2	0	0	0	0	0	0	0	0	28
06:00	0	20	7	0	2	0	0	0	0	0	0	0	0	29
06:15	0	17	11	0	7	1	0	0	0	0	0	0	0	36
06:30	0	16	13	0	4	1	0	0	0	0	0	0	0	34
06:45	0	32	4	1	1	0	0	0	0	0	0	0	0	38
07:00	0	41	7	2	3	0	0	0	0	0	0	0	0	53
07:15	0	68	13	1	2	0	0	0	0	0	0	0	0	84
07:30	0	86	20	0	1	0	1	0	0	0	0	0	0	108
07:45	0	101	25	0	4	0	0	0	0	0	0	0	0	130
08:00	0	37	22	0	1	2	0	0	0	0	0	0	0	62
08:15	0	45	11	0	3	0	0	0	0	0	0	0	0	59
08:30	0	29	11	0	1	0	0	0	0	0	0	0	0	41
08:45	0	38	14	1	5	0	0	0	0	0	0	0	0	58
09:00	0	33	16	0	1	0	0	0	0	0	0	0	0	50
09:15	0	25	7	0	1	0	0	0	0	0	0	0	0	33
09:30	0	26	13	0	0	0	0	0	0	0	0	0	0	39
09:45	0	55	19	2	3	0	0	0	0	0	0	0	0	79
10:00	0	28	11	0	1	0	0	0	0	0	0	0	0	40
10:15	0	36	8	0	2	0	0	0	0	0	0	0	0	46
10:30	1	33	13	2	1	0	0	0	0	0	0	0	0	50
10:45	0	32	17	4	4	0	0	0	0	0	0	0	0	57
11:00	0	37	14	1	6	0	0	0	0	0	0	0	0	58
11:15	0	41	9	1	2	0	0	0	0	0	0	0	0	53
11:30	0	36	17	2	5	0	0	0	0	0	0	0	0	60
11:45	0	41	9	1	4	2	0	1	0	0	0	0	0	58
12:00 PM	1	50	31	0	2	0	0	1	1	0	0	0	0	86
12:15	2	55	19	0	9	0	0	0	0	0	0	0	0	85
12:30	0	39	8	1	1	0	0	0	0	0	0	0	0	49
12:45	0	49	17	0	5	1	1	0	0	0	0	0	0	68
13:00	0	47	18	0	2	1	0	0	0	0	0	0	0	68
13:15	1	35	15	2	5	1	0	0	0	0	0	0	0	59
13:30	0	44	14	0	6	0	0	0	0	0	0	0	0	64
13:45	0	51	12	0	7	0	0	0	1	0	0	0	0	71
14:00	0	42	16	1	7	0	0	1	0	0	0	0	0	67
14:15	1	63	20	0	7	0	0	0	0	0	0	0	0	91
14:30	0	85	36	0	3	1	0	0	0	0	0	0	0	125
14:45	2	78	21	0	2	0	0	0	0	0	0	0	0	103
15:00	1	73	25	0	4	1	0	0	0	1	0	0	0	105
15:15	0	59	15	2	2	0	0	0	0	0	0	0	0	78
15:30	0	75	25	1	3	1	0	0	0	0	0	0	0	105
15:45	0	63	17	0	3	0	0	0	0	0	0	0	0	83
16:00	0	66	15	0	7	0	0	0	0	0	0	0	0	88
16:15	0	63	17	0	3	0	0	0	0	0	0	0	0	83
16:30	0	73	18	0	4	0	0	0	0	0	0	0	0	95
16:45	0	62	24	0	3	0	0	0	0	0	0	0	0	89
17:00	0	74	15	0	1	0	0	0	0	0	0	0	0	90
17:15	0	64	18	0	4	1	0	0	0	0	0	0	0	87
17:30	0	88	14	0	3	0	0	0	0	0	0	0	0	105
17:45	0	61	9	1	3	0	0	0	0	0	0	0	0	74
18:00	0	58	18	0	1	0	0	0	0	0	0	0	0	77
18:15	0	42	19	0	0	0	0	0	0	0	0	0	0	61
18:30	0	52	7	0	2	0	0	0	0	0	0	0	0	61
18:45	0	36	7	0	1	0	0	0	0	0	0	0	0	44
19:00	0	31	9	0	0	0	1	0	0	0	0	0	0	41
19:15	0	31	6	1	1	0	0	0	0	0	0	0	0	39
19:30	0	38	7	0	2	0	0	0	0	0	0	0	0	47
19:45	0	21	6	0	0	0	0	0	0	0	0	0	0	27
20:00	0	23	6	1	3	0	0	0	0	0	0	0	0	30
20:15	0	31	7	0	1	0	0	0	0	0	0	0	0	39
20:30	0	7	4	1	0	0	0	0	0	0	0	0	0	12
20:45	0	18	4	0	0	0	0	0	0	0	0	0	0	22
21:00	0	12	6	0	0	0	0	0	0	0	0	0	0	18
21:15	0	5	8	0	0	0	0	0	0	0	0	0	0	13
21:30	0	16	3	0	1	0	0	0	0	0	0	0	0	20
21:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14
22:00	0	16	3	0	1	0	0	0	0	0	0	0	0	20
22:15	0	20	1	0	0	0	0	0	0	0	0	0	0	21
22:30	0	18	1	0	0	0	0	0	0	0	0	0	0	19
22:45	0	4	3	0	0	0	0	0	0	0	0	0	0	7
23:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
23:15	0	6	4	0	0	0	0	0	0	0	0	0	0	10
23:30	0	9	2	0	0	0	0	0	0	0	0	0	0	11
23:45	0	2	3	0	0	0	0	0	0	0	0	0	0	5
<b>Totals</b>	<b>9</b>	<b>3046</b>	<b>923</b>	<b>30</b>	<b>171</b>	<b>13</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>2</b>				<b>4201</b>
<b>% of Totals</b>	<b>0%</b>	<b>73%</b>	<b>22%</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>				<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>AM Volumes</b>	1	1067	347	19
<b>% AM</b>	0%	25%	8%	0%
<b>AM Peak Hour</b>	11:30	07:00	07:15	10:30
<b>Volume</b>	3	296	80	8
<b>PM Volumes</b>	8	1979	576	11
<b>% PM</b>	0%	47%	14%	0%
<b>PM Peak Hour</b>	14:15	14:15	14:15	12:30
<b>Volume</b>	4	299	102	3

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>Volume</b>				
<b>%</b>				

# CLASSIFICATION

9th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_004e

**East Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	14	7	0	0	0	0	0	0	0	0	0	0	21
05:00	0	36	13	0	0	0	0	0	0	0	0	0	0	49
06:00	0	46	19	1	3	1	0	0	0	0	0	0	0	70
07:00	0	134	29	0	3	0	0	0	0	0	0	0	0	166
08:00	0	84	34	1	7	1	0	0	0	0	0	0	0	127
09:00	0	82	33	0	3	0	0	0	0	0	0	0	0	118
10:00	0	65	24	1	6	0	0	0	0	0	0	0	0	96
11:00	0	63	20	2	7	0	0	0	0	0	0	0	0	92
12:00 PM	2	91	41	0	9	0	0	1	1	0	0	0	0	145
13:00	1	102	40	0	12	1	0	0	0	1	0	0	0	157
14:00	0	130	45	1	11	0	0	0	0	0	0	0	0	187
15:00	0	131	46	2	7	1	0	0	0	1	0	0	0	188
16:00	0	149	41	0	9	0	0	0	0	0	0	0	0	199
17:00	0	139	31	1	7	0	0	0	0	0	0	0	0	178
18:00	0	85	22	0	4	0	0	0	0	0	0	0	0	111
19:00	0	66	19	0	3	0	0	0	0	0	0	0	0	88
20:00	0	47	11	2	1	0	0	0	0	0	0	0	0	61
21:00	0	25	10	0	0	0	0	0	0	0	0	0	0	35
22:00	0	27	5	0	0	0	0	0	0	0	0	0	0	32
23:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
<b>Totals</b>	<b>3</b>	<b>1540</b>	<b>494</b>	<b>11</b>	<b>92</b>	<b>4</b>		<b>1</b>	<b>1</b>	<b>2</b>				<b>2148</b>
<b>% of Totals</b>	<b>0%</b>	<b>72%</b>	<b>23%</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>		<b>0%</b>	<b>0%</b>	<b>0%</b>				<b>100%</b>

1543 597 4 4  
1.0 1.5 2.0 3.0

<b>1543</b>	<b>896</b>	<b>8</b>	<b>12</b>	<b>2459</b>
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<b>AM Volumes</b>	0	539	180	5	29	2	0	0	0	0	0	0	0	755
<b>% AM</b>		25%	8%	0%	1%	0%								35%
<b>AM Peak Hour</b>		07:00	08:00	11:00	08:00	06:00								07:00
<b>Volume</b>		134	34	2	7	1								166
<b>PM Volumes</b>	3	1001	314	6	63	2	0	1	1	2	0	0	0	1393
<b>% PM</b>	0%	47%	15%	0%	3%	0%		0%	0%	0%				65%
<b>PM Peak Hour</b>	12:00	16:00	15:00	15:00	13:00	13:00		12:00	12:00	13:00				16:00
<b>Volume</b>	2	149	46	2	12	1		1	1	1				199

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	293	↔ 14%	302	↔ 14%	377	↔ 18%	1176	↔ 55%

Classification Definitions				
Motorcycles	4	Buses	7	>=4-Axle Single Units
			10	>=6-Axle Single Trailers
			13	>=7-Axle Multi-Trailers

# CLASSIFICATION

9th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_004w

## West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	12	3	0	0	0	0	0	0	0	0	0	0	15
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	9	4	0	1	0	0	1	0	0	0	0	0	15
05:00	0	14	5	1	3	0	0	0	0	0	0	0	0	23
06:00	0	39	16	0	11	1	0	0	0	0	0	0	0	67
07:00	0	162	36	3	7	0	1	0	0	0	0	0	0	209
08:00	0	65	24	0	3	1	0	0	0	0	0	0	0	93
09:00	0	57	22	2	2	0	0	0	0	0	0	0	0	83
10:00	1	64	25	5	2	0	0	0	0	0	0	0	0	97
11:00	0	92	29	3	10	2	0	1	0	0	0	0	0	137
12:00 PM	1	102	34	1	4	1	0	0	0	0	0	0	0	143
13:00	0	75	19	2	8	1	0	0	0	0	0	0	0	105
14:00	3	138	48	0	8	1	0	1	0	0	0	0	0	199
15:00	1	139	36	1	5	1	0	0	0	0	0	0	0	183
16:00	0	115	33	0	8	0	0	0	0	0	0	0	0	156
17:00	0	148	25	0	4	1	0	0	0	0	0	0	0	178
18:00	0	103	29	0	0	0	0	0	0	0	0	0	0	132
19:00	0	55	9	1	0	0	1	0	0	0	0	0	0	66
20:00	0	32	10	0	0	0	0	0	0	0	0	0	0	42
21:00	0	21	8	0	1	0	0	0	0	0	0	0	0	30
22:00	0	31	3	0	1	0	0	0	0	0	0	0	0	35
23:00	0	19	8	0	1	0	0	0	0	0	0	0	0	28
<b>Totals</b>	<b>6</b>	<b>1506</b>	<b>429</b>	<b>19</b>	<b>79</b>	<b>9</b>	<b>2</b>	<b>3</b>						<b>2053</b>
<b>% of Totals</b>	<b>0%</b>	<b>73%</b>	<b>21%</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>						<b>100%</b>

<b>AM Volumes</b>	1	528	167	14	39	4	1	2	0	0	0	0	0	756
<b>% AM</b>	0%	26%	8%	1%	2%	0%	0%	0%						37%
<b>AM Peak Hour</b>	10:00	07:00	07:00	10:00	06:00	11:00	07:00	04:00						07:00
<b>Volume</b>	1	162	36	5	11	2	1	1						209
<b>PM Volumes</b>	5	978	262	5	40	5	1	1	0	0	0	0	0	1297
<b>% PM</b>	0%	48%	13%	0%	2%	0%	0%	0%						63%
<b>PM Peak Hour</b>	14:00	17:00	14:00	13:00	13:00	12:00	19:00	14:00						14:00
<b>Volume</b>	3	148	48	2	8	1	1	1						199

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	302	↔ 15%	248	↔ 12%	334	↔ 16%	1169	↔ 57%

### Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi-Trailer

# CLASSIFICATION

9th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_004

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	19	3	0	0	0	0	0	0	0	0	0	0	22
01:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
03:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
04:00	0	23	11	0	1	0	0	1	0	0	0	0	0	36
05:00	0	50	18	1	3	0	0	0	0	0	0	0	0	72
06:00	0	85	35	1	14	2	0	0	0	0	0	0	0	137
07:00	0	296	65	3	10	0	1	0	0	0	0	0	0	375
08:00	0	149	58	1	10	2	0	0	0	0	0	0	0	220
09:00	0	139	55	2	5	0	0	0	0	0	0	0	0	201
10:00	1	129	49	6	8	0	0	0	0	0	0	0	0	193
11:00	0	155	49	5	17	2	0	1	0	0	0	0	0	229
12:00 PM	3	193	75	1	13	1	0	1	1	0	0	0	0	288
13:00	1	177	59	2	20	2	0	0	0	1	0	0	0	262
14:00	3	268	93	1	19	1	0	1	0	0	0	0	0	386
15:00	1	270	82	3	12	2	0	0	0	1	0	0	0	371
16:00	0	264	74	0	17	0	0	0	0	0	0	0	0	355
17:00	0	287	56	1	11	1	0	0	0	0	0	0	0	356
18:00	0	188	51	0	4	0	0	0	0	0	0	0	0	243
19:00	0	121	28	1	3	0	1	0	0	0	0	0	0	154
20:00	0	79	21	2	1	0	0	0	0	0	0	0	0	103
21:00	0	46	18	0	1	0	0	0	0	0	0	0	0	65
22:00	0	58	8	0	1	0	0	0	0	0	0	0	0	67
23:00	0	28	11	0	1	0	0	0	0	0	0	0	0	40
<b>Totals</b>	<b>9</b>	<b>3046</b>	<b>923</b>	<b>30</b>	<b>171</b>	<b>13</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>2</b>				<b>4201</b>
% of Totals	0%	73%	22%	1%	4%	0%	0%	0%	0%	0%				100%

<b>AM Volumes</b>	1	1067	347	19	68	6	1	2	0	0	0	0	0	1511
<b>% AM</b>	0%	25%	8%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	36%
<b>AM Peak Hour</b>	10:00	07:00	07:00	10:00	11:00	06:00	07:00	04:00						07:00
<b>Volume</b>	1	296	65	6	17	2	1	1						375
<b>PM Volumes</b>	8	1979	576	11	103	7	1	2	1	2	0	0	0	2690
<b>% PM</b>	0%	47%	14%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	64%
<b>PM Peak Hour</b>	12:00	17:00	14:00	15:00	13:00	13:00	19:00	12:00	12:00	13:00				14:00
<b>Volume</b>	3	287	93	3	20	2	1	1	1	1				386

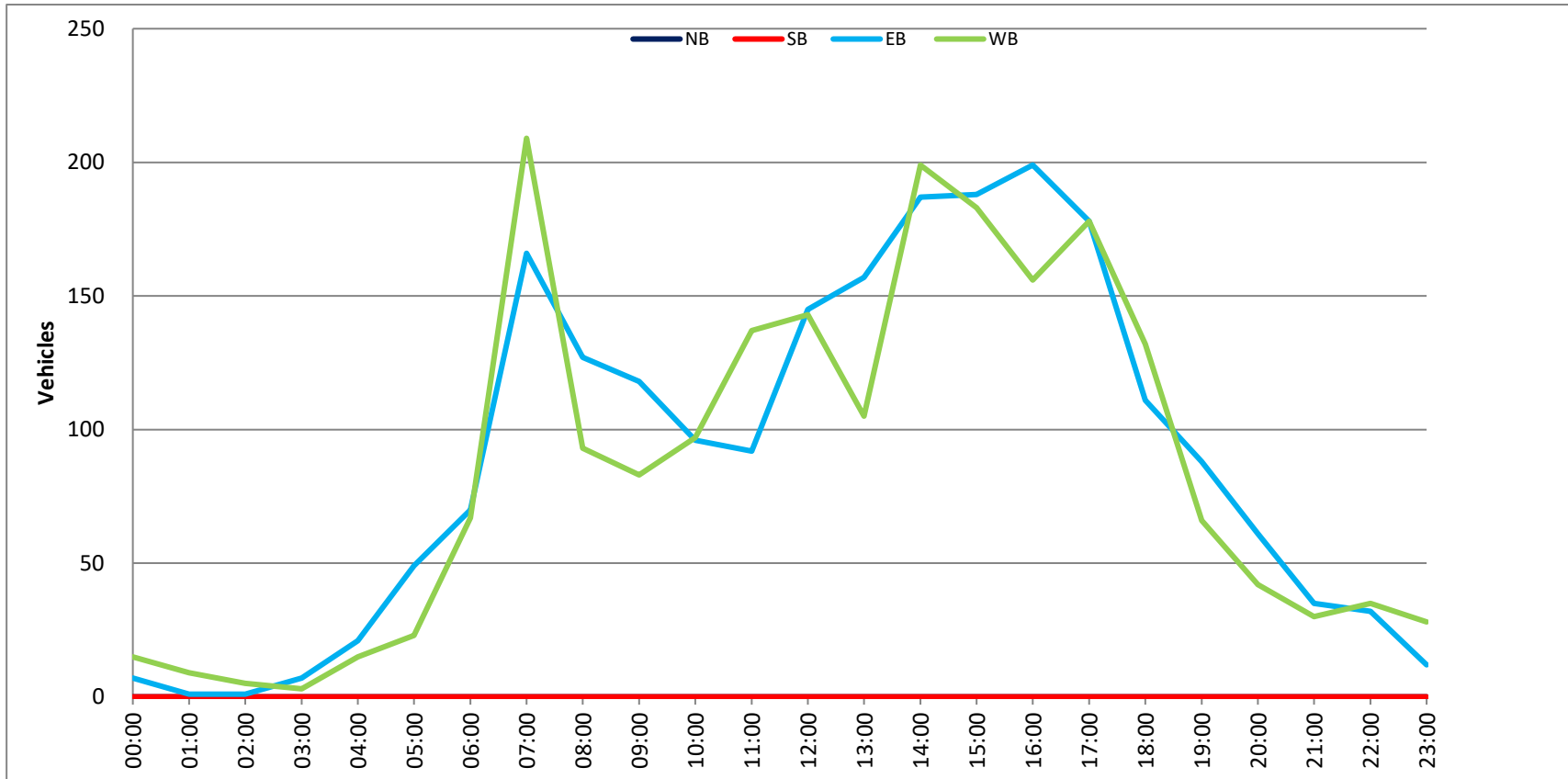
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	595	↔ 14%	550	↔ 13%	711	↔ 17%	2345	↔ 56%

## Classification Definitions

1 Motorcycles      4 Buses      7 Two-Wheel Single Units      10 Two-Wheel Single Trailers      13 Two-Wheel Multi-Trailers

DAILY TOTALS					NB	SB	EB	WB	To			
					0	0	2,148	2,053	4,2			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	0	0	1	8	9	12:00	0	0	47	39	86	
00:15	0	0	3	3	6	12:15	0	0	43	42	85	
00:30	0	0	2	1	3	12:30	0	0	24	25	49	
00:45	0	0	1	7	3	12:45	0	0	31	145	37	143
01:00	0	0	0	5	5	13:00	0	0	43	25	68	
01:15	0	0	0	0	2	13:15	0	0	36	23	59	
01:30	0	0	1	1	2	13:30	0	0	37	27	64	
01:45	0	0	0	1	3	13:45	0	0	41	157	30	105
02:00	0	0	0	2	2	14:00	0	0	44	23	67	
02:15	0	0	0	0	1	14:15	0	0	50	41	91	
02:30	0	0	1	0	1	14:30	0	0	46	79	125	
02:45	0	0	0	1	3	14:45	0	0	47	187	56	199
03:00	0	0	1	2	3	15:00	0	0	58	47	105	
03:15	0	0	0	0	3	15:15	0	0	43	35	78	
03:30	0	0	3	0	3	15:30	0	0	46	59	105	
03:45	0	0	3	7	4	15:45	0	0	41	188	42	183
04:00	0	0	2	1	3	16:00	0	0	50	38	88	
04:15	0	0	0	2	2	16:15	0	0	54	29	83	
04:30	0	0	5	4	9	16:30	0	0	48	47	95	
04:45	0	0	14	21	8	16:45	0	0	47	199	42	156
05:00	0	0	5	5	10	17:00	0	0	40	50	90	
05:15	0	0	11	7	18	17:15	0	0	44	43	87	
05:30	0	0	10	6	16	17:30	0	0	52	53	105	
05:45	0	0	23	49	5	17:45	0	0	42	178	32	178
06:00	0	0	14	15	29	18:00	0	0	28	49	77	
06:15	0	0	17	19	36	18:15	0	0	26	35	61	
06:30	0	0	19	15	34	18:30	0	0	33	28	61	
06:45	0	0	20	70	18	18:45	0	0	24	111	20	132
07:00	0	0	21	32	53	19:00	0	0	18	23	41	
07:15	0	0	35	49	84	19:15	0	0	21	18	39	
07:30	0	0	55	53	108	19:30	0	0	31	16	47	
07:45	0	0	55	166	75	19:45	0	0	18	88	9	66
08:00	0	0	41	21	62	20:00	0	0	15	15	30	
08:15	0	0	30	29	59	20:15	0	0	22	17	39	
08:30	0	0	19	22	41	20:30	0	0	10	2	12	
08:45	0	0	37	127	21	20:45	0	0	14	61	8	42
09:00	0	0	33	17	50	21:00	0	0	9	9	18	
09:15	0	0	16	17	33	21:15	0	0	6	7	13	
09:30	0	0	22	17	39	21:30	0	0	12	8	20	
09:45	0	0	47	118	32	21:45	0	0	8	35	6	30
10:00	0	0	16	24	40	22:00	0	0	7	13	20	
10:15	0	0	23	23	46	22:15	0	0	11	10	21	
10:30	0	0	24	26	50	22:30	0	0	9	10	19	
10:45	0	0	33	96	24	22:45	0	0	5	32	2	35
11:00	0	0	26	32	58	23:00	0	0	5	9	14	
11:15	0	0	22	31	53	23:15	0	0	4	6	10	
11:30	0	0	19	41	60	23:30	0	0	2	9	11	
11:45	0	0	25	92	33	23:45	0	0	1	12	4	28
TOTALS			755	756	1511	TOTALS			1393	1297		
SPLIT %			50.0%	50.0%	36.0%	SPLIT %			51.8%	48.2%		

DAILY TOTALS					NB	SB	EB	WB	To	
					0	0	2,148	2,053	4,2	
AM Peak Hour			07:15	07:00	07:15	PM Peak Hour			14:15	14:15
AM Pk Volume			186	209	384	PM Pk Volume			201	223
Pk Hr Factor			0.845	0.697	0.738	Pk Hr Factor			0.866	0.706
7 - 9 Volume	0	0	293	302	595	4 - 6 Volume	0	0	377	334
7 - 9 Peak Hour			07:15	07:00	07:15	4 - 6 Peak Hour			16:00	16:45
7 - 9 Pk Volume	0	0	186	209	384	4 - 6 Pk Volume	0	0	199	188
Pk Hr Factor	0.000	0.000	0.845	0.697	0.738	Pk Hr Factor	0.000	0.000	0.921	0.887





**CLASSIFICATION**

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005e

East Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	3
00:15	0	5	0	0	0	0	0	0	0	0	0	0	0	5
00:30	0	1	1	0	0	0	0	0	0	0	0	0	0	2
00:45	0	6	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	3	0	0	0	0	0	0	0	0	0	0	4
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	5	2	0	0	0	0	0	0	0	0	0	0	7
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
03:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:15	0	2	0	1	1	0	0	0	0	0	0	0	0	4
04:30	0	6	1	0	1	0	0	0	0	0	0	0	0	8
04:45	0	14	0	0	1	0	0	0	0	0	0	0	0	15
05:00	0	4	2	1	0	0	0	0	0	0	0	0	0	7
05:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
05:30	0	22	4	0	0	0	0	0	0	0	0	0	0	26
05:45	0	28	7	0	1	0	0	0	0	0	0	0	0	36
06:00	0	12	5	0	1	0	0	0	0	0	0	0	0	18
06:15	0	13	2	0	0	0	0	0	0	0	0	0	0	15
06:30	0	16	4	0	1	0	0	0	0	0	0	0	0	21
06:45	0	27	5	0	0	0	0	0	0	0	0	0	0	32
07:00	0	27	13	0	1	0	0	0	0	0	0	0	0	41
07:15	0	48	12	0	3	0	0	0	0	0	0	0	0	63
07:30	0	69	2	0	2	0	0	0	0	0	0	0	0	73
07:45	0	94	17	0	4	0	0	0	0	0	0	0	0	115
08:00	0	61	12	0	0	0	0	0	0	0	0	0	0	73
08:15	0	53	10	0	3	0	0	1	0	0	0	0	0	67
08:30	0	23	7	0	3	0	0	0	0	0	0	0	0	33
08:45	0	40	9	0	2	0	0	0	0	0	0	0	0	51
09:00	0	20	5	1	1	0	0	0	0	0	0	0	0	27
09:15	0	20	8	0	4	0	0	0	0	0	0	0	0	32
09:30	0	31	4	0	2	0	0	0	0	0	0	0	0	37
09:45	0	27	8	0	2	1	0	0	0	0	0	0	0	38
10:00	0	28	2	0	2	0	0	0	0	0	0	0	0	32
10:15	0	36	9	0	1	0	0	2	0	0	0	0	0	48
10:30	0	36	4	0	1	0	0	0	0	0	0	0	0	41
10:45	0	21	4	0	4	0	0	0	0	0	0	0	0	29
11:00	0	24	6	0	3	0	0	0	0	0	0	0	0	30
11:15	0	25	2	1	0	0	0	1	0	0	0	0	0	29
11:30	0	33	7	0	1	0	0	0	0	0	0	0	0	41
11:45	0	25	10	0	2	0	0	1	0	0	0	0	0	38
12:00 PM	0	34	10	0	2	0	0	0	0	0	0	0	0	46
12:15	0	30	11	1	2	0	0	0	0	0	0	0	0	44
12:30	0	37	10	0	1	0	0	0	0	0	0	0	0	48
12:45	0	28	11	1	0	0	0	0	0	0	0	0	0	40
13:00	0	28	9	1	3	0	0	0	0	0	0	0	0	41
13:15	0	32	6	0	1	0	0	0	0	0	0	0	0	39
13:30	0	37	11	0	1	0	0	0	0	0	0	0	0	49
13:45	0	39	6	0	3	1	0	0	0	0	0	0	0	49
14:00	0	37	14	1	1	0	0	0	0	0	0	0	0	53
14:15	0	37	8	0	1	0	0	0	0	0	0	0	0	46
14:30	0	38	7	0	7	0	0	0	0	0	0	0	0	52
14:45	0	72	14	1	2	0	0	0	0	0	0	0	0	89
15:00	0	54	19	0	3	0	0	1	0	0	0	0	0	77
15:15	0	53	12	1	2	0	0	0	0	0	0	0	0	68
15:30	0	59	10	0	2	1	0	0	0	0	0	0	0	72
15:45	0	52	14	1	1	0	0	0	0	0	0	0	0	68
16:00	0	49	16	0	3	1	0	0	0	0	0	0	0	69
16:15	0	51	12	0	1	0	0	0	0	0	0	0	0	64
16:30	0	54	9	1	2	0	0	0	0	0	0	0	0	66
16:45	0	44	10	0	1	0	0	0	0	0	0	0	0	55
17:00	0	73	5	0	4	0	0	0	0	0	0	0	0	82
17:15	0	65	6	0	2	0	0	0	0	0	0	0	0	73
17:30	0	69	12	0	2	0	0	0	0	0	0	0	0	83
17:45	0	66	11	0	5	0	0	1	0	0	0	0	0	83
18:00	0	60	9	1	1	0	0	0	0	0	0	0	0	71
18:15	0	54	8	0	1	0	0	0	0	0	0	0	0	63
18:30	0	47	3	0	0	0	0	0	0	0	0	0	0	50
18:45	0	52	9	1	1	0	0	0	0	0	0	0	0	63
19:00	0	45	8	0	1	0	0	0	0	0	0	0	0	54
19:15	0	25	5	0	1	0	0	0	0	0	0	0	0	31
19:30	0	25	5	0	2	0	0	0	0	0	0	0	0	32
19:45	0	10	2	0	1	0	0	0	0	0	0	0	0	13
20:00	0	19	3	0	0	0	0	0	0	0	0	0	0	22
20:15	0	23	4	0	0	0	0	0	0	0	0	0	0	27
20:30	0	24	2	0	0	0	0	0	0	0	0	0	0	26
20:45	0	22	2	0	0	0	0	0	0	0	0	0	0	24
21:00	0	18	3	0	0	0	0	0	0	0	0	0	0	21
21:15	0	19	1	0	1	0	0	0	0	0	0	0	0	21
21:30	0	14	4	0	0	0	0	0	0	0	0	0	0	18
21:45	0	13	0	0	0	0	0	0	0	0	0	0	0	13
22:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
22:15	0	8	2	0	1	0	0	0	0	0	0	0	0	11
22:30	0	11	3	0	0	0	0	0	0	0	0	0	0	14
22:45	0	10	2	0	0	0	0	0	0	0	0	0	0	12
23:00	0	5	2	0	0	0	0	1	0	0	0	0	0	8
23:15	0	11	0	0	0	0	0	0	0	0	0	0	0	11
23:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
<b>Totals</b>		<b>2614</b>	<b>528</b>	<b>14</b>	<b>106</b>	<b>4</b>		<b>8</b>						<b>3274</b>
<b>% of Totals</b>		<b>80%</b>	<b>16%</b>	<b>0%</b>	<b>3%</b>	<b>0%</b>		<b>0%</b>						<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
AM Volumes	945	194	44	1193
% AM	36%	8%	1%	36%
AM Peak Hour	07:30	07:45	04:15	09:30
Volume	277	46	2	328
PM Volumes	1669	334	62	2081
% PM	64%	10%	2%	64%
PM Peak Hour	17:00	14:45	12:15	14:30
Volume	273	55	3	321

**CLASSIFICATION**

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005w

**West Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
00:15	0	4	1	0	0	0	0	0	0	0	0	0	0	5
00:30	0	5	2	0	1	0	0	0	0	0	0	0	0	8
00:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	1	0	0	1	0	0	0	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:30	0	4	2	1	0	0	0	0	0	0	0	0	0	7
04:45	0	6	1	0	2	0	0	0	0	0	0	0	0	9
05:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
05:15	0	3	0	0	2	0	0	0	0	0	0	0	0	5
05:30	0	9	0	0	0	0	0	0	0	0	0	0	0	9
05:45	0	11	3	0	0	0	0	0	0	0	0	0	0	14
06:00	0	13	5	0	0	1	0	0	0	0	0	0	0	19
06:15	0	16	1	0	1	0	0	0	0	0	0	0	0	18
06:30	0	19	4	1	0	0	0	0	0	0	0	0	0	24
06:45	0	23	3	0	1	0	0	0	0	0	0	0	0	27
07:00	0	28	4	0	3	0	0	0	0	0	0	0	0	35
07:15	0	45	11	0	1	0	0	0	0	0	0	0	0	57
07:30	0	73	13	0	0	0	0	0	0	0	0	0	0	86
07:45	0	89	10	0	2	0	0	0	0	0	0	0	0	101
08:00	0	52	14	1	3	0	0	0	0	0	0	0	0	70
08:15	0	31	14	1	2	0	0	1	0	0	0	0	0	49
08:30	0	43	11	1	1	0	0	0	0	0	0	0	0	56
08:45	0	34	6	1	2	0	0	0	0	0	0	0	0	43
09:00	0	21	3	0	2	0	0	0	0	0	0	0	0	26
09:15	0	21	5	0	2	0	0	0	0	0	0	0	0	29
09:30	0	21	6	0	1	0	0	0	0	0	0	0	0	28
09:45	0	25	3	0	2	0	0	1	0	0	0	0	0	31
10:00	0	22	5	0	4	0	0	0	0	0	0	0	0	31
10:15	0	29	7	1	1	0	0	0	0	0	0	0	0	38
10:30	0	22	12	0	0	0	0	0	0	0	0	0	0	34
10:45	0	28	12	0	2	0	0	0	0	0	0	0	0	42
11:00	0	27	8	0	1	0	0	0	0	0	0	0	0	38
11:15	0	26	10	0	6	0	0	0	0	0	0	0	0	42
11:30	0	26	10	0	1	0	0	0	0	0	0	0	0	37
11:45	0	20	9	0	1	0	0	1	0	0	0	0	0	31
12:00 PM	0	27	4	0	1	0	0	0	0	0	0	0	0	32
12:15	0	36	5	0	2	0	0	0	0	0	0	0	0	43
12:30	0	39	10	0	0	0	0	0	0	0	0	0	0	49
12:45	0	27	8	0	1	0	0	0	0	0	0	0	0	37
13:00	0	22	11	0	0	0	0	0	0	0	0	0	0	33
13:15	0	31	14	1	0	0	0	0	0	0	0	0	0	46
13:30	0	42	7	0	1	0	0	0	0	0	0	0	0	50
13:45	0	40	13	0	2	0	0	0	0	0	0	0	0	55
14:00	0	41	16	0	2	0	0	0	0	0	0	0	0	59
14:15	0	39	8	0	1	0	0	0	0	0	0	0	0	48
14:30	0	66	14	1	1	0	0	0	0	0	0	0	0	82
14:45	0	67	13	0	2	0	0	0	0	0	0	0	0	82
15:00	0	62	13	1	1	0	0	1	0	0	0	0	0	78
15:15	0	54	9	1	3	0	0	0	0	0	0	0	0	67
15:30	0	55	13	0	2	0	0	0	0	0	0	0	0	70
15:45	0	50	8	0	4	0	0	0	0	0	0	0	0	62
16:00	0	55	11	1	2	0	0	0	0	0	0	0	0	69
16:15	0	49	7	0	2	0	0	0	0	0	0	0	0	58
16:30	1	70	11	0	0	0	0	0	0	0	0	0	0	82
16:45	0	77	6	2	2	0	0	0	0	0	0	0	0	87
17:00	0	67	18	0	1	0	0	0	0	0	0	0	0	86
17:15	0	60	15	0	1	0	0	0	0	0	0	0	0	76
17:30	0	62	15	1	1	0	0	1	0	0	0	0	0	80
17:45	0	49	2	1	2	0	0	0	0	0	0	0	0	54
18:00	0	42	9	0	3	0	0	0	0	0	0	0	0	54
18:15	0	28	14	0	0	0	0	0	0	0	0	0	0	42
18:30	0	29	5	0	0	0	0	0	0	0	0	0	0	34
18:45	0	28	10	0	0	0	0	0	0	0	0	0	0	38
19:00	0	34	10	0	0	0	0	0	0	0	0	0	0	44
19:15	0	26	7	0	0	0	0	0	0	0	0	0	0	33
19:30	0	23	1	0	1	0	0	0	0	0	0	0	0	25
19:45	0	17	4	0	2	0	0	0	0	0	0	0	0	23
20:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
20:15	0	22	0	0	2	0	0	0	0	0	0	0	0	24
20:30	0	16	4	0	0	0	0	0	0	0	0	0	0	20
20:45	0	17	2	0	0	0	0	0	0	0	0	0	0	19
21:00	0	25	1	0	1	0	0	1	0	0	0	0	0	28
21:15	0	14	2	0	1	0	0	0	0	0	0	0	0	17
21:30	0	17	5	0	0	0	0	0	0	0	0	0	0	22
21:45	0	14	0	0	1	0	0	0	0	0	0	0	0	15
22:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
22:15	0	8	0	0	1	0	0	0	0	0	0	0	0	9
22:30	0	12	2	0	0	0	0	0	0	0	0	0	0	14
22:45	0	9	2	0	0	0	0	0	0	0	0	0	0	11
23:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
23:15	0	6	1	0	0	0	0	0	0	0	0	0	0	7
23:30	0	2	2	0	0	0	0	0	0	0	0	0	0	4
23:45	0	7	2	0	0	0	0	0	0	0	0	0	0	9
<b>Totals</b>	<b>1</b>	<b>2437</b>	<b>537</b>	<b>16</b>	<b>92</b>	<b>2</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3093</b>
% of Totals	0%	79%	17%	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
AM Volumes	0	825	198	7
% AM	0%	27%	6%	0%
AM Peak Hour	07:15	07:30	08:00	10:45
Volume	259	51	4	10
PM Volumes	1	1612	339	9
% PM	0%	52%	11%	0%
PM Peak Hour	15:45	16:30	16:45	14:30
Volume	1	274	54	3
NOON 12-2				
Volume				
PM 4-6				
Volume				
Off Peak Volumes				
Volume				

**CLASSIFICATION**

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	7
00:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
00:30	0	6	3	0	1	0	0	0	0	0	0	0	0	10
00:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
01:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:15	0	2	3	0	0	0	0	0	0	0	0	0	0	5
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	7	2	0	0	0	0	0	0	0	0	0	0	9
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
03:30	0	7	1	0	1	0	0	0	0	0	0	0	0	9
03:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	4	15	0	0	0	0	1	0	0	0	0	0	5
04:15	0	5	0	1	1	0	0	0	0	0	0	0	0	7
04:30	0	10	3	1	1	0	0	0	0	0	0	0	0	15
04:45	0	20	1	0	3	0	0	0	0	0	0	0	0	24
05:00	0	13	3	1	0	0	0	0	0	0	0	0	0	17
05:15	0	15	2	0	2	0	0	0	0	0	0	0	0	19
05:30	0	31	4	0	0	0	0	0	0	0	0	0	0	35
05:45	0	39	10	0	1	0	0	0	0	0	0	0	0	50
06:00	0	25	10	0	1	1	0	0	0	0	0	0	0	37
06:15	0	29	3	0	1	0	0	0	0	0	0	0	0	33
06:30	0	35	8	1	1	0	0	0	0	0	0	0	0	45
06:45	0	50	8	0	1	0	0	0	0	0	0	0	0	59
07:00	0	55	17	0	4	4	0	0	0	0	0	0	0	76
07:15	0	93	23	0	4	0	0	0	0	0	0	0	0	120
07:30	0	142	15	0	2	0	0	0	0	0	0	0	0	159
07:45	0	183	27	0	6	0	0	0	0	0	0	0	0	216
08:00	0	113	26	1	3	0	0	0	0	0	0	0	0	143
08:15	0	84	24	1	5	0	0	2	0	0	0	0	0	116
08:30	0	66	18	1	4	0	0	0	0	0	0	0	0	89
08:45	0	74	15	1	4	0	0	0	0	0	0	0	0	94
09:00	0	41	8	1	3	0	0	0	0	0	0	0	0	53
09:15	0	41	13	0	6	6	1	0	0	0	0	0	0	63
09:30	0	52	10	0	3	0	0	0	0	0	0	0	0	65
09:45	0	52	11	0	4	1	0	1	0	0	0	0	0	69
10:00	0	50	7	0	6	0	0	0	0	0	0	0	0	63
10:15	0	65	16	1	2	0	0	2	0	0	0	0	0	86
10:30	0	58	16	0	1	0	0	0	0	0	0	0	0	75
10:45	0	49	16	0	6	0	0	0	0	0	0	0	0	71
11:00	0	51	15	0	1	0	0	0	0	0	0	0	0	68
11:15	0	51	12	1	6	0	0	1	0	0	0	0	0	71
11:30	0	59	17	0	2	0	0	0	0	0	0	0	0	78
11:45	0	45	19	0	3	0	0	2	0	0	0	0	0	69
12:00 PM	0	61	14	0	3	0	0	0	0	0	0	0	0	78
12:15	0	66	16	1	4	0	0	0	0	0	0	0	0	87
12:30	0	76	20	0	1	0	0	0	0	0	0	0	0	97
12:45	0	55	20	1	1	0	0	0	0	0	0	0	0	77
13:00	0	50	20	1	3	0	0	0	0	0	0	0	0	74
13:15	0	63	20	1	1	0	0	0	0	0	0	0	0	85
13:30	0	79	18	0	2	0	0	0	0	0	0	0	0	99
13:45	0	79	19	0	5	1	0	0	0	0	0	0	0	104
14:00	0	78	30	1	3	0	0	0	0	0	0	0	0	112
14:15	0	76	16	0	2	0	0	0	0	0	0	0	0	94
14:30	0	104	21	1	8	0	0	0	0	0	0	0	0	134
14:45	0	139	27	1	4	0	0	0	0	0	0	0	0	171
15:00	0	116	32	1	4	0	0	2	0	0	0	0	0	155
15:15	0	107	21	2	5	0	0	0	0	0	0	0	0	135
15:30	0	114	23	0	4	1	0	0	0	0	0	0	0	142
15:45	0	102	22	1	5	0	0	0	0	0	0	0	0	130
16:00	0	104	27	1	5	1	0	0	0	0	0	0	0	138
16:15	0	100	19	0	3	0	0	0	0	0	0	0	0	122
16:30	1	124	20	1	3	0	0	0	0	0	0	0	0	149
16:45	0	121	16	2	3	0	0	0	0	0	0	0	0	142
17:00	0	140	23	0	5	0	0	0	0	0	0	0	0	168
17:15	0	125	21	0	3	0	0	0	0	0	0	0	0	149
17:30	0	131	27	1	3	0	0	1	0	0	0	0	0	163
17:45	0	115	13	1	7	0	0	1	0	0	0	0	0	137
18:00	0	102	18	1	4	0	0	0	0	0	0	0	0	125
18:15	0	83	22	0	1	0	0	0	0	0	0	0	0	106
18:30	0	76	8	0	0	0	0	0	0	0	0	0	0	84
18:45	0	80	19	1	1	0	0	0	0	0	0	0	0	101
19:00	0	79	18	0	1	0	0	0	0	0	0	0	0	98
19:15	0	51	12	0	1	0	0	0	0	0	0	0	0	64
19:30	0	48	6	0	3	0	0	0	0	0	0	0	0	57
19:45	0	27	6	0	3	0	0	0	0	0	0	0	0	36
20:00	0	33	4	0	3	0	0	0	0	0	0	0	0	37
20:15	0	45	4	0	2	0	0	0	0	0	0	0	0	51
20:30	0	40	6	0	0	0	0	0	0	0	0	0	0	46
20:45	0	39	4	0	0	0	0	0	0	0	0	0	0	43
21:00	0	43	4	0	1	0	0	1	0	0	0	0	0	49
21:15	0	33	3	0	2	0	0	0	0	0	0	0	0	38
21:30	0	31	9	0	0	0	0	0	0	0	0	0	0	40
21:45	0	27	6	0	0	0	0	0	0	0	0	0	0	28
22:00	0	17	4	0	0	0	0	0	0	0	0	0	0	21
22:15	0	16	2	0	2	0	0	0	0	0	0	0	0	20
22:30	0	23	5	0	0	0	0	0	0	0	0	0	0	28
22:45	0	19	4	0	0	0	0	0	0	0	0	0	0	23
23:00	0	10	3	0	0	0	0	1	0	0	0	0	0	14
23:15	0	17	1	0	0	0	0	0	0	0	0	0	0	18
23:30	0	7	3	0	0	0	0	0	0	0	0	0	0	10
23:45	0	10	3	0	0	0	0	0	0	0	0	0	0	13
<b>Totals</b>	<b>1</b>	<b>5691</b>	<b>1068</b>	<b>30</b>	<b>198</b>	<b>8</b>	<b>16</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6367</b>
% of Totals	0%	79%	17%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%

AM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour
07:15	07:45	15:45	16:45
Volume	531	Volume	517
% AM	8%	% PM	9%
Volume	673	Volume	103
% AM	12%	% PM	1%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes	
Volume	390	Volume	1100	Volume	638
%	6%	%	17%	%	10%

# CLASSIFICATION

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005e

**East Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	13	3	0	0	0	0	0	0	0	0	0	0	16
01:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
02:00	0	7	5	0	0	0	0	0	0	0	0	0	0	12
03:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
04:00	0	26	1	1	3	0	0	0	0	0	0	0	0	31
05:00	0	66	15	1	1	0	0	0	0	0	0	0	0	83
06:00	0	68	16	0	2	0	0	0	0	0	0	0	0	86
07:00	0	238	44	0	10	0	0	0	0	0	0	0	0	292
08:00	0	177	38	0	8	0	0	1	0	0	0	0	0	224
09:00	0	98	25	1	9	1	0	0	0	0	0	0	0	134
10:00	0	121	19	0	8	0	0	2	0	0	0	0	0	150
11:00	0	107	25	1	3	0	0	2	0	0	0	0	0	138
12:00 PM	0	129	42	2	5	0	0	0	0	0	0	0	0	178
13:00	0	136	32	1	8	1	0	0	0	0	0	0	0	178
14:00	0	184	43	2	11	0	0	0	0	0	0	0	0	240
15:00	0	218	55	2	8	1	0	1	0	0	0	0	0	285
16:00	0	198	47	1	7	1	0	0	0	0	0	0	0	254
17:00	0	273	34	0	13	0	0	1	0	0	0	0	0	321
18:00	0	213	29	2	3	0	0	0	0	0	0	0	0	247
19:00	0	105	20	0	5	0	0	0	0	0	0	0	0	130
20:00	0	88	11	0	0	0	0	0	0	0	0	0	0	99
21:00	0	64	8	0	1	0	0	0	0	0	0	0	0	73
22:00	0	37	9	0	1	0	0	0	0	0	0	0	0	47
23:00	0	24	4	0	0	0	0	1	0	0	0	0	0	29
<b>Totals</b>		<b>2614</b>	<b>528</b>	<b>14</b>	<b>106</b>	<b>4</b>		<b>8</b>						<b>3274</b>
<b>% of Totals</b>		80%	16%	0%	3%	0%		0%						100%

2614 648 4 8  
1.0 1.5 2.0 3.0

**2614 972 8 24 3618**

<b>AM Volumes</b>	0	945	194	4	44	1	0	5	0	0	0	0	0	1193
<b>% AM</b>		29%	6%	0%	1%	0%		0%						36%
<b>AM Peak Hour</b>		07:00	07:00	04:00	07:00	09:00		10:00						07:00
<b>Volume</b>		238	44	1	10	1		2						292
<b>PM Volumes</b>	0	1669	334	10	62	3	0	3	0	0	0	0	0	2081
<b>% PM</b>		51%	10%	0%	2%	0%		0%						64%
<b>PM Peak Hour</b>		17:00	15:00	12:00	17:00	13:00		15:00						17:00
<b>Volume</b>		273	55	2	13	1		1						321

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes		
	Volume		%	Volume	%	Volume	%	Volume	%	
	516	↔	16%	356	↔	11%	575	↔	18%	
								1827	↔	56%

**Classification Definitions**

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers

# CLASSIFICATION

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005w

## West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	14	3	0	1	0	0	0	0	0	0	0	0	18
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
04:00	0	13	3	1	2	0	0	1	0	0	0	0	0	20
05:00	0	32	4	0	2	0	0	0	0	0	0	0	0	38
06:00	0	71	13	1	2	1	0	0	0	0	0	0	0	88
07:00	0	235	38	0	6	0	0	0	0	0	0	0	0	279
08:00	0	160	45	4	8	0	0	1	0	0	0	0	0	218
09:00	0	88	17	0	7	1	0	1	0	0	0	0	0	114
10:00	0	101	36	1	7	0	0	0	0	0	0	0	0	145
11:00	0	99	38	0	9	0	0	2	0	0	0	0	0	148
12:00 PM	0	129	28	0	4	0	0	0	0	0	0	0	0	161
13:00	0	135	45	1	3	0	0	0	0	0	0	0	0	184
14:00	0	213	51	1	6	0	0	0	0	0	0	0	0	271
15:00	0	221	43	2	10	0	0	1	0	0	0	0	0	277
16:00	1	251	35	3	7	0	0	0	0	0	0	0	0	297
17:00	0	238	50	2	5	0	0	1	0	0	0	0	0	296
18:00	0	128	38	0	3	0	0	0	0	0	0	0	0	169
19:00	0	100	22	0	3	0	0	0	0	0	0	0	0	125
20:00	0	69	7	0	2	0	0	0	0	0	0	0	0	78
21:00	0	70	8	0	3	0	0	1	0	0	0	0	0	82
22:00	0	38	6	0	1	0	0	0	0	0	0	0	0	45
23:00	0	20	6	0	0	0	0	0	0	0	0	0	0	26
<b>Totals</b>	<b>1</b>	<b>2437</b>	<b>537</b>	<b>16</b>	<b>92</b>	<b>2</b>		<b>8</b>						<b>3093</b>
% of Totals	0%	79%	17%	1%	3%	0%		0%						100%

AM Volumes	0	825	198	7	45	2	0	5	0	0	0	0	0	1082
% AM		27%	6%	0%	1%	0%		0%						35%
AM Peak Hour		07:00	08:00	08:00	11:00	06:00		11:00						07:00
Volume		235	45	4	9	1		2						279
PM Volumes	1	1612	339	9	47	0	0	3	0	0	0	0	0	2011
% PM	0%	52%	11%	0%	2%			0%						65%
PM Peak Hour	16:00	16:00	14:00	16:00	15:00			15:00						16:00
Volume	1	251	51	3	10			1						297

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	497	16%	345	11%	593	19%	1658	54%

### Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi-Trailer

# CLASSIFICATION

8th St Bet. Baker Ave & Vineyard Ave

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_005

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	27	6	0	1	0	0	0	0	0	0	0	0	34
01:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
02:00	0	12	5	0	0	0	0	0	0	0	0	0	0	17
03:00	0	16	2	0	1	0	0	0	0	0	0	0	0	19
04:00	0	39	4	2	5	0	0	1	0	0	0	0	0	51
05:00	0	98	19	1	3	0	0	0	0	0	0	0	0	121
06:00	0	139	29	1	4	1	0	0	0	0	0	0	0	174
07:00	0	473	82	0	16	0	0	0	0	0	0	0	0	571
08:00	0	337	83	4	16	0	0	2	0	0	0	0	0	442
09:00	0	186	42	1	16	2	0	1	0	0	0	0	0	248
10:00	0	222	55	1	15	0	0	2	0	0	0	0	0	295
11:00	0	206	63	1	12	0	0	4	0	0	0	0	0	286
12:00 PM	0	258	70	2	9	0	0	0	0	0	0	0	0	339
13:00	0	271	77	2	11	1	0	0	0	0	0	0	0	362
14:00	0	397	94	3	17	0	0	0	0	0	0	0	0	511
15:00	0	439	98	4	18	1	0	2	0	0	0	0	0	562
16:00	1	449	82	4	14	1	0	0	0	0	0	0	0	551
17:00	0	511	84	2	18	0	0	2	0	0	0	0	0	617
18:00	0	341	67	2	6	0	0	0	0	0	0	0	0	416
19:00	0	205	42	0	8	0	0	0	0	0	0	0	0	255
20:00	0	157	18	0	2	0	0	0	0	0	0	0	0	177
21:00	0	134	16	0	4	0	0	1	0	0	0	0	0	155
22:00	0	75	15	0	2	0	0	0	0	0	0	0	0	92
23:00	0	44	10	0	0	0	0	1	0	0	0	0	0	55
<b>Totals</b>	<b>1</b>	<b>5051</b>	<b>1065</b>	<b>30</b>	<b>198</b>	<b>6</b>		<b>16</b>						<b>6367</b>
% of Totals	0%	79%	17%	0%	3%	0%		0%						100%

AM Volumes	0	1770	392	11	89	3	0	10	0	0	0	0	0	2275
% AM		28%	6%	0%	1%	0%		0%						36%
AM Peak Hour		07:00	08:00	08:00	07:00	09:00		11:00						07:00
Volume		473	83	4	16	2		4						571
PM Volumes	1	3281	673	19	109	3	0	6	0	0	0	0	0	4092
% PM	0%	52%	11%	0%	2%	0%		0%						64%
PM Peak Hour	16:00	17:00	15:00	15:00	15:00	13:00		15:00						17:00
Volume	1	511	98	4	18	1		2						617

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1013	↔ 16%	701	↔ 11%	1168	↔ 18%	3485	↔ 55%

## Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi Trailer

DAILY TOTALS					NB	SB	EB	WB	To			
					0	0	3,274	3,093	6,3			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	0	0	3	4	7	12:00	0	0	46	32	78	
00:15	0	0	5	5	10	12:15	0	0	44	43	87	
00:30	0	0	2	8	10	12:30	0	0	48	49	97	
00:45	0	0	6	16	1	12:45	0	0	40	178	37	161
01:00	0	0	3	1	4	13:00	0	0	41	33	74	
01:15	0	0	1	0	1	13:15	0	0	39	46	85	
01:30	0	0	3	1	4	13:30	0	0	49	50	99	
01:45	0	0	4	11	4	13:45	0	0	49	178	55	184
02:00	0	0	1	1	2	14:00	0	0	53	59	112	
02:15	0	0	4	1	5	14:15	0	0	46	48	94	
02:30	0	0	0	1	1	14:30	0	0	52	82	134	
02:45	0	0	7	12	2	14:45	0	0	89	240	82	271
03:00	0	0	0	1	1	15:00	0	0	77	78	155	
03:15	0	0	2	0	2	15:15	0	0	68	67	135	
03:30	0	0	7	2	9	15:30	0	0	72	70	142	
03:45	0	0	7	16	0	15:45	0	0	68	285	62	277
04:00	0	0	4	1	5	16:00	0	0	69	69	138	
04:15	0	0	4	3	7	16:15	0	0	64	58	122	
04:30	0	0	8	7	15	16:30	0	0	66	83	149	
04:45	0	0	15	31	9	16:45	0	0	55	254	87	297
05:00	0	0	7	10	17	17:00	0	0	82	86	168	
05:15	0	0	14	5	19	17:15	0	0	73	76	149	
05:30	0	0	26	9	35	17:30	0	0	83	80	163	
05:45	0	0	36	83	14	17:45	0	0	83	321	54	296
06:00	0	0	18	19	37	18:00	0	0	71	54	125	
06:15	0	0	15	18	33	18:15	0	0	63	43	106	
06:30	0	0	21	24	45	18:30	0	0	50	34	84	
06:45	0	0	32	86	27	18:45	0	0	63	247	38	169
07:00	0	0	41	35	76	19:00	0	0	54	44	98	
07:15	0	0	63	57	120	19:15	0	0	31	33	64	
07:30	0	0	73	86	159	19:30	0	0	32	25	57	
07:45	0	0	115	292	101	19:45	0	0	13	130	23	125
08:00	0	0	73	70	143	20:00	0	0	22	15	37	
08:15	0	0	67	49	116	20:15	0	0	27	24	51	
08:30	0	0	33	56	89	20:30	0	0	26	20	46	
08:45	0	0	51	224	43	20:45	0	0	24	99	19	78
09:00	0	0	27	26	53	21:00	0	0	21	28	49	
09:15	0	0	32	29	61	21:15	0	0	21	17	38	
09:30	0	0	37	28	65	21:30	0	0	18	22	40	
09:45	0	0	38	134	31	21:45	0	0	13	73	15	82
10:00	0	0	32	31	63	22:00	0	0	10	11	21	
10:15	0	0	48	38	86	22:15	0	0	11	9	20	
10:30	0	0	41	34	75	22:30	0	0	14	14	28	
10:45	0	0	29	150	42	22:45	0	0	12	47	11	45
11:00	0	0	30	38	68	23:00	0	0	8	6	14	
11:15	0	0	29	42	71	23:15	0	0	11	7	18	
11:30	0	0	41	37	78	23:30	0	0	6	4	10	
11:45	0	0	38	138	31	23:45	0	0	4	29	9	26
<b>TOTALS</b>			1193	1082	<b>2275</b>	<b>TOTALS</b>			2081	2011		
<b>SPLIT %</b>			52.4%	47.6%	<b>35.7%</b>	<b>SPLIT %</b>			50.9%	49.1%		

DAILY TOTALS					NB	SB	EB	WB	To	
					0	0	3,274	3,093	6,3	
AM Peak Hour			07:30	07:15	07:15	PM Peak Hour			17:00	16:30
AM Pk Volume			328	314	638	PM Pk Volume			321	332
Pk Hr Factor			0.713	0.777	0.738	Pk Hr Factor			0.967	0.954
7 - 9 Volume	0	0	516	497	1013	4 - 6 Volume	0	0	575	593
7 - 9 Peak Hour			07:30	07:15	07:15	4 - 6 Peak Hour			17:00	16:30
7 - 9 Pk Volume	0	0	328	314	638	4 - 6 Pk Volume	0	0	321	332
Pk Hr Factor	0.000	0.000	0.713	0.777	0.738	Pk Hr Factor	0.000	0.000	0.967	0.954









**CLASSIFICATION**

Vineyard Ave Bet. Foothill Blvd & Arrow Hwy

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_006

Summary

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	38	6	0	1	0	0	0	0	0	0	0	0	45
00:15	0	27	3	0	0	0	0	0	0	0	0	0	0	30
00:30	0	32	4	0	0	0	0	0	0	0	0	0	0	36
00:45	0	27	3	0	0	0	0	0	0	0	0	0	0	30
01:00	0	24	3	0	0	0	0	0	0	0	0	0	0	27
01:15	0	17	3	0	0	0	0	0	0	0	0	0	0	20
01:30	0	13	2	0	0	0	0	0	0	0	0	0	0	15
01:45	0	19	2	0	0	0	0	0	0	0	0	0	0	21
02:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
02:15	0	13	2	0	0	0	0	0	0	0	0	0	0	15
02:30	0	14	3	0	1	0	0	0	0	0	0	0	0	18
02:45	0	13	0	0	1	0	0	0	0	0	0	0	0	14
03:00	0	18	5	1	0	0	0	0	0	0	0	0	0	24
03:15	0	20	5	0	0	0	0	0	0	0	0	0	0	25
03:30	0	26	2	0	0	0	0	0	1	0	0	0	0	29
03:45	0	26	8	0	0	0	0	0	0	0	0	0	0	34
04:00	0	32	6	0	0	0	0	0	0	0	0	0	0	38
04:15	0	49	13	0	2	0	0	0	0	0	0	0	0	64
04:30	0	57	16	0	2	0	0	0	0	0	0	0	0	75
04:45	0	70	18	0	2	0	0	0	0	0	0	0	0	90
05:00	0	59	16	1	3	0	0	0	0	0	0	0	0	79
05:15	0	83	22	1	2	1	0	0	0	0	0	0	0	109
05:30	0	100	24	1	3	0	0	0	0	0	0	0	0	128
05:45	0	126	24	0	6	0	0	0	1	0	0	0	0	157
06:00	0	128	28	1	5	0	0	1	0	0	0	0	0	163
06:15	0	148	35	1	11	0	0	0	0	0	0	0	0	195
06:30	0	158	33	1	7	0	0	0	0	0	0	0	0	199
06:45	0	216	48	1	7	0	0	0	0	0	0	0	0	272
07:00	0	252	51	4	7	0	0	0	0	0	0	0	0	314
07:15	0	288	55	0	11	0	1	0	2	0	0	0	0	357
07:30	0	362	80	2	11	0	0	0	0	0	0	0	0	455
07:45	0	459	91	2	13	1	0	0	0	0	0	0	0	566
08:00	0	369	75	1	11	0	0	0	0	0	0	0	0	456
08:15	0	296	69	3	11	0	0	0	0	0	0	0	0	379
08:30	0	269	52	1	10	0	0	0	0	0	0	0	0	332
08:45	0	231	51	0	7	0	0	0	1	0	0	0	0	290
09:00	0	205	47	3	4	0	0	0	0	0	0	0	0	259
09:15	0	225	46	2	5	0	0	1	0	0	0	0	0	279
09:30	0	236	51	1	6	1	0	0	0	0	0	0	0	295
09:45	0	243	48	1	10	0	0	0	0	0	0	0	0	302
10:00	0	230	49	1	10	0	0	1	0	0	0	0	0	291
10:15	0	191	45	3	11	1	0	1	0	0	0	0	0	252
10:30	0	212	61	3	7	1	0	0	0	0	0	0	0	284
10:45	0	199	47	2	8	0	0	0	0	0	0	0	0	256
11:00	0	222	53	1	6	0	0	0	0	0	0	0	0	281
11:15	0	218	52	1	8	0	0	0	0	0	0	0	0	279
11:30	0	243	53	0	7	0	0	0	1	0	0	0	0	304
11:45	0	247	55	1	5	2	0	0	0	0	0	0	0	310
12:00 PM	0	301	65	1	10	0	0	0	0	0	0	0	0	377
12:15	0	244	62	2	4	0	0	0	0	0	0	0	0	312
12:30	0	277	58	1	10	0	0	0	0	0	0	0	0	346
12:45	0	270	62	0	8	2	0	0	0	0	0	0	0	342
13:00	0	256	54	0	9	1	0	0	0	0	0	0	0	320
13:15	0	232	49	2	5	0	0	0	0	0	0	0	0	288
13:30	0	276	55	2	11	0	0	0	0	0	0	0	0	344
13:45	0	277	56	1	8	0	0	0	0	0	0	0	0	342
14:00	0	275	56	0	8	0	0	0	0	0	0	0	0	339
14:15	0	282	50	1	9	0	1	0	0	0	0	0	0	343
14:30	0	344	72	1	10	0	0	0	0	0	0	0	0	427
14:45	1	405	79	0	12	0	0	0	0	0	0	0	0	497
15:00	0	416	76	1	11	0	0	0	0	0	0	0	0	504
15:15	0	381	85	1	10	0	0	1	0	0	0	0	0	478
15:30	0	364	69	1	9	0	0	0	0	0	0	0	0	443
15:45	0	361	75	0	14	0	0	0	0	0	0	0	0	450
16:00	0	318	62	2	13	0	0	0	0	0	0	0	0	395
16:15	0	362	75	1	9	0	0	0	0	0	0	0	0	447
16:30	0	377	68	1	11	0	0	0	0	0	0	0	0	458
16:45	1	355	70	1	8	0	0	0	0	0	0	0	0	435
17:00	0	368	69	1	8	2	0	0	0	0	0	0	0	448
17:15	1	374	59	0	7	0	0	0	0	0	0	0	0	441
17:30	0	424	78	1	10	0	0	0	0	0	0	0	0	513
17:45	0	373	67	0	8	0	0	0	0	0	0	0	0	448
18:00	0	348	65	1	6	0	0	1	1	0	0	0	0	422
18:15	0	323	65	0	8	0	0	0	0	0	0	0	0	396
18:30	0	302	55	1	9	0	0	0	0	0	0	0	0	367
18:45	0	311	47	0	6	0	0	0	0	0	0	0	0	364
19:00	0	286	51	1	7	0	0	0	0	0	0	0	0	345
19:15	0	269	44	1	7	0	0	0	0	0	0	0	0	321
19:30	0	241	43	0	5	1	0	0	0	0	0	0	0	290
19:45	0	240	36	1	5	0	0	0	0	0	0	0	0	282
20:00	0	202	48	1	3	0	0	0	0	0	0	0	0	254
20:15	0	213	38	1	4	0	0	0	0	0	0	0	0	256
20:30	0	176	30	0	3	0	0	0	0	0	0	0	0	209
20:45	0	182	35	0	3	0	0	0	0	0	0	0	0	220
21:00	0	200	27	0	3	0	0	0	0	0	0	0	0	230
21:15	1	171	29	0	4	0	0	1	0	0	0	0	0	206
21:30	1	139	20	0	0	0	0	0	0	0	0	0	0	160
21:45	0	128	19	0	1	0	0	0	0	0	0	0	0	148
22:00	0	112	17	0	1	0	0	0	0	0	0	0	0	130
22:15	0	113	21	0	1	0	0	0	0	0	0	0	0	135
22:30	0	97	15	0	2	0	0	0	0	0	0	0	0	114
22:45	0	94	18	0	1	0	0	0	0	0	0	0	0	113
23:00	0	66	13	0	1	0	0	0	0	0	0	0	0	80
23:15	0	70	13	0	2	0	0	0	0	0	0	0	0	85
23:30	0	45	8	0	1	0	0	0	0	0	0	0	0	54
23:45	0	45	4	0	1	0	0	0	0	0	0	0	0	50
<b>Totals</b>	<b>5</b>	<b>19054</b>	<b>3798</b>	<b>68</b>	<b>527</b>	<b>14</b>	<b>2</b>	<b>7</b>	<b>7</b>					<b>23482</b>
% of Totals	0%	81%	16%	0%	2%	0%	0%	0%	0%					100%

AM Peak Hour	Volume	%	NOON 12-2	Volume	%	PM 4-6	Volume	%	Off Peak Volumes	Volume	%
AM Peak Hour	1486	31%	NOON 12-2	14	0%	PM 4-6	7	0%	Off Peak Volumes	1856	8%
PM Peak Hour	2332	50%	NOON 12-2	14	0%	PM 4-6	7	0%	Off Peak Volumes	1445	6%
Off Peak Volumes	1566	34%	NOON 12-2	3	0%	PM 4-6	1	0%	Off Peak Volumes	1922	8%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
Volume	1486	14	7	1856
%	31%	0%	0%	8%

# CLASSIFICATION

Vineyard Ave Bet. Foothill Blvd & Arrow Hwy

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_006n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	68	8	0	0	0	0	0	0	0	0	0	0	76
01:00	0	43	4	0	0	0	0	0	0	0	0	0	0	47
02:00	0	28	4	0	1	0	0	0	0	0	0	0	0	33
03:00	0	39	2	1	0	0	0	0	1	0	0	0	0	43
04:00	0	84	12	0	1	0	0	0	0	0	0	0	0	97
05:00	0	157	25	1	3	1	0	0	0	0	0	0	0	187
06:00	0	274	47	1	4	0	0	0	0	0	0	0	0	326
07:00	0	613	95	4	9	1	0	0	2	0	0	0	0	724
08:00	0	552	81	1	7	0	0	0	0	0	0	0	0	641
09:00	0	433	68	4	9	1	0	1	0	0	0	0	0	516
10:00	0	424	78	6	10	2	0	1	0	0	0	0	0	521
11:00	0	505	84	1	4	0	0	0	1	0	0	0	0	595
12:00 PM	0	554	99	1	13	0	0	0	0	0	0	0	0	667
13:00	0	547	83	2	8	0	0	0	0	0	0	0	0	640
14:00	0	718	115	0	14	0	0	0	0	0	0	0	0	847
15:00	0	833	137	2	16	0	0	0	0	0	0	0	0	988
16:00	0	875	142	3	13	0	0	0	0	0	0	0	0	1033
17:00	0	936	135	1	10	0	0	0	0	0	0	0	0	1082
18:00	0	723	97	1	11	0	0	0	0	0	0	0	0	832
19:00	0	542	72	1	8	1	0	0	0	0	0	0	0	624
20:00	0	378	58	1	5	0	0	0	0	0	0	0	0	442
21:00	0	325	38	0	3	0	0	1	0	0	0	0	0	367
22:00	0	233	29	0	2	0	0	0	0	0	0	0	0	264
23:00	0	115	12	0	0	0	0	0	0	0	0	0	0	127
<b>Totals</b>		<b>9999</b>	<b>1525</b>	<b>31</b>	<b>151</b>	<b>6</b>		<b>3</b>	<b>4</b>					<b>11719</b>
<b>% of Totals</b>		85%	13%	0%	1%	0%		0%	0%					100%

9999 1707 6 7  
1.0 1.5 2.0 3.0

9999 2561 12 21 12593

<b>AM Volumes</b>	0	3220	508	19	48	5	0	2	4	0	0	0	0	3806
<b>% AM</b>		27%	4%	0%	0%	0%		0%	0%					32%
<b>AM Peak Hour</b>		07:00	07:00	10:00	10:00	10:00		09:00	07:00					07:00
<b>Volume</b>		613	95	6	10	2		1	2					724
<b>PM Volumes</b>	0	6779	1017	12	103	1	0	1	0	0	0	0	0	7913
<b>% PM</b>		58%	9%	0%	1%	0%		0%						68%
<b>PM Peak Hour</b>		17:00	16:00	16:00	15:00	19:00		21:00						17:00
<b>Volume</b>		936	142	3	16	1		1						1082

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes		
	Volume		%	Volume	%	Volume	%	Volume	%	
	1365	↔	12%	1307	↔	11%	2115	↔	18%	
								6932	↔	59%

**Classification Definitions**

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers



# CLASSIFICATION

Vineyard Ave Bet. Foothill Blvd & Arrow Hwy

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_006

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	124	16	0	1	0	0	0	0	0	0	0	0	141
01:00	0	73	10	0	0	0	0	0	0	0	0	0	0	83
02:00	0	59	7	0	2	0	0	0	0	0	0	0	0	68
03:00	0	90	20	1	0	0	0	0	1	0	0	0	0	112
04:00	0	208	53	0	6	0	0	0	0	0	0	0	0	267
05:00	0	368	86	3	14	1	0	0	1	0	0	0	0	473
06:00	0	650	144	4	30	0	0	1	0	0	0	0	0	829
07:00	0	1361	277	8	42	1	1	0	2	0	0	0	0	1692
08:00	0	1165	247	5	39	0	0	0	1	0	0	0	0	1457
09:00	0	909	192	7	25	1	0	1	0	0	0	0	0	1135
10:00	0	832	202	9	36	2	0	2	0	0	0	0	0	1083
11:00	0	930	212	3	26	2	0	0	1	0	0	0	0	1174
12:00 PM	0	1092	247	4	32	2	0	0	0	0	0	0	0	1377
13:00	0	1041	214	5	33	1	0	0	0	0	0	0	0	1294
14:00	1	1306	257	2	39	0	1	0	0	0	0	0	0	1606
15:00	0	1522	305	3	44	0	0	1	0	0	0	0	0	1875
16:00	1	1412	275	5	41	1	0	0	0	0	0	0	0	1735
17:00	1	1539	273	2	33	2	0	0	0	0	0	0	0	1850
18:00	0	1284	232	2	29	0	0	1	1	0	0	0	0	1549
19:00	0	1036	174	3	24	1	0	0	0	0	0	0	0	1238
20:00	0	773	151	2	13	0	0	0	0	0	0	0	0	939
21:00	2	638	95	0	8	0	0	1	0	0	0	0	0	744
22:00	0	416	71	0	5	0	0	0	0	0	0	0	0	492
23:00	0	226	38	0	5	0	0	0	0	0	0	0	0	269
<b>Totals</b>	<b>5</b>	<b>19054</b>	<b>3798</b>	<b>68</b>	<b>527</b>	<b>14</b>	<b>2</b>	<b>7</b>	<b>7</b>					<b>23482</b>
% of Totals	0%	81%	16%	0%	2%	0%	0%	0%	0%					100%

AM Volumes	0	6769	1466	40	221	7	1	4	6	0	0	0	0	8514
% AM		29%	6%	0%	1%	0%	0%	0%	0%					36%
AM Peak Hour		07:00	07:00	10:00	07:00	10:00	07:00	10:00	07:00					07:00
Volume		1361	277	9	42	2	1	2	2					1692
PM Volumes	5	12285	2332	28	306	7	1	3	1	0	0	0	0	14968
% PM	0%	52%	10%	0%	1%	0%	0%	0%	0%					64%
PM Peak Hour	21:00	17:00	15:00	13:00	15:00	12:00	14:00	15:00	18:00					15:00
Volume	2	1539	305	5	44	2	1	1	1					1875

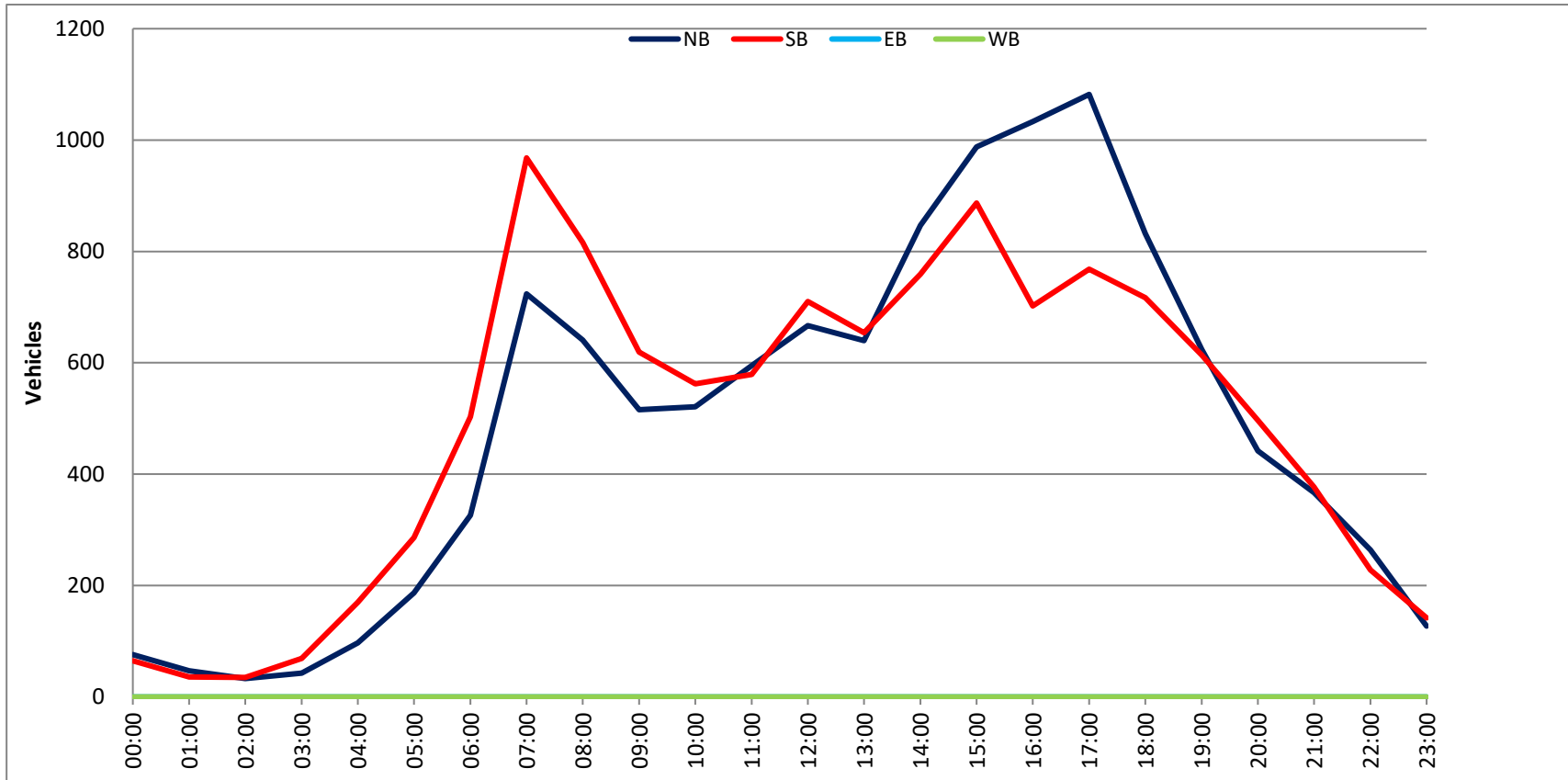
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	3149	↔ 13%	2671	↔ 11%	3585	↔ 15%	14077	↔ 60%

## Classification Definitions

1 Motorcycles      4 Buses      7 Two-Wheel Single-Track      10 Two-Wheel Single-Track      13 Two-Wheel Multi-Track

DAILY TOTALS					NB	SB	EB	WB	To						
					11,719	11,763	0	0	23,						
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO				
00:00	22	23	0	0	45	12:00	200	177	0	0	377				
00:15	17	13	0	0	30	12:15	155	157	0	0	312				
00:30	21	15	0	0	36	12:30	146	200	0	0	346				
00:45	16	76	14	65	0	0	166	667	176	710	0	342			
01:00	19	8	0	0	27	13:00	152	168	0	0	320				
01:15	12	8	0	0	20	13:15	147	141	0	0	288				
01:30	6	9	0	0	15	13:30	176	168	0	0	344				
01:45	10	47	11	36	0	0	165	640	177	654	0	342			
02:00	10	11	0	0	21	14:00	168	171	0	0	339				
02:15	8	7	0	0	15	14:15	179	164	0	0	343				
02:30	9	9	0	0	18	14:30	225	202	0	0	427				
02:45	6	33	8	35	0	0	275	847	222	759	0	497			
03:00	9	15	0	0	24	15:00	262	242	0	0	504				
03:15	9	16	0	0	25	15:15	245	233	0	0	478				
03:30	14	15	0	0	29	15:30	234	209	0	0	443				
03:45	11	43	23	69	0	0	247	988	203	887	0	450			
04:00	15	23	0	0	38	16:00	233	162	0	0	395				
04:15	26	38	0	0	64	16:15	258	189	0	0	447				
04:30	22	53	0	0	75	16:30	275	183	0	0	458				
04:45	34	97	56	170	0	0	267	1033	168	702	0	435			
05:00	35	44	0	0	79	17:00	273	175	0	0	448				
05:15	40	69	0	0	109	17:15	263	178	0	0	441				
05:30	47	81	0	0	128	17:30	281	232	0	0	513				
05:45	65	187	92	286	0	0	157	473	17:45	265	1082	183	768	0	448
06:00	60	103	0	0	163	18:00	247	175	0	0	422				
06:15	78	117	0	0	195	18:15	206	190	0	0	396				
06:30	73	126	0	0	199	18:30	191	176	0	0	367				
06:45	115	326	157	503	0	0	272	829	18:45	188	832	176	717	0	364
07:00	118	196	0	0	314	19:00	170	175	0	0	345				
07:15	143	214	0	0	357	19:15	165	156	0	0	321				
07:30	226	229	0	0	455	19:30	133	157	0	0	290				
07:45	237	724	329	968	0	0	566	1692	19:45	156	624	126	614	0	282
08:00	167	289	0	0	456	20:00	120	134	0	0	254				
08:15	179	200	0	0	379	20:15	118	138	0	0	256				
08:30	148	184	0	0	332	20:30	102	107	0	0	209				
08:45	147	641	143	816	0	0	290	1457	20:45	102	442	118	497	0	220
09:00	120	139	0	0	259	21:00	125	105	0	0	230				
09:15	130	149	0	0	279	21:15	96	110	0	0	206				
09:30	122	173	0	0	295	21:30	75	85	0	0	160				
09:45	144	516	158	619	0	0	302	1135	21:45	71	367	77	377	0	148
10:00	130	161	0	0	291	22:00	65	65	0	0	130				
10:15	122	130	0	0	252	22:15	74	61	0	0	135				
10:30	139	145	0	0	284	22:30	62	52	0	0	114				
10:45	130	521	126	562	0	0	256	1083	22:45	63	264	50	228	0	113
11:00	146	135	0	0	281	23:00	41	39	0	0	80				
11:15	145	134	0	0	279	23:15	42	43	0	0	85				
11:30	148	156	0	0	304	23:30	24	30	0	0	54				
11:45	156	595	154	579	0	0	310	1174	23:45	20	127	30	142	0	50
<b>TOTALS</b>	<b>3806</b>	<b>4708</b>			<b>8514</b>	<b>TOTALS</b>	<b>7913</b>	<b>7055</b>							
<b>SPLIT %</b>	<b>44.7%</b>	<b>55.3%</b>			<b>36.3%</b>	<b>SPLIT %</b>	<b>52.9%</b>	<b>47.1%</b>							

DAILY TOTALS					NB	SB	EB	WB	To	
					11,719	11,763	0	0	23,	
AM Peak Hour	07:30	07:15			07:30	PM Peak Hour	16:45	14:45		
AM Pk Volume	809	1061			1856	PM Pk Volume	1084	906		
Pk Hr Factor	0.853	0.806			0.820	Pk Hr Factor	0.964	0.936		
7 - 9 Volume	1365	1784	0	0	3149	4 - 6 Volume	2115	1470	0	0
7 - 9 Peak Hour	07:30	07:15			07:30	4 - 6 Peak Hour	16:45	17:00		
7 - 9 Pk Volume	809	1061	0	0	1856	4 - 6 Pk Volume	1084	768	0	0
Pk Hr Factor	0.853	0.806	0.000	0.000	0.820	Pk Hr Factor	0.964	0.828	0.000	0.000









Prepared by National Data & Surveying Services  
**CLASSIFICATION**  
 Vineyard Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
 Date: 3/12/2019

City: Rancho Cucamonga  
 Project #: CA19\_6035\_007

Summary

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	38	7	0	0	0	0	0	0	0	0	0	0	45
00:15	0	28	6	0	1	0	0	0	0	0	0	0	0	35
00:30	0	37	9	0	1	0	0	0	0	0	0	0	0	47
00:45	0	32	4	0	0	0	0	0	0	1	0	0	0	37
01:00	0	25	6	0	0	0	0	0	0	0	0	0	0	31
01:15	0	22	4	0	1	0	0	0	0	0	0	0	0	27
01:30	0	15	3	0	0	0	0	0	0	0	0	0	0	18
01:45	0	25	2	0	0	0	0	0	0	0	0	0	0	27
02:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22
02:15	0	15	2	0	0	0	0	0	0	0	0	0	0	17
02:30	0	14	3	0	0	0	0	0	0	0	0	0	0	17
02:45	0	21	5	0	0	0	0	0	0	0	0	0	0	26
03:00	0	25	5	0	0	0	0	0	0	0	0	0	0	30
03:15	0	25	4	0	1	0	0	0	0	0	0	0	0	30
03:30	0	25	6	0	0	0	0	0	0	0	0	0	0	31
03:45	0	29	5	2	0	0	0	0	0	0	0	0	0	36
04:00	0	34	8	3	3	0	0	0	0	0	0	0	0	45
04:15	0	43	15	0	3	0	0	0	1	0	0	0	0	62
04:30	0	51	12	0	4	0	0	0	0	0	0	0	0	67
04:45	0	59	17	0	4	0	0	0	0	0	0	0	0	80
05:00	0	73	14	1	4	0	0	0	0	0	0	0	0	92
05:15	0	82	23	3	4	0	0	0	0	0	1	0	0	113
05:30	0	113	21	1	4	0	0	1	0	0	0	0	0	141
05:45	0	121	25	2	5	0	0	0	1	0	0	0	0	155
06:00	0	137	30	1	6	0	0	1	1	0	0	0	0	176
06:15	0	143	40	0	11	0	0	1	0	0	0	0	0	195
06:30	0	158	38	2	9	0	0	0	1	0	0	0	0	208
06:45	0	204	40	1	11	0	0	0	0	0	0	0	0	256
07:00	0	229	42	3	11	0	0	0	0	0	0	0	0	285
07:15	0	250	53	1	9	0	1	0	0	0	0	0	0	314
07:30	0	340	70	2	13	2	0	0	0	0	0	0	0	427
07:45	0	346	71	1	19	0	0	0	0	0	0	0	0	437
08:00	1	338	82	2	15	1	0	0	0	0	0	0	0	439
08:15	0	260	61	1	17	0	0	2	1	0	0	0	0	342
08:30	0	212	48	3	16	0	0	0	1	0	0	0	0	280
08:45	0	211	59	1	11	0	0	0	0	0	0	0	0	282
09:00	0	191	39	4	8	0	0	0	0	0	0	0	0	242
09:15	0	189	41	0	7	0	0	0	0	0	0	0	0	237
09:30	0	209	48	1	11	0	0	0	0	0	0	0	0	269
09:45	0	213	53	2	10	0	0	1	0	0	0	0	0	279
10:00	0	208	49	1	11	1	0	0	0	0	0	0	0	270
10:15	0	171	40	0	13	0	0	1	0	0	0	0	0	225
10:30	0	175	54	1	7	0	0	0	1	0	1	0	0	239
10:45	0	177	43	2	10	0	0	0	0	0	0	0	0	232
11:00	0	180	40	2	6	0	0	0	0	2	0	0	0	230
11:15	1	193	41	1	12	0	0	0	0	0	0	0	0	248
11:30	0	220	51	1	9	0	0	0	1	0	0	0	0	282
11:45	0	244	50	1	10	2	0	0	1	0	0	0	0	308
12:00 PM	0	216	60	2	9	0	0	0	0	0	0	0	0	287
12:15	0	204	50	2	9	0	0	0	0	0	0	0	0	265
12:30	0	238	55	0	11	0	0	1	0	0	0	0	0	305
12:45	0	200	61	0	7	0	0	0	0	0	0	0	0	268
13:00	0	198	50	3	14	0	0	1	0	0	0	0	0	266
13:15	0	193	57	2	10	0	0	0	2	0	0	0	0	264
13:30	0	242	53	3	14	0	0	1	0	0	0	0	0	313
13:45	0	245	59	1	10	0	0	2	0	0	0	0	0	317
14:00	0	230	55	2	15	1	0	1	0	0	0	0	0	304
14:15	0	256	53	0	10	0	0	1	0	0	0	0	0	320
14:30	0	251	71	1	10	0	0	0	1	0	0	0	0	344
14:45	0	319	70	1	15	0	0	0	0	0	0	0	0	405
15:00	0	351	84	1	18	0	0	0	0	0	0	0	0	454
15:15	0	341	80	0	16	0	0	1	0	0	0	0	0	438
15:30	0	311	70	2	12	0	0	0	0	0	0	0	0	395
15:45	0	307	75	0	16	1	0	0	0	0	0	0	0	399
16:00	0	270	60	3	15	0	0	0	0	0	0	0	0	348
16:15	0	307	67	0	14	1	0	0	0	0	1	0	0	390
16:30	0	347	75	1	16	0	0	1	0	0	0	0	0	442
16:45	0	304	64	0	11	0	0	0	0	0	0	0	0	379
17:00	0	339	74	1	13	0	0	0	0	0	0	0	0	427
17:15	0	304	77	1	11	1	0	0	2	0	0	0	0	396
17:30	1	363	78	1	16	0	0	0	0	0	1	0	0	460
17:45	0	344	60	0	14	0	0	0	0	0	0	0	0	418
18:00	0	317	68	1	12	0	0	0	1	0	0	0	0	399
18:15	0	259	54	0	8	0	0	0	0	0	0	0	0	321
18:30	0	296	53	1	9	0	0	0	0	0	0	0	0	359
18:45	0	234	42	0	9	0	0	0	0	0	0	0	0	285
19:00	0	244	46	1	8	0	0	0	0	0	0	0	0	299
19:15	0	222	47	1	9	0	0	0	0	0	0	0	0	279
19:30	0	206	40	0	6	0	0	0	0	0	0	0	0	252
19:45	0	190	40	2	8	0	0	0	0	0	0	0	0	240
20:00	0	194	39	1	6	0	0	0	0	0	0	0	0	240
20:15	0	183	34	1	6	0	0	0	0	0	0	0	0	224
20:30	0	152	31	1	3	0	0	0	0	0	0	0	0	187
20:45	0	175	28	0	5	0	0	0	0	0	0	0	0	208
21:00	0	162	29	0	5	0	0	0	0	0	0	0	0	196
21:15	0	157	27	0	3	0	0	0	0	0	0	0	0	187
21:30	0	122	23	0	2	0	0	0	0	0	0	0	0	147
21:45	0	109	19	0	4	0	0	0	0	0	0	0	0	132
22:00	0	99	19	0	4	0	0	0	0	0	0	0	0	122
22:15	0	98	24	0	3	0	0	0	0	0	0	0	0	125
22:30	0	84	17	0	3	0	0	0	0	0	0	0	0	104
22:45	0	102	18	0	1	0	0	0	0	0	0	0	0	121
23:00	0	67	12	0	2	0	0	0	0	0	0	0	0	81
23:15	0	61	14	0	1	0	0	0	0	0	0	0	0	76
23:30	0	44	10	0	2	0	0	0	0	0	0	0	0	56
23:45	0	46	8	1	3	0	0	0	0	0	0	0	0	58
Totals	3	16683	3692	80	725	12	1	16	18	3	0	0	0	21235
% of Totals	0%	79%	17%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	100%

AM Volumes	2	6170	1392	43	297	7	1	7	12	0	2	0	0	7933
% AM	0%	29%	7%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	37%
AM Peak Hour	07:15	07:30	07:30	08:15	07:45	07:15	06:30	05:30	11:00	04:30	07:30	07:30	07:30	1645
Volume	1	1284	284	9	67	3	1	3	4	1	0	0	0	13302
PM Volumes	1	10513	2300	37	428	5	0	9	6	0	0	0	0	63%
% PM	0%	50%	11%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	17:00
PM Peak Hour	16:45	17:00	15:00	13:00	15:00	15:45	13:30	17:15	15:45	17:00	17:00	17:00	17:00	1701
Volume	1	1350	309	9	62	3	5	3	2	0	0	0	0	1701

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

# CLASSIFICATION

Vineyard Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_007n

## North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	74	18	0	2	0	0	0	0	0	0	0	0	94
01:00	0	47	8	0	1	0	0	0	0	0	0	0	0	56
02:00	0	38	6	0	0	0	0	0	0	0	0	0	0	44
03:00	0	33	7	1	0	0	0	0	0	0	0	0	0	41
04:00	0	47	17	0	7	0	0	0	1	0	0	0	0	72
05:00	0	133	31	2	4	0	0	0	0	0	1	0	0	171
06:00	0	208	66	0	9	0	0	1	1	0	0	0	0	285
07:00	0	400	103	3	23	0	0	0	0	0	0	0	0	529
08:00	0	385	133	2	25	0	0	2	1	0	0	0	0	548
09:00	0	344	95	2	22	0	0	1	0	0	0	0	0	464
10:00	0	335	101	1	19	0	0	0	1	0	0	0	0	457
11:00	0	391	93	4	19	0	0	0	2	0	0	0	0	509
12:00 PM	0	415	110	2	20	0	0	1	0	0	0	0	0	548
13:00	0	404	116	5	21	0	0	1	0	0	0	0	0	547
14:00	0	541	146	3	26	1	0	1	1	0	0	0	0	719
15:00	0	684	188	1	35	1	0	0	0	0	0	0	0	909
16:00	0	730	170	1	32	0	0	1	0	0	2	0	0	936
17:00	1	773	189	1	35	0	0	0	2	0	0	0	0	1001
18:00	0	580	130	1	22	0	0	0	1	0	0	0	0	734
19:00	0	445	101	2	19	0	0	0	0	0	0	0	0	567
20:00	0	350	72	0	14	0	0	0	0	0	0	0	0	436
21:00	0	283	60	0	9	0	0	0	0	0	0	0	0	352
22:00	0	208	48	0	8	0	0	0	0	0	0	0	0	264
23:00	0	102	22	1	6	0	0	0	0	0	0	0	0	131
<b>Totals</b>	<b>1</b>	<b>7950</b>	<b>2030</b>	<b>32</b>	<b>378</b>	<b>2</b>		<b>8</b>	<b>10</b>		<b>3</b>			<b>10414</b>
% of Totals	0%	76%	19%	0%	4%	0%		0%	0%		0%			100%

7951 2440 2 21  
1.0 1.5 2.0 3.0

**7951 3660 4 63 11678**

AM Volumes	0	2435	678	15	131	0	0	4	6	0	1	0	0	3270
% AM		23%	7%	0%	1%			0%	0%		0%			31%
AM Peak Hour		07:00	08:00	11:00	08:00			08:00	11:00		05:00			08:00
Volume		400	133	4	25			2	2		1			548
PM Volumes	1	5515	1352	17	247	2	0	4	4	0	2	0	0	7144
% PM	0%	53%	13%	0%	2%	0%		0%	0%		0%			69%
PM Peak Hour	17:00	17:00	17:00	13:00	15:00	14:00		12:00	17:00		16:00			17:00
Volume	1	773	189	5	35	1		1	2		2			1001

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1077	↔ 10%	1095	↔ 11%	1937	↔ 19%	6305	↔ 61%

### Classification Definitions

Motorcycles

4 Buses

7 >=4-Axle Single Units

10 >=6-Axle Single Trailers

13 >=7-Axle Multi-Trailers



# CLASSIFICATION

Vineyard Ave Bet. Arrow Hwy & 9th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_007

## Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	135	26	0	2	0	0	0	1	0	0	0	0	164
01:00	0	87	15	0	1	0	0	0	0	0	0	0	0	103
02:00	0	70	12	0	0	0	0	0	0	0	0	0	0	82
03:00	0	104	20	2	1	0	0	0	0	0	0	0	0	127
04:00	0	187	52	0	14	0	0	0	1	0	0	0	0	254
05:00	0	389	84	7	17	1	0	1	1	0	1	0	0	501
06:00	0	642	148	4	37	0	0	2	2	0	0	0	0	835
07:00	0	1165	236	7	52	2	1	0	0	0	0	0	0	1463
08:00	1	1021	250	7	59	1	0	2	2	0	0	0	0	1343
09:00	0	802	181	7	36	0	0	1	0	0	0	0	0	1027
10:00	0	731	186	4	41	1	0	1	1	0	1	0	0	966
11:00	1	837	182	5	37	2	0	0	4	0	0	0	0	1068
12:00 PM	0	858	226	4	36	0	0	1	0	0	0	0	0	1125
13:00	0	878	219	9	48	0	0	4	2	0	0	0	0	1160
14:00	0	1066	249	4	50	1	0	2	1	0	0	0	0	1373
15:00	0	1310	309	3	62	1	0	1	0	0	0	0	0	1686
16:00	0	1228	266	4	56	2	0	1	0	0	2	0	0	1559
17:00	1	1350	289	3	54	1	0	0	2	0	1	0	0	1701
18:00	0	1106	217	2	38	0	0	0	1	0	0	0	0	1364
19:00	0	862	173	4	31	0	0	0	0	0	0	0	0	1070
20:00	0	704	132	3	20	0	0	0	0	0	0	0	0	859
21:00	0	550	98	0	14	0	0	0	0	0	0	0	0	662
22:00	0	383	78	0	11	0	0	0	0	0	0	0	0	472
23:00	0	218	44	1	8	0	0	0	0	0	0	0	0	271
<b>Totals</b>	<b>3</b>	<b>16683</b>	<b>3692</b>	<b>80</b>	<b>725</b>	<b>12</b>	<b>1</b>	<b>16</b>	<b>18</b>		<b>5</b>			<b>21235</b>
% of Totals	0%	79%	17%	0%	3%	0%	0%	0%	0%		0%			100%

<b>AM Volumes</b>	2	6170	1392	43	297	7	1	7	12	0	2	0	0	7933
<b>% AM</b>	0%	29%	7%	0%	1%	0%	0%	0%	0%		0%			37%
<b>AM Peak Hour</b>	08:00	07:00	08:00	05:00	08:00	07:00	07:00	06:00	11:00		05:00			07:00
<b>Volume</b>	1	1165	250	7	59	2	1	2	4		1			1463
<b>PM Volumes</b>	1	10513	2300	37	428	5	0	9	6	0	3	0	0	13302
<b>% PM</b>	0%	50%	11%	0%	2%	0%		0%	0%		0%			63%
<b>PM Peak Hour</b>	17:00	17:00	15:00	13:00	15:00	16:00		13:00	13:00		16:00			17:00
<b>Volume</b>	1	1350	309	9	62	2		4	2		2			1701

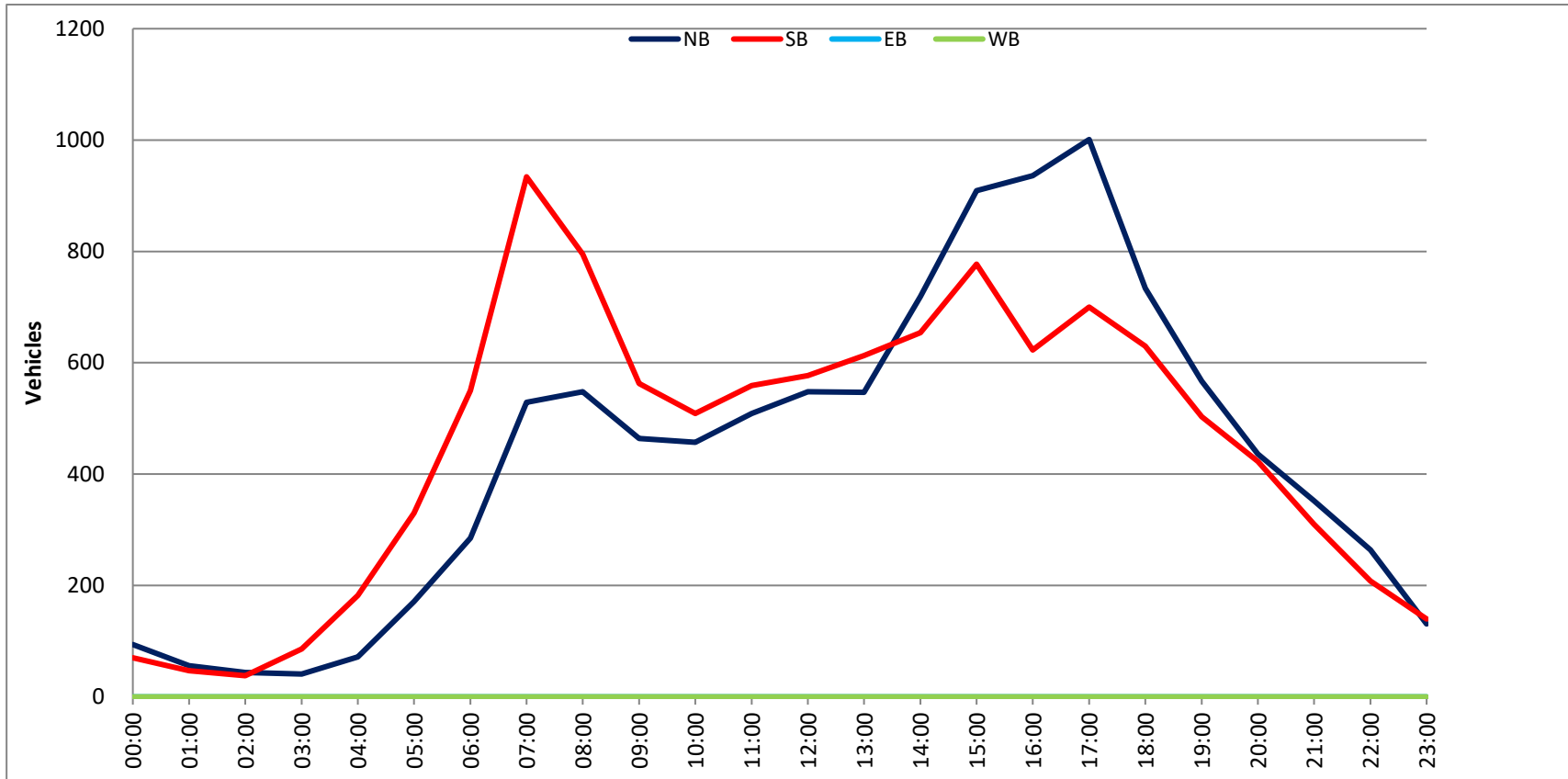
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2806	↔ 13%	2285	↔ 11%	3260	↔ 15%	12884	↔ 61%

## Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 3 Axle Multi Trailer

DAILY TOTALS					NB	SB	EB	WB	To			
					10,414	10,821	0	0	21,			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	22	23	0	0	45	12:00	150	137	0	0	287	
00:15	23	12	0	0	35	12:15	135	130	0	0	265	
00:30	31	16	0	0	47	12:30	141	164	0	0	305	
00:45	18	94	19	70	0	0	122	548	146	577	0	268
01:00	17	14	0	0	31	13:00	123	143	0	0	266	
01:15	18	9	0	0	27	13:15	114	150	0	0	264	
01:30	11	7	0	0	18	13:30	163	150	0	0	313	
01:45	10	56	17	47	0	0	147	547	170	613	0	317
02:00	10	12	0	0	22	14:00	159	145	0	0	304	
02:15	15	2	0	0	17	14:15	177	143	0	0	320	
02:30	6	11	0	0	17	14:30	159	185	0	0	344	
02:45	13	44	13	38	0	0	224	719	181	654	0	405
03:00	13	17	0	0	30	15:00	245	209	0	0	454	
03:15	6	24	0	0	30	15:15	226	212	0	0	438	
03:30	11	20	0	0	31	15:30	210	185	0	0	395	
03:45	11	41	25	86	0	0	228	909	171	777	0	399
04:00	11	34	0	0	45	16:00	212	136	0	0	348	
04:15	21	41	0	0	62	16:15	225	165	0	0	390	
04:30	15	52	0	0	67	16:30	281	161	0	0	442	
04:45	25	72	55	182	0	0	218	936	161	623	0	379
05:00	31	61	0	0	92	17:00	266	161	0	0	427	
05:15	35	78	0	0	113	17:15	239	157	0	0	396	
05:30	48	93	0	0	141	17:30	270	190	0	0	460	
05:45	57	171	98	330	0	0	226	1001	192	700	0	418
06:00	55	121	0	0	176	18:00	208	191	0	0	399	
06:15	67	128	0	0	195	18:15	179	142	0	0	321	
06:30	66	142	0	0	208	18:30	194	165	0	0	359	
06:45	97	285	159	550	0	0	153	734	132	630	0	285
07:00	94	191	0	0	285	19:00	156	143	0	0	299	
07:15	118	196	0	0	314	19:15	145	134	0	0	279	
07:30	167	260	0	0	427	19:30	126	126	0	0	252	
07:45	150	529	287	934	0	0	140	567	100	503	0	240
08:00	152	287	0	0	439	20:00	135	105	0	0	240	
08:15	130	212	0	0	342	20:15	103	121	0	0	224	
08:30	116	164	0	0	280	20:30	93	94	0	0	187	
08:45	150	548	132	795	0	0	105	436	103	423	0	208
09:00	111	131	0	0	242	21:00	106	90	0	0	196	
09:15	105	132	0	0	237	21:15	100	87	0	0	187	
09:30	117	152	0	0	269	21:30	78	69	0	0	147	
09:45	131	464	148	563	0	0	68	352	64	310	0	132
10:00	120	150	0	0	270	22:00	69	53	0	0	122	
10:15	112	113	0	0	225	22:15	75	50	0	0	125	
10:30	118	121	0	0	239	22:30	52	52	0	0	104	
10:45	107	457	125	509	0	0	68	264	53	208	0	121
11:00	99	131	0	0	230	23:00	42	39	0	0	81	
11:15	119	129	0	0	248	23:15	38	38	0	0	76	
11:30	139	143	0	0	282	23:30	29	27	0	0	56	
11:45	152	509	156	559	0	0	22	131	36	140	0	58
<b>TOTALS</b>	<b>3270</b>	<b>4663</b>			<b>7933</b>	<b>TOTALS</b>	<b>7144</b>	<b>6158</b>				
<b>SPLIT %</b>	<b>41.2%</b>	<b>58.8%</b>			<b>37.4%</b>	<b>SPLIT %</b>	<b>53.7%</b>	<b>46.3%</b>				

DAILY TOTALS					NB	SB	EB	WB	To	
					10,414	10,821	0	0	21,	
AM Peak Hour	07:30	07:30			07:30	PM Peak Hour	16:30	14:30		
AM Pk Volume	599	1046			1645	PM Pk Volume	1004	787		
Pk Hr Factor	0.897	0.911			0.937	Pk Hr Factor	0.893	0.928		
7 - 9 Volume	1077	1729	0	0	2806	4 - 6 Volume	1937	1323	0	0
7 - 9 Peak Hour	07:30	07:30			07:30	4 - 6 Peak Hour	16:30	17:00		
7 - 9 Pk Volume	599	1046	0	0	1645	4 - 6 Pk Volume	1004	700	0	0
Pk Hr Factor	0.897	0.911	0.000	0.000	0.937	Pk Hr Factor	0.893	0.911	0.000	0.000







**CLASSIFICATION**  
 Vineyard Ave Bet. 9th St & 8th St

Day: Tuesday  
 Date: 3/12/2019

City: Rancho Cucamonga  
 Project #: CA19\_6035\_008s

**South Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	24	3	0	1	0	0	0	0	0	0	0	0	28
00:15	0	12	1	0	0	0	0	0	0	0	0	0	0	13
00:30	0	13	3	0	0	0	0	0	0	0	0	0	0	16
00:45	0	14	2	0	0	0	0	0	0	1	0	0	0	17
01:00	0	13	4	0	0	0	0	0	0	0	0	0	0	17
01:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
01:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
01:45	0	19	3	0	1	0	0	0	3	0	0	0	0	26
02:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	9	2	2	0	0	0	0	0	0	0	0	0	13
02:45	0	9	2	0	0	0	0	0	0	0	0	0	0	11
03:00	0	14	3	2	0	1	0	0	1	0	0	0	0	21
03:15	0	19	3	0	0	0	0	0	0	0	0	0	0	22
03:30	0	16	4	0	1	0	0	0	0	0	0	0	0	21
03:45	0	21	3	1	0	0	0	0	0	0	0	0	0	25
04:00	0	28	5	0	2	0	0	0	0	0	0	0	0	35
04:15	0	32	10	0	1	1	0	0	0	0	0	0	0	44
04:30	0	41	7	1	4	0	0	0	0	0	0	0	0	53
04:45	0	45	15	0	2	0	0	0	1	0	0	0	0	63
05:00	0	47	9	0	3	0	0	0	0	0	0	0	0	59
05:15	0	60	15	3	5	0	0	0	1	0	0	0	0	84
05:30	0	77	14	0	4	0	4	1	0	0	0	0	0	97
05:45	0	73	15	1	6	1	0	0	0	0	0	0	0	97
06:00	0	97	21	1	4	0	0	1	2	0	0	0	0	126
06:15	0	100	29	1	10	0	0	0	4	0	0	0	0	144
06:30	0	111	25	2	7	0	0	0	1	0	0	0	0	146
06:45	0	138	25	2	7	0	0	0	3	0	0	0	0	175
07:00	0	152	29	1	5	1	0	0	1	0	0	0	0	189
07:15	0	145	33	0	5	0	1	1	0	0	0	0	0	185
07:30	0	218	37	2	8	0	0	1	4	0	0	0	0	270
07:45	0	231	54	0	12	0	0	1	1	0	0	0	0	299
08:00	0	237	43	2	9	1	0	0	1	0	0	0	0	293
08:15	0	152	25	1	10	1	0	0	0	0	0	0	0	189
08:30	0	128	29	4	11	0	0	0	1	0	0	0	0	173
08:45	1	115	23	0	5	1	0	0	0	0	0	0	0	145
09:00	0	110	22	3	4	0	0	0	0	0	0	0	0	139
09:15	0	108	23	3	2	1	0	0	2	1	0	0	0	138
09:30	0	125	29	1	5	0	0	0	2	0	0	0	0	162
09:45	0	118	24	0	6	0	0	0	1	0	0	0	0	149
10:00	1	137	21	0	7	1	0	0	4	0	0	0	0	171
10:15	0	101	22	1	8	0	0	1	1	0	0	0	0	134
10:30	0	97	29	1	4	1	0	0	3	0	0	0	0	135
10:45	0	102	19	1	7	0	0	0	1	0	0	0	0	130
11:00	0	107	24	1	4	0	0	0	1	0	0	0	0	137
11:15	0	108	24	0	7	0	0	0	1	0	0	0	0	140
11:30	1	126	22	2	5	0	0	0	3	0	0	0	0	159
11:45	0	112	24	0	3	2	0	0	2	0	0	0	0	143
12:00 PM	0	119	28	1	7	0	0	0	3	0	0	0	0	158
12:15	0	101	22	1	3	0	0	0	0	0	0	0	0	127
12:30	0	141	29	1	6	0	0	0	0	0	0	0	0	177
12:45	0	117	33	0	6	0	0	0	6	0	0	0	0	158
13:00	0	110	22	3	6	0	0	1	0	0	0	0	0	142
13:15	1	116	28	0	9	0	0	0	2	0	0	0	0	156
13:30	0	133	24	2	9	0	0	0	3	0	0	0	0	171
13:45	0	129	29	1	4	0	0	2	1	0	0	0	0	166
14:00	0	123	22	0	6	0	0	0	2	0	0	0	0	153
14:15	1	126	24	1	7	0	0	0	1	0	0	0	0	160
14:30	0	173	34	1	8	0	1	0	0	0	0	0	0	217
14:45	0	154	31	0	9	0	0	0	0	0	0	0	0	194
15:00	0	169	32	0	8	0	0	0	0	0	0	0	0	209
15:15	0	167	33	0	6	0	0	1	0	0	0	0	0	207
15:30	0	147	26	3	4	0	0	0	0	0	0	0	0	180
15:45	0	152	23	0	9	0	0	0	0	0	0	0	0	184
16:00	1	130	23	4	9	0	0	0	0	0	0	0	0	167
16:15	0	148	29	0	6	1	0	0	0	0	0	0	0	184
16:30	0	150	23	1	7	0	0	0	0	0	0	0	0	182
16:45	0	131	27	1	7	0	0	0	4	0	0	0	0	170
17:00	0	144	30	0	4	0	0	0	1	0	0	0	0	179
17:15	1	143	26	2	5	1	0	1	3	0	1	0	0	183
17:30	1	170	31	1	6	0	0	0	0	0	1	0	0	210
17:45	0	176	25	0	5	0	0	1	2	0	0	0	0	209
18:00	0	153	27	1	7	0	0	0	0	0	0	0	0	188
18:15	1	132	27	0	7	0	0	0	3	0	0	0	0	166
18:30	0	135	22	1	4	0	0	0	1	0	0	0	0	163
18:45	0	121	20	0	4	0	0	0	0	0	0	0	0	145
19:00	0	127	23	0	3	0	0	0	0	0	0	0	0	153
19:15	0	117	21	1	4	0	0	0	0	0	0	0	0	143
19:30	0	113	13	0	3	1	0	0	1	0	0	0	0	131
19:45	0	78	16	1	3	0	0	0	0	0	0	0	0	98
20:00	0	90	19	1	3	0	0	0	0	0	0	0	0	113
20:15	0	93	21	1	5	0	0	0	0	0	0	0	0	120
20:30	0	87	12	1	3	0	0	0	0	0	0	0	0	103
20:45	0	83	15	0	2	0	0	0	1	0	0	0	0	101
21:00	0	79	14	0	1	0	0	0	0	0	0	0	0	94
21:15	0	80	10	0	3	0	0	0	0	0	0	0	0	93
21:30	1	60	7	0	1	0	0	0	0	0	0	0	0	69
21:45	0	59	5	0	6	0	0	0	0	0	0	0	0	64
22:00	0	44	7	0	2	0	0	0	0	0	0	0	0	53
22:15	0	45	6	1	0	0	0	0	0	0	0	0	0	52
22:30	0	51	8	0	1	0	0	0	0	0	0	0	0	60
22:45	0	48	6	0	0	0	0	0	0	0	0	0	0	54
23:00	0	36	4	0	2	0	0	0	0	0	0	0	0	42
23:15	0	32	4	0	1	0	0	0	0	0	0	0	0	37
23:30	0	22	3	0	0	0	0	0	3	0	0	0	0	25
23:45	0	29	7	0	2	0	0	0	0	0	0	0	0	38
<b>Totals</b>	<b>10</b>	<b>9074</b>	<b>1754</b>	<b>70</b>	<b>396</b>	<b>19</b>	<b>2</b>	<b>12</b>	<b>75</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11414</b>
% of Totals	0%	79%	15%	1%	3%	0%	0%	0%	1%	0%	0%	0%	0%	100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
AM Volumes	3	3791	783	39
% AM	0%	33%	7%	0%
PM Volumes	7	5283	971	31
% PM	0%	46%	9%	0%

All Classes	Volume	%	Volume	%	Volume	%	Volume	%
AM Peak Hour	3	7%	185	13%	6	4%	4866	43%
PM Peak Hour	7	15%	213	15%	6	4%	6548	57%

**CLASSIFICATION**  
Vineyard Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_008

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	45	7	0	1	0	0	0	0	0	0	0	0	53
00:15	0	34	6	1	1	0	0	0	0	0	0	0	0	43
00:30	0	37	7	0	1	0	0	0	0	0	0	0	0	45
00:45	0	29	4	0	0	0	0	0	0	0	0	0	0	34
01:00	0	30	7	0	0	0	0	0	0	0	0	0	0	37
01:15	0	25	2	0	0	0	0	0	0	0	0	0	0	27
01:30	0	14	1	0	0	1	0	0	0	0	0	0	0	16
01:45	0	28	5	1	1	0	0	0	3	0	0	0	0	38
02:00	0	23	2	0	0	0	0	0	0	0	0	0	0	25
02:15	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:30	0	14	2	2	0	0	0	0	0	0	0	0	0	18
02:45	0	20	3	0	0	1	0	0	0	0	0	0	0	24
03:00	0	27	8	3	0	1	0	0	1	0	0	0	0	40
03:15	0	25	3	1	0	0	0	0	0	0	0	0	0	29
03:30	0	30	5	0	2	0	0	0	1	0	0	0	0	38
03:45	0	34	5	3	1	0	0	0	0	0	0	0	0	43
04:00	0	37	11	1	2	0	0	0	0	0	0	0	0	51
04:15	0	52	12	1	2	0	0	0	1	0	0	0	0	69
04:30	0	63	20	1	5	0	0	0	0	0	0	0	0	89
04:45	0	84	21	0	4	0	0	0	1	0	0	0	0	110
05:00	0	78	19	1	4	0	0	0	1	0	0	0	0	103
05:15	0	98	23	4	6	0	0	0	2	0	0	0	0	133
05:30	0	130	23	0	5	1	0	1	2	0	0	0	0	162
05:45	0	150	31	2	8	1	0	0	2	0	0	0	0	194
06:00	0	145	32	1	7	1	0	1	5	0	0	0	0	192
06:15	0	157	50	2	13	0	0	1	6	0	0	0	0	229
06:30	0	177	42	2	9	1	0	0	2	0	0	0	0	233
06:45	0	229	45	2	11	0	0	0	5	0	0	0	0	292
07:00	0	240	50	3	12	1	0	0	1	0	0	0	0	307
07:15	0	259	49	1	10	0	1	1	2	0	0	0	0	323
07:30	0	400	64	2	16	0	0	1	8	0	0	0	0	493
07:45	0	402	83	2	21	1	0	1	1	0	0	0	0	511
08:00	0	368	70	3	15	1	0	0	1	0	0	0	0	458
08:15	0	283	48	1	18	1	0	1	2	0	0	0	0	354
08:30	0	231	53	4	17	1	0	1	1	0	0	0	0	308
08:45	1	238	54	0	17	1	0	0	1	0	0	0	0	312
09:00	0	209	39	4	8	0	0	0	2	0	0	0	0	262
09:15	0	202	45	3	7	1	0	1	4	0	0	0	0	263
09:30	0	221	53	1	10	0	0	0	2	0	0	0	0	287
09:45	0	234	44	0	9	1	0	2	4	0	0	0	0	294
10:00	1	234	41	2	11	1	0	0	7	0	0	0	0	297
10:15	0	202	41	1	14	0	0	1	3	0	0	0	0	262
10:30	0	208	48	2	9	1	0	0	5	0	0	0	0	273
10:45	1	209	41	1	13	0	0	0	1	0	0	0	0	266
11:00	0	195	44	4	6	1	0	0	3	0	0	0	0	253
11:15	0	217	47	1	13	0	0	0	4	0	0	0	0	282
11:30	1	238	42	2	10	0	0	0	6	0	0	0	0	299
11:45	0	239	43	1	8	3	0	1	3	0	0	0	0	298
12:00 PM	0	240	50	3	12	0	0	0	3	0	0	0	0	308
12:15	0	208	37	1	12	0	0	0	0	0	0	0	0	258
12:30	0	254	50	1	9	0	0	1	0	0	0	0	0	315
12:45	0	207	53	0	9	0	0	0	2	0	0	0	0	273
13:00	0	215	45	4	14	0	0	1	2	0	0	0	0	280
13:15	1	214	49	1	11	1	0	0	2	0	0	0	0	279
13:30	0	277	45	2	16	0	0	2	3	0	0	0	0	345
13:45	1	251	51	3	8	0	0	2	3	0	0	0	0	319
14:00	0	259	51	2	16	2	0	0	3	0	0	0	0	333
14:15	1	271	47	1	13	0	0	1	2	0	0	0	0	336
14:30	0	301	63	1	13	0	0	1	2	0	0	0	0	381
14:45	0	337	62	2	21	0	0	0	2	0	0	0	0	424
15:00	0	357	67	2	19	0	0	0	0	0	0	0	0	445
15:15	0	326	64	0	17	0	0	1	0	0	0	0	0	408
15:30	0	323	59	5	13	0	0	0	3	0	0	0	0	403
15:45	0	343	65	0	15	1	0	0	1	0	0	0	0	425
16:00	1	290	47	6	14	1	0	0	2	0	0	0	0	361
16:15	1	359	65	0	15	3	0	0	4	0	0	0	0	447
16:30	0	352	53	2	17	0	0	1	4	0	0	0	0	432
16:45	0	319	60	2	13	1	0	0	9	0	0	0	0	404
17:00	1	342	60	1	13	1	0	0	6	0	0	0	0	424
17:15	1	353	67	2	12	1	0	1	5	0	1	0	0	443
17:30	2	383	65	2	12	0	0	0	0	0	1	0	0	465
17:45	0	374	50	1	15	1	0	1	3	0	0	0	0	445
18:00	0	335	63	2	12	0	0	0	1	0	0	0	0	413
18:15	1	389	51	0	9	0	0	0	4	0	0	0	0	354
18:30	0	283	44	1	8	0	0	0	3	0	0	0	0	339
18:45	0	258	41	0	10	0	0	0	3	0	0	0	0	312
19:00	0	271	43	1	8	0	0	0	2	0	0	0	0	325
19:15	0	234	42	1	8	0	0	0	1	0	0	0	0	286
19:30	0	240	33	0	6	1	0	0	2	0	0	0	0	282
19:45	0	185	31	2	7	0	0	0	0	0	0	0	0	225
20:00	0	198	36	1	6	0	0	0	0	0	0	0	0	241
20:15	0	174	33	1	7	0	0	0	0	0	0	0	0	215
20:30	0	161	27	2	7	0	0	0	0	0	0	0	0	197
20:45	0	174	25	0	6	0	0	0	1	0	0	0	0	206
21:00	0	183	26	0	4	0	0	0	0	0	0	0	0	213
21:15	0	168	24	0	5	0	0	0	2	0	0	0	0	199
21:30	1	126	17	0	3	0	0	0	0	0	0	0	0	147
21:45	0	113	14	0	1	0	0	0	0	0	0	0	0	128
22:00	0	101	18	0	2	0	0	0	0	0	0	0	0	121
22:15	0	107	17	1	1	0	0	0	0	0	0	0	0	126
22:30	0	100	16	0	3	0	0	0	0	0	0	0	0	119
22:45	0	106	13	0	1	1	0	0	0	0	0	0	0	121
23:00	0	76	7	2	2	1	0	0	0	0	0	0	0	88
23:15	0	66	9	0	1	0	0	0	0	0	0	0	0	76
23:30	0	50	7	0	0	0	0	0	0	0	0	0	0	57
23:45	0	45	9	1	3	0	0	0	0	0	0	0	0	58
<b>Totals</b>	<b>15</b>	<b>18055</b>	<b>3373</b>	<b>126</b>	<b>776</b>	<b>39</b>	<b>2</b>	<b>24</b>	<b>174</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>22585</b>
<b>% of Totals</b>	<b>0%</b>	<b>80%</b>	<b>15%</b>	<b>1%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

AM Peak Hour	Volume	% AM	PM Peak Hour	Volume	% PM	Off Peak Volumes	Volume	% Off Peak
AM Peak Hour	4	6857	1400	66	327	22	13	86
PM Peak Hour	11	11198	1973	59	449	17	11	79
Off Peak Volumes	4	1452	256	11	70	7	5	24

Directional Peak Periods	Volume	%	Volume	%	Volume	%	Volume	%
AM 7-9	66	3%	22	1%	13	0%	86	4%
NOON 12-2	66	3%	22	1%	13	0%	86	4%
PM 4-6	66	3%	22	1%	13	0%	86	4%

# CLASSIFICATION

Vineyard Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_008n

## North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	82	15	1	2	0	0	0	1	0	0	0	0	101
01:00	0	50	6	1	0	1	0	0	0	0	0	0	0	58
02:00	0	37	3	0	0	1	0	0	0	0	0	0	0	41
03:00	0	46	12	4	2	0	0	0	1	0	0	0	0	65
04:00	0	90	27	2	4	0	0	0	1	0	0	0	0	124
05:00	0	199	42	3	5	0	0	0	6	0	0	0	0	255
06:00	0	262	69	1	12	2	0	1	8	0	0	0	0	355
07:00	0	555	93	5	29	1	0	0	6	0	0	0	0	689
08:00	0	488	105	1	32	1	0	2	3	0	0	0	0	632
09:00	0	405	83	1	17	1	0	3	8	0	0	0	0	518
10:00	1	416	80	3	21	0	0	0	7	0	0	0	0	528
11:00	0	436	82	5	18	2	0	1	9	0	0	0	0	553
12:00 PM	0	431	78	2	20	0	0	1	0	0	0	0	0	532
13:00	1	469	87	4	21	1	0	2	3	0	0	0	0	588
14:00	0	592	112	4	33	2	0	1	6	0	0	0	0	750
15:00	0	714	141	4	37	1	0	0	4	0	0	0	0	901
16:00	1	761	125	4	30	5	0	1	15	0	0	0	0	942
17:00	2	819	130	3	32	2	0	0	8	0	0	0	0	996
18:00	0	624	103	1	21	0	0	0	7	0	0	0	0	756
19:00	0	495	76	2	16	0	0	0	4	0	0	0	0	593
20:00	0	354	54	1	13	0	0	0	0	0	0	0	0	422
21:00	0	312	45	0	8	0	0	0	2	0	0	0	0	367
22:00	0	226	37	0	4	1	0	0	0	0	0	0	0	268
23:00	0	118	14	3	1	1	0	0	0	0	0	0	0	137
<b>Totals</b>	<b>5</b>	<b>8981</b>	<b>1619</b>	<b>55</b>	<b>378</b>	<b>22</b>		<b>12</b>	<b>99</b>					<b>11171</b>
% of Totals	0%	80%	14%	0%	3%	0%		0%	1%					100%

8986 2052 22 111  
1.0 1.5 2.0 3.0

**8986 3078 44 333 12441**

AM Volumes	1	3066	617	27	142	9	0	7	50	0	0	0	0	3919
% AM	0%	27%	6%	0%	1%	0%		0%	0%					35%
AM Peak Hour	10:00	07:00	08:00	07:00	08:00	06:00		09:00	11:00					07:00
Volume	1	555	105	5	32	2		3	9					689
PM Volumes	4	5915	1002	28	236	13	0	5	49	0	0	0	0	7252
% PM	0%	53%	9%	0%	2%	0%		0%	0%					65%
PM Peak Hour	17:00	17:00	15:00	13:00	15:00	16:00		13:00	16:00					17:00
Volume	2	819	141	4	37	5		2	15					996

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1321	↔ 12%	1120	↔ 10%	1938	↔ 17%	6792	↔ 61%

### Classification Definitions

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers

# CLASSIFICATION

Vineyard Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_008s

## South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	63	9	0	1	0	0	0	1	0	0	0	0	74
01:00	0	47	9	0	1	0	0	0	3	0	0	0	0	60
02:00	0	33	5	2	0	0	0	0	0	0	0	0	0	40
03:00	0	70	13	3	1	1	0	0	1	0	0	0	0	89
04:00	0	146	37	1	9	1	0	0	1	0	0	0	0	195
05:00	0	257	54	4	18	2	0	1	1	0	0	0	0	337
06:00	0	446	100	6	28	0	0	1	10	0	0	0	0	591
07:00	0	746	153	3	30	1	1	3	6	0	0	0	0	943
08:00	1	632	120	7	35	3	0	0	2	0	0	0	0	800
09:00	0	461	98	7	17	1	0	0	4	0	0	0	0	588
10:00	1	437	91	3	26	2	0	1	9	0	0	0	0	570
11:00	1	453	94	3	19	2	0	0	7	0	0	0	0	579
12:00 PM	0	478	112	3	22	0	0	0	5	0	0	0	0	620
13:00	1	488	103	6	28	0	0	3	6	0	0	0	0	635
14:00	1	576	111	2	30	0	1	0	3	0	0	0	0	724
15:00	0	635	114	3	27	0	0	1	0	0	0	0	0	780
16:00	1	559	102	6	29	2	0	0	4	0	0	0	0	703
17:00	2	633	112	3	20	1	0	2	6	0	2	0	0	781
18:00	1	541	96	2	18	0	0	0	4	0	0	0	0	662
19:00	0	435	73	2	13	1	0	0	1	0	0	0	0	525
20:00	0	353	67	3	13	0	0	0	1	0	0	0	0	437
21:00	1	278	36	0	5	0	0	0	0	0	0	0	0	320
22:00	0	188	27	1	3	0	0	0	0	0	0	0	0	219
23:00	0	119	18	0	5	0	0	0	0	0	0	0	0	142
<b>Totals</b>	<b>10</b>	<b>9074</b>	<b>1754</b>	<b>70</b>	<b>398</b>	<b>17</b>	<b>2</b>	<b>12</b>	<b>75</b>		<b>2</b>			<b>11414</b>
% of Totals	0%	79%	15%	1%	3%	0%	0%	0%	1%		0%			100%

AM Volumes	3	3791	783	39	185	13	1	6	45	0	0	0	0	4866
% AM	0%	33%	7%	0%	2%	0%	0%	0%	0%					43%
AM Peak Hour	08:00	07:00	07:00	08:00	08:00	08:00	07:00	07:00	06:00					07:00
Volume	1	746	153	7	35	3	1	3	10					943
PM Volumes	7	5283	971	31	213	4	1	6	30	0	2	0	0	6548
% PM	0%	46%	9%	0%	2%	0%	0%	0%	0%		0%			57%
PM Peak Hour	17:00	15:00	15:00	13:00	14:00	16:00	14:00	13:00	13:00		17:00			17:00
Volume	2	635	114	6	30	2	1	3	6		2			781

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1743	↔ 15%	1255	↔ 11%	1484	↔ 13%	6932	↔ 61%

### Classification Definitions

1 Motorcycles      4 Buses      7 1/2 Axle Single Trailers      10 6 Axle Single Trailers      13 7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. 9th St & 8th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_008

### Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	145	24	1	3	0	0	0	2	0	0	0	0	175
01:00	0	97	15	1	1	1	0	0	3	0	0	0	0	118
02:00	0	70	8	2	0	1	0	0	0	0	0	0	0	81
03:00	0	116	25	7	3	1	0	0	2	0	0	0	0	154
04:00	0	236	64	3	13	1	0	0	2	0	0	0	0	319
05:00	0	456	96	7	23	2	0	1	7	0	0	0	0	592
06:00	0	708	169	7	40	2	0	2	18	0	0	0	0	946
07:00	0	1301	246	8	59	2	1	3	12	0	0	0	0	1632
08:00	1	1120	225	8	67	4	0	2	5	0	0	0	0	1432
09:00	0	866	181	8	34	2	0	3	12	0	0	0	0	1106
10:00	2	853	171	6	47	2	0	1	16	0	0	0	0	1098
11:00	1	889	176	8	37	4	0	1	16	0	0	0	0	1132
12:00 PM	0	909	190	5	42	0	0	1	5	0	0	0	0	1152
13:00	2	957	190	10	49	1	0	5	9	0	0	0	0	1223
14:00	1	1168	223	6	63	2	1	1	9	0	0	0	0	1474
15:00	0	1349	255	7	64	1	0	1	4	0	0	0	0	1681
16:00	2	1320	227	10	59	7	0	1	19	0	0	0	0	1645
17:00	4	1452	242	6	52	3	0	2	14	0	2	0	0	1777
18:00	1	1165	199	3	39	0	0	0	11	0	0	0	0	1418
19:00	0	930	149	4	29	1	0	0	5	0	0	0	0	1118
20:00	0	707	121	4	26	0	0	0	1	0	0	0	0	859
21:00	1	590	81	0	13	0	0	0	2	0	0	0	0	687
22:00	0	414	64	1	7	1	0	0	0	0	0	0	0	487
23:00	0	237	32	3	6	1	0	0	0	0	0	0	0	279
<b>Totals</b>	<b>15</b>	<b>18055</b>	<b>3373</b>	<b>125</b>	<b>776</b>	<b>39</b>	<b>2</b>	<b>24</b>	<b>174</b>		<b>2</b>			<b>22585</b>
% of Totals	0%	80%	15%	1%	3%	0%	0%	0%	1%		0%			100%

AM Volumes	4	6857	1400	66	327	22	1	13	95	0	0	0	0	8785
% AM	0%	30%	6%	0%	1%	0%	0%	0%	0%					39%
AM Peak Hour	10:00	07:00	07:00	07:00	08:00	08:00	07:00	07:00	06:00					07:00
Volume	2	1301	246	8	67	4	1	3	18					1632
PM Volumes	11	11198	1973	59	449	17	1	11	79	0	2	0	0	13800
% PM	0%	50%	9%	0%	2%	0%	0%	0%	0%		0%			61%
PM Peak Hour	17:00	17:00	15:00	13:00	15:00	16:00	14:00	13:00	16:00		17:00			17:00
Volume	4	1452	255	10	64	7	1	5	19		2			1777

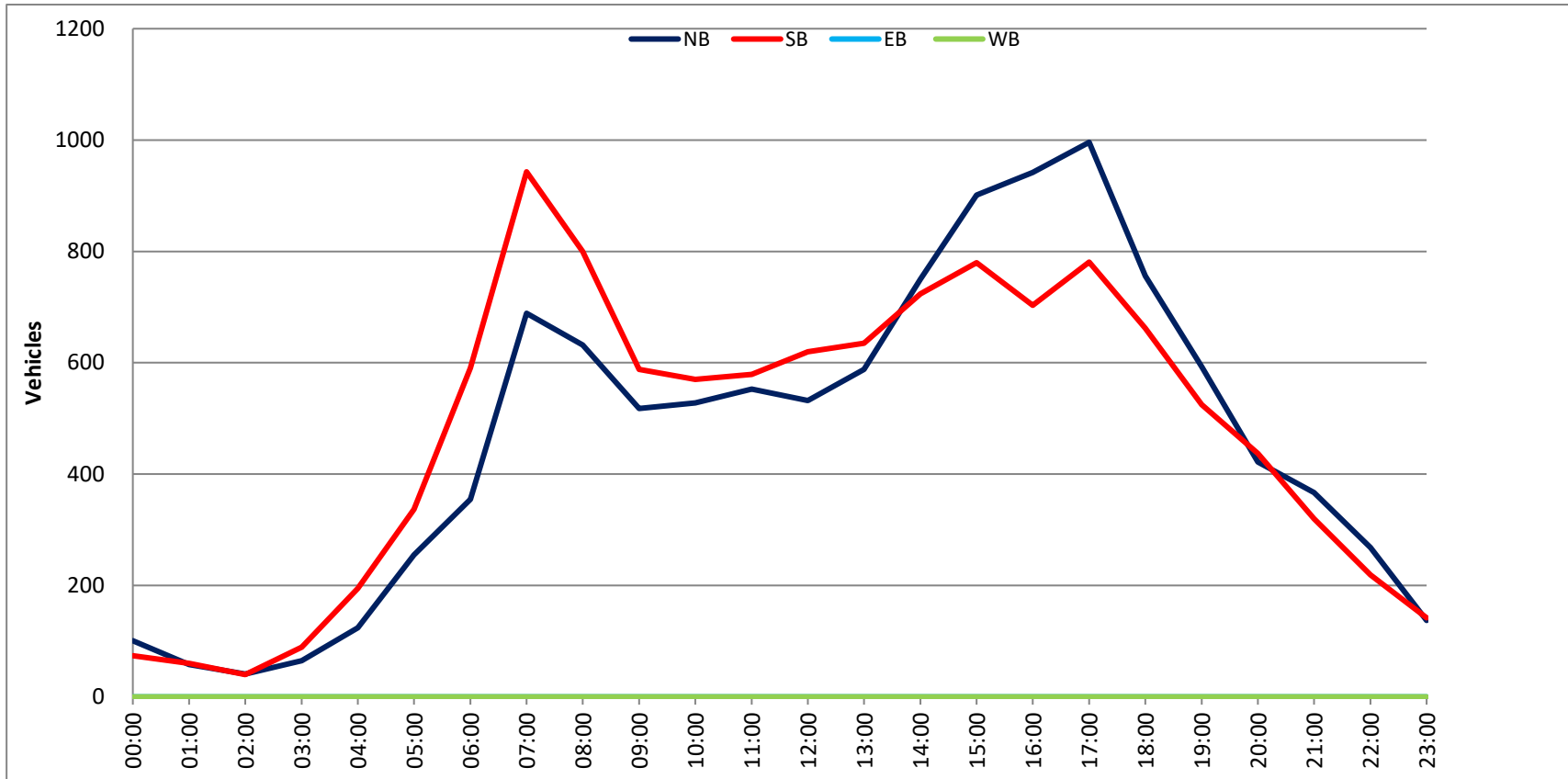
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	3064	↔ 14%	2375	↔ 11%	3422	↔ 15%	13724	↔ 61%

### Classification Definitions

1 Motorcycles      2 Bicycles      3 Bicycles      4 Bicycles      5 Bicycles      6 Bicycles      7 1 Axle Single Trailer      8 1 Axle Single Trailer      9 2 Axle Single Trailer      10 2 Axle Single Trailer      11 2 Axle Single Trailer      12 2 Axle Multi Trailer

DAILY TOTALS					NB	SB	EB	WB	To						
					11,171	11,414	0	0	22,						
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO				
00:00	25	28	0	0	53	12:00	150	158	0	0	308				
00:15	30	13	0	0	43	12:15	131	127	0	0	258				
00:30	29	16	0	0	45	12:30	138	177	0	0	315				
00:45	17	101	17	74	0	0	113	532	158	620	0	271			
01:00	20	17	0	0	37	13:00	138	142	0	0	280				
01:15	17	10	0	0	27	13:15	123	156	0	0	279				
01:30	9	7	0	0	16	13:30	174	171	0	0	345				
01:45	12	58	26	60	0	0	153	588	166	635	0	319			
02:00	11	14	0	0	25	14:00	180	153	0	0	333				
02:15	12	2	0	0	14	14:15	176	160	0	0	336				
02:30	5	13	0	0	18	14:30	164	217	0	0	381				
02:45	13	41	11	40	0	0	230	750	194	724	0	424			
03:00	19	21	0	0	40	15:00	236	209	0	0	445				
03:15	7	22	0	0	29	15:15	201	207	0	0	408				
03:30	17	21	0	0	38	15:30	223	180	0	0	403				
03:45	22	65	25	89	0	0	241	901	184	780	0	425			
04:00	16	35	0	0	51	16:00	194	167	0	0	361				
04:15	25	44	0	0	69	16:15	263	184	0	0	447				
04:30	36	53	0	0	89	16:30	251	182	0	0	433				
04:45	47	124	63	195	0	0	234	942	170	703	0	404			
05:00	44	59	0	0	103	17:00	245	179	0	0	424				
05:15	49	84	0	0	133	17:15	260	183	0	0	443				
05:30	65	97	0	0	162	17:30	255	210	0	0	465				
05:45	97	255	97	337	0	0	194	996	209	781	0	445			
06:00	66	126	0	0	192	18:00	225	188	0	0	413				
06:15	85	144	0	0	229	18:15	188	166	0	0	354				
06:30	87	146	0	0	233	18:30	176	163	0	0	339				
06:45	117	355	175	591	0	0	292	946	145	662	0	312			
07:00	118	189	0	0	307	19:00	172	153	0	0	325				
07:15	138	185	0	0	323	19:15	143	143	0	0	286				
07:30	221	270	0	0	491	19:30	151	131	0	0	282				
07:45	212	689	299	943	0	0	511	1632	127	593	98	525	0	225	
08:00	165	293	0	0	458	20:00	128	113	0	0	241				
08:15	165	189	0	0	354	20:15	95	120	0	0	215				
08:30	135	173	0	0	308	20:30	94	103	0	0	197				
08:45	167	632	145	800	0	0	312	1432	105	422	101	437	0	206	
09:00	123	139	0	0	262	21:00	119	94	0	0	213				
09:15	125	138	0	0	263	21:15	106	93	0	0	199				
09:30	125	162	0	0	287	21:30	78	69	0	0	147				
09:45	145	518	149	588	0	0	294	1106	64	367	64	320	0	128	
10:00	126	171	0	0	297	22:00	68	53	0	0	121				
10:15	128	134	0	0	262	22:15	74	52	0	0	126				
10:30	138	135	0	0	273	22:30	59	60	0	0	119				
10:45	136	528	130	570	0	0	266	1098	67	268	54	219	0	121	
11:00	116	137	0	0	253	23:00	46	42	0	0	88				
11:15	142	140	0	0	282	23:15	39	37	0	0	76				
11:30	140	159	0	0	299	23:30	32	25	0	0	57				
11:45	155	553	143	579	0	0	298	1132	20	137	38	142	0	58	
<b>TOTALS</b>	<b>3919</b>	<b>4866</b>			<b>8785</b>	<b>TOTALS</b>	<b>7252</b>	<b>6548</b>							
<b>SPLIT %</b>	<b>44.6%</b>	<b>55.4%</b>			<b>38.9%</b>	<b>SPLIT %</b>	<b>52.6%</b>	<b>47.4%</b>							

DAILY TOTALS					NB	SB	EB	WB	To	
					11,171	11,414	0	0	22,	
AM Peak Hour	07:30	07:30			07:30	PM Peak Hour	17:00	14:30		
AM Pk Volume	763	1051			1814	PM Pk Volume	996	827		
Pk Hr Factor	0.863	0.879			0.887	Pk Hr Factor	0.958	0.953		
7 - 9 Volume	1321	1743	0	0	3064	4 - 6 Volume	1938	1484	0	0
7 - 9 Peak Hour	07:30	07:30			07:30	4 - 6 Peak Hour	17:00	17:00		
7 - 9 Pk Volume	763	1051	0	0	1814	4 - 6 Pk Volume	996	781	0	0
Pk Hr Factor	0.863	0.879	0.000	0.000	0.887	Pk Hr Factor	0.958	0.930	0.000	0.000







**CLASSIFICATION**  
Vineyard Ave Bet. 8th St & 6th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_009s

South Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	24	2	0	0	0	0	0	0	0	0	0	0	26
00:15	0	13	1	0	0	0	0	0	0	0	0	0	0	14
00:30	0	11	1	0	0	0	0	0	0	0	0	0	0	12
00:45	0	13	1	0	0	0	0	1	0	0	0	0	0	15
01:00	0	12	4	0	1	0	0	0	0	0	0	0	0	17
01:15	0	10	3	0	0	0	0	0	0	0	0	0	0	13
01:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
01:45	0	23	2	0	1	0	0	0	2	0	0	0	0	28
02:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:30	0	5	6	2	0	0	0	0	0	0	0	0	0	13
02:45	0	13	4	0	0	0	0	1	0	0	0	0	0	18
03:00	0	11	5	2	0	0	0	0	1	0	0	0	0	19
03:15	0	20	4	0	1	0	0	0	0	0	0	0	0	25
03:30	0	10	12	0	2	0	0	0	0	0	0	0	0	24
03:45	0	18	4	0	2	0	0	0	0	0	0	0	0	24
04:00	0	25	10	0	2	0	0	0	0	0	0	0	0	37
04:15	0	34	13	0	1	0	0	0	0	0	0	0	0	48
04:30	0	43	16	1	7	0	0	0	1	0	0	0	0	68
04:45	0	50	19	0	2	1	0	0	1	0	0	0	0	73
05:00	0	45	17	0	3	0	0	0	0	0	0	0	0	65
05:15	0	58	21	1	6	0	0	0	1	0	0	0	0	87
05:30	0	84	24	0	4	0	0	2	0	0	0	0	0	114
05:45	0	68	25	0	7	1	0	0	0	0	0	0	0	101
06:00	0	91	29	1	6	1	0	1	0	0	0	0	0	129
06:15	0	100	25	0	8	0	0	1	3	0	0	0	0	137
06:30	0	113	33	1	9	0	0	1	0	0	0	0	0	157
06:45	0	127	26	0	9	0	0	1	2	0	0	0	0	165
07:00	0	153	32	0	5	1	0	0	3	0	0	0	0	194
07:15	0	147	36	1	7	0	0	0	1	0	0	0	0	192
07:30	2	221	39	2	9	2	0	2	4	0	0	0	0	281
07:45	0	203	54	0	10	0	0	0	1	0	0	0	0	268
08:00	0	187	42	0	7	1	0	1	1	0	0	0	0	239
08:15	0	136	38	1	10	2	0	0	1	0	0	0	0	188
08:30	0	109	30	2	12	0	0	0	2	0	0	0	0	155
08:45	0	97	28	0	7	0	1	2	1	0	1	0	0	137
09:00	0	103	31	2	5	1	0	0	0	0	0	0	0	142
09:15	0	103	31	2	6	1	0	0	2	0	0	0	0	145
09:30	0	97	35	1	6	1	0	1	1	0	0	0	0	142
09:45	0	104	34	0	7	0	0	2	0	0	0	0	0	147
10:00	0	98	31	0	6	1	0	2	2	0	1	0	0	141
10:15	0	85	23	2	7	0	0	1	2	0	0	0	0	120
10:30	0	105	26	0	5	1	0	0	2	0	0	0	0	139
10:45	0	91	27	1	3	0	0	1	0	0	1	0	0	124
11:00	0	104	30	0	9	0	0	3	1	0	0	0	0	147
11:15	0	107	38	0	4	0	0	2	1	0	0	0	0	152
11:30	0	117	35	1	4	1	0	0	3	0	0	0	0	161
11:45	0	103	23	0	9	2	0	1	1	0	1	0	0	140
12:00 PM	0	132	24	2	2	0	0	2	1	0	0	0	0	163
12:15	0	85	26	1	6	1	0	4	0	0	0	0	0	123
12:30	0	117	45	0	5	0	0	1	0	0	0	0	0	168
12:45	0	100	35	0	4	0	0	4	1	0	0	0	0	141
13:00	0	101	35	1	6	1	0	0	0	0	0	0	0	144
13:15	0	127	40	1	11	1	0	2	1	0	0	0	0	183
13:30	0	121	40	0	11	0	0	1	4	0	0	0	0	177
13:45	0	113	26	0	5	0	0	4	0	0	0	0	0	148
14:00	0	120	24	1	12	1	0	1	1	0	0	0	0	160
14:15	0	133	29	1	12	0	0	1	1	0	0	0	0	177
14:30	0	155	35	0	7	0	0	7	0	0	0	0	0	210
14:45	1	125	40	0	9	1	1	0	0	0	0	0	0	177
15:00	0	157	32	1	9	0	0	0	0	0	0	0	0	199
15:15	0	137	38	1	6	0	0	1	0	0	0	0	0	183
15:30	0	139	37	2	4	0	0	0	1	0	0	0	0	183
15:45	0	137	34	1	7	0	0	0	0	0	0	0	0	179
16:00	0	120	32	0	6	1	0	0	1	0	0	0	0	160
16:15	0	139	39	1	7	0	0	0	0	0	0	0	0	186
16:30	0	124	34	2	6	1	0	0	1	0	0	0	0	168
16:45	0	119	33	1	10	0	0	0	0	0	1	0	0	164
17:00	0	125	38	0	1	0	0	0	2	0	0	0	0	166
17:15	0	153	31	0	5	2	0	2	1	0	0	0	0	194
17:30	1	146	32	1	4	0	0	0	0	0	1	0	0	185
17:45	0	172	36	0	3	1	0	0	2	0	0	0	0	214
18:00	0	140	30	0	2	1	0	0	1	0	0	0	0	174
18:15	0	123	31	1	1	0	0	0	3	0	0	0	0	160
18:30	0	132	27	0	4	0	0	0	1	0	0	0	0	164
18:45	0	103	22	0	8	1	0	0	0	0	1	0	0	135
19:00	0	129	26	1	2	0	0	0	0	0	0	0	0	158
19:15	0	124	14	1	2	0	0	1	0	0	0	0	0	142
19:30	0	118	17	0	3	1	0	1	0	0	0	0	0	140
19:45	0	76	14	0	2	1	0	0	0	0	0	0	0	93
20:00	0	92	15	1	2	0	0	0	0	0	0	0	0	111
20:15	0	95	14	0	1	0	0	0	0	0	0	0	0	110
20:30	0	86	16	0	2	0	0	0	0	0	0	0	0	104
20:45	0	93	15	0	2	0	0	0	1	0	0	0	0	111
21:00	0	71	19	0	0	0	0	0	0	0	0	0	0	90
21:15	0	78	13	0	0	0	1	0	0	0	0	0	0	92
21:30	0	53	11	0	0	0	0	0	0	0	0	0	0	64
21:45	0	58	4	0	0	1	0	0	0	0	0	0	0	63
22:00	0	44	6	0	1	0	0	0	0	0	0	0	0	51
22:15	0	45	6	0	0	0	0	0	0	0	0	0	0	51
22:30	0	48	12	0	0	0	0	0	0	0	0	0	0	60
22:45	0	47	5	0	1	0	0	0	0	0	0	0	0	53
23:00	0	36	3	0	0	0	0	0	0	0	0	0	0	39
23:15	0	26	5	0	1	0	0	0	0	0	0	0	0	32
23:30	0	19	4	0	1	0	0	0	0	0	0	0	0	24
23:45	0	20	0	0	1	0	0	0	0	0	0	0	0	21
<b>Totals</b>	<b>4</b>	<b>8476</b>	<b>2118</b>	<b>44</b>	<b>404</b>	<b>31</b>	<b>3</b>	<b>50</b>	<b>64</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11201</b>
% of Totals	0%	76%	19%	0%	4%	0%	0%	0%	1%	0%	0%	0%	0%	100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
AM Volumes	2	3513	972	23
% AM	0%	31%	9%	0%
AM Peak Hour				
Volume				
PM Volumes	2	4963	1346	21
% PM	0%	44%	10%	0%
PM Peak Hour				
Volume				

**CLASSIFICATION**  
Vineyard Ave Bet. 8th St & 6th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_009

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	42	8	0	1	0	0	0	0	0	0	0	0	51
00:15	0	34	7	1	1	0	0	0	0	0	0	0	0	44
00:30	0	29	8	0	1	0	0	0	0	0	0	0	0	38
00:45	0	27	3	0	0	0	0	1	0	0	0	0	0	31
01:00	0	28	8	0	2	0	0	0	0	0	0	0	0	38
01:15	0	27	6	0	1	0	0	0	0	0	0	0	0	34
01:30	0	15	3	0	0	0	0	0	0	0	0	0	0	18
01:45	0	31	5	0	1	0	0	0	2	0	0	0	0	39
02:00	0	25	2	0	0	0	0	0	0	0	0	0	0	27
02:15	0	9	2	0	0	0	0	0	0	0	0	0	0	11
02:30	0	11	7	2	0	0	0	0	0	0	0	0	0	20
02:45	0	24	6	0	0	1	0	1	0	0	0	0	0	32
03:00	0	25	9	3	0	0	0	0	1	0	0	0	0	38
03:15	0	24	5	1	1	0	0	0	1	0	0	0	0	32
03:30	0	26	14	0	2	0	0	0	0	0	0	0	0	42
03:45	0	29	11	2	4	0	0	0	0	0	0	0	0	46
04:00	0	37	16	0	2	0	0	0	0	0	0	0	0	55
04:15	0	53	16	1	3	0	0	0	0	0	0	0	0	73
04:30	0	59	28	1	9	0	0	0	1	0	0	0	0	98
04:45	0	82	24	0	4	1	0	0	1	0	0	0	0	112
05:00	0	75	26	1	4	0	0	0	1	0	0	0	0	107
05:15	0	94	31	1	7	0	0	0	2	0	1	0	0	136
05:30	0	134	34	0	5	0	0	3	2	0	0	0	0	178
05:45	0	130	44	1	10	1	0	0	2	0	0	0	0	188
06:00	0	129	40	1	9	2	0	1	3	0	0	0	0	185
06:15	0	149	46	1	12	0	0	2	6	0	0	0	0	216
06:30	0	169	49	1	11	1	0	1	0	0	0	0	0	232
06:45	0	202	50	0	14	0	0	1	4	0	0	0	0	271
07:00	0	234	60	1	11	1	0	0	3	0	0	0	0	310
07:15	0	264	64	2	13	0	0	0	3	0	0	0	0	346
07:30	2	372	75	2	19	2	0	0	7	0	0	0	0	482
07:45	0	343	94	1	18	1	0	0	1	0	0	0	0	458
08:00	0	293	78	1	14	2	0	1	1	0	0	0	0	390
08:15	0	260	79	1	16	3	0	3	3	0	0	0	0	365
08:30	0	206	56	2	22	0	0	1	2	0	0	0	0	289
08:45	0	196	66	1	16	0	1	2	2	0	1	0	0	285
09:00	0	187	51	3	10	1	0	1	2	0	0	0	0	255
09:15	0	182	57	2	13	1	0	1	5	0	0	0	0	261
09:30	0	178	61	2	12	1	0	1	1	0	0	0	0	256
09:45	0	199	61	0	12	0	0	5	2	0	0	0	0	279
10:00	0	179	61	3	10	1	0	2	5	0	1	0	0	262
10:15	0	171	54	2	12	2	0	1	4	0	0	0	0	246
10:30	0	198	51	1	12	1	0	1	4	0	0	0	0	268
10:45	1	184	62	1	9	2	0	1	0	0	1	0	0	261
11:00	0	184	50	3	15	1	0	3	3	0	0	0	0	258
11:15	0	215	65	1	11	0	0	2	4	0	0	0	0	298
11:30	0	217	56	1	12	1	0	0	7	0	0	0	0	294
11:45	0	203	45	1	16	3	0	2	1	0	1	0	0	272
12:00 PM	0	220	55	4	7	0	0	3	1	0	0	0	0	290
12:15	0	171	48	1	14	2	0	4	0	0	0	0	0	240
12:30	1	211	74	0	9	0	0	2	0	0	0	0	0	297
12:45	0	183	65	2	9	1	0	1	0	0	0	0	0	262
13:00	0	207	64	3	15	1	0	0	1	0	0	0	0	291
13:15	0	214	67	2	14	1	0	2	2	0	0	0	0	302
13:30	0	249	68	0	17	1	0	3	4	0	0	0	0	342
13:45	0	232	59	1	9	0	0	4	2	0	0	0	0	307
14:00	0	240	57	3	21	3	0	2	1	0	0	0	0	327
14:15	0	262	67	1	19	0	0	1	2	0	0	0	0	352
14:30	0	285	77	1	13	0	0	2	3	0	0	0	0	381
14:45	1	283	76	3	16	1	1	0	2	0	1	0	0	384
15:00	0	324	76	3	22	0	0	0	0	0	0	0	0	425
15:15	0	296	84	1	16	0	0	1	1	0	0	0	0	399
15:30	0	301	77	4	13	0	0	0	2	0	0	0	0	397
15:45	0	316	90	1	16	1	0	0	1	0	0	0	0	425
16:00	0	268	70	3	10	1	0	0	5	0	0	0	0	357
16:15	0	329	86	2	19	1	0	0	4	0	1	0	0	442
16:30	0	320	89	2	20	1	0	0	5	0	0	0	0	438
16:45	0	292	74	2	17	0	0	0	4	0	1	0	0	390
17:00	0	316	83	1	9	0	0	0	8	0	0	0	0	417
17:15	0	346	87	0	12	2	0	2	3	0	0	0	0	452
17:30	2	348	82	3	15	0	0	1	0	0	1	0	0	452
17:45	0	336	71	0	10	1	0	0	3	0	0	0	0	421
18:00	0	317	78	1	10	1	0	0	2	0	0	0	0	409
18:15	0	271	67	1	9	0	0	0	3	0	0	0	0	351
18:30	0	273	58	0	9	0	0	0	3	0	0	0	0	343
18:45	0	231	55	0	15	1	0	0	4	0	1	0	0	307
19:00	0	259	54	2	9	0	0	0	1	0	0	0	0	325
19:15	0	231	42	1	7	0	0	1	1	0	0	0	0	283
19:30	0	241	49	0	7	1	0	1	1	0	0	0	0	300
19:45	0	161	36	1	6	1	0	0	0	0	0	0	0	205
20:00	0	196	40	1	8	0	0	0	0	0	0	0	0	245
20:15	0	169	30	0	3	0	0	0	0	0	0	0	0	202
20:30	0	160	39	1	4	0	0	0	0	0	0	0	0	204
20:45	0	168	29	0	7	0	0	0	1	0	0	0	0	205
21:00	0	170	40	0	3	0	0	0	0	0	0	0	0	213
21:15	0	159	34	0	2	0	1	0	1	0	0	0	0	197
21:30	0	120	25	0	6	0	0	0	0	0	0	0	0	151
21:45	0	116	19	0	2	0	0	0	0	0	0	0	0	137
22:00	0	99	20	0	1	0	0	0	0	0	0	0	0	120
22:15	0	108	23	0	0	1	0	0	0	0	0	0	0	132
22:30	0	88	22	0	0	0	0	0	0	0	0	0	0	110
22:45	0	104	18	0	4	1	0	0	0	0	0	0	0	127
23:00	0	72	11	2	0	1	0	0	0	0	0	0	0	86
23:15	0	53	13	0	3	0	0	0	0	0	0	0	0	69
23:30	0	44	8	0	3	0	0	0	0	0	0	0	0	56
23:45	0	28	3	0	2	0	0	0	0	0	0	0	0	33
<b>Totals</b>	<b>2</b>	<b>16571</b>	<b>4318</b>	<b>101</b>	<b>839</b>	<b>53</b>	<b>3</b>	<b>70</b>	<b>158</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22128</b>
<b>% of Totals</b>	<b>0%</b>	<b>75%</b>	<b>20%</b>	<b>0%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>AM Volumes</b>	3	48	377	29
<b>% AM</b>	0%	0%	0%	0%
<b>AM Peak Hour</b>	06:45	07:15	07:30	08:30
<b>Volume</b>	2	1272	327	8
<b>PM Volumes</b>	4	10387	2560	53
<b>% PM</b>	0%	47%	12%	0%
<b>PM Peak Hour</b>	16:45	17:15	15:45	14:45
<b>Volume</b>	2	1347	335	11

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>All Classes</b>	Volume	%	Volume	%
	Volume	%	Volume	%

# CLASSIFICATION

Vineyard Ave Bet. 8th St & 6th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_009n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	71	21	1	3	0	0	0	1	0	0	0	0	97
01:00	0	50	12	0	2	0	0	0	0	0	0	0	0	64
02:00	0	35	6	0	0	1	0	0	0	0	0	0	0	42
03:00	0	45	14	4	2	0	0	0	1	0	0	0	0	66
04:00	0	79	26	1	6	0	0	0	0	0	0	0	0	112
05:00	0	178	48	2	6	0	0	1	6	0	1	0	0	242
06:00	0	218	72	1	14	2	0	1	8	0	0	0	0	316
07:00	0	489	133	3	30	1	0	0	5	0	0	0	0	661
08:00	0	426	141	2	32	2	0	4	3	0	0	0	0	610
09:00	0	339	99	2	23	0	0	5	7	0	0	0	0	475
10:00	1	353	121	4	22	4	0	1	7	0	0	0	0	513
11:00	0	388	90	5	28	2	0	1	9	0	0	0	0	523
12:00 PM	1	351	112	4	22	2	0	2	0	0	0	0	0	494
13:00	0	440	117	4	22	1	0	2	4	0	0	0	0	590
14:00	0	527	149	6	29	2	0	1	5	0	1	0	0	720
15:00	0	667	186	4	41	1	0	0	3	0	0	0	0	902
16:00	0	707	181	5	37	1	0	1	16	0	1	0	0	949
17:00	1	750	186	3	33	0	0	1	9	0	0	0	0	983
18:00	0	594	147	1	28	0	0	0	7	0	0	0	0	777
19:00	0	445	110	2	20	0	0	0	3	0	0	0	0	580
20:00	0	327	77	1	15	0	0	0	0	0	0	0	0	420
21:00	0	305	71	0	12	0	0	0	1	0	0	0	0	389
22:00	0	215	54	0	3	2	0	0	0	0	0	0	0	274
23:00	0	96	24	2	5	1	0	0	0	0	0	0	0	128
<b>Totals</b>	<b>3</b>	<b>8095</b>	<b>2197</b>	<b>57</b>	<b>435</b>	<b>22</b>		<b>20</b>	<b>95</b>		<b>3</b>			<b>10927</b>
% of Totals	0%	74%	20%	1%	4%	0%		0%	1%		0%			100%

8098 2689 22 118  
1.0 1.5 2.0 3.0

**8098 4034 44 354 12530**

AM Volumes	1	2671	783	25	168	12	0	13	47	0	1	0	0	3721
% AM	0%	24%	7%	0%	2%	0%		0%	0%		0%			34%
AM Peak Hour	10:00	07:00	08:00	11:00	08:00	10:00		09:00	11:00		05:00			07:00
Volume	1	489	141	5	32	4		5	9		1			661
PM Volumes	2	5424	1414	32	267	10	0	7	48	0	2	0	0	7206
% PM	0%	50%	13%	0%	2%	0%		0%	0%		0%			66%
PM Peak Hour	12:00	17:00	15:00	14:00	15:00	12:00		12:00	16:00		14:00			17:00
Volume	1	750	186	6	41	2		2	16		1			983

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1271	↔ 12%	1084	↔ 10%	1932	↔ 18%	6640	↔ 61%

**Classification Definitions**

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. 8th St & 6th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_009s

**South Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	61	5	0	0	0	0	1	0	0	0	0	0	67
01:00	0	51	10	0	2	0	0	0	2	0	0	0	0	65
02:00	0	34	11	2	0	0	0	1	0	0	0	0	0	48
03:00	0	59	25	2	5	0	0	0	1	0	0	0	0	92
04:00	0	152	58	1	12	1	0	0	2	0	0	0	0	226
05:00	0	255	87	1	20	1	0	2	1	0	0	0	0	367
06:00	0	431	113	2	32	1	0	4	5	0	0	0	0	588
07:00	2	724	161	3	31	3	0	2	9	0	0	0	0	935
08:00	0	529	138	3	36	3	1	3	5	0	1	0	0	719
09:00	0	407	131	5	24	3	0	3	3	0	0	0	0	576
10:00	0	379	107	3	21	2	0	4	6	0	2	0	0	524
11:00	0	431	126	1	26	3	0	6	6	0	1	0	0	600
12:00 PM	0	434	130	3	17	1	0	8	2	0	0	0	0	595
13:00	0	462	141	2	33	2	0	7	5	0	0	0	0	652
14:00	1	543	128	2	40	2	1	4	3	0	0	0	0	724
15:00	0	570	141	5	26	0	0	1	1	0	0	0	0	744
16:00	0	502	138	4	29	2	0	0	2	0	1	0	0	678
17:00	1	596	137	1	13	3	0	2	5	0	1	0	0	759
18:00	0	498	111	1	15	2	0	0	5	0	1	0	0	633
19:00	0	447	71	2	9	2	0	2	0	0	0	0	0	533
20:00	0	366	61	1	7	0	0	0	1	0	0	0	0	436
21:00	0	260	47	0	1	0	1	0	0	0	0	0	0	309
22:00	0	184	29	0	2	0	0	0	0	0	0	0	0	215
23:00	0	101	12	0	3	0	0	0	0	0	0	0	0	116
<b>Totals</b>	<b>4</b>	<b>8476</b>	<b>2118</b>	<b>44</b>	<b>404</b>	<b>31</b>	<b>3</b>	<b>50</b>	<b>64</b>		<b>7</b>			<b>11201</b>
<b>% of Totals</b>	<b>0%</b>	<b>76%</b>	<b>19%</b>	<b>0%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>		<b>0%</b>			<b>100%</b>

<b>AM Volumes</b>	2	3513	972	23	209	17	1	26	40	0	4	0	0	4807
<b>% AM</b>	0%	31%	9%	0%	2%	0%	0%	0%	0%		0%			43%
<b>AM Peak Hour</b>	07:00	07:00	07:00	09:00	08:00	07:00	08:00	11:00	07:00		10:00			07:00
<b>Volume</b>	2	724	161	5	36	3	1	6	9		2			935
<b>PM Volumes</b>	2	4963	1146	21	195	14	2	24	24	0	3	0	0	6394
<b>% PM</b>	0%	44%	10%	0%	2%	0%	0%	0%	0%		0%			57%
<b>PM Peak Hour</b>	14:00	17:00	13:00	15:00	14:00	17:00	14:00	12:00	13:00		16:00			17:00
<b>Volume</b>	1	596	141	5	40	3	1	8	5		1			759

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1654	↔ 15%	1247	↔ 11%	1437	↔ 13%	6863	↔ 61%

Classification Definitions			
1 Motorcycles	4 Buses	12 6 Axle Single Trailers	13 7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. 8th St & 6th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_009

### Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	132	26	1	3	0	0	1	1	0	0	0	0	164
01:00	0	101	22	0	4	0	0	0	2	0	0	0	0	129
02:00	0	69	17	2	0	1	0	1	0	0	0	0	0	90
03:00	0	104	39	6	7	0	0	0	2	0	0	0	0	158
04:00	0	231	84	2	18	1	0	0	2	0	0	0	0	338
05:00	0	433	135	3	26	1	0	3	7	0	1	0	0	609
06:00	0	649	185	3	46	3	0	5	13	0	0	0	0	904
07:00	2	1213	294	6	61	4	0	2	14	0	0	0	0	1596
08:00	0	955	279	5	68	5	1	7	8	0	1	0	0	1329
09:00	0	746	230	7	47	3	0	8	10	0	0	0	0	1051
10:00	1	732	228	7	43	6	0	5	13	0	2	0	0	1037
11:00	0	819	216	6	54	5	0	7	15	0	1	0	0	1123
12:00 PM	1	785	242	7	39	3	0	10	2	0	0	0	0	1089
13:00	0	902	258	6	55	3	0	9	9	0	0	0	0	1242
14:00	1	1070	277	8	69	4	1	5	8	0	1	0	0	1444
15:00	0	1237	327	9	67	1	0	1	4	0	0	0	0	1646
16:00	0	1209	319	9	66	3	0	1	18	0	2	0	0	1627
17:00	2	1346	323	4	46	3	0	3	14	0	1	0	0	1742
18:00	0	1092	258	2	43	2	0	0	12	0	1	0	0	1410
19:00	0	892	181	4	29	2	0	2	3	0	0	0	0	1113
20:00	0	693	138	2	22	0	0	0	1	0	0	0	0	856
21:00	0	565	118	0	13	0	1	0	1	0	0	0	0	698
22:00	0	399	83	0	5	2	0	0	0	0	0	0	0	489
23:00	0	197	36	2	8	1	0	0	0	0	0	0	0	244
<b>Totals</b>	<b>7</b>	<b>16571</b>	<b>4315</b>	<b>101</b>	<b>839</b>	<b>53</b>	<b>3</b>	<b>70</b>	<b>159</b>		<b>10</b>			<b>22128</b>
<b>% of Totals</b>	<b>0%</b>	<b>75%</b>	<b>20%</b>	<b>0%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>		<b>0%</b>			<b>100%</b>

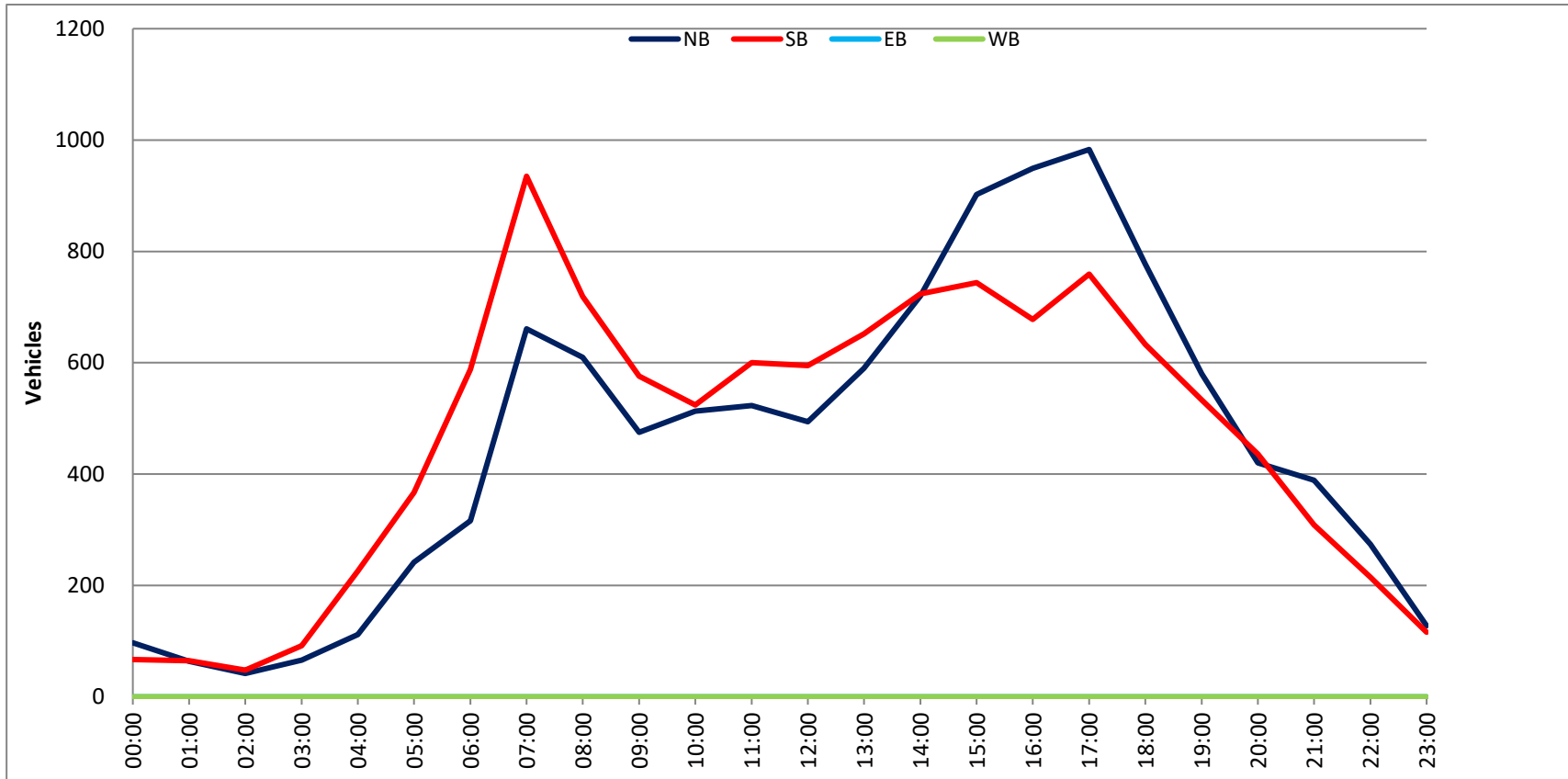
<b>AM Volumes</b>	3	6184	1755	48	377	29	1	39	87	0	5	0	0	8528
<b>% AM</b>	0%	28%	8%	0%	2%	0%	0%	0%	0%		0%			39%
<b>AM Peak Hour</b>	07:00	07:00	07:00	09:00	08:00	10:00	08:00	09:00	11:00		10:00			07:00
<b>Volume</b>	2	1213	294	7	68	6	1	8	15		2			1596
<b>PM Volumes</b>	4	10387	2560	53	462	24	2	31	72	0	5	0	0	13600
<b>% PM</b>	0%	47%	12%	0%	2%	0%	0%	0%	0%		0%			61%
<b>PM Peak Hour</b>	17:00	17:00	15:00	15:00	14:00	14:00	14:00	12:00	16:00		16:00			17:00
<b>Volume</b>	2	1346	327	9	69	4	1	10	18		2			1742

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2925	↔ 13%	2331	↔ 11%	3369	↔ 15%	13503	↔ 61%

Classification Definitions			
1 Motorcycles	2 Buses	3 1 Axle Single Unit	4 2 Axle Single Unit
5 3 Axle Single Unit	6 4 Axle Single Unit	7 5 Axle Single Unit	8 6 Axle Single Unit
9 7 Axle Single Unit	10 8 Axle Single Unit	11 9 Axle Single Unit	12 10 Axle Single Unit
13 11 Axle Single Unit	14 12 Axle Single Unit	15 13 Axle Single Unit	16 14 Axle Single Unit

DAILY TOTALS					NB	SB	EB	WB	To		
					10,927	11,201	0	0	22,		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO
00:00	25	26	0	0	51	12:00	127	163	0	0	290
00:15	30	14	0	0	44	12:15	117	123	0	0	240
00:30	26	12	0	0	38	12:30	129	168	0	0	297
00:45	16	97	15	67	31	12:45	121	494	141	595	262
01:00	21	17	0	0	38	13:00	147	144	0	0	291
01:15	21	13	0	0	34	13:15	119	183	0	0	302
01:30	11	7	0	0	18	13:30	165	177	0	0	342
01:45	11	64	28	65	39	13:45	159	590	148	652	307
02:00	13	14	0	0	27	14:00	167	160	0	0	327
02:15	8	3	0	0	11	14:15	175	177	0	0	352
02:30	7	13	0	0	20	14:30	171	210	0	0	381
02:45	14	42	18	48	32	14:45	207	720	177	724	384
03:00	19	19	0	0	38	15:00	226	199	0	0	425
03:15	7	25	0	0	32	15:15	216	183	0	0	399
03:30	18	24	0	0	42	15:30	214	183	0	0	397
03:45	22	66	24	92	46	15:45	246	902	179	744	425
04:00	18	37	0	0	55	16:00	197	160	0	0	357
04:15	25	48	0	0	73	16:15	256	186	0	0	442
04:30	30	68	0	0	98	16:30	270	168	0	0	438
04:45	39	112	73	226	112	16:45	226	949	164	678	390
05:00	42	65	0	0	107	17:00	251	166	0	0	417
05:15	49	87	0	0	136	17:15	258	194	0	0	452
05:30	64	114	0	0	178	17:30	267	185	0	0	452
05:45	87	242	101	367	188	17:45	207	983	214	759	421
06:00	56	129	0	0	185	18:00	235	174	0	0	409
06:15	79	137	0	0	216	18:15	191	160	0	0	351
06:30	75	157	0	0	232	18:30	179	164	0	0	343
06:45	106	316	165	588	271	18:45	172	777	135	633	307
07:00	116	194	0	0	310	19:00	167	158	0	0	325
07:15	154	192	0	0	346	19:15	141	142	0	0	283
07:30	201	281	0	0	482	19:30	160	140	0	0	300
07:45	190	661	268	935	458	19:45	112	580	93	533	205
08:00	151	239	0	0	390	20:00	134	111	0	0	245
08:15	177	188	0	0	365	20:15	92	110	0	0	202
08:30	134	155	0	0	289	20:30	100	104	0	0	204
08:45	148	610	137	719	285	20:45	94	420	111	436	205
09:00	113	142	0	0	255	21:00	123	90	0	0	213
09:15	116	145	0	0	261	21:15	105	92	0	0	197
09:30	114	142	0	0	256	21:30	87	64	0	0	151
09:45	132	475	147	576	279	21:45	74	389	63	309	137
10:00	121	141	0	0	262	22:00	69	51	0	0	120
10:15	126	120	0	0	246	22:15	81	51	0	0	132
10:30	129	139	0	0	268	22:30	50	60	0	0	110
10:45	137	513	124	524	261	22:45	74	274	53	215	127
11:00	112	147	0	0	259	23:00	47	39	0	0	86
11:15	146	152	0	0	298	23:15	37	32	0	0	69
11:30	133	161	0	0	294	23:30	32	24	0	0	56
11:45	132	523	140	600	272	23:45	12	128	21	116	33
<b>TOTALS</b>	<b>3721</b>	<b>4807</b>			<b>8528</b>	<b>TOTALS</b>	<b>7206</b>	<b>6394</b>			
<b>SPLIT %</b>	<b>43.6%</b>	<b>56.4%</b>			<b>38.5%</b>	<b>SPLIT %</b>	<b>53.0%</b>	<b>47.0%</b>			

DAILY TOTALS					NB	SB	EB	WB	To	
					10,927	11,201	0	0	22,	
AM Peak Hour	07:30	07:15			07:30	PM Peak Hour	16:30	14:30		
AM Pk Volume	719	980			1695	PM Pk Volume	1005	769		
Pk Hr Factor	0.894	0.872			0.879	Pk Hr Factor	0.931	0.915		
7 - 9 Volume	1271	1654	0	0	2925	4 - 6 Volume	1932	1437	0	0
7 - 9 Peak Hour	07:30	07:15			07:30	4 - 6 Peak Hour	16:30	17:00		
7 - 9 Pk Volume	719	980	0	0	1695	4 - 6 Pk Volume	1005	759	0	0
Pk Hr Factor	0.894	0.872	0.000	0.000	0.879	Pk Hr Factor	0.931	0.887	0.000	0.000





**CLASSIFICATION**  
Vineyard Ave Bet. 6th St & 4th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_010n

**North Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	31	3	0	1	0	0	0	0	0	0	0	0	35
00:15	0	29	6	1	2	0	0	0	0	1	0	0	0	39
00:30	0	21	3	0	0	0	0	0	0	0	0	0	0	24
00:45	0	22	4	0	1	0	0	0	0	0	0	0	0	27
01:00	0	15	3	0	0	0	0	0	0	0	0	0	0	18
01:15	0	20	3	0	0	0	0	0	1	0	0	0	0	24
01:30	0	13	2	0	0	1	0	0	0	0	0	0	0	16
01:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
02:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
02:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
02:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:45	0	13	1	1	0	1	0	0	0	0	0	0	0	16
03:00	0	20	3	0	0	0	0	0	0	0	0	0	0	23
03:15	0	4	1	1	0	0	0	0	1	0	0	0	0	7
03:30	0	15	2	0	0	0	0	0	0	0	0	0	0	17
03:45	0	13	8	2	0	0	0	0	0	0	0	0	0	22
04:00	0	11	5	0	0	0	0	0	0	0	0	0	0	16
04:15	0	17	2	1	1	0	0	0	1	0	0	0	0	22
04:30	0	23	6	0	0	0	0	0	0	0	0	0	0	29
04:45	0	32	4	0	0	0	0	0	0	0	0	0	0	36
05:00	0	27	13	1	1	0	0	0	1	0	0	0	0	43
05:15	0	39	8	0	1	0	0	0	2	0	0	0	0	50
05:30	0	48	7	0	1	0	0	0	1	2	0	0	0	59
05:45	0	65	13	1	2	0	0	0	2	2	0	0	0	83
06:00	0	45	12	1	3	1	0	1	3	0	0	0	0	66
06:15	0	54	14	1	3	0	0	0	3	0	0	0	0	75
06:30	0	60	13	0	1	2	0	0	0	0	0	0	0	76
06:45	0	79	18	0	7	0	0	0	2	0	0	0	0	106
07:00	0	101	15	1	6	0	0	0	0	0	0	0	0	123
07:15	0	133	20	0	6	0	0	0	3	0	0	0	0	162
07:30	0	159	23	1	10	0	0	0	1	0	0	0	0	194
07:45	0	158	28	0	5	1	0	1	0	0	0	0	0	193
08:00	0	137	22	1	6	1	0	0	0	0	0	0	0	167
08:15	0	144	32	1	9	1	0	2	2	0	0	0	0	191
08:30	1	109	17	0	10	1	0	1	0	0	0	0	0	139
08:45	0	119	30	2	7	0	0	0	1	0	0	0	0	159
09:00	0	94	15	0	3	0	0	1	2	0	0	0	0	115
09:15	0	83	18	0	7	0	0	0	3	0	0	0	0	111
09:30	0	88	23	0	4	1	0	0	0	0	0	0	0	116
09:45	0	105	20	0	4	0	0	2	3	0	0	0	0	134
10:00	0	98	23	3	2	0	0	0	2	0	0	0	0	128
10:15	0	108	17	0	5	2	0	0	2	0	0	0	0	134
10:30	0	114	21	2	6	1	0	1	2	0	0	0	0	147
10:45	0	114	29	2	8	1	0	0	1	0	0	0	0	155
11:00	0	103	18	1	3	1	0	0	2	0	0	0	0	128
11:15	0	127	23	0	6	1	1	0	3	0	0	0	0	161
11:30	0	111	20	0	5	0	0	0	4	0	0	0	0	140
11:45	0	118	24	2	5	1	0	1	0	0	0	0	0	151
12:00 PM	0	107	29	1	5	0	0	1	1	0	0	0	0	144
12:15	0	113	16	0	3	0	0	0	0	0	0	0	0	132
12:30	0	110	21	1	6	0	0	1	0	0	0	0	0	139
12:45	0	116	19	1	5	1	0	0	0	0	0	0	0	142
13:00	0	137	26	4	7	0	0	0	2	0	0	0	0	176
13:15	0	114	24	0	2	0	0	1	0	0	0	0	0	141
13:30	0	165	24	0	4	2	0	0	1	0	0	0	0	196
13:45	0	137	28	1	3	0	0	0	1	0	0	0	0	170
14:00	0	141	26	1	6	2	0	0	0	0	0	0	0	176
14:15	0	170	25	1	7	0	0	0	3	0	0	0	0	206
14:30	0	134	29	1	7	1	0	0	7	0	0	0	0	171
14:45	0	200	35	4	10	0	0	0	3	0	0	0	0	252
15:00	0	189	35	2	9	0	0	0	0	0	0	0	0	235
15:15	0	215	36	0	7	0	0	0	3	0	0	0	0	261
15:30	0	196	36	2	6	0	0	0	2	0	0	0	0	242
15:45	0	198	46	0	9	1	0	0	1	0	0	0	0	255
16:00	0	188	31	2	9	0	0	0	3	0	0	0	0	233
16:15	0	227	43	0	10	2	0	0	3	0	0	0	0	285
16:30	0	212	37	0	10	0	0	0	4	0	0	0	0	263
16:45	1	219	38	1	6	0	0	0	8	0	0	0	0	273
17:00	0	213	38	1	5	0	0	0	2	0	0	0	0	259
17:15	0	220	47	0	8	0	0	0	2	0	0	0	0	277
17:30	0	220	40	2	6	1	0	0	0	0	0	0	0	269
17:45	1	215	30	1	6	0	0	0	2	0	0	0	0	255
18:00	0	213	39	0	5	0	0	0	2	0	0	0	0	259
18:15	0	184	27	1	8	0	0	0	0	0	0	0	0	220
18:30	0	183	27	0	4	0	0	0	4	0	0	0	0	218
18:45	0	144	31	0	6	0	0	0	2	0	0	0	0	183
19:00	0	150	23	1	7	1	0	0	2	0	0	0	0	184
19:15	0	150	27	0	3	0	0	0	0	0	0	0	0	180
19:30	0	159	21	0	3	0	0	0	1	0	0	0	0	184
19:45	0	121	18	1	3	0	0	0	0	0	0	0	0	143
20:00	0	132	27	0	16	4	0	0	0	0	0	0	0	163
20:15	0	112	16	0	2	0	0	0	0	0	0	0	0	130
20:30	0	127	23	0	4	0	0	0	0	0	0	0	0	154
20:45	0	96	13	0	5	0	0	0	0	0	0	0	0	114
21:00	0	122	17	0	4	0	0	0	1	0	0	0	0	144
21:15	0	109	14	0	3	0	0	0	1	0	0	0	0	127
21:30	1	87	14	0	4	0	0	0	0	0	0	0	0	106
21:45	0	81	11	0	3	1	0	0	0	0	0	0	0	93
22:00	0	82	11	0	2	0	0	0	0	0	0	0	0	95
22:15	0	75	12	0	1	0	0	0	1	0	0	0	0	89
22:30	0	61	10	0	2	0	0	0	0	0	0	0	0	73
22:45	0	79	11	0	3	1	0	0	0	0	0	0	0	94
23:00	0	50	6	2	1	1	0	0	0	0	0	0	0	60
23:15	0	39	6	0	1	0	0	0	0	0	0	0	0	46
23:30	0	39	4	0	2	0	0	0	0	0	0	0	0	45
23:45	0	32	3	0	1	0	0	0	0	0	0	0	0	36
<b>Totals</b>	<b>4</b>	<b>9865</b>	<b>1767</b>	<b>57</b>	<b>376</b>	<b>29</b>	<b>1</b>	<b>14</b>	<b>105</b>					<b>12218</b>
% of Totals	0%	81%	14%	0%	3%	0%	0%	0%	1%					100%

AM Volumes	1	3082	597	76	141	17	1	11	50	0	0	0	0	3926
% AM	0%	25%	5%	0%	1%	0%	0%	0%	0%	0	0	0	0	32%
PM Volumes	3	6783	1170	31	235	12	0	3	55	0	0	0	0	8292
% PM	0%	56%	10%	0%	2%	0%	0%	0%	0%					68%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

**CLASSIFICATION**  
Vineyard Ave Bet. 6th St & 4th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_010s

**South Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	21	5	0	1	0	0	0	0	0	0	0	0	27
00:15	0	17	3	0	0	0	0	0	0	0	0	0	0	20
00:30	0	9	1	0	0	0	0	0	0	0	0	0	0	10
00:45	0	14	3	0	0	0	0	0	0	0	0	0	0	17
01:00	1	12	6	0	0	0	0	0	0	0	0	0	0	19
01:15	0	12	2	0	0	0	0	0	0	0	0	0	0	14
01:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
01:45	0	17	4	0	1	0	0	0	3	0	0	0	0	25
02:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
02:15	0	5	2	0	0	0	0	0	0	0	0	0	0	7
02:30	0	11	5	2	0	0	0	0	0	0	0	0	0	18
02:45	0	16	8	0	1	0	0	0	0	0	0	0	0	25
03:00	0	18	3	2	1	1	0	0	1	0	0	0	0	26
03:15	0	23	5	0	1	0	0	0	0	0	0	0	0	29
03:30	0	24	6	0	2	0	0	0	0	0	0	0	0	32
03:45	0	25	5	0	2	0	0	0	0	0	0	0	0	32
04:00	0	29	12	0	2	0	0	0	0	0	0	0	0	53
04:15	0	42	15	0	1	0	0	0	0	0	0	0	0	58
04:30	1	54	17	1	7	0	0	0	0	0	0	0	0	80
04:45	0	69	18	1	3	1	0	0	2	0	0	0	0	94
05:00	0	56	17	0	5	0	0	0	0	0	0	0	0	78
05:15	0	78	25	1	6	0	0	0	1	0	0	0	0	111
05:30	0	93	28	0	4	0	0	1	1	0	0	0	0	127
05:45	0	89	24	2	7	1	0	0	0	0	0	0	0	123
06:00	0	108	28	1	6	0	0	0	3	0	0	0	0	146
06:15	0	112	30	0	7	1	0	0	2	0	0	0	0	152
06:30	0	131	34	1	8	0	0	0	2	0	0	0	0	176
06:45	0	154	37	0	13	0	0	0	3	0	0	0	0	207
07:00	0	143	39	0	5	1	0	0	3	0	0	0	0	191
07:15	0	162	46	0	11	0	0	0	1	0	0	0	0	220
07:30	0	206	53	2	9	0	1	1	5	0	0	0	0	275
07:45	0	194	55	0	15	0	0	0	1	0	0	0	0	265
08:00	0	176	42	1	9	0	0	0	2	0	0	0	0	230
08:15	0	171	44	1	9	2	0	0	0	0	0	0	0	227
08:30	0	112	29	1	8	1	0	0	1	0	0	0	0	152
08:45	0	114	33	0	8	0	0	0	3	0	0	0	0	158
09:00	0	118	32	3	4	0	0	0	0	0	0	0	0	157
09:15	0	111	35	3	4	2	0	0	0	0	0	0	0	157
09:30	0	120	30	3	5	1	0	1	1	0	0	0	0	161
09:45	0	123	40	0	6	0	0	0	1	0	0	0	0	170
10:00	1	113	29	0	6	1	0	0	3	0	0	0	0	153
10:15	0	102	23	2	7	0	0	0	0	0	0	0	0	134
10:30	0	100	31	1	5	0	0	0	3	0	0	0	0	140
10:45	0	126	30	2	6	0	0	0	0	0	0	0	0	164
11:00	0	115	32	2	6	1	0	0	0	0	0	0	0	162
11:15	0	137	41	0	6	1	0	1	2	0	0	0	0	188
11:30	0	132	40	1	7	0	0	0	2	0	0	0	0	182
11:45	0	115	27	0	6	2	0	0	2	0	0	0	0	152
12:00 PM	0	135	35	2	5	0	0	0	2	0	0	0	0	179
12:15	0	112	32	1	9	0	0	1	1	0	0	0	0	156
12:30	0	129	40	1	7	0	0	1	0	0	0	0	0	178
12:45	0	122	37	0	5	0	0	0	0	0	0	0	0	166
13:00	0	118	35	3	6	0	0	0	0	0	0	0	0	162
13:15	0	151	42	0	7	0	0	0	1	0	0	0	0	201
13:30	0	137	50	2	7	0	0	0	4	0	0	0	0	200
13:45	0	133	42	0	7	0	0	1	0	0	0	0	0	183
14:00	0	121	35	0	10	1	0	0	1	0	0	0	0	168
14:15	0	131	34	2	9	1	0	0	1	0	0	0	0	178
14:30	0	157	44	0	8	0	0	0	0	0	0	0	0	211
14:45	0	151	46	1	8	0	0	0	0	0	0	0	0	206
15:00	0	145	44	0	6	0	0	0	0	0	0	0	0	195
15:15	0	136	36	1	7	0	0	1	0	0	0	0	0	181
15:30	0	160	45	2	9	0	0	0	1	0	0	0	0	217
15:45	0	128	38	1	8	0	0	0	0	0	0	0	0	175
16:00	0	139	32	2	7	0	0	0	2	0	0	0	0	182
16:15	0	142	40	2	7	0	0	0	2	0	0	0	0	193
16:30	0	125	30	1	9	0	0	0	0	0	0	0	0	166
16:45	0	144	36	0	6	0	0	0	1	0	0	0	0	187
17:00	0	151	45	1	7	0	0	0	0	0	0	0	0	204
17:15	0	166	40	1	7	1	0	0	1	0	0	0	0	216
17:30	0	152	33	1	5	0	0	0	2	0	0	0	0	193
17:45	0	140	33	0	8	0	0	0	2	0	0	0	0	183
18:00	0	142	37	1	5	0	0	0	0	0	0	0	0	185
18:15	1	130	37	0	7	0	0	0	0	0	0	0	0	178
18:30	0	126	30	1	4	0	0	0	0	0	0	0	0	161
18:45	0	116	32	0	6	0	0	0	1	0	0	0	0	155
19:00	0	126	33	0	4	0	0	0	0	0	0	0	0	163
19:15	1	129	25	0	5	0	0	0	0	0	0	0	0	160
19:30	0	113	36	1	7	0	0	0	1	0	0	0	0	158
19:45	0	97	24	0	4	1	0	0	0	0	0	0	0	126
20:00	1	89	27	1	5	0	0	0	0	0	0	0	0	122
20:15	0	93	23	2	7	0	0	0	0	0	0	0	0	125
20:30	0	83	24	1	2	0	0	0	0	0	0	0	0	110
20:45	0	86	27	0	5	0	0	0	1	0	0	0	0	119
21:00	0	90	18	0	2	0	0	0	0	0	0	0	0	110
21:15	0	72	20	0	1	0	0	0	0	0	0	0	0	93
21:30	2	63	11	0	1	0	0	0	0	0	0	0	0	77
21:45	0	53	10	0	0	0	0	0	0	0	0	0	0	63
22:00	0	47	10	0	1	0	0	0	0	0	0	0	0	58
22:15	0	55	11	0	1	0	0	0	0	0	0	0	0	67
22:30	0	51	11	0	0	0	0	0	0	0	0	0	0	62
22:45	0	38	8	0	0	0	0	0	0	0	0	0	0	46
23:00	0	39	8	0	2	0	0	0	0	0	0	0	0	49
23:15	0	28	7	0	1	0	0	0	0	0	0	0	0	36
23:30	0	18	6	0	0	0	0	0	0	0	0	0	0	24
23:45	0	21	6	0	2	0	0	0	0	0	0	0	0	33
<b>Totals</b>	<b>8</b>	<b>9199</b>	<b>2479</b>	<b>64</b>	<b>468</b>	<b>20</b>	<b>1</b>	<b>8</b>	<b>88</b>					<b>12333</b>
<b>% of Totals</b>	<b>0%</b>	<b>75%</b>	<b>20%</b>	<b>1%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>					<b>100%</b>

AM Volumes	3	3959	1074	33	222	36	1	4	54	0	0	0	0	5366
% AM	0%	32%	9%	0%	2%	0%	0%	0%	2%	0%	0%	0%	0%	44%
AM Peak Hour	00:15	07:30	07:15	08:45	07:15	09:15	06:45	11:45	06:45	0	0	0	0	07:30
Volume	1	747	194	9	44	4	1	2	12					997
PM Volumes	5	5240	1405	31	246	4	0	4	32	0	0	0	0	6967
% PM	0%	42%	11%	0%	4%	0%	0%	0%	2%	0%	0%	0%	0%	56%
PM Peak Hour	19:15	16:45	14:45	15:30	14:00	13:30		12:00	12:45					16:45
Volume	2	613	171	7	35	2		7						800

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

**CLASSIFICATION**  
Vineyard Ave Bet. 6th St & 4th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_010

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	52	8	0	2	0	0	0	0	0	0	0	0	62
00:15	0	46	1	1	2	0	0	0	0	0	0	0	0	59
00:30	0	30	4	0	0	0	0	0	0	0	0	0	0	34
00:45	0	36	7	0	1	0	0	0	0	0	0	0	0	44
01:00	1	27	9	0	0	0	0	0	0	0	0	0	0	37
01:15	0	32	5	0	0	0	0	0	1	0	0	0	0	38
01:30	0	19	3	0	0	1	0	0	0	0	0	0	0	23
01:45	0	25	6	0	1	0	0	0	3	0	0	0	0	35
02:00	0	29	2	0	0	0	0	0	0	0	0	0	0	31
02:15	0	17	4	0	0	0	0	0	0	0	0	0	0	21
02:30	0	19	5	2	0	0	0	0	0	0	0	0	0	26
02:45	0	29	9	1	1	1	0	0	0	0	0	0	0	41
03:00	0	38	6	2	1	1	0	0	1	0	0	0	0	49
03:15	0	27	6	1	1	0	0	0	1	0	0	0	0	36
03:30	0	39	8	0	2	0	0	0	0	0	0	0	0	49
03:45	0	38	13	2	0	0	0	0	0	0	0	0	0	55
04:00	0	50	17	0	2	0	0	0	0	0	0	0	0	69
04:15	0	59	17	1	2	0	0	0	1	0	0	0	0	80
04:30	1	77	23	1	7	0	0	0	0	0	0	0	0	109
04:45	0	101	22	1	3	1	0	0	2	0	0	0	0	130
05:00	0	83	30	1	6	0	0	0	1	0	0	0	0	121
05:15	0	117	33	1	7	0	0	0	3	0	0	0	0	161
05:30	0	141	35	0	5	0	0	2	3	0	0	0	0	185
05:45	0	154	37	3	9	1	0	1	2	0	0	0	0	206
06:00	0	153	40	2	9	1	0	1	6	0	0	0	0	212
06:15	0	166	44	1	10	1	0	0	5	0	0	0	0	227
06:30	0	191	47	1	9	2	0	0	2	0	0	0	0	252
06:45	0	233	55	0	20	0	0	0	5	0	0	0	0	313
07:00	0	244	54	1	11	1	0	0	3	0	0	0	0	314
07:15	0	295	66	0	17	0	0	0	4	0	0	0	0	382
07:30	0	365	74	3	19	0	1	1	6	0	0	0	0	469
07:45	0	352	83	0	20	1	0	1	1	0	0	0	0	458
08:00	0	313	64	2	15	1	0	0	2	0	0	0	0	397
08:15	0	315	76	2	18	3	0	2	2	0	0	0	0	418
08:30	1	221	46	1	18	2	0	1	1	0	0	0	0	291
08:45	0	233	63	2	15	0	0	0	4	0	0	0	0	317
09:00	0	212	47	3	7	0	0	1	2	0	0	0	0	272
09:15	0	194	53	3	11	2	0	0	5	0	0	0	0	268
09:30	0	208	53	3	9	2	0	1	1	0	0	0	0	277
09:45	0	228	60	0	10	0	0	2	4	0	0	0	0	304
10:00	1	211	52	3	8	1	0	0	5	0	0	0	0	281
10:15	0	210	40	2	12	2	0	0	2	0	0	0	0	268
10:30	0	214	52	3	11	1	0	1	5	0	0	0	0	287
10:45	0	240	59	4	14	1	0	0	1	0	0	0	0	319
11:00	0	218	50	3	11	2	0	0	6	0	0	0	0	298
11:15	0	264	64	0	12	2	1	1	5	0	0	0	0	349
11:30	0	243	60	1	12	0	0	0	6	0	0	0	0	322
11:45	0	233	51	2	11	3	0	1	2	0	0	0	0	303
12:00 PM	0	242	64	3	10	0	0	1	3	0	0	0	0	323
12:15	0	225	48	1	12	0	0	1	1	0	0	0	0	288
12:30	0	239	61	2	13	0	0	2	0	0	0	0	0	317
12:45	0	238	56	1	10	1	0	0	2	0	0	0	0	308
13:00	0	255	61	7	13	0	0	0	2	0	0	0	0	338
13:15	0	265	66	0	9	0	0	1	1	0	0	0	0	342
13:30	0	302	74	2	11	2	0	0	5	0	0	0	0	396
13:45	0	270	70	1	10	0	0	1	1	0	0	0	0	353
14:00	0	262	61	1	16	3	0	0	1	0	0	0	0	344
14:15	0	301	59	3	16	1	0	0	4	0	0	0	0	384
14:30	0	291	73	1	15	0	0	0	2	0	0	0	0	382
14:45	0	351	81	5	18	0	0	0	3	0	0	0	0	458
15:00	0	334	79	2	15	0	0	0	0	0	0	0	0	430
15:15	0	351	72	1	14	0	0	1	3	0	0	0	0	442
15:30	0	356	81	4	15	0	0	0	3	0	0	0	0	459
15:45	0	326	84	1	17	1	0	0	1	0	0	0	0	430
16:00	0	327	63	4	16	0	0	0	5	0	0	0	0	415
16:15	0	369	83	2	17	2	0	0	5	0	0	0	0	478
16:30	0	337	67	1	9	0	0	0	5	0	0	0	0	429
16:45	1	363	74	1	12	0	0	0	9	0	0	0	0	460
17:00	0	364	83	2	12	0	0	0	2	0	0	0	0	463
17:15	0	386	87	1	15	1	0	0	3	0	0	0	0	493
17:30	0	372	73	3	11	1	0	0	2	0	0	0	0	462
17:45	1	355	63	1	14	0	0	0	4	0	0	0	0	438
18:00	0	355	76	1	10	0	0	0	2	0	0	0	0	444
18:15	1	314	64	1	15	0	0	0	3	0	0	0	0	398
18:30	0	309	57	1	8	0	0	0	4	0	0	0	0	379
18:45	0	260	63	0	12	0	0	0	3	0	0	0	0	338
19:00	0	276	56	1	11	1	0	0	2	0	0	0	0	347
19:15	1	279	52	0	8	0	0	0	0	0	0	0	0	340
19:30	0	272	57	1	10	0	0	0	2	0	0	0	0	342
19:45	0	218	42	1	7	1	0	0	0	0	0	0	0	269
20:00	1	221	54	1	9	0	0	0	0	0	0	0	0	285
20:15	0	205	39	2	9	0	0	0	0	0	0	0	0	255
20:30	0	210	47	1	6	0	0	0	0	0	0	0	0	264
20:45	0	182	40	0	10	0	0	0	1	0	0	0	0	233
21:00	0	212	35	0	6	0	0	0	1	0	0	0	0	254
21:15	0	181	34	0	4	0	0	0	1	0	0	0	0	220
21:30	3	150	25	0	5	0	0	0	0	0	0	0	0	183
21:45	0	134	21	0	1	0	0	0	0	0	0	0	0	156
22:00	0	129	21	0	3	0	0	0	0	0	0	0	0	153
22:15	0	130	23	0	2	0	0	0	1	0	0	0	0	156
22:30	0	112	21	0	2	0	0	0	0	0	0	0	0	135
22:45	0	117	19	0	3	1	0	0	0	0	0	0	0	140
23:00	0	89	14	2	3	1	0	0	0	0	0	0	0	109
23:15	0	67	13	0	2	0	0	0	0	0	0	0	0	82
23:30	0	57	10	0	2	0	0	0	0	0	0	0	0	69
23:45	0	63	9	0	3	0	0	0	0	0	0	0	0	75
<b>Totals</b>	<b>12</b>	<b>19964</b>	<b>4248</b>	<b>121</b>	<b>844</b>	<b>48</b>	<b>2</b>	<b>22</b>	<b>191</b>					<b>24551</b>
<b>% of Totals</b>	<b>0%</b>	<b>78%</b>	<b>17%</b>	<b>0%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>					<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	%	Volume	%
AM Peak Hour	4	7041	1671	59
AM Peak Hour	0%	29%	7%	1%
AM Peak Hour	00:15	07:30	07:30	10:00
AM Peak Hour	07:30	07:30	07:45	06:45
AM Peak Hour	11:45	11:00		
AM Peak Hour	Volume	1	1345	297
AM Peak Hour	Volume	12	72	19
PM Peak Hour	8	12023	2575	62
PM Peak Hour	0%	49%	10%	0%
PM Peak Hour	20:45	16:45	16:45	15:45
PM Peak Hour	13:30	12:00	16:00	
PM Peak Hour	Volume	3	1485	317
PM Peak Hour	Volume	12	69	6
PM Peak Hour	Volume	4	24	

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	%	Volume	%
AM Peak Hour	4	7041	1671	59
AM Peak Hour	0%	29%	7%	1%
AM Peak Hour	00:15	07:30	07:30	10:00
AM Peak Hour	07:30	07:30	07:45	06:45
AM Peak Hour	11:45	11:00		
AM Peak Hour	Volume	1	1345	297
AM Peak Hour	Volume	12	72	19
PM Peak Hour	8	12023	2575	62
PM Peak Hour	0%	49%	10%	0%
PM Peak Hour	20:45	16:45	16:45	15:45
PM Peak Hour	13:30	12:00	16:00	
PM Peak Hour	Volume	3	1485	317
PM Peak Hour	Volume	12	69	6
PM Peak Hour	Volume	4	24	



# CLASSIFICATION

Vineyard Ave Bet. 6th St & 4th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_010s

## South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	61	12	0	1	0	0	0	0	0	0	0	0	74
01:00	1	47	13	0	1	0	0	0	3	0	0	0	0	65
02:00	0	46	16	2	1	0	0	0	0	0	0	0	0	65
03:00	0	90	19	2	6	1	0	0	1	0	0	0	0	119
04:00	1	204	62	2	13	1	0	0	2	0	0	0	0	285
05:00	0	316	94	3	22	1	0	1	2	0	0	0	0	439
06:00	0	505	129	2	34	1	0	0	10	0	0	0	0	681
07:00	0	705	191	2	40	1	1	1	10	0	0	0	0	951
08:00	0	573	148	3	34	3	0	0	6	0	0	0	0	767
09:00	0	472	137	9	19	3	0	1	4	0	0	0	0	645
10:00	1	441	113	5	24	1	0	0	6	0	0	0	0	591
11:00	0	499	140	3	27	4	0	1	10	0	0	0	0	684
12:00 PM	0	498	144	4	26	0	0	2	5	0	0	0	0	679
13:00	0	539	169	5	27	0	0	1	5	0	0	0	0	746
14:00	0	560	159	3	35	2	0	0	4	0	0	0	0	763
15:00	0	569	163	4	30	0	0	1	1	0	0	0	0	768
16:00	0	550	138	5	29	0	0	0	6	0	0	0	0	728
17:00	0	609	151	3	27	1	0	0	5	0	0	0	0	796
18:00	1	514	136	2	22	0	0	0	4	0	0	0	0	679
19:00	1	465	118	1	20	1	0	0	1	0	0	0	0	607
20:00	1	351	101	4	19	0	0	0	1	0	0	0	0	477
21:00	2	278	59	0	4	0	0	0	0	0	0	0	0	343
22:00	0	191	40	0	2	0	0	0	0	0	0	0	0	233
23:00	0	116	27	0	5	0	0	0	0	0	0	0	0	148
<b>Totals</b>	<b>8</b>	<b>9199</b>	<b>2479</b>	<b>64</b>	<b>468</b>	<b>20</b>	<b>1</b>	<b>8</b>	<b>86</b>					<b>12333</b>
% of Totals	0%	75%	20%	1%	4%	0%	0%	0%	1%					100%

<b>AM Volumes</b>	3	3959	1074	33	222	16	1	4	54	0	0	0	0	5366
<b>% AM</b>	0%	32%	9%	0%	2%	0%	0%	0%	0%					44%
<b>AM Peak Hour</b>	01:00	07:00	07:00	09:00	07:00	11:00	07:00	05:00	06:00					07:00
<b>Volume</b>	1	705	191	9	40	4	1	1	10					951
<b>PM Volumes</b>	5	5240	1405	31	246	4	0	4	32	0	0	0	0	6967
<b>% PM</b>	0%	42%	11%	0%	2%	0%		0%	0%					56%
<b>PM Peak Hour</b>	21:00	17:00	13:00	13:00	14:00	14:00		12:00	16:00					17:00
<b>Volume</b>	2	609	169	5	35	2		2	6					796

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1718	↔ 14%	1425	↔ 12%	1524	↔ 12%	7666	↔ 62%

### Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi Trailer

# CLASSIFICATION

## Vineyard Ave Bet. 6th St & 4th St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_010

**Summary**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	164	28	1	5	0	0	0	1	0	0	0	0	199
01:00	1	103	23	0	1	1	0	0	4	0	0	0	0	133
02:00	0	94	20	3	1	1	0	0	0	0	0	0	0	119
03:00	0	142	33	5	6	1	0	0	2	0	0	0	0	189
04:00	1	287	79	3	14	1	0	0	3	0	0	0	0	388
05:00	0	495	135	5	27	1	0	2	9	0	0	0	0	674
06:00	0	743	186	4	48	4	0	1	18	0	0	0	0	1004
07:00	0	1256	277	4	67	2	1	2	14	0	0	0	0	1623
08:00	1	1082	249	7	66	6	0	3	9	0	0	0	0	1423
09:00	0	842	213	9	37	4	0	4	12	0	0	0	0	1121
10:00	1	875	203	12	45	5	0	1	13	0	0	0	0	1155
11:00	0	958	225	6	46	7	1	2	19	0	0	0	0	1264
12:00 PM	0	944	229	7	45	1	0	4	6	0	0	0	0	1236
13:00	0	1092	271	10	43	2	0	2	9	0	0	0	0	1429
14:00	0	1205	274	10	65	4	0	0	10	0	0	0	0	1568
15:00	0	1367	316	8	61	1	0	1	7	0	0	0	0	1761
16:00	1	1396	287	8	64	2	0	0	24	0	0	0	0	1782
17:00	1	1477	306	7	52	2	0	0	11	0	0	0	0	1856
18:00	1	1238	260	3	45	0	0	0	12	0	0	0	0	1559
19:00	1	1045	207	3	36	2	0	0	4	0	0	0	0	1298
20:00	1	818	180	4	34	0	0	0	1	0	0	0	0	1038
21:00	3	677	115	0	16	0	0	0	2	0	0	0	0	813
22:00	0	488	84	0	10	1	0	0	1	0	0	0	0	584
23:00	0	276	46	2	10	1	0	0	0	0	0	0	0	335
<b>Totals</b>	<b>12</b>	<b>19064</b>	<b>4246</b>	<b>121</b>	<b>844</b>	<b>49</b>	<b>2</b>	<b>22</b>	<b>191</b>					<b>24551</b>
<b>% of Totals</b>	<b>0%</b>	<b>78%</b>	<b>17%</b>	<b>0%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>					<b>100%</b>

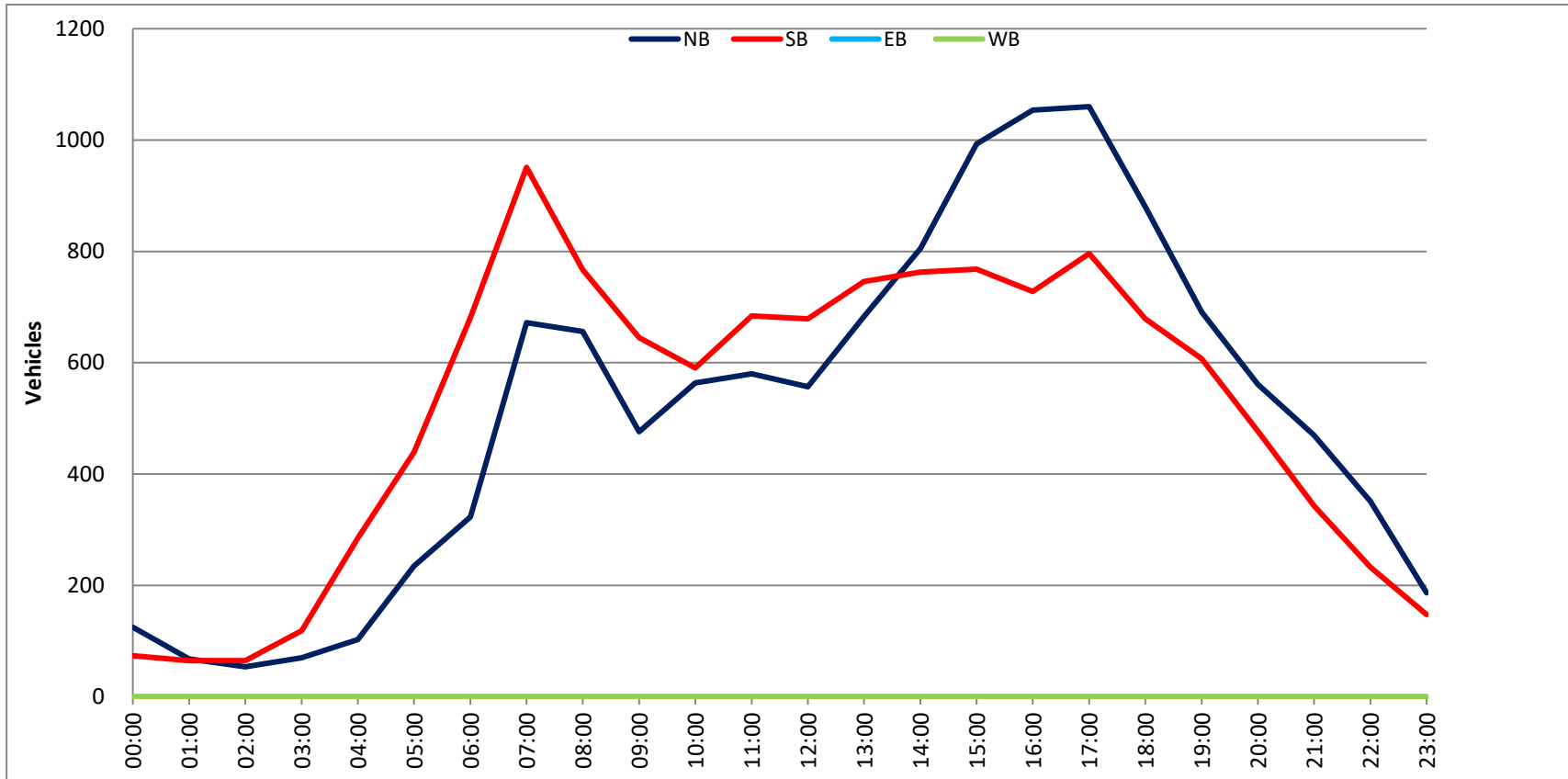
<b>AM Volumes</b>	4	7041	1671	59	363	33	2	15	104	0	0	0	0	9292
<b>% AM</b>	0%	29%	7%	0%	1%	0%	0%	0%	0%	0	0	0	0	38%
<b>AM Peak Hour</b>	01:00	07:00	07:00	10:00	07:00	11:00	07:00	09:00	11:00					07:00
<b>Volume</b>	1	1256	277	12	67	7	1	4	19					1623
<b>PM Volumes</b>	8	12023	2575	62	481	16	0	7	87	0	0	0	0	15259
<b>% PM</b>	0%	49%	10%	0%	2%	0%		0%	0%					62%
<b>PM Peak Hour</b>	21:00	17:00	15:00	13:00	14:00	14:00		12:00	16:00					17:00
<b>Volume</b>	3	1477	316	10	65	4		4	24					1856

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
		Volume	%	Volume	%	Volume	%	Volume	%
		3046	12%	2665	11%	3638	15%	15202	62%

Classification Definitions			
1 Motorcycles	4 Buses	12 6 Axle Single Trailers	13 7 Axle Multi Trailers

DAILY TOTALS					NB	SB	EB	WB	To			
					12,218	12,333	0	0	24,			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	35	27	0	0	62	12:00	144	179	0	0	323	
00:15	39	20	0	0	59	12:15	132	156	0	0	288	
00:30	24	10	0	0	34	12:30	139	178	0	0	317	
00:45	27	125	17	74	0	0	142	557	166	679	0	308
01:00	18	19	0	0	37	13:00	176	162	0	0	338	
01:15	24	14	0	0	38	13:15	141	201	0	0	342	
01:30	16	7	0	0	23	13:30	196	200	0	0	396	
01:45	10	68	25	65	0	0	170	683	183	746	0	353
02:00	16	15	0	0	31	14:00	176	168	0	0	344	
02:15	14	7	0	0	21	14:15	206	178	0	0	384	
02:30	8	18	0	0	26	14:30	171	211	0	0	382	
02:45	16	54	25	65	0	0	252	805	206	763	0	458
03:00	23	26	0	0	49	15:00	235	195	0	0	430	
03:15	7	29	0	0	36	15:15	261	181	0	0	442	
03:30	17	32	0	0	49	15:30	242	217	0	0	459	
03:45	23	70	32	119	0	0	255	993	175	768	0	430
04:00	16	53	0	0	69	16:00	233	182	0	0	415	
04:15	22	58	0	0	80	16:15	285	193	0	0	478	
04:30	29	80	0	0	109	16:30	263	166	0	0	429	
04:45	36	103	94	285	0	0	273	1054	187	728	0	460
05:00	43	78	0	0	121	17:00	259	204	0	0	463	
05:15	50	111	0	0	161	17:15	277	216	0	0	493	
05:30	59	127	0	0	186	17:30	269	193	0	0	462	
05:45	83	235	123	439	0	0	255	1060	183	796	0	438
06:00	66	146	0	0	212	18:00	259	185	0	0	444	
06:15	75	152	0	0	227	18:15	220	178	0	0	398	
06:30	76	176	0	0	252	18:30	218	161	0	0	379	
06:45	106	323	207	681	0	0	183	880	155	679	0	338
07:00	123	191	0	0	314	19:00	184	163	0	0	347	
07:15	162	220	0	0	382	19:15	180	160	0	0	340	
07:30	194	275	0	0	469	19:30	184	158	0	0	342	
07:45	193	672	265	951	0	0	143	691	126	607	0	269
08:00	167	230	0	0	397	20:00	163	123	0	0	286	
08:15	191	227	0	0	418	20:15	130	125	0	0	255	
08:30	139	152	0	0	291	20:30	154	110	0	0	264	
08:45	159	656	158	767	0	0	114	561	119	477	0	233
09:00	115	157	0	0	272	21:00	144	110	0	0	254	
09:15	111	157	0	0	268	21:15	127	93	0	0	220	
09:30	116	161	0	0	277	21:30	106	77	0	0	183	
09:45	134	476	170	645	0	0	93	470	63	343	0	156
10:00	128	153	0	0	281	22:00	95	58	0	0	153	
10:15	134	134	0	0	268	22:15	89	67	0	0	156	
10:30	147	140	0	0	287	22:30	73	62	0	0	135	
10:45	155	564	164	591	0	0	94	351	46	233	0	140
11:00	128	162	0	0	290	23:00	60	49	0	0	109	
11:15	161	188	0	0	349	23:15	46	36	0	0	82	
11:30	140	182	0	0	322	23:30	45	24	0	0	69	
11:45	151	580	152	684	0	0	36	187	39	148	0	75
<b>TOTALS</b>	<b>3926</b>	<b>5366</b>			<b>9292</b>	<b>TOTALS</b>	<b>8292</b>	<b>6967</b>				
<b>SPLIT %</b>	<b>42.3%</b>	<b>57.7%</b>			<b>37.8%</b>	<b>SPLIT %</b>	<b>54.3%</b>	<b>45.7%</b>				

DAILY TOTALS					NB	SB	EB	WB	To	
					12,218	12,333	0	0	24,	
AM Peak Hour	07:30	07:30			07:30	PM Peak Hour	16:15	16:45		
AM Pk Volume	745	997			1742	PM Pk Volume	1080	800		
Pk Hr Factor	0.960	0.906			0.929	Pk Hr Factor	0.947	0.926		
7 - 9 Volume	1328	1718	0	0	3046	4 - 6 Volume	2114	1524	0	0
7 - 9 Peak Hour	07:30	07:30			07:30	4 - 6 Peak Hour	16:15	16:45		
7 - 9 Pk Volume	745	997	0	0	1742	4 - 6 Pk Volume	1080	800	0	0
Pk Hr Factor	0.960	0.906	0.000	0.000	0.929	Pk Hr Factor	0.947	0.926	0.000	0.000





**CLASSIFICATION**  
Vineyard Ave Bet. 4th St & Jay St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_011n

**North Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	33	3	0	0	0	0	0	0	0	0	0	0	36
00:15	0	37	5	0	1	0	0	0	0	0	0	0	0	43
00:30	0	24	6	0	0	0	0	0	0	0	0	0	0	30
00:45	0	27	4	0	0	0	0	0	0	0	0	0	0	31
01:00	0	18	4	0	0	0	0	0	1	0	0	0	0	23
01:15	0	23	3	0	0	0	0	0	0	0	0	0	0	26
01:30	0	15	2	0	0	0	0	0	0	0	0	0	0	17
01:45	0	12	1	0	0	0	0	0	0	0	0	0	0	13
02:00	0	14	3	0	0	0	0	0	0	0	0	0	0	17
02:15	0	12	1	0	1	0	0	0	0	0	0	0	0	14
02:30	0	10	3	0	0	0	0	0	0	0	0	0	0	13
02:45	0	20	4	1	0	0	0	0	0	0	0	0	0	25
03:00	0	16	2	0	0	0	0	0	0	0	0	0	0	18
03:15	0	10	1	0	1	0	0	0	1	0	0	0	0	13
03:30	0	15	3	0	2	0	0	0	0	0	0	0	0	20
03:45	0	20	6	0	1	0	0	0	0	0	0	0	0	27
04:00	0	8	2	0	1	0	0	0	1	0	0	0	0	12
04:15	0	25	4	0	0	0	0	0	1	0	0	0	0	30
04:30	0	28	9	0	0	0	0	0	1	0	0	0	0	38
04:45	0	44	8	1	1	0	0	0	0	0	0	0	0	54
05:00	0	40	7	1	1	0	0	0	1	0	0	0	0	50
05:15	0	47	6	0	1	0	0	0	1	0	0	0	0	55
05:30	0	47	10	0	4	0	0	0	1	0	0	0	0	62
05:45	0	64	19	2	3	1	0	0	1	0	0	0	0	90
06:00	0	67	13	0	2	1	0	0	3	0	0	0	0	85
06:15	0	75	16	0	2	0	0	0	1	0	0	0	0	94
06:30	0	56	20	1	5	0	0	0	0	0	0	0	0	82
06:45	0	110	24	1	4	0	0	1	0	0	0	0	0	140
07:00	0	106	22	0	6	0	0	0	3	0	0	0	0	137
07:15	0	152	32	1	5	1	0	0	1	0	0	0	0	192
07:30	0	167	32	0	4	4	0	0	1	0	0	0	0	204
07:45	0	178	34	0	5	1	0	0	2	0	0	0	0	220
08:00	0	181	31	1	5	1	0	0	1	0	0	0	0	220
08:15	0	187	30	0	7	1	0	0	0	0	0	0	0	225
08:30	0	140	24	0	3	1	0	0	4	0	0	0	0	172
08:45	0	137	25	2	4	1	0	0	2	0	0	0	0	171
09:00	1	92	19	0	3	0	0	1	2	0	0	0	0	118
09:15	0	93	17	0	3	0	0	0	2	0	0	0	0	115
09:30	0	88	13	0	4	2	0	0	3	0	1	0	0	111
09:45	0	97	14	4	3	1	2	1	4	0	0	0	0	126
10:00	0	111	26	1	3	1	0	0	1	0	0	0	0	143
10:15	0	86	27	1	6	1	0	0	2	0	0	0	0	123
10:30	1	132	20	1	4	0	0	0	2	0	0	0	0	160
10:45	0	133	18	3	7	1	0	0	2	0	0	0	0	164
11:00	0	125	28	1	4	1	0	0	5	3	1	0	0	163
11:15	0	163	30	1	6	0	0	1	2	0	0	0	0	203
11:30	0	137	18	0	3	2	0	0	1	0	0	0	0	161
11:45	0	124	25	5	4	1	0	0	0	0	0	0	0	159
12:00 PM	0	142	24	0	3	0	1	0	3	0	0	0	0	173
12:15	0	131	22	0	4	2	0	0	1	0	1	0	0	161
12:30	0	130	25	3	3	1	0	0	1	0	1	0	0	164
12:45	0	145	24	4	4	1	1	0	1	1	1	0	0	181
13:00	0	153	19	2	6	1	1	0	1	1	0	0	0	183
13:15	1	167	30	0	6	1	0	0	4	0	0	0	0	209
13:30	0	200	31	2	5	1	0	0	2	0	1	0	0	242
13:45	0	146	30	0	4	1	0	1	0	1	0	0	0	183
14:00	0	142	31	1	6	0	1	0	0	0	0	0	0	181
14:15	1	151	24	1	5	1	1	0	3	0	0	0	0	187
14:30	0	168	33	0	7	1	0	0	1	0	0	0	0	209
14:45	0	230	43	0	7	1	0	0	1	0	0	0	0	282
15:00	0	233	44	1	5	0	0	1	2	0	1	0	0	287
15:15	0	215	34	1	3	0	0	1	2	0	1	0	0	257
15:30	0	239	31	3	5	0	0	1	3	0	0	0	0	282
15:45	0	229	33	1	5	0	0	0	3	0	0	0	0	271
16:00	0	229	37	3	4	0	0	0	2	0	0	0	0	275
16:15	0	261	38	1	10	1	0	0	0	0	0	0	0	311
16:30	0	240	40	1	8	0	0	0	0	0	0	0	0	289
16:45	0	241	45	2	8	0	0	0	1	0	0	0	0	297
17:00	0	251	41	1	7	0	0	1	2	0	1	0	0	304
17:15	0	256	33	1	5	0	0	0	1	1	1	0	0	298
17:30	0	220	39	2	5	0	0	0	1	0	0	0	0	267
17:45	0	275	41	1	7	0	0	0	3	0	0	0	0	327
18:00	0	245	36	0	5	0	0	0	1	0	0	0	0	287
18:15	1	205	29	0	6	0	0	0	2	1	0	0	0	241
18:30	0	196	30	0	5	0	0	0	1	0	0	0	0	232
18:45	0	165	18	1	4	0	0	0	0	0	0	0	0	188
19:00	0	173	31	0	5	0	0	0	1	0	0	0	0	210
19:15	0	165	29	0	4	0	0	0	2	0	0	0	0	200
19:30	0	172	27	0	3	0	0	0	1	0	1	0	0	204
19:45	0	144	20	1	4	0	0	0	0	0	0	0	0	169
20:00	0	145	21	1	3	0	0	0	1	0	0	0	0	171
20:15	0	130	19	0	0	0	0	0	0	0	0	0	0	149
20:30	0	116	18	0	2	0	0	0	0	0	0	0	0	136
20:45	0	103	14	0	1	0	0	0	0	0	0	0	0	118
21:00	0	140	18	0	2	0	0	0	1	0	0	0	0	161
21:15	0	110	13	0	0	0	0	0	1	0	0	0	0	124
21:30	0	107	12	0	1	1	0	0	0	0	0	0	0	121
21:45	0	104	14	0	0	0	0	0	0	0	0	0	0	118
22:00	0	88	16	0	1	0	0	0	0	0	0	0	0	105
22:15	0	117	12	0	2	0	0	0	0	0	0	0	0	131
22:30	0	88	9	0	1	0	0	0	0	0	0	0	0	98
22:45	0	102	19	1	3	0	0	0	1	0	0	0	0	126
23:00	0	67	6	0	2	0	0	0	0	0	0	0	0	75
23:15	0	47	8	0	1	0	0	0	1	0	0	0	0	57
23:30	0	45	6	0	1	0	0	0	1	0	0	0	0	53
23:45	0	49	5	0	1	0	0	0	0	0	0	0	0	55
<b>Totals</b>	<b>5</b>	<b>11363</b>	<b>1898</b>	<b>63</b>	<b>308</b>	<b>30</b>	<b>7</b>	<b>9</b>	<b>100</b>	<b>3</b>	<b>10</b>			<b>13794</b>
% of Totals	0%	82%	14%	0%	2%	0%	0%	0%	1%	0%	0%			100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes										
AM Volumes	2	3546	674	28	119	17	2	4	51	0	2	0	0	4445
% AM	0%	26%	5%	0%	1%	0%	0%	0%	0%	0	0	0	0	32%
AM Peak Hour Volume														
PM Volumes	3	7817	1222	35	189	13	5	5	49	3	8	0	0	9349
% PM	0%	57%	9%	0%	1%	0%	0%	0%	0%	0%	0%	0	0	68%
PM Peak Hour Volume														

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes				
All Classes	Volume	%	Volume	%	Volume	%	Volume	%

**CLASSIFICATION**  
Vineyard Ave Bet. 4th St & Jay St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_0115

South Bound

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	26	4	0	0	0	0	0	0	0	0	0	0	30
00:15	0	23	3	0	0	0	0	0	0	0	0	0	0	26
00:30	0	13	1	0	0	0	0	0	0	0	0	0	0	14
00:45	0	20	3	0	0	0	0	0	0	0	0	0	0	23
01:00	0	14	4	0	0	0	0	0	0	0	0	0	0	18
01:15	0	22	3	0	0	0	0	0	0	0	0	0	0	25
01:30	0	13	2	0	0	0	0	0	0	0	0	0	0	15
01:45	0	23	2	0	0	0	0	2	2	0	0	0	0	29
02:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
02:15	0	13	2	0	0	0	0	0	0	0	0	0	0	15
02:30	0	13	6	1	0	0	0	0	0	0	0	0	0	20
02:45	0	17	3	1	0	0	0	1	0	0	0	0	0	22
03:00	0	16	6	2	1	0	0	0	1	0	0	0	0	26
03:15	0	27	5	0	0	0	0	0	0	0	0	0	0	32
03:30	0	30	5	0	1	0	0	0	0	0	0	0	0	36
03:45	0	29	4	0	1	0	0	0	0	0	0	0	0	34
04:00	0	46	7	1	3	0	0	0	0	0	0	0	0	57
04:15	0	58	12	0	2	0	0	0	1	0	0	0	0	73
04:30	0	75	15	0	3	0	0	0	0	0	0	0	0	93
04:45	0	80	19	0	3	0	0	0	3	0	0	0	0	105
05:00	0	60	17	0	2	0	0	0	0	0	0	0	0	79
05:15	0	93	24	1	3	0	0	0	3	0	0	0	0	124
05:30	0	127	22	1	2	0	0	1	2	0	0	0	0	155
05:45	0	113	24	1	6	1	0	0	2	0	0	0	0	147
06:00	0	131	31	1	4	0	0	1	2	0	0	0	0	170
06:15	0	124	19	0	5	1	0	0	3	0	0	0	0	152
06:30	0	175	29	2	4	0	0	0	1	0	0	0	0	211
06:45	0	203	39	0	8	0	0	0	3	0	0	0	0	253
07:00	0	221	34	0	4	0	0	0	5	0	0	0	0	264
07:15	0	232	46	0	7	0	0	0	7	0	0	0	0	287
07:30	0	255	45	1	6	2	1	0	5	0	0	0	0	315
07:45	0	264	45	0	6	0	0	1	3	0	0	0	0	319
08:00	0	246	43	1	6	1	0	0	2	0	0	0	0	299
08:15	0	210	33	1	4	1	0	1	1	0	0	0	0	251
08:30	0	163	36	1	5	0	0	1	1	0	0	0	0	207
08:45	0	153	25	0	4	0	0	1	3	0	0	0	0	186
09:00	0	143	26	1	2	0	0	0	1	0	0	0	0	173
09:15	0	149	26	2	6	0	0	1	2	0	0	0	0	186
09:30	0	153	35	2	3	0	0	0	2	0	0	0	0	195
09:45	0	148	28	1	4	1	0	0	2	0	0	0	0	184
10:00	0	154	33	0	6	0	0	1	3	0	0	0	0	197
10:15	0	129	25	1	6	2	0	0	1	0	0	0	0	164
10:30	0	129	33	1	5	1	0	1	2	0	0	0	0	172
10:45	0	137	25	2	4	1	0	0	1	0	0	0	0	170
11:00	0	127	25	2	4	1	0	0	5	0	0	0	0	164
11:15	0	158	25	0	3	0	1	0	4	0	0	0	0	191
11:30	0	176	35	1	4	0	0	0	3	0	0	0	0	219
11:45	0	156	26	0	3	2	0	0	1	0	0	0	0	188
12:00 PM	0	164	29	0	2	0	0	1	2	0	0	0	0	198
12:15	0	176	28	0	4	0	0	0	3	0	0	0	0	211
12:30	0	187	40	1	6	0	0	0	1	0	0	0	0	235
12:45	0	170	32	2	3	0	0	0	2	0	0	0	0	209
13:00	0	185	34	1	3	1	0	0	2	0	0	0	0	225
13:15	0	193	40	1	4	0	0	0	1	0	0	0	0	239
13:30	0	187	37	2	10	0	0	0	3	0	0	0	0	239
13:45	0	183	34	1	5	0	0	0	2	0	0	0	0	225
14:00	0	160	32	0	6	1	0	0	3	0	0	0	0	202
14:15	0	173	34	2	6	1	0	0	2	0	0	0	0	218
14:30	0	186	34	0	5	0	0	0	2	0	0	0	0	227
14:45	1	171	32	4	4	0	0	0	1	0	0	0	0	213
15:00	0	174	36	0	6	1	0	0	1	0	0	0	0	218
15:15	0	197	31	1	3	0	0	1	2	0	1	0	0	236
15:30	0	196	38	3	2	0	0	1	2	0	0	0	0	242
15:45	0	190	34	0	3	1	0	0	1	0	0	0	0	229
16:00	0	166	30	0	5	1	0	0	1	0	0	0	0	203
16:15	0	176	35	4	4	0	0	0	3	0	0	0	0	222
16:30	0	157	32	0	5	0	0	0	5	0	0	0	0	195
16:45	0	194	32	0	3	0	0	0	2	0	0	0	0	231
17:00	0	220	33	0	3	0	0	0	1	0	0	0	0	257
17:15	0	228	38	3	3	1	0	0	1	0	0	0	0	274
17:30	0	204	24	1	5	1	0	0	1	0	1	0	0	237
17:45	0	169	23	0	5	0	0	0	1	1	0	0	0	199
18:00	0	186	22	0	3	0	0	0	2	0	0	0	0	213
18:15	0	159	25	1	3	0	0	0	1	0	0	0	0	189
18:30	1	171	26	0	4	0	0	0	2	0	0	0	0	204
18:45	0	142	28	0	3	0	0	0	1	0	0	0	0	174
19:00	0	157	27	0	2	0	0	0	1	0	0	0	0	187
19:15	0	140	17	0	4	0	0	0	1	0	0	0	0	162
19:30	0	127	22	1	4	0	0	0	2	0	0	0	0	156
19:45	0	129	17	0	1	0	0	0	1	0	0	0	0	148
20:00	0	121	20	1	1	0	0	0	1	0	0	0	0	144
20:15	0	140	20	1	2	0	0	0	1	0	0	0	0	164
20:30	0	105	18	1	2	0	0	0	2	0	0	0	0	128
20:45	0	115	19	0	1	0	0	0	2	0	0	0	0	137
21:00	0	108	13	0	2	0	0	0	1	0	0	0	0	124
21:15	0	127	17	0	2	0	0	0	1	0	0	0	0	147
21:30	0	72	6	0	1	0	0	0	0	0	0	0	0	79
21:45	0	75	10	0	1	0	0	0	0	0	0	0	0	86
22:00	0	72	10	0	1	0	0	0	0	0	0	0	0	83
22:15	0	72	5	1	0	0	0	0	0	0	0	0	0	78
22:30	0	84	17	0	1	0	0	0	1	0	0	0	0	103
22:45	0	68	11	0	1	0	0	0	0	0	0	0	0	80
23:00	0	61	8	0	1	0	0	0	0	0	0	0	0	70
23:15	0	34	5	0	0	0	0	0	0	0	0	0	0	39
23:30	0	40	6	0	1	0	0	0	1	0	0	0	0	47
23:45	0	37	3	0	0	0	0	0	0	0	0	0	0	40
<b>Totals</b>	<b>2</b>	<b>12649</b>	<b>2128</b>	<b>60</b>	<b>286</b>	<b>22</b>	<b>2</b>	<b>16</b>	<b>132</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14697</b>
% of Totals	0%	82%	14%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
AM Volumes	0	5101	962	28
% AM	35%	7%	0%	1%
AM Peak Hour Volume	0	129	17	0
PM Volumes	2	6948	1164	32
% PM	0%	47%	8%	0%
PM Peak Hour Volume	0	121	20	1

All Classes	Volume	%	Volume	%	Volume	%	Volume	%
AM 7-9	0	0%	5101	35%	962	7%	28	0%
NOON 12-2	0	0%	286	2%	22	0%	2	0%
PM 4-6	0	0%	16	0%	132	1%	2	0%
Off Peak Volumes	0	0%	0	0%	0	0%	0	0%

**CLASSIFICATION**  
Vineyard Ave Bet. 4th St & Jay St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_011

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	59	7	0	0	0	0	0	0	0	0	0	0	66
00:15	0	60	8	0	1	0	0	0	0	0	0	0	0	69
00:30	0	37	7	0	0	0	0	0	0	0	0	0	0	44
00:45	0	47	7	0	0	0	0	0	0	0	0	0	0	54
01:00	0	32	8	0	0	0	0	0	1	0	0	0	0	41
01:15	0	45	6	0	0	0	0	0	0	0	0	0	0	51
01:30	0	28	4	0	0	0	0	0	0	0	0	0	0	32
01:45	0	35	3	0	0	0	0	2	2	0	0	0	0	42
02:00	0	28	5	0	0	0	0	0	0	0	0	0	0	33
02:15	0	25	3	0	1	0	0	0	0	0	0	0	0	29
02:30	0	23	9	1	0	0	0	0	0	0	0	0	0	33
02:45	0	37	7	2	0	0	0	1	0	0	0	0	0	47
03:00	0	32	8	2	1	0	0	0	1	0	0	0	0	44
03:15	0	37	6	0	1	0	0	0	1	0	0	0	0	45
03:30	0	45	8	0	3	0	0	0	0	0	0	0	0	56
03:45	0	49	10	0	2	0	0	0	0	1	0	0	0	61
04:00	0	54	9	1	4	0	0	0	1	0	0	0	0	69
04:15	0	83	16	0	2	0	0	0	2	0	0	0	0	103
04:30	0	103	24	0	3	0	0	0	1	0	0	0	0	131
04:45	0	124	27	1	4	0	0	0	3	0	0	0	0	159
05:00	0	100	24	1	3	0	0	0	1	0	0	0	0	129
05:15	0	140	30	1	4	0	0	0	4	0	0	0	0	179
05:30	0	174	32	1	6	0	0	1	3	0	0	0	0	217
05:45	0	177	43	3	9	2	0	0	3	0	0	0	0	237
06:00	0	198	44	1	6	0	0	1	5	0	0	0	0	255
06:15	0	199	35	0	7	1	0	0	4	0	0	0	0	246
06:30	0	231	49	3	9	0	0	0	1	0	0	0	0	293
06:45	0	313	63	1	12	0	0	1	3	0	0	0	0	393
07:00	0	327	56	0	10	0	0	0	8	0	0	0	0	401
07:15	0	384	78	1	12	1	0	0	3	0	0	0	0	479
07:30	0	422	77	1	10	2	1	0	6	0	0	0	0	519
07:45	0	442	79	0	11	1	0	1	5	0	0	0	0	539
08:00	0	427	74	2	11	2	0	0	3	0	0	0	0	519
08:15	0	397	63	1	11	2	0	1	1	0	0	0	0	476
08:30	0	303	60	1	8	1	0	1	5	0	0	0	0	379
08:45	0	290	50	2	8	1	0	1	5	0	0	0	0	357
09:00	1	235	45	1	5	0	0	1	3	0	0	0	0	291
09:15	0	242	43	2	9	0	0	1	4	0	0	0	0	301
09:30	0	241	48	2	7	2	0	0	5	0	1	0	0	306
09:45	0	245	42	5	7	2	2	1	6	0	0	0	0	310
10:00	0	265	59	1	9	1	0	1	4	0	0	0	0	340
10:15	0	215	52	2	12	3	0	0	3	0	0	0	0	287
10:30	1	261	53	2	9	1	0	1	4	0	0	0	0	332
10:45	0	270	43	5	11	2	0	0	3	0	0	0	0	334
11:00	0	252	53	3	8	2	0	0	8	0	1	0	0	327
11:15	0	321	55	1	9	0	1	1	6	0	0	0	0	394
11:30	0	313	53	1	7	2	0	0	4	0	0	0	0	380
11:45	0	280	51	5	7	3	0	0	1	0	0	0	0	347
12:00 PM	0	306	53	0	5	0	1	1	5	0	0	0	0	371
12:15	0	307	50	0	8	2	0	0	4	0	1	0	0	372
12:30	0	317	65	4	9	1	0	0	2	0	1	0	0	399
12:45	0	315	56	6	7	1	1	0	3	1	0	0	0	390
13:00	0	338	53	3	9	2	1	0	2	0	0	0	0	408
13:15	1	360	70	1	10	1	0	0	5	0	0	0	0	448
13:30	0	387	68	4	15	1	0	0	5	0	1	0	0	481
13:45	0	329	64	1	9	1	0	1	2	1	0	0	0	408
14:00	0	302	63	1	12	1	1	0	3	0	0	0	0	383
14:15	1	324	58	3	11	2	1	0	5	0	0	0	0	405
14:30	0	354	67	0	12	1	0	0	12	0	0	0	0	436
14:45	1	401	75	4	11	1	0	0	2	0	0	0	0	495
15:00	0	407	80	1	11	1	0	1	3	0	1	0	0	505
15:15	0	412	65	2	6	0	0	2	4	0	2	0	0	493
15:30	0	435	69	6	7	0	0	2	5	0	0	0	0	524
15:45	0	419	67	1	8	1	0	0	4	0	0	0	0	500
16:00	0	395	67	3	9	1	0	0	3	0	0	0	0	478
16:15	0	437	73	5	14	1	0	0	3	0	0	0	0	533
16:30	0	397	71	1	13	0	0	0	1	0	0	0	0	484
16:45	0	435	77	2	11	0	0	0	3	0	0	0	0	528
17:00	0	471	74	1	10	0	0	1	3	0	1	0	0	561
17:15	0	484	71	4	8	1	0	0	2	1	1	0	0	572
17:30	0	424	63	3	10	1	0	0	2	0	1	0	0	504
17:45	0	444	64	1	12	0	0	1	4	0	0	0	0	526
18:00	0	431	58	0	8	0	0	0	3	0	0	0	0	500
18:15	1	364	54	1	9	0	0	1	1	0	0	0	0	430
18:30	1	367	56	0	9	0	0	0	3	0	0	0	0	436
18:45	0	307	46	1	7	0	0	0	1	0	0	0	0	362
19:00	0	330	58	0	7	0	0	0	2	0	0	0	0	397
19:15	0	305	46	0	8	0	0	0	3	0	0	0	0	362
19:30	0	299	49	1	7	0	0	0	3	0	1	0	0	360
19:45	0	273	37	1	5	0	0	0	1	0	0	0	0	317
20:00	0	266	41	2	4	0	0	0	2	0	0	0	0	215
20:15	0	270	39	1	2	0	0	0	1	0	0	0	0	313
20:30	0	221	36	1	4	0	0	0	2	0	0	0	0	264
20:45	0	218	33	0	2	0	0	0	2	0	0	0	0	255
21:00	0	248	31	0	4	0	0	0	2	0	0	0	0	285
21:15	0	237	30	0	2	0	0	0	2	0	0	0	0	271
21:30	0	179	18	0	2	1	0	0	0	0	0	0	0	200
21:45	0	179	24	0	1	0	0	0	0	0	0	0	0	204
22:00	0	160	26	0	2	0	0	0	0	0	0	0	0	188
22:15	0	189	17	1	2	0	0	0	0	0	0	0	0	209
22:30	0	172	26	0	2	0	0	0	1	0	0	0	0	201
22:45	0	170	30	1	4	0	0	0	1	0	0	0	0	206
23:00	0	128	14	0	3	0	0	0	0	0	0	0	0	145
23:15	0	81	13	0	1	0	0	0	1	0	0	0	0	96
23:30	0	85	12	0	2	0	0	0	2	0	0	0	0	100
23:45	0	86	8	0	1	0	0	0	0	0	0	0	0	95
<b>Totals</b>	<b>7</b>	<b>23412</b>	<b>4022</b>	<b>123</b>	<b>594</b>	<b>52</b>	<b>9</b>	<b>23</b>	<b>232</b>	<b>3</b>	<b>12</b>			<b>28491</b>
<b>% of Totals</b>	<b>0%</b>	<b>82%</b>	<b>14%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>			<b>100%</b>

AM Volumes	AM % AM	PM Volumes	PM % PM	PM Peak Hour	PM Peak Hour % PM	NOON 12-2	NOON 12-2 %	PM 4-6	PM 4-6 %	Off Peak Volumes	Off Peak Volumes %
2	8647	1636	56	259	31	4	16	123	0	2	10776
0%	30%	6%	1%	0%	0%	0%	0%	0%	0%	38%	38%
08:15	07:30	07:15	10:15	06:45	09:30	09:00	08:15	07:00		11:45	07:15
Volume	1	1688	308	12	44	8	2	22		2	2056
PM Volumes	5	14765	2386	67	335	21	5	9	109	9	17715
0%	62%	31%	6%	0%	0%	0%	0%	0%	0%	3%	62%
PM Peak Hour	14:00	17:00	16:15	15:30	16:15	12:15	12:00	14:45	15:00	12:00	14:30
Volume	2	1823	296	15	48	6	5	16	1	3	1645

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%



# CLASSIFICATION

## Vineyard Ave Bet. 4th St & Jay St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_011s

**South Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	82	11	0	0	0	0	0	0	0	0	0	0	93
01:00	0	72	11	0	0	0	0	2	2	0	0	0	0	87
02:00	0	57	13	2	0	0	0	1	0	0	0	0	0	73
03:00	0	102	20	2	3	0	0	0	1	0	0	0	0	128
04:00	0	259	53	1	11	0	0	0	4	0	0	0	0	328
05:00	0	393	87	3	13	1	0	1	7	0	0	0	0	505
06:00	0	633	118	3	21	1	0	1	9	0	0	0	0	786
07:00	0	972	170	1	23	2	1	1	15	0	0	0	0	1185
08:00	0	772	137	3	19	2	0	3	7	0	0	0	0	943
09:00	0	593	115	6	15	1	0	1	7	0	0	0	0	738
10:00	0	549	116	4	21	4	0	2	7	0	0	0	0	703
11:00	0	617	111	3	14	3	1	0	13	0	0	0	0	762
12:00 PM	0	697	129	3	15	0	0	1	8	0	0	0	0	853
13:00	0	748	145	5	22	1	0	0	7	0	0	0	0	928
14:00	1	690	132	6	21	2	0	0	8	0	0	0	0	860
15:00	0	757	139	4	14	2	0	2	6	0	1	0	0	925
16:00	0	693	129	4	17	1	0	0	7	0	0	0	0	851
17:00	0	821	118	4	16	2	0	1	4	0	1	0	0	967
18:00	1	658	101	1	13	0	0	0	6	0	0	0	0	780
19:00	0	553	83	1	11	0	0	0	5	0	0	0	0	653
20:00	0	481	77	3	6	0	0	0	6	0	0	0	0	573
21:00	0	382	46	0	6	0	0	0	2	0	0	0	0	436
22:00	0	296	43	1	3	0	0	0	1	0	0	0	0	344
23:00	0	172	22	0	2	0	0	0	0	0	0	0	0	196
<b>Totals</b>	<b>2</b>	<b>12049</b>	<b>2126</b>	<b>60</b>	<b>286</b>	<b>22</b>	<b>2</b>	<b>16</b>	<b>132</b>		<b>2</b>			<b>14697</b>
<b>% of Totals</b>	<b>0%</b>	<b>82%</b>	<b>14%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>		<b>0%</b>			<b>100%</b>

<b>AM Volumes</b>	0	5101	962	28	140	14	2	12	72	0	0	0	0	6331
<b>% AM</b>		35%	7%	0%	1%	0%	0%	0%	0%					43%
<b>AM Peak Hour</b>		07:00	07:00	09:00	07:00	10:00	07:00	08:00	07:00					07:00
<b>Volume</b>		972	170	6	23	4	1	3	15					1185
<b>PM Volumes</b>	2	6948	1164	32	146	8	0	4	60	0	2	0	0	8366
<b>% PM</b>	0%	47%	8%	0%	1%	0%		0%	0%		0%			57%
<b>PM Peak Hour</b>	14:00	17:00	13:00	14:00	13:00	14:00		15:00	12:00		15:00			17:00
<b>Volume</b>	1	821	145	6	22	2		2	8		1			967

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2128	↔ 14%	1781	↔ 12%	1818	↔ 12%	8970	↔ 61%

Classification Definitions			
1 Motorist	2	3	4
5	6	7	8
9	10	11	12

# CLASSIFICATION

## Vineyard Ave Bet. 4th St & Jay St

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_011

**Summary**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	203	29	0	1	0	0	0	0	0	0	0	0	233
01:00	0	140	21	0	0	0	0	2	3	0	0	0	0	166
02:00	0	113	24	3	1	0	0	1	0	0	0	0	0	142
03:00	0	163	32	2	7	0	0	0	2	0	0	0	0	206
04:00	0	364	76	2	13	0	0	0	7	0	0	0	0	462
05:00	0	591	129	6	22	2	0	1	11	0	0	0	0	762
06:00	0	941	191	5	34	1	0	2	13	0	0	0	0	1187
07:00	0	1575	290	2	43	4	1	1	22	0	0	0	0	1938
08:00	0	1417	247	6	38	6	0	3	14	0	0	0	0	1731
09:00	1	963	178	10	28	4	2	3	18	0	1	0	0	1208
10:00	1	1011	207	10	41	7	0	2	14	0	0	0	0	1293
11:00	0	1166	212	10	31	7	1	1	19	0	1	0	0	1448
12:00 PM	0	1245	224	10	29	4	2	1	14	1	2	0	0	1532
13:00	1	1414	255	9	43	5	1	1	14	1	1	0	0	1745
14:00	2	1381	263	8	46	5	2	0	12	0	0	0	0	1719
15:00	0	1673	281	10	32	2	0	5	16	0	3	0	0	2022
16:00	0	1664	289	11	47	2	0	0	10	0	0	0	0	2023
17:00	0	1823	272	9	40	2	0	2	11	1	3	0	0	2163
18:00	2	1469	214	2	33	0	0	0	8	0	0	0	0	1728
19:00	0	1207	190	2	27	0	0	0	9	0	1	0	0	1436
20:00	0	975	149	4	12	0	0	0	7	0	0	0	0	1147
21:00	0	843	103	0	9	1	0	0	4	0	0	0	0	960
22:00	0	691	99	2	10	0	0	0	2	0	0	0	0	804
23:00	0	380	47	0	7	0	0	0	2	0	0	0	0	436
<b>Totals</b>	<b>7</b>	<b>23412</b>	<b>4022</b>	<b>123</b>	<b>594</b>	<b>52</b>	<b>9</b>	<b>25</b>	<b>232</b>	<b>3</b>	<b>12</b>			<b>28491</b>
<b>% of Totals</b>	<b>0%</b>	<b>82%</b>	<b>14%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>0%</b>			<b>100%</b>

<b>AM Volumes</b>	2	8647	1636	56	259	31	4	16	123	0	2	0	0	10776
<b>% AM</b>	0%	30%	6%	0%	1%	0%	0%	0%	0%		0%			38%
<b>AM Peak Hour</b>	09:00	07:00	07:00	09:00	07:00	10:00	09:00	08:00	07:00		09:00			07:00
<b>Volume</b>	1	1575	290	10	43	7	2	3	22		1			1938
<b>PM Volumes</b>	5	14765	2386	67	335	21	5	9	109	3	10	0	0	17715
<b>% PM</b>	0%	52%	8%	0%	1%	0%	0%	0%	0%	0%	0%			62%
<b>PM Peak Hour</b>	14:00	17:00	16:00	16:00	16:00	13:00	12:00	15:00	15:00	12:00	15:00			17:00
<b>Volume</b>	2	1823	289	11	47	5	2	5	16	1	3			2163

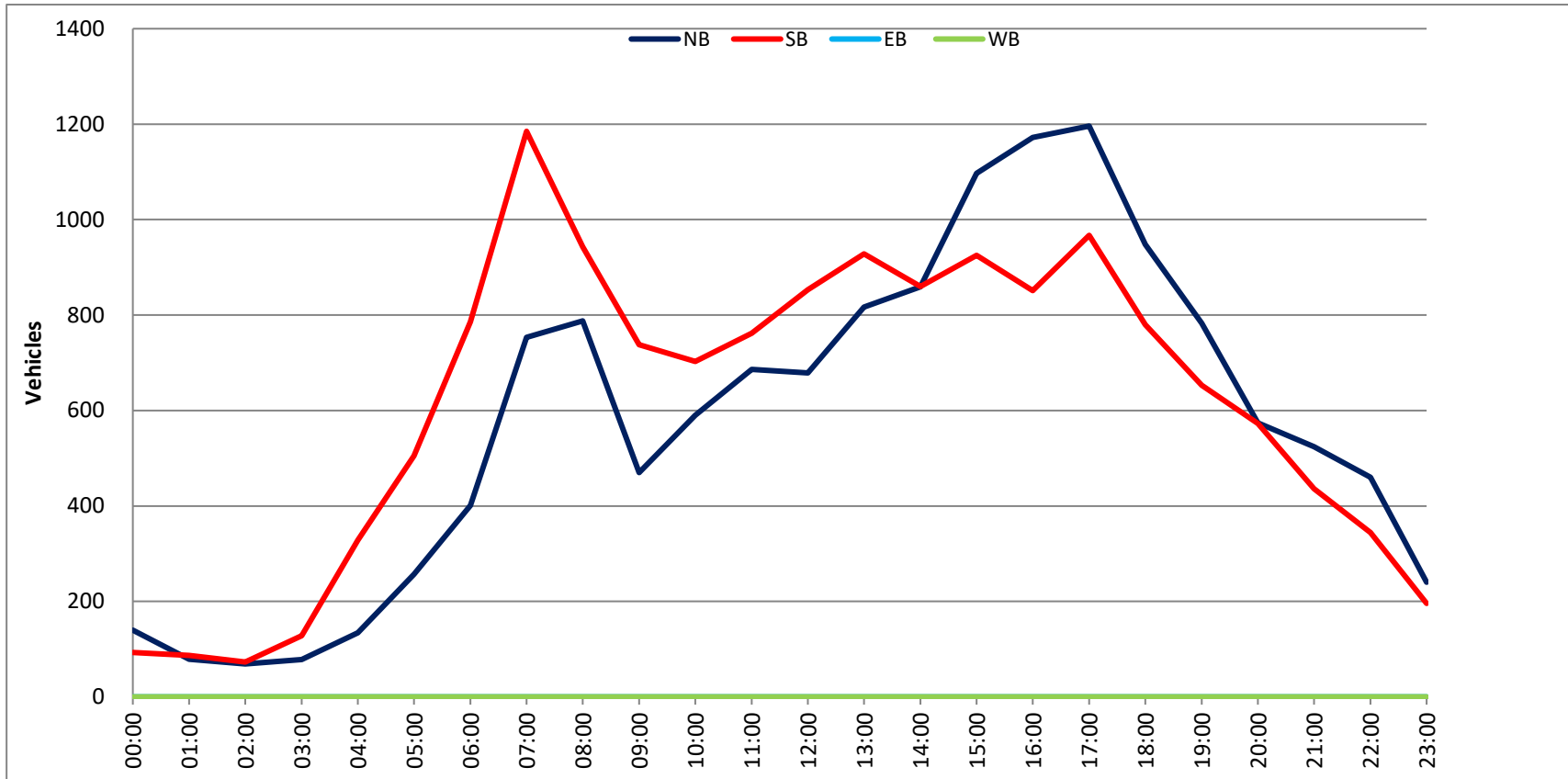
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	3669	↔ 13%	3277	↔ 12%	4186	↔ 15%	17359	↔ 61%

Classification Definitions			
1 Motorcycles	4 Buses	7 1/2 Axle Single Unit	12 6 Axle Single Trailer
2 Trucks	5 Trucks	8 1/2 Axle Single Unit	13 7 Axle Multi Trailer

Prepared by NDS/ATD

DAILY TOTALS					NB	SB	EB	WB	To		
					13,794	14,697	0	0	28,		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO
00:00	36	30	0	0	66	12:00	173	198	0	0	371
00:15	43	26	0	0	69	12:15	161	211	0	0	372
00:30	30	14	0	0	44	12:30	164	235	0	0	399
00:45	31	140	23	93	54	12:45	181	679	209	853	390
01:00	23	18	0	0	41	13:00	183	225	0	0	408
01:15	26	25	0	0	51	13:15	209	239	0	0	448
01:30	17	15	0	0	32	13:30	242	239	0	0	481
01:45	13	79	29	87	42	13:45	183	817	225	928	408
02:00	17	16	0	0	33	14:00	181	202	0	0	383
02:15	14	15	0	0	29	14:15	187	218	0	0	405
02:30	13	20	0	0	33	14:30	209	227	0	0	436
02:45	25	69	22	73	47	14:45	282	859	213	860	495
03:00	18	26	0	0	44	15:00	287	218	0	0	505
03:15	13	32	0	0	45	15:15	257	236	0	0	493
03:30	20	36	0	0	56	15:30	282	242	0	0	524
03:45	27	78	34	128	61	15:45	271	1097	229	925	500
04:00	12	57	0	0	69	16:00	275	203	0	0	478
04:15	30	73	0	0	103	16:15	311	222	0	0	533
04:30	38	93	0	0	131	16:30	289	195	0	0	484
04:45	54	134	105	328	159	16:45	297	1172	231	851	528
05:00	50	79	0	0	129	17:00	304	257	0	0	561
05:15	55	124	0	0	179	17:15	298	274	0	0	572
05:30	62	155	0	0	217	17:30	267	237	0	0	504
05:45	90	257	147	505	237	17:45	327	1196	199	967	526
06:00	85	170	0	0	255	18:00	287	213	0	0	500
06:15	94	152	0	0	246	18:15	241	189	0	0	430
06:30	82	211	0	0	293	18:30	232	204	0	0	436
06:45	140	401	253	786	393	18:45	188	948	174	780	362
07:00	137	264	0	0	401	19:00	210	187	0	0	397
07:15	192	287	0	0	479	19:15	200	162	0	0	362
07:30	204	315	0	0	519	19:30	204	156	0	0	360
07:45	220	753	319	1185	539	19:45	169	783	148	653	317
08:00	220	299	0	0	519	20:00	171	144	0	0	315
08:15	225	251	0	0	476	20:15	149	164	0	0	313
08:30	172	207	0	0	379	20:30	136	128	0	0	264
08:45	171	788	186	943	357	20:45	118	574	137	573	255
09:00	118	173	0	0	291	21:00	161	124	0	0	285
09:15	115	186	0	0	301	21:15	124	147	0	0	271
09:30	111	195	0	0	306	21:30	121	79	0	0	200
09:45	126	470	184	738	310	21:45	118	524	86	436	204
10:00	143	197	0	0	340	22:00	105	83	0	0	188
10:15	123	164	0	0	287	22:15	131	78	0	0	209
10:30	160	172	0	0	332	22:30	98	103	0	0	201
10:45	164	590	170	703	334	22:45	126	460	80	344	206
11:00	163	164	0	0	327	23:00	75	70	0	0	145
11:15	203	191	0	0	394	23:15	57	39	0	0	96
11:30	161	219	0	0	380	23:30	53	47	0	0	100
11:45	159	686	188	762	347	23:45	55	240	40	196	95
<b>TOTALS</b>	<b>4445</b>	<b>6331</b>			<b>10776</b>	<b>TOTALS</b>	<b>9349</b>	<b>8366</b>			
<b>SPLIT %</b>	<b>41.2%</b>	<b>58.8%</b>			<b>37.8%</b>	<b>SPLIT %</b>	<b>52.8%</b>	<b>47.2%</b>			

DAILY TOTALS					NB	SB	EB	WB	To	
					13,794	14,697	0	0	28,	
AM Peak Hour	07:30	07:15			07:15	PM Peak Hour	16:15	16:45		
AM Pk Volume	869	1220			2056	PM Pk Volume	1201	999		
Pk Hr Factor	0.966	0.956			0.954	Pk Hr Factor	0.965	0.911		
7 - 9 Volume	1541	2128	0	0	3669	4 - 6 Volume	2368	1818	0	0
7 - 9 Peak Hour	07:30	07:15			07:15	4 - 6 Peak Hour	16:15	16:45		
7 - 9 Pk Volume	869	1220	0	0	2056	4 - 6 Pk Volume	1201	999	0	0
Pk Hr Factor	0.966	0.956	0.000	0.000	0.954	Pk Hr Factor	0.965	0.911	0.000	0.000







**CLASSIFICATION**

Prepared by National Data & Surveying Services  
 Vineyard Ave Bet. Inland Empire Blvd & I-10 WB Ramps

Day: Tuesday  
 Date: 3/12/2019

City: Rancho Cucamonga  
 Project #: CA19\_6035\_012s

**South Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	48	8	0	1	0	0	0	0	0	0	0	0	57
00:15	1	33	4	0	1	0	0	0	0	0	0	0	0	40
00:30	0	30	5	0	0	0	0	0	0	0	0	0	0	35
00:45	0	29	5	0	0	0	0	1	1	0	0	0	0	36
01:00	0	25	9	0	2	0	0	0	1	0	0	0	0	37
01:15	0	23	4	0	2	0	0	0	2	0	0	0	0	31
01:30	0	15	3	0	0	0	0	0	1	0	0	0	0	19
01:45	1	19	5	0	2	0	0	1	0	0	0	0	0	28
02:00	0	23	3	0	1	0	0	1	0	0	0	0	0	28
02:15	0	24	5	0	1	0	0	2	0	0	0	0	0	32
02:30	0	23	6	0	0	0	0	1	1	0	0	0	0	31
02:45	0	19	4	0	0	0	0	0	0	0	0	0	0	23
03:00	0	36	8	1	2	3	0	1	2	0	0	0	0	53
03:15	0	33	5	0	0	0	0	0	3	0	0	0	0	41
03:30	0	46	10	0	1	0	0	0	1	0	0	0	0	58
03:45	0	39	10	1	1	1	0	1	2	0	0	0	0	55
04:00	0	50	8	1	4	0	0	2	1	0	0	0	0	66
04:15	0	66	11	1	2	0	0	0	2	0	0	0	0	82
04:30	0	100	22	0	4	1	0	0	3	0	0	0	0	130
04:45	0	99	22	1	5	0	0	0	1	0	0	0	0	128
05:00	0	85	19	2	4	2	0	0	3	0	0	0	0	115
05:15	0	109	20	0	4	0	0	0	2	0	0	0	0	135
05:30	0	136	26	2	7	1	0	0	4	0	0	0	0	178
05:45	1	139	23	5	6	1	0	0	5	0	0	0	0	180
06:00	0	142	25	1	4	1	0	0	1	0	0	0	0	175
06:15	0	133	26	2	7	0	0	0	1	0	0	0	0	169
06:30	1	210	34	4	7	0	0	1	4	0	0	0	0	261
06:45	0	191	29	0	7	0	0	0	3	0	0	0	0	230
07:00	0	217	33	3	5	0	0	0	3	0	0	0	0	261
07:15	2	258	49	2	9	0	1	1	8	0	0	0	0	330
07:30	1	284	43	2	7	1	0	0	5	0	0	0	0	349
07:45	1	254	39	1	11	0	0	0	5	0	0	0	0	311
08:00	1	221	40	0	6	0	0	0	2	0	0	0	0	270
08:15	1	204	39	0	6	1	0	0	0	0	0	0	0	251
08:30	0	119	23	1	3	0	0	0	4	0	0	0	0	150
08:45	0	166	33	1	4	1	0	0	1	0	0	0	0	206
09:00	0	153	29	0	8	0	0	1	3	0	0	0	0	194
09:15	0	141	23	0	8	0	1	0	2	0	0	0	0	176
09:30	0	147	32	1	5	0	0	0	2	0	0	0	0	187
09:45	0	157	35	2	5	1	0	0	6	0	0	0	0	206
10:00	0	152	25	3	4	0	0	0	8	0	0	0	0	192
10:15	0	150	23	0	8	1	0	1	2	0	0	0	0	185
10:30	0	127	26	1	6	0	0	0	5	0	0	0	0	165
10:45	0	137	26	2	5	0	0	0	5	0	0	0	0	175
11:00	0	161	32	1	5	0	0	0	9	0	0	0	0	202
11:15	1	159	25	2	3	0	0	0	8	0	0	0	0	198
11:30	0	134	26	4	5	0	0	0	4	0	0	0	0	173
11:45	0	139	27	2	6	1	0	0	5	0	0	0	0	180
12:00 PM	0	180	36	0	5	1	0	0	6	0	0	0	0	228
12:15	1	195	32	1	8	1	0	0	4	0	0	0	0	242
12:30	0	175	31	2	4	0	0	0	5	0	0	0	0	217
12:45	0	202	36	0	7	0	0	0	15	0	0	0	0	258
13:00	0	197	34	1	6	0	0	0	5	0	0	0	0	243
13:15	0	175	28	0	5	2	0	0	2	0	0	0	0	212
13:30	1	232	39	1	8	1	0	0	3	0	0	0	0	285
13:45	1	178	33	1	8	0	0	0	1	0	0	0	0	222
14:00	0	188	35	2	4	1	0	0	2	0	0	0	0	232
14:15	0	207	35	0	5	0	0	0	2	0	0	0	0	249
14:30	1	226	41	0	10	0	0	0	3	0	0	0	0	281
14:45	0	220	38	3	9	0	0	0	2	0	0	0	0	272
15:00	0	205	35	1	5	1	0	0	4	0	0	0	0	251
15:15	0	210	35	0	5	0	0	0	2	0	0	0	0	252
15:30	1	256	42	2	8	1	0	1	5	0	0	0	0	316
15:45	1	247	37	1	8	0	0	0	2	0	0	0	0	296
16:00	0	196	35	1	6	0	0	0	0	0	0	0	0	238
16:15	1	201	34	3	4	1	0	0	3	0	0	0	0	247
16:30	0	195	32	2	6	0	0	1	0	0	0	0	0	238
16:45	2	232	37	2	7	0	0	1	2	0	0	0	0	283
17:00	0	207	32	1	5	0	0	0	2	0	0	0	0	247
17:15	1	252	47	2	6	1	0	1	1	0	0	0	0	311
17:30	1	257	45	0	6	1	0	0	2	0	0	0	0	312
17:45	0	205	31	1	5	0	0	0	1	0	0	0	0	243
18:00	0	213	32	0	5	0	0	0	4	0	0	0	0	254
18:15	0	171	24	0	5	0	0	0	3	0	0	0	0	209
18:30	0	181	33	1	4	0	0	0	3	0	0	0	0	222
18:45	0	168	25	0	4	0	0	0	2	0	0	0	0	199
19:00	0	185	28	1	4	0	0	1	1	0	0	0	0	220
19:15	0	163	28	0	4	1	0	0	3	0	0	0	0	199
19:30	0	143	23	2	4	0	0	1	2	0	0	0	0	175
19:45	0	135	22	0	3	0	0	0	2	0	0	0	0	162
20:00	0	150	22	1	3	0	0	0	1	0	0	0	0	177
20:15	0	122	22	0	3	0	0	0	1	0	0	0	0	148
20:30	0	122	19	1	3	0	0	0	1	0	0	0	0	146
20:45	0	129	21	0	4	0	0	1	2	0	0	0	0	157
21:00	0	119	20	0	3	0	0	0	3	0	0	0	0	145
21:15	0	101	18	1	2	0	0	0	4	0	0	0	0	126
21:30	1	87	11	0	2	0	0	0	1	0	0	0	0	102
21:45	0	91	13	0	3	0	0	0	3	0	0	0	0	114
22:00	0	93	18	0	2	0	0	0	0	0	0	0	0	113
22:15	0	54	10	0	1	1	0	1	0	0	0	0	0	67
22:30	0	76	12	0	3	0	0	0	4	0	0	0	0	95
22:45	0	68	10	0	2	0	0	0	3	0	0	0	0	83
23:00	0	56	9	0	1	2	0	0	1	0	0	0	0	69
23:15	0	44	8	0	1	0	0	0	0	0	0	0	0	53
23:30	0	51	7	1	1	0	0	0	1	0	0	0	0	61
23:45	0	54	7	0	1	0	0	1	0	0	0	0	0	63
<b>Totals</b>	<b>23</b>	<b>13221</b>	<b>2293</b>	<b>84</b>	<b>412</b>	<b>34</b>	<b>1</b>	<b>25</b>	<b>243</b>					<b>16336</b>
% of Totals	0%	81%	14%	1%	3%	0%	0%	0%	1%					100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes										
AM Volumes	11	5407	987	49	194	17	1	16	126	0	0	0	0	6808
% AM	0%	33%	6%	0%	1%	0%	0%	0%	1%					42%
PM Volumes	12	7814	1306	35	218	17	0	9	117	0	0	0	0	9528
% PM	0%	48%	8%	0%	1%	0%	0%	0%	1%					58%

All Classes	Volume	%	Volume	%	Volume	%	Volume	%
AM Peak Hour	11	33%	12	48%	11	33%	11	33%
PM Peak Hour	12	48%	12	48%	12	48%	12	48%

**CLASSIFICATION**

Vineyard Ave Bet. Inland Empire Blvd & I-10 WB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_012

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	87	15	1	2	0	0	0	0	0	0	0	0	105
00:15	1	69	10	0	3	0	0	1	2	0	0	0	0	87
00:30	0	52	9	0	2	0	0	1	2	0	0	0	0	66
00:45	0	63	10	1	2	0	0	1	3	0	0	0	0	80
01:00	0	54	12	0	3	0	0	1	4	0	0	0	0	74
01:15	0	48	7	0	2	0	0	2	2	0	0	0	0	61
01:30	0	40	7	1	1	0	0	3	1	0	0	0	0	53
01:45	1	45	10	1	4	0	0	2	4	0	0	0	0	67
02:00	0	53	11	0	3	0	0	4	4	0	0	0	0	75
02:15	0	52	9	0	3	0	0	4	4	0	0	0	0	72
02:30	0	46	9	0	0	0	0	4	4	0	0	0	0	63
02:45	0	44	8	0	1	0	0	3	5	0	0	0	0	61
03:00	0	64	12	1	2	3	0	2	6	0	0	0	0	90
03:15	0	50	7	1	3	0	0	1	5	0	0	0	0	67
03:30	0	73	14	1	3	1	0	2	5	0	0	0	0	99
03:45	0	71	14	2	1	1	0	2	5	0	0	0	0	98
04:00	0	72	13	1	4	2	0	4	7	0	0	0	0	98
04:15	0	95	15	2	4	1	0	1	2	0	0	0	0	120
04:30	0	155	29	0	5	1	0	2	5	0	0	0	0	197
04:45	0	199	32	2	9	1	0	1	2	0	0	0	0	246
05:00	0	152	30	4	5	3	0	2	3	0	0	0	0	199
05:15	1	151	27	0	4	1	0	0	3	0	0	0	0	187
05:30	0	215	35	3	10	2	0	0	8	0	0	0	0	273
05:45	1	248	44	6	7	3	0	1	8	0	0	0	0	318
06:00	0	226	47	2	7	1	0	1	8	0	0	0	0	292
06:15	0	226	40	3	12	0	0	0	2	0	0	0	0	283
06:30	1	315	48	4	13	0	0	1	7	0	0	0	0	389
06:45	0	360	63	2	12	0	0	0	8	0	0	0	0	445
07:00	1	374	64	3	11	0	0	1	15	0	0	0	0	469
07:15	2	394	83	2	15	0	1	1	11	0	0	0	0	509
07:30	1	470	79	2	13	1	0	0	9	0	0	0	0	575
07:45	1	474	74	2	20	1	0	0	5	0	0	0	0	577
08:00	1	404	76	1	11	0	0	0	7	0	0	0	0	500
08:15	1	357	74	0	10	2	0	0	1	0	0	0	0	445
08:30	0	269	55	3	6	2	0	1	5	0	0	0	0	341
08:45	0	284	57	2	10	2	0	1	6	0	0	0	0	362
09:00	0	268	54	4	16	0	0	4	6	0	0	0	0	352
09:15	0	259	48	2	15	2	1	1	7	0	0	0	0	333
09:30	0	288	59	3	8	0	0	0	10	0	0	0	0	368
09:45	0	306	61	3	8	1	0	0	10	0	0	0	0	389
10:00	0	277	57	5	8	2	0	2	12	0	0	0	0	363
10:15	0	255	48	3	11	1	0	1	4	0	0	0	0	323
10:30	0	254	55	1	12	1	0	0	10	0	0	0	0	333
10:45	0	277	53	4	10	1	0	1	11	0	0	0	0	357
11:00	0	300	53	1	10	1	0	1	8	0	0	0	0	374
11:15	1	325	52	6	11	2	0	0	13	0	0	0	0	410
11:30	0	271	64	5	10	0	0	1	9	0	0	0	0	360
11:45	0	301	60	6	10	1	0	0	11	0	0	0	0	379
12:00 PM	2	354	68	1	10	2	0	0	15	0	0	0	0	452
12:15	1	347	60	2	20	2	0	0	10	0	0	0	0	442
12:30	0	336	61	3	10	1	0	0	7	0	0	0	0	418
12:45	2	371	68	2	14	1	0	0	2	19	0	0	0	479
13:00	0	341	55	2	11	0	0	2	8	0	0	0	0	419
13:15	0	357	59	2	12	3	0	1	7	0	0	0	0	441
13:30	3	410	71	2	15	2	0	0	7	0	0	0	0	510
13:45	4	339	62	2	16	0	0	0	5	0	0	0	0	428
14:00	0	362	68	4	11	1	0	0	6	0	0	0	0	452
14:15	0	355	60	0	11	0	0	0	4	0	0	0	0	430
14:30	1	403	83	0	15	2	0	1	4	0	0	0	0	508
14:45	0	429	72	3	17	0	0	1	7	0	0	0	0	529
15:00	1	404	66	2	18	1	0	1	6	0	0	0	0	499
15:15	1	422	66	1	9	2	0	1	4	0	0	0	0	506
15:30	1	462	74	5	12	1	0	1	7	0	0	0	0	563
15:45	1	501	79	6	16	0	0	0	5	0	0	0	0	608
16:00	2	456	81	2	14	0	0	1	2	0	0	0	0	558
16:15	1	458	77	4	13	2	0	1	7	0	0	0	0	563
16:30	4	455	75	6	15	3	0	1	2	0	0	0	0	565
16:45	4	489	76	7	16	0	0	3	5	0	0	0	0	600
17:00	1	497	80	2	11	1	0	0	7	0	0	0	0	599
17:15	3	532	95	5	17	1	0	1	6	0	0	0	0	660
17:30	3	522	85	0	13	1	0	1	4	0	0	0	0	629
17:45	1	440	68	2	14	0	0	2	4	0	0	0	0	531
18:00	1	445	70	2	9	0	0	1	6	0	0	0	0	534
18:15	0	366	56	1	8	0	0	0	6	0	0	0	0	437
18:30	4	400	65	1	9	1	0	2	6	0	0	0	0	488
18:45	0	363	53	1	8	1	0	0	6	0	0	0	0	432
19:00	1	365	51	1	10	0	0	2	4	0	0	0	0	434
19:15	0	322	52	1	8	1	0	0	3	7	0	0	0	394
19:30	0	304	42	3	8	1	0	0	1	7	0	0	0	366
19:45	0	299	44	1	5	0	0	0	6	0	0	0	0	355
20:00	1	277	43	1	6	0	0	0	2	0	0	0	0	330
20:15	0	247	40	0	5	0	0	0	2	0	0	0	0	294
20:30	0	244	39	1	7	1	0	4	2	0	0	0	0	298
20:45	0	249	40	0	7	0	0	2	6	0	0	0	0	304
21:00	1	226	34	0	4	1	0	1	6	0	0	0	0	273
21:15	0	216	32	1	4	0	0	1	7	0	0	0	0	261
21:30	1	193	28	0	4	0	0	0	5	0	0	0	0	231
21:45	0	195	28	1	6	1	0	1	4	0	0	0	0	237
22:00	0	188	29	0	7	0	0	1	5	0	0	0	0	230
22:15	0	148	19	0	2	3	0	1	4	0	0	0	0	177
22:30	0	172	23	0	5	0	1	0	7	0	0	0	0	208
22:45	0	136	24	0	3	1	0	0	5	0	0	0	0	169
23:00	0	109	17	0	2	3	0	0	1	0	0	0	0	132
23:15	0	92	12	0	2	0	0	1	2	0	0	0	0	109
23:30	0	102	12	1	2	0	0	1	3	0	0	0	0	121
23:45	0	104	14	0	3	1	0	2	0	0	0	0	0	124
<b>Totals</b>	<b>58</b>	<b>25336</b>	<b>4380</b>	<b>177</b>	<b>816</b>	<b>80</b>	<b>2</b>	<b>107</b>	<b>554</b>					<b>31718</b>
<b>% of Totals</b>	<b>0%</b>	<b>81%</b>	<b>14%</b>	<b>1%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>					<b>100%</b>

AM Volumes	13	9732	1803	96	352	39	1	61	285	0	0	0	0	12382
% AM	0%	31%	6%	0%	1%	0%	0%	0%	2%	0%	0%	0%	0%	39%
AM Peak Hour	07:00	07:15	07:15	11:00	07:00	05:00	06:30	02:00	11:15	0	0	0	0	07:15
Volume	5	1742	312	18	59	9	1	15	48					2161
PM Volumes	45	15804	2577	81	464	41	1	46	269	0	0	0	0	19328
% PM	0%	60%	8%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	61%
PM Peak Hour	16:30	16:45	16:45	16:30	14:15	22:15	21:45	20:30	12:00					16:45
Volume	12	2040	336	20	61	7	1	8	51					2488

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
	%	%	%	%

# CLASSIFICATION

Vineyard Ave Bet. Inland Empire Blvd & I-10 WB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_012n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	131	22	2	7	0	0	2	6	0	0	0	0	170
01:00	0	105	15	2	4	0	0	7	7	0	0	0	0	140
02:00	0	106	19	0	5	0	0	11	16	0	0	0	0	157
03:00	0	104	14	3	5	1	0	5	13	0	0	0	0	145
04:00	0	206	26	2	7	4	0	6	4	0	0	0	0	255
05:00	1	295	48	4	5	5	0	3	8	0	0	0	0	369
06:00	0	451	84	4	19	0	0	0	16	0	0	0	0	574
07:00	1	699	136	1	27	1	0	1	19	0	0	0	0	885
08:00	0	604	127	4	18	4	0	2	12	0	0	0	0	771
09:00	0	523	103	9	21	0	0	3	20	0	0	0	0	679
10:00	0	497	113	7	18	4	0	3	17	0	0	0	0	659
11:00	0	604	109	9	22	3	0	2	21	0	0	0	0	770
12:00 PM	4	656	122	5	30	4	0	2	23	0	0	0	0	846
13:00	5	665	113	5	27	2	0	3	16	0	0	0	0	836
14:00	0	708	134	2	26	2	0	2	12	0	0	0	0	886
15:00	2	871	136	10	29	2	0	2	9	0	0	0	0	1061
16:00	8	1034	172	11	35	2	0	5	13	0	0	0	0	1280
17:00	6	1070	173	5	33	1	0	3	15	0	0	0	0	1306
18:00	5	841	130	4	16	2	0	3	12	0	0	0	0	1013
19:00	1	664	88	3	16	1	0	4	16	0	0	0	0	793
20:00	1	494	78	0	12	1	0	5	7	0	0	0	0	598
21:00	1	432	56	1	8	2	0	4	11	0	0	0	0	515
22:00	0	353	45	0	9	3	1	1	14	0	0	0	0	426
23:00	0	202	24	0	5	2	0	3	4	0	0	0	0	240
<b>Totals</b>	<b>35</b>	<b>12315</b>	<b>2087</b>	<b>93</b>	<b>404</b>	<b>46</b>	<b>1</b>	<b>82</b>	<b>311</b>					<b>15374</b>
% of Totals	0%	80%	14%	1%	3%	0%	0%	1%	2%					100%

12350 2584 46 394  
1.0 1.5 2.0 3.0

**12350 3876 92 1182 17500**

<b>AM Volumes</b>	2	4325	816	47	158	22	0	45	159	0	0	0	0	5574
<b>% AM</b>	0%	28%	5%	0%	1%	0%		0%	1%					36%
<b>AM Peak Hour</b>	05:00	07:00	07:00	09:00	07:00	05:00		02:00	11:00					07:00
<b>Volume</b>	1	699	136	9	27	5		11	21					885
<b>PM Volumes</b>	33	7990	1271	46	246	24	1	37	152	0	0	0	0	9800
<b>% PM</b>	0%	52%	8%	0%	2%	0%	0%	0%	1%					64%
<b>PM Peak Hour</b>	16:00	17:00	17:00	16:00	16:00	12:00	22:00	16:00	12:00					17:00
<b>Volume</b>	8	1070	173	11	35	4	1	5	23					1306

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
Volume		Volume	%	Volume	%	Volume	%	Volume	%
1656	↔	1682	11%	1682	11%	2586	17%	9450	61%

**Classification Definitions**

Motorcycles 4 Buses 7 >=4 Axle Single Units 10 >=6 Axle Single Trailers 13 >=7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. Inland Empire Blvd & I-10 WB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_012s

### South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	140	22	0	2	0	0	1	2	0	0	0	0	168
01:00	1	82	21	0	6	0	0	1	4	0	0	0	0	115
02:00	0	89	18	0	2	0	0	4	1	0	0	0	0	114
03:00	0	154	33	2	4	4	0	2	8	0	0	0	0	207
04:00	0	315	63	3	15	1	0	2	7	0	0	0	0	406
05:00	1	471	88	9	21	4	0	0	14	0	0	0	0	608
06:00	1	676	114	7	25	1	0	2	9	0	0	0	0	835
07:00	4	1013	164	8	32	1	1	1	21	0	0	0	0	1245
08:00	2	710	135	2	19	2	0	0	7	0	0	0	0	877
09:00	0	598	119	3	26	2	0	2	13	0	0	0	0	763
10:00	0	566	100	6	23	1	0	1	20	0	0	0	0	717
11:00	1	593	110	9	19	1	0	0	20	0	0	0	0	753
12:00 PM	1	752	135	3	24	2	0	0	28	0	0	0	0	945
13:00	2	782	134	3	27	3	0	0	11	0	0	0	0	962
14:00	1	841	149	5	28	1	0	0	9	0	0	0	0	1034
15:00	2	918	149	4	26	2	0	1	13	0	0	0	0	1115
16:00	3	824	138	8	23	3	0	2	5	0	0	0	0	1006
17:00	2	921	155	4	22	2	0	1	6	0	0	0	0	1113
18:00	0	733	114	1	18	0	0	0	12	0	0	0	0	878
19:00	0	626	101	3	15	1	0	2	8	0	0	0	0	756
20:00	0	523	84	2	13	0	0	1	5	0	0	0	0	628
21:00	1	398	66	1	10	0	0	0	11	0	0	0	0	487
22:00	0	291	50	0	8	1	0	1	7	0	0	0	0	358
23:00	0	205	31	1	4	2	0	1	2	0	0	0	0	246
<b>Totals</b>	<b>23</b>	<b>13221</b>	<b>2293</b>	<b>84</b>	<b>412</b>	<b>34</b>	<b>1</b>	<b>25</b>	<b>243</b>					<b>16336</b>
% of Totals	0%	81%	14%	1%	3%	0%	0%	0%	1%					100%

AM Volumes	11	5407	987	49	194	17	1	16	126	0	0	0	0	6808
% AM	0%	33%	6%	0%	1%	0%	0%	0%	1%					42%
AM Peak Hour	07:00	07:00	07:00	05:00	07:00	03:00	07:00	02:00	07:00					07:00
Volume	4	1013	164	9	32	4	1	4	21					1245
PM Volumes	12	7814	1306	35	218	17	0	9	117	0	0	0	0	9528
% PM	0%	48%	8%	0%	1%	0%		0%	1%					58%
PM Peak Hour	16:00	17:00	17:00	16:00	14:00	13:00		16:00	12:00					15:00
Volume	3	921	155	8	28	3		2	28					1115

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2122	↔ 13%	1907	↔ 12%	2119	↔ 13%	10188	↔ 62%

### Classification Definitions

1 Motorcycles, 2 Bicycles, 3 Bicycles, 4 Bicycles, 5 Bicycles, 6 Bicycles, 7 1 Axle Single Trailer, 8 1 Axle Single Trailer, 9 2 Axle Single Trailer, 10 2 Axle Single Trailer, 11 2 Axle Single Trailer, 12 2 Axle Multi Trailer, 13 2 Axle Multi Trailer, 14 2 Axle Multi Trailer, 15 2 Axle Multi Trailer, 16 2 Axle Multi Trailer, 17 2 Axle Multi Trailer, 18 2 Axle Multi Trailer, 19 2 Axle Multi Trailer, 20 2 Axle Multi Trailer, 21 2 Axle Multi Trailer, 22 2 Axle Multi Trailer, 23 2 Axle Multi Trailer, 24 2 Axle Multi Trailer, 25 2 Axle Multi Trailer, 26 2 Axle Multi Trailer, 27 2 Axle Multi Trailer, 28 2 Axle Multi Trailer, 29 2 Axle Multi Trailer, 30 2 Axle Multi Trailer, 31 2 Axle Multi Trailer, 32 2 Axle Multi Trailer, 33 2 Axle Multi Trailer, 34 2 Axle Multi Trailer, 35 2 Axle Multi Trailer, 36 2 Axle Multi Trailer, 37 2 Axle Multi Trailer, 38 2 Axle Multi Trailer, 39 2 Axle Multi Trailer, 40 2 Axle Multi Trailer, 41 2 Axle Multi Trailer, 42 2 Axle Multi Trailer, 43 2 Axle Multi Trailer, 44 2 Axle Multi Trailer, 45 2 Axle Multi Trailer, 46 2 Axle Multi Trailer, 47 2 Axle Multi Trailer, 48 2 Axle Multi Trailer, 49 2 Axle Multi Trailer, 50 2 Axle Multi Trailer, 51 2 Axle Multi Trailer, 52 2 Axle Multi Trailer, 53 2 Axle Multi Trailer, 54 2 Axle Multi Trailer, 55 2 Axle Multi Trailer, 56 2 Axle Multi Trailer, 57 2 Axle Multi Trailer, 58 2 Axle Multi Trailer, 59 2 Axle Multi Trailer, 60 2 Axle Multi Trailer, 61 2 Axle Multi Trailer, 62 2 Axle Multi Trailer, 63 2 Axle Multi Trailer, 64 2 Axle Multi Trailer, 65 2 Axle Multi Trailer, 66 2 Axle Multi Trailer, 67 2 Axle Multi Trailer, 68 2 Axle Multi Trailer, 69 2 Axle Multi Trailer, 70 2 Axle Multi Trailer, 71 2 Axle Multi Trailer, 72 2 Axle Multi Trailer, 73 2 Axle Multi Trailer, 74 2 Axle Multi Trailer, 75 2 Axle Multi Trailer, 76 2 Axle Multi Trailer, 77 2 Axle Multi Trailer, 78 2 Axle Multi Trailer, 79 2 Axle Multi Trailer, 80 2 Axle Multi Trailer, 81 2 Axle Multi Trailer, 82 2 Axle Multi Trailer, 83 2 Axle Multi Trailer, 84 2 Axle Multi Trailer, 85 2 Axle Multi Trailer, 86 2 Axle Multi Trailer, 87 2 Axle Multi Trailer, 88 2 Axle Multi Trailer, 89 2 Axle Multi Trailer, 90 2 Axle Multi Trailer, 91 2 Axle Multi Trailer, 92 2 Axle Multi Trailer, 93 2 Axle Multi Trailer, 94 2 Axle Multi Trailer, 95 2 Axle Multi Trailer, 96 2 Axle Multi Trailer, 97 2 Axle Multi Trailer, 98 2 Axle Multi Trailer, 99 2 Axle Multi Trailer, 100 2 Axle Multi Trailer

# CLASSIFICATION

## Vineyard Ave Bet. Inland Empire Blvd & I-10 WB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_012

### Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	271	44	2	9	0	0	3	8	0	0	0	0	338
01:00	1	187	36	2	10	0	0	8	11	0	0	0	0	255
02:00	0	195	37	0	7	0	0	15	17	0	0	0	0	271
03:00	0	258	47	5	9	5	0	7	21	0	0	0	0	352
04:00	0	521	89	5	22	5	0	8	11	0	0	0	0	661
05:00	2	766	136	13	26	9	0	3	22	0	0	0	0	977
06:00	1	1127	198	11	44	1	0	2	25	0	0	0	0	1409
07:00	5	1712	300	9	59	2	1	2	40	0	0	0	0	2130
08:00	2	1314	262	6	37	6	0	2	19	0	0	0	0	1648
09:00	0	1121	222	12	47	2	0	5	33	0	0	0	0	1442
10:00	0	1063	213	13	41	5	0	4	37	0	0	0	0	1376
11:00	1	1197	219	18	41	4	0	2	41	0	0	0	0	1523
12:00 PM	5	1408	257	8	54	6	0	2	51	0	0	0	0	1791
13:00	7	1447	247	8	54	5	0	3	27	0	0	0	0	1798
14:00	1	1549	283	7	54	3	0	2	21	0	0	0	0	1920
15:00	4	1789	285	14	55	4	0	3	22	0	0	0	0	2176
16:00	11	1858	310	19	58	5	0	7	18	0	0	0	0	2286
17:00	8	1991	328	9	55	3	0	4	21	0	0	0	0	2419
18:00	5	1574	244	5	34	2	0	3	24	0	0	0	0	1891
19:00	1	1290	189	6	31	2	0	6	24	0	0	0	0	1549
20:00	1	1017	162	2	25	1	0	6	12	0	0	0	0	1226
21:00	2	830	122	2	18	2	0	4	22	0	0	0	0	1002
22:00	0	644	95	0	17	4	1	2	21	0	0	0	0	784
23:00	0	407	55	1	9	4	0	4	6	0	0	0	0	486
<b>Totals</b>	<b>58</b>	<b>25536</b>	<b>4380</b>	<b>177</b>	<b>816</b>	<b>80</b>	<b>2</b>	<b>107</b>	<b>554</b>					<b>31710</b>
% of Totals	0%	81%	14%	1%	3%	0%	0%	0%	2%					100%

AM Volumes	13	9732	1803	96	352	39	1	61	285	0	0	0	0	12382
% AM	0%	31%	6%	0%	1%	0%	0%	0%	1%					39%
AM Peak Hour	07:00	07:00	07:00	11:00	07:00	05:00	07:00	02:00	11:00					07:00
Volume	5	1712	300	18	59	9	1	15	41					2130
PM Volumes	45	15804	2577	81	464	41	1	46	269	0	0	0	0	19328
% PM	0%	50%	8%	0%	1%	0%	0%	0%	1%					61%
PM Peak Hour	16:00	17:00	17:00	16:00	16:00	12:00	22:00	16:00	12:00					17:00
Volume	11	1991	328	19	58	6	1	7	51					2419

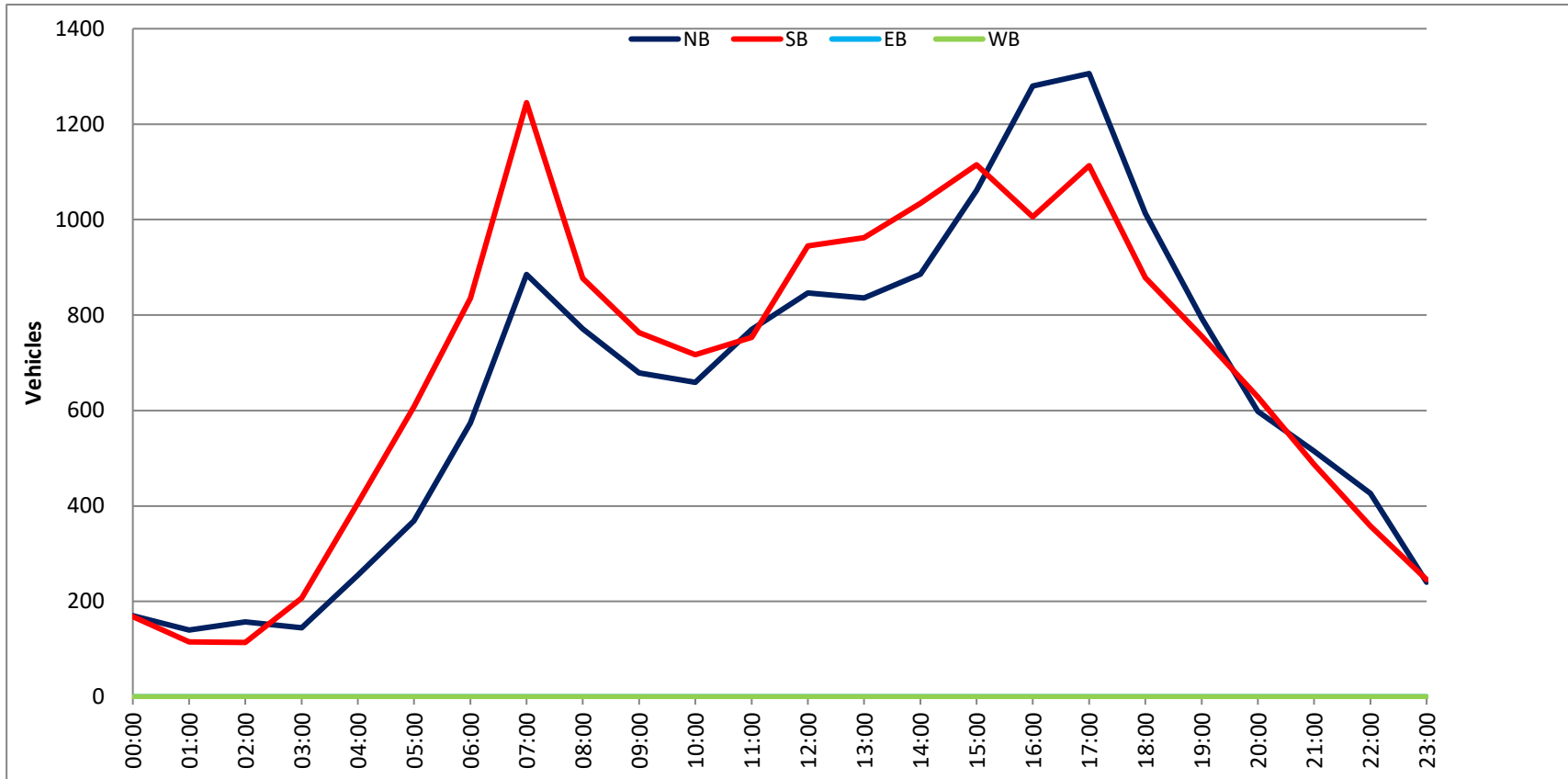
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	3778	↔ 12%	3589	↔ 11%	4705	↔ 15%	19638	↔ 62%

### Classification Definitions

1 Motorist, 2 Motorist, 3 Motorist, 4 Bicyclist, 5 Bicyclist, 6 Adult Single-Unit, 7 Adult Single-Unit, 8 Adult Single-Unit, 9 Adult Single-Unit, 10 Adult Single-Unit, 11 Adult Single-Unit, 12 Adult Multi-Unit, 13 Adult Multi-Unit, 14 Adult Multi-Unit, 15 Adult Multi-Unit, 16 Adult Multi-Unit, 17 Adult Multi-Unit, 18 Adult Multi-Unit, 19 Adult Multi-Unit, 20 Adult Multi-Unit, 21 Adult Multi-Unit, 22 Adult Multi-Unit, 23 Adult Multi-Unit, 24 Adult Multi-Unit, 25 Adult Multi-Unit, 26 Adult Multi-Unit, 27 Adult Multi-Unit, 28 Adult Multi-Unit, 29 Adult Multi-Unit, 30 Adult Multi-Unit, 31 Adult Multi-Unit, 32 Adult Multi-Unit, 33 Adult Multi-Unit, 34 Adult Multi-Unit, 35 Adult Multi-Unit, 36 Adult Multi-Unit, 37 Adult Multi-Unit, 38 Adult Multi-Unit, 39 Adult Multi-Unit, 40 Adult Multi-Unit, 41 Adult Multi-Unit, 42 Adult Multi-Unit, 43 Adult Multi-Unit, 44 Adult Multi-Unit, 45 Adult Multi-Unit, 46 Adult Multi-Unit, 47 Adult Multi-Unit, 48 Adult Multi-Unit, 49 Adult Multi-Unit, 50 Adult Multi-Unit, 51 Adult Multi-Unit, 52 Adult Multi-Unit, 53 Adult Multi-Unit, 54 Adult Multi-Unit, 55 Adult Multi-Unit, 56 Adult Multi-Unit, 57 Adult Multi-Unit, 58 Adult Multi-Unit, 59 Adult Multi-Unit, 60 Adult Multi-Unit, 61 Adult Multi-Unit, 62 Adult Multi-Unit, 63 Adult Multi-Unit, 64 Adult Multi-Unit, 65 Adult Multi-Unit, 66 Adult Multi-Unit, 67 Adult Multi-Unit, 68 Adult Multi-Unit, 69 Adult Multi-Unit, 70 Adult Multi-Unit, 71 Adult Multi-Unit, 72 Adult Multi-Unit, 73 Adult Multi-Unit, 74 Adult Multi-Unit, 75 Adult Multi-Unit, 76 Adult Multi-Unit, 77 Adult Multi-Unit, 78 Adult Multi-Unit, 79 Adult Multi-Unit, 80 Adult Multi-Unit, 81 Adult Multi-Unit, 82 Adult Multi-Unit, 83 Adult Multi-Unit, 84 Adult Multi-Unit, 85 Adult Multi-Unit, 86 Adult Multi-Unit, 87 Adult Multi-Unit, 88 Adult Multi-Unit, 89 Adult Multi-Unit, 90 Adult Multi-Unit, 91 Adult Multi-Unit, 92 Adult Multi-Unit, 93 Adult Multi-Unit, 94 Adult Multi-Unit, 95 Adult Multi-Unit, 96 Adult Multi-Unit, 97 Adult Multi-Unit, 98 Adult Multi-Unit, 99 Adult Multi-Unit, 100 Adult Multi-Unit

DAILY TOTALS					NB	SB	EB	WB	To			
					15,374	16,336	0	0	31,			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	48	57	0	0	105	12:00	224	228	0	0	452	
00:15	47	40	0	0	87	12:15	200	242	0	0	442	
00:30	31	35	0	0	66	12:30	201	217	0	0	418	
00:45	44	170	36	168	0	0	221	846	258	945	0	479
01:00	37	37	0	0	74	13:00	176	243	0	0	419	
01:15	30	31	0	0	61	13:15	229	212	0	0	441	
01:30	34	19	0	0	53	13:30	225	285	0	0	510	
01:45	39	140	28	115	0	0	206	836	222	962	0	428
02:00	47	28	0	0	75	14:00	220	232	0	0	452	
02:15	40	32	0	0	72	14:15	181	249	0	0	430	
02:30	32	31	0	0	63	14:30	228	281	0	0	509	
02:45	38	157	23	114	0	0	257	886	272	1034	0	529
03:00	37	53	0	0	90	15:00	248	251	0	0	499	
03:15	26	41	0	0	67	15:15	254	252	0	0	506	
03:30	41	58	0	0	99	15:30	247	316	0	0	563	
03:45	41	145	55	207	0	0	312	1061	296	1115	0	608
04:00	32	66	0	0	98	16:00	320	238	0	0	558	
04:15	38	82	0	0	120	16:15	316	247	0	0	563	
04:30	67	130	0	0	197	16:30	327	238	0	0	565	
04:45	118	255	128	406	0	0	317	1280	283	1006	0	600
05:00	84	115	0	0	199	17:00	352	247	0	0	599	
05:15	52	135	0	0	187	17:15	349	311	0	0	660	
05:30	95	178	0	0	273	17:30	317	312	0	0	629	
05:45	138	369	180	608	0	0	288	1306	243	1113	0	531
06:00	117	175	0	0	292	18:00	280	254	0	0	534	
06:15	114	169	0	0	283	18:15	234	203	0	0	437	
06:30	128	261	0	0	389	18:30	266	222	0	0	488	
06:45	215	574	230	835	0	0	233	1013	199	878	0	432
07:00	208	261	0	0	469	19:00	214	220	0	0	434	
07:15	179	330	0	0	509	19:15	195	199	0	0	394	
07:30	232	343	0	0	575	19:30	191	175	0	0	366	
07:45	266	885	311	1245	0	0	193	793	162	756	0	355
08:00	230	270	0	0	500	20:00	153	177	0	0	330	
08:15	194	251	0	0	445	20:15	146	148	0	0	294	
08:30	191	150	0	0	341	20:30	152	146	0	0	298	
08:45	156	771	206	877	0	0	147	598	157	628	0	304
09:00	158	194	0	0	352	21:00	128	145	0	0	273	
09:15	157	176	0	0	333	21:15	135	126	0	0	261	
09:30	181	187	0	0	368	21:30	129	102	0	0	231	
09:45	183	679	206	763	0	0	123	515	114	487	0	237
10:00	171	192	0	0	363	22:00	117	113	0	0	230	
10:15	138	185	0	0	323	22:15	110	67	0	0	177	
10:30	168	165	0	0	333	22:30	113	95	0	0	208	
10:45	182	659	175	717	0	0	86	426	83	358	0	169
11:00	172	202	0	0	374	23:00	63	69	0	0	132	
11:15	212	198	0	0	410	23:15	56	53	0	0	109	
11:30	187	173	0	0	360	23:30	60	61	0	0	121	
11:45	199	770	180	753	0	0	61	240	63	246	0	124
<b>TOTALS</b>	5574	6808			12382	<b>TOTALS</b>	9800	9528				
<b>SPLIT %</b>	45.0%	55.0%			39.0%	<b>SPLIT %</b>	50.7%	49.3%				

DAILY TOTALS					NB	SB	EB	WB	To	
					15,374	16,336	0	0	31,	
AM Peak Hour	07:30	07:15			07:15	PM Peak Hour	16:30	16:45		
AM Pk Volume	922	1254			2161	PM Pk Volume	1345	1153		
Pk Hr Factor	0.867	0.914			0.936	Pk Hr Factor	0.955	0.924		
7 - 9 Volume	1656	2122	0	0	3778	4 - 6 Volume	2586	2119	0	0
7 - 9 Peak Hour	07:30	07:15			07:15	4 - 6 Peak Hour	16:30	16:45		
7 - 9 Pk Volume	922	1254	0	0	2161	4 - 6 Pk Volume	1345	1153	0	0
Pk Hr Factor	0.867	0.914	0.000	0.000	0.936	Pk Hr Factor	0.955	0.924	0.000	0.000





**CLASSIFICATION**

Vineyard Ave Bet. I-10 WB Ramps & I-10 EB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_013n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM														0
00:15														0
00:30														0
00:45														0
01:00														0
01:15														0
01:30														0
01:45														0
02:00														0
02:15														0
02:30														0
02:45														0
03:00														0
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09:00														0
09:15														0
09:30														0
09:45														0
10:00														0
10:15														0
10:30														0
10:45														0
11:00														0
11:15														0
11:30														0
11:45														0
12:00 PM														0
12:15														0
12:30														0
12:45														0
13:00														0
13:15														0
13:30														0
13:45														0
14:00														0
14:15														0
14:30														0
14:45														0
15:00														0
15:15														0
15:30														0
15:45														0
16:00														0
16:15														0
16:30														0
16:45														0
17:00														0
17:15														0
17:30														0
17:45														0
18:00														0
18:15														0
18:30														0
18:45														0
19:00														0
19:15														0
19:30														0
19:45														0
20:00														0
20:15														0
20:30														0
20:45														0
21:00														0
21:15														0
21:30														0
21:45														0
22:00														0
22:15														0
22:30														0
22:45														0
23:00														0
23:15														0
23:30														0
23:45														0
<b>Totals</b>														
<b>% of Totals</b>														

<b>AM Volumes</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% AM</b>														
<b>AM Peak Hour</b>														
<b>Volume</b>														
<b>PM Volumes</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>% PM</b>														
<b>PM Peak Hour</b>														
<b>Volume</b>														

Directional Peak Periods	AM 7-9				NOON 12-2				PM 4-6				Off Peak Volumes			
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
All Classes																



**CLASSIFICATION**

Vineyard Ave Bet. I-10 WB Ramps & I-10 EB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_013

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	29	0	0	0	0	0	0	0	0	0	0	0	29
00:15	0	26	6	0	0	0	0	0	0	0	0	0	0	32
00:30	0	26	3	0	0	0	0	0	0	0	0	0	0	29
00:45	0	19	3	0	0	0	0	0	0	0	0	0	0	22
01:00	0	21	10	0	0	0	0	0	0	0	0	0	0	31
01:15	0	20	3	0	0	0	0	0	0	0	0	0	0	23
01:30	0	18	1	0	1	0	0	0	0	0	0	0	0	20
01:45	0	19	1	1	0	1	0	0	0	0	0	0	0	22
02:00	0	10	4	0	1	0	0	0	0	0	0	0	0	15
02:15	0	9	2	0	0	0	0	0	0	0	0	0	0	11
02:30	0	15	7	0	0	0	0	0	0	0	0	0	0	22
02:45	0	20	1	0	0	2	0	0	2	0	0	0	0	25
03:00	0	18	0	0	0	0	0	0	1	0	0	0	0	19
03:15	0	23	0	0	0	0	0	0	0	0	0	0	0	23
03:30	0	31	6	1	1	0	0	0	0	0	0	0	0	39
03:45	0	38	6	0	2	0	0	0	0	0	0	0	0	46
04:00	0	49	7	1	4	0	0	0	0	0	0	0	0	63
04:15	0	50	16	0	1	1	0	0	0	0	0	0	0	68
04:30	0	68	18	0	1	0	0	0	0	0	0	0	0	87
04:45	1	72	16	2	3	1	0	0	2	0	0	0	0	97
05:00	0	73	19	0	3	0	0	0	1	0	0	0	0	96
05:15	0	81	18	1	4	0	0	0	1	0	0	0	0	105
05:30	0	114	19	2	3	0	0	0	4	0	0	0	0	140
05:45	0	131	31	0	4	0	0	1	2	0	0	0	0	169
06:00	0	123	22	1	1	1	0	0	0	0	0	0	0	148
06:15	0	140	20	0	4	2	0	0	0	0	0	0	0	166
06:30	0	180	36	1	4	0	0	0	2	0	0	0	0	223
06:45	0	210	32	1	7	1	0	0	1	0	0	0	0	252
07:00	1	215	30	1	6	0	0	0	0	0	0	0	0	253
07:15	1	251	44	3	8	1	0	0	4	0	0	0	0	312
07:30	2	241	42	1	5	0	0	0	1	0	0	0	0	292
07:45	0	238	53	0	8	0	0	2	1	0	0	0	0	302
08:00	0	202	45	0	3	0	0	0	4	0	0	0	0	254
08:15	0	228	31	1	3	1	0	0	1	0	0	0	0	265
08:30	0	192	31	1	5	1	0	0	1	0	0	0	0	231
08:45	0	158	38	2	4	0	1	0	3	0	0	0	0	206
09:00	1	105	27	0	5	0	0	1	1	0	0	0	0	140
09:15	0	155	24	0	5	1	0	0	3	0	0	0	0	188
09:30	1	129	29	1	5	0	0	0	4	0	0	0	0	169
09:45	0	137	31	1	5	1	0	2	1	0	0	0	0	178
10:00	0	129	30	1	7	0	0	1	4	0	0	0	0	172
10:15	0	129	22	0	4	1	0	0	2	0	0	0	0	158
10:30	0	136	32	2	5	0	0	0	1	0	0	0	0	176
10:45	1	144	27	0	6	0	0	0	2	0	0	0	0	180
11:00	0	138	26	0	5	0	0	1	2	0	0	0	0	172
11:15	1	143	27	0	4	1	0	0	1	0	0	0	0	177
11:30	0	139	22	1	3	0	0	0	4	0	0	0	0	169
11:45	0	161	34	0	7	0	0	0	4	0	0	0	0	206
12:00 PM	0	166	32	1	3	0	0	0	2	0	0	0	0	204
12:15	0	158	28	0	6	0	0	0	4	0	0	0	0	196
12:30	1	154	31	1	5	0	0	1	2	0	0	0	0	195
12:45	0	157	29	0	5	1	0	0	2	0	0	0	0	186
13:00	0	180	38	1	5	0	0	1	2	0	0	0	0	226
13:15	1	188	30	0	4	3	0	0	2	0	0	0	0	228
13:30	1	157	40	3	5	0	0	0	1	0	0	0	0	207
13:45	0	216	36	2	6	0	0	0	1	0	0	0	0	261
14:00	0	202	37	0	5	2	0	0	0	0	0	0	0	246
14:15	0	183	27	1	11	1	0	2	2	0	0	0	0	227
14:30	1	234	38	0	4	0	0	0	4	0	0	0	0	277
14:45	0	198	38	1	5	0	0	0	1	0	0	0	0	243
15:00	0	192	44	2	6	0	0	0	3	0	0	0	0	247
15:15	0	195	41	2	7	0	0	0	2	0	0	0	0	247
15:30	0	205	31	1	5	0	0	0	0	0	0	0	0	242
15:45	0	191	35	0	5	1	0	0	1	0	0	0	0	233
16:00	0	189	30	1	3	0	0	1	2	0	0	0	0	226
16:15	0	184	40	1	4	0	0	0	1	0	0	0	0	230
16:30	0	180	25	1	3	0	0	0	1	0	0	0	0	210
16:45	1	179	23	2	3	1	0	0	5	0	0	0	0	214
17:00	0	230	37	3	5	2	0	0	1	0	0	0	0	278
17:15	0	213	40	0	2	0	0	0	1	0	0	0	0	256
17:30	0	202	30	3	2	1	0	0	0	0	0	0	0	238
17:45	0	178	31	0	4	0	0	0	0	0	0	0	0	213
18:00	0	206	27	0	2	2	0	0	1	0	0	0	0	238
18:15	0	159	31	2	4	0	0	0	2	0	0	0	0	198
18:30	0	188	21	2	7	0	0	0	2	0	0	0	0	220
18:45	1	150	20	0	0	0	0	0	4	0	0	0	0	175
19:00	1	153	25	0	2	0	0	0	0	0	0	0	0	181
19:15	0	154	19	0	2	0	0	0	0	0	0	0	0	175
19:30	0	155	21	1	3	0	0	0	1	0	0	0	0	181
19:45	0	148	19	0	2	0	0	0	0	0	0	0	0	169
20:00	0	144	24	0	0	0	0	0	2	0	0	0	0	170
20:15	0	128	15	0	1	0	0	0	0	0	0	0	0	144
20:30	1	125	18	0	5	0	0	0	2	0	0	0	0	151
20:45	0	125	17	0	3	0	0	0	0	0	0	0	0	145
21:00	0	106	15	0	1	0	0	0	0	0	0	0	0	122
21:15	0	97	20	0	1	0	0	0	0	0	0	0	0	118
21:30	1	84	14	0	2	0	0	0	0	0	0	0	0	101
21:45	0	107	12	0	0	0	0	0	1	0	0	0	0	120
22:00	0	95	17	0	3	0	0	0	1	0	0	0	0	116
22:15	0	77	11	0	2	0	0	0	0	0	0	0	0	90
22:30	0	74	6	0	0	1	0	0	0	0	0	0	0	81
22:45	0	72	11	0	0	0	0	0	0	0	0	0	0	83
23:00	0	54	8	0	2	0	0	0	0	0	0	0	0	64
23:15	0	53	7	0	0	0	0	0	0	0	0	0	0	60
23:30	0	47	5	1	2	0	0	0	5	0	0	0	0	55
23:45	0	40	0	0	2	0	0	0	0	0	0	0	0	42
<b>Totals</b>	<b>18</b>	<b>12275</b>	<b>2137</b>	<b>58</b>	<b>305</b>	<b>31</b>	<b>1</b>	<b>14</b>	<b>109</b>					<b>14948</b>
<b>% of Totals</b>	<b>0%</b>	<b>82%</b>	<b>14%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>					<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
All Classes	Volume	Volume	Volume	Volume
AM Volumes	9	26	147	8
% AM	0%	0%	0%	0%
AM Peak Hour	06:45	07:00	07:15	06:30
Volume	4	6	27	4
PM Volumes	9	7272	1185	32
% PM	0%	69%	8%	0%
PM Peak Hour	12:30	13:45	14:30	13:30
Volume	2	835	161	8

# CLASSIFICATION

## Vineyard Ave Bet. I-10 WB Ramps & I-10 EB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_013n

### North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>														
% of Totals														

AM Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% AM														
AM Peak Hour														
Volume														
PM Volumes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% PM														
PM Peak Hour														
Volume														

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	0	↔ #VALUE!	0	↔ #VALUE!	0	↔ #VALUE!	#VALUE!	↔ #VALUE!

Classification Definitions			
Major	1-3	7-9	12-2
Minor	4-6	10-11	3-6
Off Peak	0-6	10-11	12-2

# CLASSIFICATION

## Vineyard Ave Bet. I-10 WB Ramps & I-10 EB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_013s

### South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	100	12	0	0	0	0	0	0	0	0	0	0	112
01:00	0	78	15	1	1	1	0	0	0	0	0	0	0	96
02:00	0	54	14	0	1	2	0	0	2	0	0	0	0	73
03:00	0	110	12	1	3	0	0	0	1	0	0	0	0	127
04:00	1	239	57	3	9	2	0	0	2	0	0	0	0	313
05:00	0	399	87	3	14	0	0	1	6	0	0	0	0	510
06:00	0	653	110	3	16	4	0	0	3	0	0	0	0	789
07:00	4	945	169	5	27	1	0	2	6	0	0	0	0	1159
08:00	0	780	145	4	15	2	1	0	9	0	0	0	0	956
09:00	2	526	111	2	20	2	0	3	9	0	0	0	0	675
10:00	1	538	111	3	22	1	0	1	9	0	0	0	0	686
11:00	1	581	109	1	19	1	0	1	11	0	0	0	0	724
12:00 PM	1	635	111	2	19	1	0	2	10	0	0	0	0	781
13:00	2	741	144	6	20	3	0	1	5	0	0	0	0	922
14:00	1	817	140	2	25	3	0	2	3	0	0	0	0	993
15:00	0	783	151	5	23	1	0	0	6	0	0	0	0	969
16:00	1	732	118	5	13	1	0	1	9	0	0	0	0	880
17:00	0	823	138	6	13	3	0	0	2	0	0	0	0	985
18:00	1	703	99	4	13	2	0	0	9	0	0	0	0	831
19:00	1	610	84	1	9	0	0	0	1	0	0	0	0	706
20:00	1	522	74	0	9	0	0	0	4	0	0	0	0	610
21:00	1	394	61	0	4	0	0	0	1	0	0	0	0	461
22:00	0	318	45	0	5	1	0	0	1	0	0	0	0	370
23:00	0	194	20	1	6	0	0	0	0	0	0	0	0	221
<b>Totals</b>	<b>18</b>	<b>12275</b>	<b>2137</b>	<b>58</b>	<b>306</b>	<b>31</b>	<b>1</b>	<b>14</b>	<b>109</b>					<b>14949</b>
% of Totals	0%	82%	14%	0%	2%	0%	0%	0%	1%					100%

12293

1.0

12293

2501

1.5

3752

31

2.0

62

124

3.0

372

16479

AM Volumes	9	5003	952	26	147	16	1	8	58	0	0	0	0	6220
% AM	0%	33%	6%	0%	1%	0%	0%	0%	0%					42%
AM Peak Hour	07:00	07:00	07:00	07:00	07:00	06:00	08:00	09:00	11:00					07:00
Volume	4	945	169	5	27	4	1	3	11					1159
PM Volumes	9	7272	1185	32	159	15	0	6	51	0	0	0	0	8729
% PM	0%	49%	8%	0%	1%	0%		0%	0%					58%
PM Peak Hour	13:00	17:00	15:00	13:00	14:00	13:00		12:00	12:00					14:00
Volume	2	823	151	6	25	3		2	10					993

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
Volume		Volume	%	Volume	%	Volume	%	Volume	%
2115	↔	1703	14%	1703	11%	1865	12%	9266	62%

### Classification Definitions

1. Motorcycles

4. Buses

7. >=4 Axle Single Units

10. >=6 Axle Single Trailers

13. >=7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. I-10 WB Ramps & I-10 EB Ramps

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_013

### Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	100	12	0	0	0	0	0	0	0	0	0	0	112
01:00	0	78	15	1	1	1	0	0	0	0	0	0	0	96
02:00	0	54	14	0	1	2	0	0	2	0	0	0	0	73
03:00	0	110	12	1	3	0	0	0	1	0	0	0	0	127
04:00	1	239	57	3	9	2	0	0	2	0	0	0	0	313
05:00	0	399	87	3	14	0	0	1	6	0	0	0	0	510
06:00	0	653	110	3	16	4	0	0	3	0	0	0	0	789
07:00	4	945	169	5	27	1	0	2	6	0	0	0	0	1159
08:00	0	780	145	4	15	2	1	0	9	0	0	0	0	956
09:00	2	526	111	2	20	2	0	3	9	0	0	0	0	675
10:00	1	538	111	3	22	1	0	1	9	0	0	0	0	686
11:00	1	581	109	1	19	1	0	1	11	0	0	0	0	724
12:00 PM	1	635	111	2	19	1	0	2	10	0	0	0	0	781
13:00	2	741	144	6	20	3	0	1	5	0	0	0	0	922
14:00	1	817	140	2	25	3	0	2	3	0	0	0	0	993
15:00	0	783	151	5	23	1	0	0	6	0	0	0	0	969
16:00	1	732	118	5	13	1	0	1	9	0	0	0	0	880
17:00	0	823	138	6	13	3	0	0	2	0	0	0	0	985
18:00	1	703	99	4	13	2	0	0	9	0	0	0	0	831
19:00	1	610	84	1	9	0	0	0	1	0	0	0	0	706
20:00	1	522	74	0	9	0	0	0	4	0	0	0	0	610
21:00	1	394	61	0	4	0	0	0	1	0	0	0	0	461
22:00	0	318	45	0	5	1	0	0	1	0	0	0	0	370
23:00	0	194	20	1	6	0	0	0	0	0	0	0	0	221
<b>Totals</b>	<b>18</b>	<b>12275</b>	<b>2137</b>	<b>58</b>	<b>306</b>	<b>31</b>	<b>1</b>	<b>14</b>	<b>109</b>					<b>14949</b>
% of Totals	0%	82%	14%	0%	2%	0%	0%	0%	1%					100%

AM Volumes	9	5003	952	26	147	16	1	8	58	0	0	0	0	6220
% AM	0%	33%	6%	0%	1%	0%	0%	0%	0%					42%
AM Peak Hour	07:00	07:00	07:00	07:00	07:00	06:00	08:00	09:00	11:00					07:00
Volume	4	945	169	5	27	4	1	3	11					1159
PM Volumes	9	7272	1185	32	159	15	0	6	51	0	0	0	0	8729
% PM	0%	49%	8%	0%	1%	0%		0%	0%					58%
PM Peak Hour	13:00	17:00	15:00	13:00	14:00	13:00		12:00	12:00					14:00
Volume	2	823	151	6	25	3		2	10					993

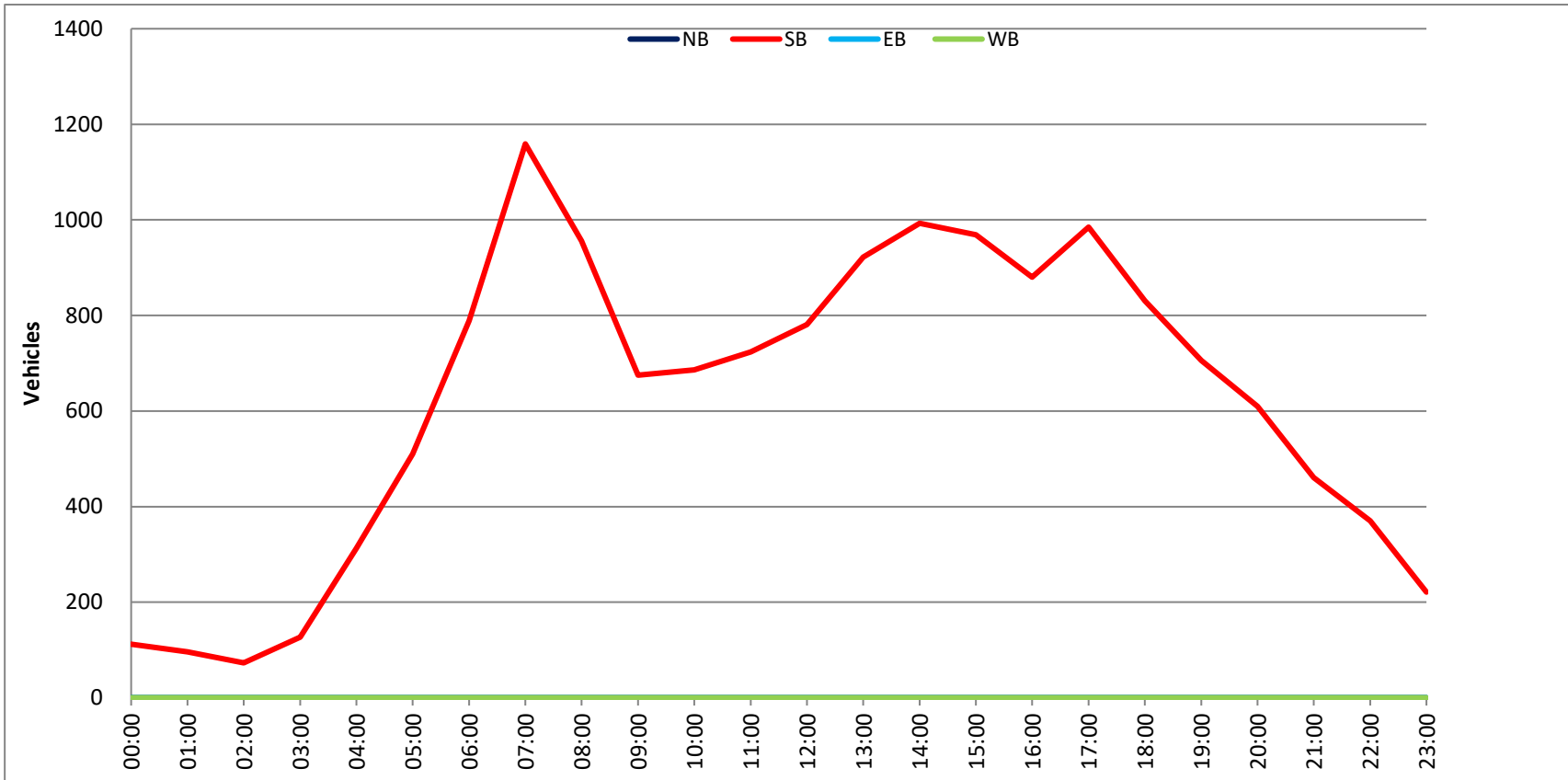
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	2115	14%	1703	11%	1865	12%	9266	62%

### Classification Definitions

1 Motorist... 2... 3... 4... 5... 6... 7... 8... 9... 10... 11... 12... 13... 14... 15... 16... 17... 18... 19... 20... 21... 22... 23... 24... 25... 26... 27... 28... 29... 30... 31... 32... 33... 34... 35... 36... 37... 38... 39... 40... 41... 42... 43... 44... 45... 46... 47... 48... 49... 50... 51... 52... 53... 54... 55... 56... 57... 58... 59... 60... 61... 62... 63... 64... 65... 66... 67... 68... 69... 70... 71... 72... 73... 74... 75... 76... 77... 78... 79... 80... 81... 82... 83... 84... 85... 86... 87... 88... 89... 90... 91... 92... 93... 94... 95... 96... 97... 98... 99... 100...

DAILY TOTALS					NB	SB	EB	WB	To		
					0	14,949	0	0	14,949		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO
00:00	0	29	0	0	29	12:00	0	204	0	0	204
00:15	0	32	0	0	32	12:15	0	196	0	0	196
00:30	0	29	0	0	29	12:30	0	195	0	0	195
00:45	0	22	112	0	22	12:45	0	186	781	0	186
01:00	0	31	0	0	31	13:00	0	226	0	0	226
01:15	0	23	0	0	23	13:15	0	228	0	0	228
01:30	0	20	0	0	20	13:30	0	207	0	0	207
01:45	0	22	96	0	22	13:45	0	261	922	0	261
02:00	0	15	0	0	15	14:00	0	246	0	0	246
02:15	0	11	0	0	11	14:15	0	227	0	0	227
02:30	0	22	0	0	22	14:30	0	277	0	0	277
02:45	0	25	73	0	25	14:45	0	243	993	0	243
03:00	0	19	0	0	19	15:00	0	247	0	0	247
03:15	0	23	0	0	23	15:15	0	247	0	0	247
03:30	0	39	0	0	39	15:30	0	242	0	0	242
03:45	0	46	127	0	46	15:45	0	233	969	0	233
04:00	0	61	0	0	61	16:00	0	226	0	0	226
04:15	0	68	0	0	68	16:15	0	230	0	0	230
04:30	0	87	0	0	87	16:30	0	210	0	0	210
04:45	0	97	313	0	97	16:45	0	214	880	0	214
05:00	0	96	0	0	96	17:00	0	278	0	0	278
05:15	0	105	0	0	105	17:15	0	256	0	0	256
05:30	0	140	0	0	140	17:30	0	238	0	0	238
05:45	0	169	510	0	169	17:45	0	213	985	0	213
06:00	0	148	0	0	148	18:00	0	238	0	0	238
06:15	0	166	0	0	166	18:15	0	198	0	0	198
06:30	0	223	0	0	223	18:30	0	220	0	0	220
06:45	0	252	789	0	252	18:45	0	175	831	0	175
07:00	0	253	0	0	253	19:00	0	181	0	0	181
07:15	0	312	0	0	312	19:15	0	175	0	0	175
07:30	0	292	0	0	292	19:30	0	181	0	0	181
07:45	0	302	1159	0	302	19:45	0	169	706	0	169
08:00	0	254	0	0	254	20:00	0	170	0	0	170
08:15	0	265	0	0	265	20:15	0	144	0	0	144
08:30	0	231	0	0	231	20:30	0	151	0	0	151
08:45	0	206	956	0	206	20:45	0	145	610	0	145
09:00	0	140	0	0	140	21:00	0	122	0	0	122
09:15	0	188	0	0	188	21:15	0	118	0	0	118
09:30	0	169	0	0	169	21:30	0	101	0	0	101
09:45	0	178	675	0	178	21:45	0	120	461	0	120
10:00	0	172	0	0	172	22:00	0	116	0	0	116
10:15	0	158	0	0	158	22:15	0	90	0	0	90
10:30	0	176	0	0	176	22:30	0	81	0	0	81
10:45	0	180	686	0	180	22:45	0	83	370	0	83
11:00	0	172	0	0	172	23:00	0	64	0	0	64
11:15	0	177	0	0	177	23:15	0	60	0	0	60
11:30	0	169	0	0	169	23:30	0	55	0	0	55
11:45	0	206	724	0	206	23:45	0	42	221	0	42
<b>TOTALS</b>		6220			6220	<b>TOTALS</b>		8729			
<b>SPLIT %</b>		100.0%			41.6%	<b>SPLIT %</b>		100.0%			

DAILY TOTALS					NB	SB	EB	WB	To	
					0	14,949	0	0	14,949	
AM Peak Hour	07:15				07:15	PM Peak Hour	14:30			
AM Pk Volume	1160				1160	PM Pk Volume	1014			
Pk Hr Factor	0.929				0.929	Pk Hr Factor	0.915			
7 - 9 Volume	0	2115	0	0	2115	4 - 6 Volume	0	1865	0	0
7 - 9 Peak Hour	07:15				07:15	4 - 6 Peak Hour	16:45			
7 - 9 Pk Volume	0	1160	0	0	1160	4 - 6 Pk Volume	0	986	0	0
Pk Hr Factor	0.000	0.929	0.000	0.000	0.929	Pk Hr Factor	0.000	0.887	0.000	0.000





**CLASSIFICATION**

Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014n

**North Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	46	8	0	1	0	0	0	1	0	0	0	0	56
00:15	0	34	3	0	0	0	0	0	0	0	0	0	0	37
00:30	0	39	1	0	1	0	0	0	1	0	0	0	0	42
00:45	0	33	5	0	1	0	0	0	0	0	0	0	0	39
01:00	0	31	5	0	1	0	0	0	1	0	0	0	0	38
01:15	0	30	0	0	1	0	0	0	0	0	0	0	0	31
01:30	0	32	6	0	0	0	0	0	0	0	0	0	0	38
01:45	0	25	1	0	1	0	0	0	0	0	0	0	0	27
02:00	0	22	6	0	1	0	0	1	0	0	0	0	0	30
02:15	0	27	4	0	2	0	0	0	0	0	0	0	0	33
02:30	0	32	0	0	1	0	0	0	1	0	0	0	0	34
02:45	0	29	0	0	1	0	0	0	1	0	0	0	0	31
03:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
03:15	0	31	0	0	2	0	0	0	0	0	0	0	0	33
03:30	0	31	5	0	0	0	0	0	0	0	0	0	0	36
03:45	0	38	3	0	1	0	0	0	0	0	0	0	0	42
04:00	0	26	6	0	1	0	0	0	0	0	0	0	0	33
04:15	0	25	6	0	1	0	0	0	0	0	0	0	0	33
04:30	0	56	5	0	0	0	0	1	0	0	0	0	0	62
04:45	0	80	6	0	2	0	0	0	1	0	0	0	0	89
05:00	0	47	9	0	2	0	0	0	0	0	0	0	0	58
05:15	0	46	4	0	2	0	0	0	0	0	0	0	0	52
05:30	0	74	9	0	0	1	0	1	1	0	0	0	0	86
05:45	0	92	13	0	1	1	0	1	2	0	0	0	0	110
06:00	0	84	11	0	3	0	0	2	1	0	0	0	0	101
06:15	0	96	14	0	1	0	0	0	1	0	0	0	0	112
06:30	0	86	11	0	4	0	0	1	1	0	0	0	0	103
06:45	0	167	19	1	1	1	0	1	3	0	0	0	0	193
07:00	0	157	22	2	6	1	0	3	2	0	0	0	0	193
07:15	0	160	22	2	5	2	0	2	2	0	0	0	0	193
07:30	0	170	22	1	3	2	0	1	3	0	0	0	0	202
07:45	0	203	25	2	4	1	0	2	1	0	0	0	0	238
08:00	0	198	21	0	3	1	0	1	2	0	0	0	0	226
08:15	1	155	16	1	6	0	0	1	2	0	0	0	0	182
08:30	0	174	20	0	4	0	0	2	3	0	0	0	0	203
08:45	0	165	22	1	3	1	0	1	2	0	0	0	0	195
09:00	0	146	20	0	5	0	0	2	3	0	0	0	0	176
09:15	1	126	19	2	4	2	0	0	2	0	0	0	0	155
09:30	0	138	19	1	3	0	0	2	0	0	0	0	0	163
09:45	0	173	24	1	4	1	0	4	2	0	0	0	0	209
10:00	1	168	21	2	5	1	0	2	4	0	0	0	0	204
10:15	1	150	17	1	3	0	0	1	2	0	0	0	0	175
10:30	1	144	18	2	4	2	0	3	2	0	0	0	0	176
10:45	1	172	19	2	4	0	0	2	1	0	0	0	0	201
11:00	0	154	17	1	3	1	0	3	2	0	0	0	0	181
11:15	1	165	19	1	6	1	0	3	2	0	0	0	0	198
11:30	1	155	18	1	6	2	0	2	1	0	0	0	0	186
11:45	1	166	20	2	6	0	0	2	3	0	0	0	0	200
12:00 PM	1	177	19	2	3	1	0	3	2	0	0	0	0	208
12:15	0	165	26	0	3	1	0	1	3	0	0	0	0	199
12:30	1	177	22	0	5	0	0	0	1	0	0	0	0	206
12:45	1	182	22	0	6	1	0	0	6	0	0	0	0	215
13:00	0	179	21	1	3	2	0	1	1	0	0	0	0	208
13:15	1	183	21	1	5	1	0	3	2	0	0	0	0	217
13:30	0	167	21	0	3	0	0	4	0	0	0	0	0	195
13:45	0	181	24	0	6	0	0	0	1	0	0	0	0	212
14:00	0	168	23	1	7	1	0	3	3	0	0	0	0	206
14:15	0	187	25	0	4	0	0	0	0	0	0	0	0	216
14:30	1	211	29	0	6	2	0	5	1	0	0	0	0	254
14:45	1	230	30	2	4	1	0	6	1	0	0	0	0	275
15:00	1	232	29	2	6	2	0	5	2	0	0	0	0	279
15:15	1	262	34	1	7	0	0	6	1	0	0	0	0	312
15:30	1	229	33	0	6	1	0	3	4	0	0	0	0	277
15:45	0	233	29	1	5	2	0	7	4	0	0	0	0	281
16:00	0	275	38	1	7	1	0	2	2	0	0	0	0	326
16:15	0	250	32	2	6	2	0	1	1	0	0	0	0	294
16:30	0	230	30	2	5	1	0	1	1	0	0	0	0	273
16:45	1	237	29	1	4	1	0	0	3	0	0	0	0	276
17:00	0	269	30	1	7	0	0	1	5	0	0	0	0	313
17:15	1	233	25	1	6	0	0	0	4	0	0	0	0	270
17:30	0	261	34	2	7	1	0	2	1	0	0	0	0	308
17:45	1	264	37	1	7	0	0	1	4	0	0	0	0	315
18:00	1	212	23	0	5	0	0	1	1	0	0	0	0	243
18:15	1	223	24	0	6	1	0	1	1	0	0	0	0	257
18:30	0	208	29	0	6	2	0	3	6	0	0	0	0	254
18:45	1	206	24	1	5	1	0	3	3	0	0	0	0	244
19:00	0	166	23	1	4	2	0	4	2	0	0	0	0	202
19:15	0	148	22	1	3	2	0	4	0	0	0	0	0	180
19:30	1	143	17	1	7	0	0	2	2	0	0	0	0	173
19:45	1	129	14	0	2	1	0	0	3	0	0	0	0	159
20:00	0	148	19	2	5	0	0	0	1	0	0	0	0	175
20:15	0	148	21	1	2	0	0	1	2	0	0	0	0	175
20:30	0	131	13	2	6	0	0	0	0	0	0	0	0	152
20:45	0	137	13	0	4	1	0	1	0	0	0	0	0	156
21:00	0	125	18	2	6	1	0	1	1	0	0	0	0	154
21:15	0	113	16	1	6	0	0	0	2	0	0	0	0	138
21:30	0	101	16	0	5	0	0	0	2	0	0	0	0	124
21:45	0	100	14	0	3	0	0	1	3	0	0	0	0	121
22:00	0	102	9	0	3	0	0	0	0	0	0	0	0	114
22:15	0	83	9	0	5	1	0	0	2	0	0	0	0	100
22:30	0	56	11	0	1	0	0	0	1	0	0	0	0	69
22:45	0	70	10	0	2	0	0	0	0	0	0	0	0	82
23:00	0	63	7	0	1	0	0	1	0	0	0	0	0	72
23:15	0	52	10	0	2	0	0	0	1	0	0	0	0	65
23:30	0	45	8	0	1	0	0	0	0	0	0	0	0	53
23:45	0	48	6	0	2	0	0	0	0	0	0	0	0	56
<b>Totals</b>	<b>36</b>	<b>12792</b>	<b>1601</b>	<b>60</b>	<b>339</b>	<b>58</b>	<b>126</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>138</b>	<b>15095</b>
<b>% of Totals</b>	<b>0%</b>	<b>84%</b>	<b>11%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>AM Volumes</b>	9	4610	562	76
<b>% AM</b>	0%	31%	4%	0%
<b>AM Peak Hour</b>	Volume	119	22	45
	%	1%	0%	0%
<b>PM Volumes</b>	17	8142	1039	34
<b>% PM</b>	0%	54%	7%	0%
<b>PM Peak Hour</b>	Volume	220	33	81
	%	1%	0%	1%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>All Classes</b>	Volume	Volume	Volume	Volume
	%	%	%	%

**CLASSIFICATION**  
Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014s

**South Bound**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	50	7	0	1	0	0	1	0	0	0	0	0	59
00:15	0	32	4	0	0	0	0	0	0	0	0	0	0	38
00:30	0	28	3	0	0	0	0	1	0	0	0	0	0	32
00:45	0	30	5	0	0	0	0	2	1	0	0	0	0	38
01:00	0	22	8	0	0	0	0	1	1	0	0	0	0	32
01:15	0	25	2	0	0	0	0	2	1	0	0	0	0	30
01:30	0	13	2	0	0	0	0	1	1	0	0	0	0	17
01:45	0	21	1	0	1	0	0	2	0	0	0	0	0	25
02:00	0	24	1	0	0	0	0	1	2	0	0	0	0	27
02:15	0	23	3	0	0	0	0	1	0	0	0	0	0	27
02:30	0	26	2	0	0	0	0	1	1	0	0	0	0	30
02:45	0	15	3	0	0	0	0	0	0	0	0	0	0	18
03:00	0	40	10	0	1	3	0	2	2	0	0	0	0	58
03:15	0	31	3	0	1	0	0	3	3	0	0	0	0	41
03:30	0	36	11	0	2	0	0	1	1	0	0	0	0	51
03:45	0	36	9	1	4	0	0	2	2	0	0	0	0	54
04:00	0	40	10	1	3	0	0	3	0	0	0	0	0	57
04:15	0	65	8	0	1	0	0	3	1	0	0	0	0	78
04:30	0	81	18	2	3	0	0	1	2	0	0	0	0	107
04:45	0	87	20	1	5	0	0	1	0	0	0	0	0	114
05:00	1	77	18	0	5	0	0	1	0	0	0	0	0	102
05:15	0	95	22	0	3	0	0	0	0	0	0	0	0	120
05:30	0	119	19	1	5	1	0	1	0	0	0	0	0	146
05:45	1	117	17	1	8	0	0	1	1	0	0	0	0	146
06:00	0	128	29	0	2	0	0	1	0	0	0	0	0	160
06:15	0	116	31	0	6	0	0	1	1	0	0	0	0	155
06:30	0	167	31	3	8	0	0	3	1	0	0	0	0	213
06:45	0	179	27	0	6	0	0	0	1	0	0	0	0	213
07:00	0	213	26	2	3	0	0	2	2	0	0	0	0	248
07:15	1	231	40	1	8	2	1	2	6	0	0	0	0	292
07:30	1	261	34	1	5	1	1	1	1	0	0	0	0	305
07:45	1	227	31	1	5	0	0	1	4	0	0	0	0	270
08:00	1	207	28	0	3	0	0	0	2	0	0	0	0	241
08:15	0	199	32	0	5	1	0	1	1	0	0	0	0	239
08:30	0	177	23	0	4	0	0	0	2	0	0	0	0	206
08:45	1	159	27	2	2	2	0	0	3	0	0	0	0	196
09:00	0	148	29	0	7	1	0	2	1	0	0	0	0	188
09:15	0	126	27	0	5	0	0	2	1	0	0	0	0	161
09:30	0	134	27	1	5	1	0	1	0	0	0	0	0	169
09:45	0	147	30	2	5	1	0	2	4	0	0	0	0	191
10:00	2	132	25	0	7	2	0	2	3	0	0	0	0	173
10:15	0	142	22	0	7	0	0	1	1	0	0	0	0	173
10:30	0	118	28	1	5	0	0	0	4	0	0	0	0	156
10:45	0	122	23	2	4	0	0	0	0	0	0	0	0	151
11:00	0	151	28	0	3	3	0	1	3	0	0	0	0	186
11:15	2	124	20	2	2	3	0	1	1	0	0	0	0	155
11:30	0	132	27	4	6	2	0	0	4	0	0	0	0	175
11:45	0	120	18	1	6	1	0	1	1	0	0	0	0	148
12:00 PM	2	167	29	0	2	1	0	0	4	0	0	0	0	205
12:15	0	156	26	1	3	1	0	0	4	0	0	0	0	191
12:30	0	158	27	1	4	1	0	1	4	0	0	0	0	196
12:45	2	170	29	0	5	1	0	1	7	0	0	0	0	215
13:00	0	184	24	0	2	0	0	0	6	0	0	0	0	216
13:15	0	134	22	0	5	1	0	1	2	0	0	0	0	165
13:30	1	182	25	1	7	1	0	0	3	0	0	0	0	220
13:45	0	146	25	1	6	4	0	2	1	0	0	0	0	185
14:00	0	166	22	1	5	0	0	2	2	0	0	0	0	198
14:15	0	174	25	0	6	0	0	1	1	0	0	0	0	207
14:30	2	179	33	0	9	4	1	0	5	0	0	0	0	233
14:45	0	191	38	1	8	1	0	2	0	0	0	0	0	241
15:00	0	191	25	1	2	0	2	0	1	0	0	0	0	222
15:15	1	182	29	2	3	1	0	1	3	0	0	0	0	222
15:30	1	225	32	1	4	1	0	4	3	0	0	0	0	271
15:45	0	199	31	1	7	4	0	0	0	0	0	0	0	242
16:00	0	182	27	0	5	1	0	1	0	0	0	0	0	216
16:15	3	173	31	3	2	3	0	0	5	0	0	0	0	220
16:30	0	186	26	2	5	3	1	0	3	0	0	0	0	224
16:45	1	192	29	2	4	2	1	2	0	0	0	0	0	233
17:00	0	199	26	3	5	1	1	3	1	0	0	0	0	239
17:15	3	188	31	1	6	3	1	0	3	0	0	0	0	236
17:30	1	211	39	0	3	3	0	1	3	0	0	0	0	261
17:45	0	190	25	1	2	0	0	1	2	0	0	0	0	221
18:00	1	183	27	1	4	4	1	4	4	0	0	0	0	229
18:15	0	155	20	0	3	0	0	1	1	0	0	0	0	182
18:30	0	176	30	1	2	1	0	0	1	0	0	0	0	211
18:45	1	145	24	0	1	2	0	1	4	0	0	0	0	178
19:00	1	175	20	0	3	4	1	2	0	0	0	0	0	206
19:15	0	148	22	0	3	0	0	1	5	0	0	0	0	179
19:30	0	127	15	2	2	0	0	1	4	0	0	0	0	151
19:45	0	130	20	0	1	0	0	2	1	0	0	0	0	154
20:00	0	146	21	0	1	0	0	1	3	0	0	0	0	172
20:15	0	118	19	0	3	0	0	1	0	0	0	0	0	141
20:30	0	106	11	1	0	0	0	0	0	0	0	0	0	118
20:45	0	114	15	0	2	0	0	3	1	0	0	0	0	135
21:00	0	114	20	0	0	0	0	1	3	0	0	0	0	138
21:15	0	100	13	0	2	0	0	0	3	0	0	0	0	118
21:30	0	76	8	0	0	0	0	1	0	0	0	0	0	85
21:45	0	96	14	0	1	0	0	1	1	0	0	0	0	113
22:00	0	95	15	0	1	0	0	1	0	0	0	0	0	112
22:15	0	53	6	0	0	0	0	1	0	0	0	0	0	60
22:30	0	80	11	0	1	0	0	2	3	0	0	0	0	97
22:45	0	67	8	0	1	0	0	0	3	0	0	0	0	79
23:00	0	59	6	0	1	1	0	0	0	0	0	0	0	67
23:15	0	42	6	0	0	0	0	0	0	0	0	0	0	48
23:30	0	50	7	1	1	0	0	0	1	0	0	0	0	60
23:45	0	42	4	0	1	0	0	1	1	0	0	0	0	49
<b>Totals</b>	<b>31</b>	<b>11915</b>	<b>1907</b>	<b>59</b>	<b>305</b>	<b>70</b>	<b>11</b>	<b>105</b>	<b>168</b>					<b>14572</b>
% of Totals	0%	82%	13%	0%	2%	0%	0%	1%	1%					100%

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
AM Volumes	11	4993	869	30
% AM	0%	34%	6%	0%
AM Peak Hour Volume				
PM Volumes	20	6922	1038	29
% PM	0%	48%	7%	0%
PM Peak Hour Volume				

All Classes	Volume	%	Volume	%	Volume	%	Volume	%
AM 7-9			NOON 12-2		PM 4-6		Off Peak Volumes	

**CLASSIFICATION**

Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014

**Summary**

Time	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	Total
00:00 AM	0	96	15	0	2	0	0	1	1	0	0	0	0	115
00:15	0	66	7	0	0	0	0	2	2	0	0	0	0	75
00:30	0	67	4	0	1	0	0	1	1	0	0	0	0	74
00:45	0	63	10	0	1	0	0	2	1	0	0	0	0	77
01:00	0	53	13	0	1	0	0	1	2	0	0	0	0	70
01:15	0	55	2	0	1	0	0	2	1	0	0	0	0	61
01:30	0	45	8	0	0	0	0	1	1	0	0	0	0	55
01:45	0	46	2	0	2	0	0	2	0	0	0	0	0	52
02:00	0	46	7	0	1	0	0	1	0	0	0	0	0	57
02:15	0	50	7	0	2	0	0	1	0	0	0	0	0	60
02:30	0	58	2	0	1	0	0	1	2	0	0	0	0	64
02:45	0	44	3	0	1	0	0	0	1	0	0	0	0	49
03:00	0	52	12	0	1	3	0	2	2	0	0	0	0	72
03:15	0	62	3	0	3	0	0	3	3	0	0	0	0	74
03:30	0	67	16	0	2	0	0	1	1	0	0	0	0	87
03:45	0	74	12	1	5	0	0	2	2	0	0	0	0	96
04:00	0	66	16	1	4	0	0	3	0	0	0	0	0	90
04:15	0	90	14	0	2	1	0	3	1	0	0	0	0	111
04:30	0	137	23	2	3	0	0	2	2	0	0	0	0	169
04:45	0	167	26	1	7	0	0	1	1	0	0	0	0	203
05:00	1	124	27	0	7	0	0	1	0	0	0	0	0	160
05:15	0	141	26	0	5	0	0	0	0	0	0	0	0	172
05:30	0	193	28	1	5	2	0	2	1	0	0	0	0	232
05:45	1	299	30	1	9	1	0	2	3	0	0	0	0	256
06:00	0	212	40	0	5	1	0	3	1	0	0	0	0	261
06:15	0	212	45	0	7	0	0	1	2	0	0	0	0	267
06:30	0	253	42	3	12	0	0	4	2	0	0	0	0	316
06:45	0	346	46	1	7	1	0	1	4	0	0	0	0	406
07:00	0	370	48	4	9	1	0	5	4	0	0	0	0	441
07:15	1	391	61	3	13	4	1	3	8	0	0	0	0	485
07:30	1	431	56	2	8	3	1	1	4	0	0	0	0	507
07:45	1	430	56	3	9	1	0	3	5	0	0	0	0	508
08:00	1	405	49	0	6	1	0	1	4	0	0	0	0	467
08:15	1	354	48	1	11	1	0	2	3	0	0	0	0	421
08:30	0	351	43	0	8	0	0	2	5	0	0	0	0	409
08:45	1	324	49	3	5	3	0	1	5	0	0	0	0	391
09:00	0	294	49	0	12	1	0	4	4	0	0	0	0	364
09:15	1	252	46	2	9	2	0	2	2	0	0	0	0	316
09:30	0	272	46	2	8	1	0	3	0	0	0	0	0	332
09:45	0	320	54	3	9	2	0	6	6	0	0	0	0	400
10:00	3	300	46	2	12	3	0	4	7	0	0	0	0	377
10:15	1	292	39	1	10	0	0	2	3	0	0	0	0	348
10:30	1	262	46	3	9	2	0	3	6	0	0	0	0	332
10:45	1	294	42	4	8	0	0	2	1	0	0	0	0	352
11:00	0	305	45	1	6	1	0	3	5	0	0	0	0	367
11:15	3	289	39	3	8	4	0	4	3	0	0	0	0	353
11:30	1	287	45	5	12	4	0	2	5	0	0	0	0	361
11:45	1	286	38	3	12	1	0	3	4	0	0	0	0	348
12:00 PM	3	344	48	2	5	2	0	3	6	0	0	0	0	413
12:15	0	321	52	1	6	2	0	1	7	0	0	0	0	390
12:30	1	335	49	1	9	1	0	1	5	0	0	0	0	402
12:45	3	352	53	0	11	0	0	11	7	0	0	0	0	430
13:00	0	363	45	1	5	2	0	1	7	0	0	0	0	424
13:15	1	317	43	1	10	2	0	4	4	0	0	0	0	382
13:30	1	349	46	1	10	1	0	4	3	0	0	0	0	415
13:45	0	327	49	1	12	4	0	2	2	0	0	0	0	397
14:00	0	334	45	2	12	1	0	5	5	0	0	0	0	404
14:15	0	361	50	0	10	0	0	1	1	0	0	0	0	423
14:30	3	390	63	0	15	6	1	5	5	0	0	0	0	487
14:45	1	421	68	3	12	2	0	8	1	0	0	0	0	516
15:00	1	423	54	3	8	2	2	5	3	0	0	0	0	501
15:15	2	444	63	3	10	1	0	7	4	0	0	0	0	534
15:30	2	454	65	1	10	2	0	7	7	0	0	0	0	548
15:45	0	432	60	2	12	6	0	7	4	0	0	0	0	523
16:00	0	457	65	1	12	2	0	3	2	0	0	0	0	542
16:15	3	423	63	5	8	5	0	1	6	0	0	0	0	514
16:30	0	419	56	4	10	4	1	1	2	0	0	0	0	497
16:45	2	429	58	3	8	3	1	2	3	0	0	0	0	509
17:00	0	468	56	4	12	1	1	4	6	0	0	0	0	552
17:15	4	421	56	2	12	3	1	0	7	0	0	0	0	506
17:30	1	472	73	2	10	4	0	3	4	0	0	0	0	569
17:45	1	454	62	2	9	0	0	2	6	0	0	0	0	536
18:00	2	395	50	1	9	4	1	5	5	0	0	0	0	472
18:15	1	378	44	0	9	1	0	4	2	0	0	0	0	439
18:30	0	384	59	1	8	3	0	3	7	0	0	0	0	465
18:45	2	351	48	1	6	3	0	4	7	0	0	0	0	422
19:00	1	341	43	1	7	6	1	6	2	0	0	0	0	408
19:15	0	296	44	1	6	2	0	5	5	0	0	0	0	359
19:30	1	270	32	3	9	0	0	3	6	0	0	0	0	324
19:45	1	259	34	0	3	1	0	2	4	0	0	0	0	304
20:00	0	294	40	2	6	0	0	1	4	0	0	0	0	347
20:15	0	266	40	1	5	0	0	2	2	0	0	0	0	316
20:30	0	237	24	3	6	0	0	0	0	0	0	0	0	270
20:45	0	251	28	0	6	1	0	4	1	0	0	0	0	291
21:00	0	239	38	2	6	1	0	2	4	0	0	0	0	292
21:15	0	213	29	1	8	0	0	0	5	0	0	0	0	256
21:30	0	177	24	0	5	0	0	1	2	0	0	0	0	209
21:45	0	196	28	0	4	0	0	1	2	0	0	0	0	234
22:00	0	197	24	0	4	0	0	1	0	0	0	0	0	226
22:15	0	136	15	0	5	1	0	1	2	0	0	0	0	160
22:30	0	136	22	0	2	0	0	2	4	0	0	0	0	166
22:45	0	137	18	0	3	0	0	0	3	0	0	0	0	161
23:00	0	122	13	0	2	1	0	1	0	0	0	0	0	139
23:15	0	94	16	0	2	0	0	0	1	0	0	0	0	113
23:30	0	95	15	1	2	0	0	0	2	0	0	0	0	115
23:45	0	90	10	0	3	0	0	1	1	0	0	0	0	105
<b>Totals</b>	<b>57</b>	<b>24667</b>	<b>3508</b>	<b>119</b>	<b>645</b>	<b>128</b>	<b>11</b>	<b>231</b>	<b>304</b>					<b>29867</b>
<b>% of Totals</b>	<b>0%</b>	<b>83%</b>	<b>12%</b>	<b>0%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>1%</b>	<b>1%</b>					<b>100%</b>

Directional Peak Periods	AM 7-9	NOON 12-2	PM 4-6	Off Peak Volumes
<b>AM Volumes</b>	20	9603	1431	56
<b>% AM</b>	0%	32%	5%	0%
<b>AM Peak Hour</b>	11:15	07:15	07:15	10:45
<b>Volume</b>	8	1657	222	13
<b>PM Volumes</b>	37	15064	2077	63
<b>% PM</b>	0%	51%	7%	0%
<b>PM Peak Hour</b>	17:15	17:00	15:15	16:15
<b>Volume</b>	8	1815	253	16

All Classes	Volume	%	Volume	%	Volume	%	Volume	%
AM 7-9	20	0%	9603	32%	1431	5%	56	0%
NOON 12-2	11	0%	645	2%	128	0%	11	0%
PM 4-6	2	0%	231	1%	304	1%	100	0%
Off Peak Volumes	13	0%	119	0%	645	2%	128	0%

# CLASSIFICATION

Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	152	17	0	3	0	0	0	2	0	0	0	0	174
01:00	0	118	12	0	3	0	0	0	1	0	0	0	0	134
02:00	0	110	10	0	5	0	0	1	2	0	0	0	0	128
03:00	0	112	10	0	3	0	0	0	0	0	0	0	0	125
04:00	0	187	23	0	4	1	0	1	1	0	0	0	0	217
05:00	0	259	35	0	5	2	0	2	3	0	0	0	0	306
06:00	0	433	55	1	9	1	0	4	6	0	0	0	0	509
07:00	0	690	90	7	18	6	0	7	8	0	0	0	0	826
08:00	1	692	79	2	16	2	0	5	9	0	0	0	0	806
09:00	1	583	82	4	16	3	0	8	6	0	0	0	0	703
10:00	4	634	75	7	16	3	0	8	9	0	0	0	0	756
11:00	3	640	74	5	21	4	0	9	9	0	0	0	0	765
12:00 PM	3	701	89	2	17	3	0	7	6	0	0	0	0	828
13:00	1	710	87	2	17	3	0	8	4	0	0	0	0	832
14:00	2	796	107	3	21	4	0	14	4	0	0	0	0	951
15:00	3	956	125	4	24	5	0	21	11	0	0	0	0	1149
16:00	1	995	129	6	22	5	0	4	7	0	0	0	0	1169
17:00	2	1027	126	5	27	1	0	4	14	0	0	0	0	1206
18:00	3	849	100	1	22	4	0	8	11	0	0	0	0	998
19:00	2	586	76	3	16	5	0	10	7	0	0	0	0	705
20:00	0	564	66	5	17	1	0	2	3	0	0	0	0	658
21:00	0	439	64	3	20	1	0	2	8	0	0	0	0	537
22:00	0	311	39	0	11	1	0	0	3	0	0	0	0	365
23:00	0	208	31	0	6	0	0	1	2	0	0	0	0	248
<b>Totals</b>	<b>26</b>	<b>12752</b>	<b>1601</b>	<b>60</b>	<b>339</b>	<b>55</b>		<b>126</b>	<b>136</b>					<b>15095</b>
% of Totals	0%	84%	11%	0%	2%	0%		1%	1%					100%

12778

2000

55

262

1.0

1.5

2.0

3.0

**12778**

**3000**

**110**

**786**

**16674**

<b>AM Volumes</b>	9	4610	562	26	119	22	0	45	56	0	0	0	0	5449
<b>% AM</b>	0%	31%	4%	0%	1%	0%		0%	0%					36%
<b>AM Peak Hour</b>	10:00	08:00	07:00	07:00	11:00	07:00		11:00	08:00					07:00
<b>Volume</b>	4	692	90	7	21	6		9	9					826
<b>PM Volumes</b>	17	8142	1039	34	220	33	0	81	80	0	0	0	0	9646
<b>% PM</b>	0%	54%	7%	0%	1%	0%		1%	1%					64%
<b>PM Peak Hour</b>	12:00	17:00	16:00	16:00	17:00	15:00		15:00	17:00					17:00
<b>Volume</b>	3	1027	129	6	27	5		21	14					1206

Directional Peak Periods All Classes		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
Volume		Volume	%	Volume	%	Volume	%	Volume	%
1632	↔	1660	11%	1660	11%	2375	16%	9428	62%

**Classification Definitions**

Motorcycles

4 Buses

7 >=4 Axle Single Units

10 >=6 Axle Single Trailers

13 >=7 Axle Multi Trailers

# CLASSIFICATION

## Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014s

### South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	140	19	0	1	0	0	4	3	0	0	0	0	167
01:00	0	81	13	0	1	0	0	6	3	0	0	0	0	104
02:00	0	88	9	0	0	0	0	2	3	0	0	0	0	102
03:00	0	143	33	1	8	3	0	8	8	0	0	0	0	204
04:00	0	273	56	4	12	0	0	8	3	0	0	0	0	356
05:00	2	408	76	2	21	1	0	3	1	0	0	0	0	514
06:00	0	590	118	3	22	0	0	5	3	0	0	0	0	741
07:00	3	932	131	5	21	3	2	5	13	0	0	0	0	1115
08:00	2	742	110	2	14	3	0	1	8	0	0	0	0	882
09:00	0	555	113	3	22	3	0	7	6	0	0	0	0	709
10:00	2	514	98	3	23	2	0	3	8	0	0	0	0	653
11:00	2	527	93	7	17	6	0	3	9	0	0	0	0	664
12:00 PM	4	651	111	2	14	4	0	2	19	0	0	0	0	807
13:00	1	646	96	2	20	6	0	3	12	0	0	0	0	786
14:00	2	710	118	2	28	5	1	5	8	0	0	0	0	879
15:00	2	797	117	5	16	6	2	5	7	0	0	0	0	957
16:00	4	733	113	7	16	9	2	3	6	0	0	0	0	893
17:00	4	788	121	5	16	7	2	5	9	0	0	0	0	957
18:00	2	659	101	2	10	7	1	8	10	0	0	0	0	800
19:00	1	580	77	2	9	4	1	6	10	0	0	0	0	690
20:00	0	484	66	1	6	0	0	5	4	0	0	0	0	566
21:00	0	386	55	0	3	0	0	3	7	0	0	0	0	454
22:00	0	295	40	0	3	0	0	4	6	0	0	0	0	348
23:00	0	193	23	1	3	1	0	1	2	0	0	0	0	224
<b>Totals</b>	<b>31</b>	<b>11915</b>	<b>1907</b>	<b>59</b>	<b>306</b>	<b>70</b>	<b>11</b>	<b>105</b>	<b>168</b>					<b>14572</b>
% of Totals	0%	82%	13%	0%	2%	0%	0%	1%	1%					100%

AM Volumes	11	4993	869	30	162	21	2	55	68	0	0	0	0	6211
% AM	0%	34%	6%	0%	1%	0%	0%	0%	0%					43%
AM Peak Hour	07:00	07:00	07:00	11:00	10:00	11:00	07:00	03:00	07:00					07:00
Volume	3	932	131	7	23	6	2	8	13					1115
PM Volumes	20	6922	1038	29	144	49	9	50	100	0	0	0	0	8361
% PM	0%	48%	7%	0%	1%	0%	0%	0%	1%					57%
PM Peak Hour	12:00	15:00	17:00	16:00	14:00	16:00	15:00	18:00	12:00					15:00
Volume	4	797	121	7	28	9	2	8	19					957

Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	1997	14%	1593	11%	1850	13%	9132	63%

### Classification Definitions

1 - Motorcycles, 2 - Bicycles, 3 - Bicycles, 4 - Bicycles, 5 - Bicycles, 6 - Bicycles, 7 - 1 Axle Single Trailer, 8 - 1 Axle Single Trailer, 9 - 2 Axle Single Trailer, 10 - 2 Axle Single Trailer, 11 - 2 Axle Single Trailer, 12 - 3 Axle Multi-Trailer, 13 - 3 Axle Multi-Trailer, 14 - 3 Axle Multi-Trailer, 15 - 3 Axle Multi-Trailer, 16 - 3 Axle Multi-Trailer, 17 - 3 Axle Multi-Trailer, 18 - 3 Axle Multi-Trailer, 19 - 3 Axle Multi-Trailer, 20 - 3 Axle Multi-Trailer, 21 - 3 Axle Multi-Trailer, 22 - 3 Axle Multi-Trailer, 23 - 3 Axle Multi-Trailer, 24 - 3 Axle Multi-Trailer, 25 - 3 Axle Multi-Trailer, 26 - 3 Axle Multi-Trailer, 27 - 3 Axle Multi-Trailer, 28 - 3 Axle Multi-Trailer, 29 - 3 Axle Multi-Trailer, 30 - 3 Axle Multi-Trailer, 31 - 3 Axle Multi-Trailer, 32 - 3 Axle Multi-Trailer, 33 - 3 Axle Multi-Trailer, 34 - 3 Axle Multi-Trailer, 35 - 3 Axle Multi-Trailer, 36 - 3 Axle Multi-Trailer, 37 - 3 Axle Multi-Trailer, 38 - 3 Axle Multi-Trailer, 39 - 3 Axle Multi-Trailer, 40 - 3 Axle Multi-Trailer, 41 - 3 Axle Multi-Trailer, 42 - 3 Axle Multi-Trailer, 43 - 3 Axle Multi-Trailer, 44 - 3 Axle Multi-Trailer, 45 - 3 Axle Multi-Trailer, 46 - 3 Axle Multi-Trailer, 47 - 3 Axle Multi-Trailer, 48 - 3 Axle Multi-Trailer, 49 - 3 Axle Multi-Trailer, 50 - 3 Axle Multi-Trailer, 51 - 3 Axle Multi-Trailer, 52 - 3 Axle Multi-Trailer, 53 - 3 Axle Multi-Trailer, 54 - 3 Axle Multi-Trailer, 55 - 3 Axle Multi-Trailer, 56 - 3 Axle Multi-Trailer, 57 - 3 Axle Multi-Trailer, 58 - 3 Axle Multi-Trailer, 59 - 3 Axle Multi-Trailer, 60 - 3 Axle Multi-Trailer, 61 - 3 Axle Multi-Trailer, 62 - 3 Axle Multi-Trailer, 63 - 3 Axle Multi-Trailer, 64 - 3 Axle Multi-Trailer, 65 - 3 Axle Multi-Trailer, 66 - 3 Axle Multi-Trailer, 67 - 3 Axle Multi-Trailer, 68 - 3 Axle Multi-Trailer, 69 - 3 Axle Multi-Trailer, 70 - 3 Axle Multi-Trailer, 71 - 3 Axle Multi-Trailer, 72 - 3 Axle Multi-Trailer, 73 - 3 Axle Multi-Trailer, 74 - 3 Axle Multi-Trailer, 75 - 3 Axle Multi-Trailer, 76 - 3 Axle Multi-Trailer, 77 - 3 Axle Multi-Trailer, 78 - 3 Axle Multi-Trailer, 79 - 3 Axle Multi-Trailer, 80 - 3 Axle Multi-Trailer, 81 - 3 Axle Multi-Trailer, 82 - 3 Axle Multi-Trailer, 83 - 3 Axle Multi-Trailer, 84 - 3 Axle Multi-Trailer, 85 - 3 Axle Multi-Trailer, 86 - 3 Axle Multi-Trailer, 87 - 3 Axle Multi-Trailer, 88 - 3 Axle Multi-Trailer, 89 - 3 Axle Multi-Trailer, 90 - 3 Axle Multi-Trailer, 91 - 3 Axle Multi-Trailer, 92 - 3 Axle Multi-Trailer, 93 - 3 Axle Multi-Trailer, 94 - 3 Axle Multi-Trailer, 95 - 3 Axle Multi-Trailer, 96 - 3 Axle Multi-Trailer, 97 - 3 Axle Multi-Trailer, 98 - 3 Axle Multi-Trailer, 99 - 3 Axle Multi-Trailer, 100 - 3 Axle Multi-Trailer

# CLASSIFICATION

## Vineyard Ave Bet. Jay St & Inland Empire Blvd

Day: Tuesday  
Date: 3/12/2019

City: Rancho Cucamonga  
Project #: CA19\_6035\_014

### Summary

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	292	36	0	4	0	0	4	5	0	0	0	0	341
01:00	0	199	25	0	4	0	0	6	4	0	0	0	0	238
02:00	0	198	19	0	5	0	0	3	5	0	0	0	0	230
03:00	0	255	43	1	11	3	0	8	8	0	0	0	0	329
04:00	0	460	79	4	16	1	0	9	4	0	0	0	0	573
05:00	2	667	111	2	26	3	0	5	4	0	0	0	0	820
06:00	0	1023	173	4	31	1	0	9	9	0	0	0	0	1250
07:00	3	1622	221	12	39	9	2	12	21	0	0	0	0	1941
08:00	3	1434	189	4	30	5	0	6	17	0	0	0	0	1688
09:00	1	1138	195	7	38	6	0	15	12	0	0	0	0	1412
10:00	6	1148	173	10	39	5	0	11	17	0	0	0	0	1409
11:00	5	1167	167	12	38	10	0	12	18	0	0	0	0	1429
12:00 PM	7	1352	200	4	31	7	0	9	25	0	0	0	0	1635
13:00	2	1356	183	4	37	9	0	11	16	0	0	0	0	1618
14:00	4	1506	225	5	49	9	1	19	12	0	0	0	0	1830
15:00	5	1753	242	9	40	11	2	26	18	0	0	0	0	2106
16:00	5	1728	242	13	38	14	2	7	13	0	0	0	0	2062
17:00	6	1815	247	10	43	8	2	9	23	0	0	0	0	2163
18:00	5	1508	201	3	32	11	1	16	21	0	0	0	0	1798
19:00	3	1166	153	5	25	9	1	16	17	0	0	0	0	1395
20:00	0	1048	132	6	23	1	0	7	7	0	0	0	0	1224
21:00	0	825	119	3	23	1	0	5	15	0	0	0	0	991
22:00	0	606	79	0	14	1	0	4	9	0	0	0	0	713
23:00	0	401	54	1	9	1	0	2	4	0	0	0	0	472
<b>Totals</b>	<b>57</b>	<b>24667</b>	<b>3508</b>	<b>119</b>	<b>645</b>	<b>125</b>	<b>11</b>	<b>231</b>	<b>304</b>					<b>29667</b>
% of Totals	0%	83%	12%	0%	2%	0%	0%	1%	1%					100%

AM Volumes	20	9603	1431	56	281	43	2	100	124	0	0	0	0	11660
% AM	0%	32%	5%	0%	1%	0%	0%	0%	0%					39%
AM Peak Hour	10:00	07:00	07:00	07:00	07:00	11:00	07:00	09:00	07:00					07:00
Volume	6	1622	221	12	39	10	2	15	21					1941
PM Volumes	37	15064	2077	63	364	82	9	131	180	0	0	0	0	18007
% PM	0%	51%	7%	0%	1%	0%	0%	0%	1%					61%
PM Peak Hour	12:00	17:00	17:00	16:00	14:00	16:00	15:00	15:00	12:00					17:00
Volume	7	1815	247	13	49	14	2	26	25					2163

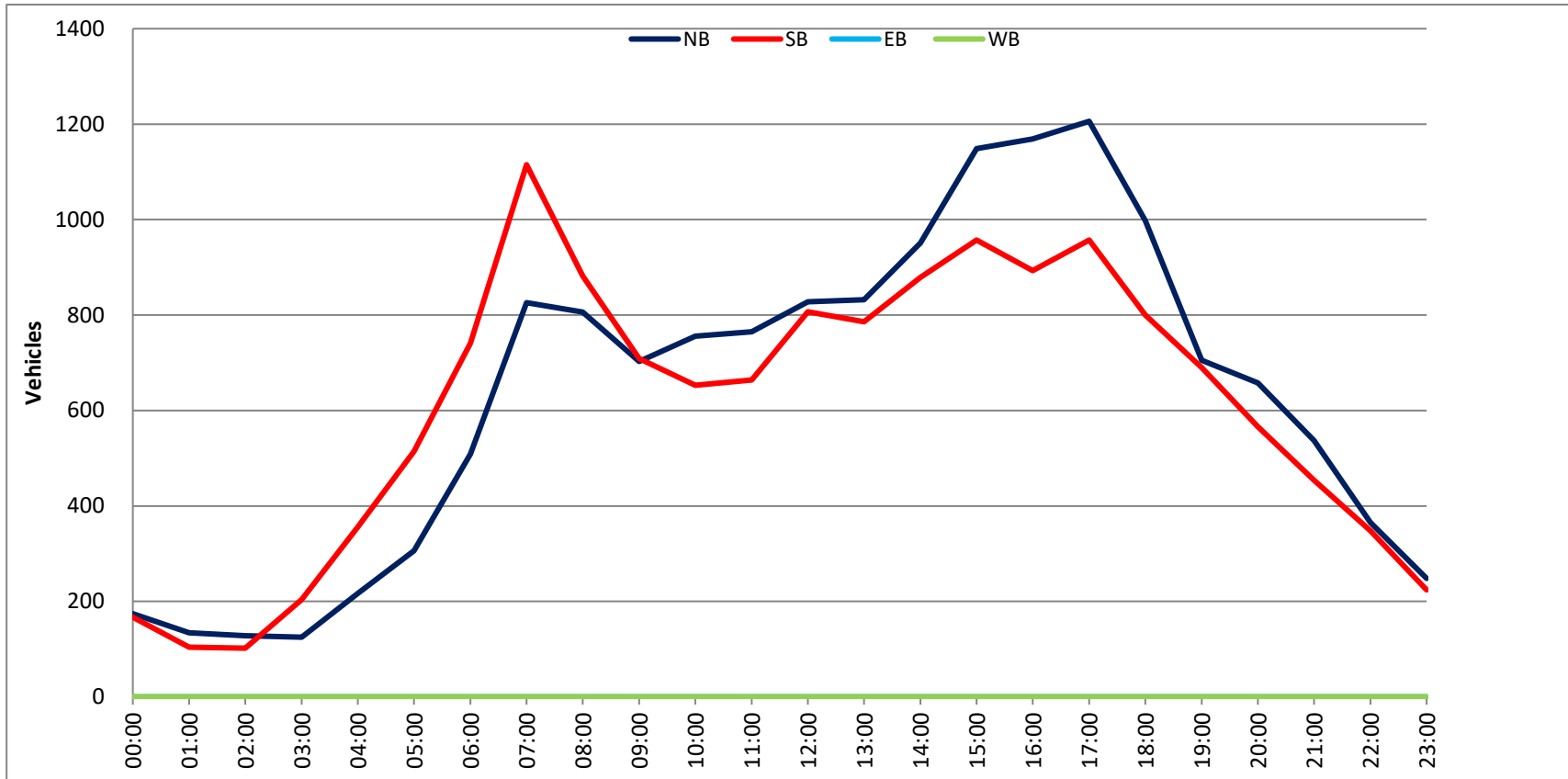
Directional Peak Periods All Classes	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	3629	↔ 12%	3253	↔ 11%	4225	↔ 14%	18560	↔ 63%

### Classification Definitions

1 - Motorcycles      4 - Buses      7 - 1 Axle Single Trailers      10 - 6 Axle Single Trailers      13 - 7 Axle Multi Trailers

DAILY TOTALS					NB	SB	EB	WB	To			
					15,095	14,572	0	0	29,			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TO	
00:00	56	59	0	0	115	12:00	208	205	0	0	413	
00:15	37	38	0	0	75	12:15	199	191	0	0	390	
00:30	42	32	0	0	74	12:30	206	196	0	0	402	
00:45	39	174	38	167	0	0	215	828	215	807	0	430
01:00	38	32	0	0	70	13:00	208	216	0	0	424	
01:15	31	30	0	0	61	13:15	217	165	0	0	382	
01:30	38	17	0	0	55	13:30	195	220	0	0	415	
01:45	27	134	25	104	0	0	212	832	185	786	0	397
02:00	30	27	0	0	57	14:00	206	198	0	0	404	
02:15	33	27	0	0	60	14:15	216	207	0	0	423	
02:30	34	30	0	0	64	14:30	254	233	0	0	487	
02:45	31	128	18	102	0	0	275	951	241	879	0	516
03:00	14	58	0	0	72	15:00	279	222	0	0	501	
03:15	33	41	0	0	74	15:15	312	222	0	0	534	
03:30	36	51	0	0	87	15:30	277	271	0	0	548	
03:45	42	125	54	204	0	0	281	1149	242	957	0	523
04:00	33	57	0	0	90	16:00	326	216	0	0	542	
04:15	33	78	0	0	111	16:15	294	220	0	0	514	
04:30	62	107	0	0	169	16:30	273	224	0	0	497	
04:45	89	217	114	356	0	0	276	1169	233	893	0	509
05:00	58	102	0	0	160	17:00	313	239	0	0	552	
05:15	52	120	0	0	172	17:15	270	236	0	0	506	
05:30	86	146	0	0	232	17:30	308	261	0	0	569	
05:45	110	306	146	514	0	0	315	1206	221	957	0	536
06:00	101	160	0	0	261	18:00	243	229	0	0	472	
06:15	112	155	0	0	267	18:15	257	182	0	0	439	
06:30	103	213	0	0	316	18:30	254	211	0	0	465	
06:45	193	509	213	741	0	0	244	998	178	800	0	422
07:00	193	248	0	0	441	19:00	202	206	0	0	408	
07:15	193	292	0	0	485	19:15	180	179	0	0	359	
07:30	202	305	0	0	507	19:30	173	151	0	0	324	
07:45	238	826	270	1115	0	0	150	705	154	690	0	304
08:00	226	241	0	0	467	20:00	175	172	0	0	347	
08:15	182	239	0	0	421	20:15	175	141	0	0	316	
08:30	203	206	0	0	409	20:30	152	118	0	0	270	
08:45	195	806	196	882	0	0	156	658	135	566	0	291
09:00	176	188	0	0	364	21:00	154	138	0	0	292	
09:15	155	161	0	0	316	21:15	138	118	0	0	256	
09:30	163	169	0	0	332	21:30	124	85	0	0	209	
09:45	209	703	191	709	0	0	121	537	113	454	0	234
10:00	204	173	0	0	377	22:00	114	112	0	0	226	
10:15	175	173	0	0	348	22:15	100	60	0	0	160	
10:30	176	156	0	0	332	22:30	69	97	0	0	166	
10:45	201	756	151	653	0	0	82	365	79	348	0	161
11:00	181	186	0	0	367	23:00	72	67	0	0	139	
11:15	198	155	0	0	353	23:15	65	48	0	0	113	
11:30	186	175	0	0	361	23:30	55	60	0	0	115	
11:45	200	765	148	664	0	0	56	248	49	224	0	105
<b>TOTALS</b>	5449	6211			11660	<b>TOTALS</b>	9646	8361				
<b>SPLIT %</b>	46.7%	53.3%			39.3%	<b>SPLIT %</b>	53.6%	46.4%				

DAILY TOTALS					NB	SB	EB	WB	To	
					15,095	14,572	0	0	29,	
AM Peak Hour	07:15	07:00			07:15	PM Peak Hour	17:00	16:45		
AM Pk Volume	859	1115			1967	PM Pk Volume	1206	969		
Pk Hr Factor	0.902	0.914			0.968	Pk Hr Factor	0.957	0.928		
7 - 9 Volume	1632	1997	0	0	3629	4 - 6 Volume	2375	1850	0	0
7 - 9 Peak Hour	07:15	07:00			07:15	4 - 6 Peak Hour	17:00	16:45		
7 - 9 Pk Volume	859	1115	0	0	1967	4 - 6 Pk Volume	1206	969	0	0
Pk Hr Factor	0.902	0.914	0.000	0.000	0.968	Pk Hr Factor	0.957	0.928	0.000	0.000







































# APPENDIX H

## INTERSECTION LOS WORKSHEETS

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Existing  
timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	 
Traffic Volume (veh/h)	296	512	76	147	898	102	102	627	166	181	802	373
Future Volume (veh/h)	296	512	76	147	898	102	102	627	166	181	802	373
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	1796	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	348	602	89	173	1056	120	120	738	195	213	944	439
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	1708	530	240	1306	148	180	1116	498	282	1221	544
Arrive On Green	0.12	0.33	0.33	0.07	0.28	0.28	0.05	0.31	0.31	0.08	0.34	0.34
Sat Flow, veh/h	3456	5106	1585	3456	4652	528	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	348	602	89	173	772	404	120	738	195	213	944	439
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1775	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.3	9.3	4.2	5.1	22.1	22.2	3.6	18.9	10.1	6.3	24.9	26.4
Cycle Q Clear(g_c), s	10.3	9.3	4.2	5.1	22.1	22.2	3.6	18.9	10.1	6.3	24.9	26.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	1708	530	240	955	498	180	1116	498	282	1221	544
V/C Ratio(X)	0.82	0.35	0.17	0.72	0.81	0.81	0.67	0.66	0.39	0.76	0.77	0.81
Avail Cap(c_a), veh/h	610	2045	635	379	1136	593	270	1457	650	412	1603	715
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	44.8	26.3	24.6	47.8	35.1	35.1	48.8	31.1	28.1	47.1	30.8	31.3
Incr Delay (d2), s/veh	5.7	0.1	0.1	4.0	3.8	7.1	4.2	0.7	0.5	4.6	1.8	5.1
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	4.6	3.6	1.5	2.3	9.2	10.1	1.6	7.8	3.7	2.8	10.3	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	26.4	24.7	51.8	38.9	42.2	53.0	31.8	28.6	51.7	32.5	36.4
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	D
Approach Vol, veh/h		1039			1349			1053			1596	
Approach Delay, s/veh		34.4			41.5			33.6			36.1	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.1	38.9	11.8	41.1	10.0	42.0	17.4	35.4				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.5	43.0	11.5	42.0	8.2	47.3	18.5	35.0				
Max Q Clear Time (g_c+I1), s	8.3	20.9	7.1	11.3	5.6	28.4	12.3	24.2				
Green Ext Time (p_c), s	0.2	5.4	0.2	4.3	0.1	7.7	0.6	5.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay												36.7
HCM 6th LOS												D

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	507	36	114	621	71	32	83	58	78	89	55
Future Volume (veh/h)	27	507	36	114	621	71	32	83	58	78	89	55
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1796	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	31	576	41	130	706	81	36	94	66	89	101	62
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	1273	90	321	708	600	81	174	756	96	80	756
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	688	3365	239	806	1870	1585	14	364	1585	22	168	1585
Grp Volume(v), veh/h	31	304	313	130	706	81	130	0	66	190	0	62
Grp Sat Flow(s),veh/h/ln	688	1777	1827	806	1870	1585	378	0	1585	190	0	1585
Q Serve(g_s), s	1.1	8.0	8.0	8.9	23.4	2.1	0.9	0.0	1.4	0.9	0.0	1.3
Cycle Q Clear(g_c), s	23.5	8.0	8.0	16.6	23.4	2.1	29.6	0.0	1.4	29.6	0.0	1.3
Prop In Lane	1.00		0.13	1.00		1.00	0.28		1.00	0.47		1.00
Lane Grp Cap(c), veh/h	129	672	691	321	708	600	254	0	756	176	0	756
V/C Ratio(X)	0.24	0.45	0.45	0.40	1.00	0.14	0.51	0.00	0.09	1.08	0.00	0.08
Avail Cap(c_a), veh/h	129	673	692	322	708	600	330	0	830	246	0	830
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	30.8	14.5	14.5	20.5	19.3	12.6	13.9	0.0	8.9	19.9	0.0	8.8
Incr Delay (d2), s/veh	1.0	0.5	0.5	0.8	33.3	0.1	1.6	0.0	0.0	77.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.7	2.8	1.5	14.7	0.6	0.9	0.0	0.4	5.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	14.9	14.9	21.4	52.5	12.7	15.4	0.0	8.9	97.6	0.0	8.9
LnGrp LOS	C	B	B	C	D	B	B	A	A	F	A	A
Approach Vol, veh/h		648			917			196			252	
Approach Delay, s/veh		15.8			44.6			13.2			75.8	
Approach LOS		B			D			B			E	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.9		28.0		34.9		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		32.5		23.5		32.5		23.5				
Max Q Clear Time (g_c+I1), s		31.6		25.5		31.6		25.4				
Green Ext Time (p_c), s		0.1		0.0		0.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay												36.2
HCM 6th LOS												D

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	563	69	200	660	226	57	448	108	192	836	120
Future Volume (veh/h)	118	563	69	200	660	226	57	448	108	192	836	120
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	137	655	80	233	767	263	66	521	126	223	972	140
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	865	106	263	848	291	85	733	177	253	1099	158
Arrive On Green	0.09	0.27	0.27	0.15	0.33	0.33	0.05	0.26	0.26	0.14	0.35	0.35
Sat Flow, veh/h	1781	3188	389	1781	2597	890	1781	2840	684	1781	3118	449
Grp Volume(v), veh/h	137	365	370	233	525	505	66	325	322	223	554	558
Grp Sat Flow(s),veh/h/ln	1781	1777	1800	1781	1777	1710	1781	1777	1747	1781	1777	1790
Q Serve(g_s), s	8.8	21.8	21.9	14.9	32.8	32.8	4.3	19.3	19.5	14.3	34.0	34.1
Cycle Q Clear(g_c), s	8.8	21.8	21.9	14.9	32.8	32.8	4.3	19.3	19.5	14.3	34.0	34.1
Prop In Lane	1.00		0.22	1.00		0.52	1.00		0.39	1.00		0.25
Lane Grp Cap(c), veh/h	165	482	488	263	580	558	85	459	451	253	627	631
V/C Ratio(X)	0.83	0.76	0.76	0.89	0.90	0.90	0.78	0.71	0.71	0.88	0.88	0.88
Avail Cap(c_a), veh/h	212	510	516	330	627	604	115	513	504	318	715	720
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	51.8	38.8	38.8	48.5	37.4	37.4	54.7	39.1	39.2	48.9	35.3	35.4
Incr Delay (d2), s/veh	19.3	6.1	6.1	20.5	15.9	16.5	20.6	3.9	4.2	20.4	11.6	11.6
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	4.7	10.0	10.1	7.9	16.1	15.6	2.3	8.6	8.6	7.6	16.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	44.9	44.9	69.0	53.3	53.8	75.3	43.0	43.3	69.3	46.9	46.9
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		872		1263		713		1335				
Approach Delay, s/veh		49.0		56.4		46.2		50.7				
Approach LOS		D		E		D		D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	36.0	15.2	43.9	10.0	46.9	21.6	37.5				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	20.7	33.5	13.8	41.0	7.5	46.7	21.5	33.3				
Max Q Clear Time (g_c+1/3), s	10.3	21.5	10.8	34.8	6.3	36.1	16.9	23.9				
Green Ext Time (p_c), s	0.2	2.9	0.1	3.1	0.0	4.9	0.3	2.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				51.3								
HCM 6th LOS				D								

**Intersection**

Intersection Delay, s/veh 16.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	127	6	34	120	67	50	158	36	38	142	80
Future Vol, veh/h	59	127	6	34	120	67	50	158	36	38	142	80
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	161	8	43	152	85	63	200	46	48	180	101
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.2	15.7	16.8	17.2
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	31%	15%	15%
Vol Thru, %	65%	66%	54%	55%
Vol Right, %	15%	3%	30%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	192	221	260
LT Vol	50	59	34	38
Through Vol	158	127	120	142
RT Vol	36	6	67	80
Lane Flow Rate	309	243	280	329
Geometry Grp	1	1	1	1
Degree of Util (X)	0.545	0.451	0.498	0.567
Departure Headway (Hd)	6.348	6.674	6.403	6.206
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	565	537	559	579
Service Time	4.42	4.749	4.474	4.278
HCM Lane V/C Ratio	0.547	0.453	0.501	0.568
HCM Control Delay	16.8	15.2	15.7	17.2
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	3.3	2.3	2.8	3.5

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	128	41	68	86	29	59	560	146	65	1010	38
Future Volume (veh/h)	31	128	41	68	86	29	59	560	146	65	1010	38
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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	36	151	48	80	101	34	69	659	172	76	1188	45
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	313	100	165	180	365	153	1750	781	100	1539	58
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.09	0.49	0.49	0.06	0.44	0.44
Sat Flow, veh/h	1254	1360	432	383	783	1585	1781	3554	1585	1781	3491	132
Grp Volume(v), veh/h	36	0	199	181	0	34	69	659	172	76	604	629
Grp Sat Flow(s),veh/h/ln	1254	0	1793	1166	0	1585	1781	1777	1585	1781	1777	1847
Q Serve(g_s), s	1.9	0.0	6.5	4.6	0.0	1.1	2.5	7.8	4.2	2.9	19.6	19.6
Cycle Q Clear(g_c), s	13.0	0.0	6.5	11.1	0.0	1.1	2.5	7.8	4.2	2.9	19.6	19.6
Prop In Lane	1.00		0.24	0.44		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	190	0	413	345	0	365	153	1750	781	100	783	814
V/C Ratio(X)	0.19	0.00	0.48	0.52	0.00	0.09	0.45	0.38	0.22	0.76	0.77	0.77
Avail Cap(c_a), veh/h	409	0	726	616	0	654	577	2984	1331	276	1204	1251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	0.0	22.6	24.5	0.0	20.5	29.5	10.7	9.8	31.6	16.1	16.1
Incr Delay (d2), s/veh	0.5	0.0	0.9	1.2	0.0	0.1	2.1	0.1	0.1	11.2	1.7	1.6
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	0.6	0.0	2.6	2.6	0.0	0.4	1.1	2.5	1.2	1.4	6.8	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	0.0	23.5	25.8	0.0	20.6	31.6	10.9	9.9	42.8	17.8	17.7
LnGrp LOS	C	A	C	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		235			215			900			1309	
Approach Delay, s/veh		24.6			25.0			12.3			19.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.4			20.1	11.8	35.9		20.1				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	10.5	57.0		27.5	22.0	* 46		* 28				
Max Q Clear Time (g_c+1/3), s	14.9	9.8		15.0	4.5	21.6		13.1				
Green Ext Time (p_c), s	0.1	5.3		0.9	0.1	8.3		0.9				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	37.2											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	50	219	36	30	231	55	76	136	41	69	188	49
Future Vol, veh/h	50	219	36	30	231	55	76	136	41	69	188	49
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	267	44	37	282	67	93	166	50	84	229	60
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	36.2	32.4	25.1	53.1
HCM LOS	E	D	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	36%	0%	19%	0%	11%	0%	23%
Vol Thru, %	64%	0%	81%	0%	89%	0%	61%
Vol Right, %	0%	100%	0%	100%	0%	100%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	212	41	269	36	261	55	306
LT Vol	76	0	50	0	30	0	69
Through Vol	136	0	219	0	231	0	188
RT Vol	0	41	0	36	0	55	49
Lane Flow Rate	259	50	328	44	318	67	373
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.654	0.114	0.806	0.097	0.78	0.15	0.901
Departure Headway (Hd)	9.106	8.191	8.842	7.977	8.82	8.029	8.694
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	396	437	410	449	411	448	418
Service Time	6.875	5.959	6.562	5.734	6.542	5.751	6.763
HCM Lane V/C Ratio	0.654	0.114	0.8	0.098	0.774	0.15	0.892
HCM Control Delay	27.6	12	39.5	11.6	36.6	12.2	53.1
HCM Lane LOS	D	B	E	B	E	B	F
HCM 95th-tile Q	4.5	0.4	7.2	0.3	6.7	0.5	9.5

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	197	43	23	178	39	48	650	43	49	974	90
Future Volume (veh/h)	95	197	43	23	178	39	48	650	43	49	974	90
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	113	235	51	27	212	46	57	774	51	58	1160	107
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	698	149	291	448	380	137	1683	111	86	1472	136
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.08	0.50	0.50	0.05	0.45	0.45
Sat Flow, veh/h	1121	2914	621	1093	1870	1585	1781	3384	223	1781	3290	303
Grp Volume(v), veh/h	113	142	144	27	212	46	57	406	419	58	626	641
Grp Sat Flow(s),veh/h/ln	1121	1777	1759	1093	1870	1585	1781	1777	1830	1781	1777	1816
Q Serve(g_s), s	6.7	4.6	4.7	1.5	6.8	1.6	2.1	10.4	10.4	2.2	21.0	21.0
Cycle Q Clear(g_c), s	13.5	4.6	4.7	6.2	6.8	1.6	2.1	10.4	10.4	2.2	21.0	21.0
Prop In Lane	1.00		0.35	1.00		1.00	1.00		0.12	1.00		0.17
Lane Grp Cap(c), veh/h	263	425	421	291	448	380	137	884	910	86	795	812
V/C Ratio(X)	0.43	0.33	0.34	0.09	0.47	0.12	0.42	0.46	0.46	0.67	0.79	0.79
Avail Cap(c_a), veh/h	372	598	592	405	643	545	715	1584	1631	237	1120	1145
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	28.6	21.9	22.0	24.6	22.8	20.8	30.7	11.4	11.4	32.7	16.4	16.5
Incr Delay (d2), s/veh	1.1	0.5	0.5	0.1	0.8	0.1	2.0	0.4	0.4	8.8	2.5	2.5
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	1.8	1.8	1.8	0.4	2.8	0.5	0.9	3.2	3.3	1.1	7.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	22.4	22.5	24.7	23.5	20.9	32.8	11.8	11.8	41.4	19.0	19.0
LnGrp LOS	C	C	C	C	C	C	C	C	B	B	D	B
Approach Vol, veh/h		399			285			882			1325	
Approach Delay, s/veh		24.5			23.2			13.2			19.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	40.7		21.2	11.4	37.2		21.2				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	3	62.2		23.5	28.0	* 44		* 24				
Max Q Clear Time (g_c+1/2), s	14.2	12.4		15.5	4.1	23.0		8.8				
Green Ext Time (p_c), s	0.0	5.1		1.2	0.1	8.2		1.1				

Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	187	63	68	202	77	45	644	79	80	882	76
Future Volume (veh/h)	62	187	63	68	202	77	45	644	79	80	882	76
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	68	205	69	75	222	85	49	708	87	88	969	84
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	526	172	280	507	188	138	1427	175	122	1359	118
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.08	0.45	0.45	0.07	0.41	0.41
Sat Flow, veh/h	1072	2632	860	1105	2536	942	1781	3186	391	1781	3309	287
Grp Volume(v), veh/h	68	136	138	75	154	153	49	395	400	88	520	533
Grp Sat Flow(s),veh/h/ln	1072	1777	1715	1105	1777	1701	1781	1777	1800	1781	1777	1819
Q Serve(g_s), s	3.2	3.5	3.7	3.4	4.0	4.2	1.4	8.3	8.4	2.6	12.9	12.9
Cycle Q Clear(g_c), s	7.4	3.5	3.7	7.0	4.0	4.2	1.4	8.3	8.4	2.6	12.9	12.9
Prop In Lane	1.00		0.50	1.00		0.55	1.00		0.22	1.00		0.16
Lane Grp Cap(c), veh/h	265	355	343	280	355	340	138	796	806	122	730	747
V/C Ratio(X)	0.26	0.38	0.40	0.27	0.43	0.45	0.35	0.50	0.50	0.72	0.71	0.71
Avail Cap(c_a), veh/h	486	722	697	518	738	707	976	2014	2040	454	1510	1546
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	21.9	18.3	18.4	21.5	18.5	18.6	23.2	10.4	10.4	24.2	13.0	13.0
Incr Delay (d2), s/veh	0.5	0.7	0.8	0.5	0.8	0.9	1.5	0.5	0.5	7.7	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.3	1.3	0.8	1.5	1.5	0.6	2.3	2.3	1.2	3.8	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	19.0	19.2	22.0	19.4	19.6	24.7	10.8	10.8	31.9	14.3	14.3
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		342			382			844			1141	
Approach Delay, s/veh		19.7			20.0			11.6			15.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	29.7		15.1	10.1	27.7		15.1				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	13.5	60.0		21.5	29.0	* 45		* 22				
Max Q Clear Time (g_c+1), s	14.6	10.4		9.4	3.4	14.9		9.0				
Green Ext Time (p_c), s	0.1	4.9		1.3	0.1	6.8		1.5				

Intersection Summary

HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↕↔↔		
Traffic Volume (veh/h)	102	184	135	232	261	38	93	627	122	35	894	63
Future Volume (veh/h)	102	184	135	232	261	38	93	627	122	35	894	63
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	107	194	142	244	275	40	98	660	0	37	941	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	315	219	366	608	87	127	1823		68	1579	110
Arrive On Green	0.07	0.16	0.16	0.11	0.19	0.19	0.07	0.36	0.00	0.04	0.32	0.32
Sat Flow, veh/h	3456	2004	1392	3456	3118	448	1781	5106	1585	1781	4872	341
Grp Volume(v), veh/h	107	171	165	244	155	160	98	660	0	37	657	350
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1790	1781	1702	1585	1781	1702	1809
Q Serve(g_s), s	1.8	5.5	5.9	4.2	4.7	4.8	3.3	5.9	0.0	1.3	9.9	10.0
Cycle Q Clear(g_c), s	1.8	5.5	5.9	4.2	4.7	4.8	3.3	5.9	0.0	1.3	9.9	10.0
Prop In Lane	1.00		0.86	1.00		0.25	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	236	280	255	366	346	349	127	1823		68	1103	586
V/C Ratio(X)	0.45	0.61	0.65	0.67	0.45	0.46	0.77	0.36		0.55	0.60	0.60
Avail Cap(c_a), veh/h	534	723	659	703	810	815	246	3739		188	2382	1266
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	27.5	24.1	24.3	26.4	21.8	21.9	28.1	14.6	0.0	29.0	17.4	17.4
Incr Delay (d2), s/veh	1.4	2.2	2.8	2.1	0.9	0.9	9.6	0.1	0.0	6.7	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	2.3	1.7	1.9	2.0	1.7	2.1	0.0	0.6	3.6	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	26.3	27.1	28.5	22.7	22.8	37.7	14.7	0.0	35.7	17.9	18.4
LnGrp LOS	C	C	C	C	C	C	D	B		D	B	B
Approach Vol, veh/h		443			559			758	A		1044	
Approach Delay, s/veh		27.2			25.3			17.7			18.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	27.9	8.7	18.0	8.9	25.9	11.0	15.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	5	45.0	9.5	28.0	8.5	43.0	12.5	25.0				
Max Q Clear Time (g_c+I), s	13.3	7.9	3.8	6.8	5.3	12.0	6.2	7.9				
Green Ext Time (p_c), s	0.0	5.2	0.1	1.8	0.1	7.9	0.4	1.8				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘
Traffic Volume (veh/h)	7	0	14	12	0	18	49	877	51	21	1221	9
Future Volume (veh/h)	7	0	14	12	0	18	49	877	51	21	1221	9
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	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	7	0	14	12	0	19	51	904	53	22	1259	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	0	28	122	0	56	146	2643	821	47	2253	16
Arrive On Green	0.03	0.00	0.03	0.04	0.00	0.04	0.08	0.52	0.52	0.03	0.43	0.43
Sat Flow, veh/h	548	0	1097	3456	0	1585	1781	5106	1585	1781	5230	37
Grp Volume(v), veh/h	21	0	0	12	0	19	51	904	53	22	819	449
Grp Sat Flow(s),veh/h/ln	1645	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	0.6	0.0	0.0	0.2	0.0	0.6	1.3	5.0	0.8	0.6	8.7	8.7
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.2	0.0	0.6	1.3	5.0	0.8	0.6	8.7	8.7
Prop In Lane	0.33		0.67	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	42	0	0	122	0	56	146	2643	821	47	1466	803
V/C Ratio(X)	0.50	0.00	0.00	0.10	0.00	0.34	0.35	0.34	0.06	0.47	0.56	0.56
Avail Cap(c_a), veh/h	565	0	0	1150	0	527	815	5522	1714	241	2620	1434
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	0.0	22.5	0.0	22.6	20.8	6.8	5.8	23.1	10.3	10.3
Incr Delay (d2), s/veh	9.0	0.0	0.0	0.3	0.0	3.5	1.4	0.1	0.0	7.0	0.3	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/lr	0.3	0.0	0.0	0.1	0.0	0.2	0.5	1.3	0.2	0.3	2.6	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	0.0	22.8	0.0	26.2	22.3	6.9	5.8	30.1	10.6	10.9
LnGrp LOS	C	A	A	C	A	C	C	A	A	C	B	B
Approach Vol, veh/h		21			31			1008			1290	
Approach Delay, s/veh		32.1			24.9			7.6			11.0	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	30.9		5.7	10.0	26.7		5.7				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5	52.0		16.0	22.0	* 37		16.5				
Max Q Clear Time (g_c+1), s	12.6	7.0		2.6	3.3	10.7		2.6				
Green Ext Time (p_c), s	0.0	8.1		0.1	0.1	10.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Existing  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↑↑↑	↖	↖↗	↑↑↑
Traffic Volume (veh/h)	85	28	937	68	32	1229
Future Volume (veh/h)	85	28	937	68	32	1229
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	29	976	71	33	1280
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	203	93	3665	1138	113	4124
Arrive On Green	0.06	0.06	0.72	0.72	0.03	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	89	29	976	71	33	1280
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.4	5.2	1.0	0.7	5.1
Cycle Q Clear(g_c), s	2.0	1.4	5.2	1.0	0.7	5.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	203	93	3665	1138	113	4124
V/C Ratio(X)	0.44	0.31	0.27	0.06	0.29	0.31
Avail Cap(c_a), veh/h	1670	766	3665	1138	330	4124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	35.5	3.9	3.3	37.1	1.9
Incr Delay (d2), s/veh	1.5	1.9	0.0	0.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.6	1.0	0.2	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.2	37.4	3.9	3.3	38.6	2.1
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	118		1047			1313
Approach Delay, s/veh	37.3		3.9			3.1
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.1	62.4			69.5	9.1
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5	49.5			* 64	38.0
Max Q Clear Time (g_c+1/2), s	12.5	7.2			7.1	4.0
Green Ext Time (p_c), s	0.0	7.5			10.9	0.4

Intersection Summary

HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	164	0	309	0	665	197	0	1103	322
Future Volume (veh/h)	0	0	0	164	0	309	0	665	197	0	1103	322
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				174	0	329	0	707	0	0	1173	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				458	0	407	0	1832		0	1832	
Arrive On Green				0.26	0.00	0.26	0.00	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				174	0	329	0	707	0	0	1173	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				3.4	0.0	8.1	0.0	5.0	0.0	0.0	10.0	0.0
Cycle Q Clear(g_c), s				3.4	0.0	8.1	0.0	5.0	0.0	0.0	10.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				458	0	407	0	1832		0	1832	
V/C Ratio(X)				0.38	0.00	0.81	0.00	0.39		0.00	0.64	
Avail Cap(c_a), veh/h				1196	0	1064	0	4472		0	4472	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.8	0.0	14.5	0.0	6.1	0.0	0.0	7.3	0.0
Incr Delay (d2), s/veh				0.5	0.0	3.8	0.0	0.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	2.8	0.0	0.8	0.0	0.0	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.3	0.0	18.4	0.0	6.2	0.0	0.0	7.7	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					503			707	A		1173	A
Approach Delay, s/veh					16.6			6.2			7.7	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		26.0				26.0		15.7				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		52.5				52.5		28.0				
Max Q Clear Time (g_c+I1), s		7.0				12.0		10.1				
Green Ext Time (p_c), s		4.8				9.5		0.6				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Existing  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	4	334	0	0	0	0	654	321	409	874	0
Future Volume (veh/h)	227	4	334	0	0	0	0	654	321	409	874	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	166	0	452				0	711	349	445	950	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	356	0	633				0	1070	498	499	2338	0
Arrive On Green	0.20	0.00	0.20				0.00	0.31	0.31	0.28	0.66	0.00
Sat Flow, veh/h	1781	0	3170				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	166	0	452				0	711	349	445	950	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	5.2	0.0	8.4				0.0	11.4	12.2	15.1	7.9	0.0
Cycle Q Clear(g_c), s	5.2	0.0	8.4				0.0	11.4	12.2	15.1	7.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	356	0	633				0	1070	498	499	2338	0
V/C Ratio(X)	0.47	0.00	0.71				0.00	0.66	0.70	0.89	0.41	0.00
Avail Cap(c_a), veh/h	762	0	1356				0	1564	728	592	3067	0
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	22.3	0.0	23.6				0.0	18.8	19.0	21.8	5.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.5				0.0	0.7	1.8	14.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	3.1				0.0	3.8	3.9	7.2	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	25.1				0.0	19.5	20.8	35.9	5.2	0.0
LnGrp LOS	C	A	C				A	B	C	D	A	A
Approach Vol, veh/h		618						1060			1395	
Approach Delay, s/veh		24.6						19.9			15.0	
Approach LOS		C						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	21.7	24.4	17.1	46.0								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	21.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+ll), s	14.2	14.2	10.4	9.9								
Green Ext Time (p_c), s	0.6	5.6	2.2	7.1								

Intersection Summary



































HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Existing  
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		  	  		 	 		 	 	
Traffic Volume (veh/h)	444	1051	135	231	685	179	144	764	227	192	539	265
Future Volume (veh/h)	444	1051	135	231	685	179	144	764	227	192	539	265
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	1796	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	458	1084	139	238	706	185	148	788	234	198	556	273
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	1548	481	322	956	247	221	1031	460	273	1085	484
Arrive On Green	0.16	0.30	0.30	0.09	0.24	0.24	0.06	0.29	0.29	0.08	0.31	0.31
Sat Flow, veh/h	3456	5106	1585	3456	4041	1045	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	458	1084	139	238	593	298	148	788	234	198	556	273
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1682	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.5	16.8	6.0	6.0	14.4	14.7	3.8	18.1	11.0	5.0	11.5	12.9
Cycle Q Clear(g_c), s	11.5	16.8	6.0	6.0	14.4	14.7	3.8	18.1	11.0	5.0	11.5	12.9
Prop In Lane	1.00		1.00	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	1548	481	322	805	398	221	1031	460	273	1085	484
V/C Ratio(X)	0.83	0.70	0.29	0.74	0.74	0.75	0.67	0.76	0.51	0.73	0.51	0.56
Avail Cap(c_a), veh/h	726	2002	621	529	1141	564	340	1639	731	344	1643	733
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	36.4	27.6	23.8	39.5	31.6	31.7	41.0	29.0	26.5	40.3	25.6	26.1
Incr Delay (d2), s/veh	6.2	0.8	0.3	3.3	1.5	3.4	3.5	1.2	0.9	5.6	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	6.4	2.1	2.6	5.7	5.9	1.6	7.3	4.0	2.2	4.6	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	28.4	24.2	42.9	33.1	35.1	44.5	30.2	27.3	45.9	26.0	27.1
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		1681			1129			1170			1027	
Approach Delay, s/veh		31.9			35.7			31.4			30.1	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	32.0	12.8	33.1	10.2	33.3	18.8	27.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	8.9	41.3	13.7	35.1	8.8	41.4	18.8	30.0				
Max Q Clear Time (g_c+I1), s	7.0	20.1	8.0	18.8	5.8	14.9	13.5	16.7				
Green Ext Time (p_c), s	0.1	5.9	0.4	6.8	0.1	4.5	0.8	4.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				32.3								
HCM 6th LOS				C								



9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	699	23	10	524	93	27	137	73	48	95	33
Future Volume (veh/h)	42	699	23	10	524	93	27	137	73	48	95	33
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1796	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	44	736	24	11	552	98	28	144	77	51	100	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1452	47	374	773	655	118	391	554	144	214	554
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	782	3512	114	706	1870	1585	22	1119	1585	48	611	1585
Grp Volume(v), veh/h	44	372	388	11	552	98	172	0	77	151	0	35
Grp Sat Flow(s),veh/h/ln	782	1777	1850	706	1870	1585	1142	0	1585	659	0	1585
Q Serve(g_s), s	1.9	5.9	5.9	0.4	9.3	1.5	0.6	0.0	1.3	0.9	0.0	0.6
Cycle Q Clear(g_c), s	10.9	5.9	5.9	6.2	9.3	1.5	12.8	0.0	1.3	12.9	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.16		1.00	0.34		1.00
Lane Grp Cap(c), veh/h	326	734	764	374	773	655	509	0	554	357	0	554
V/C Ratio(X)	0.13	0.51	0.51	0.03	0.71	0.15	0.34	0.00	0.14	0.42	0.00	0.06
Avail Cap(c_a), veh/h	467	1054	1098	501	1110	940	1206	0	1191	981	0	1191
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	13.7	8.3	8.3	10.5	9.3	7.0	9.2	0.0	8.4	9.8	0.0	8.2
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.0	1.2	0.1	0.4	0.0	0.1	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.3	1.4	0.1	2.3	0.3	0.7	0.0	0.3	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	8.8	8.8	10.6	10.5	7.1	9.6	0.0	8.5	10.6	0.0	8.3
LnGrp LOS	B	A	A	B	B	A	A	A	A	B	A	A
Approach Vol, veh/h		804			661			249			186	
Approach Delay, s/veh		9.1			10.0			9.3			10.1	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.4		20.4		18.4		20.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+1), s		14.8		12.9		14.9		11.3				
Green Ext Time (p_c), s		0.9		3.2		0.7		2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				9.5								
HCM 6th LOS				A								



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	631	50	138	567	202	67	755	141	118	527	110
Future Volume (veh/h)	172	631	50	138	567	202	67	755	141	118	527	110
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	183	671	53	147	603	215	71	803	150	126	561	117
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	974	77	180	695	247	92	926	173	156	1013	211
Arrive On Green	0.12	0.29	0.29	0.10	0.27	0.27	0.05	0.31	0.31	0.09	0.35	0.35
Sat Flow, veh/h	1781	3337	263	1781	2568	914	1781	2988	558	1781	2929	609
Grp Volume(v), veh/h	183	357	367	147	417	401	71	477	476	126	340	338
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1777	1706	1781	1777	1770	1781	1777	1761
Q Serve(g_s), s	10.1	17.8	17.9	8.1	22.4	22.4	3.9	25.4	25.4	6.9	15.5	15.6
Cycle Q Clear(g_c), s	10.1	17.8	17.9	8.1	22.4	22.4	3.9	25.4	25.4	6.9	15.5	15.6
Prop In Lane	1.00		0.14	1.00		0.54	1.00		0.32	1.00		0.35
Lane Grp Cap(c), veh/h	218	519	532	180	481	461	92	550	548	156	614	609
V/C Ratio(X)	0.84	0.69	0.69	0.82	0.87	0.87	0.77	0.87	0.87	0.81	0.55	0.56
Avail Cap(c_a), veh/h	344	590	605	308	554	532	183	639	637	223	678	672
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	43.0	31.4	31.4	44.1	34.8	34.8	46.9	32.6	32.6	44.8	26.5	26.5
Incr Delay (d2), s/veh	10.2	2.9	2.8	8.7	12.4	13.0	12.9	10.9	11.0	13.4	0.8	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	4.9	7.6	7.8	3.9	10.7	10.4	2.0	11.9	11.8	3.5	6.3	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	34.3	34.2	52.8	47.2	47.9	59.8	43.5	43.6	58.2	27.3	27.3
LnGrp LOS	D	C	C	D	D	D	E	D	D	E	C	C
Approach Vol, veh/h		907		965		1024		804				
Approach Delay, s/veh		38.1		48.3		44.7		32.1				
Approach LOS		D		D		D		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.3	37.0	16.7	33.1	9.7	40.6	14.6	35.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.5	36.0	19.3	31.2	10.3	38.2	17.3	33.2				
Max Q Clear Time (g_c+1), s	10.9	27.4	12.1	24.4	5.9	17.6	10.1	19.9				
Green Ext Time (p_c), s	0.1	3.6	0.3	2.6	0.0	3.7	0.2	3.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				41.3								
HCM 6th LOS				D								

**Intersection**

Intersection Delay, s/veh 12.7

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	171	44	43	143	17	39	199	25	2	165	17
Future Vol, veh/h	42	171	44	43	143	17	39	199	25	2	165	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	184	47	46	154	18	42	214	27	2	177	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.1	12.1	13.4	11.7
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	16%	21%	1%
Vol Thru, %	76%	67%	70%	90%
Vol Right, %	10%	17%	8%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	263	257	203	184
LT Vol	39	42	43	2
Through Vol	199	171	143	165
RT Vol	25	44	17	17
Lane Flow Rate	283	276	218	198
Geometry Grp	1	1	1	1
Degree of Util (X)	0.448	0.434	0.353	0.32
Departure Headway (Hd)	5.697	5.658	5.823	5.831
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	628	633	613	611
Service Time	3.767	3.73	3.899	3.91
HCM Lane V/C Ratio	0.451	0.436	0.356	0.324
HCM Control Delay	13.4	13.1	12.1	11.7
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.3	2.2	1.6	1.4

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖	↗	↖	↗	↖	↗	↖	↗
Traffic Volume (veh/h)	45	119	28	116	105	62	45	877	111	26	645	47
Future Volume (veh/h)	45	119	28	116	105	62	45	877	111	26	645	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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	48	128	30	125	113	67	48	943	119	28	694	51
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	380	89	256	188	411	139	1441	643	58	1105	81
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.08	0.41	0.41	0.03	0.33	0.33
Sat Flow, veh/h	1204	1465	343	560	724	1585	1781	3554	1585	1781	3356	246
Grp Volume(v), veh/h	48	0	158	238	0	67	48	943	119	28	367	378
Grp Sat Flow(s),veh/h/ln	1204	0	1809	1284	0	1585	1781	1777	1585	1781	1777	1826
Q Serve(g_s), s	1.9	0.0	3.5	5.5	0.0	1.6	1.3	10.6	2.4	0.8	8.6	8.7
Cycle Q Clear(g_c), s	10.9	0.0	3.5	9.0	0.0	1.6	1.3	10.6	2.4	0.8	8.6	8.7
Prop In Lane	1.00		0.19	0.53		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	238	0	469	444	0	411	139	1441	643	58	585	601
V/C Ratio(X)	0.20	0.00	0.34	0.54	0.00	0.16	0.35	0.65	0.19	0.49	0.63	0.63
Avail Cap(c_a), veh/h	547	0	932	834	0	833	864	3145	1403	205	933	959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	14.9	17.2	0.0	14.2	21.6	11.9	9.5	23.5	14.0	14.0
Incr Delay (d2), s/veh	0.4	0.0	0.4	1.0	0.0	0.2	1.5	0.5	0.1	6.3	1.1	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	0.5	0.0	1.2	2.2	0.0	0.5	0.5	3.1	0.6	0.4	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	15.3	18.2	0.0	14.4	23.1	12.4	9.6	29.8	15.1	15.1
LnGrp LOS	C	A	B	B	A	B	C	B	A	C	B	B
Approach Vol, veh/h		206			305			1110			773	
Approach Delay, s/veh		16.9			17.4			12.6			15.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	26.1		17.3	9.9	22.3		17.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.7	43.8		25.5	24.0	* 26		* 26				
Max Q Clear Time (g_c+1/2), s	12.8	12.6		12.9	3.3	10.7		11.0				
Green Ext Time (p_c), s	0.0	7.4		0.7	0.1	3.7		1.3				

Intersection Summary

HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	18.6											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕	↕		↕	↕		↕	↕
Traffic Vol, veh/h	49	235	43	39	244	50	32	192	30	31	183	43
Future Vol, veh/h	49	235	43	39	244	50	32	192	30	31	183	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	242	44	40	252	52	33	198	31	32	189	44
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	19.2	18.8	16.5	19.5
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	0%	17%	0%	14%	0%	12%
Vol Thru, %	86%	0%	83%	0%	86%	0%	71%
Vol Right, %	0%	100%	0%	100%	0%	100%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	224	30	284	43	283	50	257
LT Vol	32	0	49	0	39	0	31
Through Vol	192	0	235	0	244	0	183
RT Vol	0	30	0	43	0	50	43
Lane Flow Rate	231	31	293	44	292	52	265
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.487	0.058	0.598	0.081	0.594	0.094	0.551
Departure Headway (Hd)	7.597	6.805	7.358	6.55	7.335	6.545	7.49
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	524	489	544	490	545	480
Service Time	5.375	4.583	5.131	4.322	5.108	4.317	5.568
HCM Lane V/C Ratio	0.488	0.059	0.599	0.081	0.596	0.095	0.552
HCM Control Delay	17.4	10	20.6	9.9	20.4	10	19.5
HCM Lane LOS	C	A	C	A	C	A	C
HCM 95th-tile Q	2.6	0.2	3.9	0.3	3.8	0.3	3.3

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖	↖	↖	↖↗		↖	↖↗	
Traffic Volume (veh/h)	100	194	54	32	194	38	45	899	28	29	701	67
Future Volume (veh/h)	100	194	54	32	194	38	45	899	28	29	701	67
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	105	204	57	34	204	40	47	946	29	31	738	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	681	186	359	462	391	139	1409	43	63	1068	103
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.40	0.40	0.04	0.33	0.33
Sat Flow, veh/h	1136	2760	752	1118	1870	1585	1781	3520	108	1781	3276	315
Grp Volume(v), veh/h	105	129	132	34	204	40	47	478	497	31	400	409
Grp Sat Flow(s),veh/h/ln	136	1777	1735	1118	1870	1585	1781	1777	1851	1781	1777	1814
Q Serve(g_s), s	4.1	2.8	2.9	1.2	4.4	0.9	1.2	10.4	10.4	0.8	9.3	9.3
Cycle Q Clear(g_c), s	8.4	2.8	2.9	4.1	4.4	0.9	1.2	10.4	10.4	0.8	9.3	9.3
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.06	1.00		0.17
Lane Grp Cap(c), veh/h	328	439	428	359	462	391	139	711	741	63	579	591
V/C Ratio(X)	0.32	0.30	0.31	0.09	0.44	0.10	0.34	0.67	0.67	0.49	0.69	0.69
Avail Cap(c_a), veh/h	567	812	793	606	875	741	1014	1786	1860	222	1015	1036
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	18.6	14.5	14.5	16.2	15.0	13.8	20.6	11.6	11.6	22.4	13.9	13.9
Incr Delay (d2), s/veh	0.6	0.4	0.4	0.1	0.7	0.1	1.4	1.1	1.1	5.8	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	1.0	0.3	1.5	0.3	0.5	2.9	3.0	0.4	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	14.8	14.9	16.3	15.7	13.9	22.1	12.7	12.7	28.2	15.3	15.3
LnGrp LOS	B	B	B	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		366			278			1022			840	
Approach Delay, s/veh		16.1			15.5			13.1			15.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	24.9		16.2	9.7	21.4		16.2				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.9	47.5		21.6	26.9	* 27		* 22				
Max Q Clear Time (g_c+1), s	12.8	12.4		10.4	3.2	11.3		6.4				
Green Ext Time (p_c), s	0.0	6.2		1.3	0.1	4.1		1.1				

Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	54	243	46	108	331	89	51	919	93	74	639	47
Future Volume (veh/h)	54	243	46	108	331	89	51	919	93	74	639	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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	59	264	50	117	360	97	55	999	101	80	695	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	256	746	139	316	693	184	146	1366	138	113	1255	92
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.42	0.42	0.06	0.37	0.37
Sat Flow, veh/h	934	2989	558	1066	2776	738	1781	3259	329	1781	3357	246
Grp Volume(v), veh/h	59	155	159	117	229	228	55	545	555	80	368	378
Grp Sat Flow(s),veh/h/ln	934	1777	1770	1066	1777	1737	1781	1777	1811	1781	1777	1826
Q Serve(g_s), s	3.3	4.0	4.1	5.7	6.2	6.4	1.6	14.4	14.4	2.5	9.2	9.2
Cycle Q Clear(g_c), s	9.6	4.0	4.1	9.8	6.2	6.4	1.6	14.4	14.4	2.5	9.2	9.2
Prop In Lane	1.00		0.32	1.00		0.42	1.00		0.18	1.00		0.13
Lane Grp Cap(c), veh/h	256	444	442	316	444	434	146	745	759	113	664	683
V/C Ratio(X)	0.23	0.35	0.36	0.37	0.52	0.53	0.38	0.73	0.73	0.71	0.55	0.55
Avail Cap(c_a), veh/h	381	681	679	468	697	682	921	1385	1411	311	792	814
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	22.3	17.3	17.3	21.4	18.1	18.2	24.4	13.6	13.6	25.7	13.9	13.9
Incr Delay (d2), s/veh	0.5	0.5	0.5	0.7	0.9	1.0	1.6	1.4	1.4	7.8	0.7	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	0.7	1.4	1.5	1.3	2.2	2.3	0.7	4.4	4.5	1.2	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	17.8	17.8	22.1	19.0	19.2	26.0	15.0	15.0	33.6	14.6	14.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		373			574			1155			826	
Approach Delay, s/veh		18.6			19.7			15.6			16.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	29.5		18.5	10.6	27.0		18.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.8	43.7		21.5	29.0	* 25		* 22				
Max Q Clear Time (g_c+1), s	14.5	16.4		11.6	3.6	11.2		11.8				
Green Ext Time (p_c), s	0.1	7.1		1.3	0.1	3.4		2.2				

Intersection Summary

HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↓		↔↔	↑↓		↔	↑↑↑	↔	↔	↑↑↑	
Traffic Volume (veh/h)	169	246	97	336	462	64	133	927	152	79	589	90
Future Volume (veh/h)	169	246	97	336	462	64	133	927	152	79	589	90
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	182	265	104	361	497	69	143	997	0	85	633	97
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	415	159	489	705	97	185	1641		110	1250	189
Arrive On Green	0.08	0.17	0.17	0.14	0.22	0.22	0.10	0.32	0.00	0.06	0.28	0.28
Sat Flow, veh/h	3456	2513	961	3456	3136	434	1781	5106	1585	1781	4475	677
Grp Volume(v), veh/h	182	185	184	361	281	285	143	997	0	85	480	250
Grp Sat Flow(s),veh/h/ln	1728	1777	1697	1728	1777	1792	1781	1702	1585	1781	1702	1748
Q Serve(g_s), s	3.5	6.6	6.9	6.8	9.8	9.9	5.3	11.1	0.0	3.2	8.0	8.2
Cycle Q Clear(g_c), s	3.5	6.6	6.9	6.8	9.8	9.9	5.3	11.1	0.0	3.2	8.0	8.2
Prop In Lane	1.00		0.57	1.00		0.24	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	283	294	280	489	400	403	185	1641		110	951	488
V/C Ratio(X)	0.64	0.63	0.65	0.74	0.70	0.71	0.77	0.61		0.77	0.50	0.51
Avail Cap(c_a), veh/h	577	656	627	842	792	799	466	3619		250	2001	1028
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	30.1	26.3	26.5	27.9	24.2	24.2	29.6	19.4	0.0	31.3	20.5	20.5
Incr Delay (d2), s/veh	2.4	2.2	2.6	2.2	2.3	2.3	6.7	0.4	0.0	10.9	0.4	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	1.5	2.8	2.8	2.8	4.2	4.2	2.5	4.1	0.0	1.6	3.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	28.6	29.0	30.1	26.4	26.5	36.3	19.7	0.0	42.2	20.9	21.4
LnGrp LOS	C	C	C	C	C	C	D	B		D	C	C
Approach Vol, veh/h		551			927			1140	A		815	
Approach Delay, s/veh		30.1			27.9			21.8			23.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	27.8	10.0	21.2	11.5	24.9	14.1	17.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9.5	48.0	11.3	30.2	17.7	39.8	16.5	25.0				
Max Q Clear Time (g_c+1/2), s	15.2	13.1	5.5	11.9	7.3	10.2	8.8	8.9				
Green Ext Time (p_c), s	0.1	8.6	0.3	3.3	0.2	5.3	0.8	2.0				

Intersection Summary

HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

Notes

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



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↖	↔	↗	↖	↔	↗	↖	↔
Traffic Volume (veh/h)	9	3	14	75	3	35	58	1190	33	20	988	24
Future Volume (veh/h)	9	3	14	75	3	35	58	1190	33	20	988	24
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	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	9	3	14	77	3	36	60	1227	34	21	1019	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	6	28	292	10	125	167	2251	699	46	1742	43
Arrive On Green	0.03	0.03	0.03	0.08	0.08	0.08	0.09	0.44	0.44	0.03	0.34	0.34
Sat Flow, veh/h	581	194	904	3456	123	1480	1781	5106	1585	1781	5126	126
Grp Volume(v), veh/h	26	0	0	77	0	39	60	1227	34	21	676	368
Grp Sat Flow(s),veh/h/ln	1679	0	0	1728	0	1604	1781	1702	1585	1781	1702	1848
Q Serve(g_s), s	0.7	0.0	0.0	0.9	0.0	1.0	1.4	8.0	0.6	0.5	7.4	7.4
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.9	0.0	1.0	1.4	8.0	0.6	0.5	7.4	7.4
Prop In Lane	0.35		0.54	1.00		0.92	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	52	0	0	292	0	136	167	2251	699	46	1157	628
V/C Ratio(X)	0.50	0.00	0.00	0.26	0.00	0.29	0.36	0.55	0.05	0.46	0.58	0.59
Avail Cap(c_a), veh/h	591	0	0	1217	0	565	706	3821	1186	196	1611	874
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	19.5	0.0	19.5	19.3	9.4	7.3	21.8	12.4	12.4
Incr Delay (d2), s/veh	7.4	0.0	0.0	0.5	0.0	1.2	1.3	0.2	0.0	7.1	0.5	0.9
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/lr	0.4	0.0	0.0	0.4	0.0	0.4	0.6	2.3	0.2	0.3	2.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	0.0	19.9	0.0	20.7	20.6	9.6	7.3	28.9	12.8	13.2
LnGrp LOS	C	A	A	B	A	C	C	A	A	C	B	B
Approach Vol, veh/h		26			116			1321			1065	
Approach Delay, s/veh		29.1			20.2			10.0			13.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	26.0		7.8	10.2	21.4		5.9				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	34.0		16.0	18.0	* 22		16.0				
Max Q Clear Time (g_c+1), s	12.5	10.0		3.0	3.4	9.4		2.7				
Green Ext Time (p_c), s	0.0	10.0		0.3	0.1	5.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Existing  
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	159	63	1220	88	22	1031
Future Volume (veh/h)	159	63	1220	88	22	1031
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	66	1271	92	23	1074
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	310	142	3268	1014	91	3776
Arrive On Green	0.09	0.09	0.64	0.64	0.03	0.74
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	166	66	1271	92	23	1074
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.8	2.4	7.3	1.4	0.4	4.3
Cycle Q Clear(g_c), s	2.8	2.4	7.3	1.4	0.4	4.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	310	142	3268	1014	91	3776
V/C Ratio(X)	0.54	0.46	0.39	0.09	0.25	0.28
Avail Cap(c_a), veh/h	2303	1056	3268	1014	281	3776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	26.6	5.3	4.2	29.4	2.6
Incr Delay (d2), s/veh	1.4	2.3	0.1	0.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.0	1.4	0.2	0.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.2	28.9	5.4	4.3	30.8	2.8
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	232		1363			1097
Approach Delay, s/veh	28.4		5.3			3.4
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.1	45.4			51.5	10.0
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	34.0			* 46	41.0
Max Q Clear Time (g_c+1), s	12.4	9.3			6.3	4.8
Green Ext Time (p_c), s	0.0	9.4			8.1	0.8

Intersection Summary

HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	208	0	381	0	956	350	0	822	389
Future Volume (veh/h)	0	0	0	208	0	381	0	956	350	0	822	389
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				224	0	410	0	1028	0	0	884	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				552	0	491	0	1620		0	1620	
Arrive On Green				0.31	0.00	0.31	0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				224	0	410	0	1028	0	0	884	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				4.0	0.0	9.8	0.0	9.0	0.0	0.0	7.3	0.0
Cycle Q Clear(g_c), s				4.0	0.0	9.8	0.0	9.0	0.0	0.0	7.3	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				552	0	491	0	1620		0	1620	
V/C Ratio(X)				0.41	0.00	0.83	0.00	0.63		0.00	0.55	
Avail Cap(c_a), veh/h				1668	0	1484	0	3721		0	3721	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.1	0.0	13.0	0.0	8.4	0.0	0.0	8.0	0.0
Incr Delay (d2), s/veh				0.5	0.0	3.8	0.0	0.4	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	3.2	0.0	1.8	0.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.5	0.0	16.8	0.0	8.9	0.0	0.0	8.3	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					634			1028	A		884	A
Approach Delay, s/veh					15.0			8.9			8.3	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		23.0				23.0		17.6				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		42.5				42.5		38.0				
Max Q Clear Time (g_c+11), s		11.0				9.3		11.8				
Green Ext Time (p_c), s		7.5				6.2		0.8				

Intersection Summary

HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Existing  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	279	3	260	0	0	0	0	1018	340	219	806	0
Future Volume (veh/h)	279	3	260	0	0	0	0	1018	340	219	806	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	373	0	180				0	1049	351	226	831	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	635	0	282				0	1580	529	287	2323	0
Arrive On Green	0.18	0.00	0.18				0.00	0.42	0.42	0.16	0.65	0.00
Sat Flow, veh/h	3563	0	1585				0	3950	1265	1781	3647	0
Grp Volume(v), veh/h	373	0	180				0	944	456	226	831	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1643	1781	1777	0
Q Serve(g_s), s	5.1	0.0	5.6				0.0	12.0	12.0	6.5	5.7	0.0
Cycle Q Clear(g_c), s	5.1	0.0	5.6				0.0	12.0	12.0	6.5	5.7	0.0
Prop In Lane	1.00		1.00				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	635	0	282				0	1422	686	287	2323	0
V/C Ratio(X)	0.59	0.00	0.64				0.00	0.66	0.66	0.79	0.36	0.00
Avail Cap(c_a), veh/h	1805	0	803				0	2030	979	599	3613	0
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	20.2	0.0	20.4				0.0	12.5	12.5	21.6	4.2	0.0
Incr Delay (d2), s/veh	0.9	0.0	2.4				0.0	0.5	1.1	4.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.1				0.0	3.3	3.3	2.6	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	22.8				0.0	13.1	13.7	26.4	4.3	0.0
LnGrp LOS	C	A	C				A	B	B	C	A	A
Approach Vol, veh/h		553						1400			1057	
Approach Delay, s/veh		21.6						13.3			9.0	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	12.6	26.9	14.0	39.5								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	18.0	31.9	27.1	* 54								
Max Q Clear Time (g_c+I), s	19.5	14.0	7.6	7.7								
Green Ext Time (p_c), s	0.4	8.4	1.9	5.9								

Intersection Summary

HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	296	512	76	147	898	102	102	629	166	181	806	373
Future Volume (veh/h)	296	512	76	147	898	102	102	629	166	181	806	373
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	348	602	89	173	1056	120	120	740	195	213	948	439
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	1708	530	240	1305	148	180	1117	498	282	1221	545
Arrive On Green	0.12	0.33	0.33	0.07	0.28	0.28	0.05	0.31	0.31	0.08	0.34	0.34
Sat Flow, veh/h	3456	5106	1585	3456	4652	528	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	348	602	89	173	772	404	120	740	195	213	948	439
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1775	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.3	9.3	4.2	5.1	22.2	22.2	3.6	18.9	10.1	6.3	25.1	26.4
Cycle Q Clear(g_c), s	10.3	9.3	4.2	5.1	22.2	22.2	3.6	18.9	10.1	6.3	25.1	26.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	1708	530	240	955	498	180	1117	498	282	1221	545
V/C Ratio(X)	0.82	0.35	0.17	0.72	0.81	0.81	0.67	0.66	0.39	0.76	0.78	0.81
Avail Cap(c_a), veh/h	609	2044	635	379	1136	592	270	1457	650	412	1602	715
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	44.8	26.3	24.6	47.8	35.1	35.1	48.8	31.1	28.1	47.2	30.8	31.2
Incr Delay (d2), s/veh	5.8	0.1	0.1	4.1	3.8	7.1	4.2	0.7	0.5	4.6	1.8	5.1
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	4.6	3.6	1.5	2.3	9.2	10.1	1.6	7.8	3.7	2.8	10.4	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	26.5	24.8	51.9	38.9	42.3	53.0	31.9	28.6	51.8	32.6	36.4
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	D
Approach Vol, veh/h		1039			1349			1055			1600	
Approach Delay, s/veh		34.4			41.6			33.7			36.2	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.1	39.0	11.8	41.1	10.0	42.1	17.4	35.4				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.5	43.0	11.5	42.0	8.2	47.3	18.5	35.0				
Max Q Clear Time (g_c+I1), s	8.3	20.9	7.1	11.3	5.6	28.4	12.3	24.2				
Green Ext Time (p_c), s	0.2	5.4	0.2	4.3	0.1	7.7	0.6	5.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay												36.7
HCM 6th LOS												D

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	510	37	116	622	71	33	85	60	77	95	55
Future Volume (veh/h)	27	510	37	116	622	71	33	85	60	77	95	55
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	580	42	132	707	81	38	97	68	88	108	62
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	1250	90	312	696	590	80	167	769	92	85	769
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	687	3361	243	802	1870	1585	13	344	1585	20	174	1585
Grp Volume(v), veh/h	31	306	316	132	707	81	135	0	68	196	0	62
Grp Sat Flow(s),veh/h/ln	687	1777	1827	802	1870	1585	357	0	1585	194	0	1585
Q Serve(g_s), s	0.5	8.3	8.3	9.4	23.5	2.1	0.9	0.0	1.5	0.9	0.0	1.3
Cycle Q Clear(g_c), s	23.5	8.3	8.3	17.3	23.5	2.1	30.6	0.0	1.5	30.6	0.0	1.3
Prop In Lane	1.00		0.13	1.00		1.00	0.28		1.00	0.45		1.00
Lane Grp Cap(c), veh/h	120	661	680	312	696	590	247	0	769	177	0	769
V/C Ratio(X)	0.26	0.46	0.46	0.42	1.02	0.14	0.55	0.00	0.09	1.11	0.00	0.08
Avail Cap(c_a), veh/h	120	661	680	312	696	590	294	0	816	221	0	816
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(l)	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	31.5	15.0	15.0	21.5	19.8	13.1	14.1	0.0	8.7	19.4	0.0	8.7
Incr Delay (d2), s/veh	1.1	0.5	0.5	0.9	38.1	0.1	1.9	0.0	0.0	93.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.5	0.5	2.8	2.9	1.6	15.6	0.7	0.9	0.0	0.4	5.8	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	15.5	15.5	22.4	58.0	13.2	16.0	0.0	8.8	112.8	0.0	8.7
LnGrp LOS	C	B	B	C	F	B	B	A	A	F	A	A
Approach Vol, veh/h		653			920			203			258	
Approach Delay, s/veh		16.4			48.9			13.6			87.8	
Approach LOS		B			D			B			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		28.0		36.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		32.5		23.5		32.5		23.5				
Max Q Clear Time (g_c+I1), s		32.6		25.5		32.6		25.5				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay												39.9
HCM 6th LOS												D

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	564	71	202	661	226	58	449	109	192	839	121
Future Volume (veh/h)	119	564	71	202	661	226	58	449	109	192	839	121
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	138	656	83	235	769	263	67	522	127	223	976	141
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	858	108	265	847	290	86	736	178	253	1100	159
Arrive On Green	0.09	0.27	0.27	0.15	0.33	0.33	0.05	0.26	0.26	0.14	0.35	0.35
Sat Flow, veh/h	1781	3174	401	1781	2599	889	1781	2837	687	1781	3116	450
Grp Volume(v), veh/h	138	367	372	235	526	506	67	326	323	223	556	561
Grp Sat Flow(s),veh/h/ln	1781	1777	1798	1781	1777	1710	1781	1777	1747	1781	1777	1789
Q Serve(g_s), s	8.9	22.2	22.3	15.1	33.1	33.1	4.3	19.5	19.6	14.4	34.5	34.5
Cycle Q Clear(g_c), s	8.9	22.2	22.3	15.1	33.1	33.1	4.3	19.5	19.6	14.4	34.5	34.5
Prop In Lane	1.00		0.22	1.00		0.52	1.00		0.39	1.00		0.25
Lane Grp Cap(c), veh/h	166	480	486	265	579	558	86	461	453	253	627	632
V/C Ratio(X)	0.83	0.76	0.77	0.89	0.91	0.91	0.78	0.71	0.71	0.88	0.89	0.89
Avail Cap(c_a), veh/h	210	506	512	328	623	600	114	509	501	315	710	715
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(l)	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	52.1	39.2	39.2	48.8	37.7	37.7	55.0	39.2	39.3	49.2	35.6	35.6
Incr Delay (d2), s/veh	19.9	6.5	6.5	21.1	16.5	17.0	21.4	4.0	4.2	20.8	12.0	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.2	10.3	8.1	16.3	15.8	2.4	8.7	8.6	7.7	16.2	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	45.7	45.7	69.9	54.2	54.7	76.4	43.2	43.5	70.0	47.6	47.6
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		877			1267			716			1340	
Approach Delay, s/veh		49.8			57.3			46.5			51.3	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.1	36.3	15.4	44.1	10.1	47.3	21.9	37.6				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	20.7	33.5	13.8	41.0	7.5	46.7	21.5	33.3				
Max Q Clear Time (g_c+11g), s	11.4	21.6	10.9	35.1	6.3	36.5	17.1	24.3				
Green Ext Time (p_c), s	0.2	2.9	0.1	3.0	0.0	4.8	0.3	2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					52.0							
HCM 6th LOS					D							

<b>Intersection</b>												
Intersection Delay, s/veh	17											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	59	127	6	35	120	68	50	162	39	42	147	80
Future Vol, veh/h	59	127	6	35	120	68	50	162	39	42	147	80
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	161	8	44	152	86	63	205	49	53	186	101
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.5	16.2	17.6	18.2
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	31%	16%	16%
Vol Thru, %	65%	66%	54%	55%
Vol Right, %	16%	3%	30%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	192	223	269
LT Vol	50	59	35	42
Through Vol	162	127	120	147
RT Vol	39	6	68	80
Lane Flow Rate	318	243	282	341
Geometry Grp	1	1	1	1
Degree of Util (X)	0.566	0.458	0.51	0.594
Departure Headway (Hd)	6.417	6.784	6.504	6.281
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	527	550	572
Service Time	4.495	4.867	4.582	4.357
HCM Lane V/C Ratio	0.569	0.461	0.513	0.596
HCM Control Delay	17.6	15.5	16.2	18.2
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	3.5	2.4	2.9	3.9



9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	32	128	52	68	86	29	92	562	146	65	1014	41
Future Volume (veh/h)	32	128	52	68	86	29	92	562	146	65	1014	41
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	38	151	61	80	101	34	108	661	172	76	1193	48
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	209	76	176	194	346	180	1808	806	99	1536	62
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.10	0.51	0.51	0.06	0.44	0.44
Sat Flow, veh/h	118	958	347	459	889	1585	1781	3554	1585	1781	3482	140
Grp Volume(v), veh/h	250	0	0	181	0	34	108	661	172	76	608	633
Grp Sat Flow(s),veh/h/ln	1423	0	0	1348	0	1585	1781	1777	1585	1781	1777	1845
Q Serve(g_s), s	4.0	0.0	0.0	0.0	0.0	1.2	4.0	7.8	4.1	2.9	20.1	20.1
Cycle Q Clear(g_c), s	12.1	0.0	0.0	8.1	0.0	1.2	4.0	7.8	4.1	2.9	20.1	20.1
Prop In Lane	0.15		0.24	0.44		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	371	0	0	370	0	346	180	1808	806	99	784	814
V/C Ratio(X)	0.67	0.00	0.00	0.49	0.00	0.10	0.60	0.37	0.21	0.77	0.78	0.78
Avail Cap(c_a), veh/h	672	0	0	646	0	643	568	2935	1309	271	1184	1230
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	0.0	23.9	0.0	21.5	29.7	10.2	9.3	32.2	16.4	16.4
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.0	0.0	0.1	3.2	0.1	0.1	11.7	1.9	1.8
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	3.8	0.0	0.0	2.5	0.0	0.4	1.7	2.4	1.2	1.5	7.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	0.0	0.0	24.9	0.0	21.7	32.8	10.4	9.5	43.8	18.2	18.2
LnGrp LOS	C	A	A	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		250			215			941			1317	
Approach Delay, s/veh		27.6			24.4			12.8			19.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	41.1		19.6	13.0	36.5		19.6				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	10.5	57.0		27.5	22.0	* 46		* 28				
Max Q Clear Time (g_c+14), s	14.9	9.8		14.1	6.0	22.1		10.1				
Green Ext Time (p_c), s	0.1	5.3		1.1	0.2	8.3		1.0				

Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

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



Intersection

Intersection Delay, s/veh 44.2

Intersection LOS E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	52	222	36	30	232	97	76	143	41	82	189	49
Future Vol, veh/h	52	222	36	30	232	97	76	143	41	82	189	49
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	271	44	37	283	118	93	174	50	100	230	60
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	42.5	33.6	28.7	70.3
HCM LOS	E	D	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	0%	19%	0%	11%	0%	26%
Vol Thru, %	65%	0%	81%	0%	89%	0%	59%
Vol Right, %	0%	100%	0%	100%	0%	100%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	219	41	274	36	262	97	320
LT Vol	76	0	52	0	30	0	82
Through Vol	143	0	222	0	232	0	189
RT Vol	0	41	0	36	0	97	49
Lane Flow Rate	267	50	334	44	320	118	390
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.701	0.119	0.85	0.101	0.808	0.273	0.977
Departure Headway (Hd)	9.448	8.535	9.155	8.322	9.108	8.315	9.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	420	394	430	396	432	402
Service Time	7.213	6.3	6.916	6.083	6.874	6.08	7.075
HCM Lane V/C Ratio	0.699	0.119	0.848	0.102	0.808	0.273	0.97
HCM Control Delay	31.7	12.5	46.5	12	40.8	14.2	70.3
HCM Lane LOS	D	B	E	B	E	B	F
HCM 95th-tile Q	5.2	0.4	8.1	0.3	7.2	1.1	11.5

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	198	55	23	180	41	88	717	43	50	992	91
Future Volume (veh/h)	98	198	55	23	180	41	88	717	43	50	992	91
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	117	236	65	27	214	49	105	854	51	60	1181	108
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	666	179	277	450	381	169	1743	104	85	1463	134
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.09	0.51	0.51	0.05	0.44	0.44
Sat Flow, veh/h	1116	2768	745	1078	1870	1585	1781	3407	203	1781	3292	301
Grp Volume(v), veh/h	117	150	151	27	214	49	105	445	460	60	636	653
Grp Sat Flow(s),veh/h/ln	1116	1777	1736	1078	1870	1585	1781	1777	1834	1781	1777	1816
Q Serve(g_s), s	7.5	5.2	5.4	1.6	7.3	1.8	4.2	12.2	12.2	2.5	23.2	23.3
Cycle Q Clear(g_c), s	14.9	5.2	5.4	7.0	7.3	1.8	4.2	12.2	12.2	2.5	23.2	23.3
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.11	1.00		0.17
Lane Grp Cap(c), veh/h	255	427	418	277	450	381	169	909	938	85	789	807
V/C Ratio(X)	0.46	0.35	0.36	0.10	0.48	0.13	0.62	0.49	0.49	0.71	0.81	0.81
Avail Cap(c_a), veh/h	337	558	545	364	600	508	666	1476	1524	221	1044	1068
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(l)	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	30.7	23.6	23.7	26.6	24.4	22.3	32.6	11.9	11.9	35.1	18.0	18.0
Incr Delay (d2), s/veh	1.3	0.5	0.5	0.2	0.8	0.2	3.7	0.4	0.4	10.3	3.5	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	2.0	2.1	2.1	0.4	3.0	0.6	1.8	3.9	4.0	1.2	8.7	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	24.1	24.2	26.7	25.2	22.4	36.3	12.3	12.3	45.4	21.6	21.6
LnGrp LOS	C	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		418			290			1010			1349	
Approach Delay, s/veh		26.3			24.8			14.8			22.6	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	44.3		22.5	13.1	39.3		22.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	3	62.2		23.5	28.0	* 44		* 24				
Max Q Clear Time (g_c+14.5), s	14.5	14.2		16.9	6.2	25.3		9.3				
Green Ext Time (p_c), s	0.0	5.8		1.1	0.2	7.9		1.1				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	61	187	63	68	202	81	45	748	79	82	910	76
Future Volume (veh/h)	61	187	63	68	202	81	45	748	79	82	910	76
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	67	205	69	75	222	89	49	822	87	90	1000	84
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	525	172	276	499	194	137	1475	156	122	1389	117
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.08	0.45	0.45	0.07	0.42	0.42
Sat Flow, veh/h	1068	2632	860	1105	2501	972	1781	3242	343	1781	3318	279
Grp Volume(v), veh/h	67	136	138	75	156	155	49	450	459	90	535	549
Grp Sat Flow(s),veh/h/ln	1068	1777	1715	1105	1777	1695	1781	1777	1809	1781	1777	1820
Q Serve(g_s), s	3.2	3.6	3.8	3.4	4.2	4.4	1.4	10.0	10.0	2.7	13.6	13.6
Cycle Q Clear(g_c), s	7.6	3.6	3.8	7.2	4.2	4.4	1.4	10.0	10.0	2.7	13.6	13.6
Prop In Lane	1.00		0.50	1.00		0.57	1.00		0.19	1.00		0.15
Lane Grp Cap(c), veh/h	260	354	342	276	354	338	137	808	823	122	744	762
V/C Ratio(X)	0.26	0.39	0.40	0.27	0.44	0.46	0.36	0.56	0.56	0.74	0.72	0.72
Avail Cap(c_a), veh/h	472	706	682	505	723	690	955	1971	2006	445	1478	1514
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	22.4	18.8	18.8	22.0	19.0	19.1	23.7	10.8	10.8	24.7	13.1	13.1
Incr Delay (d2), s/veh	0.5	0.7	0.8	0.5	0.9	1.0	1.6	0.6	0.6	8.4	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.3	1.3	0.8	1.5	1.5	0.6	2.8	2.8	1.3	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	19.5	19.6	22.5	19.9	20.1	25.3	11.4	11.4	33.1	14.4	14.4
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		341			386			958			1174	
Approach Delay, s/veh		20.2			20.5			12.1			15.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	30.6		15.3	10.2	28.6		15.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	13.5	60.0		21.5	29.0	* 45		* 22				
Max Q Clear Time (g_c+14), s	14.7	12.0		9.6	3.4	15.6		9.2				
Green Ext Time (p_c), s	0.1	5.9		1.3	0.1	7.1		1.5				

Intersection Summary

HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↔↔↔		
Traffic Volume (veh/h)	104	184	135	232	261	47	93	720	122	37	919	64
Future Volume (veh/h)	104	184	135	232	261	47	93	720	122	37	919	64
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		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	109	194	142	244	275	49	98	758	0	39	967	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	314	218	365	586	103	128	1836		70	1596	110
Arrive On Green	0.07	0.16	0.16	0.11	0.19	0.19	0.07	0.36	0.00	0.04	0.33	0.33
Sat Flow, veh/h	3456	2004	1392	3456	3021	531	1781	5106	1585	1781	4876	337
Grp Volume(v), veh/h	109	171	165	244	160	164	98	758	0	39	674	360
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1775	1781	1702	1585	1781	1702	1810
Q Serve(g_s), s	1.9	5.6	5.9	4.2	5.0	5.1	3.4	6.9	0.0	1.3	10.3	10.3
Cycle Q Clear(g_c), s	1.9	5.6	5.9	4.2	5.0	5.1	3.4	6.9	0.0	1.3	10.3	10.3
Prop In Lane	1.00		0.86	1.00		0.30	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	236	279	254	365	345	344	128	1836		70	1114	592
V/C Ratio(X)	0.46	0.61	0.65	0.67	0.46	0.48	0.77	0.41		0.56	0.61	0.61
Avail Cap(c_a), veh/h	407	716	653	697	865	864	330	3706		187	2196	1167
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	27.8	24.4	24.5	26.7	22.1	22.2	28.3	14.9	0.0	29.2	17.5	17.5
Incr Delay (d2), s/veh	1.4	2.2	2.8	2.1	1.0	1.0	9.3	0.1	0.0	6.7	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.4	2.3	1.8	2.0	2.1	1.7	2.4	0.0	0.7	3.7	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	26.6	27.3	28.8	23.1	23.2	37.5	15.1	0.0	35.9	18.0	18.5
LnGrp LOS	C	C	C	C	C	C	D	B		D	B	B
Approach Vol, veh/h		445			568			856	A		1073	
Approach Delay, s/veh		27.5			25.6			17.7			18.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.9	28.3	8.7	18.0	8.9	26.3	11.0	15.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	6.5	45.0	7.3	30.2	11.5	40.0	12.5	25.0				
Max Q Clear Time (g_c+1), s	13.3	8.9	3.9	7.1	5.4	12.3	6.2	7.9				
Green Ext Time (p_c), s	0.0	6.2	0.1	1.9	0.1	8.0	0.4	1.8				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗ ↗	↗	↗ ↗ ↗ ↗	↗	↗ ↗ ↗ ↗	
Traffic Volume (veh/h)	7	0	14	12	0	18	49	970	51	21	1246	9
Future Volume (veh/h)	7	0	14	12	0	18	49	970	51	21	1246	9
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	7	0	14	12	0	19	51	1000	53	22	1285	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	0	28	122	0	56	146	2666	828	47	2280	16
Arrive On Green	0.03	0.00	0.03	0.04	0.00	0.04	0.08	0.52	0.52	0.03	0.44	0.44
Sat Flow, veh/h	548	0	1097	3456	0	1585	1781	5106	1585	1781	5231	37
Grp Volume(v), veh/h	21	0	0	12	0	19	51	1000	53	22	836	458
Grp Sat Flow(s),veh/h/ln	1645	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	0.6	0.0	0.0	0.2	0.0	0.6	1.3	5.7	0.8	0.6	8.9	8.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.2	0.0	0.6	1.3	5.7	0.8	0.6	8.9	8.9
Prop In Lane	0.33		0.67	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	42	0	0	122	0	56	146	2666	828	47	1483	812
V/C Ratio(X)	0.50	0.00	0.00	0.10	0.00	0.34	0.35	0.38	0.06	0.47	0.56	0.56
Avail Cap(c_a), veh/h	559	0	0	1137	0	522	806	5462	1696	238	2591	1419
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	0.0	22.7	0.0	22.9	21.1	6.9	5.7	23.3	10.3	10.3
Incr Delay (d2), s/veh	9.0	0.0	0.0	0.4	0.0	3.6	1.4	0.1	0.0	7.0	0.3	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	0.3	0.0	0.0	0.1	0.0	0.3	0.6	1.5	0.2	0.3	2.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.4	0.0	0.0	23.1	0.0	26.5	22.5	7.0	5.8	30.4	10.6	10.9
LnGrp LOS	C	A	A	C	A	C	C	A	A	C	B	B
Approach Vol, veh/h		21			31			1104			1316	
Approach Delay, s/veh		32.4			25.1			7.6			11.0	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	31.4		5.7	10.0	27.2		5.7				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5	52.0		16.0	22.0	* 37		16.5				
Max Q Clear Time (g_c+1), s	12.6	7.7		2.6	3.3	10.9		2.6				
Green Ext Time (p_c), s	0.0	9.3		0.1	0.1	10.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Existing w Project  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	85	28	1030	68	32	1254
Future Volume (veh/h)	85	28	1030	68	32	1254
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	29	1073	71	33	1306
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	203	93	3665	1138	113	4124
Arrive On Green	0.06	0.06	0.72	0.72	0.03	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	89	29	1073	71	33	1306
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.4	5.9	1.0	0.7	5.2
Cycle Q Clear(g_c), s	2.0	1.4	5.9	1.0	0.7	5.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	203	93	3665	1138	113	4124
V/C Ratio(X)	0.44	0.31	0.29	0.06	0.29	0.32
Avail Cap(c_a), veh/h	1670	766	3665	1138	330	4124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.7	35.5	4.0	3.3	37.1	2.0
Incr Delay (d2), s/veh	1.5	1.9	0.0	0.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.6	1.1	0.2	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.2	37.4	4.0	3.3	38.6	2.2
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	118		1144			1339
Approach Delay, s/veh	37.3		4.0			3.1
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.1	62.4			69.5	9.1
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	7.5	49.5			* 64	38.0
Max Q Clear Time (g_c+1/2, s)	7.5	7.9			7.2	4.0
Green Ext Time (p_c), s	0.0	8.5			11.3	0.4

Intersection Summary

HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	164	0	347	0	720	197	0	1113	337
Future Volume (veh/h)	0	0	0	164	0	347	0	720	197	0	1113	337
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				174	0	369	0	766	0	0	1184	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				499	0	444	0	1802		0	1802	
Arrive On Green				0.28	0.00	0.28	0.00	0.51	0.00	0.00	0.51	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				174	0	369	0	766	0	0	1184	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				3.5	0.0	9.7	0.0	6.0	0.0	0.0	11.0	0.0
Cycle Q Clear(g_c), s				3.5	0.0	9.7	0.0	6.0	0.0	0.0	11.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				499	0	444	0	1802		0	1802	
V/C Ratio(X)				0.35	0.00	0.83	0.00	0.43		0.00	0.66	
Avail Cap(c_a), veh/h				1119	0	995	0	4184		0	4184	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.8	0.0	15.1	0.0	6.9	0.0	0.0	8.1	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.1	0.0	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	3.4	0.0	1.2	0.0	0.0	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.2	0.0	19.2	0.0	7.1	0.0	0.0	8.5	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					543			766	A		1184	A
Approach Delay, s/veh					17.3			7.1			8.5	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		27.1				27.1		17.5				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		52.5				52.5		28.0				
Max Q Clear Time (g_c+I1), s		8.0				13.0		11.7				
Green Ext Time (p_c), s		5.3				9.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Notes

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



9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Existing w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	4	334	0	0	0	0	658	321	418	875	0
Future Volume (veh/h)	278	4	334	0	0	0	0	658	321	418	875	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	426	0	233				0	715	349	454	951	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	722	0	321				0	1062	495	505	2337	0
Arrive On Green	0.20	0.00	0.20				0.00	0.31	0.31	0.28	0.66	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	426	0	233				0	715	349	454	951	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	7.0	0.0	8.9				0.0	11.8	12.5	15.8	8.1	0.0
Cycle Q Clear(g_c), s	7.0	0.0	8.9				0.0	11.8	12.5	15.8	8.1	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	722	0	321				0	1062	495	505	2337	0
V/C Ratio(X)	0.59	0.00	0.73				0.00	0.67	0.71	0.90	0.41	0.00
Avail Cap(c_a), veh/h	1492	0	664				0	1532	713	580	3005	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.3	0.0	24.0				0.0	19.3	19.6	22.2	5.2	0.0
Incr Delay (d2), s/veh	0.8	0.0	3.1				0.0	0.8	1.9	15.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.4				0.0	4.0	4.1	7.7	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	27.1				0.0	20.1	21.4	37.7	5.3	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		659						1064			1405	
Approach Delay, s/veh		25.1						20.5			15.8	
Approach LOS		C						C			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	22.3	24.6	17.6	46.9								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	1.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+1/3), s	11.0	14.5	10.9	10.1								
Green Ext Time (p_c), s	0.5	5.6	2.2	7.1								

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	6	2	249	20	4	308
Future Vol, veh/h	6	2	249	20	4	308
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	271	22	4	335

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	625	282	0	0	293
Stage 1	282	-	-	-	-
Stage 2	343	-	-	-	-
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	449	757	-	-	1269
Stage 1	766	-	-	-	-
Stage 2	719	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	447	757	-	-	1269
Mov Cap-2 Maneuver	447	-	-	-	-
Stage 1	763	-	-	-	-
Stage 2	719	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	498	1269
HCM Lane V/C Ratio	-	-	0.017	0.003
HCM Control Delay (s)	-	-	12.4	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	269	0	0	314
Future Vol, veh/h	0	0	269	0	0	314
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	292	0	0	341

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	633	292	0	0	292	0
Stage 1	292	-	-	-	-	-
Stage 2	341	-	-	-	-	-
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	444	747	-	-	1270	-
Stage 1	758	-	-	-	-	-
Stage 2	720	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	444	747	-	-	1270	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	720	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1270	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	12	0	2	0	267	46	5	313	0
Future Vol, veh/h	0	0	0	12	0	2	0	267	46	5	313	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	13	0	2	0	290	50	5	340	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	666	690	340	665	665	315	340	0	0	340	0	0
Stage 1	350	350	-	315	315	-	-	-	-	-	-	-
Stage 2	316	340	-	350	350	-	-	-	-	-	-	-
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	373	368	702	374	381	725	1219	-	-	1219	-	-
Stage 1	666	633	-	696	656	-	-	-	-	-	-	-
Stage 2	695	639	-	666	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	370	366	702	373	379	725	1219	-	-	1219	-	-
Mov Cap-2 Maneuver	370	366	-	373	379	-	-	-	-	-	-	-
Stage 1	666	630	-	696	656	-	-	-	-	-	-	-
Stage 2	693	639	-	663	630	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		14.3		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1219	-	-	-	401	1219	-	-
HCM Lane V/C Ratio	-	-	-	-	0.038	0.004	-	-
HCM Control Delay (s)	0	-	-	0	14.3	8	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	201	7	36	221	2	12
Future Vol, veh/h	201	7	36	221	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	8	39	240	2	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	226	0	540 222
Stage 1	-	-	-	-	222 -
Stage 2	-	-	-	-	318 -
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	-	-	1342	-	503 818
Stage 1	-	-	-	-	815 -
Stage 2	-	-	-	-	738 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1342	-	486 818
Mov Cap-2 Maneuver	-	-	-	-	486 -
Stage 1	-	-	-	-	787 -
Stage 2	-	-	-	-	738 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	745	-	-	1342	-
HCM Lane V/C Ratio	0.02	-	-	0.029	-
HCM Control Delay (s)	9.9	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	10	33	843	1137	8
Future Vol, veh/h	2	10	33	843	1137	8
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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	2	11	36	916	1236	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1771	623	1245	0	-	0
Stage 1	1241	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	74	429	226	-	-	-
Stage 1	236	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	62	429	226	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	198	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	226	-	216	-	-
HCM Lane V/C Ratio	0.159	-	0.06	-	-
HCM Control Delay (s)	23.9	-	22.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	7	26	819	1138	0
Future Vol, veh/h	0	7	26	819	1138	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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	29	910	1264	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1777	632	1264	0	-	0
Stage 1	1264	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	74	423	546	-	-	-
Stage 1	229	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	423	546	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	204	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	546	-	423	-	-
HCM Lane V/C Ratio	0.053	-	0.018	-	-
HCM Control Delay (s)	12	0.6	13.7	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑↑	↖	↖↗	↑↑↑		↖↗	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (veh/h)	444	1051	135	231	685	179	144	769	227	192	540	265
Future Volume (veh/h)	444	1051	135	231	685	179	144	769	227	192	540	265
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	458	1084	139	238	706	185	148	793	234	198	557	273
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	1546	480	322	955	247	220	1035	462	273	1089	486
Arrive On Green	0.16	0.30	0.30	0.09	0.24	0.24	0.06	0.29	0.29	0.08	0.31	0.31
Sat Flow, veh/h	3456	5106	1585	3456	4041	1045	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	458	1084	139	238	593	298	148	793	234	198	557	273
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1682	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.5	16.9	6.0	6.0	14.5	14.8	3.8	18.3	11.0	5.0	11.6	13.0
Cycle Q Clear(g_c), s	11.5	16.9	6.0	6.0	14.5	14.8	3.8	18.3	11.0	5.0	11.6	13.0
Prop In Lane	1.00		1.00	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	1546	480	322	805	398	220	1035	462	273	1089	486
V/C Ratio(X)	0.83	0.70	0.29	0.74	0.74	0.75	0.67	0.77	0.51	0.73	0.51	0.56
Avail Cap(c_a), veh/h	723	1995	619	527	1137	562	339	1634	729	342	1638	730
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(l)	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	36.6	27.7	23.9	39.7	31.7	31.8	41.1	29.0	26.5	40.4	25.6	26.1
Incr Delay (d2), s/veh	6.3	0.8	0.3	3.3	1.6	3.4	3.5	1.2	0.9	5.7	0.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	6.5	2.1	2.6	5.7	6.0	1.6	7.4	4.0	2.3	4.6	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	28.5	24.3	43.0	33.3	35.3	44.7	30.3	27.3	46.1	26.0	27.1
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		1681			1129			1175			1028	
Approach Delay, s/veh		32.0			35.9			31.5			30.2	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	32.2	12.9	33.2	10.2	33.5	18.8	27.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	8.9	41.3	13.7	35.1	8.8	41.4	18.8	30.0				
Max Q Clear Time (g_c+I1), s	7.0	20.3	8.0	18.9	5.8	15.0	13.5	16.8				
Green Ext Time (p_c), s	0.1	5.9	0.4	6.8	0.1	4.5	0.8	4.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				32.4								
HCM 6th LOS				C								

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	699	24	12	527	92	29	143	77	48	97	33
Future Volume (veh/h)	42	699	24	12	527	92	29	143	77	48	97	33
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	44	736	25	13	555	97	31	151	81	51	102	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1449	49	372	773	655	120	389	556	145	222	556
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	780	3507	119	705	1870	1585	28	1109	1585	55	632	1585
Grp Volume(v), veh/h	44	373	388	13	555	97	182	0	81	153	0	35
Grp Sat Flow(s),veh/h/ln	780	1777	1849	705	1870	1585	1137	0	1585	687	0	1585
Q Serve(g_s), s	1.9	5.9	6.0	0.5	9.5	1.5	0.6	0.0	1.3	0.9	0.0	0.6
Cycle Q Clear(g_c), s	11.1	5.9	6.0	6.4	9.5	1.5	12.7	0.0	1.3	12.9	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.17		1.00	0.33		1.00
Lane Grp Cap(c), veh/h	324	734	764	372	773	655	509	0	556	367	0	556
V/C Ratio(X)	0.14	0.51	0.51	0.03	0.72	0.15	0.36	0.00	0.15	0.42	0.00	0.06
Avail Cap(c_a), veh/h	461	1047	1090	496	1102	934	1192	0	1183	978	0	1183
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(l)	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	13.8	8.3	8.3	10.6	9.3	7.0	9.3	0.0	8.5	9.7	0.0	8.2
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.0	1.3	0.1	0.4	0.0	0.1	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.3		1.4	1.4	0.1	2.4	0.3	0.7	0.0	0.3	0.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	8.9	8.8	10.7	10.6	7.1	9.7	0.0	8.6	10.5	0.0	8.3
LnGrp LOS	B	A	A	B	B	A	A	A	A	B	A	A
Approach Vol, veh/h		805			665			263			188	
Approach Delay, s/veh		9.1			10.1			9.4			10.1	
Approach LOS		A			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.5		20.5		18.5		20.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+I1), s		14.7		13.1		14.9		11.5				
Green Ext Time (p_c), s		0.9		3.2		0.7		2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											9.6	
HCM 6th LOS											A	



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	633	50	138	568	202	69	758	144	118	527	111
Future Volume (veh/h)	174	633	50	138	568	202	69	758	144	118	527	111
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	185	673	53	147	604	215	73	806	153	126	561	118
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	976	77	180	694	247	94	925	176	156	1009	212
Arrive On Green	0.12	0.29	0.29	0.10	0.27	0.27	0.05	0.31	0.31	0.09	0.35	0.35
Sat Flow, veh/h	1781	3337	263	1781	2570	913	1781	2980	566	1781	2924	613
Grp Volume(v), veh/h	185	358	368	147	417	402	73	481	478	126	340	339
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1777	1706	1781	1777	1769	1781	1777	1760
Q Serve(g_s), s	10.2	18.0	18.0	8.1	22.6	22.6	4.1	25.7	25.8	7.0	15.6	15.7
Cycle Q Clear(g_c), s	10.2	18.0	18.0	8.1	22.6	22.6	4.1	25.7	25.8	7.0	15.6	15.7
Prop In Lane	1.00		0.14	1.00		0.54	1.00		0.32	1.00		0.35
Lane Grp Cap(c), veh/h	220	520	533	180	480	461	94	552	549	156	613	608
V/C Ratio(X)	0.84	0.69	0.69	0.82	0.87	0.87	0.78	0.87	0.87	0.81	0.55	0.56
Avail Cap(c_a), veh/h	341	586	601	306	550	528	182	635	632	221	674	667
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(l)	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	43.2	31.6	31.6	44.4	35.1	35.1	47.1	32.8	32.8	45.1	26.7	26.7
Incr Delay (d2), s/veh	10.7	2.9	2.9	8.8	12.8	13.4	12.7	11.4	11.4	13.7	0.8	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/lr	5.0	7.7	7.9	3.9	10.9	10.6	2.1	12.1	12.1	3.6	6.3	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	34.5	34.5	53.1	47.8	48.5	59.8	44.2	44.3	58.8	27.5	27.6
LnGrp LOS	D	C	C	D	D	D	E	D	D	E	C	C
Approach Vol, veh/h		911			966			1032			805	
Approach Delay, s/veh		38.4			48.9			45.3			32.5	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.3	37.3	16.9	33.2	9.8	40.8	14.7	35.5				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.5	36.0	19.3	31.2	10.3	38.2	17.3	33.2				
Max Q Clear Time (g_c+19), s	19.0	27.8	12.2	24.6	6.1	17.7	10.1	20.0				
Green Ext Time (p_c), s	0.1	3.5	0.3	2.6	0.0	3.7	0.2	3.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											41.8	
HCM 6th LOS											D	

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	171	44	47	143	21	39	207	26	3	169	17
Future Vol, veh/h	42	171	44	47	143	21	39	207	26	3	169	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	184	47	51	154	23	42	223	28	3	182	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	12.4	13.8	11.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	16%	22%	2%
Vol Thru, %	76%	67%	68%	89%
Vol Right, %	10%	17%	10%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	272	257	211	189
LT Vol	39	42	47	3
Through Vol	207	171	143	169
RT Vol	26	44	21	17
Lane Flow Rate	292	276	227	203
Geometry Grp	1	1	1	1
Degree of Util (X)	0.467	0.44	0.371	0.333
Departure Headway (Hd)	5.752	5.738	5.883	5.9
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	623	622	608	604
Service Time	3.83	3.818	3.965	3.987
HCM Lane V/C Ratio	0.469	0.444	0.373	0.336
HCM Control Delay	13.8	13.3	12.4	11.9
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.5	2.2	1.7	1.5

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	49	119	64	116	105	62	58	881	111	26	644	48
Future Volume (veh/h)	49	119	64	116	105	62	58	881	111	26	644	48
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	53	128	69	125	113	67	62	947	119	28	692	52
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	201	90	263	197	419	165	1432	639	57	1048	79
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.09	0.40	0.40	0.03	0.31	0.31
Sat Flow, veh/h	132	759	340	577	744	1585	1781	3554	1585	1781	3350	252
Grp Volume(v), veh/h	250	0	0	238	0	67	62	947	119	28	367	377
Grp Sat Flow(s),veh/h/ln	1230	0	0	1322	0	1585	1781	1777	1585	1781	1777	1825
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	1.6	1.6	10.8	2.4	0.8	8.9	8.9
Cycle Q Clear(g_c), s	10.4	0.0	0.0	8.1	0.0	1.6	1.6	10.8	2.4	0.8	8.9	8.9
Prop In Lane	0.21		0.28	0.53		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	413	0	0	459	0	419	165	1432	639	57	556	571
V/C Ratio(X)	0.61	0.00	0.00	0.52	0.00	0.16	0.38	0.66	0.19	0.49	0.66	0.66
Avail Cap(c_a), veh/h	904	0	0	913	0	921	749	2904	1295	203	925	950
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.2	0.0	14.1	21.3	12.1	9.6	23.8	14.9	14.9
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.9	0.0	0.2	1.4	0.5	0.1	6.3	1.3	1.3
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	2.2	0.0	0.0	2.1	0.0	0.5	0.6	3.2	0.6	0.4	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	0.0	0.0	17.1	0.0	14.3	22.7	12.7	9.8	30.0	16.2	16.2
LnGrp LOS	B	A	A	B	A	B	C	B	A	C	B	B
Approach Vol, veh/h		250			305			1128			772	
Approach Delay, s/veh		18.1			16.5			12.9			16.7	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	26.1		17.7	10.6	21.6		17.7				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.7	40.8		28.5	21.0	* 26		* 29				
Max Q Clear Time (g_c+1/2), s	12.8	12.8		12.4	3.6	10.9		10.1				
Green Ext Time (p_c), s	0.0	7.3		1.2	0.1	3.7		1.5				

Intersection Summary

HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	22.5											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	50	236	43	39	247	68	32	195	30	77	191	45
Future Vol, veh/h	50	236	43	39	247	68	32	195	30	77	191	45
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	243	44	40	255	70	33	201	31	79	197	46
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	22.2	21.2	18.4	27.6
HCM LOS	C	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	0%	17%	0%	14%	0%	25%
Vol Thru, %	86%	0%	83%	0%	86%	0%	61%
Vol Right, %	0%	100%	0%	100%	0%	100%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	30	286	43	286	68	313
LT Vol	32	0	50	0	39	0	77
Through Vol	195	0	236	0	247	0	191
RT Vol	0	30	0	43	0	68	45
Lane Flow Rate	234	31	295	44	295	70	323
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.526	0.063	0.646	0.087	0.642	0.137	0.704
Departure Headway (Hd)	8.086	7.291	7.884	7.07	7.833	7.04	7.85
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	447	491	457	506	460	509	461
Service Time	5.838	5.043	5.635	4.821	5.585	4.791	5.901
HCM Lane V/C Ratio	0.523	0.063	0.646	0.087	0.641	0.138	0.701
HCM Control Delay	19.5	10.5	24	10.5	23.7	10.9	27.6
HCM Lane LOS	C	B	C	B	C	B	D
HCM 95th-tile Q	3	0.2	4.5	0.3	4.4	0.5	5.4

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	196	98	32	195	39	62	925	28	32	773	70
Future Volume (veh/h)	101	196	98	32	195	39	62	925	28	32	773	70
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	106	206	103	34	205	41	65	974	29	34	814	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	575	277	322	462	392	167	1498	45	67	1119	102
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.09	0.43	0.43	0.04	0.34	0.34
Sat Flow, veh/h	1134	2327	1119	1070	1870	1585	1781	3523	105	1781	3294	299
Grp Volume(v), veh/h	106	155	154	34	205	41	65	491	512	34	439	449
Grp Sat Flow(s),veh/h/ln	1134	1777	1669	1070	1870	1585	1781	1777	1851	1781	1777	1816
Q Serve(g_s), s	4.5	3.7	3.9	1.4	4.8	1.0	1.8	11.4	11.4	1.0	11.2	11.2
Cycle Q Clear(g_c), s	9.3	3.7	3.9	5.4	4.8	1.0	1.8	11.4	11.4	1.0	11.2	11.2
Prop In Lane	1.00		0.67	1.00		1.00	1.00		0.06	1.00		0.16
Lane Grp Cap(c), veh/h	315	439	413	322	462	392	167	755	787	67	603	617
V/C Ratio(X)	0.34	0.35	0.37	0.11	0.44	0.10	0.39	0.65	0.65	0.51	0.73	0.73
Avail Cap(c_a), veh/h	508	742	697	515	800	678	927	1633	1701	203	928	949
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(l)	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	20.4	16.0	16.1	18.3	16.4	15.0	22.0	11.8	11.8	24.4	15.0	15.0
Incr Delay (d2), s/veh	0.6	0.5	0.6	0.1	0.7	0.1	1.5	1.0	0.9	5.9	1.7	1.7
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	1.1	1.3	1.3	0.3	1.8	0.3	0.7	3.2	3.4	0.5	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	16.5	16.7	18.5	17.1	15.1	23.5	12.8	12.7	30.4	16.7	16.6
LnGrp LOS	C	B	B	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		415			280			1068			922	
Approach Delay, s/veh		17.7			17.0			13.4			17.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	28.0		17.3	10.9	23.6		17.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.9	47.5		21.6	26.9	* 27		* 22				
Max Q Clear Time (g_c+13), s	13.4	13.4		11.3	3.8	13.2		7.4				
Green Ext Time (p_c), s	0.0	6.5		1.5	0.1	4.3		1.1				

Intersection Summary

HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	243	46	108	331	91	51	960	93	79	751	46
Future Volume (veh/h)	54	243	46	108	331	91	51	960	93	79	751	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		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	59	264	50	117	360	99	55	1043	101	86	816	50
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	248	739	138	309	683	185	144	1406	136	115	1317	81
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.43	0.43	0.06	0.39	0.39
Sat Flow, veh/h	933	2989	558	1066	2762	750	1781	3273	317	1781	3401	208
Grp Volume(v), veh/h	59	155	159	117	230	229	55	566	578	86	426	440
Grp Sat Flow(s),veh/h/ln	933	1777	1770	1066	1777	1735	1781	1777	1813	1781	1777	1833
Q Serve(g_s), s	3.4	4.2	4.3	5.9	6.5	6.6	1.7	15.5	15.5	2.8	11.2	11.2
Cycle Q Clear(g_c), s	10.0	4.2	4.3	10.2	6.5	6.6	1.7	15.5	15.5	2.8	11.2	11.2
Prop In Lane	1.00		0.32	1.00		0.43	1.00		0.17	1.00		0.11
Lane Grp Cap(c), veh/h	248	439	438	309	439	429	144	763	779	115	688	710
V/C Ratio(X)	0.24	0.35	0.36	0.38	0.52	0.53	0.38	0.74	0.74	0.75	0.62	0.62
Avail Cap(c_a), veh/h	363	659	656	449	674	658	891	1339	1366	301	766	790
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(l)	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	23.3	18.0	18.0	22.3	18.9	18.9	25.3	13.9	13.9	26.7	14.3	14.3
Incr Delay (d2), s/veh	0.5	0.5	0.5	0.8	1.0	1.0	1.6	1.4	1.4	9.2	1.3	1.3
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/lr	0.7	1.5	1.6	1.3	2.4	2.4	0.7	4.8	4.9	1.3	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	18.5	18.6	23.0	19.8	20.0	26.9	15.3	15.3	35.9	15.6	15.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	D	B	B
Approach Vol, veh/h		373			576			1199			952	
Approach Delay, s/veh		19.4			20.5			15.8			17.4	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	30.9		18.8	10.7	28.5		18.8				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	30.8	43.7		21.5	29.0	* 25		* 22				
Max Q Clear Time (g_c+14), s	14.8	17.5		12.0	3.7	13.2		12.2				
Green Ext Time (p_c), s	0.1	7.4		1.3	0.1	3.8		2.1				

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↕↔↔		
Traffic Volume (veh/h)	170	246	97	336	462	67	133	964	152	87	690	93
Future Volume (veh/h)	170	246	97	336	462	67	133	964	152	87	690	93
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		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	183	265	104	361	497	72	143	1037	0	94	742	100
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	480	184	509	779	112	197	1808		134	1453	194
Arrive On Green	0.09	0.19	0.19	0.15	0.25	0.22	0.11	0.35	0.00	0.08	0.32	0.29
Sat Flow, veh/h	3456	2513	961	3456	3117	450	1781	5106	1585	1781	4556	609
Grp Volume(v), veh/h	183	185	184	361	282	287	143	1037	0	94	553	289
Grp Sat Flow(s),veh/h/ln	1728	1777	1697	1728	1777	1789	1781	1702	1585	1781	1702	1761
Q Serve(g_s), s	3.5	6.5	6.8	6.9	9.8	9.9	5.4	11.3	0.0	3.6	9.1	9.3
Cycle Q Clear(g_c), s	3.5	6.5	6.8	6.9	9.8	9.9	5.4	11.3	0.0	3.6	9.1	9.3
Prop In Lane	1.00		0.57	1.00		0.25	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	306	340	325	509	444	447	197	1808		134	1086	562
V/C Ratio(X)	0.60	0.55	0.57	0.71	0.64	0.64	0.73	0.57		0.70	0.51	0.51
Avail Cap(c_a), veh/h	592	696	665	853	830	836	470	3705		258	2065	1068
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	30.2	25.2	25.3	28.0	23.1	23.3	29.6	18.0	0.0	31.1	19.1	19.4
Incr Delay (d2), s/veh	1.9	1.4	1.5	1.8	1.5	1.5	5.1	0.3	0.0	6.5	0.4	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	1.5	2.7	2.7	2.8	4.0	4.1	2.5	4.2	0.0	1.7	3.4	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	26.5	26.8	29.8	24.6	24.9	34.7	18.3	0.0	37.6	19.5	20.2
LnGrp LOS	C	C	C	C	C	C	C	B		D	B	C
Approach Vol, veh/h		552		930			1180		A		936	
Approach Delay, s/veh		28.5		26.7			20.3				21.5	
Approach LOS		C		C			C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	28.4	10.1	21.2	11.6	26.0	14.1	17.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	4.5	48.0	11.3	30.2	17.7	39.8	16.5	25.0				
Max Q Clear Time (g_c+1.5), s	15.6	13.3	5.5	11.9	7.4	11.3	8.9	8.8				
Green Ext Time (p_c), s	0.1	9.1	0.3	3.3	0.2	6.3	0.8	2.0				

Intersection Summary

HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

Notes

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



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗	↗	↗	↗ ↗ ↗	↗ ↗ ↗	
Traffic Volume (veh/h)	9	3	14	75	3	35	58	1227	33	20	1089	24
Future Volume (veh/h)	9	3	14	75	3	35	58	1227	33	20	1089	24
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	9	3	14	77	3	36	60	1265	34	21	1123	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	24	8	38	290	10	124	243	2509	779	65	1788	40
Arrive On Green	0.04	0.04	0.03	0.08	0.08	0.08	0.14	0.49	0.49	0.04	0.35	0.35
Sat Flow, veh/h	581	194	904	3456	123	1480	1781	5106	1585	1781	5139	114
Grp Volume(v), veh/h	26	0	0	77	0	39	60	1265	34	21	744	404
Grp Sat Flow(s),veh/h/ln	1679	0	0	1728	0	1604	1781	1702	1585	1781	1702	1850
Q Serve(g_s), s	0.7	0.0	0.0	1.0	0.0	1.1	1.4	7.7	0.5	0.5	8.4	8.4
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.0	0.0	1.1	1.4	7.7	0.5	0.5	8.4	8.4
Prop In Lane	0.35		0.54	1.00		0.92	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	70	0	0	290	0	135	243	2509	779	65	1185	644
V/C Ratio(X)	0.37	0.00	0.00	0.27	0.00	0.29	0.25	0.50	0.04	0.32	0.63	0.63
Avail Cap(c_a), veh/h	600	0	0	1199	0	556	772	3985	1237	212	1587	862
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	0.0	19.8	0.0	19.8	17.8	7.9	6.1	21.7	12.5	12.5
Incr Delay (d2), s/veh	3.3	0.0	0.0	0.5	0.0	1.2	0.5	0.2	0.0	2.8	0.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	0.0	0.0	0.4	0.0	0.4	0.5	2.1	0.1	0.3	2.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	0.0	20.3	0.0	21.0	18.3	8.1	6.1	24.5	13.1	13.6
LnGrp LOS	C	A	A	C	A	C	B	A	A	C	B	B
Approach Vol, veh/h		26			116			1359			1169	
Approach Delay, s/veh		24.9			20.5			8.5			13.5	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	26.7		7.9	10.3	22.1		5.9				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	34.0		16.0	18.0	* 22		16.0				
Max Q Clear Time (g_c+1), s	12.5	9.7		3.1	3.4	10.4		2.7				
Green Ext Time (p_c), s	0.0	10.4		0.3	0.1	5.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Existing with Project  
 timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	159	63	1257	88	22	1132
Future Volume (veh/h)	159	63	1257	88	22	1132
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	66	1309	92	23	1179
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	304	139	3340	1037	90	3829
Arrive On Green	0.09	0.09	0.65	0.65	0.03	0.75
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	166	66	1309	92	23	1179
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	3.0	2.6	7.7	1.4	0.4	4.9
Cycle Q Clear(g_c), s	3.0	2.6	7.7	1.4	0.4	4.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	304	139	3340	1037	90	3829
V/C Ratio(X)	0.55	0.47	0.39	0.09	0.25	0.31
Avail Cap(c_a), veh/h	2030	931	3340	1037	267	3829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	28.1	5.2	4.1	30.9	2.6
Incr Delay (d2), s/veh	1.5	2.5	0.1	0.0	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.0	1.5	0.2	0.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	30.6	5.3	4.1	32.3	2.8
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	232		1401			1202
Approach Delay, s/veh	30.0		5.2			3.4
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	48.3			54.5	10.2
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	37.0			* 49	38.0
Max Q Clear Time (g_c+I), s	12.4	9.7			6.9	5.0
Green Ext Time (p_c), s	0.0	10.1			9.3	0.8

Intersection Summary

HCM 6th Ctrl Delay		6.5
HCM 6th LOS		A

Notes

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

9th and Vineyard TIA  
 12: Vineyard Ave & I-10 WB Ramps

Existing with Project  
 timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	208	0	397	0	977	350	0	870	442
Future Volume (veh/h)	0	0	0	208	0	397	0	977	350	0	870	442
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				224	0	427	0	1051	0	0	935	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				568	0	505	0	1624		0	1624	
Arrive On Green				0.32	0.00	0.32	0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				224	0	427	0	1051	0	0	935	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				4.2	0.0	10.6	0.0	9.7	0.0	0.0	8.2	0.0
Cycle Q Clear(g_c), s				4.2	0.0	10.6	0.0	9.7	0.0	0.0	8.2	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				568	0	505	0	1624		0	1624	
V/C Ratio(X)				0.39	0.00	0.84	0.00	0.65		0.00	0.58	
Avail Cap(c_a), veh/h				1597	0	1421	0	3562		0	3562	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.2	0.0	13.5	0.0	8.9	0.0	0.0	8.5	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.0	0.0	0.4	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	3.6	0.0	2.1	0.0	0.0	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.7	0.0	17.4	0.0	9.3	0.0	0.0	8.8	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					651			1051	A		935	A
Approach Delay, s/veh					15.5			9.3			8.8	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		23.9				23.9		18.5				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		42.5				42.5		38.0				
Max Q Clear Time (g_c+I1), s		11.7				10.2		12.6				
Green Ext Time (p_c), s		7.7				6.7		0.9				

Intersection Summary

HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Existing with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	3	260	0	0	0	0	1020	340	262	811	0
Future Volume (veh/h)	298	3	260	0	0	0	0	1020	340	262	811	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	392	0	180				0	1052	351	270	836	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	626	0	279				0	1544	515	332	2363	0
Arrive On Green	0.18	0.00	0.18				0.00	0.41	0.41	0.19	0.66	0.00
Sat Flow, veh/h	3563	0	1585				0	3953	1263	1781	3647	0
Grp Volume(v), veh/h	392	0	180				0	946	457	270	836	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1643	1781	1777	0
Q Serve(g_s), s	5.8	0.0	6.0				0.0	12.9	12.9	8.2	5.8	0.0
Cycle Q Clear(g_c), s	5.8	0.0	6.0				0.0	12.9	12.9	8.2	5.8	0.0
Prop In Lane	1.00		1.00				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	626	0	279				0	1389	670	332	2363	0
V/C Ratio(X)	0.63	0.00	0.65				0.00	0.68	0.68	0.81	0.35	0.00
Avail Cap(c_a), veh/h	1709	0	760				0	1922	928	567	3421	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.6	0.0	21.7				0.0	13.7	13.7	22.1	4.1	0.0
Incr Delay (d2), s/veh	1.0	0.0	2.5				0.0	0.6	1.2	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.2				0.0	3.7	3.7	3.3	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	24.2				0.0	14.3	14.9	26.9	4.2	0.0
LnGrp LOS	C	A	C				A	B	B	C	A	A
Approach Vol, veh/h		572						1403			1106	
Approach Delay, s/veh		23.1						14.5			9.8	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	4.5	27.6	14.4	42.1								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	18.0	31.9	27.1	* 54								
Max Q Clear Time (g_c+110), s	11.0	14.9	8.0	7.8								
Green Ext Time (p_c), s	0.5	8.2	2.0	6.0								

Intersection Summary

HCM 6th Ctrl Delay	14.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	23	4	296	10	2	263
Future Vol, veh/h	23	4	296	10	2	263
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	25	4	322	11	2	286

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	618	328	0	0	333
Stage 1	328	-	-	-	-
Stage 2	290	-	-	-	-
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	453	713	-	-	1226
Stage 1	730	-	-	-	-
Stage 2	759	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	452	713	-	-	1226
Mov Cap-2 Maneuver	452	-	-	-	-
Stage 1	729	-	-	-	-
Stage 2	759	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	478	1226
HCM Lane V/C Ratio	-	-	0.061	0.002
HCM Control Delay (s)	-	-	13	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	306	0	0	286
Future Vol, veh/h	0	0	306	0	0	286
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	333	0	0	311

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	644	333	0	0	333	0
Stage 1	333	-	-	-	-	-
Stage 2	311	-	-	-	-	-
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	437	709	-	-	1226	-
Stage 1	726	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	437	709	-	-	1226	-
Mov Cap-2 Maneuver	437	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	743	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1226	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	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	0	0	0	51	0	4	0	302	16	3	284	0
Future Vol, veh/h	0	0	0	51	0	4	0	302	16	3	284	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	55	0	4	0	328	17	3	309	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	654	660	309	652	652	337	309	0	0	345	0	0
Stage 1	315	315	-	337	337	-	-	-	-	-	-	-
Stage 2	339	345	-	315	315	-	-	-	-	-	-	-
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	380	383	731	381	387	705	1252	-	-	1214	-	-
Stage 1	696	656	-	677	641	-	-	-	-	-	-	-
Stage 2	676	636	-	696	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	377	382	731	380	386	705	1252	-	-	1214	-	-
Mov Cap-2 Maneuver	377	382	-	380	386	-	-	-	-	-	-	-
Stage 1	696	654	-	677	641	-	-	-	-	-	-	-
Stage 2	672	636	-	694	654	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		15.8		0		0.1	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	-	393	1214	-	-
HCM Lane V/C Ratio	-	-	-	-	0.152	0.003	-	-
HCM Control Delay (s)	0	-	-	0	15.8	8	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	198	2	14	203	8	40
Future Vol, veh/h	198	2	14	203	8	40
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	215	2	15	221	9	43

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	217	0	467
Stage 1	-	-	-	-	216
Stage 2	-	-	-	-	251
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1353	-	554
Stage 1	-	-	-	-	820
Stage 2	-	-	-	-	791
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1353	-	547
Mov Cap-2 Maneuver	-	-	-	-	547
Stage 1	-	-	-	-	809
Stage 2	-	-	-	-	791

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	760	-	-	1353	-
HCM Lane V/C Ratio	0.069	-	-	0.011	-
HCM Control Delay (s)	10.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	4	37	12	1060	860	2
Future Vol, veh/h	4	37	12	1060	860	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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	4	40	13	1152	935	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1538	469	937	0	-	0
Stage 1	936	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	106	541	339	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	541	339	-	-	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	339	-	381	-	-
HCM Lane V/C Ratio	0.038	-	0.117	-	-
HCM Control Delay (s)	16	-	15.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	27	10	1054	835	0
Future Vol, veh/h	0	27	10	1054	835	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	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	10	1098	870	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1439	435	870	0	-	0
Stage 1	870	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	124	569	770	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	569	770	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	770	-	569	-	-
HCM Lane V/C Ratio	0.014	-	0.049	-	-
HCM Control Delay (s)	9.7	0.2	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	543	85	159	924	104	109	641	174	185	822	382
Future Volume (veh/h)	308	543	85	159	924	104	109	641	174	185	822	382
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	1796	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	362	639	100	187	1087	122	128	754	205	218	967	449
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	1758	546	278	1487	167	206	1196	534	295	1288	574
Arrive On Green	0.11	0.34	0.34	0.08	0.32	0.30	0.06	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	3456	5106	1585	3456	4658	522	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	362	639	100	187	794	415	128	754	205	218	967	449
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1776	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.9	9.8	4.6	5.5	21.6	21.7	3.8	18.7	10.3	6.4	24.9	26.3
Cycle Q Clear(g_c), s	10.9	9.8	4.6	5.5	21.6	21.7	3.8	18.7	10.3	6.4	24.9	26.3
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	1758	546	278	1087	567	206	1196	534	295	1288	574
V/C Ratio(X)	0.99	0.36	0.18	0.67	0.73	0.73	0.62	0.63	0.38	0.74	0.75	0.78
Avail Cap(c_a), veh/h	364	1810	562	662	1500	783	311	1634	729	298	1620	723
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	46.7	25.6	24.0	46.7	31.5	31.8	47.9	29.2	26.4	46.6	29.2	29.6
Incr Delay (d2), s/veh	45.5	0.1	0.2	2.8	1.2	2.2	3.0	0.6	0.5	9.2	1.5	4.4
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	6.8	3.8	1.7	2.4	8.6	9.2	1.7	7.6	3.8	3.0	10.2	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.2	25.8	24.1	49.5	32.7	34.1	51.0	29.7	26.8	55.8	30.7	34.0
LnGrp LOS	F	C	C	D	C	C	D	C	C	E	C	C
Approach Vol, veh/h		1101			1396			1087			1634	
Approach Delay, s/veh		47.5			35.4			31.7			34.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	39.1	12.4	40.0	10.2	41.8	15.0	37.3				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	8.5	46.0	19.5	35.0	8.9	45.6	10.5	44.0				
Max Q Clear Time (g_c+I1), s	8.4	20.7	7.5	11.8	5.8	28.3	12.9	23.7				
Green Ext Time (p_c), s	0.0	5.8	0.4	4.4	0.1	7.5	0.0	7.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				37.0								
HCM 6th LOS				D								

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	517	37	116	634	72	33	90	59	80	105	56
Future Volume (veh/h)	28	517	37	116	634	72	33	90	59	80	105	56
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1796	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	32	588	42	132	720	82	38	102	67	91	119	64
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1449	103	357	806	683	71	153	707	80	76	707
Arrive On Green	0.43	0.43	0.42	0.43	0.43	0.43	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	678	3364	240	796	1870	1585	0	344	1585	1	170	1585
Grp Volume(v), veh/h	32	310	320	132	720	82	140	0	67	210	0	64
Grp Sat Flow(s),veh/h/ln	678	1777	1827	796	1870	1585	344	0	1585	170	0	1585
Q Serve(g_s), s	3.0	7.8	7.9	8.9	23.2	2.0	0.0	0.0	1.6	0.0	0.0	1.5
Cycle Q Clear(g_c), s	26.1	7.8	7.9	16.8	23.2	2.0	29.0	0.0	1.6	29.0	0.0	1.5
Prop In Lane	1.00		0.13	1.00		1.00	0.27		1.00	0.43		1.00
Lane Grp Cap(c), veh/h	161	765	787	357	806	683	224	0	707	155	0	707
V/C Ratio(X)	0.20	0.41	0.41	0.37	0.89	0.12	0.62	0.00	0.09	1.35	0.00	0.09
Avail Cap(c_a), veh/h	161	766	787	357	806	683	224	0	707	156	0	707
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	29.2	12.8	12.8	18.6	17.1	11.1	15.1	0.0	10.4	19.1	0.0	10.4
Incr Delay (d2), s/veh	0.6	0.3	0.3	0.6	12.4	0.1	5.3	0.0	0.1	194.5	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	0.5	2.6	2.7	1.5	10.6	0.6	1.3	0.0	0.5	9.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	13.1	13.1	19.2	29.6	11.2	20.4	0.0	10.5	213.6	0.0	10.4
LnGrp LOS	C	B	B	B	C	B	C	A	B	F	A	B
Approach Vol, veh/h		662		934		207		274				
Approach Delay, s/veh		13.9		26.5		17.2		166.1				
Approach LOS		B		C		B		F				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		32.0		33.0		32.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		27.5		28.5		27.5				
Max Q Clear Time (g_c+I1), s		31.0		28.1		31.0		25.2				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				40.0								
HCM 6th LOS				D								

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	574	70	204	674	231	58	468	110	196	874	122
Future Volume (veh/h)	120	574	70	204	674	231	58	468	110	196	874	122
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	140	667	81	237	784	269	67	544	128	228	1016	142
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1031	125	206	908	312	95	773	181	264	1145	160
Arrive On Green	0.09	0.32	0.31	0.12	0.35	0.33	0.05	0.27	0.25	0.15	0.37	0.35
Sat Flow, veh/h	1781	3191	387	1781	2596	891	1781	2857	670	1781	3131	437
Grp Volume(v), veh/h	140	371	377	237	536	517	67	338	334	228	576	582
Grp Sat Flow(s),veh/h/ln	1781	1777	1801	1781	1777	1710	1781	1777	1750	1781	1777	1792
Q Serve(g_s), s	8.7	20.1	20.2	13.0	31.6	31.7	4.2	19.2	19.4	14.0	34.2	34.3
Cycle Q Clear(g_c), s	8.7	20.1	20.2	13.0	31.6	31.7	4.2	19.2	19.4	14.0	34.2	34.3
Prop In Lane	1.00		0.21	1.00		0.52	1.00		0.38	1.00		0.24
Lane Grp Cap(c), veh/h	159	574	582	206	622	598	95	481	474	264	650	655
V/C Ratio(X)	0.88	0.65	0.65	1.15	0.86	0.86	0.71	0.70	0.71	0.86	0.89	0.89
Avail Cap(c_a), veh/h	159	633	641	206	680	655	285	680	670	285	680	686
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	50.6	32.5	32.7	49.7	34.0	34.5	52.3	36.9	37.3	46.8	33.5	33.7
Incr Delay (d2), s/veh	39.8	2.0	2.0	108.8	10.4	10.8	9.3	1.9	1.9	21.9	13.1	13.2
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	5.5	8.6	8.7	11.8	14.6	14.3	2.1	8.2	8.3	7.6	16.2	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.4	34.5	34.7	158.5	44.4	45.4	61.6	38.8	39.2	68.7	46.6	46.9
LnGrp LOS	F	C	C	F	D	D	E	D	D	E	D	D
Approach Vol, veh/h		888			1290			739			1386	
Approach Delay, s/veh		43.4			65.8			41.1			50.4	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.6	34.4	14.0	43.3	10.0	45.1	17.0	40.3				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	17.5	41.0	9.5	41.0	17.5	41.0	12.5	38.0				
Max Q Clear Time (g_c+1/3g), s	11.0	21.4	10.7	33.7	6.2	36.3	15.0	22.2				
Green Ext Time (p_c), s	0.1	3.6	0.0	3.6	0.1	2.8	0.0	3.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											51.9	
HCM 6th LOS											D	

Intersection												
Intersection Delay, s/veh	18.1											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	60	130	6	36	123	69	51	165	39	41	157	82
Future Vol, veh/h	60	130	6	36	123	69	51	165	39	41	157	82
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	165	8	46	156	87	65	209	49	52	199	104
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.3	17.1	18.6	19.8
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	31%	16%	15%
Vol Thru, %	65%	66%	54%	56%
Vol Right, %	15%	3%	30%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	255	196	228	280
LT Vol	51	60	36	41
Through Vol	165	130	123	157
RT Vol	39	6	69	82
Lane Flow Rate	323	248	289	354
Geometry Grp	1	1	1	1
Degree of Util (X)	0.587	0.477	0.532	0.629
Departure Headway (Hd)	6.545	6.921	6.634	6.387
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	549	516	540	560
Service Time	4.638	5.021	4.728	4.477
HCM Lane V/C Ratio	0.588	0.481	0.535	0.632
HCM Control Delay	18.6	16.3	17.1	19.8
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	3.8	2.5	3.1	4.4

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	131	49	69	89	30	85	579	149	66	1038	52
Future Volume (veh/h)	35	131	49	69	89	30	85	579	149	66	1038	52
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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	41	154	58	81	105	35	100	681	175	78	1221	61
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	323	121	160	182	384	214	1876	837	112	1531	76
Arrive On Green	0.25	0.25	0.24	0.24	0.24	0.24	0.12	0.53	0.53	0.06	0.44	0.44
Sat Flow, veh/h	1249	1295	488	376	752	1585	1781	3554	1585	1781	3444	172
Grp Volume(v), veh/h	41	0	212	186	0	35	100	681	175	78	629	653
Grp Sat Flow(s),veh/h/ln	1249	0	1783	1127	0	1585	1781	1777	1585	1781	1777	1839
Q Serve(g_s), s	2.4	0.0	7.6	5.5	0.0	1.3	3.9	8.4	4.4	3.2	22.9	22.9
Cycle Q Clear(g_c), s	15.5	0.0	7.6	13.2	0.0	1.3	3.9	8.4	4.4	3.2	22.9	22.9
Prop In Lane	1.00		0.27	0.44		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	188	0	444	342	0	384	214	1876	837	112	790	818
V/C Ratio(X)	0.22	0.00	0.48	0.54	0.00	0.09	0.47	0.36	0.21	0.69	0.80	0.80
Avail Cap(c_a), veh/h	326	0	641	516	0	570	569	2867	1279	247	1112	1151
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	0.0	24.1	27.0	0.0	22.0	30.8	10.3	9.4	34.5	17.9	18.0
Incr Delay (d2), s/veh	0.6	0.0	0.8	1.3	0.0	0.1	1.6	0.1	0.1	7.5	2.8	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	0.7	0.0	3.1	3.0	0.0	0.5	1.7	2.7	1.3	1.5	8.4	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.0	24.9	28.3	0.0	22.1	32.4	10.5	9.5	41.9	20.7	20.7
LnGrp LOS	C	A	C	C	A	C	C	B	A	D	C	C
Approach Vol, veh/h		253			221			956			1360	
Approach Delay, s/veh		26.3			27.3			12.6			21.9	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	43.7		22.7	13.0	39.4		22.7				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.5	58.6		26.5	22.0	* 47		* 27				
Max Q Clear Time (g_c+1/2), s	15.2	10.4		17.5	5.9	24.9		15.2				
Green Ext Time (p_c), s	0.1	5.5		0.8	0.2	8.5		0.8				

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	47.4											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	51	223	37	31	237	56	78	145	42	70	205	50
Future Vol, veh/h	51	223	37	31	237	56	78	145	42	70	205	50
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	272	45	38	289	68	95	177	51	85	250	61
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	43.1	38.8	29.8	74.6
HCM LOS	E	E	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	0%	19%	0%	12%	0%	22%
Vol Thru, %	65%	0%	81%	0%	88%	0%	63%
Vol Right, %	0%	100%	0%	100%	0%	100%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	223	42	274	37	268	56	325
LT Vol	78	0	51	0	31	0	70
Through Vol	145	0	223	0	237	0	205
RT Vol	0	42	0	37	0	56	50
Lane Flow Rate	272	51	334	45	327	68	396
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.716	0.122	0.854	0.105	0.833	0.159	0.994
Departure Headway (Hd)	9.474	8.56	9.198	8.368	9.176	8.382	9.032
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	381	418	394	427	395	427	400
Service Time	7.249	6.334	6.971	6.139	6.949	6.155	7.106
HCM Lane V/C Ratio	0.714	0.122	0.848	0.105	0.828	0.159	0.99
HCM Control Delay	33	12.5	47.3	12.1	44.2	12.7	74.6
HCM Lane LOS	D	B	E	B	E	B	F
HCM 95th-tile Q	5.4	0.4	8.2	0.3	7.7	0.6	12

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	201	44	33	183	40	49	696	74	50	1008	92
Future Volume (veh/h)	97	201	44	33	183	40	49	696	74	50	1008	92
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	115	239	52	39	218	48	58	829	88	60	1200	110
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	736	157	293	460	390	186	1700	180	99	1474	135
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.10	0.52	0.50	0.06	0.45	0.45
Sat Flow, veh/h	1113	2913	622	1088	1870	1585	1781	3241	344	1781	3292	301
Grp Volume(v), veh/h	115	144	147	39	218	48	58	454	463	60	647	663
Grp Sat Flow(s),veh/h/ln	1113	1777	1758	1088	1870	1585	1781	1777	1808	1781	1777	1816
Q Serve(g_s), s	7.0	4.7	4.9	2.2	7.1	1.7	2.2	11.7	11.8	2.4	22.7	22.8
Cycle Q Clear(g_c), s	14.1	4.7	4.9	7.1	7.1	1.7	2.2	11.7	11.8	2.4	22.7	22.8
Prop In Lane	1.00		0.35	1.00		1.00	1.00		0.19	1.00		0.17
Lane Grp Cap(c), veh/h	271	449	444	293	460	390	186	932	948	99	796	813
V/C Ratio(X)	0.42	0.32	0.33	0.13	0.47	0.12	0.31	0.49	0.49	0.61	0.81	0.82
Avail Cap(c_a), veh/h	418	683	676	445	719	610	745	1510	1537	233	1000	1022
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	28.7	21.8	21.9	25.2	23.1	21.0	29.8	10.9	11.0	33.1	17.2	17.2
Incr Delay (d2), s/veh	1.1	0.4	0.4	0.2	0.8	0.1	0.9	0.4	0.4	5.9	4.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.9	1.9	0.5	2.9	0.6	0.9	3.6	3.7	1.1	8.5	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	22.2	22.4	25.4	23.9	21.2	30.7	11.3	11.4	39.0	21.4	21.4
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	C	C
Approach Vol, veh/h		406			305			975			1370	
Approach Delay, s/veh		24.4			23.6			12.5			22.2	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	41.6		22.1	11.5	38.1		22.1				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	3.9	59.0		27.1	28.0	* 40		* 28				
Max Q Clear Time (g_c+1/4), s	14.4	13.8		16.1	4.2	24.8		9.1				
Green Ext Time (p_c), s	0.0	5.9		1.5	0.1	7.3		1.3				

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	191	73	70	207	79	49	720	84	82	925	78
Future Volume (veh/h)	63	191	73	70	207	79	49	720	84	82	925	78
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	69	210	80	77	227	87	54	791	92	90	1016	86
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	547	202	274	523	195	209	1583	184	136	1383	117
Arrive On Green	0.22	0.22	0.21	0.21	0.21	0.21	0.12	0.49	0.46	0.08	0.42	0.42
Sat Flow, veh/h	1066	2541	938	1089	2534	943	1781	3207	373	1781	3316	281
Grp Volume(v), veh/h	69	145	145	77	157	157	54	438	445	90	544	558
Grp Sat Flow(s),veh/h/ln	1066	1777	1702	1089	1777	1701	1781	1777	1803	1781	1777	1820
Q Serve(g_s), s	3.3	3.9	4.1	3.7	4.3	4.5	1.5	9.3	9.4	2.7	14.4	14.4
Cycle Q Clear(g_c), s	7.9	3.9	4.1	7.8	4.3	4.5	1.5	9.3	9.4	2.7	14.4	14.4
Prop In Lane	1.00		0.55	1.00		0.55	1.00		0.21	1.00		0.15
Lane Grp Cap(c), veh/h	272	382	366	274	367	351	209	877	890	136	741	759
V/C Ratio(X)	0.25	0.38	0.40	0.28	0.43	0.45	0.26	0.50	0.50	0.66	0.73	0.73
Avail Cap(c_a), veh/h	539	827	792	556	827	792	989	1909	1937	383	1304	1336
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	22.4	18.7	18.9	22.6	19.3	19.4	22.5	9.5	9.7	25.1	13.7	13.7
Incr Delay (d2), s/veh	0.5	0.6	0.7	0.6	0.8	0.9	0.7	0.4	0.4	5.4	1.4	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	0.8	1.4	1.4	0.9	1.6	1.6	0.6	2.5	2.6	1.2	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	19.3	19.6	23.2	20.1	20.3	23.1	9.9	10.1	30.5	15.1	15.1
LnGrp LOS	C	B	B	C	C	C	C	A	B	C	B	B
Approach Vol, veh/h		359			391			937			1192	
Approach Delay, s/veh		20.1			20.8			10.8			16.3	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	31.6		16.0	10.5	29.3		16.0				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	15	58.0		25.5	29.0	* 41		* 26				
Max Q Clear Time (g_c+1/4), s	14.5	11.4		9.9	3.5	16.4		9.8				
Green Ext Time (p_c), s	0.1	5.6		1.6	0.1	6.9		1.7				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↔↔↔	↔	↔↔↔		
Traffic Volume (veh/h)	104	189	138	246	269	45	95	702	127	38	945	64
Future Volume (veh/h)	104	189	138	246	269	45	95	702	127	38	945	64
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	109	199	145	259	283	47	100	739	0	40	995	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	387	268	338	653	107	142	2045		86	1804	121
Arrive On Green	0.08	0.19	0.19	0.10	0.21	0.18	0.08	0.40	0.00	0.05	0.37	0.34
Sat Flow, veh/h	3456	2007	1390	3456	3056	501	1781	5106	1585	1781	4887	329
Grp Volume(v), veh/h	109	175	169	259	163	167	100	739	0	40	693	369
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1780	1781	1702	1585	1781	1702	1811
Q Serve(g_s), s	1.8	5.4	5.8	4.5	4.9	5.0	3.4	6.2	0.0	1.3	9.9	10.0
Cycle Q Clear(g_c), s	1.8	5.4	5.8	4.5	4.9	5.0	3.4	6.2	0.0	1.3	9.9	10.0
Prop In Lane	1.00		0.86	1.00		0.28	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	266	343	313	338	380	381	142	2045		86	1257	669
V/C Ratio(X)	0.41	0.51	0.54	0.77	0.43	0.44	0.70	0.36		0.46	0.55	0.55
Avail Cap(c_a), veh/h	338	984	897	338	984	986	174	2411		725	2661	1416
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(l)	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	27.0	22.2	22.3	27.0	20.9	21.2	27.6	12.9	0.0	28.4	15.3	15.5
Incr Delay (d2), s/veh	1.0	1.2	1.5	10.2	0.8	0.8	9.4	0.1	0.0	3.8	0.4	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/lr	0.8	2.2	2.2	2.2	2.0	2.0	1.7	2.1	0.0	0.6	3.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	23.4	23.8	37.2	21.7	22.0	37.0	13.0	0.0	32.3	15.7	16.2
LnGrp LOS	C	C	C	D	C	C	D	B		C	B	B
Approach Vol, veh/h		453			589			839	A		1102	
Approach Delay, s/veh		24.6			28.6			15.9			16.5	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	28.6	8.7	17.1	8.9	26.7	10.0	15.8				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax)	24.5	27.0	5.5	32.0	5.5	46.0	5.5	32.0				
Max Q Clear Time (g_c+1)	13.3	8.2	3.8	7.0	5.4	12.0	6.5	7.8				
Green Ext Time (p_c), s	0.1	5.0	0.0	1.9	0.0	8.7	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗ ↗	↗	↗	↗ ↗ ↗ ↗	↗ ↗ ↗ ↗	
Traffic Volume (veh/h)	7	0	14	12	0	18	50	960	52	21	1287	9
Future Volume (veh/h)	7	0	14	12	0	18	50	960	52	21	1287	9
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	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	7	0	15	13	0	19	53	1011	55	22	1355	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	0	43	127	0	58	234	2688	834	68	2029	13
Arrive On Green	0.04	0.00	0.03	0.04	0.00	0.04	0.13	0.53	0.53	0.04	0.39	0.39
Sat Flow, veh/h	523	0	1120	3456	0	1585	1781	5106	1585	1781	5233	35
Grp Volume(v), veh/h	22	0	0	13	0	19	53	1011	55	22	881	483
Grp Sat Flow(s),veh/h/ln	1643	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	0.6	0.0	0.0	0.2	0.0	0.5	1.2	5.2	0.8	0.5	9.5	9.5
Cycle Q Clear(g_c), s	0.6	0.0	0.0	0.2	0.0	0.5	1.2	5.2	0.8	0.5	9.5	9.5
Prop In Lane	0.32		0.68	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	62	0	0	127	0	58	234	2688	834	68	1320	723
V/C Ratio(X)	0.35	0.00	0.00	0.10	0.00	0.33	0.23	0.38	0.07	0.32	0.67	0.67
Avail Cap(c_a), veh/h	926	0	0	2026	0	929	900	4260	1322	241	1581	866
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	20.7	0.0	20.8	17.2	6.2	5.2	20.8	11.2	11.2
Incr Delay (d2), s/veh	3.3	0.0	0.0	0.3	0.0	3.2	0.5	0.1	0.0	2.7	0.8	1.5
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/lr	0.3	0.0	0.0	0.1	0.0	0.2	0.5	1.3	0.2	0.3	2.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	0.0	21.0	0.0	24.0	17.7	6.3	5.2	23.5	12.0	12.7
LnGrp LOS	C	A	A	C	A	C	B	A	A	C	B	B
Approach Vol, veh/h		22			32			1119			1386	
Approach Delay, s/veh		24.3			22.8			6.8			12.5	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	27.3		5.6	9.8	23.2		5.7				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.5	35.0		26.0	20.4	* 21		24.5				
Max Q Clear Time (g_c+1), s	12.5	7.2		2.5	3.2	11.5		2.6				
Green Ext Time (p_c), s	0.0	8.5		0.1	0.1	5.7		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Opening Year without Project  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶↷	↶	↶↶↶	↶	↶↷	↶↶↶
Traffic Volume (veh/h)	87	29	1021	69	33	1296
Future Volume (veh/h)	87	29	1021	69	33	1296
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	30	1064	72	34	1350
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	226	104	3790	1177	137	4123
Arrive On Green	0.07	0.07	0.74	0.74	0.04	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	91	30	1064	72	34	1350
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.4	5.3	1.0	0.8	5.4
Cycle Q Clear(g_c), s	2.0	1.4	5.3	1.0	0.8	5.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	226	104	3790	1177	137	4123
V/C Ratio(X)	0.40	0.29	0.28	0.06	0.25	0.33
Avail Cap(c_a), veh/h	1692	776	3790	1177	352	4123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	35.0	3.3	2.7	36.6	2.0
Incr Delay (d2), s/veh	1.2	1.5	0.0	0.0	0.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	0.8	0.1	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.4	36.5	3.3	2.8	37.6	2.2
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	121		1136			1384
Approach Delay, s/veh	36.5		3.3			3.1
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.1	62.4			69.5	9.1
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5	49.5			* 64	38.0
Max Q Clear Time (g_c+1/2), s	12.8	7.3			7.4	4.0
Green Ext Time (p_c), s	0.0	8.4			11.9	0.4

Intersection Summary

HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	167	0	335	0	694	201	0	1146	347
Future Volume (veh/h)	0	0	0	167	0	335	0	694	201	0	1146	347
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				178	0	356	0	738	0	0	1219	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				514	0	457	0	1887		0	1887	
Arrive On Green				0.29	0.00	0.29	0.00	0.53	0.00	0.00	0.53	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				178	0	356	0	738	0	0	1219	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				3.5	0.0	9.1	0.0	5.5	0.0	0.0	10.9	0.0
Cycle Q Clear(g_c), s				3.5	0.0	9.1	0.0	5.5	0.0	0.0	10.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				514	0	457	0	1887		0	1887	
V/C Ratio(X)				0.35	0.00	0.78	0.00	0.39		0.00	0.65	
Avail Cap(c_a), veh/h				1044	0	929	0	4485		0	4485	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.5	0.0	14.5	0.0	6.2	0.0	0.0	7.4	0.0
Incr Delay (d2), s/veh				0.4	0.0	2.9	0.0	0.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	3.1	0.0	1.0	0.0	0.0	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				12.9	0.0	17.4	0.0	6.3	0.0	0.0	7.8	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					534			738	A		1219	A
Approach Delay, s/veh					15.9			6.3			7.8	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		27.6				27.6		16.8				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		55.5				55.5		25.0				
Max Q Clear Time (g_c+11), s		7.5				12.9		11.1				
Green Ext Time (p_c), s		5.1				10.2		0.7				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps



































Opening Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	4	341	0	0	0	0	667	327	438	891	0
Future Volume (veh/h)	278	4	341	0	0	0	0	667	327	438	891	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	430	0	237				0	725	355	476	968	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	747	0	332				0	1083	504	521	2356	0
Arrive On Green	0.21	0.00	0.21				0.00	0.32	0.31	0.29	0.66	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	430	0	237				0	725	355	476	968	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	7.2	0.0	9.3				0.0	12.3	13.2	17.2	8.4	0.0
Cycle Q Clear(g_c), s	7.2	0.0	9.3				0.0	12.3	13.2	17.2	8.4	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	747	0	332				0	1083	504	521	2356	0
V/C Ratio(X)	0.58	0.00	0.71				0.00	0.67	0.70	0.91	0.41	0.00
Avail Cap(c_a), veh/h	1467	0	653				0	1504	700	560	2900	0
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	23.7	0.0	24.5				0.0	19.7	20.2	22.8	5.2	0.0
Incr Delay (d2), s/veh	0.7	0.0	2.8				0.0	0.7	1.9	18.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	3.5				0.0	4.2	4.4	8.8	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	0.0	27.4				0.0	20.5	22.2	41.6	5.3	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		667						1080			1444	
Approach Delay, s/veh		25.5						21.0			17.3	
Approach LOS		C						C			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	23.5	25.2	18.0	48.8								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	21.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+119), s	119.2	15.2	11.3	10.4								
Green Ext Time (p_c), s	0.3	5.5	2.2	7.3								
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Opening Year without Project  
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  		 	  		 	 		 	 	 
Traffic Volume (veh/h)	457	1085	145	242	721	183	155	784	243	196	552	276
Future Volume (veh/h)	457	1085	145	242	721	183	155	784	243	196	552	276
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	1900	1900	1900	1900	1900	1824	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	471	1119	149	249	743	189	160	808	251	202	569	285
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	562	1584	492	333	992	250	232	1055	470	276	1100	490
Arrive On Green	0.16	0.31	0.31	0.09	0.24	0.24	0.07	0.29	0.29	0.08	0.30	0.30
Sat Flow, veh/h	3510	5187	1610	3510	4131	1040	3510	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	471	1119	149	249	621	311	160	808	251	202	569	285
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1713	1755	1805	1610	1755	1805	1610
Q Serve(g_s), s	11.9	17.5	6.5	6.3	15.2	15.5	4.1	18.7	12.0	5.2	11.9	13.7
Cycle Q Clear(g_c), s	11.9	17.5	6.5	6.3	15.2	15.5	4.1	18.7	12.0	5.2	11.9	13.7
Prop In Lane	1.00		1.00	1.00		0.61	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	562	1584	492	333	831	411	232	1055	470	276	1100	490
V/C Ratio(X)	0.84	0.71	0.30	0.75	0.75	0.76	0.69	0.77	0.53	0.73	0.52	0.58
Avail Cap(c_a), veh/h	708	1945	604	540	1131	560	302	1653	737	325	1677	748
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	37.4	28.2	24.4	40.4	32.3	32.4	41.9	29.6	27.2	41.3	26.3	26.9
Incr Delay (d2), s/veh	7.2	0.9	0.3	3.3	1.8	4.0	4.4	1.2	0.9	6.9	0.4	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	5.4	6.9	2.4	2.8	6.2	6.5	1.8	7.7	4.4	2.4	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	29.1	24.7	43.8	34.1	36.4	46.3	30.8	28.2	48.2	26.7	28.0
LnGrp LOS	D	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		1739			1181			1219			1056	
Approach Delay, s/veh		32.9			36.7			32.3			31.2	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	32.8	13.2	34.0	10.6	33.9	19.2	28.0				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	8.5	42.0	14.1	34.4	7.9	42.6	18.5	30.0				
Max Q Clear Time (g_c+I1), s	7.2	20.7	8.3	19.5	6.1	15.7	13.9	17.5				
Green Ext Time (p_c), s	0.1	6.1	0.4	6.7	0.1	4.7	0.8	4.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				33.3								
HCM 6th LOS				C								



9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	714	23	10	535	95	28	154	74	49	105	34
Future Volume (veh/h)	43	714	23	10	535	95	28	154	74	49	105	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1900	1900	1824	1900	1900	1900	1824	1900	1900	1824	1900	1900
Adj Flow Rate, veh/h	45	752	24	11	563	100	29	162	78	52	111	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	316	1465	47	364	779	660	115	419	581	140	233	581
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	784	3571	114	706	1900	1610	25	1162	1610	53	647	1610
Grp Volume(v), veh/h	45	380	396	11	563	100	191	0	78	163	0	36
Grp Sat Flow(s),veh/h/ln	784	1805	1879	706	1900	1610	1186	0	1610	700	0	1610
Q Serve(g_s), s	2.0	6.2	6.2	0.5	9.8	1.5	0.6	0.0	1.3	1.0	0.0	0.6
Cycle Q Clear(g_c), s	11.4	6.2	6.2	6.5	9.8	1.5	13.5	0.0	1.3	13.7	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.15		1.00	0.32		1.00
Lane Grp Cap(c), veh/h	316	740	771	364	779	660	533	0	581	373	0	581
V/C Ratio(X)	0.14	0.51	0.51	0.03	0.72	0.15	0.36	0.00	0.13	0.44	0.00	0.06
Avail Cap(c_a), veh/h	444	1034	1077	479	1088	922	1177	0	1168	949	0	1168
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	14.4	8.7	8.7	11.0	9.7	7.3	9.3	0.0	8.4	9.9	0.0	8.2
Incr Delay (d2), s/veh	0.2	0.6	0.5	0.0	1.4	0.1	0.4	0.0	0.1	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.1	2.6	0.3	0.8	0.0	0.3	0.7	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	9.2	9.2	11.1	11.2	7.4	9.7	0.0	8.5	10.7	0.0	8.3
LnGrp LOS	B	A	A	B	B	A	A	A	A	B	A	A
Approach Vol, veh/h		821			674			269			199	
Approach Delay, s/veh		9.5			10.6			9.4			10.2	
Approach LOS		A			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.4		20.8		19.4		20.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+1), s		15.5		13.4		15.7		11.8				
Green Ext Time (p_c), s		0.9		3.1		0.7		2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				9.9								
HCM 6th LOS				A								



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	645	51	141	579	206	68	794	144	120	554	112
Future Volume (veh/h)	175	645	51	141	579	206	68	794	144	120	554	112
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	186	686	54	150	616	219	72	845	153	128	589	119
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	968	76	181	691	245	93	966	175	157	1053	212
Arrive On Green	0.12	0.29	0.29	0.10	0.27	0.27	0.05	0.32	0.32	0.09	0.36	0.36
Sat Flow, veh/h	1781	3337	263	1781	2570	913	1781	3005	544	1781	2947	594
Grp Volume(v), veh/h	186	365	375	150	426	409	72	500	498	128	355	353
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1777	1706	1781	1777	1772	1781	1777	1763
Q Serve(g_s), s	10.8	19.4	19.4	8.7	24.3	24.3	4.2	28.0	28.0	7.4	16.9	17.0
Cycle Q Clear(g_c), s	10.8	19.4	19.4	8.7	24.3	24.3	4.2	28.0	28.0	7.4	16.9	17.0
Prop In Lane	1.00		0.14	1.00		0.53	1.00		0.31	1.00		0.34
Lane Grp Cap(c), veh/h	218	515	529	181	478	459	93	571	570	157	635	630
V/C Ratio(X)	0.85	0.71	0.71	0.83	0.89	0.89	0.78	0.87	0.87	0.82	0.56	0.56
Avail Cap(c_a), veh/h	282	566	581	238	522	502	174	657	655	208	691	686
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	45.4	33.5	33.5	46.5	37.1	37.1	49.4	33.8	33.8	47.2	27.2	27.2
Incr Delay (d2), s/veh	17.7	3.7	3.6	16.8	16.3	17.1	12.9	11.4	11.5	16.8	0.8	0.9
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	5.7	8.4	8.7	4.6	12.1	11.8	2.1	13.2	13.1	3.9	6.9	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.0	37.1	37.1	63.3	53.4	54.2	62.3	45.2	45.2	64.0	28.0	28.1
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	C	C
Approach Vol, veh/h		926		985		1070		836				
Approach Delay, s/veh		42.3		55.2		46.4		33.6				
Approach LOS		D		E		D		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.8	39.9	17.4	34.4	10.0	43.7	15.2	36.6				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.3	39.0	16.7	31.0	10.3	41.0	14.1	33.6				
Max Q Clear Time (g_c+I), s	19.4	30.0	12.8	26.3	6.2	19.0	10.7	21.4				
Green Ext Time (p_c), s	0.1	3.9	0.2	2.0	0.0	4.0	0.1	3.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			44.9									
HCM 6th LOS			D									

Intersection												
Intersection Delay, s/veh	13.4											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	175	45	46	147	19	40	215	27	3	175	17
Future Vol, veh/h	43	175	45	46	147	19	40	215	27	3	175	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	188	48	49	158	20	43	231	29	3	188	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.8	12.7	14.4	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	16%	22%	2%
Vol Thru, %	76%	67%	69%	90%
Vol Right, %	10%	17%	9%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	263	212	195
LT Vol	40	43	46	3
Through Vol	215	175	147	175
RT Vol	27	45	19	17
Lane Flow Rate	303	283	228	210
Geometry Grp	1	1	1	1
Degree of Util (X)	0.489	0.457	0.378	0.348
Departure Headway (Hd)	5.808	5.812	5.974	5.97
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	614	597	595
Service Time	3.897	3.901	4.069	4.068
HCM Lane V/C Ratio	0.492	0.461	0.382	0.353
HCM Control Delay	14.4	13.8	12.7	12.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.7	2.4	1.8	1.6

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	122	56	118	108	63	56	905	113	27	669	53
Future Volume (veh/h)	60	122	56	118	108	63	56	905	113	27	669	53
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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	65	131	60	127	116	68	60	973	122	29	719	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	356	163	257	205	465	156	1421	634	58	1060	84
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.09	0.40	0.40	0.03	0.32	0.32
Sat Flow, veh/h	1200	1214	556	534	700	1585	1781	3554	1585	1781	3335	264
Grp Volume(v), veh/h	65	0	191	243	0	68	60	973	122	29	383	393
Grp Sat Flow(s),veh/h/ln1200		0	1770	1233	0	1585	1781	1777	1585	1781	1777	1823
Q Serve(g_s), s	2.8	0.0	4.7	5.9	0.0	1.7	1.7	12.4	2.7	0.9	10.2	10.3
Cycle Q Clear(g_c), s	13.4	0.0	4.7	10.6	0.0	1.7	1.7	12.4	2.7	0.9	10.2	10.3
Prop In Lane	1.00		0.31	0.52		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	250	0	519	462	0	465	156	1421	634	58	564	579
V/C Ratio(X)	0.26	0.00	0.37	0.53	0.00	0.15	0.39	0.68	0.19	0.50	0.68	0.68
Avail Cap(c_a), veh/h	502	0	890	777	0	811	716	2716	1211	186	845	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	15.3	17.8	0.0	14.3	23.6	13.6	10.7	26.0	16.2	16.2
Incr Delay (d2), s/veh	0.5	0.0	0.4	0.9	0.0	0.1	1.6	0.6	0.1	6.5	1.4	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/ln0.7	0.0	0.0	1.6	2.5	0.0	0.5	0.7	3.8	0.8	0.4	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	15.8	18.7	0.0	14.4	25.1	14.1	10.8	32.5	17.7	17.6
LnGrp LOS	C	A	B	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		256			311			1155			805	
Approach Delay, s/veh		17.9			17.8			14.4			18.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s6.3		27.9		20.5	10.8	23.4		20.5				
Change Period (Y+Rc), s 4.5		6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s 5.7		41.8		27.5	22.0	* 26		* 28				
Max Q Clear Time (g_c+1/2), s 12.9		14.4		15.4	3.7	12.3		12.6				
Green Ext Time (p_c), s 0.0		7.5		0.9	0.1	3.7		1.4				

Intersection Summary

HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	20.6											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	50	241	44	40	250	51	33	209	31	32	196	44
Future Vol, veh/h	50	241	44	40	250	51	33	209	31	32	196	44
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	248	45	41	258	53	34	215	32	33	202	45
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	21.1	20.7	18.5	21.9
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	0%	17%	0%	14%	0%	12%
Vol Thru, %	86%	0%	83%	0%	86%	0%	72%
Vol Right, %	0%	100%	0%	100%	0%	100%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	242	31	291	44	290	51	272
LT Vol	33	0	50	0	40	0	32
Through Vol	209	0	241	0	250	0	196
RT Vol	0	31	0	44	0	51	44
Lane Flow Rate	249	32	300	45	299	53	280
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.54	0.062	0.634	0.086	0.629	0.099	0.601
Departure Headway (Hd)	7.792	7.002	7.602	6.792	7.579	6.787	7.71
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	459	508	471	523	472	524	465
Service Time	5.59	4.799	5.397	4.586	5.376	4.583	5.81
HCM Lane V/C Ratio	0.542	0.063	0.637	0.086	0.633	0.101	0.602
HCM Control Delay	19.5	10.3	22.8	10.2	22.5	10.3	21.9
HCM Lane LOS	C	B	C	B	C	B	C
HCM 95th-tile Q	3.1	0.2	4.3	0.3	4.3	0.3	3.9

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	199	55	64	199	39	46	937	40	30	753	68
Future Volume (veh/h)	102	199	55	64	199	39	46	937	40	30	753	68
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	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	107	209	58	67	209	41	48	986	42	32	793	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	319	685	186	352	464	393	139	1428	61	64	1116	101
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.41	0.41	0.04	0.34	0.34
Sat Flow, veh/h	1130	2764	748	1112	1870	1585	1781	3473	148	1781	3294	299
Grp Volume(v), veh/h	107	132	135	67	209	41	48	504	524	32	428	437
Grp Sat Flow(s),veh/h/ln	1130	1777	1736	1112	1870	1585	1781	1777	1844	1781	1777	1817
Q Serve(g_s), s	4.4	3.0	3.1	2.6	4.7	1.0	1.3	11.5	11.5	0.9	10.3	10.3
Cycle Q Clear(g_c), s	9.0	3.0	3.1	5.7	4.7	1.0	1.3	11.5	11.5	0.9	10.3	10.3
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.08	1.00		0.16
Lane Grp Cap(c), veh/h	319	440	430	352	464	393	139	731	758	64	602	615
V/C Ratio(X)	0.33	0.30	0.31	0.19	0.45	0.10	0.34	0.69	0.69	0.50	0.71	0.71
Avail Cap(c_a), veh/h	510	740	723	551	798	676	1013	1747	1813	221	975	997
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	19.5	15.0	15.1	17.4	15.7	14.3	21.5	11.9	11.9	23.3	14.2	14.2
Incr Delay (d2), s/veh	0.6	0.4	0.4	0.3	0.7	0.1	1.5	1.2	1.1	5.9	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0	1.0	1.1	0.6	1.7	0.3	0.5	3.2	3.4	0.4	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	15.4	15.5	17.7	16.4	14.4	22.9	13.1	13.0	29.2	15.7	15.7
LnGrp LOS	C	B	B	B	B	B	C	B	B	C	B	B
Approach Vol, veh/h		374			317			1076			897	
Approach Delay, s/veh		16.8			16.4			13.5			16.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	26.2		16.7	9.8	22.7		16.7				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	48.4			20.5	28.0	* 27		* 21				
Max Q Clear Time (g_c+1/3), s	13.5			11.0	3.3	12.3		7.7				
Green Ext Time (p_c), s	0.0	6.7		1.3	0.1	4.3		1.2				

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	55	249	52	113	339	91	61	968	96	75	721	48
Future Volume (veh/h)	55	249	52	113	339	91	61	968	96	75	721	48
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	60	271	57	123	368	99	66	1052	104	82	784	52
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	248	741	154	306	702	187	159	1410	139	111	1283	85
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.09	0.43	0.43	0.06	0.38	0.38
Sat Flow, veh/h	926	2931	607	1052	2777	738	1781	3266	323	1781	3383	224
Grp Volume(v), veh/h	60	163	165	123	234	233	66	572	584	82	412	424
Grp Sat Flow(s),veh/h/ln	926	1777	1761	1052	1777	1738	1781	1777	1812	1781	1777	1830
Q Serve(g_s), s	3.5	4.5	4.6	6.5	6.7	6.9	2.1	16.0	16.0	2.7	11.1	11.1
Cycle Q Clear(g_c), s	10.4	4.5	4.6	11.1	6.7	6.9	2.1	16.0	16.0	2.7	11.1	11.1
Prop In Lane	1.00		0.34	1.00		0.42	1.00		0.18	1.00		0.12
Lane Grp Cap(c), veh/h	248	449	445	306	449	439	159	767	782	111	674	694
V/C Ratio(X)	0.24	0.36	0.37	0.40	0.52	0.53	0.41	0.75	0.75	0.74	0.61	0.61
Avail Cap(c_a), veh/h	334	614	609	413	629	615	871	1337	1363	297	779	803
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	23.6	18.2	18.3	22.8	19.1	19.1	25.5	14.1	14.1	27.3	14.9	14.9
Incr Delay (d2), s/veh	0.5	0.5	0.5	0.9	0.9	1.0	1.7	1.5	1.4	9.1	1.1	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	0.7	1.6	1.7	1.5	2.5	2.5	0.8	5.0	5.1	1.3	3.6	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	18.7	18.8	23.7	20.0	20.1	27.2	15.6	15.6	36.4	15.9	15.9
LnGrp LOS	C	B	B	C	B	C	C	B	B	D	B	B
Approach Vol, veh/h		388			590			1222			918	
Approach Delay, s/veh		19.6			20.8			16.2			17.8	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	31.6		19.5	11.3	28.5		19.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.5	44.6		20.5	29.0	* 26		* 21				
Max Q Clear Time (g_c+14), s	14.5	18.0		12.4	4.1	13.1		13.1				
Green Ext Time (p_c), s	0.1	7.6		1.2	0.1	3.8		1.9				

Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↕↔↔		
Traffic Volume (veh/h)	172	254	99	349	473	69	136	983	165	88	670	92
Future Volume (veh/h)	172	254	99	349	473	69	136	983	165	88	670	92
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	185	273	106	375	509	74	146	1057	0	95	720	99
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	415	157	495	705	102	187	1688		123	1340	183
Arrive On Green	0.08	0.16	0.16	0.14	0.23	0.23	0.10	0.33	0.00	0.07	0.29	0.29
Sat Flow, veh/h	3456	2520	955	3456	3115	451	1781	5106	1585	1781	4544	619
Grp Volume(v), veh/h	185	190	189	375	289	294	146	1057	0	95	538	281
Grp Sat Flow(s),veh/h/ln	1728	1777	1698	1728	1777	1789	1781	1702	1585	1781	1702	1759
Q Serve(g_s), s	3.7	7.2	7.5	7.5	10.8	10.9	5.7	12.5	0.0	3.8	9.5	9.6
Cycle Q Clear(g_c), s	3.7	7.2	7.5	7.5	10.8	10.9	5.7	12.5	0.0	3.8	9.5	9.6
Prop In Lane	1.00		0.56	1.00		0.25	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	281	292	279	495	402	405	187	1688		123	1004	519
V/C Ratio(X)	0.66	0.65	0.67	0.76	0.72	0.72	0.78	0.63		0.77	0.54	0.54
Avail Cap(c_a), veh/h	544	619	592	794	748	753	390	3401		241	1983	1024
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	32.0	28.1	28.2	29.5	25.7	25.7	31.3	20.3	0.0	32.9	21.2	21.2
Incr Delay (d2), s/veh	2.6	2.4	2.8	2.4	2.4	2.5	7.0	0.4	0.0	9.8	0.4	0.9
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	1.6	3.1	3.1	3.1	4.6	4.7	2.7	4.7	0.0	1.9	3.6	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	30.5	31.0	32.0	28.1	28.2	38.3	20.7	0.0	42.7	21.6	22.1
LnGrp LOS	C	C	C	C	C	C	D	C		D	C	C
Approach Vol, veh/h		564		958			1203		A		914	
Approach Delay, s/veh		32.0		29.6			22.8				24.0	
Approach LOS		C		C			C				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	29.7	10.3	22.2	12.0	27.2	14.8	17.8				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	47.8	47.8	11.3	30.2	15.7	41.8	16.5	25.0				
Max Q Clear Time (g_c+1/3), s	14.5	14.5	5.7	12.9	7.7	11.6	9.5	9.5				
Green Ext Time (p_c), s	0.1	9.2	0.3	3.3	0.2	6.1	0.8	2.0				

Intersection Summary

HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

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



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	9	3	14	77	3	36	59	1261	34	20	1083	24
Future Volume (veh/h)	9	3	14	77	3	36	59	1261	34	20	1083	24
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		No		No
Adj Sat Flow, veh/h/ln	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	9	3	15	81	3	38	62	1327	36	21	1140	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	6	29	291	10	125	168	2340	726	45	1841	40
Arrive On Green	0.03	0.03	0.03	0.08	0.08	0.08	0.09	0.46	0.46	0.03	0.36	0.36
Sat Flow, veh/h	558	186	931	3456	117	1486	1781	5106	1585	1781	5141	113
Grp Volume(v), veh/h	27	0	0	81	0	41	62	1327	36	21	755	410
Grp Sat Flow(s),veh/h/ln	1675	0	0	1728	0	1603	1781	1702	1585	1781	1702	1850
Q Serve(g_s), s	0.8	0.0	0.0	1.0	0.0	1.1	1.6	9.0	0.6	0.6	8.7	8.7
Cycle Q Clear(g_c), s	0.8	0.0	0.0	1.0	0.0	1.1	1.6	9.0	0.6	0.6	8.7	8.7
Prop In Lane	0.33		0.56	1.00		0.93	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	53	0	0	291	0	135	168	2340	726	45	1219	662
V/C Ratio(X)	0.51	0.00	0.00	0.28	0.00	0.30	0.37	0.57	0.05	0.46	0.62	0.62
Avail Cap(c_a), veh/h	565	0	0	1165	0	540	676	3659	1136	188	1542	838
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	0.0	0.0	20.4	0.0	20.4	20.2	9.4	7.1	22.8	12.6	12.6
Incr Delay (d2), s/veh	7.4	0.0	0.0	0.5	0.0	1.2	1.4	0.2	0.0	7.2	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.4	0.0	0.4	0.6	2.6	0.2	0.3	2.8	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	0.0	20.9	0.0	21.7	21.5	9.6	7.2	30.0	13.1	13.5
LnGrp LOS	C	A	A	C	A	C	C	A	A	C	B	B
Approach Vol, veh/h		27			122			1425			1186	
Approach Delay, s/veh		30.1			21.1			10.1			13.5	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	27.7		8.0	10.5	23.0		6.0				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	34.0		16.0	18.0	* 22		16.0				
Max Q Clear Time (g_c+1), s	12.6	11.0		3.1	3.6	10.7		2.8				
Green Ext Time (p_c), s	0.0	10.7		0.3	0.1	5.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Opening Year without Project  
 Timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	162	64	1291	90	22	1127
Future Volume (veh/h)	162	64	1291	90	22	1127
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	67	1345	94	23	1174
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	307	141	3336	1035	90	3824
Arrive On Green	0.09	0.09	0.65	0.65	0.03	0.75
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	169	67	1345	94	23	1174
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	3.0	2.6	8.0	1.4	0.4	4.9
Cycle Q Clear(g_c), s	3.0	2.6	8.0	1.4	0.4	4.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	307	141	3336	1035	90	3824
V/C Ratio(X)	0.55	0.48	0.40	0.09	0.25	0.31
Avail Cap(c_a), veh/h	2028	930	3336	1035	267	3824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	28.1	5.3	4.1	30.9	2.7
Incr Delay (d2), s/veh	1.5	2.5	0.1	0.0	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	1.5	0.3	0.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	30.5	5.4	4.2	32.4	2.9
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	236		1439			1197
Approach Delay, s/veh	30.0		5.3			3.4
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	48.3			54.5	10.3
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	37.0			* 49	38.0
Max Q Clear Time (g_c+1), s	12.4	10.0			6.9	5.0
Green Ext Time (p_c), s	0.0	10.4			9.3	0.8

Intersection Summary

HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	212	0	412	0	987	357	0	864	447
Future Volume (veh/h)	0	0	0	212	0	412	0	987	357	0	864	447
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				228	0	443	0	1061	0	0	929	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				584	0	519	0	1618		0	1618	
Arrive On Green				0.33	0.00	0.33	0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				228	0	443	0	1061	0	0	929	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				4.3	0.0	11.4	0.0	10.1	0.0	0.0	8.4	0.0
Cycle Q Clear(g_c), s				4.3	0.0	11.4	0.0	10.1	0.0	0.0	8.4	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				584	0	519	0	1618		0	1618	
V/C Ratio(X)				0.39	0.00	0.85	0.00	0.66		0.00	0.57	
Avail Cap(c_a), veh/h				1547	0	1376	0	3451		0	3451	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.3	0.0	13.7	0.0	9.3	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.1	0.0	0.5	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	3.9	0.0	2.2	0.0	0.0	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.8	0.0	17.8	0.0	9.7	0.0	0.0	9.1	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					671			1061	A		929	A
Approach Delay, s/veh					15.8			9.7			9.1	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		24.4				24.4		19.3				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		42.5				42.5		38.0				
Max Q Clear Time (g_c+I1), s		12.1				10.4		13.4				
Green Ext Time (p_c), s		7.8				6.6		0.9				

Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Opening Year without Project  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	3	265	0	0	0	0	1038	347	249	822	0
Future Volume (veh/h)	308	3	265	0	0	0	0	1038	347	249	822	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	404	0	183				0	1070	358	257	847	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	635	0	283				0	1564	523	318	2355	0
Arrive On Green	0.18	0.00	0.18				0.00	0.41	0.41	0.18	0.66	0.00
Sat Flow, veh/h	3563	0	1585				0	3950	1265	1781	3647	0
Grp Volume(v), veh/h	404	0	183				0	963	465	257	847	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1643	1781	1777	0
Q Serve(g_s), s	5.9	0.0	6.1				0.0	13.1	13.1	7.8	6.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	6.1				0.0	13.1	13.1	7.8	6.0	0.0
Prop In Lane	1.00		1.00				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	635	0	283				0	1408	679	318	2355	0
V/C Ratio(X)	0.64	0.00	0.65				0.00	0.68	0.68	0.81	0.36	0.00
Avail Cap(c_a), veh/h	1700	0	756				0	1925	929	567	3423	0
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	21.5	0.0	21.6				0.0	13.6	13.6	22.3	4.2	0.0
Incr Delay (d2), s/veh	1.1	0.0	2.5				0.0	0.6	1.2	4.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.3				0.0	3.8	3.8	3.2	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	24.1				0.0	14.2	14.8	27.2	4.3	0.0
LnGrp LOS	C	A	C				A	B	B	C	A	A
Approach Vol, veh/h		587						1428			1104	
Approach Delay, s/veh		23.1						14.4			9.6	
Approach LOS		C						B			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	14.1	27.9	14.6	42.0								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	10.0	32.0	27.0	* 55								
Max Q Clear Time (g_c+I), s	19.8	15.1	8.1	8.0								
Green Ext Time (p_c), s	0.4	8.3	2.0	6.1								

Intersection Summary

HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑↑	↗	↖↖	↑↑↑		↖↖	↑↑	↗	↖↖	↑↑	↗
Traffic Volume (veh/h)	308	543	85	159	924	104	109	643	174	185	826	382
Future Volume (veh/h)	308	543	85	159	924	104	109	643	174	185	826	382
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	1796	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	362	639	100	187	1087	122	128	756	205	218	972	449
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	1706	530	253	1309	147	187	1132	505	284	1232	550
Arrive On Green	0.13	0.33	0.33	0.07	0.28	0.28	0.05	0.32	0.32	0.08	0.35	0.35
Sat Flow, veh/h	3456	5106	1585	3456	4658	522	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	362	639	100	187	794	415	128	756	205	218	972	449
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1776	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.2	10.4	4.9	5.8	23.9	23.9	4.0	20.1	11.1	6.8	26.9	28.2
Cycle Q Clear(g_c), s	11.2	10.4	4.9	5.8	23.9	23.9	4.0	20.1	11.1	6.8	26.9	28.2
Prop In Lane	1.00		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	436	1706	530	253	957	499	187	1132	505	284	1232	550
V/C Ratio(X)	0.83	0.37	0.19	0.74	0.83	0.83	0.69	0.67	0.41	0.77	0.79	0.82
Avail Cap(c_a), veh/h	585	1925	598	389	1090	569	237	1398	624	395	1561	696
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	46.6	27.7	25.9	49.6	36.8	36.9	50.8	32.2	29.1	49.1	32.1	32.5
Incr Delay (d2), s/veh	7.4	0.1	0.2	4.2	5.0	9.1	5.6	0.9	0.5	5.9	2.2	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.1	1.8	2.6	10.1	11.2	1.8	8.4	4.1	3.1	11.3	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	27.8	26.0	53.9	41.8	46.0	56.4	33.1	29.7	55.0	34.3	38.6
LnGrp LOS	D	C	C	D	D	D	E	C	C	E	C	D
Approach Vol, veh/h		1101			1396			1089			1639	
Approach Delay, s/veh		36.3			44.7			35.2			38.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.5	40.8	12.5	42.5	10.4	43.9	18.3	36.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.5	43.0	12.3	41.2	7.5	48.0	18.5	35.0				
Max Q Clear Time (g_c+I1), s	8.8	22.1	7.8	12.4	6.0	30.2	13.2	25.9				
Green Ext Time (p_c), s	0.2	5.5	0.2	4.6	0.0	7.7	0.6	4.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											38.9	
HCM 6th LOS											D	

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	520	38	118	635	72	34	92	61	79	111	56
Future Volume (veh/h)	28	520	38	118	635	72	34	92	61	79	111	56
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1796	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	32	591	43	134	722	82	39	105	69	90	126	64
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1421	103	348	791	671	71	154	695	79	81	695
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	677	3359	244	793	1870	1585	1	351	1585	1	185	1585
Grp Volume(v), veh/h	32	312	322	134	722	82	144	0	69	216	0	64
Grp Sat Flow(s),veh/h/ln	677	1777	1826	793	1870	1585	352	0	1585	186	0	1585
Q Serve(g_s), s	3.0	8.0	8.0	9.3	23.6	2.0	0.0	0.0	1.7	0.0	0.0	1.5
Cycle Q Clear(g_c), s	26.6	8.0	8.0	17.3	23.6	2.0	28.5	0.0	1.7	28.5	0.0	1.5
Prop In Lane	1.00		0.13	1.00		1.00	0.27		1.00	0.42		1.00
Lane Grp Cap(c), veh/h	152	752	773	348	791	671	225	0	695	160	0	695
V/C Ratio(X)	0.21	0.42	0.42	0.38	0.91	0.12	0.64	0.00	0.10	1.35	0.00	0.09
Avail Cap(c_a), veh/h	152	752	773	348	792	671	225	0	695	160	0	695
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(l)	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	30.1	13.1	13.1	19.2	17.6	11.4	15.2	0.0	10.7	18.8	0.0	10.7
Incr Delay (d2), s/veh	0.7	0.4	0.4	0.7	14.9	0.1	6.0	0.0	0.1	192.9	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/lr0.5	0.5	2.7	2.7	1.5	11.3	0.6	1.4	0.0	0.5	9.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	13.5	13.5	19.9	32.5	11.5	21.2	0.0	10.8	211.8	0.0	10.7
LnGrp LOS	C	B	B	B	C	B	C	A	B	F	A	B
Approach Vol, veh/h		666			938			213			280	
Approach Delay, s/veh		14.3			28.8			17.8			165.8	
Approach LOS		B			C			B			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		32.0		33.0		32.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		27.5		28.5		27.5				
Max Q Clear Time (g_c+I1), s		30.5		28.6		30.5		25.6				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				41.4								
HCM 6th LOS				D								

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	575	72	206	675	231	59	469	111	196	877	123
Future Volume (veh/h)	121	575	72	206	675	231	59	469	111	196	877	123
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	141	669	84	240	785	269	69	545	129	228	1020	143
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	833	105	273	890	305	89	743	175	257	1111	156
Arrive On Green	0.07	0.26	0.26	0.15	0.34	0.34	0.05	0.26	0.26	0.14	0.36	0.36
Sat Flow, veh/h	1781	3177	398	1781	2597	890	1781	2853	673	1781	3130	438
Grp Volume(v), veh/h	141	374	379	240	537	517	69	339	335	228	579	584
Grp Sat Flow(s),veh/h/ln	1781	1777	1799	1781	1777	1710	1781	1777	1749	1781	1777	1791
Q Serve(g_s), s	8.5	23.0	23.0	15.4	33.3	33.3	4.5	20.4	20.5	14.7	36.4	36.5
Cycle Q Clear(g_c), s	8.5	23.0	23.0	15.4	33.3	33.3	4.5	20.4	20.5	14.7	36.4	36.5
Prop In Lane	1.00		0.22	1.00		0.52	1.00		0.38	1.00		0.24
Lane Grp Cap(c), veh/h	130	466	472	273	609	586	89	463	455	257	631	636
V/C Ratio(X)	1.09	0.80	0.80	0.88	0.88	0.88	0.78	0.73	0.74	0.89	0.92	0.92
Avail Cap(c_a), veh/h	130	466	472	434	704	678	160	509	501	316	664	670
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	54.2	40.3	40.3	48.4	36.2	36.2	54.9	39.5	39.6	49.0	36.0	36.1
Incr Delay (d2), s/veh	104.7	9.7	9.7	11.9	11.4	11.8	13.5	4.8	5.1	21.5	17.2	17.3
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	7.5	10.9	11.1	7.5	15.6	15.1	2.3	9.2	9.1	7.9	17.9	18.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.9	50.0	50.0	60.3	47.6	48.0	68.4	44.3	44.6	70.6	53.3	53.4
LnGrp LOS	F	D	D	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		894			1294			743			1391	
Approach Delay, s/veh		67.2			50.1			46.7			56.2	
Approach LOS		E			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.4	36.4	13.0	46.0	10.3	47.5	22.4	36.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	20.7	33.5	8.5	46.3	10.5	43.7	28.5	26.3				
Max Q Clear Time (g_c+11g), s	11.0	22.5	10.5	35.3	6.5	38.5	17.4	25.0				
Green Ext Time (p_c), s	0.2	2.9	0.0	4.8	0.0	3.0	0.5	0.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											55.0	
HCM 6th LOS											E	

Intersection												
Intersection Delay, s/veh	19.6											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	60	130	6	37	123	70	51	169	42	45	162	82
Future Vol, veh/h	60	130	6	37	123	70	51	169	42	45	162	82
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	165	8	47	156	89	65	214	53	57	205	104
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	17	18.2	20.2	22.1
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	31%	16%	16%
Vol Thru, %	65%	66%	53%	56%
Vol Right, %	16%	3%	30%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	262	196	230	289
LT Vol	51	60	37	45
Through Vol	169	130	123	162
RT Vol	42	6	70	82
Lane Flow Rate	332	248	291	366
Geometry Grp	1	1	1	1
Degree of Util (X)	0.619	0.493	0.554	0.672
Departure Headway (Hd)	6.721	7.15	6.845	6.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	537	504	524	549
Service Time	4.782	5.216	4.908	4.616
HCM Lane V/C Ratio	0.618	0.492	0.555	0.667
HCM Control Delay	20.2	17	18.2	22.1
HCM Lane LOS	C	C	C	C
HCM 95th-tile Q	4.2	2.7	3.3	5



9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	36	131	52	68	89	30	92	562	146	66	1014	55
Future Volume (veh/h)	36	131	52	68	89	30	92	562	146	66	1014	55
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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	42	154	61	80	105	35	108	661	172	78	1193	65
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	211	74	171	198	362	175	1800	803	101	1522	83
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.10	0.51	0.51	0.06	0.44	0.44
Sat Flow, veh/h	124	922	326	434	865	1585	1781	3554	1585	1781	3427	187
Grp Volume(v), veh/h	257	0	0	185	0	35	108	661	172	78	618	640
Grp Sat Flow(s),veh/h/ln	1372	0	0	1299	0	1585	1781	1777	1585	1781	1777	1837
Q Serve(g_s), s	4.6	0.0	0.0	0.0	0.0	1.3	4.2	8.1	4.3	3.1	21.4	21.4
Cycle Q Clear(g_c), s	13.6	0.0	0.0	8.9	0.0	1.3	4.2	8.1	4.3	3.1	21.4	21.4
Prop In Lane	0.16		0.24	0.43		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	372	0	0	369	0	362	175	1800	803	101	789	816
V/C Ratio(X)	0.69	0.00	0.00	0.50	0.00	0.10	0.62	0.37	0.21	0.77	0.78	0.78
Avail Cap(c_a), veh/h	603	0	0	585	0	594	519	2850	1271	264	1183	1223
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	24.4	0.0	21.9	31.2	10.8	9.8	33.5	17.1	17.1
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.1	0.0	0.1	3.5	0.1	0.1	11.7	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	2.7	0.0	0.4	1.8	2.6	1.2	1.6	7.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	0.0	25.5	0.0	22.0	34.7	10.9	10.0	45.2	19.1	19.1
LnGrp LOS	C	A	A	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		257			220			941			1336	
Approach Delay, s/veh		28.7			24.9			13.5			20.6	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	42.5		21.0	13.1	38.0		21.0				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	10.7	57.8		26.5	21.0	* 48		* 27				
Max Q Clear Time (g_c+1/3), s	15.1	10.1		15.6	6.2	23.4		10.9				
Green Ext Time (p_c), s	0.1	5.3		1.0	0.2	8.6		1.0				

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

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



Intersection

Intersection Delay, s/veh 52.3

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↔	
Traffic Vol, veh/h	53	226	37	31	238	98	78	152	42	83	206	50
Future Vol, veh/h	53	226	37	31	238	98	78	152	42	83	206	50
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	276	45	38	290	120	95	185	51	101	251	61
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left		NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	45.3	36.4	31.4	92.8
HCM LOS	E	E	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	34%	0%	19%	0%	12%	0%	24%
Vol Thru, %	66%	0%	81%	0%	88%	0%	61%
Vol Right, %	0%	100%	0%	100%	0%	100%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	42	279	37	269	98	339
LT Vol	78	0	53	0	31	0	83
Through Vol	152	0	226	0	238	0	206
RT Vol	0	42	0	37	0	98	50
Lane Flow Rate	280	51	340	45	328	120	413
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.732	0.121	0.865	0.104	0.829	0.276	1.058
Departure Headway (Hd)	9.73	8.819	9.476	8.641	9.436	8.64	9.211
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	373	409	384	417	387	418	397
Service Time	7.43	6.519	7.176	6.341	7.136	6.34	7.211
HCM Lane V/C Ratio	0.751	0.125	0.885	0.108	0.848	0.287	1.04
HCM Control Delay	34.8	12.7	49.7	12.3	44.4	14.6	92.8
HCM Lane LOS	D	B	E	B	E	B	F
HCM 95th-tile Q	5.6	0.4	8.3	0.3	7.6	1.1	13.9

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	202	56	33	185	42	89	763	74	51	1026	93
Future Volume (veh/h)	100	202	56	33	185	42	89	763	74	51	1026	93
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	119	240	67	39	220	50	106	908	88	61	1221	111
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	671	183	274	455	385	165	1693	164	84	1491	135
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.09	0.52	0.52	0.05	0.45	0.45
Sat Flow, veh/h	1109	2758	753	1072	1870	1585	1781	3273	317	1781	3295	299
Grp Volume(v), veh/h	119	153	154	39	220	50	106	493	503	61	657	675
Grp Sat Flow(s),veh/h/ln	1109	1777	1735	1072	1870	1585	1781	1777	1813	1781	1777	1817
Q Serve(g_s), s	8.0	5.5	5.8	2.4	7.9	1.9	4.5	14.4	14.4	2.6	25.0	25.2
Cycle Q Clear(g_c), s	15.9	5.5	5.8	8.2	7.9	1.9	4.5	14.4	14.4	2.6	25.0	25.2
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.17	1.00		0.16
Lane Grp Cap(c), veh/h	250	432	422	274	455	385	165	919	938	84	804	822
V/C Ratio(X)	0.48	0.35	0.37	0.14	0.48	0.13	0.64	0.54	0.54	0.73	0.82	0.82
Avail Cap(c_a), veh/h	315	536	524	344	576	489	618	1415	1444	217	1027	1050
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	32.1	24.4	24.5	27.9	25.3	23.0	34.1	12.6	12.6	36.6	18.5	18.6
Incr Delay (d2), s/veh	1.4	0.5	0.5	0.2	0.8	0.2	4.2	0.5	0.5	11.4	4.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.2	2.3	0.6	3.3	0.7	2.0	4.7	4.8	1.3	9.6	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	24.9	25.0	28.1	26.1	23.2	38.3	13.0	13.0	48.0	22.7	22.7
LnGrp LOS	C	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		426			309			1102			1393	
Approach Delay, s/veh		27.3			25.9			15.5			23.8	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	46.3		23.4	13.2	41.2		23.4				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.5	62.0		23.5	27.0	* 45		* 24				
Max Q Clear Time (g_c+14), s	14.6	16.4		17.9	6.5	27.2		10.2				
Green Ext Time (p_c), s	0.0	6.7		1.0	0.2	8.1		1.2				

Intersection Summary

HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	62	191	73	70	207	83	49	824	84	84	953	78
Future Volume (veh/h)	62	191	73	70	207	83	49	824	84	84	953	78
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	68	210	80	77	227	91	54	905	92	92	1047	86
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	529	195	274	521	203	144	1494	152	120	1393	114
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.08	0.46	0.46	0.07	0.42	0.42
Sat Flow, veh/h	1062	2541	938	1089	2500	972	1781	3257	331	1781	3325	273
Grp Volume(v), veh/h	68	145	145	77	159	159	54	494	503	92	559	574
Grp Sat Flow(s),veh/h/ln	1062	1777	1702	1089	1777	1695	1781	1777	1811	1781	1777	1821
Q Serve(g_s), s	3.4	4.0	4.2	3.7	4.4	4.6	1.6	11.8	11.8	2.9	15.1	15.1
Cycle Q Clear(g_c), s	8.0	4.0	4.2	7.9	4.4	4.6	1.6	11.8	11.8	2.9	15.1	15.1
Prop In Lane	1.00		0.55	1.00		0.57	1.00		0.18	1.00		0.15
Lane Grp Cap(c), veh/h	262	370	355	274	370	353	144	815	831	120	744	763
V/C Ratio(X)	0.26	0.39	0.41	0.28	0.43	0.45	0.37	0.61	0.61	0.76	0.75	0.75
Avail Cap(c_a), veh/h	595	927	888	625	943	900	933	1666	1698	394	1144	1173
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(l)	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	23.0	19.3	19.4	22.8	19.5	19.5	24.6	11.5	11.5	25.9	13.9	13.9
Incr Delay (d2), s/veh	0.5	0.7	0.8	0.6	0.8	0.9	1.6	0.7	0.7	9.6	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.5	1.5	0.9	1.6	1.6	0.7	3.4	3.5	1.4	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	20.0	20.1	23.3	20.2	20.4	26.2	12.2	12.2	35.5	15.5	15.5
LnGrp LOS	C	B	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		358			395			1051			1225	
Approach Delay, s/veh		20.7			20.9			12.9			17.0	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	31.9		16.3	10.6	29.7		16.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	12.5	53.0		29.5	29.6	* 36		* 30				
Max Q Clear Time (g_c+14), s	14.9	13.8		10.0	3.6	17.1		9.9				
Green Ext Time (p_c), s	0.1	6.6		1.7	0.1	6.6		1.9				

Intersection Summary

HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↕↔↔		
Traffic Volume (veh/h)	106	189	138	246	269	54	95	795	127	40	970	65
Future Volume (veh/h)	106	189	138	246	269	54	95	795	127	40	970	65
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	112	199	145	259	283	57	100	837	0	42	1021	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	316	219	376	589	117	130	1884		73	1648	110
Arrive On Green	0.07	0.16	0.16	0.11	0.20	0.20	0.07	0.37	0.00	0.04	0.34	0.34
Sat Flow, veh/h	3456	2007	1390	3456	2955	587	1781	5106	1585	1781	4891	325
Grp Volume(v), veh/h	112	175	169	259	169	171	100	837	0	42	710	379
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1765	1781	1702	1585	1781	1702	1812
Q Serve(g_s), s	2.0	6.0	6.4	4.7	5.4	5.6	3.6	8.0	0.0	1.5	11.3	11.4
Cycle Q Clear(g_c), s	2.0	6.0	6.4	4.7	5.4	5.6	3.6	8.0	0.0	1.5	11.3	11.4
Prop In Lane	1.00		0.86	1.00		0.33	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	231	279	255	376	354	351	130	1884		73	1147	611
V/C Ratio(X)	0.48	0.63	0.66	0.69	0.48	0.49	0.77	0.44		0.58	0.62	0.62
Avail Cap(c_a), veh/h	389	685	625	667	828	822	289	3514		190	2154	1146
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(l)	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	29.2	25.5	25.7	27.8	23.0	23.0	29.5	15.4	0.0	30.5	18.0	18.0
Incr Delay (d2), s/veh	1.6	2.3	2.9	2.3	1.0	1.0	9.2	0.2	0.0	7.0	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.9	2.6	2.5	2.0	2.2	2.3	1.8	2.8	0.0	0.8	4.1	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	27.8	28.6	30.1	24.0	24.1	38.7	15.6	0.0	37.5	18.5	19.0
LnGrp LOS	C	C	C	C	C	C	D	B		D	B	B
Approach Vol, veh/h		456			599			937	A		1131	
Approach Delay, s/veh		28.8			26.6			18.1			19.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	29.9	8.8	18.9	9.2	27.8	11.5	16.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9	44.6	7.3	30.2	10.5	41.0	12.5	25.0				
Max Q Clear Time (g_c+13), s	13.5	10.0	4.0	7.6	5.6	13.4	6.7	8.4				
Green Ext Time (p_c), s	0.0	6.9	0.1	2.0	0.1	8.5	0.4	1.9				

Intersection Summary

HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘	↗ ↘
Traffic Volume (veh/h)	7	0	14	12	0	18	50	1053	52	21	1312	9
Future Volume (veh/h)	7	0	14	12	0	18	50	1053	52	21	1312	9
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	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	7	0	15	13	0	19	53	1108	55	22	1381	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	0	30	124	0	57	149	2680	832	47	2287	15
Arrive On Green	0.03	0.00	0.03	0.04	0.00	0.04	0.08	0.52	0.52	0.03	0.44	0.44
Sat Flow, veh/h	523	0	1120	3456	0	1585	1781	5106	1585	1781	5234	34
Grp Volume(v), veh/h	22	0	0	13	0	19	53	1108	55	22	898	492
Grp Sat Flow(s),veh/h/ln	1643	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	0.7	0.0	0.0	0.2	0.0	0.6	1.4	6.5	0.8	0.6	9.9	9.9
Cycle Q Clear(g_c), s	0.7	0.0	0.0	0.2	0.0	0.6	1.4	6.5	0.8	0.6	9.9	9.9
Prop In Lane	0.32		0.68	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	43	0	0	124	0	57	149	2680	832	47	1487	815
V/C Ratio(X)	0.51	0.00	0.00	0.10	0.00	0.33	0.36	0.41	0.07	0.47	0.60	0.60
Avail Cap(c_a), veh/h	805	0	0	1124	0	516	739	4714	1463	199	2146	1175
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	0.0	22.9	0.0	23.1	21.3	7.1	5.8	23.6	10.6	10.6
Incr Delay (d2), s/veh	8.9	0.0	0.0	0.4	0.0	3.4	1.4	0.1	0.0	7.1	0.4	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/lr	0.3	0.0	0.0	0.1	0.0	0.3	0.6	1.7	0.2	0.3	3.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	0.0	0.0	23.3	0.0	26.5	22.7	7.2	5.8	30.7	11.0	11.3
LnGrp LOS	C	A	A	C	A	C	C	A	A	C	B	B
Approach Vol, veh/h		22			32			1216			1412	
Approach Delay, s/veh		32.5			25.2			7.8			11.4	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	31.8		5.8	10.1	27.5		5.8				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.5	45.4		16.0	20.4	* 31		24.1				
Max Q Clear Time (g_c+1), s	12.6	8.5		2.6	3.4	11.9		2.7				
Green Ext Time (p_c), s	0.0	10.3		0.1	0.1	9.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Opening Year w Project  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	87	29	1114	69	33	1321
Future Volume (veh/h)	87	29	1114	69	33	1321
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	30	1160	72	34	1376
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	204	94	3660	1136	115	4123
Arrive On Green	0.06	0.06	0.72	0.72	0.03	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	91	30	1160	72	34	1376
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.4	6.5	1.1	0.8	5.6
Cycle Q Clear(g_c), s	2.0	1.4	6.5	1.1	0.8	5.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	204	94	3660	1136	115	4123
V/C Ratio(X)	0.45	0.32	0.32	0.06	0.30	0.33
Avail Cap(c_a), veh/h	1670	766	3660	1136	330	4123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	35.5	4.1	3.3	37.1	2.0
Incr Delay (d2), s/veh	1.5	1.9	0.0	0.0	1.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	1.2	0.2	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.3	37.4	4.1	3.3	38.5	2.2
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	121		1232			1410
Approach Delay, s/veh	37.3		4.1			3.1
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.1	62.4			69.5	9.1
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	7.5	49.5			* 64	38.0
Max Q Clear Time (g_c+1/2, s)	12.8	8.5			7.6	4.0
Green Ext Time (p_c), s	0.0	9.5			12.3	0.4

Intersection Summary

HCM 6th Ctrl Delay		5.0
HCM 6th LOS		A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	167	0	373	0	749	201	0	1156	362
Future Volume (veh/h)	0	0	0	167	0	373	0	749	201	0	1156	362
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1900	0	1900	1870	0	1900	1900
Adj Flow Rate, veh/h				178	0	397	0	797	0	0	1230	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	0	0	0	0	2	0	0	0
Cap, veh/h				520	0	470	0	1827	0	0	1827	0
Arrive On Green				0.29	0.00	0.29	0.00	0.51	0.00	0.00	0.51	0.00
Sat Flow, veh/h				1781	0	1610	0	3705	1585	0	3705	1610
Grp Volume(v), veh/h				178	0	397	0	797	0	0	1230	0
Grp Sat Flow(s),veh/h/ln				1781	0	1610	0	1805	1585	0	1805	1610
Q Serve(g_s), s				3.7	0.0	10.9	0.0	6.6	0.0	0.0	12.0	0.0
Cycle Q Clear(g_c), s				3.7	0.0	10.9	0.0	6.6	0.0	0.0	12.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				520	0	470	0	1827	0	0	1827	0
V/C Ratio(X)				0.34	0.00	0.84	0.00	0.44		0.00	0.67	
Avail Cap(c_a), veh/h				1249	0	1129	0	3644		0	3644	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				13.1	0.0	15.6	0.0	7.4	0.0	0.0	8.7	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.2	0.0	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.3	0.0	3.9	0.0	1.4	0.0	0.0	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				13.5	0.0	19.9	0.0	7.5	0.0	0.0	9.1	0.0
LnGrp LOS				B	A	B	A	A		A	A	
Approach Vol, veh/h					575			797	A		1230	A
Approach Delay, s/veh					17.9			7.5			9.1	
Approach LOS					B			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		28.3				28.3		18.7				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		47.5				47.5		33.0				
Max Q Clear Time (g_c+I1), s		8.6				14.0		12.9				
Green Ext Time (p_c), s		5.5				9.8		0.9				

Intersection Summary

HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Opening Year w Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	4	341	0	0	0	0	671	327	447	892	0
Future Volume (veh/h)	329	4	341	0	0	0	0	671	327	447	892	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	477	0	246				0	729	355	486	970	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	745	0	331				0	1046	487	526	2348	0
Arrive On Green	0.21	0.00	0.21				0.00	0.31	0.31	0.30	0.66	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	477	0	246				0	729	355	486	970	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	8.4	0.0	10.0				0.0	13.0	13.8	18.3	8.8	0.0
Cycle Q Clear(g_c), s	8.4	0.0	10.0				0.0	13.0	13.8	18.3	8.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	745	0	331				0	1046	487	526	2348	0
V/C Ratio(X)	0.64	0.00	0.74				0.00	0.70	0.73	0.92	0.41	0.00
Avail Cap(c_a), veh/h	1393	0	620				0	1429	665	542	2804	0
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	24.9	0.0	25.6				0.0	21.1	21.3	23.6	5.5	0.0
Incr Delay (d2), s/veh	0.9	0.0	3.3				0.0	0.9	2.6	21.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.9				0.0	4.5	4.7	9.6	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	0.0	28.9				0.0	22.0	24.0	45.0	5.6	0.0
LnGrp LOS	C	A	C				A	C	C	D	A	A
Approach Vol, veh/h		723						1084			1456	
Approach Delay, s/veh		26.9						22.6			18.7	
Approach LOS		C						C			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	24.4	25.7	18.9	50.1								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	21.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+Q), s	20.3	15.8	12.0	10.8								
Green Ext Time (p_c), s	0.1	5.4	2.4	7.3								
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	260	20	4	327
Future Vol, veh/h	6	2	260	20	4	327
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	283	22	4	355

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	657	294	0	0	305
Stage 1	294	-	-	-	-
Stage 2	363	-	-	-	-
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	430	745	-	-	1256
Stage 1	756	-	-	-	-
Stage 2	704	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	428	745	-	-	1256
Mov Cap-2 Maneuver	428	-	-	-	-
Stage 1	753	-	-	-	-
Stage 2	704	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	479	1256
HCM Lane V/C Ratio	-	-	0.018	0.003
HCM Control Delay (s)	-	-	12.7	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	280	0	0	333
Future Vol, veh/h	0	0	280	0	0	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	304	0	0	362

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	666	304	0	0	304	0
Stage 1	304	-	-	-	-	-
Stage 2	362	-	-	-	-	-
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	425	736	-	-	1257	-
Stage 1	748	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	425	736	-	-	1257	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	704	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1257	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	12	0	2	0	278	46	5	332	0
Future Vol, veh/h	0	0	0	12	0	2	0	278	46	5	332	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	13	0	2	0	302	50	5	361	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	699	723	361	698	698	327	361	0	0	352	0	0
Stage 1	371	371	-	327	327	-	-	-	-	-	-	-
Stage 2	328	352	-	371	371	-	-	-	-	-	-	-
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	354	352	684	355	364	714	1198	-	-	1207	-	-
Stage 1	649	620	-	686	648	-	-	-	-	-	-	-
Stage 2	685	632	-	649	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	352	350	684	354	362	714	1198	-	-	1207	-	-
Mov Cap-2 Maneuver	352	350	-	354	362	-	-	-	-	-	-	-
Stage 1	649	617	-	686	648	-	-	-	-	-	-	-
Stage 2	683	632	-	646	617	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		14.8		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1198	-	-	-	381	1207	-	-
HCM Lane V/C Ratio	-	-	-	-	0.04	0.005	-	-
HCM Control Delay (s)	0	-	-	0	14.8	8	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	215	7	36	264	2	12
Future Vol, veh/h	215	7	36	264	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	234	8	39	287	2	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	242	0	603
Stage 1	-	-	-	-	238
Stage 2	-	-	-	-	365
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1336	-	465
Stage 1	-	-	-	-	806
Stage 2	-	-	-	-	707
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1336	-	449
Mov Cap-2 Maneuver	-	-	-	-	449
Stage 1	-	-	-	-	778
Stage 2	-	-	-	-	707

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)	724	-	-	1336	-
HCM Lane V/C Ratio	0.021	-	-	0.029	-
HCM Control Delay (s)	10.1	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT		T	TT	TT	
Traffic Vol, veh/h	2	10	33	843	1137	8
Future Vol, veh/h	2	10	33	843	1137	8
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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	2	11	37	937	1263	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1811	636	1272	0	-	0
Stage 1	1268	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	70	421	218	-	-	-
Stage 1	228	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	58	421	218	-	-	-
Mov Cap-2 Maneuver	58	-	-	-	-	-
Stage 1	189	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.7	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	218	-	206	-	-
HCM Lane V/C Ratio	0.168	-	0.065	-	-
HCM Control Delay (s)	24.8	-	23.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	7	26	819	1138	0
Future Vol, veh/h	0	7	26	819	1138	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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	29	910	1264	0

























Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1777	632	1264	0	-	0
Stage 1	1264	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	74	423	546	-	-	-
Stage 1	229	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	66	423	546	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	204	-	-	-	-	-
Stage 2	566	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	546	-	423	-	-
HCM Lane V/C Ratio	0.053	-	0.018	-	-
HCM Control Delay (s)	12	0.6	13.7	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Opening Year with Project  
timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	1085	145	242	721	183	155	789	243	196	553	276
Future Volume (veh/h)	457	1085	145	242	721	183	155	789	243	196	553	276
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	1796	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	471	1119	149	249	743	189	160	813	251	202	570	285
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	557	1564	486	330	979	246	229	1049	468	273	1093	487
Arrive On Green	0.16	0.31	0.31	0.10	0.24	0.24	0.07	0.30	0.30	0.08	0.31	0.31
Sat Flow, veh/h	3456	5106	1585	3456	4067	1023	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	471	1119	149	249	621	311	160	813	251	202	570	285
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1686	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	12.4	18.2	6.7	6.6	15.9	16.1	4.2	19.6	12.4	5.4	12.4	14.2
Cycle Q Clear(g_c), s	12.4	18.2	6.7	6.6	15.9	16.1	4.2	19.6	12.4	5.4	12.4	14.2
Prop In Lane	1.00		1.00	1.00		0.61	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	1564	486	330	819	406	229	1049	468	273	1093	487
V/C Ratio(X)	0.85	0.72	0.31	0.75	0.76	0.77	0.70	0.78	0.54	0.74	0.52	0.58
Avail Cap(c_a), veh/h	683	1876	582	520	1090	540	292	1594	711	314	1617	721
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(l)	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	38.1	28.9	24.9	41.3	33.0	33.1	42.8	30.2	27.6	42.2	26.7	27.4
Incr Delay (d2), s/veh	8.1	1.1	0.4	3.5	2.2	4.7	5.1	1.4	1.0	7.8	0.4	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	5.6	7.1	2.4	2.8	6.4	6.7	1.9	8.0	4.5	2.5	5.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	29.9	25.2	44.8	35.2	37.8	47.9	31.5	28.6	50.0	27.1	28.5
LnGrp LOS	D	C	C	D	D	D	D	C	C	D	C	C
Approach Vol, veh/h		1739			1181			1224			1057	
Approach Delay, s/veh		33.9			37.9			33.1			31.9	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	33.6	13.4	34.7	10.7	34.8	19.6	28.5				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	8.5	42.0	14.1	34.4	7.9	42.6	18.5	30.0				
Max Q Clear Time (g_c+l1), s	7.4	21.6	8.6	20.2	6.2	16.2	14.4	18.1				
Green Ext Time (p_c), s	0.1	6.0	0.4	6.6	0.1	4.7	0.7	4.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			34.2									
HCM 6th LOS			C									

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	714	24	12	538	94	30	160	78	49	107	34
Future Volume (veh/h)	43	714	24	12	538	94	30	160	78	49	107	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1796	1870	1870	1796	1870	1870
Adj Flow Rate, veh/h	45	752	25	13	566	99	32	168	82	52	113	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	1435	48	351	765	648	112	403	587	135	229	587
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	771	3510	117	694	1870	1585	26	1089	1585	51	619	1585
Grp Volume(v), veh/h	45	381	396	13	566	99	200	0	82	165	0	36
Grp Sat Flow(s),veh/h/ln	771	1777	1849	694	1870	1585	1115	0	1585	670	0	1585
Q Serve(g_s), s	2.1	6.6	6.6	0.6	10.5	1.6	0.8	0.0	1.4	1.1	0.0	0.6
Cycle Q Clear(g_c), s	12.2	6.6	6.6	7.0	10.5	1.6	14.5	0.0	1.4	14.6	0.0	0.6
Prop In Lane	1.00		0.06	1.00		1.00	0.16		1.00	0.32		1.00
Lane Grp Cap(c), veh/h	301	727	756	351	765	648	516	0	587	364	0	587
V/C Ratio(X)	0.15	0.52	0.52	0.04	0.74	0.15	0.39	0.00	0.14	0.45	0.00	0.06
Avail Cap(c_a), veh/h	411	980	1020	450	1032	874	1083	0	1108	873	0	1108
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(l)	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	15.2	9.1	9.1	11.7	10.2	7.6	9.5	0.0	8.5	10.1	0.0	8.3
Incr Delay (d2), s/veh	0.2	0.6	0.6	0.0	1.9	0.1	0.5	0.0	0.1	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.3		1.7	1.7	0.1	3.0	0.4	0.9	0.0	0.3	0.7	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	9.7	9.6	11.7	12.1	7.7	10.0	0.0	8.6	11.0	0.0	8.3
LnGrp LOS	B	A	A	B	B	A	B	A	A	B	A	A
Approach Vol, veh/h		822			678			282			201	
Approach Delay, s/veh		10.0			11.5			9.6			10.5	
Approach LOS		A			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.4		21.4		20.4		21.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+I1), s		16.5		14.2		16.6		12.5				
Green Ext Time (p_c), s		1.0		3.0		0.7		2.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											10.5	
HCM 6th LOS											B	



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	647	51	141	580	206	70	797	147	120	554	113
Future Volume (veh/h)	177	647	51	141	580	206	70	797	147	120	554	113
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	188	688	54	150	617	219	74	848	156	128	589	120
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	970	76	180	691	245	95	966	178	157	1049	213
Arrive On Green	0.12	0.29	0.29	0.10	0.27	0.27	0.05	0.32	0.32	0.09	0.36	0.36
Sat Flow, veh/h	1781	3338	262	1781	2571	912	1781	2997	551	1781	2942	598
Grp Volume(v), veh/h	188	366	376	150	426	410	74	503	501	128	355	354
Grp Sat Flow(s),veh/h/ln	1781	1777	1823	1781	1777	1706	1781	1777	1771	1781	1777	1763
Q Serve(g_s), s	11.0	19.5	19.6	8.8	24.5	24.5	4.4	28.4	28.4	7.5	17.1	17.1
Cycle Q Clear(g_c), s	11.0	19.5	19.6	8.8	24.5	24.5	4.4	28.4	28.4	7.5	17.1	17.1
Prop In Lane	1.00		0.14	1.00		0.53	1.00		0.31	1.00		0.34
Lane Grp Cap(c), veh/h	220	516	530	180	477	458	95	573	571	157	634	629
V/C Ratio(X)	0.86	0.71	0.71	0.83	0.89	0.89	0.78	0.88	0.88	0.82	0.56	0.56
Avail Cap(c_a), veh/h	280	562	577	237	519	498	196	653	651	206	663	658
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(l)	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	45.6	33.6	33.6	46.8	37.4	37.4	49.6	34.0	34.0	47.6	27.4	27.5
Incr Delay (d2), s/veh	18.3	3.7	3.7	17.1	16.8	17.6	12.5	11.9	11.9	17.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	5.8	8.5	8.7	4.6	12.3	11.9	2.2	13.4	13.4	4.0	7.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	37.4	37.3	64.0	54.1	54.9	62.1	45.9	45.9	64.6	28.4	28.5
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	C	C
Approach Vol, veh/h		930			986			1078			837	
Approach Delay, s/veh		42.7			56.0			47.0			34.0	
Approach LOS		D			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.8	40.2	17.6	34.5	10.2	43.9	15.2	36.8				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	12.3	39.0	16.7	31.0	11.7	39.6	14.1	33.6				
Max Q Clear Time (g_c+1), s	19.5	30.4	13.0	26.5	6.4	19.1	10.8	21.6				
Green Ext Time (p_c), s	0.1	3.8	0.2	2.0	0.1	3.9	0.1	3.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			45.4									
HCM 6th LOS			D									

Intersection												
Intersection Delay, s/veh	14											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	175	45	50	147	23	40	223	28	4	179	17
Future Vol, veh/h	43	175	45	50	147	23	40	223	28	4	179	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	188	48	54	158	25	43	240	30	4	192	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.3	13.3	15.3	12.7
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	16%	23%	2%
Vol Thru, %	77%	67%	67%	90%
Vol Right, %	10%	17%	10%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	263	220	200
LT Vol	40	43	50	4
Through Vol	223	175	147	179
RT Vol	28	45	23	17
Lane Flow Rate	313	283	237	215
Geometry Grp	1	1	1	1
Degree of Util (X)	0.521	0.471	0.403	0.367
Departure Headway (Hd)	5.998	5.995	6.14	6.151
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	600	584	585
Service Time	3.998	4.037	4.187	4.196
HCM Lane V/C Ratio	0.518	0.472	0.406	0.368
HCM Control Delay	15.3	14.3	13.3	12.7
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3	2.5	1.9	1.7

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	64	122	64	116	108	63	58	881	111	27	644	54
Future Volume (veh/h)	64	122	64	116	108	63	58	881	111	27	644	54
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	1796	1796	1870	1870	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	69	131	69	125	116	68	62	947	119	29	692	58
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	205	88	262	212	453	162	1406	627	59	1026	86
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.09	0.40	0.40	0.03	0.31	0.31
Sat Flow, veh/h	175	716	307	551	742	1585	1781	3554	1585	1781	3319	278
Grp Volume(v), veh/h	269	0	0	241	0	68	62	947	119	29	370	380
Grp Sat Flow(s),veh/h/ln	198	0	0	1294	0	1585	1781	1777	1585	1781	1777	1820
Q Serve(g_s), s	3.6	0.0	0.0	0.0	0.0	1.7	1.7	11.5	2.6	0.8	9.5	9.6
Cycle Q Clear(g_c), s	12.0	0.0	0.0	8.5	0.0	1.7	1.7	11.5	2.6	0.8	9.5	9.6
Prop In Lane	0.26		0.26	0.52		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	429	0	0	474	0	453	162	1406	627	59	549	563
V/C Ratio(X)	0.63	0.00	0.00	0.51	0.00	0.15	0.38	0.67	0.19	0.50	0.67	0.67
Avail Cap(c_a), veh/h	833	0	0	857	0	876	713	2762	1232	193	880	902
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	0.0	16.1	0.0	14.0	22.5	13.1	10.4	25.0	15.8	15.8
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.8	0.0	0.2	1.5	0.6	0.1	6.4	1.4	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	2.8	0.0	0.0	2.2	0.0	0.5	0.7	3.5	0.7	0.4	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	0.0	0.0	16.9	0.0	14.1	24.0	13.6	10.5	31.3	17.3	17.3
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		269			309			1128			779	
Approach Delay, s/veh		18.8			16.3			13.9			17.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	26.8		19.5	10.8	22.2		19.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.7	40.8		28.5	21.0	* 26		* 29				
Max Q Clear Time (g_c+1/2), s	12.8	13.5		14.0	3.7	11.6		10.5				
Green Ext Time (p_c), s	0.0	7.2		1.3	0.1	3.6		1.5				

Intersection Summary

HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh25.7												
Intersection LOS D												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗		↔	
Traffic Vol, veh/h	51	242	44	40	253	69	33	212	31	78	204	46
Future Vol, veh/h	51	242	44	40	253	69	33	212	31	78	204	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	249	45	41	261	71	34	219	32	80	210	47
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach RightNB		SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	24.9	23.7	20.9	32.8
HCM LOS	C	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	13%	0%	17%	0%	14%	0%	24%
Vol Thru, %	87%	0%	83%	0%	86%	0%	62%
Vol Right, %	0%	100%	0%	100%	0%	100%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	31	293	44	293	69	328
LT Vol	33	0	51	0	40	0	78
Through Vol	212	0	242	0	253	0	204
RT Vol	0	31	0	44	0	69	46
Lane Flow Rate	253	32	302	45	302	71	338
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.584	0.067	0.685	0.093	0.681	0.145	0.761
Departure Headway (Hd)	8.321	7.527	8.169	7.353	8.121	7.324	8.104
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	475	441	486	444	489	446
Service Time	6.087	5.292	5.933	5.116	5.884	5.088	6.169
HCM Lane V/C Ratio	0.586	0.067	0.685	0.093	0.68	0.145	0.758
HCM Control Delay	22.2	10.8	27	10.9	26.6	11.3	32.8
HCM Lane LOS	C	B	D	B	D	B	D
HCM 95th-tile Q	3.6	0.2	5	0.3	5	0.5	6.4

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	201	99	64	200	40	63	963	40	33	825	71
Future Volume (veh/h)	103	201	99	64	200	40	63	963	40	33	825	71
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1870	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	108	212	104	67	211	42	66	1014	42	35	868	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	577	273	313	461	391	166	1518	63	67	1169	101
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.09	0.44	0.44	0.04	0.35	0.35
Sat Flow, veh/h	1127	2342	1106	1064	1870	1585	1781	3477	144	1781	3310	286
Grp Volume(v), veh/h	108	159	157	67	211	42	66	518	538	35	466	477
Grp Sat Flow(s),veh/h/ln	1127	1777	1671	1064	1870	1585	1781	1777	1844	1781	1777	1819
Q Serve(g_s), s	4.8	4.0	4.2	3.0	5.2	1.1	1.9	12.5	12.5	1.0	12.4	12.4
Cycle Q Clear(g_c), s	10.0	4.0	4.2	7.2	5.2	1.1	1.9	12.5	12.5	1.0	12.4	12.4
Prop In Lane	1.00		0.66	1.00		1.00	1.00		0.08	1.00		0.16
Lane Grp Cap(c), veh/h	304	438	412	313	461	391	166	776	805	67	628	643
V/C Ratio(X)	0.36	0.36	0.38	0.21	0.46	0.11	0.40	0.67	0.67	0.52	0.74	0.74
Avail Cap(c_a), veh/h	435	644	606	446	696	590	928	1632	1695	202	925	947
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(l)	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	21.4	16.8	16.8	19.8	17.2	15.7	23.0	12.0	12.0	25.4	15.2	15.2
Incr Delay (d2), s/veh	0.7	0.5	0.6	0.3	0.7	0.1	1.5	1.0	1.0	6.1	1.8	1.8
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	1.2	1.4	1.4	0.7	1.9	0.3	0.7	3.6	3.7	0.5	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	17.3	17.4	20.2	17.9	15.8	24.5	13.0	13.0	31.4	17.0	17.0
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		424			320			1122			978	
Approach Delay, s/veh		18.6			18.1			13.7			17.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	29.5		17.8	11.0	25.0		17.8				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	49.4			19.5	28.0	* 28		* 20				
Max Q Clear Time (g_c+1), s	14.5			12.0	3.9	14.4		9.2				
Green Ext Time (p_c), s	0.0	7.0		1.3	0.1	4.6		1.1				

Intersection Summary

HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	55	249	52	113	339	93	61	1009	96	80	833	47
Future Volume (veh/h)	55	249	52	113	339	93	61	1009	96	80	833	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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1796	1870	1870	1796	1870	1870	1796
Adj Flow Rate, veh/h	60	271	57	123	368	101	66	1097	104	87	905	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	242	736	152	300	694	188	157	1447	137	113	1340	75
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.09	0.44	0.44	0.06	0.39	0.39
Sat Flow, veh/h	924	2931	607	1052	2763	749	1781	3281	311	1781	3420	193
Grp Volume(v), veh/h	60	163	165	123	235	234	66	594	607	87	470	486
Grp Sat Flow(s),veh/h/ln	924	1777	1761	1052	1777	1736	1781	1777	1814	1781	1777	1836
Q Serve(g_s), s	3.7	4.6	4.8	6.7	7.0	7.2	2.2	17.2	17.2	3.0	13.4	13.4
Cycle Q Clear(g_c), s	10.8	4.6	4.8	11.5	7.0	7.2	2.2	17.2	17.2	3.0	13.4	13.4
Prop In Lane	1.00		0.34	1.00		0.43	1.00		0.17	1.00		0.10
Lane Grp Cap(c), veh/h	242	446	442	300	446	436	157	784	800	113	696	719
V/C Ratio(X)	0.25	0.36	0.37	0.41	0.53	0.54	0.42	0.76	0.76	0.77	0.68	0.68
Avail Cap(c_a), veh/h	324	605	600	403	620	605	842	1274	1301	293	742	766
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(l)	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	24.6	18.9	19.0	23.7	19.8	19.9	26.5	14.4	14.4	28.3	15.4	15.4
Incr Delay (d2), s/veh	0.5	0.5	0.5	0.9	1.0	1.0	1.8	1.5	1.5	10.6	2.3	2.2
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/lr0.8		1.7	1.7	1.5	2.6	2.6	0.9	5.4	5.6	1.4	4.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	19.4	19.5	24.6	20.8	20.9	28.3	15.9	15.9	38.9	17.7	17.6
LnGrp LOS	C	B	B	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		388			592			1267			1043	
Approach Delay, s/veh		20.3			21.6			16.6			19.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	33.1		19.9	11.4	30.0		19.9				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	44.0			20.9	29.0	* 26		* 21				
Max Q Clear Time (g_c+1/3), s	19.2			12.8	4.2	15.4		13.5				
Green Ext Time (p_c), s	0.1	7.8		1.2	0.1	3.9		1.9				

Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕		↔↔	↕↕		↔↔↔	↕↕↕	↔	↕↕↕		
Traffic Volume (veh/h)	173	254	99	349	473	72	136	1020	165	96	771	95
Future Volume (veh/h)	173	254	99	349	473	72	136	1020	165	96	771	95
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	186	273	106	375	509	77	146	1097	0	103	829	102
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	280	414	157	489	696	105	185	1720		133	1418	174
Arrive On Green	0.08	0.16	0.16	0.14	0.22	0.22	0.10	0.34	0.00	0.07	0.31	0.31
Sat Flow, veh/h	3456	2520	955	3456	3097	467	1781	5106	1585	1781	4609	564
Grp Volume(v), veh/h	186	190	189	375	291	295	146	1097	0	103	611	320
Grp Sat Flow(s),veh/h/ln	1728	1777	1698	1728	1777	1786	1781	1702	1585	1781	1702	1769
Q Serve(g_s), s	3.9	7.4	7.7	7.8	11.3	11.4	5.9	13.5	0.0	4.2	11.2	11.3
Cycle Q Clear(g_c), s	3.9	7.4	7.7	7.8	11.3	11.4	5.9	13.5	0.0	4.2	11.2	11.3
Prop In Lane	1.00		0.56	1.00		0.26	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	280	292	279	489	399	401	185	1720		133	1047	544
V/C Ratio(X)	0.66	0.65	0.68	0.77	0.73	0.73	0.79	0.64		0.77	0.58	0.59
Avail Cap(c_a), veh/h	526	598	572	754	716	720	329	3254		252	2022	1051
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	33.1	29.0	29.2	30.7	26.7	26.7	32.5	20.8	0.0	33.7	21.7	21.7
Incr Delay (d2), s/veh	2.7	2.5	2.9	2.5	2.6	2.6	7.3	0.4	0.0	9.2	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.3	3.3	3.3	4.8	4.9	2.9	5.1	0.0	2.1	4.3	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	31.5	32.0	33.2	29.3	29.3	39.8	21.2	0.0	42.9	22.2	22.7
LnGrp LOS	D	C	C	C	C	C	D	C		D	C	C
Approach Vol, veh/h		565		961		1243		A		1034		
Approach Delay, s/veh		33.1		30.8		23.4				24.4		
Approach LOS		C		C		C				C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.0	31.0	10.5	22.7	12.2	28.8	15.0	18.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	10.5	47.3	11.3	29.9	13.7	44.1	16.2	25.0				
Max Q Clear Time (g_c+1/2), s	10.5	15.5	5.9	13.4	7.9	13.3	9.8	9.7				
Green Ext Time (p_c), s	0.1	9.5	0.3	3.3	0.2	7.2	0.8	2.0				

Intersection Summary

HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

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



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕		↕	↑↑↑	↕	↕	↑↑↑	
Traffic Volume (veh/h)	9	3	14	77	3	36	59	1298	34	20	1184	24
Future Volume (veh/h)	9	3	14	77	3	36	59	1298	34	20	1184	24
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		No		No
Adj Sat Flow, veh/h/ln	1796	1870	1796	1870	1870	1796	1870	1870	1870	1870	1870	1796
Adj Flow Rate, veh/h	9	3	15	81	3	38	62	1366	36	21	1246	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	6	29	289	10	124	167	2374	737	45	1884	38
Arrive On Green	0.03	0.03	0.03	0.08	0.08	0.08	0.09	0.46	0.46	0.03	0.37	0.37
Sat Flow, veh/h	558	186	931	3456	117	1486	1781	5106	1585	1781	5152	103
Grp Volume(v), veh/h	27	0	0	81	0	41	62	1366	36	21	823	448
Grp Sat Flow(s),veh/h/ln	1675	0	0	1728	0	1603	1781	1702	1585	1781	1702	1852
Q Serve(g_s), s	0.8	0.0	0.0	1.1	0.0	1.2	1.6	9.4	0.6	0.6	9.7	9.7
Cycle Q Clear(g_c), s	0.8	0.0	0.0	1.1	0.0	1.2	1.6	9.4	0.6	0.6	9.7	9.7
Prop In Lane	0.33		0.56	1.00		0.93	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	53	0	0	289	0	134	167	2374	737	45	1245	677
V/C Ratio(X)	0.51	0.00	0.00	0.28	0.00	0.31	0.37	0.58	0.05	0.46	0.66	0.66
Avail Cap(c_a), veh/h	557	0	0	1148	0	533	684	3605	1119	185	1485	808
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	0.0	20.7	0.0	20.8	20.5	9.4	7.1	23.1	12.8	12.8
Incr Delay (d2), s/veh	7.5	0.0	0.0	0.5	0.0	1.3	1.4	0.2	0.0	7.2	0.8	1.6
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/lr	0.4	0.0	0.0	0.4	0.0	0.4	0.7	2.7	0.2	0.3	3.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	0.0	0.0	21.2	0.0	22.0	21.9	9.6	7.1	30.3	13.6	14.3
LnGrp LOS	C	A	A	C	A	C	C	A	A	C	B	B
Approach Vol, veh/h		27		122		1464		1292				
Approach Delay, s/veh		30.4		21.5		10.1		14.1				
Approach LOS		C		C		B		B				
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	28.4		8.0	10.5	23.6		6.0				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	34.0		16.0	18.5	* 21		16.0				
Max Q Clear Time (g_c+1/2), s	11.6	11.4		3.2	3.6	11.7		2.8				
Green Ext Time (p_c), s	0.0	11.0		0.3	0.1	5.4		0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Opening Year with Project  
 timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	162	64	1328	90	22	1228
Future Volume (veh/h)	162	64	1328	90	22	1228
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	67	1383	94	23	1279
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	307	141	3336	1035	90	3824
Arrive On Green	0.09	0.09	0.65	0.65	0.03	0.75
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	169	67	1383	94	23	1279
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	3.0	2.6	8.3	1.4	0.4	5.4
Cycle Q Clear(g_c), s	3.0	2.6	8.3	1.4	0.4	5.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	307	141	3336	1035	90	3824
V/C Ratio(X)	0.55	0.48	0.41	0.09	0.25	0.33
Avail Cap(c_a), veh/h	2028	930	3336	1035	267	3824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	28.1	5.3	4.1	30.9	2.7
Incr Delay (d2), s/veh	1.5	2.5	0.1	0.0	1.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.0	1.6	0.3	0.2	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	30.5	5.4	4.2	32.4	3.0
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	236		1477			1302
Approach Delay, s/veh	30.0		5.3			3.5
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	48.3			54.5	10.3
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	37.0			* 49	38.0
Max Q Clear Time (g_c+I), s	12.4	10.3			7.4	5.0
Green Ext Time (p_c), s	0.0	10.7			10.5	0.8

Intersection Summary

HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	212	0	428	0	1008	357	0	912	500
Future Volume (veh/h)	0	0	0	212	0	428	0	1008	357	0	912	500
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				228	0	460	0	1084	0	0	981	0
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				600	0	534	0	1619		0	1619	
Arrive On Green				0.34	0.00	0.34	0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				228	0	460	0	1084	0	0	981	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				4.4	0.0	12.4	0.0	10.9	0.0	0.0	9.5	0.0
Cycle Q Clear(g_c), s				4.4	0.0	12.4	0.0	10.9	0.0	0.0	9.5	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				600	0	534	0	1619		0	1619	
V/C Ratio(X)				0.38	0.00	0.86	0.00	0.67		0.00	0.61	
Avail Cap(c_a), veh/h				1521	0	1353	0	3228		0	3228	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.5	0.0	14.2	0.0	9.7	0.0	0.0	9.4	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.3	0.0	0.5	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.5	0.0	4.2	0.0	2.5	0.0	0.0	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				11.9	0.0	18.4	0.0	10.2	0.0	0.0	9.7	0.0
LnGrp LOS				B	A	B	A	B		A	A	
Approach Vol, veh/h					688			1084	A		981	A
Approach Delay, s/veh					16.3			10.2			9.7	
Approach LOS					B			B			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		25.3				25.3		20.4				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		41.5				41.5		39.0				
Max Q Clear Time (g_c+I1), s		12.9				11.5		14.4				
Green Ext Time (p_c), s		7.9				7.0		1.0				

Intersection Summary

HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Opening Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	3	265	0	0	0	0	1040	347	292	827	0
Future Volume (veh/h)	327	3	265	0	0	0	0	1040	347	292	827	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1796	1870	1870	0
Adj Flow Rate, veh/h	423	0	183				0	1072	358	301	853	0
Peak Hour Factor	0.97	0.97	0.97				0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	638	0	284				0	1514	505	361	2381	0
Arrive On Green	0.18	0.00	0.18				0.00	0.40	0.40	0.20	0.67	0.00
Sat Flow, veh/h	3563	0	1585				0	3952	1263	1781	3647	0
Grp Volume(v), veh/h	423	0	183				0	964	466	301	853	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1643	1781	1777	0
Q Serve(g_s), s	6.6	0.0	6.4				0.0	14.1	14.1	9.7	6.2	0.0
Cycle Q Clear(g_c), s	6.6	0.0	6.4				0.0	14.1	14.1	9.7	6.2	0.0
Prop In Lane	1.00		1.00				0.00		0.77	1.00		0.00
Lane Grp Cap(c), veh/h	638	0	284				0	1362	657	361	2381	0
V/C Ratio(X)	0.66	0.00	0.64				0.00	0.71	0.71	0.83	0.36	0.00
Avail Cap(c_a), veh/h	1614	0	718				0	1770	854	568	3249	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.8	0.0	22.7				0.0	15.0	15.0	22.8	4.3	0.0
Incr Delay (d2), s/veh	1.2	0.0	2.4				0.0	0.9	1.9	6.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	2.4				0.0	4.3	4.3	4.0	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	25.2				0.0	15.9	16.8	28.9	4.4	0.0
LnGrp LOS	C	A	C				A	B	B	C	A	A
Approach Vol, veh/h		606						1430			1154	
Approach Delay, s/veh		24.3						16.2			10.8	
Approach LOS		C						B			B	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	6.1	28.3	15.2	44.4								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	19.0	31.0	27.0	* 55								
Max Q Clear Time (g_c+ll), s	11.7	16.1	8.6	8.2								
Green Ext Time (p_c), s	0.5	7.7	2.1	6.1								

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	23	4	315	10	2	277
Future Vol, veh/h	23	4	315	10	2	277
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	25	4	342	11	2	301

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	653	348	0	0	353
Stage 1	348	-	-	-	-
Stage 2	305	-	-	-	-
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	432	695	-	-	1206
Stage 1	715	-	-	-	-
Stage 2	748	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	431	695	-	-	1206
Mov Cap-2 Maneuver	431	-	-	-	-
Stage 1	714	-	-	-	-
Stage 2	748	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	457	1206
HCM Lane V/C Ratio	-	-	0.064	0.002
HCM Control Delay (s)	-	-	13.4	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	325	0	0	300	0	0
Future Vol, veh/h	325	0	0	300	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	353	0	0	326	0	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	353	0	679	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	326	-
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	-	-	1206	-	417	691
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1206	-	417	691
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	731	-

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

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1206	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	-	0
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	0	0	51	0	4	0	321	16	3	298	0
Future Vol, veh/h	0	0	0	51	0	4	0	321	16	3	298	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	55	0	4	0	349	17	3	324	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	690	696	324	688	688	358	324	0	0	366	0	0
Stage 1	330	330	-	358	358	-	-	-	-	-	-	-
Stage 2	360	366	-	330	330	-	-	-	-	-	-	-
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	359	365	717	360	369	686	1236	-	-	1193	-	-
Stage 1	683	646	-	660	628	-	-	-	-	-	-	-
Stage 2	658	623	-	683	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	356	364	717	359	368	686	1236	-	-	1193	-	-
Mov Cap-2 Maneuver	356	364	-	359	368	-	-	-	-	-	-	-
Stage 1	683	644	-	660	628	-	-	-	-	-	-	-
Stage 2	654	623	-	681	644	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		16.5		0		0.1	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1236	-	-	-	372	1193	-	-
HCM Lane V/C Ratio	-	-	-	-	0.161	0.003	-	-
HCM Control Delay (s)	0	-	-	0	16.5	8	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.6	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	244	2	14	223	8	40
Future Vol, veh/h	244	2	14	223	8	40
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	265	2	15	242	9	43

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	267	0	538 266
Stage 1	-	-	-	-	266 -
Stage 2	-	-	-	-	272 -
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	-	-	1297	-	504 773
Stage 1	-	-	-	-	779 -
Stage 2	-	-	-	-	774 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1297	-	497 773
Mov Cap-2 Maneuver	-	-	-	-	497 -
Stage 1	-	-	-	-	769 -
Stage 2	-	-	-	-	774 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	708	-	-	1297	-
HCM Lane V/C Ratio	0.074	-	-	0.012	-
HCM Control Delay (s)	10.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↗		↘	↑↑	↑↑	
Traffic Vol, veh/h	4	37	12	1060	860	2
Future Vol, veh/h	4	37	12	1060	860	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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	4	40	13	1152	935	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1538	469	937	0	-	0
Stage 1	936	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	106	541	339	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	102	541	339	-	-	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	339	-	381	-	-
HCM Lane V/C Ratio	0.038	-	0.117	-	-
HCM Control Delay (s)	16	-	15.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	27	10	1054	835	0
Future Vol, veh/h	0	27	10	1054	835	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	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	10	1098	870	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1439	435	870	0	-	0
Stage 1	870	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	124	569	770	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	569	770	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	770	-	569	-	-
HCM Lane V/C Ratio	0.014	-	0.049	-	-
HCM Control Delay (s)	9.7	0.2	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	882	85	206	1100	150	109	714	278	326	937	382
Future Volume (veh/h)	346	882	85	206	1100	150	109	714	278	326	937	382
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	364	928	89	217	1158	158	115	752	293	343	986	402
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	428	1729	537	284	1349	184	171	973	434	406	1215	542
Arrive On Green	0.12	0.34	0.34	0.08	0.30	0.30	0.05	0.27	0.27	0.12	0.34	0.34
Sat Flow, veh/h	3456	5106	1585	3456	4543	620	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	364	928	89	217	868	448	115	752	293	343	986	402
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1759	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.5	16.4	4.4	6.9	26.9	26.9	3.7	21.8	18.4	10.9	28.3	25.0
Cycle Q Clear(g_c), s	11.5	16.4	4.4	6.9	26.9	26.9	3.7	21.8	18.4	10.9	28.3	25.0
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	428	1729	537	284	1011	522	171	973	434	406	1215	542
V/C Ratio(X)	0.85	0.54	0.17	0.76	0.86	0.86	0.67	0.77	0.68	0.84	0.81	0.74
Avail Cap(c_a), veh/h	492	1729	537	461	1096	566	219	1338	597	464	1589	709
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(l)	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	48.0	29.9	25.9	50.2	37.1	37.1	52.2	37.4	36.2	48.3	33.5	32.4
Incr Delay (d2), s/veh	12.0	0.3	0.1	4.2	6.6	11.9	5.3	1.9	1.8	12.1	2.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	6.5	1.6	3.1	11.6	12.7	1.7	9.3	7.0	5.2	11.9	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	30.2	26.1	54.5	43.7	49.0	57.5	39.3	38.0	60.5	36.0	35.4
LnGrp LOS	E	C	C	D	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1381			1533			1160			1731	
Approach Delay, s/veh		37.8			46.7			40.8			40.7	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	36.6	13.7	43.8	10.0	44.2	18.4	39.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	15.0	42.1	14.9	37.0	7.1	50.0	15.9	36.0				
Max Q Clear Time (g_c+I1), s	12.9	23.8	8.9	18.4	5.7	30.3	13.5	28.9				
Green Ext Time (p_c), s	0.3	5.5	0.3	6.0	0.0	8.0	0.3	4.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	665	48	116	755	72	51	102	74	86	105	76
Future Volume (veh/h)	34	665	48	116	755	72	51	102	74	86	105	76
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	36	700	51	122	795	76	54	107	78	91	111	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	1473	107	317	820	695	74	114	671	80	70	671
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	636	3359	245	712	1870	1585	0	269	1585	0	166	1585
Grp Volume(v), veh/h	36	370	381	122	795	76	161	0	78	202	0	80
Grp Sat Flow(s),veh/h/ln	636	1777	1826	712	1870	1585	269	0	1585	166	0	1585
Q Serve(g_s), s	1.5	9.6	9.6	9.5	27.0	1.8	0.0	0.0	1.9	0.0	0.0	2.0
Cycle Q Clear(g_c), s	28.5	9.6	9.6	19.2	27.0	1.8	27.5	0.0	1.9	27.5	0.0	2.0
Prop In Lane	1.00		0.13	1.00		1.00	0.34		1.00	0.45		1.00
Lane Grp Cap(c), veh/h	126	779	801	317	820	695	188	0	671	151	0	671
V/C Ratio(X)	0.29	0.48	0.48	0.38	0.97	0.11	0.86	0.00	0.12	1.34	0.00	0.12
Avail Cap(c_a), veh/h	126	779	801	317	820	695	188	0	671	151	0	671
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(l)	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	32.2	12.9	12.9	19.7	17.8	10.8	16.1	0.0	11.4	20.3	0.0	11.4
Incr Delay (d2), s/veh	1.2	0.5	0.4	0.8	24.1	0.1	30.4	0.0	0.1	191.2	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/lr0.6	0.6	3.2	3.3	1.4	14.6	0.5	2.8	0.0	0.6	9.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	13.4	13.4	20.5	41.9	10.8	46.5	0.0	11.5	211.4	0.0	11.5
LnGrp LOS	C	B	B	C	D	B	D	A	B	F	A	B
Approach Vol, veh/h		787			993			239			282	
Approach Delay, s/veh		14.3			36.9			35.1			154.7	
Approach LOS		B			D			D			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		33.0		32.0		33.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		27.5		28.5		27.5		28.5				
Max Q Clear Time (g_c+I1), s		29.5		30.5		29.5		29.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

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

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	684	93	204	724	231	85	595	133	199	957	151
Future Volume (veh/h)	155	684	93	204	724	231	85	595	133	199	957	151
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		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	720	98	215	762	243	89	626	140	209	1007	159
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	825	112	241	773	246	111	851	190	235	1120	177
Arrive On Green	0.11	0.26	0.26	0.14	0.29	0.29	0.06	0.29	0.29	0.13	0.36	0.36
Sat Flow, veh/h	1781	3143	428	1781	2650	845	1781	2887	644	1781	3075	485
Grp Volume(v), veh/h	163	407	411	215	511	494	89	385	381	209	581	585
Grp Sat Flow(s),veh/h/ln	1781	1777	1793	1781	1777	1718	1781	1777	1754	1781	1777	1783
Q Serve(g_s), s	10.8	26.3	26.3	14.2	34.3	34.3	5.9	23.4	23.5	13.8	37.1	37.2
Cycle Q Clear(g_c), s	10.8	26.3	26.3	14.2	34.3	34.3	5.9	23.4	23.5	13.8	37.1	37.2
Prop In Lane	1.00		0.24	1.00		0.49	1.00		0.37	1.00		0.27
Lane Grp Cap(c), veh/h	190	467	471	241	518	501	111	524	517	235	647	650
V/C Ratio(X)	0.86	0.87	0.87	0.89	0.99	0.99	0.80	0.73	0.74	0.89	0.90	0.90
Avail Cap(c_a), veh/h	200	471	475	248	518	501	111	524	517	239	647	650
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)	0.91	0.91	0.91	1.00	1.00	1.00	0.94	0.94	0.94	0.68	0.68	0.68
Uniform Delay (d), s/veh	52.7	42.3	42.3	51.0	42.3	42.3	55.5	38.1	38.1	51.2	36.0	36.1
Incr Delay (d2), s/veh	26.4	14.9	14.9	30.0	35.8	36.4	30.9	8.4	8.5	22.9	13.0	13.1
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	6.1	13.0	13.2	8.2	19.5	19.0	3.5	11.0	10.9	7.5	17.6	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.1	57.2	57.3	81.0	78.0	78.7	86.4	46.4	46.7	74.1	49.0	49.2
LnGrp LOS	E	E	E	F	E	E	F	D	D	E	D	D
Approach Vol, veh/h		981			1220			855			1375	
Approach Delay, s/veh		60.9			78.8			50.7			52.9	
Approach LOS		E			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.3	41.4	17.3	41.0	12.0	49.7	20.8	37.5				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	34.4	34.4	13.5	35.0	7.5	43.0	16.7	31.8				
Max Q Clear Time (g_c+1/15), s	25.5	25.5	12.8	36.3	7.9	39.2	16.2	28.3				
Green Ext Time (p_c), s	0.0	2.9	0.0	0.0	0.0	2.3	0.0	1.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			61.4									
HCM 6th LOS			E									

**Intersection**

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	130	6	36	123	74	54	204	40	41	157	82
Future Vol, veh/h	64	130	6	36	123	74	54	204	40	41	157	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	137	6	38	129	78	57	215	42	43	165	86
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.1	13.4	15.2	14.2
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	32%	15%	15%
Vol Thru, %	68%	65%	53%	56%
Vol Right, %	13%	3%	32%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	298	200	233	280
LT Vol	54	64	36	41
Through Vol	204	130	123	157
RT Vol	40	6	74	82
Lane Flow Rate	314	211	245	295
Geometry Grp	1	1	1	1
Degree of Util (X)	0.519	0.371	0.413	0.48
Departure Headway (Hd)	5.955	6.338	6.065	5.857
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	609	566	591	613
Service Time	3.955	4.39	4.117	3.902
HCM Lane V/C Ratio	0.516	0.373	0.415	0.481
HCM Control Delay	15.2	13.1	13.4	14.2
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3	1.7	2	2.6

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	131	49	69	89	35	85	755	149	66	1155	52
Future Volume (veh/h)	43	131	49	69	89	35	85	755	149	66	1155	52
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	45	138	52	73	94	37	89	795	157	69	1216	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	290	109	161	180	355	170	1792	799	95	1525	69
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.10	0.50	0.50	0.05	0.44	0.44
Sat Flow, veh/h	1259	1295	488	385	804	1585	1781	3554	1585	1781	3463	156
Grp Volume(v), veh/h	45	0	190	167	0	37	89	795	157	69	624	647
Grp Sat Flow(s),veh/h/ln	1259	0	1783	1189	0	1585	1781	1777	1585	1781	1777	1842
Q Serve(g_s), s	2.4	0.0	6.4	3.9	0.0	1.3	3.3	9.8	3.7	2.6	20.8	20.8
Cycle Q Clear(g_c), s	12.6	0.0	6.4	10.3	0.0	1.3	3.3	9.8	3.7	2.6	20.8	20.8
Prop In Lane	1.00		0.27	0.44		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	199	0	399	342	0	355	170	1792	799	95	783	811
V/C Ratio(X)	0.23	0.00	0.48	0.49	0.00	0.10	0.52	0.44	0.20	0.73	0.80	0.80
Avail Cap(c_a), veh/h	458	0	766	661	0	693	674	2898	1293	246	1035	1073
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(l)	1.00	0.00	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	30.5	0.0	23.1	24.7	0.0	21.2	29.6	10.9	9.4	32.0	16.6	16.6
Incr Delay (d2), s/veh	0.6	0.0	0.9	1.1	0.0	0.1	2.5	0.2	0.1	10.1	3.3	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.5	2.4	0.0	0.4	1.4	3.1	1.1	1.3	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	24.0	25.8	0.0	21.3	32.1	11.0	9.5	42.1	19.8	19.8
LnGrp LOS	C	A	C	C	A	C	C	B	A	D	B	B
Approach Vol, veh/h		235			204			1041			1340	
Approach Delay, s/veh		25.4			24.9			12.6			21.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	40.6		19.9	12.5	36.2		19.9				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.5	56.0		29.5	26.0	* 40		* 30				
Max Q Clear Time (g_c+14), s	14.6	11.8		14.6	5.3	22.8		12.3				
Green Ext Time (p_c), s	0.0	6.5		0.9	0.2	7.4		0.9				

Intersection Summary

HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	45.4											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	79	327	59	33	237	59	85	159	45	70	205	50
Future Vol, veh/h	79	327	59	33	237	59	85	159	45	70	205	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	344	62	35	249	62	89	167	47	74	216	53
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	71.7	26.9	25.4	44.4
HCM LOS	F	D	D	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	0%	19%	0%	12%	0%	22%
Vol Thru, %	65%	0%	81%	0%	88%	0%	63%
Vol Right, %	0%	100%	0%	100%	0%	100%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	45	406	59	270	59	325
LT Vol	85	0	79	0	33	0	70
Through Vol	159	0	327	0	237	0	205
RT Vol	0	45	0	59	0	59	50
Lane Flow Rate	257	47	427	62	284	62	342
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.651	0.109	1.026	0.135	0.697	0.139	0.838
Departure Headway (Hd)	9.333	8.321	8.644	7.814	9.06	8.263	9.036
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	390	428	427	465	401	437	404
Service Time	7.033	6.121	6.288	5.458	6.76	5.963	7.036
HCM Lane V/C Ratio	0.659	0.11	1	0.133	0.708	0.142	0.847
HCM Control Delay	27.8	12.1	80.4	11.7	30.1	12.3	44.4
HCM Lane LOS	D	B	F	B	D	B	E
HCM 95th-tile Q	4.4	0.4	13.4	0.5	5.1	0.5	7.9

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	280	51	33	196	48	52	798	74	66	1101	92
Future Volume (veh/h)	113	280	51	33	196	48	52	798	74	66	1101	92
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	119	295	54	35	206	51	55	840	78	69	1159	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	734	133	269	457	387	134	1603	149	94	1474	123
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.08	0.49	0.49	0.05	0.44	0.44
Sat Flow, veh/h	1123	3006	543	1032	1870	1585	1781	3287	305	1781	3320	278
Grp Volume(v), veh/h	119	173	176	35	206	51	55	454	464	69	620	636
Grp Sat Flow(s),veh/h/ln	1123	1777	1773	1032	1870	1585	1781	1777	1815	1781	1777	1820
Q Serve(g_s), s	7.0	5.7	5.8	2.1	6.5	1.8	2.1	12.3	12.3	2.7	20.8	20.8
Cycle Q Clear(g_c), s	13.5	5.7	5.8	7.9	6.5	1.8	2.1	12.3	12.3	2.7	20.8	20.8
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.17	1.00		0.15
Lane Grp Cap(c), veh/h	272	434	433	269	457	387	134	867	885	94	789	808
V/C Ratio(X)	0.44	0.40	0.41	0.13	0.45	0.13	0.41	0.52	0.52	0.73	0.79	0.79
Avail Cap(c_a), veh/h	377	599	598	373	644	546	716	1586	1620	238	1122	1149
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	28.1	22.1	22.1	25.4	22.4	20.6	30.8	12.3	12.3	32.5	16.5	16.6
Incr Delay (d2), s/veh	1.1	0.6	0.6	0.2	0.7	0.2	2.0	0.5	0.5	10.4	2.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.2	2.3	0.5	2.7	0.6	0.9	3.9	4.0	1.3	7.4	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	22.6	22.7	25.6	23.1	20.7	32.8	12.8	12.8	42.9	19.0	19.0
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		468			292			973			1325	
Approach Delay, s/veh		24.3			23.0			13.9			20.2	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	40.0		21.5	11.2	36.9		21.5				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	3	62.2		23.5	28.0	* 44		* 24				
Max Q Clear Time (g_c+14), s	14.3	14.3		15.5	4.1	22.8		9.9				
Green Ext Time (p_c), s	0.0	5.9		1.5	0.1	8.1		1.1				

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	281	73	70	215	82	55	786	137	137	1015	92
Future Volume (veh/h)	65	281	73	70	215	82	55	786	137	137	1015	92
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	68	296	77	74	226	86	58	827	144	144	1068	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	612	157	243	555	205	146	1307	228	188	1420	129
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.08	0.43	0.43	0.11	0.43	0.43
Sat Flow, veh/h	1067	2802	717	1009	2540	938	1781	3026	527	1781	3294	299
Grp Volume(v), veh/h	68	186	187	74	156	156	58	486	485	144	576	589
Grp Sat Flow(s),veh/h/ln	1067	1777	1741	1009	1777	1701	1781	1777	1776	1781	1777	1817
Q Serve(g_s), s	3.6	5.6	5.8	4.3	4.6	4.8	1.9	13.1	13.1	4.8	16.7	16.8
Cycle Q Clear(g_c), s	8.4	5.6	5.8	10.0	4.6	4.8	1.9	13.1	13.1	4.8	16.7	16.8
Prop In Lane	1.00		0.41	1.00		0.55	1.00		0.30	1.00		0.16
Lane Grp Cap(c), veh/h	266	388	380	243	388	372	146	768	767	188	766	783
V/C Ratio(X)	0.26	0.48	0.49	0.30	0.40	0.42	0.40	0.63	0.63	0.77	0.75	0.75
Avail Cap(c_a), veh/h	407	622	610	384	637	610	812	1609	1608	519	1331	1361
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(l)	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	24.3	20.9	21.0	25.4	20.6	20.6	26.8	13.6	13.6	26.7	14.7	14.7
Incr Delay (d2), s/veh	0.5	0.9	1.0	0.7	0.7	0.8	1.8	0.9	0.9	6.5	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.1	2.1	1.0	1.7	1.7	0.8	4.1	4.1	2.1	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	21.9	22.0	26.1	21.2	21.4	28.5	14.5	14.5	33.2	16.2	16.2
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		441			386			1029			1309	
Approach Delay, s/veh		22.4			22.2			15.3			18.1	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	1.0	32.5		17.9	11.0	32.5		17.9				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9	55.6		21.5	28.0	* 46		* 22				
Max Q Clear Time (g_c+1/3), s	10.8	15.1		10.4	3.9	18.8		12.0				
Green Ext Time (p_c), s	0.2	6.4		1.7	0.1	7.7		1.4				

Intersection Summary

HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↓		↔↔	↑↓		↔	↑↑↑	↔	↔	↑↑↑	
Traffic Volume (veh/h)	104	189	138	353	269	45	95	981	393	42	1103	64
Future Volume (veh/h)	104	189	138	353	269	45	95	981	393	42	1103	64
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		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	109	199	145	372	283	47	100	1033	0	44	1161	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	302	209	475	695	114	129	1975		72	1752	101
Arrive On Green	0.06	0.15	0.15	0.14	0.23	0.23	0.07	0.39	0.00	0.04	0.35	0.35
Sat Flow, veh/h	3456	2007	1390	3456	3056	501	1781	5106	1585	1781	4938	285
Grp Volume(v), veh/h	109	175	169	372	163	167	100	1033	0	44	800	428
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1780	1781	1702	1585	1781	1702	1819
Q Serve(g_s), s	2.3	6.8	7.3	7.7	5.8	5.9	4.1	11.5	0.0	1.8	14.6	14.6
Cycle Q Clear(g_c), s	2.3	6.8	7.3	7.7	5.8	5.9	4.1	11.5	0.0	1.8	14.6	14.6
Prop In Lane	1.00		0.86	1.00		0.28	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	209	267	244	475	404	405	129	1975		72	1208	645
V/C Ratio(X)	0.52	0.65	0.69	0.78	0.40	0.41	0.78	0.52		0.61	0.66	0.66
Avail Cap(c_a), veh/h	342	603	550	614	742	744	220	3173		123	1930	1032
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	33.6	29.5	29.7	30.7	24.2	24.3	33.6	17.4	0.0	34.8	20.1	20.1
Incr Delay (d2), s/veh	2.0	2.7	3.5	5.0	0.6	0.7	9.6	0.2	0.0	8.2	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	1.0	3.0	3.0	3.4	2.4	2.5	2.0	4.2	0.0	0.9	5.5	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	32.2	33.2	35.7	24.9	24.9	43.2	17.6	0.0	43.0	20.7	21.2
LnGrp LOS	D	C	C	D	C	C	D	B		D	C	C
Approach Vol, veh/h		453		702			1133		A		1272	
Approach Delay, s/veh		33.4		30.6			19.8				21.6	
Approach LOS		C		C			B				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.5	34.5	9.0	22.8	9.8	32.2	14.6	17.1				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	5.0	45.8	7.3	30.8	9.1	41.8	13.1	25.0				
Max Q Clear Time (g_c+1/3), s	13.5	13.5	4.3	7.9	6.1	16.6	9.7	9.3				
Green Ext Time (p_c), s	0.0	8.9	0.1	1.9	0.1	9.5	0.5	1.8				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗ ↗		↗	↗ ↗ ↗	↗ ↗ ↗	
Traffic Volume (veh/h)	29	0	69	13	0	18	84	1459	57	21	1569	10
Future Volume (veh/h)	29	0	69	13	0	18	84	1459	57	21	1569	10
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	0	73	14	0	19	88	1536	60	22	1652	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	0	95	119	0	55	174	2894	898	45	2467	16
Arrive On Green	0.08	0.00	0.08	0.03	0.00	0.03	0.10	0.57	0.57	0.03	0.47	0.47
Sat Flow, veh/h	489	0	1150	3456	0	1585	1781	5106	1585	1781	5233	35
Grp Volume(v), veh/h	104	0	0	14	0	19	88	1536	60	22	1075	588
Grp Sat Flow(s),veh/h/ln	1639	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	4.1	0.0	0.0	0.3	0.0	0.8	3.1	12.2	1.1	0.8	15.9	15.9
Cycle Q Clear(g_c), s	4.1	0.0	0.0	0.3	0.0	0.8	3.1	12.2	1.1	0.8	15.9	15.9
Prop In Lane	0.30		0.70	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	136	0	0	119	0	55	174	2894	898	45	1605	879
V/C Ratio(X)	0.77	0.00	0.00	0.12	0.00	0.35	0.51	0.53	0.07	0.49	0.67	0.67
Avail Cap(c_a), veh/h	401	0	0	846	0	388	518	4218	1310	136	2109	1155
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	0.0	30.6	0.0	30.8	28.0	8.8	6.4	31.4	13.3	13.3
Incr Delay (d2), s/veh	8.7	0.0	0.0	0.4	0.0	3.7	2.3	0.2	0.0	8.1	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.1	0.0	0.3	1.4	3.7	0.3	0.4	5.4	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	0.0	0.0	31.0	0.0	34.6	30.3	8.9	6.4	39.5	13.9	14.3
LnGrp LOS	D	A	A	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		104			33			1684			1685	
Approach Delay, s/veh		38.0			33.1			9.9			14.3	
Approach LOS		D			C			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	43.1		6.3	12.4	36.8		9.9				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	54.0		16.0	19.0	* 41		16.0				
Max Q Clear Time (g_c+1/2R), s	12.8	14.2		2.8	5.1	17.9		6.1				
Green Ext Time (p_c), s	0.0	16.7		0.1	0.2	12.9		0.3				

Intersection Summary

HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Horizon Year without Project  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↑↑↑	↖	↖↗	↑↑↑
Traffic Volume (veh/h)	87	32	1572	99	45	1602
Future Volume (veh/h)	87	32	1572	99	45	1602
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	34	1655	104	47	1686
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	206	94	3621	1124	141	4121
Arrive On Green	0.06	0.06	0.71	0.71	0.04	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	92	34	1655	104	47	1686
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.6	11.0	1.6	1.0	7.5
Cycle Q Clear(g_c), s	2.0	1.6	11.0	1.6	1.0	7.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	206	94	3621	1124	141	4121
V/C Ratio(X)	0.45	0.36	0.46	0.09	0.33	0.41
Avail Cap(c_a), veh/h	1669	766	3621	1124	242	4121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	35.6	4.9	3.6	36.7	2.2
Incr Delay (d2), s/veh	1.5	2.3	0.1	0.0	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	2.1	0.3	0.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.3	37.9	5.0	3.6	38.1	2.5
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	126		1759			1733
Approach Delay, s/veh	37.4		4.9			3.5
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.7	61.8			69.5	9.2
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.5	51.5			* 64	38.0
Max Q Clear Time (g_c+13), s	13.0	13.0			9.5	4.0
Green Ext Time (p_c), s	0.0	15.8			17.3	0.4

Intersection Summary

HCM 6th Ctrl Delay	5.4
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	284	0	684	0	937	201	0	1393	388
Future Volume (veh/h)	0	0	0	284	0	684	0	937	201	0	1393	388
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				299	0	720	0	986	0	0	1466	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				800	0	712	0	1578		0	1578	
Arrive On Green				0.45	0.00	0.45	0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				299	0	720	0	986	0	0	1466	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				9.9	0.0	40.0	0.0	19.0	0.0	0.0	34.8	0.0
Cycle Q Clear(g_c), s				9.9	0.0	40.0	0.0	19.0	0.0	0.0	34.8	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				800	0	712	0	1578		0	1578	
V/C Ratio(X)				0.37	0.00	1.01	0.00	0.62		0.00	0.93	
Avail Cap(c_a), veh/h				800	0	712	0	1616		0	1616	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.2	0.0	24.5	0.0	19.0	0.0	0.0	23.4	0.0
Incr Delay (d2), s/veh				0.3	0.0	36.5	0.0	0.7	0.0	0.0	9.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.9	0.0	21.1	0.0	6.9	0.0	0.0	14.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.5	0.0	61.0	0.0	19.8	0.0	0.0	33.2	0.0
LnGrp LOS				B	A	F	A	B		A	C	
Approach Vol, veh/h					1019			986	A		1466	A
Approach Delay, s/veh					48.0			19.8			33.2	
Approach LOS					D			B			C	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		44.0				44.0		45.0				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		40.5				40.5		40.0				
Max Q Clear Time (g_c+I1), s		21.0				36.8		42.0				
Green Ext Time (p_c), s		6.1				2.8		0.0				

Intersection Summary

HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Horizon Year without Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	304	6	493	0	0	0	0	961	503	528	1168	0
Future Volume (veh/h)	304	6	493	0	0	0	0	961	503	528	1168	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No			
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	215	0	635				0	1012	529	556	1229	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	434	0	772				0	1186	552	449	2305	0
Arrive On Green	0.24	0.00	0.24				0.00	0.35	0.35	0.25	0.65	0.00
Sat Flow, veh/h	1781	0	3170				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	215	0	635				0	1012	529	556	1229	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	8.6	0.0	15.8				0.0	23.0	27.2	21.0	15.5	0.0
Cycle Q Clear(g_c), s	8.6	0.0	15.8				0.0	23.0	27.2	21.0	15.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	434	0	772				0	1186	552	449	2305	0
V/C Ratio(X)	0.50	0.00	0.82				0.00	0.85	0.96	1.24	0.53	0.00
Avail Cap(c_a), veh/h	578	0	1028				0	1186	552	449	2326	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.1	0.0	29.8				0.0	25.2	26.5	31.1	7.9	0.0
Incr Delay (d2), s/veh	0.9	0.0	4.1				0.0	6.2	28.1	124.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	6.3				0.0	9.2	13.3	23.7	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.0	0.0	33.9				0.0	31.4	54.6	156.0	8.1	0.0
LnGrp LOS	C	A	C				A	C	D	F	A	A
Approach Vol, veh/h		850						1541			1785	
Approach Delay, s/veh		32.4						39.4			54.2	
Approach LOS		C						D			D	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	25.0	33.5	24.8	58.5								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	21.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+Q), s	23.0	29.2	17.8	17.5								
Green Ext Time (p_c), s	0.0	0.0	2.5	10.1								

Intersection Summary

HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	1343	145	355	1061	335	155	921	348	344	623	309
Future Volume (veh/h)	457	1343	145	355	1061	335	155	921	348	344	623	309
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	481	1414	153	374	1117	353	163	969	366	362	656	325
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	1514	470	416	1139	360	241	1215	542	320	1297	578
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.28	0.07	0.34	0.34	0.09	0.36	0.36
Sat Flow, veh/h	3456	5106	1585	3456	3842	1214	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	481	1414	153	374	990	480	163	969	366	362	656	325
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1652	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.0	29.1	8.1	11.5	31.1	31.1	5.0	26.6	21.3	10.0	15.5	17.7
Cycle Q Clear(g_c), s	13.0	29.1	8.1	11.5	31.1	31.1	5.0	26.6	21.3	10.0	15.5	17.7
Prop In Lane	1.00		1.00	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	1514	470	416	1010	490	241	1215	542	320	1297	578
V/C Ratio(X)	1.16	0.93	0.33	0.90	0.98	0.98	0.68	0.80	0.68	1.13	0.51	0.56
Avail Cap(c_a), veh/h	416	1514	470	416	1010	490	317	1449	646	320	1453	648
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	47.4	36.9	29.5	46.8	37.6	38.4	49.0	32.1	30.4	48.9	26.7	27.4
Incr Delay (d2), s/veh	93.8	11.0	0.4	21.7	23.5	35.4	3.6	2.7	2.2	90.3	0.3	0.9
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	10.8	13.0	3.0	6.0	15.5	16.8	2.2	11.2	8.0	8.2	6.3	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	141.2	47.9	29.9	68.5	61.2	73.8	52.6	34.8	32.6	139.2	27.0	28.2
LnGrp LOS	F	D	C	E	E	E	D	C	C	F	C	C
Approach Vol, veh/h		2048			1844			1498			1343	
Approach Delay, s/veh		68.5			65.9			36.2			57.5	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	40.9	17.0	36.0	11.5	43.4	17.0	36.0				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9.5	42.0	12.5	30.0	9.4	42.1	12.5	30.0				
Max Q Clear Time (g_c+I1), s	12.0	28.6	13.5	31.1	7.0	19.7	15.0	33.1				
Green Ext Time (p_c), s	0.0	6.3	0.0	0.0	0.1	5.3	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			58.4									
HCM 6th LOS			E									



9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	949	81	15	773	95	51	154	74	49	127	42
Future Volume (veh/h)	77	949	81	15	773	95	51	154	74	49	127	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	81	999	85	16	814	100	54	162	78	52	134	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	1569	133	224	885	750	60	148	645	61	128	645
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	611	3314	282	520	1870	1585	0	364	1585	0	314	1585
Grp Volume(v), veh/h	81	535	549	16	814	100	216	0	78	186	0	44
Grp Sat Flow(s),veh/h/ln	611	1777	1820	520	1870	1585	364	0	1585	314	0	1585
Q Serve(g_s), s	5.1	17.0	17.0	1.8	30.4	2.7	0.0	0.0	2.3	0.0	0.0	1.3
Cycle Q Clear(g_c), s	35.5	17.0	17.0	18.8	30.4	2.7	30.5	0.0	2.3	30.5	0.0	1.3
Prop In Lane	1.00		0.15	1.00		1.00	0.25		1.00	0.28		1.00
Lane Grp Cap(c), veh/h	137	841	861	224	885	750	208	0	645	189	0	645
V/C Ratio(X)	0.59	0.64	0.64	0.07	0.92	0.13	1.04	0.00	0.12	0.98	0.00	0.07
Avail Cap(c_a), veh/h	137	841	861	224	885	750	208	0	645	189	0	645
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(l)	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	36.2	14.9	14.9	22.0	18.4	11.1	20.8	0.0	13.9	19.3	0.0	13.6
Incr Delay (d2), s/veh	6.5	1.6	1.6	0.1	14.5	0.1	72.9	0.0	0.1	60.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.1	6.2	0.2	14.2	0.8	6.5	0.0	0.7	5.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	16.5	16.5	22.1	32.9	11.2	93.7	0.0	14.0	79.5	0.0	13.6
LnGrp LOS	D	B	B	C	C	B	F	A	B	E	A	B
Approach Vol, veh/h		1165			930			294			230	
Approach Delay, s/veh		18.3			30.4			72.5			66.9	
Approach LOS		B			C			E			E	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.0		40.0		35.0		40.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		30.5		35.5		30.5		35.5				
Max Q Clear Time (g_c+I1), s		32.5		37.5		32.5		32.4				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											32.9	
HCM 6th LOS											C	



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	739	72	159	704	212	94	896	149	122	673	151
Future Volume (veh/h)	227	739	72	159	704	212	94	896	149	122	673	151
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	239	778	76	167	741	223	99	943	157	128	708	159
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	975	95	196	710	214	124	970	161	147	955	214
Arrive On Green	0.14	0.30	0.30	0.11	0.26	0.26	0.07	0.32	0.32	0.08	0.33	0.33
Sat Flow, veh/h	1781	3270	319	1781	2691	810	1781	3049	507	1781	2883	647
Grp Volume(v), veh/h	239	423	431	167	489	475	99	549	551	128	436	431
Grp Sat Flow(s),veh/h/ln	1781	1777	1813	1781	1777	1725	1781	1777	1779	1781	1777	1754
Q Serve(g_s), s	14.6	24.1	24.1	10.1	29.0	29.0	6.0	33.6	33.6	7.8	23.9	24.0
Cycle Q Clear(g_c), s	14.6	24.1	24.1	10.1	29.0	29.0	6.0	33.6	33.6	7.8	23.9	24.0
Prop In Lane	1.00		0.18	1.00		0.47	1.00		0.29	1.00		0.37
Lane Grp Cap(c), veh/h	257	529	540	196	468	455	124	565	566	147	589	581
V/C Ratio(X)	0.93	0.80	0.80	0.85	1.04	1.04	0.80	0.97	0.97	0.87	0.74	0.74
Avail Cap(c_a), veh/h	257	529	540	225	468	455	154	565	566	147	589	581
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(l)	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	46.5	35.6	35.6	48.1	40.5	40.5	50.4	37.0	37.0	49.9	32.6	32.6
Incr Delay (d2), s/veh	37.3	8.4	8.3	23.1	53.6	54.2	20.6	30.7	30.9	38.7	5.0	5.1
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	8.9	11.2	11.4	5.6	19.0	18.5	3.3	18.5	18.6	5.0	10.6	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	44.0	43.9	71.2	94.1	94.7	71.1	67.7	67.9	88.6	37.6	37.7
LnGrp LOS	F	D	D	E	F	F	E	E	E	F	D	D
Approach Vol, veh/h		1093			1131			1199			995	
Approach Delay, s/veh		52.6			91.0			68.1			44.2	
Approach LOS		D			F			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.6	41.0	20.4	35.0	12.2	42.4	16.6	38.8				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	35.0	15.9	29.0	9.5	34.6	13.9	31.0					
Max Q Clear Time (g_c+1), s	35.6	16.6	31.0	8.0	26.0	12.1	26.1					
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.3	0.1	2.1				

Intersection Summary

HCM 6th Ctrl Delay	64.7
HCM 6th LOS	E

Notes

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

Intersection												
Intersection Delay, s/veh	15.4											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	175	49	49	147	19	40	219	27	3	267	21
Future Vol, veh/h	43	175	49	49	147	19	40	219	27	3	267	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	184	52	52	155	20	42	231	28	3	281	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.3	14	15.9	16
HCM LOS	C	B	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	16%	23%	1%
Vol Thru, %	77%	66%	68%	92%
Vol Right, %	9%	18%	9%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	286	267	215	291
LT Vol	40	43	49	3
Through Vol	219	175	147	267
RT Vol	27	49	19	21
Lane Flow Rate	301	281	226	306
Geometry Grp	1	1	1	1
Degree of Util (X)	0.52	0.491	0.408	0.527
Departure Headway (Hd)	6.22	6.294	6.492	6.198
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	578	571	552	579
Service Time	4.276	4.351	4.552	4.253
HCM Lane V/C Ratio	0.521	0.492	0.409	0.528
HCM Control Delay	15.9	15.3	14	16
HCM Lane LOS	C	C	B	C
HCM 95th-tile Q	3	2.7	2	3.1

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	122	56	118	108	64	56	1051	113	31	828	55
Future Volume (veh/h)	60	122	56	118	108	64	56	1051	113	31	828	55
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	63	128	59	124	114	67	59	1106	119	33	872	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	348	160	243	197	455	148	1528	681	63	1208	80
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.08	0.43	0.43	0.04	0.36	0.36
Sat Flow, veh/h	1203	1211	558	532	687	1585	1781	3554	1585	1781	3382	225
Grp Volume(v), veh/h	63	0	187	238	0	67	59	1106	119	33	458	472
Grp Sat Flow(s),veh/h/ln	1203	0	1770	1219	0	1585	1781	1777	1585	1781	1777	1830
Q Serve(g_s), s	3.0	0.0	5.1	6.7	0.0	1.9	1.9	15.6	2.8	1.1	13.5	13.5
Cycle Q Clear(g_c), s	14.8	0.0	5.1	11.8	0.0	1.9	1.9	15.6	2.8	1.1	13.5	13.5
Prop In Lane	1.00		0.32	0.52		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	231	0	508	441	0	455	148	1528	681	63	635	654
V/C Ratio(X)	0.27	0.00	0.37	0.54	0.00	0.15	0.40	0.72	0.17	0.53	0.72	0.72
Avail Cap(c_a), veh/h	432	0	804	694	0	733	647	2454	1095	168	763	786
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(l)	1.00	0.00	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	26.3	0.0	17.2	20.1	0.0	16.1	26.3	14.3	10.6	28.7	16.9	16.9
Incr Delay (d2), s/veh	0.6	0.0	0.4	1.0	0.0	0.1	1.7	0.7	0.1	6.7	2.7	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	0.8	0.0	1.9	2.8	0.0	0.6	0.8	5.0	0.8	0.5	5.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	17.6	21.1	0.0	16.2	28.0	14.9	10.8	35.4	19.5	19.5
LnGrp LOS	C	A	B	C	A	B	C	B	B	D	B	B
Approach Vol, veh/h		250			305			1284			963	
Approach Delay, s/veh		20.0			20.0			15.2			20.0	
Approach LOS		B			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	32.0		21.9	11.0	27.6		21.9				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5.8	41.8		27.5	22.0	* 26		* 28				
Max Q Clear Time (g_c+1), s	13.6	17.6		16.8	3.9	15.5		13.8				
Green Ext Time (p_c), s	0.0	8.4		0.8	0.1	3.9		1.3				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

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

<b>Intersection</b>												
Intersection Delay, s/veh	55											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	65	250	44	40	330	76	33	209	31	51	245	81
Future Vol, veh/h	65	250	44	40	330	76	33	209	31	51	245	81
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	263	46	42	347	80	35	220	33	54	258	85
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	42.9	59.3	28.4	80.7
HCM LOS	E	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	14%	0%	21%	0%	11%	0%	14%
Vol Thru, %	86%	0%	79%	0%	89%	0%	65%
Vol Right, %	0%	100%	0%	100%	0%	100%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	242	31	315	44	370	76	377
LT Vol	33	0	65	0	40	0	51
Through Vol	209	0	250	0	330	0	245
RT Vol	0	31	0	44	0	76	81
Lane Flow Rate	255	33	332	46	389	80	397
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.675	0.08	0.849	0.108	0.97	0.182	1.016
Departure Headway (Hd)	9.736	8.931	9.453	8.609	9.181	8.391	9.214
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	374	404	385	419	397	430	397
Service Time	7.436	6.631	7.153	6.309	6.881	6.091	7.19
HCM Lane V/C Ratio	0.682	0.082	0.862	0.11	0.98	0.186	1
HCM Control Delay	30.4	12.4	47.2	12.3	68.8	12.9	80.7
HCM Lane LOS	D	B	E	B	F	B	F
HCM 95th-tile Q	4.7	0.3	8	0.4	11.2	0.7	12.6

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	217	55	64	298	63	49	1045	40	51	830	94
Future Volume (veh/h)	102	217	55	64	298	63	49	1045	40	51	830	94
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	107	228	58	67	314	66	52	1100	42	54	874	99
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	812	202	361	539	457	136	1469	56	87	1188	135
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.08	0.42	0.42	0.05	0.37	0.37
Sat Flow, veh/h	1003	2819	702	1093	1870	1585	1781	3490	133	1781	3217	364
Grp Volume(v), veh/h	107	142	144	67	314	66	52	560	582	54	483	490
Grp Sat Flow(s),veh/h/ln	1003	1777	1744	1093	1870	1585	1781	1777	1846	1781	1777	1805
Q Serve(g_s), s	6.3	3.8	4.0	3.1	8.9	1.9	1.7	16.5	16.5	1.8	14.6	14.6
Cycle Q Clear(g_c), s	15.2	3.8	4.0	7.1	8.9	1.9	1.7	16.5	16.5	1.8	14.6	14.6
Prop In Lane	1.00		0.40	1.00		1.00	1.00		0.07	1.00		0.20
Lane Grp Cap(c), veh/h	261	512	502	361	539	457	136	748	777	87	656	667
V/C Ratio(X)	0.41	0.28	0.29	0.19	0.58	0.14	0.38	0.75	0.75	0.62	0.74	0.74
Avail Cap(c_a), veh/h	304	588	577	417	634	537	805	1376	1430	187	774	786
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	25.4	17.1	17.1	19.9	18.9	16.4	27.2	15.2	15.2	28.9	16.9	16.9
Incr Delay (d2), s/veh	1.0	0.3	0.3	0.2	1.0	0.1	1.8	1.5	1.5	7.0	3.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	1.4	0.7	3.4	0.6	0.7	5.4	5.6	0.9	5.4	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	17.4	17.4	20.1	19.9	16.5	29.0	16.7	16.6	35.9	20.0	19.9
LnGrp LOS	C	B	B	C	B	B	C	B	B	D	B	B
Approach Vol, veh/h		393			447			1194			1027	
Approach Delay, s/veh		19.9			19.4			17.2			20.8	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	32.1		22.4	10.7	28.9		22.4				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	6.5	48.0		20.5	28.0	* 27		* 21				
Max Q Clear Time (g_c+1/3), s	13.8	18.5		17.2	3.7	16.6		10.9				
Green Ext Time (p_c), s	0.0	7.6		0.6	0.1	4.1		1.5				

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	279	52	135	532	135	62	1050	105	99	722	68
Future Volume (veh/h)	63	279	52	135	532	135	62	1050	105	99	722	68
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	66	294	55	142	560	142	65	1105	111	104	760	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	894	165	327	838	212	143	1373	138	134	1296	123
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.08	0.42	0.42	0.08	0.40	0.40
Sat Flow, veh/h	745	2995	553	1032	2809	710	1781	3261	327	1781	3281	311
Grp Volume(v), veh/h	66	173	176	142	353	349	65	602	614	104	412	420
Grp Sat Flow(s),veh/h/ln	745	1777	1771	1032	1777	1743	1781	1777	1811	1781	1777	1814
Q Serve(g_s), s	6.2	5.5	5.7	9.1	12.7	12.8	2.5	21.6	21.7	4.2	13.3	13.3
Cycle Q Clear(g_c), s	19.0	5.5	5.7	14.7	12.7	12.8	2.5	21.6	21.7	4.2	13.3	13.3
Prop In Lane	1.00		0.31	1.00		0.41	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	190	530	528	327	530	520	143	748	762	134	702	717
V/C Ratio(X)	0.35	0.33	0.33	0.43	0.67	0.67	0.45	0.80	0.81	0.78	0.59	0.59
Avail Cap(c_a), veh/h	218	597	595	373	609	597	708	1019	1038	213	702	717
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(l)	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	30.8	19.9	19.9	25.7	22.4	22.4	32.0	18.5	18.5	33.1	17.4	17.4
Incr Delay (d2), s/veh	1.1	0.4	0.4	0.9	2.3	2.4	2.2	3.4	3.4	9.3	1.3	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	1.1	2.1	2.1	2.1	5.0	5.0	1.1	7.9	8.1	2.0	4.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	20.2	20.3	26.6	24.7	24.8	34.2	21.9	21.9	42.5	18.6	18.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	D	B	B
Approach Vol, veh/h		415			844			1281			936	
Approach Delay, s/veh		22.1			25.1			22.5			21.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	36.7		26.3	11.9	34.8		26.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	3.0	41.8		24.5	29.0	* 22		* 25				
Max Q Clear Time (g_c+1/2), s	10.0	23.7		21.0	4.5	15.3		16.7				
Green Ext Time (p_c), s	0.0	7.0		0.8	0.1	2.5		3.0				

Intersection Summary

HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↓		↔↔	↑↓		↔	↑↑↑	↔	↔	↑↑↑	
Traffic Volume (veh/h)	172	254	131	588	537	69	216	1157	220	88	843	92
Future Volume (veh/h)	172	254	131	588	537	69	216	1157	220	88	843	92
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		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	181	267	138	619	565	73	227	1218	0	93	887	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	361	181	700	904	117	262	1808		106	1244	136
Arrive On Green	0.07	0.16	0.16	0.20	0.29	0.29	0.15	0.35	0.00	0.06	0.27	0.27
Sat Flow, veh/h	3456	2291	1149	3456	3166	408	1781	5106	1585	1781	4674	509
Grp Volume(v), veh/h	181	205	200	619	316	322	227	1218	0	93	645	339
Grp Sat Flow(s),veh/h/ln	1728	1777	1663	1728	1777	1797	1781	1702	1585	1781	1702	1779
Q Serve(g_s), s	4.7	10.2	10.7	16.1	14.3	14.4	11.5	18.8	0.0	4.8	15.9	16.0
Cycle Q Clear(g_c), s	4.7	10.2	10.7	16.1	14.3	14.4	11.5	18.8	0.0	4.8	15.9	16.0
Prop In Lane	1.00		0.69	1.00		0.23	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	257	280	262	700	508	513	262	1808		106	906	473
V/C Ratio(X)	0.70	0.73	0.76	0.88	0.62	0.63	0.87	0.67		0.88	0.71	0.72
Avail Cap(c_a), veh/h	414	479	449	764	660	667	302	2645		106	1388	726
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	41.9	37.2	37.4	35.9	28.8	28.8	38.6	25.4	0.0	43.3	30.8	30.8
Incr Delay (d2), s/veh	3.5	3.7	4.6	11.3	1.3	1.3	20.3	0.4	0.0	51.7	1.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.7	4.6	7.7	6.2	6.3	6.4	7.4	0.0	3.6	6.5	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	40.9	42.0	47.2	30.0	30.1	58.9	25.8	0.0	94.9	31.8	32.9
LnGrp LOS	D	D	D	D	C	C	E	C		F	C	C
Approach Vol, veh/h		586			1257			1445	A		1077	
Approach Delay, s/veh		42.7			38.5			31.0			37.6	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	38.8	11.4	32.5	18.1	30.7	23.3	20.6				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	5.5	48.0	11.1	34.4	15.7	37.8	20.5	25.0				
Max Q Clear Time (g_c+1/3), s	10.8	20.8	6.7	16.4	13.5	18.0	18.1	12.7				
Green Ext Time (p_c), s	0.0	10.3	0.2	3.8	0.1	6.7	0.6	1.9				

Intersection Summary

HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Notes

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



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗ ↗		↗	↗ ↗ ↗ ↗		
Traffic Volume (veh/h)	30	7	61	82	3	36	79	1568	34	20	1546	30
Future Volume (veh/h)	30	7	61	82	3	36	79	1568	34	20	1546	30
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	32	7	64	86	3	38	83	1651	36	21	1627	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	9	84	262	9	113	183	2474	768	44	1961	39
Arrive On Green	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.48	0.48	0.02	0.38	0.38
Sat Flow, veh/h	515	113	1031	3456	117	1486	1781	5106	1585	1781	5155	101
Grp Volume(v), veh/h	103	0	0	86	0	41	83	1651	36	21	1074	585
Grp Sat Flow(s),veh/h/ln	1659	0	0	1728	0	1603	1781	1702	1585	1781	1702	1852
Q Serve(g_s), s	3.5	0.0	0.0	1.3	0.0	1.4	2.5	14.1	0.7	0.7	16.3	16.3
Cycle Q Clear(g_c), s	3.5	0.0	0.0	1.3	0.0	1.4	2.5	14.1	0.7	0.7	16.3	16.3
Prop In Lane	0.31		0.62	1.00		0.93	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	135	0	0	262	0	122	183	2474	768	44	1295	705
V/C Ratio(X)	0.76	0.00	0.00	0.33	0.00	0.34	0.45	0.67	0.05	0.48	0.83	0.83
Avail Cap(c_a), veh/h	465	0	0	969	0	450	578	3044	945	156	1295	705
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	0.0	25.0	0.0	25.0	24.1	11.2	7.8	27.4	16.0	16.0
Incr Delay (d2), s/veh	8.5	0.0	0.0	0.7	0.0	1.6	1.8	0.4	0.0	7.7	4.7	8.2
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	1.6	0.0	0.0	0.5	0.0	0.5	1.1	4.4	0.2	0.4	6.3	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	0.0	0.0	25.7	0.0	26.6	25.8	11.6	7.8	35.2	20.7	24.2
LnGrp LOS	C	A	A	C	A	C	C	B	A	D	C	C
Approach Vol, veh/h		103			127			1770			1680	
Approach Delay, s/veh		34.1			26.0			12.2			22.1	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	33.6		8.3	11.9	27.7		9.2				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	34.0		16.0	18.5	* 21		16.0				
Max Q Clear Time (g_c+1/2), s	12.7	16.1		3.4	4.5	18.3		5.5				
Green Ext Time (p_c), s	0.0	11.6		0.3	0.1	2.2		0.3				

Intersection Summary

HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Horizon Year without Project  
 timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖↗	↖	↑↑↑	↖	↖↗	↑↑↑
Traffic Volume (veh/h)	162	65	1637	90	26	1632
Future Volume (veh/h)	162	65	1637	90	26	1632
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	68	1723	95	27	1718
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	310	142	3315	1029	103	3821
Arrive On Green	0.09	0.09	0.65	0.65	0.03	0.75
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	171	68	1723	95	27	1718
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	3.1	2.6	11.6	1.4	0.5	8.3
Cycle Q Clear(g_c), s	3.1	2.6	11.6	1.4	0.5	8.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	310	142	3315	1029	103	3821
V/C Ratio(X)	0.55	0.48	0.52	0.09	0.26	0.45
Avail Cap(c_a), veh/h	2026	929	3315	1029	267	3821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	28.1	6.0	4.2	30.7	3.1
Incr Delay (d2), s/veh	1.5	2.5	0.1	0.0	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.1	2.2	0.3	0.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.8	30.5	6.2	4.3	32.1	3.5
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	239		1818			1745
Approach Delay, s/veh	30.0		6.1			3.9
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	48.1			54.5	10.3
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	37.0			* 49	38.0
Max Q Clear Time (g_c+1/2), s	12.5	13.6			10.3	5.1
Green Ext Time (p_c), s	0.0	13.1			16.0	0.8

Intersection Summary

HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	531	0	585	0	1152	357	0	1312	514
Future Volume (veh/h)	0	0	0	531	0	585	0	1152	357	0	1312	514
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				559	0	616	0	1213	0	0	1381	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				732	0	652	0	1650		0	1650	
Arrive On Green				0.41	0.00	0.41	0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				559	0	616	0	1213	0	0	1381	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				20.5	0.0	28.5	0.0	21.2	0.0	0.0	26.0	0.0
Cycle Q Clear(g_c), s				20.5	0.0	28.5	0.0	21.2	0.0	0.0	26.0	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				732	0	652	0	1650		0	1650	
V/C Ratio(X)				0.76	0.00	0.95	0.00	0.74		0.00	0.84	
Avail Cap(c_a), veh/h				911	0	811	0	1934		0	1934	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.3	0.0	21.6	0.0	16.6	0.0	0.0	17.9	0.0
Incr Delay (d2), s/veh				3.0	0.0	17.4	0.0	1.2	0.0	0.0	3.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.4	0.0	12.8	0.0	7.2	0.0	0.0	9.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.3	0.0	39.0	0.0	17.9	0.0	0.0	20.9	0.0
LnGrp LOS				C	A	D	A	B		A	C	
Approach Vol, veh/h					1175			1213	A		1381	A
Approach Delay, s/veh					31.1			17.9			20.9	
Approach LOS					C			B			C	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		39.9				39.9		36.4				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		41.5				41.5		39.0				
Max Q Clear Time (g_c+I1), s		23.2				28.0		30.5				
Green Ext Time (p_c), s		7.7				7.4		0.8				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Horizon Year without Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	308	5	417	0	0	0	0	1263	770	378	1469	0
Future Volume (veh/h)	308	5	417	0	0	0	0	1263	770	378	1469	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	480	0	275				0	1329	811	398	1546	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	679	0	302				0	1627	758	421	2643	0
Arrive On Green	0.19	0.00	0.19				0.00	0.48	0.48	0.24	0.74	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	480	0	275				0	1329	811	398	1546	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	17.2	0.0	23.2				0.0	45.7	65.3	30.0	27.0	0.0
Cycle Q Clear(g_c), s	17.2	0.0	23.2				0.0	45.7	65.3	30.0	27.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	679	0	302				0	1627	758	421	2643	0
V/C Ratio(X)	0.71	0.00	0.91				0.00	0.82	1.07	0.95	0.59	0.00
Avail Cap(c_a), veh/h	722	0	321				0	1627	758	443	2700	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.7	0.0	54.2				0.0	30.5	35.7	51.3	7.9	0.0
Incr Delay (d2), s/veh	3.0	0.0	27.8				0.0	3.4	53.2	28.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	8.0	0.0	11.6				0.0	18.2	34.5	16.3	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	0.0	81.9				0.0	33.9	88.9	80.0	8.3	0.0
LnGrp LOS	D	A	F				A	C	F	E	A	A
Approach Vol, veh/h		755						2140			1944	
Approach Delay, s/veh		64.6						54.7			22.9	
Approach LOS		E						D			C	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	36.3	69.8	30.5	106.1								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	31.0	65.3	27.7	* 1E2								
Max Q Clear Time (g_c+Q), s	32.0	67.3	25.2	29.0								
Green Ext Time (p_c), s	0.3	0.0	0.8	16.7								

Intersection Summary

HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year with Project  
timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	882	85	206	1100	150	109	716	278	326	941	382
Future Volume (veh/h)	346	882	85	206	1100	150	109	716	278	326	941	382
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	364	928	89	217	1158	158	115	754	293	343	991	402
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	1726	536	281	1347	184	171	981	437	406	1222	545
Arrive On Green	0.12	0.34	0.34	0.08	0.30	0.30	0.05	0.28	0.28	0.12	0.34	0.34
Sat Flow, veh/h	3456	5106	1585	3456	4543	620	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	364	928	89	217	868	448	115	754	293	343	991	402
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1759	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.6	16.5	4.4	6.9	27.0	27.0	3.7	21.9	18.4	10.9	28.5	25.0
Cycle Q Clear(g_c), s	11.6	16.5	4.4	6.9	27.0	27.0	3.7	21.9	18.4	10.9	28.5	25.0
Prop In Lane	1.00		1.00	1.00		0.35	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	1726	536	281	1009	521	171	981	437	406	1222	545
V/C Ratio(X)	0.86	0.54	0.17	0.77	0.86	0.86	0.67	0.77	0.67	0.85	0.81	0.74
Avail Cap(c_a), veh/h	462	1748	543	388	1093	565	219	1362	608	462	1613	719
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(l)	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	48.2	30.0	26.0	50.5	37.3	37.3	52.4	37.3	36.1	48.5	33.5	32.3
Incr Delay (d2), s/veh	13.9	0.3	0.1	6.3	6.7	12.1	5.4	1.8	1.8	12.3	2.4	2.8
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	5.6	6.5	1.6	3.1	11.6	12.8	1.7	9.3	7.0	5.2	12.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	30.4	26.2	56.8	43.9	49.3	57.8	39.1	37.8	60.8	35.9	35.1
LnGrp LOS	E	C	C	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		1381			1533			1162			1736	
Approach Delay, s/veh		38.5			47.3			40.6			40.6	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	37.0	13.6	43.9	10.0	44.6	18.3	39.3				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	15.0	43.0	12.6	38.4	7.1	50.9	15.0	36.0				
Max Q Clear Time (g_c+I1), s	12.9	23.9	8.9	18.5	5.7	30.5	13.6	29.0				
Green Ext Time (p_c), s	0.3	5.6	0.2	6.2	0.0	8.1	0.2	4.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			41.9									
HCM 6th LOS			D									

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	668	49	118	756	72	52	104	76	85	111	76
Future Volume (veh/h)	34	668	49	118	756	72	52	104	76	85	111	76
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	36	703	52	124	796	76	55	109	80	89	117	80
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	1471	109	316	820	695	74	114	671	79	76	671
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	635	3355	248	709	1870	1585	0	269	1585	0	179	1585
Grp Volume(v), veh/h	36	372	383	124	796	76	164	0	80	206	0	80
Grp Sat Flow(s),veh/h/ln	635	1777	1826	709	1870	1585	269	0	1585	179	0	1585
Q Serve(g_s), s	1.5	9.7	9.7	9.8	27.0	1.8	0.0	0.0	2.0	0.0	0.0	2.0
Cycle Q Clear(g_c), s	28.5	9.7	9.7	19.5	27.0	1.8	27.5	0.0	2.0	27.5	0.0	2.0
Prop In Lane	1.00		0.14	1.00		1.00	0.34		1.00	0.43		1.00
Lane Grp Cap(c), veh/h	125	779	801	316	820	695	188	0	671	155	0	671
V/C Ratio(X)	0.29	0.48	0.48	0.39	0.97	0.11	0.87	0.00	0.12	1.33	0.00	0.12
Avail Cap(c_a), veh/h	125	779	801	316	820	695	188	0	671	155	0	671
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(l)	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	32.2	13.0	13.0	19.9	17.8	10.8	16.1	0.0	11.4	19.7	0.0	11.4
Incr Delay (d2), s/veh	1.3	0.5	0.4	0.8	24.3	0.1	33.5	0.0	0.1	185.4	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/lr0.6	0.6	3.2	3.3	1.5	14.7	0.5	3.0	0.0	0.6	9.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	13.4	13.4	20.7	42.2	10.8	49.6	0.0	11.5	205.1	0.0	11.5
LnGrp LOS	C	B	B	C	D	B	D	A	B	F	A	B
Approach Vol, veh/h		791			996			244			286	
Approach Delay, s/veh		14.3			37.1			37.1			150.9	
Approach LOS		B			D			D			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		33.0		32.0		33.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		27.5		28.5		27.5		28.5				
Max Q Clear Time (g_c+I1), s		29.5		30.5		29.5		29.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

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

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	685	95	206	725	231	86	596	134	199	960	152
Future Volume (veh/h)	156	685	95	206	725	231	86	596	134	199	960	152
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		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	164	721	100	217	763	243	91	627	141	209	1011	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	836	116	244	786	250	114	824	185	236	1090	172
Arrive On Green	0.11	0.27	0.27	0.14	0.30	0.30	0.06	0.29	0.29	0.13	0.35	0.35
Sat Flow, veh/h	1781	3135	434	1781	2651	844	1781	2883	647	1781	3074	486
Grp Volume(v), veh/h	164	409	412	217	511	495	91	386	382	209	584	587
Grp Sat Flow(s),veh/h/ln	1781	1777	1792	1781	1777	1718	1781	1777	1754	1781	1777	1783
Q Serve(g_s), s	10.7	25.8	25.9	14.1	33.5	33.6	5.9	23.4	23.5	13.6	37.3	37.4
Cycle Q Clear(g_c), s	10.7	25.8	25.9	14.1	33.5	33.6	5.9	23.4	23.5	13.6	37.3	37.4
Prop In Lane	1.00		0.24	1.00		0.49	1.00		0.37	1.00		0.27
Lane Grp Cap(c), veh/h	191	474	478	244	527	510	114	508	501	236	630	632
V/C Ratio(X)	0.86	0.86	0.86	0.89	0.97	0.97	0.80	0.76	0.76	0.88	0.93	0.93
Avail Cap(c_a), veh/h	195	474	478	255	527	510	116	518	511	252	653	656
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(l)	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	51.8	41.2	41.2	50.0	41.0	41.0	54.5	38.5	38.5	50.3	36.6	36.7
Incr Delay (d2), s/veh	29.6	15.0	15.0	28.8	31.6	32.3	30.9	6.4	6.6	27.8	19.1	19.4
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	6.2	12.8	13.0	8.1	18.6	18.1	3.6	10.7	10.6	7.7	18.6	18.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.5	56.2	56.2	78.8	72.6	73.3	85.4	44.8	45.0	78.1	55.8	56.0
LnGrp LOS	F	E	E	E	E	E	F	D	D	E	E	E
Approach Vol, veh/h		985			1223			859			1380	
Approach Delay, s/veh		60.4			74.0			49.2			59.3	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.2	39.7	17.1	41.0	12.0	47.8	20.7	37.5				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	16.7	34.4	12.9	35.0	7.7	43.4	16.9	31.0				
Max Q Clear Time (g_c+11/5), s	11.6	25.5	12.7	35.6	7.9	39.4	16.1	27.9				
Green Ext Time (p_c), s	0.1	2.9	0.0	0.0	0.0	2.4	0.0	1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											61.6	
HCM 6th LOS											E	

Intersection												
Intersection Delay, s/veh	13.2											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	60	130	6	37	123	70	51	169	42	45	162	82
Future Vol, veh/h	60	130	6	37	123	70	51	169	42	45	162	82
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	137	6	39	129	74	54	178	44	47	171	86
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.5	12.7	13.4	13.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	31%	16%	16%
Vol Thru, %	65%	66%	53%	56%
Vol Right, %	16%	3%	30%	28%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	262	196	230	289
LT Vol	51	60	37	45
Through Vol	169	130	123	162
RT Vol	42	6	70	82
Lane Flow Rate	276	206	242	304
Geometry Grp	1	1	1	1
Degree of Util (X)	0.441	0.35	0.393	0.476
Departure Headway (Hd)	5.763	6.1	5.844	5.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	621	584	610	633
Service Time	3.851	4.194	3.936	3.723
HCM Lane V/C Ratio	0.444	0.353	0.397	0.48
HCM Control Delay	13.4	12.5	12.7	13.8
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.2	1.6	1.9	2.6



9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	36	131	52	68	89	30	92	562	146	66	1014	55
Future Volume (veh/h)	36	131	52	68	89	30	92	562	146	66	1014	55
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	38	138	55	72	94	32	97	592	154	69	1067	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	170	68	93	121	185	152	1586	707	90	1347	73
Arrive On Green	0.16	0.16	0.16	0.12	0.12	0.12	0.09	0.45	0.45	0.05	0.39	0.39
Sat Flow, veh/h	293	1063	424	794	1037	1585	1781	3554	1585	1781	3427	186
Grp Volume(v), veh/h	231	0	0	166	0	32	97	592	154	69	553	572
Grp Sat Flow(s),veh/h/ln	1779	0	0	1831	0	1585	1781	1777	1585	1781	1777	1837
Q Serve(g_s), s	10.5	0.0	0.0	7.4	0.0	1.5	4.4	9.3	5.0	3.2	22.9	23.0
Cycle Q Clear(g_c), s	10.5	0.0	0.0	7.4	0.0	1.5	4.4	9.3	5.0	3.2	22.9	23.0
Prop In Lane	0.16		0.24	0.43		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	284	0	0	214	0	185	152	1586	707	90	698	722
V/C Ratio(X)	0.81	0.00	0.00	0.78	0.00	0.17	0.64	0.37	0.22	0.77	0.79	0.79
Avail Cap(c_a), veh/h	530	0	0	372	0	322	503	2872	1281	266	1211	1252
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	0.0	0.0	35.9	0.0	33.3	37.0	15.4	14.2	39.2	22.4	22.4
Incr Delay (d2), s/veh	5.6	0.0	0.0	6.0	0.0	0.4	4.3	0.1	0.2	13.0	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	3.5	0.0	0.6	2.0	3.3	1.6	1.6	8.9	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.5	0.0	0.0	41.8	0.0	33.7	41.3	15.5	14.4	52.2	24.5	24.4
LnGrp LOS	D	A	A	D	A	C	D	B	B	D	C	C
Approach Vol, veh/h		231			198			843			1194	
Approach Delay, s/veh		39.5			40.5			18.3			26.0	
Approach LOS		D			D			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	43.3		17.9	13.2	38.9		13.8				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		4.0				
Max Green Setting (Gmax), s	12.5	67.6		24.9	23.6	* 57		17.0				
Max Q Clear Time (g_c+1/2), s	11.3	11.3		12.5	6.4	25.0		9.4				
Green Ext Time (p_c), s	0.1	4.6		0.9	0.2	7.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

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



Intersection												
Intersection Delay, s/veh	51											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	↔
Traffic Vol, veh/h	81	330	59	33	238	101	85	166	45	83	206	50
Future Vol, veh/h	81	330	59	33	238	101	85	166	45	83	206	50
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	347	62	35	251	106	89	175	47	87	217	53
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	82.5	27.2	27.8	53.7
HCM LOS	F	D	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	34%	0%	20%	0%	12%	0%	24%
Vol Thru, %	66%	0%	80%	0%	88%	0%	61%
Vol Right, %	0%	100%	0%	100%	0%	100%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	45	411	59	271	101	339
LT Vol	85	0	81	0	33	0	83
Through Vol	166	0	330	0	238	0	206
RT Vol	0	45	0	59	0	101	50
Lane Flow Rate	264	47	433	62	285	106	357
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.683	0.11	1.064	0.138	0.714	0.243	0.892
Departure Headway (Hd)	9.602	8.692	8.852	8.019	9.311	8.513	9.292
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	378	415	415	450	391	424	393
Service Time	7.302	6.392	6.552	5.719	7.011	6.213	7.292
HCM Lane V/C Ratio	0.698	0.113	1.043	0.138	0.729	0.25	0.908
HCM Control Delay	30.6	12.5	92.6	12	32.1	13.9	53.7
HCM Lane LOS	D	B	F	B	D	B	F
HCM 95th-tile Q	4.9	0.4	14.5	0.5	5.4	0.9	9.1

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	202	56	33	185	42	89	763	74	51	1026	93
Future Volume (veh/h)	100	202	56	33	185	42	89	763	74	51	1026	93
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	105	213	59	35	195	44	94	803	78	54	1080	98
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	626	169	285	424	359	176	1640	159	84	1408	128
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.10	0.50	0.50	0.05	0.43	0.43
Sat Flow, veh/h	1141	2765	748	1107	1870	1585	1781	3272	318	1781	3295	299
Grp Volume(v), veh/h	105	135	137	35	195	44	94	436	445	54	582	596
Grp Sat Flow(s),veh/h/ln	1141	1777	1736	1107	1870	1585	1781	1777	1813	1781	1777	1817
Q Serve(g_s), s	5.8	4.2	4.4	1.8	6.0	1.5	3.3	10.8	10.8	2.0	18.6	18.7
Cycle Q Clear(g_c), s	11.8	4.2	4.4	6.3	6.0	1.5	3.3	10.8	10.8	2.0	18.6	18.7
Prop In Lane	1.00		0.43	1.00		1.00	1.00		0.18	1.00		0.16
Lane Grp Cap(c), veh/h	264	402	393	285	424	359	176	891	909	84	759	776
V/C Ratio(X)	0.40	0.34	0.35	0.12	0.46	0.12	0.53	0.49	0.49	0.64	0.77	0.77
Avail Cap(c_a), veh/h	407	626	611	433	673	570	721	1651	1685	254	1199	1225
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	27.4	21.6	21.7	24.3	22.3	20.5	28.6	11.0	11.0	31.2	16.3	16.3
Incr Delay (d2), s/veh	1.0	0.5	0.5	0.2	0.8	0.2	2.5	0.4	0.4	7.8	1.7	1.6
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	1.5	1.7	1.7	0.4	2.4	0.5	1.4	3.3	3.3	1.0	6.5	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	22.1	22.2	24.5	23.1	20.7	31.1	11.4	11.4	39.0	17.9	17.9
LnGrp LOS	C	C	C	C	C	C	C	B	B	D	B	B
Approach Vol, veh/h		377			274			975			1232	
Approach Delay, s/veh		23.9			22.9			13.3			18.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	39.4		19.6	12.6	34.5		19.6				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9.5	62.0		23.5	27.0	* 45		* 24				
Max Q Clear Time (g_c+14), s	14.0	12.8		13.8	5.3	20.7		8.3				
Green Ext Time (p_c), s	0.0	5.6		1.3	0.2	7.9		1.1				

Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	281	73	70	215	86	55	890	137	139	1043	92
Future Volume (veh/h)	64	281	73	70	215	86	55	890	137	139	1043	92
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	67	296	77	74	226	91	58	937	144	146	1098	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	619	158	244	552	216	145	1334	205	190	1431	126
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.08	0.43	0.43	0.11	0.43	0.43
Sat Flow, veh/h	1063	2802	717	1009	2497	975	1781	3087	474	1781	3303	292
Grp Volume(v), veh/h	67	186	187	74	159	158	58	539	542	146	590	605
Grp Sat Flow(s),veh/h/ln	1063	1777	1741	1009	1777	1695	1781	1777	1785	1781	1777	1818
Q Serve(g_s), s	3.6	5.7	5.9	4.3	4.8	5.0	1.9	15.4	15.5	5.0	17.6	17.6
Cycle Q Clear(g_c), s	8.6	5.7	5.9	10.2	4.8	5.0	1.9	15.4	15.5	5.0	17.6	17.6
Prop In Lane	1.00		0.41	1.00		0.58	1.00		0.27	1.00		0.16
Lane Grp Cap(c), veh/h	265	393	385	244	393	375	145	768	771	190	770	787
V/C Ratio(X)	0.25	0.47	0.49	0.30	0.40	0.42	0.40	0.70	0.70	0.77	0.77	0.77
Avail Cap(c_a), veh/h	458	715	700	435	729	695	828	1481	1487	511	1179	1206
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(l)	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	24.6	21.1	21.2	25.6	20.8	20.9	27.2	14.5	14.5	27.1	15.0	15.0
Incr Delay (d2), s/veh	0.5	0.9	1.0	0.7	0.7	0.8	1.8	1.2	1.2	6.4	1.6	1.6
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	0.8	2.2	2.2	1.0	1.8	1.8	0.8	5.0	5.0	2.2	5.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	22.0	22.2	26.3	21.5	21.6	29.0	15.6	15.6	33.6	16.7	16.6
LnGrp LOS	C	C	C	C	C	C	C	B	B	C	B	B
Approach Vol, veh/h		440			391			1139			1341	
Approach Delay, s/veh		22.5			22.4			16.3			18.5	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	1.1	33.0		18.3	11.1	33.0		18.3				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	9	52.0		25.1	29.0	* 41		* 26				
Max Q Clear Time (g_c+11), s	9	17.5		10.6	3.9	19.6		12.2				
Green Ext Time (p_c), s	0.2	7.3		1.9	0.1	7.4		1.6				

Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↔		↔↔	↕↔		↔↔↔	↕↔↔	↔	↔↔↔		
Traffic Volume (veh/h)	106	189	138	353	269	54	95	1074	393	44	1128	65
Future Volume (veh/h)	106	189	138	353	269	54	95	1074	393	44	1128	65
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	112	199	145	372	283	57	100	1131	0	46	1187	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	208	300	208	469	665	132	128	2010		73	1792	103
Arrive On Green	0.06	0.15	0.15	0.14	0.23	0.23	0.07	0.39	0.00	0.04	0.36	0.36
Sat Flow, veh/h	3456	2007	1390	3456	2955	587	1781	5106	1585	1781	4941	283
Grp Volume(v), veh/h	112	175	169	372	169	171	100	1131	0	46	818	437
Grp Sat Flow(s),veh/h/ln	1728	1777	1620	1728	1777	1765	1781	1702	1585	1781	1702	1819
Q Serve(g_s), s	2.4	7.0	7.4	7.8	6.1	6.3	4.1	12.9	0.0	1.9	15.1	15.1
Cycle Q Clear(g_c), s	2.4	7.0	7.4	7.8	6.1	6.3	4.1	12.9	0.0	1.9	15.1	15.1
Prop In Lane	1.00		0.86	1.00		0.33	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	208	266	242	469	400	397	128	2010		73	1235	660
V/C Ratio(X)	0.54	0.66	0.70	0.79	0.42	0.43	0.78	0.56		0.63	0.66	0.66
Avail Cap(c_a), veh/h	336	592	540	567	711	706	178	3173		121	2007	1072
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(l)	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	34.2	30.1	30.3	31.4	24.9	24.9	34.2	17.7	0.0	35.4	20.0	20.0
Incr Delay (d2), s/veh	2.2	2.8	3.6	6.4	0.7	0.7	13.7	0.2	0.0	8.5	0.6	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	1.0	3.1	3.0	3.6	2.6	2.6	2.2	4.8	0.0	1.0	5.7	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	32.8	33.9	37.8	25.6	25.7	47.9	18.0	0.0	43.9	20.7	21.2
LnGrp LOS	D	C	C	D	C	C	D	B		D	C	C
Approach Vol, veh/h		456			712			1231	A		1301	
Approach Delay, s/veh		34.1			32.0			20.4			21.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	35.5	9.0	22.9	9.9	33.2	14.7	17.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	46.6	7.3	30.0	7.5	44.2	12.3	25.0					
Max Q Clear Time (g_c+1), s	14.9	4.4	8.3	6.1	17.1	9.8	9.4					
Green Ext Time (p_c), s	0.0	9.9	0.1	1.9	0.0	10.1	0.4	1.8				

Intersection Summary

HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗ ↗	↗	↗ ↗ ↗ ↗	↗	↗ ↗ ↗ ↗	
Traffic Volume (veh/h)	29	0	69	13	0	18	84	1552	57	21	1594	10
Future Volume (veh/h)	29	0	69	13	0	18	84	1552	57	21	1594	10
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	0	73	14	0	19	88	1634	60	22	1678	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	0	96	119	0	55	173	2907	902	45	2484	16
Arrive On Green	0.08	0.00	0.08	0.03	0.00	0.03	0.10	0.57	0.57	0.03	0.47	0.47
Sat Flow, veh/h	489	0	1150	3456	0	1585	1781	5106	1585	1781	5234	34
Grp Volume(v), veh/h	104	0	0	14	0	19	88	1634	60	22	1091	598
Grp Sat Flow(s),veh/h/ln	1639	0	0	1728	0	1585	1781	1702	1585	1781	1702	1864
Q Serve(g_s), s	4.1	0.0	0.0	0.3	0.0	0.8	3.1	13.4	1.1	0.8	16.4	16.4
Cycle Q Clear(g_c), s	4.1	0.0	0.0	0.3	0.0	0.8	3.1	13.4	1.1	0.8	16.4	16.4
Prop In Lane	0.30		0.70	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	136	0	0	119	0	55	173	2907	902	45	1616	885
V/C Ratio(X)	0.76	0.00	0.00	0.12	0.00	0.35	0.51	0.56	0.07	0.49	0.68	0.68
Avail Cap(c_a), veh/h	422	0	0	838	0	385	486	4103	1274	135	2090	1145
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	0.0	0.0	30.9	0.0	31.1	28.3	9.0	6.4	31.7	13.4	13.4
Incr Delay (d2), s/veh	8.6	0.0	0.0	0.4	0.0	3.8	2.3	0.2	0.0	8.1	0.6	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	1.9	0.0	0.0	0.1	0.0	0.3	1.4	4.1	0.3	0.4	5.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	0.0	0.0	31.3	0.0	34.9	30.6	9.2	6.4	39.8	14.0	14.5
LnGrp LOS	D	A	A	C	A	C	C	A	A	D	B	B
Approach Vol, veh/h		104			33			1782			1711	
Approach Delay, s/veh		38.2			33.4			10.1			14.5	
Approach LOS		D			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	43.6		6.3	12.4	37.3		10.0				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	53.0		16.0	18.0	* 41		17.0				
Max Q Clear Time (g_c+1), s	12.8	15.4		2.8	5.1	18.4		6.1				
Green Ext Time (p_c), s	0.0	17.8		0.1	0.1	13.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Horizon Year with Project  
 timing Plan: AM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	87	32	1665	99	45	1627
Future Volume (veh/h)	87	32	1665	99	45	1627
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	34	1753	104	47	1713
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	206	94	3621	1124	141	4121
Arrive On Green	0.06	0.06	0.71	0.71	0.04	0.81
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	92	34	1753	104	47	1713
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.0	1.6	12.0	1.6	1.0	7.7
Cycle Q Clear(g_c), s	2.0	1.6	12.0	1.6	1.0	7.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	206	94	3621	1124	141	4121
V/C Ratio(X)	0.45	0.36	0.48	0.09	0.33	0.42
Avail Cap(c_a), veh/h	1669	766	3621	1124	242	4121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	35.6	5.1	3.6	36.7	2.2
Incr Delay (d2), s/veh	1.5	2.3	0.1	0.0	1.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	2.3	0.3	0.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.3	37.9	5.2	3.6	38.1	2.5
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	126		1857			1760
Approach Delay, s/veh	37.4		5.1			3.5
Approach LOS	D		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.7	61.8			69.5	9.2
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.5	51.5			* 64	38.0
Max Q Clear Time (g_c+13), s	13.0	14.0			9.7	4.0
Green Ext Time (p_c), s	0.0	17.0			17.7	0.4

Intersection Summary

HCM 6th Ctrl Delay	5.4
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	284	0	722	0	992	201	0	1403	403
Future Volume (veh/h)	0	0	0	284	0	722	0	992	201	0	1403	403
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				299	0	760	0	1044	0	0	1477	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				814	0	725	0	1552		0	1552	
Arrive On Green				0.46	0.00	0.46	0.00	0.44	0.00	0.00	0.44	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				299	0	760	0	1044	0	0	1477	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				9.8	0.0	41.0	0.0	21.0	0.0	0.0	35.9	0.0
Cycle Q Clear(g_c), s				9.8	0.0	41.0	0.0	21.0	0.0	0.0	35.9	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				814	0	725	0	1552		0	1552	
V/C Ratio(X)				0.37	0.00	1.05	0.00	0.67		0.00	0.95	
Avail Cap(c_a), veh/h				814	0	725	0	1565		0	1565	
HCM Platoon Ratio				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	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.9	0.0	24.3	0.0	20.1	0.0	0.0	24.3	0.0
Incr Delay (d2), s/veh				0.3	0.0	46.9	0.0	1.1	0.0	0.0	13.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.9	0.0	23.6	0.0	7.8	0.0	0.0	15.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				16.1	0.0	71.2	0.0	21.3	0.0	0.0	37.3	0.0
LnGrp LOS				B	A	F	A	C		A	D	
Approach Vol, veh/h						1059		1044	A		1477	A
Approach Delay, s/veh						55.7		21.3			37.3	
Approach LOS						E		C			D	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		43.7				43.7		46.0				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		39.5				39.5		41.0				
Max Q Clear Time (g_c+I1), s		23.0				37.9		43.0				
Green Ext Time (p_c), s		6.1				1.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

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



9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Horizon Year with Project  
timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	355	6	493	0	0	0	0	965	503	537	1169	0
Future Volume (veh/h)	355	6	493	0	0	0	0	965	503	537	1169	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	560	0	324				0	1016	529	565	1231	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	877	0	390				0	1181	550	448	2296	0
Arrive On Green	0.25	0.00	0.25				0.00	0.35	0.35	0.25	0.65	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	560	0	324				0	1016	529	565	1231	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	11.7	0.0	16.2				0.0	23.2	27.3	21.0	15.7	0.0
Cycle Q Clear(g_c), s	11.7	0.0	16.2				0.0	23.2	27.3	21.0	15.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	877	0	390				0	1181	550	448	2296	0
V/C Ratio(X)	0.64	0.00	0.83				0.00	0.86	0.96	1.26	0.54	0.00
Avail Cap(c_a), veh/h	1151	0	512				0	1181	550	448	2317	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	0.0	29.8				0.0	25.4	26.7	31.3	8.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	8.6				0.0	6.6	28.9	135.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	6.9				0.0	9.3	13.5	24.9	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	38.4				0.0	32.0	55.7	166.3	8.2	0.0
LnGrp LOS	C	A	D				A	C	E	F	A	A
Approach Vol, veh/h		884						1545			1796	
Approach Delay, s/veh		32.4						40.1			58.0	
Approach LOS		C						D			E	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	25.0	33.5	25.1	58.5								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	21.0	29.0	27.0	* 55								
Max Q Clear Time (g_c+Q), s	23.0	29.3	18.2	17.7								
Green Ext Time (p_c), s	0.0	0.0	2.4	10.1								

Intersection Summary

HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	6	2	249	20	4	308
Future Vol, veh/h	6	2	249	20	4	308
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	262	21	4	324

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	605	273	0	0	283
Stage 1	273	-	-	-	-
Stage 2	332	-	-	-	-
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	461	766	-	-	1279
Stage 1	773	-	-	-	-
Stage 2	727	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	459	766	-	-	1279
Mov Cap-2 Maneuver	459	-	-	-	-
Stage 1	770	-	-	-	-
Stage 2	727	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	510	1279
HCM Lane V/C Ratio	-	-	0.017	0.003
HCM Control Delay (s)	-	-	12.2	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	269	0	0	314
Future Vol, veh/h	0	0	269	0	0	314
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	283	0	0	331

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	614	283	0	0	283	0
Stage 1	283	-	-	-	-	-
Stage 2	331	-	-	-	-	-
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	455	756	-	-	1279	-
Stage 1	765	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	455	756	-	-	1279	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	728	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1279	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	12	0	2	0	267	46	5	313	0
Future Vol, veh/h	0	0	0	12	0	2	0	267	46	5	313	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	13	0	2	0	281	48	5	329	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	645	668	329	644	644	305	329	0	0	329	0	0
Stage 1	339	339	-	305	305	-	-	-	-	-	-	-
Stage 2	306	329	-	339	339	-	-	-	-	-	-	-
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	385	379	712	386	391	735	1231	-	-	1231	-	-
Stage 1	676	640	-	705	662	-	-	-	-	-	-	-
Stage 2	704	646	-	676	640	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	382	377	712	384	389	735	1231	-	-	1231	-	-
Mov Cap-2 Maneuver	382	377	-	384	389	-	-	-	-	-	-	-
Stage 1	676	637	-	705	662	-	-	-	-	-	-	-
Stage 2	702	646	-	673	637	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		14.1		0		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	-	412	1231	-	-
HCM Lane V/C Ratio	-	-	-	-	0.036	0.004	-	-
HCM Control Delay (s)	0	-	-	0	14.1	7.9	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	201	7	36	221	2	12
Future Vol, veh/h	201	7	36	221	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	7	38	233	2	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	219	0	525 216
Stage 1	-	-	-	-	216 -
Stage 2	-	-	-	-	309 -
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	-	-	1350	-	513 824
Stage 1	-	-	-	-	820 -
Stage 2	-	-	-	-	745 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1350	-	497 824
Mov Cap-2 Maneuver	-	-	-	-	497 -
Stage 1	-	-	-	-	794 -
Stage 2	-	-	-	-	745 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	753	-	-	1350	-
HCM Lane V/C Ratio	0.02	-	-	0.028	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	2	10	33	843	1137	8
Future Vol, veh/h	2	10	33	843	1137	8
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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	2	11	35	887	1197	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1715	603	1205	0	-	0
Stage 1	1201	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	81	442	238	-	-	-
Stage 1	248	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	69	442	238	-	-	-
Mov Cap-2 Maneuver	69	-	-	-	-	-
Stage 1	212	-	-	-	-	-
Stage 2	565	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.3	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	238	-	233	-	-
HCM Lane V/C Ratio	0.146	-	0.054	-	-
HCM Control Delay (s)	22.7	-	21.3	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	7	26	819	1138	0
Future Vol, veh/h	0	7	26	819	1138	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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	27	862	1198	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1683	599	1198	0	-	0
Stage 1	1198	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	85	445	578	-	-	-
Stage 1	249	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	445	578	-	-	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	227	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	578	-	445	-	-
HCM Lane V/C Ratio	0.047	-	0.017	-	-
HCM Control Delay (s)	11.5	0.5	13.2	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	1343	145	355	1061	335	155	926	348	344	624	309
Future Volume (veh/h)	457	1343	145	355	1061	335	155	926	348	344	624	309
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	481	1414	153	374	1117	353	163	975	366	362	657	325
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	1521	472	409	1137	359	238	1219	544	320	1303	581
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.28	0.07	0.34	0.34	0.09	0.37	0.37
Sat Flow, veh/h	3456	5106	1585	3456	3842	1214	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	481	1414	153	374	990	480	163	975	366	362	657	325
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1652	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.0	29.1	8.1	11.6	31.2	31.2	5.0	26.8	21.3	10.0	15.5	17.7
Cycle Q Clear(g_c), s	13.0	29.1	8.1	11.6	31.2	31.2	5.0	26.8	21.3	10.0	15.5	17.7
Prop In Lane	1.00		1.00	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	1521	472	409	1008	489	238	1219	544	320	1303	581
V/C Ratio(X)	1.16	0.93	0.32	0.91	0.98	0.98	0.68	0.80	0.67	1.13	0.50	0.56
Avail Cap(c_a), veh/h	416	1521	472	409	1008	489	256	1447	645	320	1512	675
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	47.5	36.8	29.5	47.1	37.8	38.5	49.2	32.1	30.3	49.0	26.6	27.3
Incr Delay (d2), s/veh	94.6	10.4	0.4	24.7	24.0	35.9	6.7	2.8	2.2	91.0	0.3	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	10.9	12.9	3.0	6.2	15.6	16.9	2.3	11.3	8.0	8.2	6.3	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	142.2	47.3	29.9	71.8	61.7	74.4	55.9	34.9	32.5	140.1	26.9	28.1
LnGrp LOS	F	D	C	E	E	E	E	C	C	F	C	C
Approach Vol, veh/h		2048			1844			1504			1344	
Approach Delay, s/veh		68.3			67.1			36.6			57.7	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	41.1	16.8	36.2	11.5	43.6	17.0	36.0				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9.5	42.0	12.3	30.2	7.5	44.0	12.5	30.0				
Max Q Clear Time (g_c+I1), s	12.0	28.8	13.6	31.1	7.0	19.7	15.0	33.2				
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.0	5.5	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			58.8									
HCM 6th LOS			E									

9th and Vineyard TIA  
2: Baker Ave & Arrow Hwy

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	949	82	17	776	94	53	160	78	49	129	42
Future Volume (veh/h)	77	949	82	17	776	94	53	160	78	49	129	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	81	999	86	18	817	99	56	168	82	52	136	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	1324	114	169	748	634	230	659	782	247	615	782
Arrive On Green	0.40	0.40	0.39	0.40	0.40	0.40	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	610	3311	285	520	1870	1585	344	1335	1585	376	1248	1585
Grp Volume(v), veh/h	81	536	549	18	817	99	224	0	82	188	0	44
Grp Sat Flow(s),veh/h/ln	610	1777	1819	520	1870	1585	1680	0	1585	1624	0	1585
Q Serve(g_s), s	0.0	19.4	19.5	2.3	30.0	3.0	0.0	0.0	2.1	0.0	0.0	1.1
Cycle Q Clear(g_c), s	30.0	19.4	19.5	21.8	30.0	3.0	5.2	0.0	2.1	4.2	0.0	1.1
Prop In Lane	1.00		0.16	1.00		1.00	0.25		1.00	0.28		1.00
Lane Grp Cap(c), veh/h	96	711	728	169	748	634	889	0	782	862	0	782
V/C Ratio(X)	0.84	0.75	0.75	0.11	1.09	0.16	0.25	0.00	0.10	0.22	0.00	0.06
Avail Cap(c_a), veh/h	96	711	728	169	748	634	889	0	782	862	0	782
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(l)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	19.3	19.4	28.7	22.5	14.4	10.9	0.0	10.2	10.7	0.0	9.9
Incr Delay (d2), s/veh	46.2	4.6	4.5	0.0	43.8	0.0	0.7	0.0	0.3	0.6	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	2.6	7.8	7.9	0.3	20.2	0.9	1.9	0.0	0.7	1.6	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	23.9	23.9	28.7	66.3	14.4	11.6	0.0	10.4	11.3	0.0	10.0
LnGrp LOS	F	C	C	C	F	B	B	A	B	B	A	B
Approach Vol, veh/h		1166			934			306			232	
Approach Delay, s/veh		28.0			60.1			11.3			11.0	
Approach LOS		C			E			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.0		34.0		41.0		34.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		36.5		29.5		36.5		29.5				
Max Q Clear Time (g_c+I1), s		7.2		32.0		6.2		32.0				
Green Ext Time (p_c), s		1.5		0.0		1.2		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay												36.0
HCM 6th LOS												D



9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	741	72	159	705	212	96	899	152	122	673	152
Future Volume (veh/h)	229	741	72	159	705	212	96	899	152	122	673	152
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	241	780	76	167	742	223	101	946	160	128	708	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	986	96	197	710	213	126	956	162	147	940	212
Arrive On Green	0.15	0.30	0.30	0.11	0.26	0.26	0.07	0.31	0.31	0.08	0.33	0.33
Sat Flow, veh/h	1781	3271	319	1781	2692	809	1781	3041	514	1781	2880	650
Grp Volume(v), veh/h	241	424	432	167	490	475	101	553	553	128	437	431
Grp Sat Flow(s),veh/h/ln	1781	1777	1813	1781	1777	1725	1781	1777	1778	1781	1777	1753
Q Serve(g_s), s	14.7	24.1	24.1	10.1	29.0	29.0	6.1	34.0	34.1	7.8	24.1	24.2
Cycle Q Clear(g_c), s	14.7	24.1	24.1	10.1	29.0	29.0	6.1	34.0	34.1	7.8	24.1	24.2
Prop In Lane	1.00		0.18	1.00		0.47	1.00		0.29	1.00		0.37
Lane Grp Cap(c), veh/h	264	536	547	197	468	455	126	559	559	147	580	572
V/C Ratio(X)	0.91	0.79	0.79	0.85	1.05	1.05	0.80	0.99	0.99	0.87	0.75	0.75
Avail Cap(c_a), veh/h	264	536	547	232	468	455	151	559	559	147	580	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(l)	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	46.2	35.2	35.2	48.0	40.5	40.5	50.3	37.5	37.5	49.9	33.1	33.1
Incr Delay (d2), s/veh	33.4	7.9	7.7	22.0	53.9	54.5	22.2	35.1	35.3	38.7	5.5	5.6
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/lr	8.7	11.1	11.3	5.6	19.1	18.6	3.4	19.4	19.4	5.0	10.7	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	43.1	43.0	70.0	94.4	95.0	72.5	72.6	72.8	88.6	38.6	38.7
LnGrp LOS	E	D	D	E	F	F	E	E	E	F	D	D
Approach Vol, veh/h		1097			1132			1207			996	
Approach Delay, s/veh		51.1			91.1			72.7			45.1	
Approach LOS		D			F			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.6	40.6	20.8	35.0	12.3	41.9	16.6	39.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	3.6	34.6	16.3	29.0	9.3	34.4	14.3	31.0				
Max Q Clear Time (g_c+1/8), s	3.6	36.1	16.7	31.0	8.1	26.2	12.1	26.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	3.2	0.1	2.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											65.8	
HCM 6th LOS											E	

**Intersection**

Intersection Delay, s/veh 13.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	175	45	50	147	23	40	223	28	4	179	17
Future Vol, veh/h	43	175	45	50	147	23	40	223	28	4	179	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	184	47	53	155	24	42	235	29	4	188	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.6	12.8	14.5	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	16%	23%	2%
Vol Thru, %	77%	67%	67%	90%
Vol Right, %	10%	17%	10%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	263	220	200
LT Vol	40	43	50	4
Through Vol	223	175	147	179
RT Vol	28	45	23	17
Lane Flow Rate	306	277	232	211
Geometry Grp	1	1	1	1
Degree of Util (X)	0.494	0.448	0.384	0.349
Departure Headway (Hd)	5.804	5.83	5.966	5.973
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	616	612	597	596
Service Time	3.891	3.921	4.062	4.071
HCM Lane V/C Ratio	0.497	0.453	0.389	0.354
HCM Control Delay	14.5	13.6	12.8	12.3
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.7	2.3	1.8	1.6

9th and Vineyard TIA  
5: Vineyard Ave & 9th St

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	64	122	64	116	108	63	58	881	111	27	644	54
Future Volume (veh/h)	64	122	64	116	108	63	58	881	111	27	644	54
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	67	128	67	122	114	66	61	927	117	28	678	57
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	165	86	157	146	263	191	1351	602	66	934	78
Arrive On Green	0.19	0.19	0.18	0.17	0.17	0.17	0.11	0.38	0.38	0.04	0.28	0.28
Sat Flow, veh/h	452	863	452	943	881	1585	1781	3554	1585	1781	3318	279
Grp Volume(v), veh/h	262	0	0	236	0	66	61	927	117	28	363	372
Grp Sat Flow(s),veh/h/ln	1766	0	0	1823	0	1585	1781	1777	1585	1781	1777	1820
Q Serve(g_s), s	10.0	0.0	0.0	8.8	0.0	2.6	2.2	15.5	3.5	1.1	13.1	13.1
Cycle Q Clear(g_c), s	10.0	0.0	0.0	8.8	0.0	2.6	2.2	15.5	3.5	1.1	13.1	13.1
Prop In Lane	0.26		0.26	0.52		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	337	0	0	303	0	263	191	1351	602	66	500	513
V/C Ratio(X)	0.78	0.00	0.00	0.78	0.00	0.25	0.32	0.69	0.19	0.43	0.73	0.73
Avail Cap(c_a), veh/h	628	0	0	541	0	470	599	2719	1213	166	928	951
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	0.0	28.3	0.0	25.7	29.2	18.4	14.7	33.4	23.0	23.0
Incr Delay (d2), s/veh	3.9	0.0	0.0	4.3	0.0	0.5	1.0	0.6	0.2	4.3	2.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	3.9	0.0	0.9	0.9	5.5	1.1	0.5	5.1	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	0.0	0.0	32.6	0.0	26.2	30.2	19.0	14.9	37.7	25.0	25.0
LnGrp LOS	C	A	A	C	A	C	C	B	B	D	C	C
Approach Vol, veh/h		262			302			1105			763	
Approach Delay, s/veh		31.2			31.2			19.2			25.4	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	30.9		17.5	11.6	25.9		15.8				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		4.0				
Max Green Setting (Gmax), s	52.2			24.7	21.8	* 37		21.0				
Max Q Clear Time (g_c+1), s	17.5			12.0	4.2	15.1		10.8				
Green Ext Time (p_c), s	0.0	7.4		1.1	0.1	4.1		1.0				

Intersection Summary

HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

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

**Intersection**

Intersection Delay, s/veh 70.6

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔		↔	↔		↔	
Traffic Vol, veh/h	66	251	44	40	342	94	33	212	31	97	253	83
Future Vol, veh/h	66	251	44	40	342	94	33	212	31	97	253	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	264	46	42	360	99	35	223	33	102	266	87
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	44.1	63	29.4	127.3
HCM LOS	E	F	D	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	13%	0%	21%	0%	10%	0%	22%
Vol Thru, %	87%	0%	79%	0%	90%	0%	58%
Vol Right, %	0%	100%	0%	100%	0%	100%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	31	317	44	382	94	433
LT Vol	33	0	66	0	40	0	97
Through Vol	212	0	251	0	342	0	253
RT Vol	0	31	0	44	0	94	83
Lane Flow Rate	258	33	334	46	402	99	456
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.678	0.079	0.848	0.107	0.99	0.223	1.162
Departure Headway (Hd)	10.065	9.258	9.823	8.976	9.503	8.712	9.177
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	361	389	370	402	386	415	397
Service Time	7.765	6.958	7.523	6.676	7.203	6.412	7.266
HCM Lane V/C Ratio	0.715	0.085	0.903	0.114	1.041	0.239	1.149
HCM Control Delay	31.5	12.8	48.5	12.7	75.1	13.9	127.3
HCM Lane LOS	D	B	E	B	F	B	F
HCM 95th-tile Q	4.7	0.3	7.9	0.4	11.6	0.8	17.5

9th and Vineyard TIA  
7: Vineyard Ave & 8th St

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	201	99	64	200	40	63	963	40	41	825	71
Future Volume (veh/h)	103	201	99	64	200	40	63	963	40	41	825	71
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	108	212	104	67	211	42	66	1014	42	43	868	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	602	284	315	463	393	233	1619	67	95	1162	100
Arrive On Green	0.26	0.26	0.25	0.25	0.25	0.25	0.13	0.47	0.43	0.05	0.35	0.35
Sat Flow, veh/h	1127	2342	1106	1064	1870	1585	1781	3477	144	1781	3310	286
Grp Volume(v), veh/h	108	159	157	67	211	42	66	518	538	43	466	477
Grp Sat Flow(s),veh/h/ln	1127	1777	1671	1064	1870	1585	1781	1777	1844	1781	1777	1819
Q Serve(g_s), s	4.8	3.9	4.2	3.0	5.1	1.1	1.8	11.8	11.8	1.3	12.4	12.4
Cycle Q Clear(g_c), s	9.9	3.9	4.2	7.1	5.1	1.1	1.8	11.8	11.8	1.3	12.4	12.4
Prop In Lane	1.00		0.66	1.00		1.00	1.00		0.08	1.00		0.16
Lane Grp Cap(c), veh/h	316	457	429	315	463	393	233	827	859	95	624	639
V/C Ratio(X)	0.34	0.35	0.37	0.21	0.46	0.11	0.28	0.63	0.63	0.45	0.75	0.75
Avail Cap(c_a), veh/h	468	696	655	469	733	621	997	1658	1721	233	895	916
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	20.8	16.2	16.5	19.7	17.1	15.6	21.0	10.8	10.9	24.6	15.3	15.3
Incr Delay (d2), s/veh	0.6	0.5	0.5	0.3	0.7	0.1	0.7	0.8	0.8	3.3	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	1.4	0.7	1.9	0.3	0.7	3.2	3.4	0.6	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.5	16.7	17.0	20.0	17.8	15.7	21.7	11.6	11.6	27.9	17.4	17.3
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		424			320			1122			986	
Approach Delay, s/veh		18.0			18.0			12.2			17.8	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	29.0		17.8	11.0	24.8		17.8				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	5	48.0		20.5	28.0	* 27		* 21				
Max Q Clear Time (g_c+1), s	13.3	13.8		11.9	3.8	14.4		9.1				
Green Ext Time (p_c), s	0.0	7.0		1.4	0.1	4.5		1.1				

Intersection Summary

HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

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

9th and Vineyard TIA  
8: Vineyard Ave & 6th St

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	279	52	135	532	137	62	1091	105	104	834	67
Future Volume (veh/h)	63	279	52	135	532	137	62	1091	105	104	834	67
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		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	66	294	55	142	560	144	65	1148	111	109	878	71
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	938	173	336	858	220	191	1434	138	151	1292	104
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.11	0.44	0.41	0.08	0.39	0.39
Sat Flow, veh/h	743	2995	553	1032	2800	718	1781	3274	316	1781	3329	269
Grp Volume(v), veh/h	66	173	176	142	355	349	65	622	637	109	469	480
Grp Sat Flow(s),veh/h/ln	743	1777	1771	1032	1777	1741	1781	1777	1813	1781	1777	1822
Q Serve(g_s), s	6.1	5.4	5.6	9.0	12.7	12.7	2.5	22.2	22.3	4.4	16.0	16.0
Cycle Q Clear(g_c), s	18.9	5.4	5.6	14.6	12.7	12.7	2.5	22.2	22.3	4.4	16.0	16.0
Prop In Lane	1.00		0.31	1.00		0.41	1.00		0.17	1.00		0.15
Lane Grp Cap(c), veh/h	202	557	555	336	545	534	191	778	794	151	689	707
V/C Ratio(X)	0.33	0.31	0.32	0.42	0.65	0.65	0.34	0.80	0.80	0.72	0.68	0.68
Avail Cap(c_a), veh/h	282	748	745	454	748	733	730	922	941	224	689	707
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	29.8	19.1	19.2	25.1	22.0	22.0	30.3	17.8	18.0	32.6	18.6	18.6
Incr Delay (d2), s/veh	0.9	0.3	0.3	0.8	1.3	1.4	1.0	4.3	4.3	6.3	2.7	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	1.1	2.0	2.1	2.1	4.9	4.8	1.0	8.3	8.6	2.0	6.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	19.4	19.6	26.0	23.3	23.4	31.3	22.1	22.3	39.0	21.3	21.3
LnGrp LOS	C	B	B	C	C	C	C	C	C	D	C	C
Approach Vol, veh/h		415			846			1324			1058	
Approach Delay, s/veh		21.3			23.8			22.7			23.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.2	36.1		26.9	11.9	34.4		26.9				
Change Period (Y+Rc), s	4.5	6.0		4.5	6.0	* 6		* 4.5				
Max Green Setting (Gmax), s	30.3	36.0		30.3	28.0	* 17		* 31				
Max Q Clear Time (g_c+1/4), s	16.4	24.3		20.9	4.5	18.0		16.6				
Green Ext Time (p_c), s	0.0	5.7		1.6	0.1	0.0		4.0				

Intersection Summary

HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
9: Vineyard Ave & 4th St

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕		↔↔	↕↕		↔↔↔	↕↕↕	↔	↕↕↕		
Traffic Volume (veh/h)	173	254	131	588	537	72	216	1194	220	96	944	95
Future Volume (veh/h)	173	254	131	588	537	72	216	1194	220	96	944	95
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		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	182	267	138	619	565	76	227	1257	0	101	994	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	400	201	732	964	129	269	1890		136	1394	140
Arrive On Green	0.08	0.17	0.17	0.21	0.31	0.29	0.15	0.37	0.00	0.08	0.30	0.27
Sat Flow, veh/h	3456	2291	1149	3456	3149	422	1781	5106	1585	1781	4716	473
Grp Volume(v), veh/h	182	205	200	619	318	323	227	1257	0	101	717	377
Grp Sat Flow(s),veh/h/ln	1728	1777	1663	1728	1777	1794	1781	1702	1585	1781	1702	1785
Q Serve(g_s), s	4.9	10.3	10.8	16.5	14.5	14.6	11.9	19.7	0.0	5.3	18.0	18.1
Cycle Q Clear(g_c), s	4.9	10.3	10.8	16.5	14.5	14.6	11.9	19.7	0.0	5.3	18.0	18.1
Prop In Lane	1.00		0.69	1.00		0.24	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	277	310	290	732	544	549	269	1890		136	1006	528
V/C Ratio(X)	0.66	0.66	0.69	0.85	0.58	0.59	0.84	0.67		0.74	0.71	0.71
Avail Cap(c_a), veh/h	563	501	469	902	675	682	301	2346		149	1272	667
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(l)	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	42.8	36.9	37.1	36.2	28.1	28.3	39.6	25.2	0.0	43.3	30.1	30.4
Incr Delay (d2), s/veh	2.6	2.4	2.9	6.3	1.0	1.0	17.7	0.5	0.0	16.5	1.4	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	2.2	4.6	4.6	7.5	6.2	6.3	6.5	7.8	0.0	2.9	7.4	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	39.3	40.0	42.5	29.1	29.3	57.3	25.7	0.0	59.8	31.5	33.0
LnGrp LOS	D	D	D	D	C	C	E	C		E	C	C
Approach Vol, veh/h		587		1260			1484	A		1195		
Approach Delay, s/veh		41.4		35.7			30.5			34.4		
Approach LOS		D		D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.3	39.4	11.7	33.3	18.5	32.3	24.3	20.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	7.5	42.0	15.1	34.4	15.7	33.8	24.5	25.0				
Max Q Clear Time (g_c+11), s	3	21.7	6.9	16.6	13.9	20.1	18.5	12.8				
Green Ext Time (p_c), s	0.0	9.3	0.3	3.8	0.1	6.2	1.3	1.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			34.4									
HCM 6th LOS			C									
<b>Notes</b>												
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.												



9th and Vineyard TIA  
10: Vineyard Ave & Jay St

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗ ↘	↗		↗ ↗ ↗	↗	↗ ↗ ↗	↗	↗ ↗ ↗	
Traffic Volume (veh/h)	30	7	61	82	3	36	79	1605	34	20	1647	30
Future Volume (veh/h)	30	7	61	82	3	36	79	1605	34	20	1647	30
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	32	7	64	86	3	38	83	1689	36	21	1734	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	10	96	268	9	115	250	2590	804	60	1884	35
Arrive On Green	0.09	0.09	0.08	0.08	0.08	0.08	0.14	0.51	0.51	0.03	0.37	0.37
Sat Flow, veh/h	515	113	1031	3456	117	1486	1781	5106	1585	1781	5162	95
Grp Volume(v), veh/h	103	0	0	86	0	41	83	1689	36	21	1143	623
Grp Sat Flow(s),veh/h/ln	1659	0	0	1728	0	1603	1781	1702	1585	1781	1702	1853
Q Serve(g_s), s	3.3	0.0	0.0	1.3	0.0	1.3	2.3	13.5	0.6	0.6	17.8	17.8
Cycle Q Clear(g_c), s	3.3	0.0	0.0	1.3	0.0	1.3	2.3	13.5	0.6	0.6	17.8	17.8
Prop In Lane	0.31		0.62	1.00		0.93	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	154	0	0	268	0	124	250	2590	804	60	1243	676
V/C Ratio(X)	0.67	0.00	0.00	0.32	0.00	0.33	0.33	0.65	0.04	0.35	0.92	0.92
Avail Cap(c_a), veh/h	838	0	0	1090	0	506	658	3038	943	177	1243	676
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	24.2	0.0	24.2	21.5	10.1	6.9	26.2	16.8	16.8
Incr Delay (d2), s/veh	4.9	0.0	0.0	0.7	0.0	1.5	0.8	0.4	0.0	3.4	11.1	18.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.5	0.0	0.5	1.0	4.1	0.2	0.3	7.9	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.4	0.0	0.0	24.9	0.0	25.8	22.3	10.5	6.9	29.6	28.0	34.8
LnGrp LOS	C	A	A	C	A	C	C	B	A	C	C	C
Approach Vol, veh/h		103			127			1808			1787	
Approach Delay, s/veh		29.4			25.2			10.9			30.4	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	32.1		8.3	11.8	26.2		9.1				
Change Period (Y+Rc), s	4.5	6.0		4.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s	5.0	31.0		17.5	18.5	* 18		27.5				
Max Q Clear Time (g_c+1), s	12.6	15.5		3.3	4.3	19.8		5.3				
Green Ext Time (p_c), s	0.0	10.6		0.4	0.1	0.0		0.5				

Intersection Summary

HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Notes

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



9th and Vineyard TIA  
 11: Vineyard Ave & Inland Empire Blvd

Horizon Year with Project  
 timing Plan: PM Peak



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔	↔	↑↑↑	↔	↔↔	↑↑↑
Traffic Volume (veh/h)	162	65	1674	90	26	1733
Future Volume (veh/h)	162	65	1674	90	26	1733
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	68	1762	95	27	1824
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	343	157	3410	1058	132	3770
Arrive On Green	0.10	0.10	0.67	0.67	0.04	0.74
Sat Flow, veh/h	3456	1585	5274	1585	3456	5274
Grp Volume(v), veh/h	171	68	1762	95	27	1824
Grp Sat Flow(s),veh/h/ln	1728	1585	1702	1585	1728	1702
Q Serve(g_s), s	2.9	2.5	10.8	1.3	0.5	9.0
Cycle Q Clear(g_c), s	2.9	2.5	10.8	1.3	0.5	9.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	343	157	3410	1058	132	3770
V/C Ratio(X)	0.50	0.43	0.52	0.09	0.20	0.48
Avail Cap(c_a), veh/h	2327	1067	3410	1058	308	3770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	26.1	5.2	3.6	28.7	3.3
Incr Delay (d2), s/veh	1.1	1.9	0.1	0.0	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.0	1.7	0.2	0.2	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.4	28.0	5.3	3.7	29.5	3.7
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	239		1857			1851
Approach Delay, s/veh	27.6		5.2			4.1
Approach LOS	C		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	45.1			51.5	10.1
Change Period (Y+Rc), s	4.5	6.0			* 6	4.5
Max Green Setting (Gmax), s	5.0	34.0			* 46	41.0
Max Q Clear Time (g_c+I), s	12.5	12.8			11.0	4.9
Green Ext Time (p_c), s	0.0	12.6			16.8	0.8

Intersection Summary

HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Notes

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

9th and Vineyard TIA  
12: Vineyard Ave & I-10 WB Ramps

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↘		↗		↑↑	↗		↑↑	↗
Traffic Volume (veh/h)	0	0	0	531	0	601	0	1173	357	0	1360	567
Future Volume (veh/h)	0	0	0	531	0	601	0	1173	357	0	1360	567
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	0	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h				559	0	633	0	1235	0	0	1432	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	0	2	0	2	2	0	2	2
Cap, veh/h				761	0	677	0	1683		0	1683	
Arrive On Green				0.43	0.00	0.43	0.00	0.47	0.00	0.00	0.47	0.00
Sat Flow, veh/h				1781	0	1585	0	3647	1585	0	3647	1585
Grp Volume(v), veh/h				559	0	633	0	1235	0	0	1432	0
Grp Sat Flow(s),veh/h/ln				1781	0	1585	0	1777	1585	0	1777	1585
Q Serve(g_s), s				21.1	0.0	30.7	0.0	22.6	0.0	0.0	28.6	0.0
Cycle Q Clear(g_c), s				21.1	0.0	30.7	0.0	22.6	0.0	0.0	28.6	0.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				761	0	677	0	1683		0	1683	
V/C Ratio(X)				0.73	0.00	0.93	0.00	0.73		0.00	0.85	
Avail Cap(c_a), veh/h				862	0	767	0	1895		0	1895	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.3	0.0	22.0	0.0	17.1	0.0	0.0	18.7	0.0
Incr Delay (d2), s/veh				2.9	0.0	17.4	0.0	1.3	0.0	0.0	3.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.7	0.0	13.7	0.0	7.9	0.0	0.0	10.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.1	0.0	39.4	0.0	18.4	0.0	0.0	22.3	0.0
LnGrp LOS				C	A	D	A	B		A	C	
Approach Vol, veh/h					1192			1235	A		1432	A
Approach Delay, s/veh					31.3			18.4			22.3	
Approach LOS					C			B			C	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		42.2				42.2		38.4				
Change Period (Y+Rc), s		4.5				4.5		5.0				
Max Green Setting (Gmax), s		42.5				42.5		38.0				
Max Q Clear Time (g_c+I1), s		24.6				30.6		32.7				
Green Ext Time (p_c), s		7.7				7.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C

Notes

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

9th and Vineyard TIA  
13: Vineyard Ave & I-10 EB Ramps

Horizon Year with Project  
timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	327	5	417	0	0	0	0	1265	770	421	1474	0
Future Volume (veh/h)	327	5	417	0	0	0	0	1265	770	421	1474	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No					No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	497	0	278				0	1332	811	443	1552	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	692	0	308				0	1558	725	465	2644	0
Arrive On Green	0.19	0.00	0.19				0.00	0.46	0.45	0.26	0.74	0.00
Sat Flow, veh/h	3563	0	1585				0	3572	1585	1781	3647	0
Grp Volume(v), veh/h	497	0	278				0	1332	811	443	1552	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1702	1585	1781	1777	0
Q Serve(g_s), s	18.0	0.0	23.6				0.0	48.0	63.0	33.7	27.3	0.0
Cycle Q Clear(g_c), s	18.0	0.0	23.6				0.0	48.0	63.0	33.7	27.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	692	0	308				0	1558	725	465	2644	0
V/C Ratio(X)	0.72	0.00	0.90				0.00	0.86	1.12	0.95	0.59	0.00
Avail Cap(c_a), veh/h	725	0	322				0	1558	725	479	2685	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.9	0.0	54.2				0.0	33.3	37.6	50.1	8.0	0.0
Incr Delay (d2), s/veh	3.3	0.0	26.4				0.0	4.9	70.8	29.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	8.4	0.0	11.7				0.0	19.6	37.0	18.2	8.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	0.0	80.6				0.0	38.2	108.3	79.3	8.3	0.0
LnGrp LOS	E	A	F				A	D	F	E	A	A
Approach Vol, veh/h		775						2143			1995	
Approach Delay, s/veh		64.3						64.7			24.1	
Approach LOS		E						E			C	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	39.9	67.0	30.8	106.9								
Change Period (Y+Rc), s	4.0	4.5	4.5	* 4.5								
Max Green Setting (Gmax), s	37.0	62.5	27.5	* 1E2								
Max Q Clear Time (g_c+Q), s	35.7	65.0	25.6	29.3								
Green Ext Time (p_c), s	0.2	0.0	0.7	16.8								

Intersection Summary

HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	23	4	296	10	2	263
Future Vol, veh/h	23	4	296	10	2	263
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	4	312	11	2	277

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	599	318	0	0	323
Stage 1	318	-	-	-	-
Stage 2	281	-	-	-	-
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	465	723	-	-	1237
Stage 1	738	-	-	-	-
Stage 2	767	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	464	723	-	-	1237
Mov Cap-2 Maneuver	464	-	-	-	-
Stage 1	737	-	-	-	-
Stage 2	767	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	490	1237
HCM Lane V/C Ratio	-	-	0.058	0.002
HCM Control Delay (s)	-	-	12.8	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	306	0	0	286	0	0
Future Vol, veh/h	306	0	0	286	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	322	0	0	301	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	322	0	623 322
Stage 1	-	-	-	-	322 -
Stage 2	-	-	-	-	301 -
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	-	-	1238	-	450 719
Stage 1	-	-	-	-	735 -
Stage 2	-	-	-	-	751 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1238	-	450 719
Mov Cap-2 Maneuver	-	-	-	-	450 -
Stage 1	-	-	-	-	735 -
Stage 2	-	-	-	-	751 -

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

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1238	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	-	0
HCM Lane LOS	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	0	-	-

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	51	0	4	0	302	16	3	284	0
Future Vol, veh/h	0	0	0	51	0	4	0	302	16	3	284	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	54	0	4	0	318	17	3	299	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	634	640	299	632	632	327	299	0	0	335	0	0
Stage 1	305	305	-	327	327	-	-	-	-	-	-	-
Stage 2	329	335	-	305	305	-	-	-	-	-	-	-
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	392	393	741	393	398	714	1262	-	-	1224	-	-
Stage 1	705	662	-	686	648	-	-	-	-	-	-	-
Stage 2	684	643	-	705	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	389	392	741	392	397	714	1262	-	-	1224	-	-
Mov Cap-2 Maneuver	389	392	-	392	397	-	-	-	-	-	-	-
Stage 1	705	660	-	686	648	-	-	-	-	-	-	-
Stage 2	680	643	-	703	660	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		15.4		0		0.1	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	-	405	1224	-	-
HCM Lane V/C Ratio	-	-	-	-	0.143	0.003	-	-
HCM Control Delay (s)	0	-	-	0	15.4	7.9	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	2	14	203	8	40
Future Vol, veh/h	198	2	14	203	8	40
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	2	15	214	8	42

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	210	0	453 209
Stage 1	-	-	-	-	209 -
Stage 2	-	-	-	-	244 -
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	-	-	1361	-	565 831
Stage 1	-	-	-	-	826 -
Stage 2	-	-	-	-	797 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1361	-	558 831
Mov Cap-2 Maneuver	-	-	-	-	558 -
Stage 1	-	-	-	-	815 -
Stage 2	-	-	-	-	797 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	768	-	-	1361	-
HCM Lane V/C Ratio	0.066	-	-	0.011	-
HCM Control Delay (s)	10	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↗		↘	↑↑	↑↑	
Traffic Vol, veh/h	4	37	12	1060	860	2
Future Vol, veh/h	4	37	12	1060	860	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	-	325	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	100	2	2	2
Mvmt Flow	4	39	13	1116	905	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1490	454	907	0	-	0
Stage 1	906	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.1	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3.2	-	-	-
Pot Cap-1 Maneuver	115	553	352	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	111	553	352	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	521	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	352	-	398	-	-
HCM Lane V/C Ratio	0.036	-	0.108	-	-
HCM Control Delay (s)	15.6	-	15.1	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	27	10	1054	835	0
Future Vol, veh/h	0	27	10	1054	835	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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	11	1109	879	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1456	440	879	0	-	0
Stage 1	879	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	121	565	764	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	116	565	764	-	-	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	764	-	565	-	-
HCM Lane V/C Ratio	0.014	-	0.05	-	-
HCM Control Delay (s)	9.8	0.2	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	32.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗	↖	↗	
Traffic Vol, veh/h	53	226	37	31	238	98	78	152	42	83	206	50
Future Vol, veh/h	53	226	37	31	238	98	78	152	42	83	206	50
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	276	45	38	290	120	95	185	51	101	251	61
Number of Lanes	0	1	1	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	39.2	31.7	28.5	28.8
HCM LOS	E	D	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	34%	0%	19%	0%	12%	0%	100%	0%
Vol Thru, %	66%	0%	81%	0%	88%	0%	0%	80%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	42	279	37	269	98	83	256
LT Vol	78	0	53	0	31	0	83	0
Through Vol	152	0	226	0	238	0	0	206
RT Vol	0	42	0	37	0	98	0	50
Lane Flow Rate	280	51	340	45	328	120	101	312
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.71	0.117	0.833	0.1	0.797	0.264	0.262	0.749
Departure Headway (Hd)	9.116	8.208	8.817	7.99	8.741	7.953	9.304	8.641
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	395	435	408	447	413	451	386	418
Service Time	6.892	5.984	6.592	5.764	6.518	5.728	7.08	6.416
HCM Lane V/C Ratio	0.709	0.117	0.833	0.101	0.794	0.266	0.262	0.746
HCM Control Delay	31.5	12.1	42.9	11.7	38.3	13.6	15.4	33.2
HCM Lane LOS	D	B	E	B	E	B	C	D
HCM 95th-tile Q	5.3	0.4	7.8	0.3	7	1	1	6.1

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗		↖	↗	↖	↗	
Traffic Vol, veh/h	51	242	44	40	253	69	33	212	31	78	204	46
Future Vol, veh/h	51	242	44	40	253	69	33	212	31	78	204	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	249	45	41	261	71	34	219	32	80	210	47
Number of Lanes	0	1	1	0	1	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	22.3	21.3	19.5	18
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	13%	0%	17%	0%	14%	0%	100%	0%
Vol Thru, %	87%	0%	83%	0%	86%	0%	0%	82%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	31	293	44	293	69	78	250
LT Vol	33	0	51	0	40	0	78	0
Through Vol	212	0	242	0	253	0	0	204
RT Vol	0	31	0	44	0	69	0	46
Lane Flow Rate	253	32	302	45	302	71	80	258
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.56	0.064	0.652	0.088	0.648	0.137	0.186	0.55
Departure Headway (Hd)	7.976	7.184	7.772	6.961	7.721	6.93	8.331	7.682
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	450	495	462	511	465	514	429	466
Service Time	5.773	4.98	5.565	4.754	5.515	4.723	6.127	5.478
HCM Lane V/C Ratio	0.562	0.065	0.654	0.088	0.649	0.138	0.186	0.554
HCM Control Delay	20.6	10.5	24.1	10.4	23.8	10.8	13	19.6
HCM Lane LOS	C	B	C	B	C	B	B	C
HCM 95th-tile Q	3.4	0.2	4.6	0.3	4.5	0.5	0.7	3.3

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year with Project -Mitigated

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	346	882	85	206	1100	150	109	716	278	326	940	382
Future Volume (veh/h)	346	882	85	206	1100	150	109	716	278	326	940	382
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	364	928	89	217	1158	158	115	754	293	343	989	402
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	1640	509	285	1426	443	173	995	444	411	1239	750
Arrive On Green	0.12	0.32	0.32	0.08	0.28	0.28	0.05	0.28	0.28	0.12	0.35	0.35
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	364	928	89	217	1158	158	115	754	293	343	989	402
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.0	16.0	4.3	6.5	22.5	8.5	3.5	20.6	17.4	10.3	26.7	19.0
Cycle Q Clear(g_c), s	11.0	16.0	4.3	6.5	22.5	8.5	3.5	20.6	17.4	10.3	26.7	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	430	1640	509	285	1426	443	173	995	444	411	1239	750
V/C Ratio(X)	0.85	0.57	0.17	0.76	0.81	0.36	0.66	0.76	0.66	0.83	0.80	0.54
Avail Cap(c_a), veh/h	487	1843	572	409	1727	536	231	1436	641	487	1700	956
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	45.6	30.0	26.0	47.8	35.7	30.7	49.7	35.0	33.8	45.9	31.3	19.8
Incr Delay (d2), s/veh	11.9	0.3	0.2	5.1	2.6	0.5	4.3	1.4	1.7	10.4	1.9	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	5.2	6.3	1.6	2.9	9.2	3.2	1.6	8.7	6.6	4.9	11.1	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	30.3	26.1	52.9	38.3	31.2	54.0	36.4	35.5	56.2	33.2	20.4
LnGrp LOS	E	C	C	D	D	C	D	D	D	E	C	C
Approach Vol, veh/h		1381			1533			1162			1734	
Approach Delay, s/veh		37.2			39.6			37.9			34.8	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	35.8	13.3	40.2	9.8	43.1	17.7	35.7				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	15.0	43.0	12.6	38.4	7.1	50.9	15.0	36.0				
Max Q Clear Time (g_c+I1), s	12.3	22.6	8.5	18.0	5.5	28.7	13.0	24.5				
Green Ext Time (p_c), s	0.3	5.8	0.2	6.3	0.0	8.4	0.3	5.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			37.3									
HCM 6th LOS			D									

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year with Project -Mitigated  
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	685	94	206	725	231	86	596	134	199	959	152
Future Volume (veh/h)	156	685	94	206	725	231	86	596	134	199	959	152
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		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	164	721	99	217	763	243	91	627	141	209	1009	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	782	107	246	991	442	114	844	190	239	1114	177
Arrive On Green	0.11	0.25	0.25	0.14	0.28	0.28	0.06	0.29	0.29	0.13	0.36	0.36
Sat Flow, veh/h	1781	3139	431	1781	3554	1585	1781	2883	647	1781	3073	487
Grp Volume(v), veh/h	164	408	412	217	763	243	91	386	382	209	583	586
Grp Sat Flow(s),veh/h/ln	1781	1777	1793	1781	1777	1585	1781	1777	1754	1781	1777	1783
Q Serve(g_s), s	10.2	25.3	25.3	13.5	22.3	14.8	5.7	22.2	22.2	13.0	35.2	35.3
Cycle Q Clear(g_c), s	10.2	25.3	25.3	13.5	22.3	14.8	5.7	22.2	22.2	13.0	35.2	35.3
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.37	1.00		0.27
Lane Grp Cap(c), veh/h	193	442	446	246	991	442	114	520	513	239	644	647
V/C Ratio(X)	0.85	0.92	0.92	0.88	0.77	0.55	0.79	0.74	0.74	0.87	0.90	0.91
Avail Cap(c_a), veh/h	235	456	460	276	994	443	134	535	528	292	692	694
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(l)	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	49.5	41.4	41.4	47.8	37.4	34.7	52.1	36.1	36.1	48.0	34.1	34.2
Incr Delay (d2), s/veh	21.1	23.9	23.9	24.8	3.7	1.4	24.0	5.4	5.5	21.2	14.8	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	5.5	13.5	13.7	7.5	9.8	5.7	3.2	10.0	9.9	7.0	16.9	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	65.2	65.3	72.6	41.1	36.1	76.1	41.5	41.6	69.1	49.0	49.2
LnGrp LOS	E	E	E	E	D	D	E	D	D	E	D	D
Approach Vol, veh/h		984			1223			859			1378	
Approach Delay, s/veh		66.1			45.7			45.2			52.1	
Approach LOS		E			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	39.1	16.7	37.5	11.8	47.0	20.1	34.1				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	18.5	34.0	14.9	31.6	8.5	44.0	17.5	29.0				
Max Q Clear Time (g_c+1/5), s	11.5	24.2	12.2	24.3	7.7	37.3	15.5	27.3				
Green Ext Time (p_c), s	0.2	3.1	0.1	2.4	0.0	3.7	0.1	0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											52.1	
HCM 6th LOS											D	

Intersection												
Intersection Delay, s/veh	25.8											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	
Traffic Vol, veh/h	81	330	59	33	238	101	85	166	45	83	206	51
Future Vol, veh/h	81	330	59	33	238	101	85	166	45	83	206	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	347	62	35	251	106	89	175	47	87	217	54
Number of Lanes	0	2	0	0	2	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	26.8	17.5	30.7	29.4
HCM LOS	D	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	34%	0%	33%	0%	29%	0%	0%	100%	3%
Vol Thru, %	66%	0%	67%	74%	71%	100%	0%	0%	78%
Vol Right, %	0%	100%	0%	26%	0%	0%	100%	0%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	45	246	224	112	159	101	75	265
LT Vol	85	0	81	0	33	0	0	75	8
Through Vol	166	0	165	165	79	159	0	0	206
RT Vol	0	45	0	59	0	0	101	0	51
Lane Flow Rate	264	47	259	236	118	167	106	79	279
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.716	0.117	0.672	0.588	0.318	0.442	0.26	0.218	0.724
Departure Headway (Hd)	9.761	8.862	9.345	8.981	9.675	9.522	8.793	9.976	9.336
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	370	403	386	401	370	377	407	359	385
Service Time	7.555	6.654	7.136	6.772	7.469	7.316	6.587	7.768	7.127
HCM Lane V/C Ratio	0.714	0.117	0.671	0.589	0.319	0.443	0.26	0.22	0.725
HCM Control Delay	33.9	12.8	29.4	23.9	17	19.7	14.7	15.6	33.3
HCM Lane LOS	D	B	D	C	C	C	B	C	D
HCM 95th-tile Q	5.4	0.4	4.7	3.6	1.3	2.2	1	0.8	5.5

9th and Vineyard TIA  
1: Vineyard Ave & Foothill Blvd

Horizon Year with Project - Mitigated  
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	457	1343	145	355	1061	335	155	926	348	344	624	309
Future Volume (veh/h)	457	1343	145	355	1061	335	155	926	348	344	624	309
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	481	1414	153	374	1117	353	163	975	366	362	657	325
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	1521	472	409	1512	440	238	1219	544	320	1303	794
Arrive On Green	0.12	0.30	0.30	0.12	0.30	0.28	0.07	0.34	0.34	0.09	0.37	0.37
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	481	1414	153	374	1117	353	163	975	366	362	657	325
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.0	29.1	8.1	11.6	21.3	22.4	5.0	26.8	21.3	10.0	15.5	13.9
Cycle Q Clear(g_c), s	13.0	29.1	8.1	11.6	21.3	22.4	5.0	26.8	21.3	10.0	15.5	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	1521	472	409	1512	440	238	1219	544	320	1303	794
V/C Ratio(X)	1.16	0.93	0.32	0.91	0.74	0.80	0.68	0.80	0.67	1.13	0.50	0.41
Avail Cap(c_a), veh/h	416	1521	472	409	1512	440	256	1447	645	320	1512	887
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	47.5	36.8	29.5	47.1	34.3	36.3	49.2	32.1	30.3	49.0	26.6	16.9
Incr Delay (d2), s/veh	94.6	10.4	0.4	24.7	2.0	10.3	6.7	2.8	2.2	91.0	0.3	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	10.9	12.9	3.0	6.2	8.7	9.5	2.3	11.3	8.0	8.2	6.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	142.2	47.3	29.9	71.8	36.2	46.6	55.9	34.9	32.5	140.1	26.9	17.3
LnGrp LOS	F	D	C	E	D	D	E	C	C	F	C	B
Approach Vol, veh/h		2048			1844			1504			1344	
Approach Delay, s/veh		68.3			45.4			36.6			55.1	
Approach LOS		E			D			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	41.1	16.8	36.2	11.5	43.6	17.0	36.0				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9.5	42.0	12.3	30.2	7.5	44.0	12.5	30.0				
Max Q Clear Time (g_c+I1), s	12.0	28.8	13.6	31.1	7.0	17.5	15.0	23.3				
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.0	5.6	0.0	3.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			52.3									
HCM 6th LOS			D									

9th and Vineyard TIA  
3: Vineyard Ave & Arrow Hwy

Horizon Year with Project - Mitigated  
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	741	72	159	705	212	96	899	152	122	673	152
Future Volume (veh/h)	229	741	72	159	705	212	96	899	152	122	673	152
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	241	780	76	167	742	223	101	946	160	128	708	160
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	890	87	196	819	365	127	1018	172	156	1011	228
Arrive On Green	0.15	0.27	0.27	0.11	0.23	0.23	0.07	0.33	0.33	0.09	0.35	0.35
Sat Flow, veh/h	1781	3271	319	1781	3554	1585	1781	3041	514	1781	2880	650
Grp Volume(v), veh/h	241	424	432	167	742	223	101	553	553	128	437	431
Grp Sat Flow(s),veh/h/ln	1781	1777	1813	1781	1777	1585	1781	1777	1778	1781	1777	1753
Q Serve(g_s), s	14.2	24.4	24.5	9.9	21.8	13.5	6.0	32.2	32.2	7.6	22.7	22.7
Cycle Q Clear(g_c), s	14.2	24.4	24.5	9.9	21.8	13.5	6.0	32.2	32.2	7.6	22.7	22.7
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.29	1.00		0.37
Lane Grp Cap(c), veh/h	270	483	493	196	819	365	127	595	595	156	624	616
V/C Ratio(X)	0.89	0.88	0.88	0.85	0.91	0.61	0.80	0.93	0.93	0.82	0.70	0.70
Avail Cap(c_a), veh/h	274	507	517	198	862	384	154	613	613	158	624	616
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(l)	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	44.6	37.3	37.3	46.9	40.1	37.0	49.1	34.4	34.4	48.1	29.9	29.9
Incr Delay (d2), s/veh	28.4	15.4	15.2	28.2	12.7	2.6	20.9	20.4	20.5	28.0	3.5	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	8.2	12.1	12.4	5.8	10.5	5.3	3.3	16.4	16.4	4.5	9.7	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.1	52.7	52.5	75.1	52.9	39.6	70.0	54.8	54.9	76.1	33.4	33.5
LnGrp LOS	E	D	D	E	D	D	E	D	D	E	C	C
Approach Vol, veh/h		1097			1132			1207			996	
Approach Delay, s/veh		57.1			53.5			56.1			38.9	
Approach LOS		E			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.9	41.9	20.7	30.7	12.1	43.7	16.3	35.2				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.0	4.5	6.0	4.5	6.0				
Max Green Setting (Gmax), s	9.5	37.0	16.5	26.0	9.3	37.2	11.9	30.6				
Max Q Clear Time (g_c+1), s	19.6	34.2	16.2	23.8	8.0	24.7	11.9	26.5				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.9	0.0	4.1	0.0	1.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											51.8	
HCM 6th LOS											D	



Intersection												
Intersection Delay, s/veh	33.6											
Intersection LOS	D											

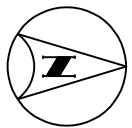
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	
Traffic Vol, veh/h	66	251	44	40	342	94	33	212	31	97	253	83
Future Vol, veh/h	66	251	44	40	342	94	33	212	31	97	253	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	264	46	42	360	99	35	223	33	102	266	87
Number of Lanes	0	2	0	0	2	1	0	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	24	23.4	34.6	52.2
HCM LOS	C	C	D	F

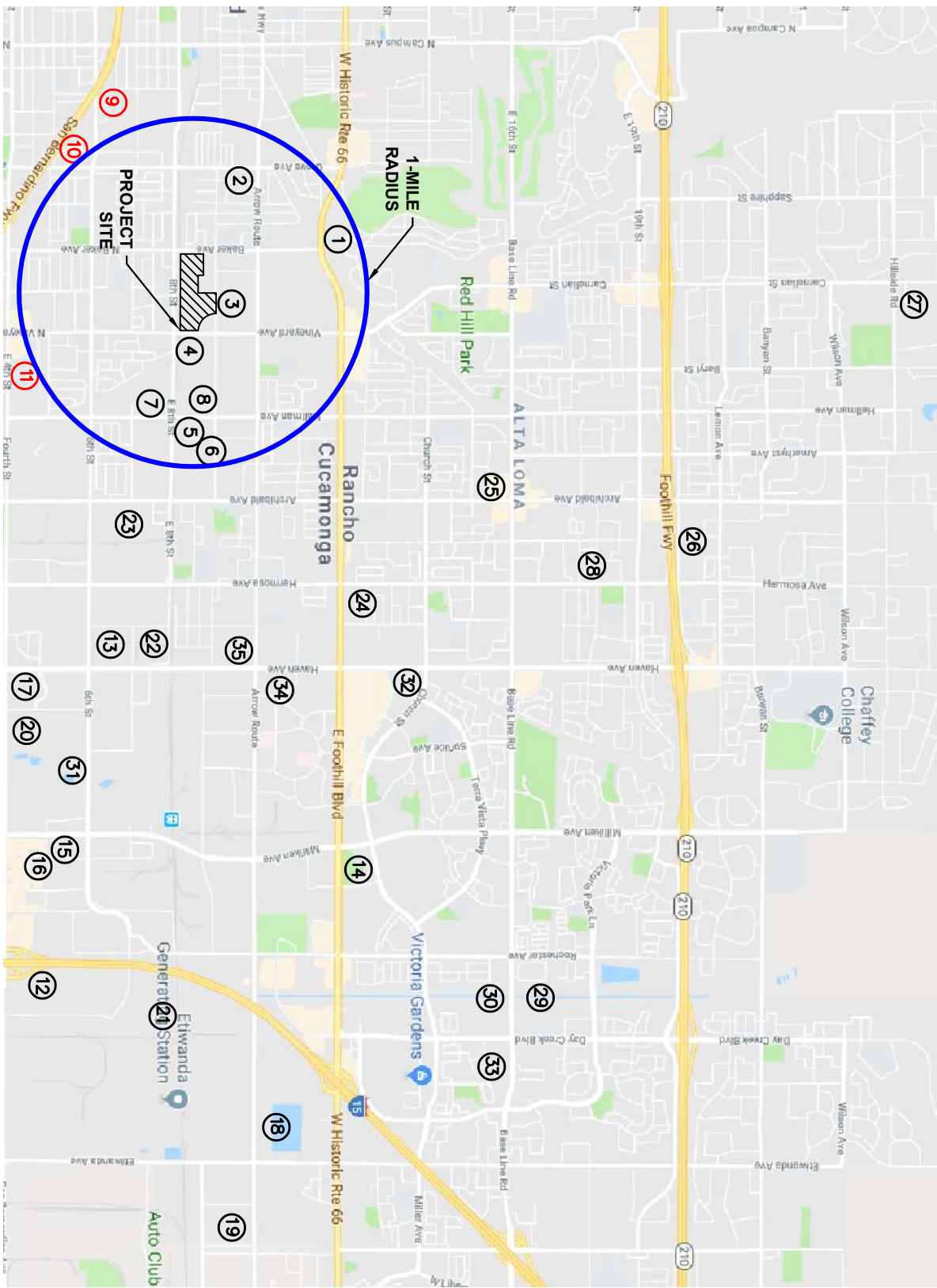
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	13%	0%	34%	0%	26%	0%	0%	100%	0%
Vol Thru, %	87%	0%	66%	74%	74%	100%	0%	0%	75%
Vol Right, %	0%	100%	0%	26%	0%	0%	100%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	245	31	192	170	154	228	94	97	336
LT Vol	33	0	66	0	40	0	0	97	0
Through Vol	212	0	126	126	114	228	0	0	253
RT Vol	0	31	0	44	0	0	94	0	83
Lane Flow Rate	258	33	202	178	162	240	99	102	354
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.738	0.086	0.574	0.49	0.445	0.65	0.248	0.289	0.933
Departure Headway (Hd)	10.299	9.5	10.258	9.886	9.89	9.755	9.024	10.193	9.496
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	351	377	353	364	365	370	398	353	382
Service Time	8.057	7.258	8.018	7.646	7.647	7.511	6.781	7.946	7.249
HCM Lane V/C Ratio	0.735	0.088	0.572	0.489	0.444	0.649	0.249	0.289	0.927
HCM Control Delay	37.3	13.2	26	21.8	20.4	29	14.7	17.1	62.3
HCM Lane LOS	E	B	D	C	C	D	B	C	F
HCM 95th-tile Q	5.6	0.3	3.4	2.6	2.2	4.4	1	1.2	10

# APPENDIX I

## CUMULATIVE PROJECTS INFORMATION



NOT TO SCALE



LEGEND:

(X) = Cumulative Project in Rancho Cucamonga

(Y) = Cumulative Project in Ontario



FIGURE A  
LOCATION OF CUMULATIVE PROJECTS

**TABLE A  
CUMULATIVE PROJECTS  
9TH AND VINEYARD WAREHOUSE**

#	Project Name	Location/Address	City	State
<b>Cumulative Projects to Be Included in Traffic Study</b>				
1	Sycamore Heights (Foothill & P&E Trail)	Red Hill Country Club Drive & E. Foothill Blvd	Rancho Cucamonga	CA
2	DRC2015-00991 WeCare Dialysis	8591 Grove Avenue	Rancho Cucamonga	CA
3	DRC2018-00912 Phelan Development	8768 Ninth Street	Rancho Cucamonga	CA
4	DRC2018-00430 Bonaldo Engineering	Eighth Street & Vineyard Avenue	Rancho Cucamonga	CA
5	DRC2018-00594 Lord Constructors	Hellman Avenue & Feron Boulevard	Rancho Cucamonga	CA
6	9500 & 9505 Feron Boulevard	9500 Feron Boulevard	Rancho Cucamonga	CA
7	DRC2018-00119 Overton Moore Properties	9000 Hellman Avenue	Rancho Cucamonga	CA
8	BOB 2.0	8794 Lions Street	Rancho Cucamonga	CA
9	941 E. Sixth Street	941 E. Sixth Street	Ontario	CA
10	1402 N. Virginia Ave.	1402 N. Virginia Ave.	Ontario	CA
11	2041 E. Fourth Street	2041 E. Fourth Street	Ontario	CA
<b>City of Rancho Cucamonga Cumulative Projects Outside 1-Mile Radius of Project Site</b>				
12	9455 Hyssop Drive	9455 Hyssop Drive	Rancho Cucamonga	CA
13	NEC 6th St. & Center Ave.	6th Street & Center Avenue	Rancho Cucamonga	CA
14	Mayten Ave. & South of Foothill	Mayten Ave. & Foothill Blvd.	Rancho Cucamonga	CA
15	9370 Pittsburgh Avenue	9370 Pittsburgh Avenue	Rancho Cucamonga	CA
16	West Side of Pittsburgh Avenue	9407 Pittsburgh Avenue	Rancho Cucamonga	CA
17	NWC 4th & Utica	10682 4th Street	Rancho Cucamonga	CA
18	North of Arrow & West of Etiwanda	Arrow Route & Etiwanda Avenue	Rancho Cucamonga	CA
19	Hickory & Arrow	Arrow Route & Hickory Avenue	Rancho Cucamonga	CA
20	NEC 4th & Utica	Utica Avenue & Bentley Street	Rancho Cucamonga	CA
21	8889 Santa Anita Avenue	8889 Santa Anita Avenue	Rancho Cucamonga	CA
22	South Side of 8th St, West of Haven Ave	8978 Haven Avenue	Rancho Cucamonga	CA
23	9668 7th Street	9668 7th Street	Rancho Cucamonga	CA
24	Vintner Apartments (Foothill & Hermosa)	Foothill Avenue & Hermosa Avenue	Rancho Cucamonga	CA
25	Via Pacifica (Archibald & Baseline, 7418 Archibald Avenue)	7418 Archibald Avenue	Rancho Cucamonga	CA
26	Meryl Gardens (Highland & Cambridge, 9942 Highland)	9942 Highland Avenue	Rancho Cucamonga	CA
27	Weaver Lane (Northeast Corner of Carnelian & Cherry Lane)	Carnelian Street & Cherry Lane	Rancho Cucamonga	CA
28	Victoria & Hermosa (Northwest Corner)	Victoria Street & Hermosa Avenue	Rancho Cucamonga	CA
29	Day Creek (Northwest Corner of Day Creek & Baseline)	12270 Base Line Road	Rancho Cucamonga	CA
30	DR Horton's (Southwest Corner of Day Creek & Baseline)	Day Creek Boulevard & Base Line Road	Rancho Cucamonga	CA
31	Empire Lakes	Cleveland Avenue & Sixth Street	Rancho Cucamonga	CA
32	SEC Haven & Church	Haven Avenue & Church Street	Rancho Cucamonga	CA
33	Day Creek Marketplace (Day Creek & Baseline)	Day Creek Boulevard & Base Line Road	Rancho Cucamonga	CA
34	Haven City Market	8421 Haven Avenue	Rancho Cucamonga	CA
35	Haven and Arrow	Haven Avenue & Arrow Route	Rancho Cucamonga	CA

**TABLE B  
SUMMARY OF CUMULATIVE PROJECTS**

<b>PROJECT TRIP GENERATION</b>										
<b>Project #</b>	<b>Land Use</b>	<b>Quantity</b>	<b>Units</b>	<b>Trip Generation Estimates</b>						
				<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>		
					<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>
<b>City of Rancho Cucamonga</b>										
1	Sycamore Heights (Foothill & P&E Trail)	175	DU	1,281	19	62	81	62	36	98
2	DRC2015-00991 WeCare Dialysis	10.912	KSF	380	24	7	31	11	27	38
3	DRC2018-00912 Phelan Development	241.147	KSF	551	42	11	53	16	45	61
4	DRC2018-00430 Bonaldo Engineering	20.385	KSF	46	3	1	4	1	3	4
5	DRC2018-00594 Lord Constructors	17.200	KSF	40	3	1	4	1	3	4
6	9500 & 9505 Feron Boulevard	150.003	KSF	342	26	8	34	10	28	38
7	DRC2018-00119 Overton Moore Properties	174.745	KSF	398	30	10	40	11	31	42
8	BOB 2.0	15.000	KSF	26	2	1	3	1	2	3
<b>City of Ontario</b>										
9	941 E Sixth Street	37	DU	271	4	13	17	13	8	21
10	1402 N Virginia Avenue	88	DU	644	9	31	40	31	18	49
11	2041 E Fourth Street	55	DU	519	10	31	41	34	20	54
<b>Total Project Trips</b>				4,496	172	176	348	191	221	412
DU = Dwelling Units, KSF = 1,000 square feet										

# APPENDIX J

## SIGNAL WARRANT ANALYSIS MEMO

## MEMORANDUM

To: Baldwin Ngai, Assistant Engineer  
Department of Engineering Services,  
Land Development and Traffic Management  
City of Rancho Cucamonga

From: Leo Espelet, PE, TE  
Kimley-Horn and Associates, Inc.

Date: June 3 , 2021

Subject: Traffic Signal Warrant Investigation at 8<sup>th</sup> Street and Baker Avenue

---

This memorandum was prepared to analyze whether the intersection of 8th Street and Baker Avenue would warrant traffic signal control per the *California Manual on Uniform Traffic Control Devices (CA-MUTCD)*.

The intersection of 8th Street and Baker Avenue is currently an all-way stop-controlled intersection. 8th Street is a two-lane undivided roadway through the study area, with a posted speed limit of 45 mph west of Baker Avenue, a 40 mph speed limit the entire stretch of the roadway within the City of Ontario, and 40 mph between Baker Avenue and Vineyard Avenue. 8th Street is designated as a Collector on the City of Rancho Cucamonga Circulation Plan, and as a Minor Arterial on the City of Ontario Circulation Plan. On-street parking is permitted on both sides of the roadway. Baker Avenue is a two-lane undivided roadway through the study area, with a posted speed limit of 35 mph between 8th Street and 9th Street and a posted speed limit of 40 mph from 8<sup>th</sup> Street, south. Baker Avenue is designated as a Collector in both Rancho Cucamonga and the City of Ontario Circulation Plan. On-street parking is permitted on both sides of the roadway. Opening Day (2021) configuration would widen the southbound approach at Baker Street to provide an exclusive southbound left-turn lane. The intersection is presented in **Figure 1**.

Intersection traffic counts were taken on Tuesday, March 12, 2019 when the local school district was in session and have been included as attachments to this memorandum. A 5-year traffic collision data from January 2014 to December 2019 was obtained through SWTRS and TIMS and is also attached.

### **Traffic Signal Warrants**

Chapter 4C of the CA-MUTCD, Traffic Control Signal Needs Studies, lists nine warrants for the installation of a traffic signal at an intersection. Generally, when an intersection meets one or more of the above signal warrants, it should be considered for signalization. The CA MUTCD provides guidance as part of the signal warrant analysis to be used if and when the traffic volumes and geometry conditions apply to the intersection being evaluated. Below are the assumptions applied for this intersection per CA MUTCD Chapter 4C Section 4C.01:

*Engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume*



*if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered*

The guidance above was applied to the traffic signal warrant analysis. The intersection of 8<sup>th</sup> Street and Baker was evaluated as a one-lane approach with only the traffic volume in the through/left lane. Traffic Signal Warrant Worksheets are provided as an attachment and are summarized below. Volumes for the intersection of 8<sup>th</sup> Street and Baker Avenue have been forecasted to represent Opening Day (2021) with Project and Horizon Year (2040) with Project conditions.

Because there are only four hours of traffic data available and no pedestrian volumes, Warrants 1,4, and 5 were not conducted. Additionally, Warrant 7 was not considered for this evaluation.



Figure 1: Intersection of 8<sup>th</sup> Street and Baker Avenue





#### **Warrant 1, Eight-Hour Vehicular Volume**

Analyzes whether the minimum traffic volumes are met for each of any eight hours during an average day. Eight Hour Vehicular Volumes are not available for the Opening Day with Project Conditions. Therefore, **this warrant was not conducted.**

#### **Warrant 2, Four-Hour Vehicular Volume**

Analyzes whether the minimum traffic volumes are met for each of any four hours during an average day. The intersection volumes do not meet the minimum volume requirements for four hours of a day. Therefore, **this warrant is not met.**

#### **Warrant 3, Peak Hour**

Analyzes whether the minor street approaches experience undue delay in crossing or entering the major approach for a minimum of one hour on an average day. The intersection volumes do not meet the minimum volume requirements for the peak hour. Therefore, **this warrant is not met.**

#### **Warrant 4, Pedestrian Volumes**

Analyzes whether pedestrians experience excessive delay in crossing the major street due to heavy traffic volumes. Pedestrian crossing volumes were not collected at this intersection. Therefore, **this warrant was not conducted.**

#### **Warrant 5, School Crossing**

Determines whether school children crossing of the major roadway would warrant signal installation. Special California criterion is provided for this warrant in the CA-MUTCD. Pedestrian crossing volumes were not collected at this intersection. Additionally, there are no schools located in the immediate vicinity of the intersection. Therefore, **this warrant was not conducted.**

#### **Warrant 6, Coordinated Signal System**

Under special conditions, a traffic signal may be considered when the major street is operated with a coordinated signal system. Since the traffic signals along 8th Avenue and Baker Avenue are not operating as coordinated system, **this warrant is not met.**

#### **Warrant 7, Crash Experience**

Frequency and severity of accidents may justify the installation of a traffic signal. No more than two accidents were reported at this intersection within any 12-month period in the last five years and does not meet the requirement of 5 or more reported crashes within a 12-month period and susceptible to correction with the installation of a traffic signal. Therefore, **this warrant is not met.**



### **Warrant 8, Roadway Network**

Under special conditions, a traffic signal may be considered at the intersection of two major through routes or regionally significant roadways. Baker Avenue would not be considered a major route; therefore, **this warrant is not met.**

### **Warrant 9, Intersection Near a Grade Crossing**

A traffic signal may be considered if the proximity to the intersection of a grade crossing is the principal reason to consider installing a traffic signal and none of the conditions described in the other eight traffic signal warrants are met. A grade crossing exists on the southbound approach and the center of the track nearest to the intersection and it is more than 140 feet from the stop line. Therefore, **this warrant is not met.**

### **Conclusion**

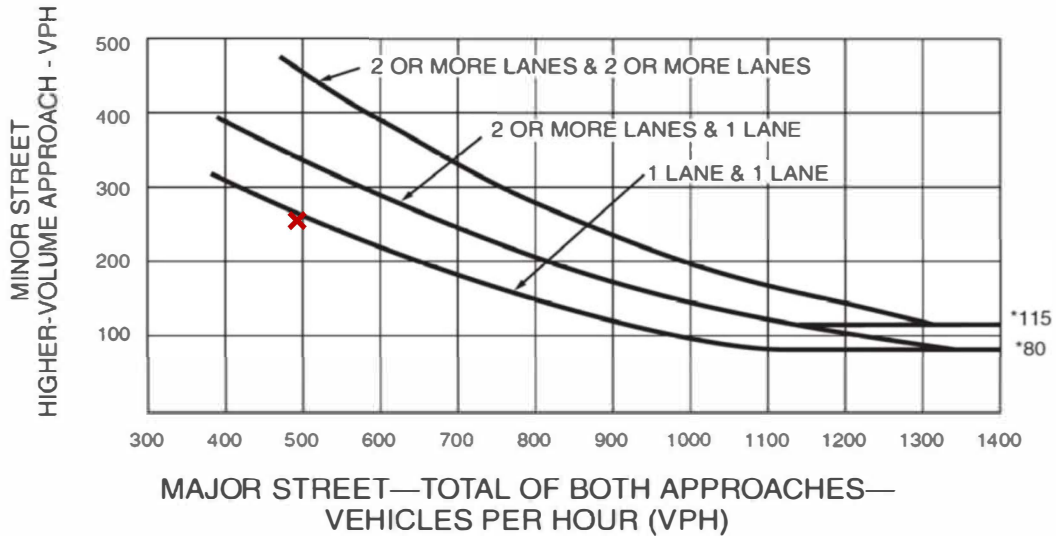
The intersection of 8th Street and Baker Avenue would not meet the conducted signal warrants per the Chapter 4C of the CA-MUTCD.

### **Attachments:**

- CA-MUTCD Traffic Signal Warrant Worksheets (Opening Day with Project)
- CA-MUTCD Traffic Signal Warrant Worksheets (Horizon Year with Project)
- Intersection Counts
- Volume Breakdown
- Accident history

*k:\snd\_dev\095894015 - 9th and vineyard\traffic\7 submittals\6th submittal - external - no credit sensitivity analysis\signal warrants\2021.06.03 - 8th and baker ave.docx*

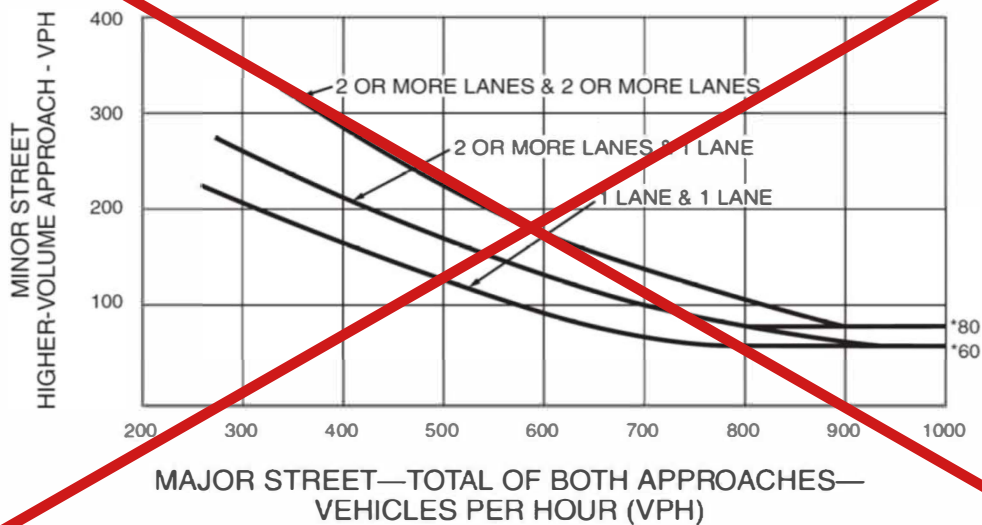
**Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume**



\*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 approach with one lane.

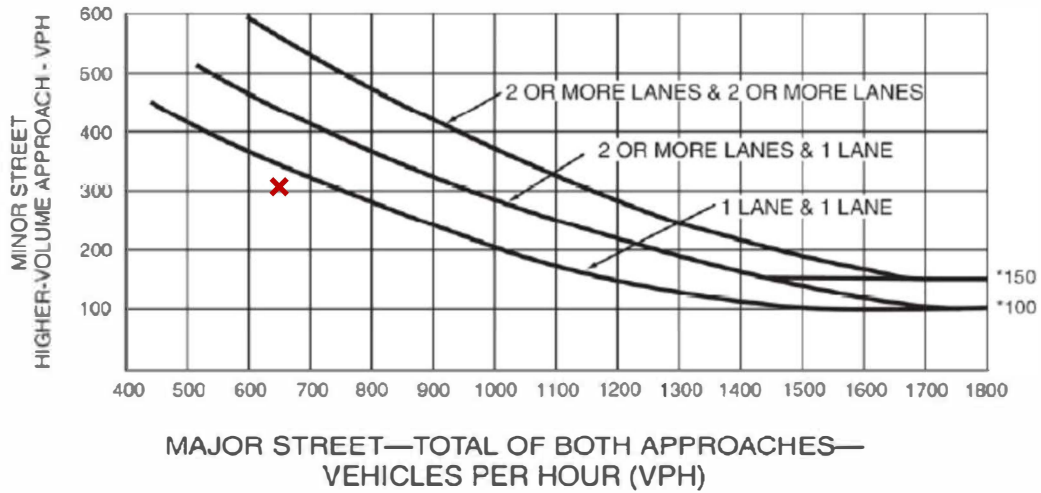
**Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 79 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



\*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

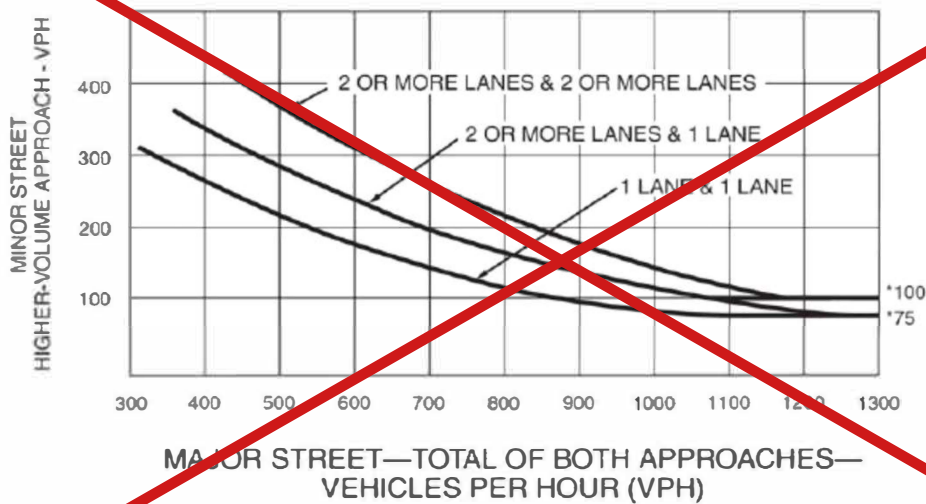
**Figure 4C-3. Warrant 3, Peak Hour**



\*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

**Figure 4C-4. Warrant 3, Peak Hour (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 79 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



\*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

**TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2014 MUTCD)**

MAJOR STREET: 8TH STREET EB WB # OF APPROACH LANES:

MINOR STREET: BAKER AVENUE NB SB # OF APPROACH LANES:

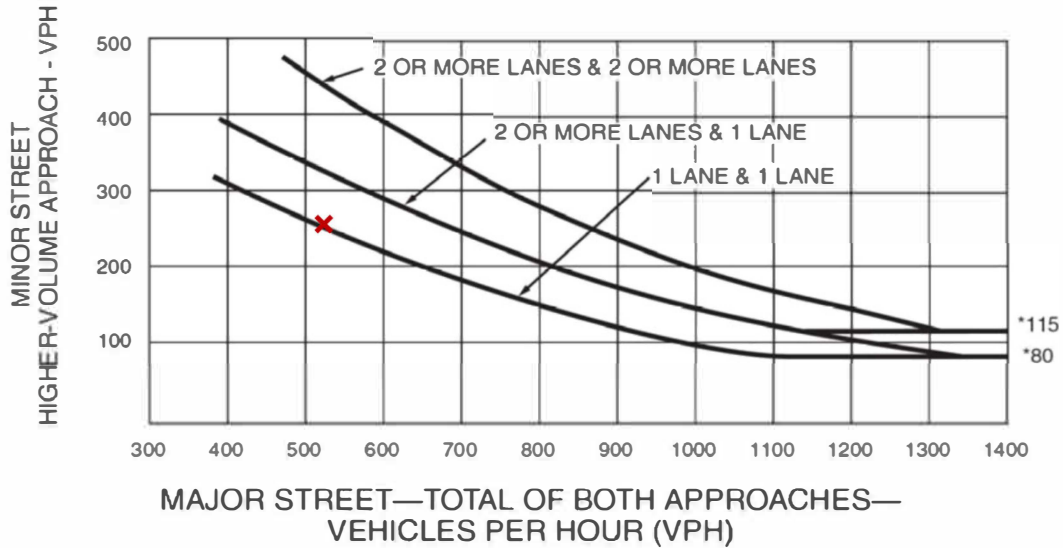
CITY, STATE: Rancho Cucamonga, California

COMMENTS: Opening Day with Project Signal Warrant  
Volumes for Opening Day Plus Project were obtain from Traffic Study and forecasted for year 2022 - Existing Counts conducted on Tuesday, March 12, 2019

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):   
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2	WARRANT 3	
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour	
<b>THRESHOLD VALUES</b>			<b>500</b>	<b>150</b>		<b>750</b>	<b>75</b>		<b>400</b>	<b>120</b>		<b>600</b>	<b>60</b>				
06:00 AM	TO 07:00 AM	0	0														
07:00 AM	TO 08:00 AM	460	230		Y			Y	Y	Y		Y					
08:00 AM	TO 09:00 AM	393	208		Y				Y			Y					
09:00 AM	TO 10:00 AM	0	0														
10:00 AM	TO 11:00 AM	0	0														
11:00 AM	TO 12:00 PM	0	0														
12:00 PM	TO 01:00 PM	0	0														
01:00 PM	TO 02:00 PM	0	0														
02:00 PM	TO 03:00 PM	0	0														
03:00 PM	TO 04:00 PM	0	0														
04:00 PM	TO 05:00 PM	587	283	Y	Y	Y		Y	Y	Y		Y		Y			
05:00 PM	TO 06:00 PM	646	311	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y			
06:00 PM	TO 07:00 PM	0	0														
07:00 PM	TO 08:00 PM	0	0														
08:00 PM	TO 09:00 PM	0	0														
09:00 PM	TO 10:00 PM	0	0														
		2,086	1,032	2	4	2	0	4	0	3	4	3	1	4	1	2	0
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			NOT SATISFIED			NOT SATISFIED						NOT SATISFIED	NOT SATISFIED

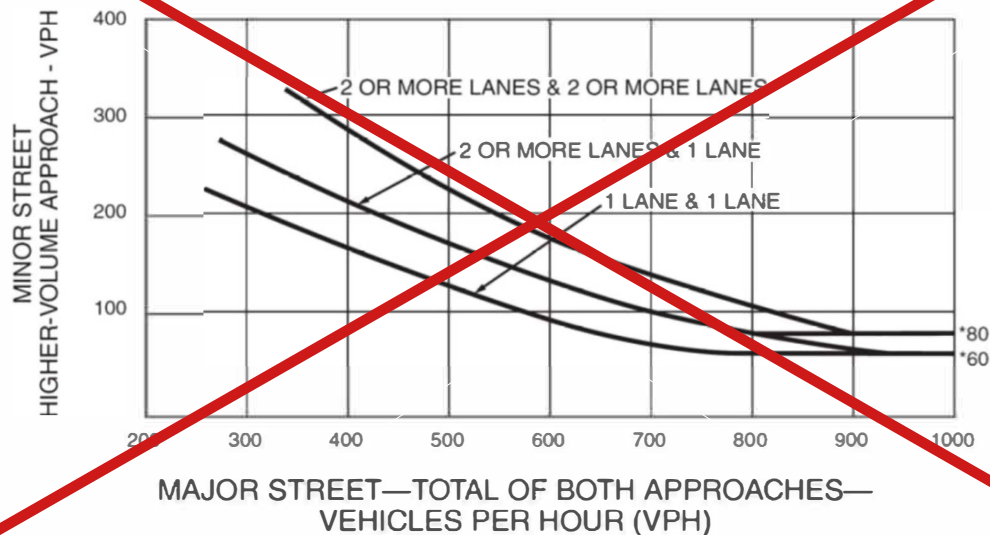
**Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume**



\*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 approach with one lane.

**Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)**

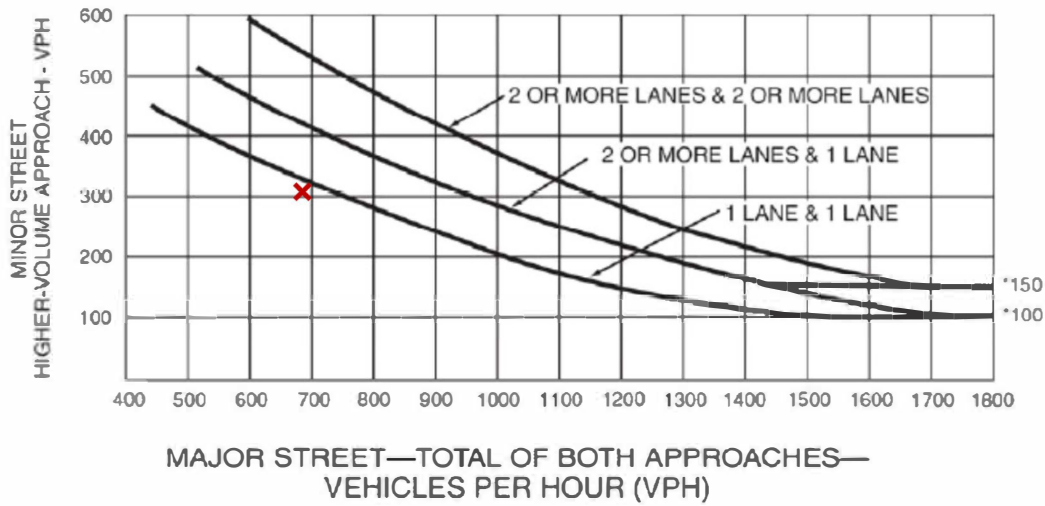
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 79 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



\*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

California MUTCD 2014 Edition  
 (FHWA's MUTCD 2009 Edition, including Revisions 1 & 2, as amended for use in California)

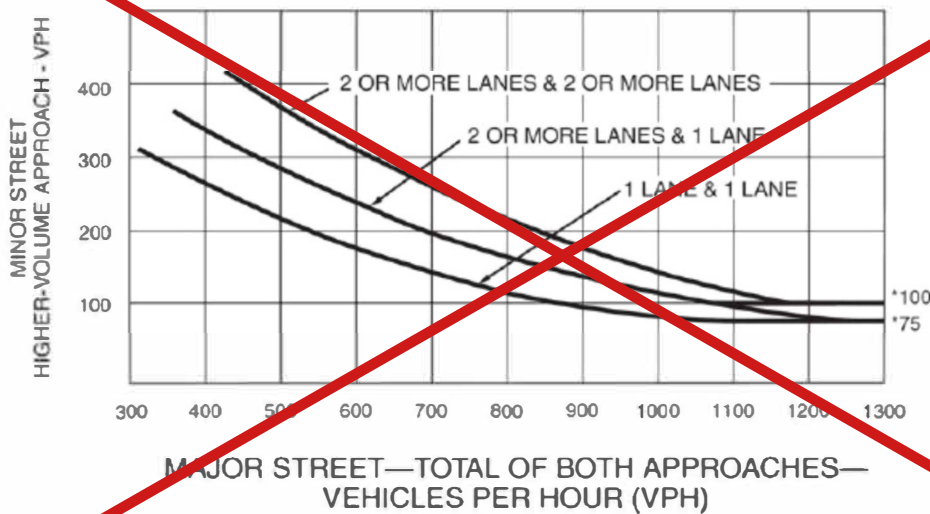
**Figure 4C-3. Warrant 3, Peak Hour**



\*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

**Figure 4C-4. Warrant 3, Peak Hour (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



\*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

**TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2014 MUTCD)**

MAJOR STREET: 8TH STREET EB WB # OF APPROACH LANES:

MINOR STREET: BAKER AVENUE NB SB # OF APPROACH LANES:

CITY, STATE: Rancho Cucamonga, California

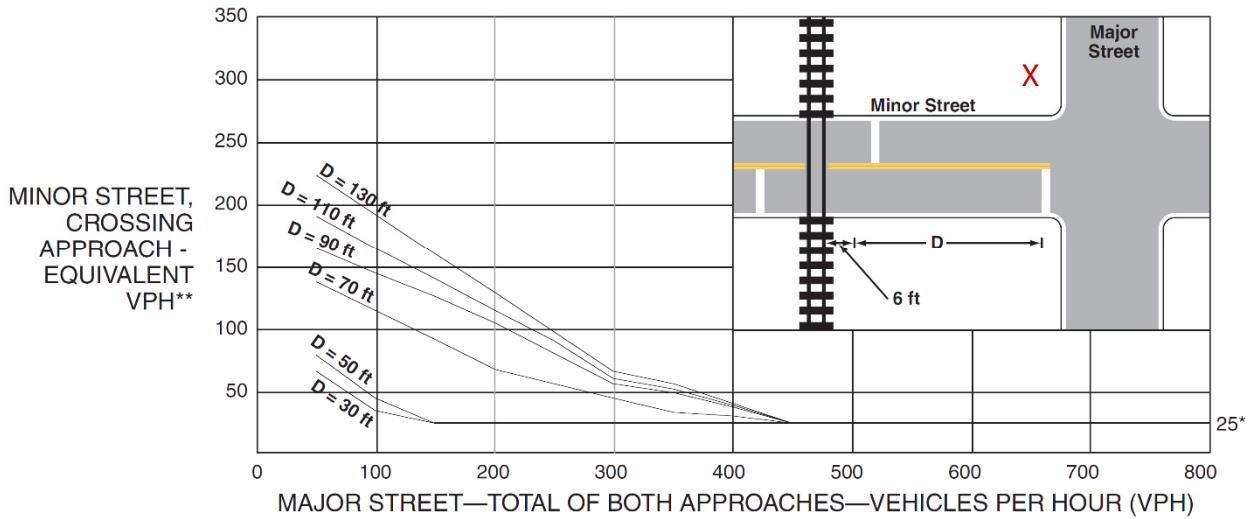
COMMENTS: Horizon Year with Project Signal Warrant  
Volumes for Horizon Year Plus Project were obtain from Traffic Study and forecasted for year 2040 - Existing Counts conducted on Tuesday, March 12, 2019

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N):   
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N):

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2	WARRANT 3
			MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	Four-Hour	Peak Hour
<b>THRESHOLD VALUES</b>			<b>500</b>	<b>150</b>		<b>750</b>	<b>75</b>		<b>400</b>	<b>120</b>		<b>600</b>	<b>60</b>			
06:00 AM TO 07:00 AM	0	0														
07:00 AM TO 08:00 AM	684	289	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	
08:00 AM TO 09:00 AM	490	208		Y			Y		Y	Y	Y		Y			
09:00 AM TO 10:00 AM	0	0														
10:00 AM TO 11:00 AM	0	0														
11:00 AM TO 12:00 PM	0	0														
12:00 PM TO 01:00 PM	0	0														
01:00 PM TO 02:00 PM	0	0														
02:00 PM TO 03:00 PM	0	0														
03:00 PM TO 04:00 PM	0	0														
04:00 PM TO 05:00 PM	587	283	Y	Y	Y		Y		Y	Y	Y		Y		Y	
05:00 PM TO 06:00 PM	646	311	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	
06:00 PM TO 07:00 PM	0	0														
07:00 PM TO 08:00 PM	0	0														
08:00 PM TO 09:00 PM	0	0														
09:00 PM TO 10:00 PM	0	0														
	2,407	1,091	3	4	3	0	4	0	4	4	4	2	4	2	3	0
			8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
			NOT SATISFIED			NOT SATISFIED			NOT SATISFIED						NOT SATISFIED	NOT SATISFIED

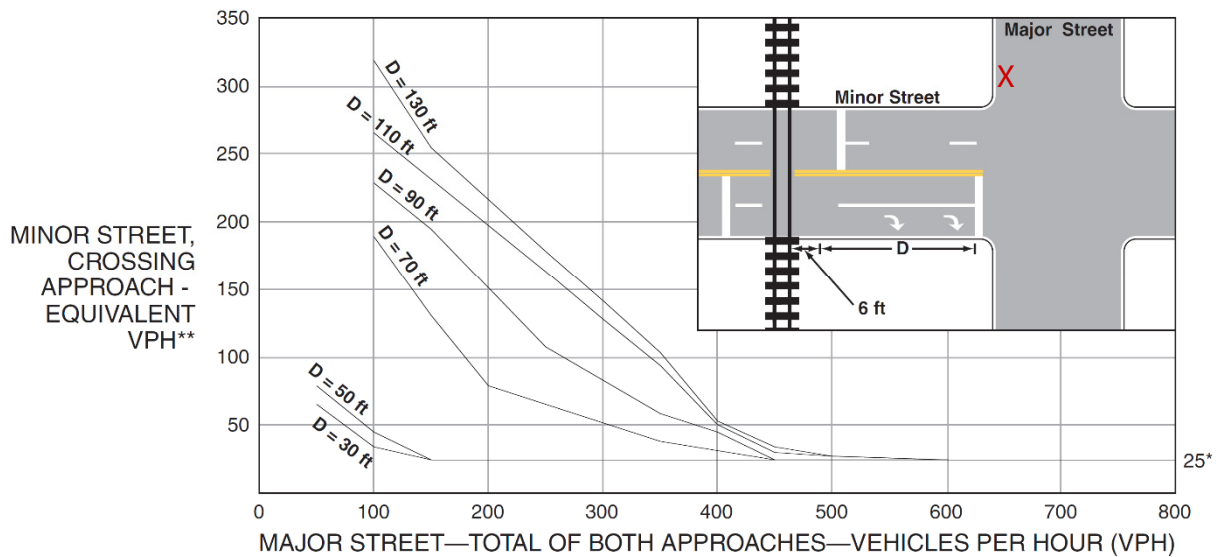


**Figure 4C-9. Warrant 9, Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)**



\* 25 vph applies as the lower threshold volume  
 \*\* VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

**Figure 4C-10. Warrant 9, Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)**



\* 25 vph applies as the lower threshold volume  
 \*\* VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Baker Ave & 8th St  
**City:** Rancho Cucamonga  
**Control:** 4-Way Stop

**Project ID:** 19-06034-006  
**Date:** 3/12/2019

## Total

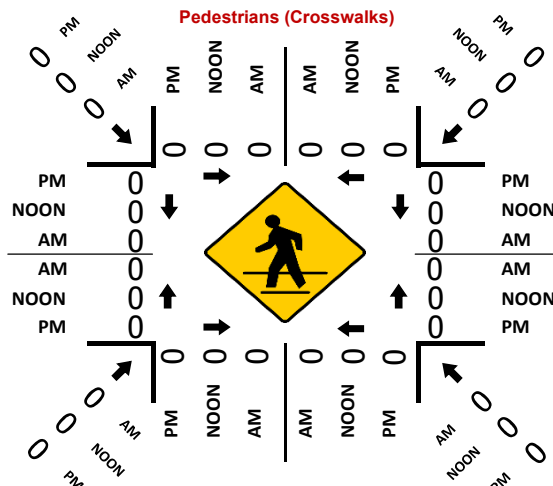
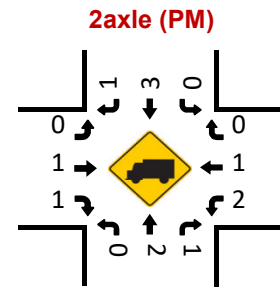
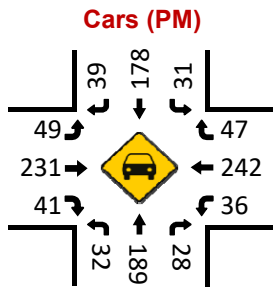
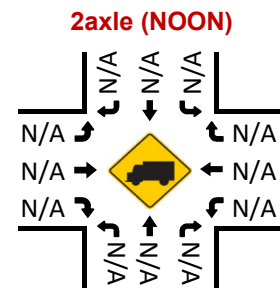
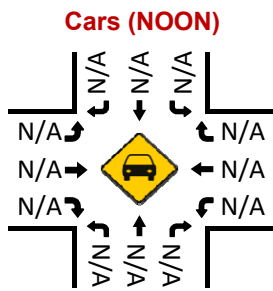
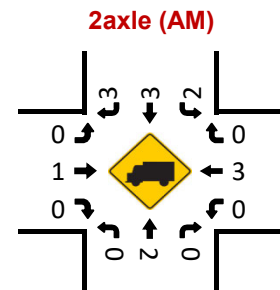
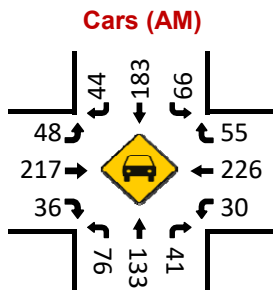
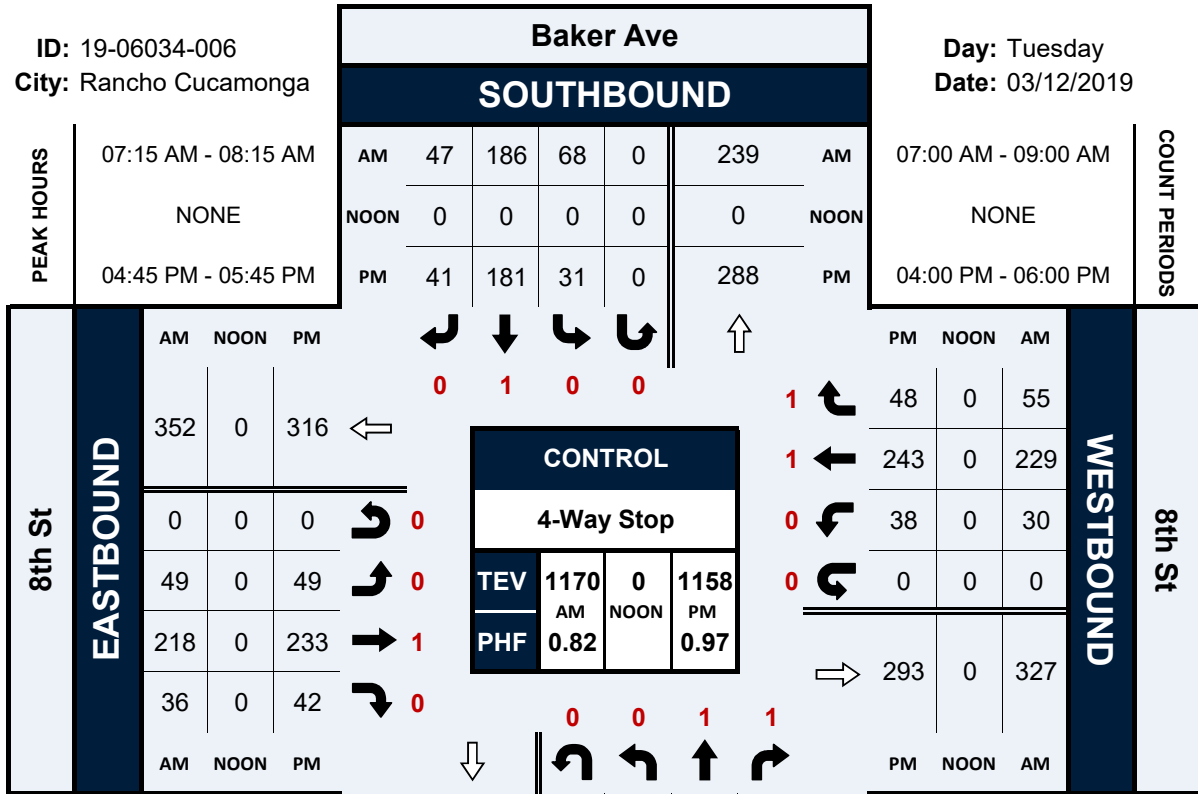
NS/EW Streets:	Baker Ave				Baker Ave				8th St				8th St				TOTAL				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND								
AM	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
7:00 AM	11	26	3	0	3	27	8	0	8	33	6	0	4	26	2	0					157
7:15 AM	23	23	9	0	11	46	9	0	5	46	8	0	6	45	7	0					238
7:30 AM	25	33	9	0	21	49	18	0	19	52	12	0	5	69	15	0					327
7:45 AM	17	48	11	0	24	41	15	0	15	77	11	0	7	67	24	0					357
8:00 AM	11	31	12	0	12	50	5	0	10	43	5	0	12	48	9	0					248
8:15 AM	10	15	8	0	8	30	11	0	4	54	2	0	2	45	5	0					194
8:30 AM	5	22	2	0	0	41	6	0	8	33	3	0	4	54	2	0					180
8:45 AM	11	18	6	0	3	22	9	0	4	40	3	0	3	31	2	0					152
<b>TOTAL VOLUMES :</b>	113	216	60	0	82	306	81	0	73	378	50	0	43	385	66	0					1853
<b>APPROACH %'s :</b>	29.05%	55.53%	15.42%	0.00%	17.48%	65.25%	17.27%	0.00%	14.57%	75.45%	9.98%	0.00%	8.70%	77.94%	13.36%	0.00%					
<b>PEAK HR :</b>	<b>07:15 AM - 08:15 AM</b>																				<b>TOTAL</b>
<b>PEAK HR VOL :</b>	76	135	41	0	68	186	47	0	49	218	36	0	30	229	55	0					1170
<b>PEAK HR FACTOR :</b>	0.760	0.703	0.854	0.000	0.708	0.930	0.653	0.000	0.645	0.708	0.750	0.000	0.625	0.830	0.573	0.000					0.819
			0.829			0.855				0.735				0.801							
PM	0	1	1	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU					
4:00 PM	6	47	4	0	9	35	8	0	9	62	8	0	8	49	9	0					254
4:15 PM	5	43	6	0	1	43	9	0	13	55	10	0	7	38	11	0					241
4:30 PM	9	40	4	0	8	46	6	0	17	53	3	0	12	63	8	0					269
4:45 PM	6	51	5	0	8	48	13	0	15	44	8	0	10	63	13	0					284
5:00 PM	9	48	11	0	7	41	5	0	11	60	11	0	10	64	14	0					291
5:15 PM	9	37	8	0	8	45	9	0	15	61	12	0	9	59	11	0					283
5:30 PM	8	55	5	0	8	47	14	0	8	68	11	0	9	57	10	0					300
5:45 PM	6	49	11	0	5	39	5	0	14	70	9	0	9	45	7	0					269
<b>TOTAL VOLUMES :</b>	58	370	54	0	54	344	69	0	102	473	72	0	74	438	83	0					2191
<b>APPROACH %'s :</b>	12.03%	76.76%	11.20%	0.00%	11.56%	73.66%	14.78%	0.00%	15.77%	73.11%	11.13%	0.00%	12.44%	73.61%	13.95%	0.00%					
<b>PEAK HR :</b>	<b>04:45 PM - 05:45 PM</b>																				<b>TOTAL</b>
<b>PEAK HR VOL :</b>	32	191	29	0	31	181	41	0	49	233	42	0	38	243	48	0					1158
<b>PEAK HR FACTOR :</b>	0.889	0.868	0.659	0.000	0.969	0.943	0.732	0.000	0.817	0.857	0.875	0.000	0.950	0.949	0.857	0.000					0.965
			0.926			0.917				0.920				0.935							

# Baker Ave & 8th St

## Peak Hour Turning Movement Count

ID: 19-06034-006  
City: Rancho Cucamonga

Day: Tuesday  
Date: 03/12/2019



**TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2014 MUTCD)**

MAJOR STREET: 8TH STREET EB WB # OF APPROACH LANES: 1

MINOR STREET: BAKER AVENUE NB SB # OF APPROACH LANES: 1

CITY, STATE: Rancho Cucamonga, California

COMMENTS: Opening Day with Project Signal Warrant  
Volumes for Opening Day Plus Project were obtain from Traffic Study and forecasted for year 2022 - Existing Counts cc

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

			8TH STREET		Total	BAKER AVENUE		Minor Street Heavy Leg
			EB Approach	WB Approach		NB Approach	SB Approach	
06:00 AM	TO	07:00 AM			0			0
07:00 AM	TO	08:00 AM	230	230	460	230	230	230
08:00 AM	TO	09:00 AM	200	193	393	166	208	208
09:00 AM	TO	10:00 AM			0			0
10:00 AM	TO	11:00 AM			0			0
11:00 AM	TO	12:00 PM			0			0
12:00 PM	TO	01:00 PM			0			0
01:00 PM	TO	02:00 PM			0			0
02:00 PM	TO	03:00 PM			0			0
03:00 PM	TO	04:00 PM			0			0
04:00 PM	TO	05:00 PM	293	294	587	245	283	283
05:00 PM	TO	06:00 PM	323	323	646	269	311	311
06:00 PM	TO	07:00 PM			0			0
07:00 PM	TO	08:00 PM			0			0
08:00 PM	TO	09:00 PM			0			0
09:00 PM	TO	10:00 PM			0			0

06/02/21

Kimley-Horn and Associates

## Baker Ave &amp; 8th St

Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
7:00	11	30		8	13		13	24		28	10		137
7:15	24	27		28	22		8	34		41	17		201
7:30	26	39		54	23		32	38		35	26		273
7:45	17	56		62	20		25	56		48	25		309
8:00	17	39		31	52		15	41		13	46		254
8:15	15	19		21	31		6	51		2	43		188
8:30	8	28		0	42		12	31		4	52		177
8:45	17	23		8	23		6	38		3	30		148
7-8am	78	152	0	152	78	0	78	152	0	152	78	0	920
<b>NB Approach 230</b>				<b>SB Approach 230</b>			<b>EB approach 230</b>			<b>WB approach 230</b>			
8-9am	57	109	0	60	148	0	39	161	0	22	171	0	767
<b>NB Approach 166</b>				<b>SB Approach 208</b>			<b>EB approach 200</b>			<b>WB approach 193</b>			

Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
4:00	8	55		27	42		9	70		9	58		278
4:15	6	50		3	51		12	62		8	45		237
4:30	11	47		24	55		16	60		13	75		301
4:45	8	60		24	57		14	50		11	75		299
5:00	10	59		22	53		13	62		12	79		310
5:15	10	46		25	59		18	63		11	73		305
5:30	9	68		25	61		9	70		11	70		323
5:45	7	60		15	51		16	72		11	56		288
4-5pm	33	212	0	78	205	0	51	242	0	41	253	0	1115
<b>NB Approach 245</b>				<b>SB Approach 283</b>			<b>EB approach 293</b>			<b>WB approach 294</b>			
5-6pm	36	233	0	87	224	0	56	267	0	45	278	0	1226
<b>NB Approach 269</b>				<b>SB Approach 311</b>			<b>EB approach 323</b>			<b>WB approach 323</b>			

**TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2014 MUTCD)**

MAJOR STREET: **8TH STREET** **EB** WB # OF APPROACH LANES: **1**

MINOR STREET: **BAKER AVENUE** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Rancho Cucamonga, California**

COMMENTS: **Horizon Year with Project Signal Warrant**  
**Volumes for Horizon Year Plus Project were obtain from Traffic Study and forecasted for year 2040 - Existing Counts c**

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**

				8TH STREET		Total	BAKER AVENUE		Minor Street Heavy Leg
				EB Approach	WB Approach		NB Approach	SB Approach	
06:00 AM	TO	07:00 AM				0			0
07:00 AM	TO	08:00 AM		412	272	684	250	289	289
08:00 AM	TO	09:00 AM		295	195	490	179	208	208
09:00 AM	TO	10:00 AM				0			0
10:00 AM	TO	11:00 AM				0			0
11:00 AM	TO	12:00 PM				0			0
12:00 PM	TO	01:00 PM				0			0
01:00 PM	TO	02:00 PM				0			0
02:00 PM	TO	03:00 PM				0			0
03:00 PM	TO	04:00 PM				0			0
04:00 PM	TO	05:00 PM		293	294	587	245	283	283
05:00 PM	TO	06:00 PM		323	323	646	269	311	311
06:00 PM	TO	07:00 PM				0			0
07:00 PM	TO	08:00 PM				0			0
08:00 PM	TO	09:00 PM				0			0
09:00 PM	TO	10:00 PM				0			0

06/02/21

Kimley-Horn and Associates

## Baker Ave &amp; 8th St

Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
7:00	12	33		4	34		14	52		6	30		211
7:15	26	29		15	58		9	73		9	52		321
7:30	28	42		30	62		33	83		8	79		447
7:45	19	61		34	52		26	122		11	77		501
8:00	18	43		31	52		22	60		14	46		345
8:15	16	21		21	31		9	75		2	43		256
8:30	8	30		0	42		18	46		5	52		219
8:45	18	25		8	23		9	56		3	30		200
7-8am	85	165	0	83	206	0	82	330	0	34	238	0	1223
<b>NB Approach 250</b>				<b>SB Approach 289</b>			<b>EB approach 412</b>			<b>WB approach 272</b>			
8-9am	60	119	0	60	148	0	58	237	0	24	171	0	877
<b>NB Approach 179</b>				<b>SB Approach 208</b>			<b>EB approach 295</b>			<b>WB approach 195</b>			

Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	TOTAL
4:00	8	55		27	42		9	70		9	58		324
4:15	6	50		3	51		12	62		8	45		295
4:30	11	47		24	55		16	60		13	75		335
4:45	8	60		24	57		14	50		11	75		361
5:00	10	59		22	53		13	62		12	79		234
5:15	10	46		25	59		18	63		11	73		227
5:30	9	68		25	61		9	70		11	70		242
5:45	7	60		15	51		16	72		11	56		209
4-5pm	33	212	0	78	205	0	51	242	0	41	253	0	1115
<b>NB Approach 245</b>				<b>SB Approach 283</b>			<b>EB approach 293</b>			<b>WB approach 294</b>			
5-6pm	36	233	0	87	224	0	56	267	0	45	278	0	1226
<b>NB Approach 269</b>				<b>SB Approach 311</b>			<b>EB approach 323</b>			<b>WB approach 323</b>			

**Traffic Signal Warrants Worksheet**

Major Street: 8TH STREET  
 Minor Street: BAKER AVENUE

**WARRANT 7 - Crash Warrant**

**Satisfied**

**NO**

Minimum Volume Requirements	Entering volumes - all approaches	Y or N	Fulfilled (Y or N)
One warrant satisfied 80%	During typical weekday peak hour <input type="text"/> vph	N	N
	OR During each of any 5 hours of Sat. or Sun. <input type="text"/> vph		
Signal will not seriously disrupt progressive traffic flow			N
Adequate trial of less restrictive remedies has failed to reduce accident frequency			N
Accidents within a 12 month period susceptible for correction and involving injury or >= \$500 damage			N
Minimum Requirements	Number of accidents		
5 or more	<input type="text" value="4"/>		



# COLLISION DIAGRAM

Primary Street:  
8th Street

---

Secondary Street:  
Baker Ave

---

Time Period:  
01/01/2014 - 12/31/2019

---

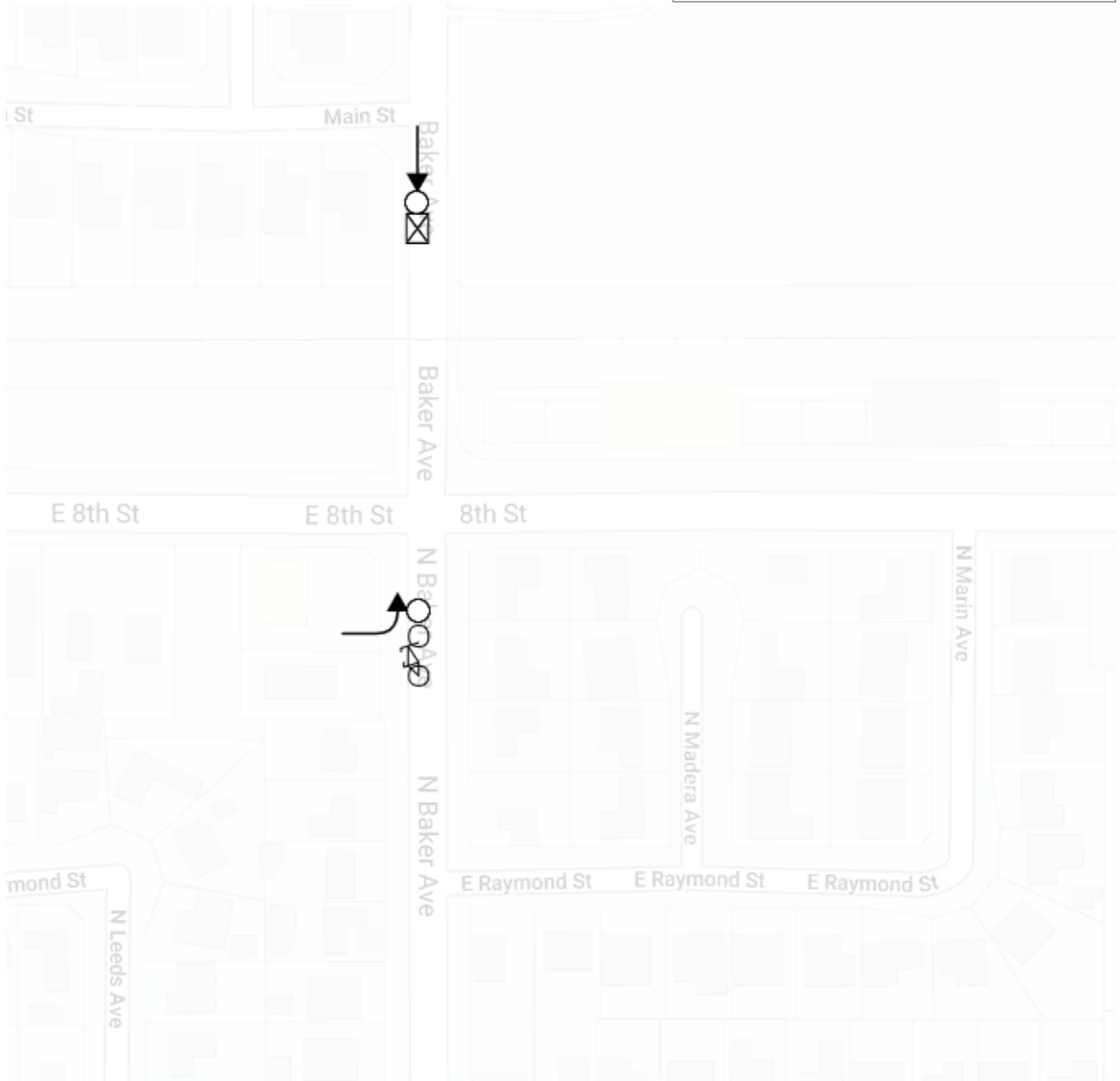
Agency Name:  
Kimley-Horn and Associates

---

Mapping Summary:

Fatal Collision	0
Injury Collision	2
Mapped	2
Not Drawn	0
Total	2

→ Straight	🚶 Pedestrian
↶ Left Turn	🚲 Bicycle
↷ Right Turn	☒ Object
↻ U-Turn	● Fatal Crash
↶ Overturned	○ Injury Crash
↘ Ran Off Road	
⚡ Stopped	
☒ Parked	



Date Created: 09/24/2020

Created by TIMS (<https://tims.berkeley.edu>) © UC Regents, 2014-2020

# APPENDIX K

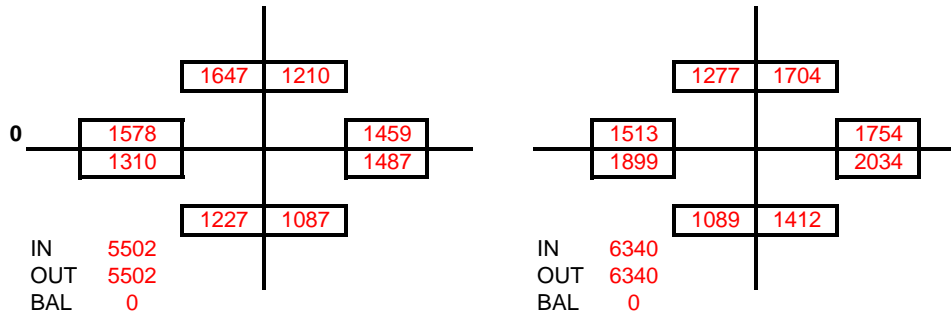
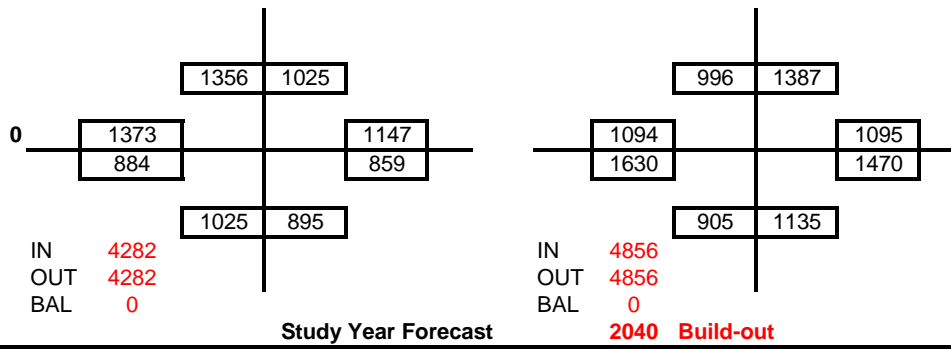
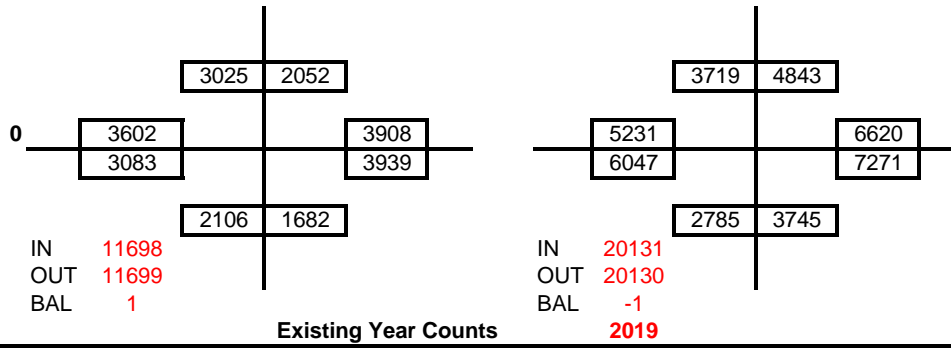
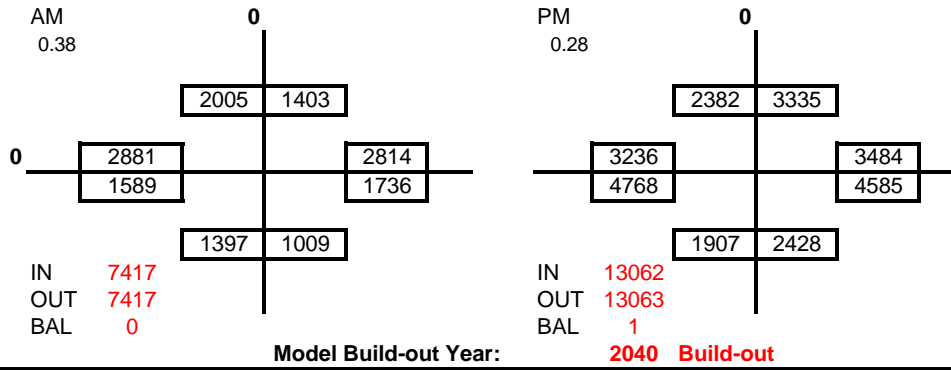
## B-TURNS ANALYSIS WORKSHEETS

**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 1  
**North/South Street** Vineyard Ave  
**East/West Street** Foothill Blvd

**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

**Model Base Year: 2012**

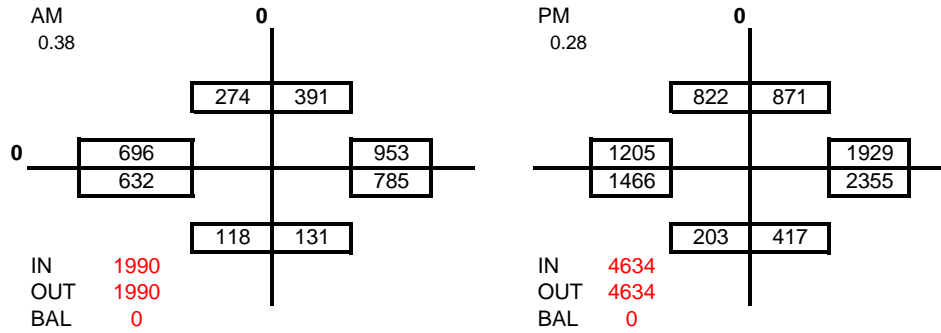


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 2  
**North/South Street:** Baker Ave  
**East/West Street:** Arrow Rte

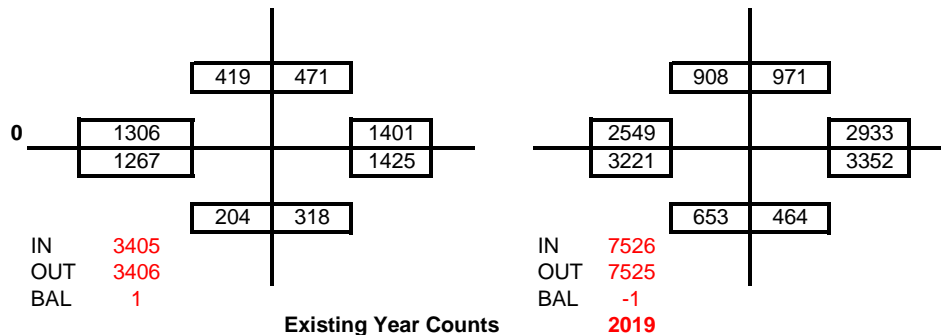
**Model Base Year:** 2012  
**Model Build-out Year:** 2040  
**Total Difference:** 28  
**Existing Year Counts:** 2019  
**Difference Ex to B-O:** 21  
**Percent:** 0.75  
**Study Year Forecast:** 2040 Build-out  
**Difference Ex to Forecast:** 21

Date: 10/18/19

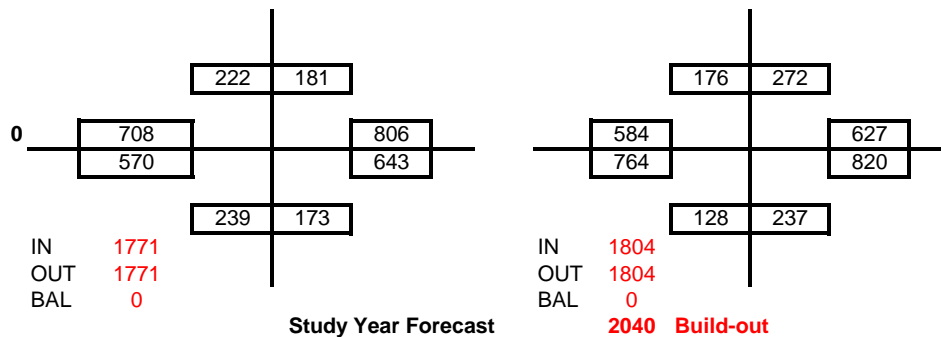
**Model Base Year: 2012**



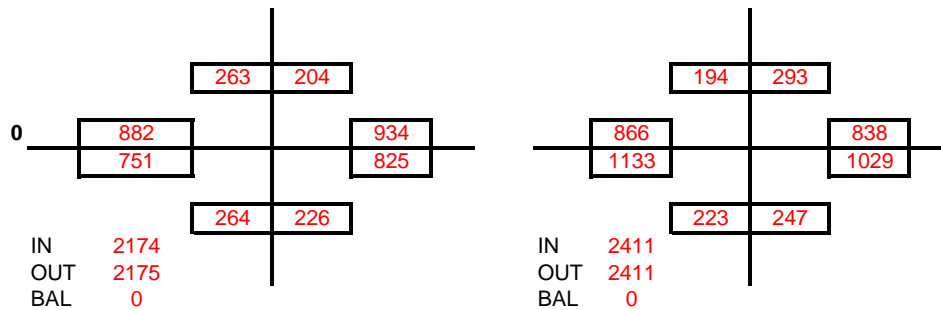
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

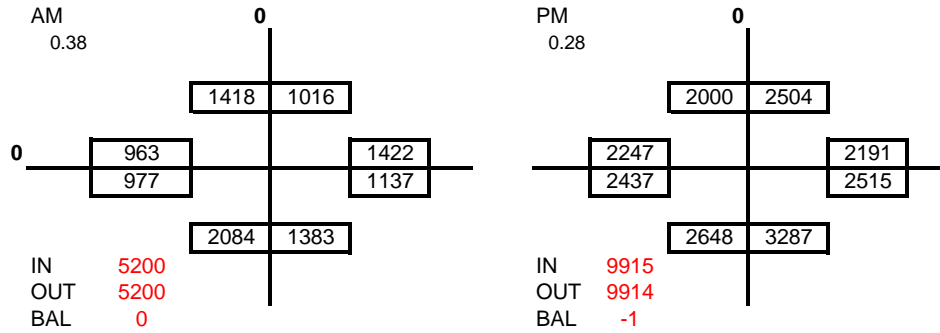


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 3  
**North/South Street:** Vineyard Ave  
**East/West Street:** Arrow Rte

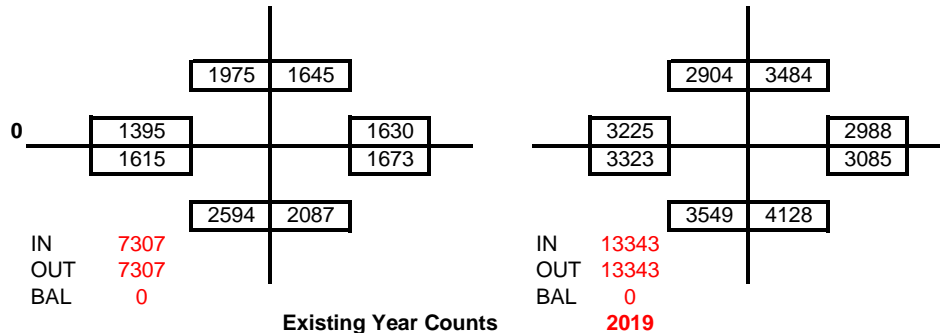
**Model Base Year:** 2012  
**Model Build-out Year:** 2040  
**Total Difference:** 28  
**Existing Year Counts:** 2019  
**Difference Ex to B-O:** 21  
**Percent:** 0.75  
**Study Year Forecast:** 2040 Build-out  
**Difference Ex to Forecast:** 21

Date: 10/18/19

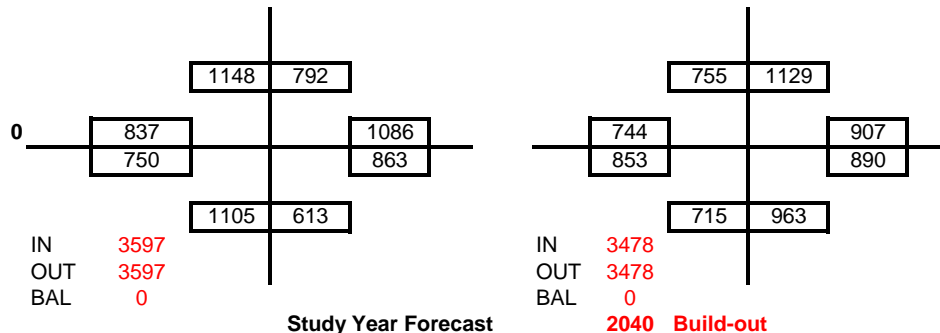
**Model Base Year: 2012**



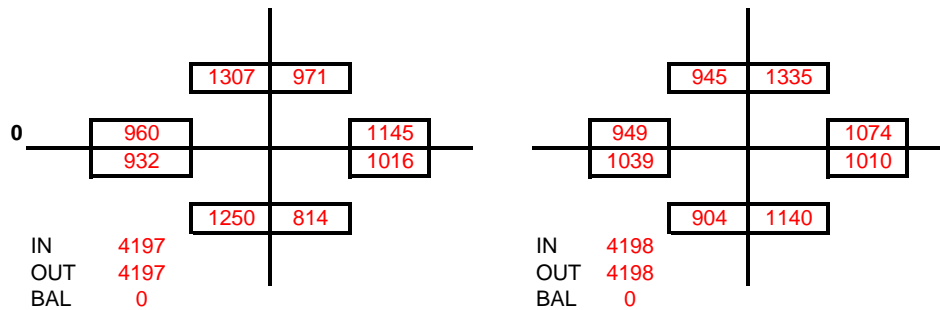
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

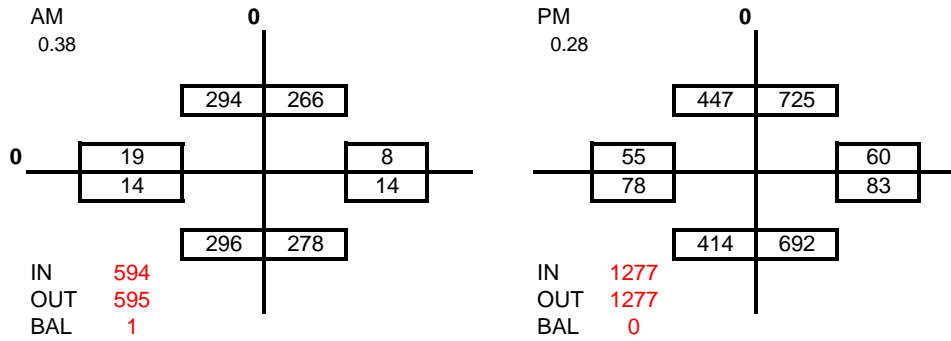


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 4  
**North/South Street** Baker Ave  
**East/West Street** 9th St

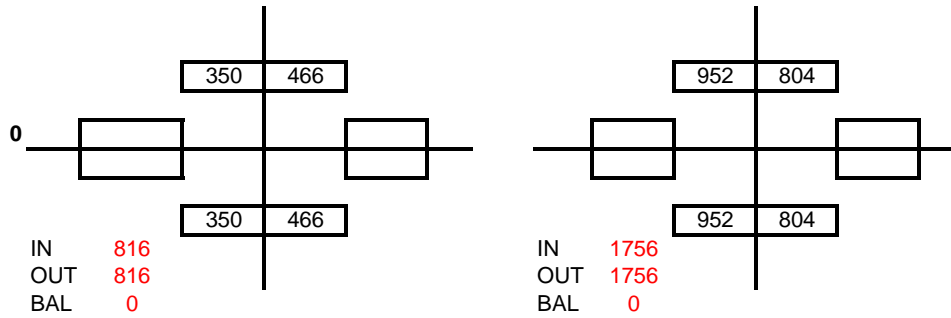
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

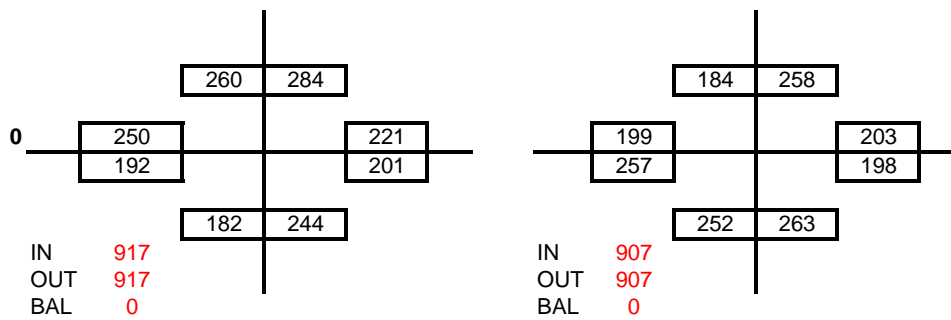
**Model Base Year: 2012**



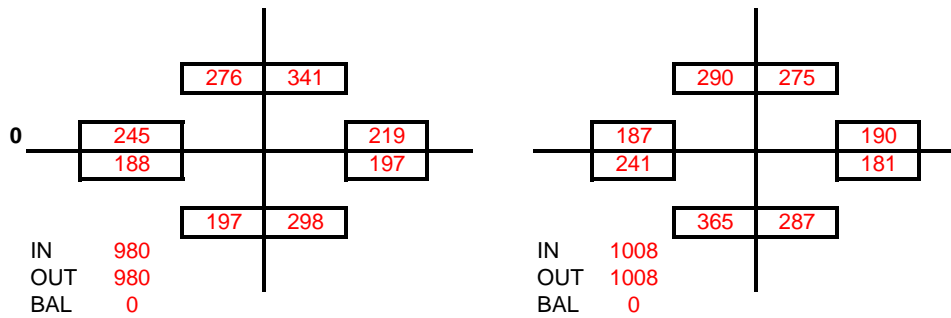
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

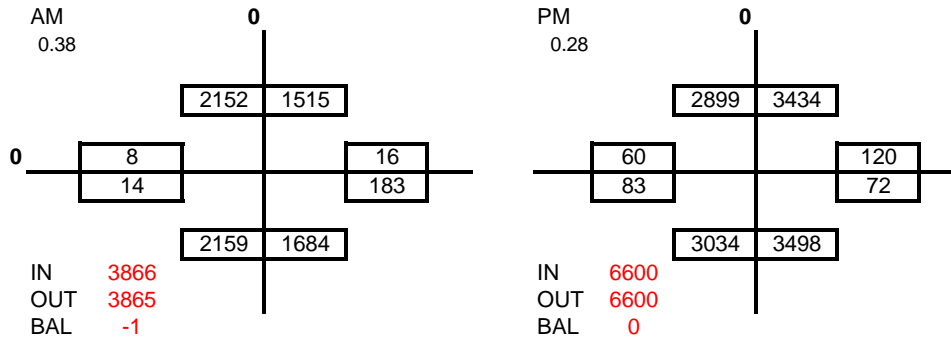


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 5  
**North/South Street** Vineyard Ave  
**East/West Street** 9th St

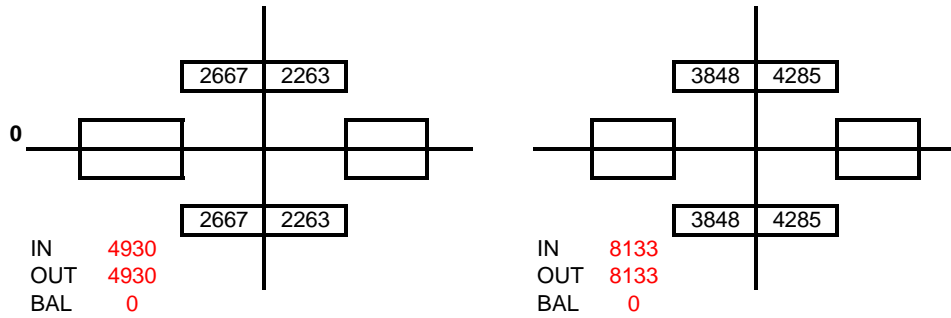
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

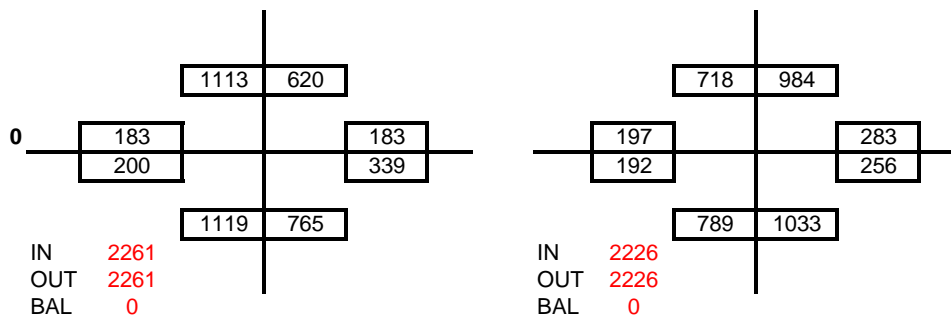
**Model Base Year: 2012**



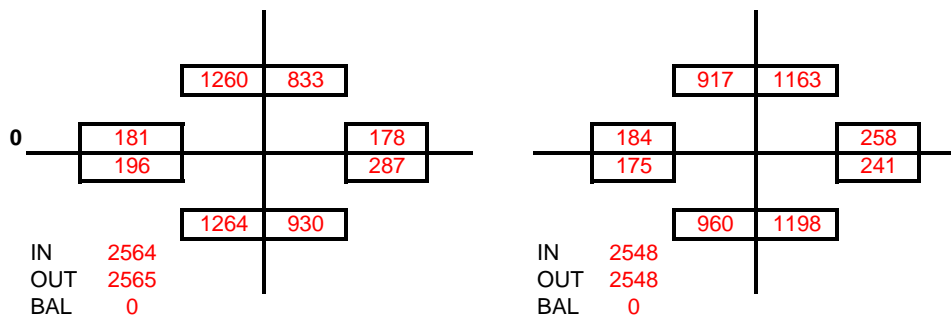
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

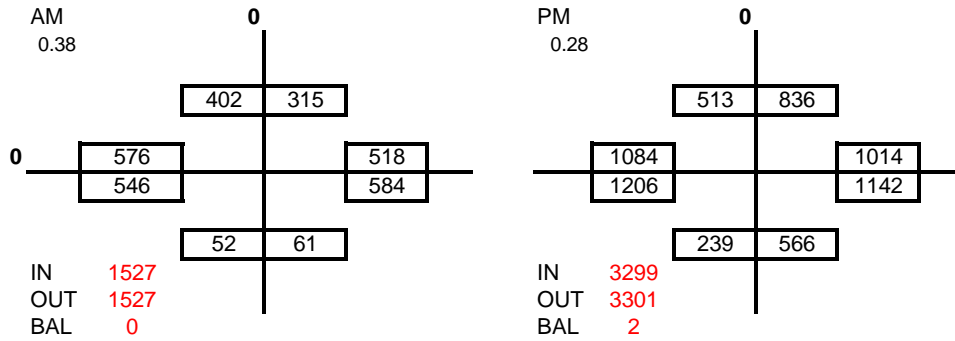


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 6  
**North/South Street:** Baker Ave  
**East/West Street:** 8th St

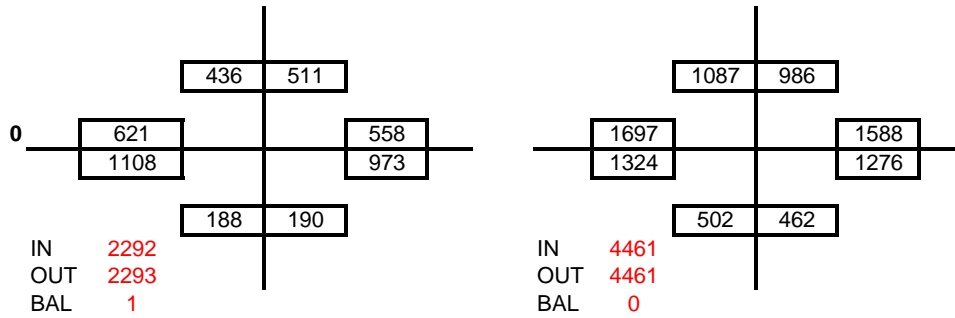
**Model Base Year:** 2012  
**Model Build-out Year:** 2040  
**Total Difference:** 28  
**Existing Year Counts:** 2019  
**Difference Ex to B-O:** 21  
**Percent:** 0.75  
**Study Year Forecast:** 2040 Build-out  
**Difference Ex to Forecast:** 21

Date: 10/18/19

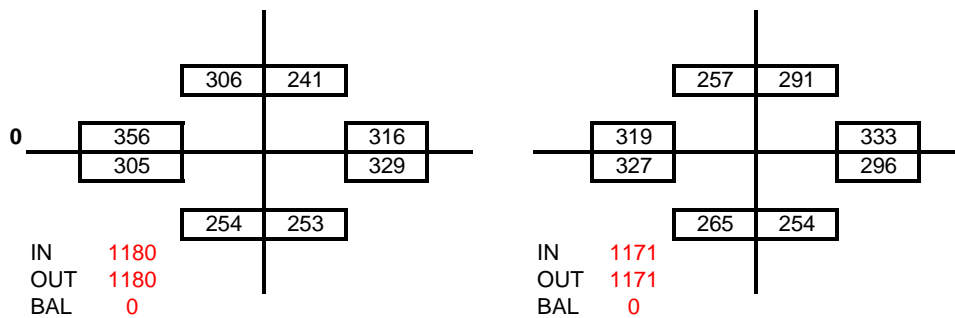
**Model Base Year: 2012**



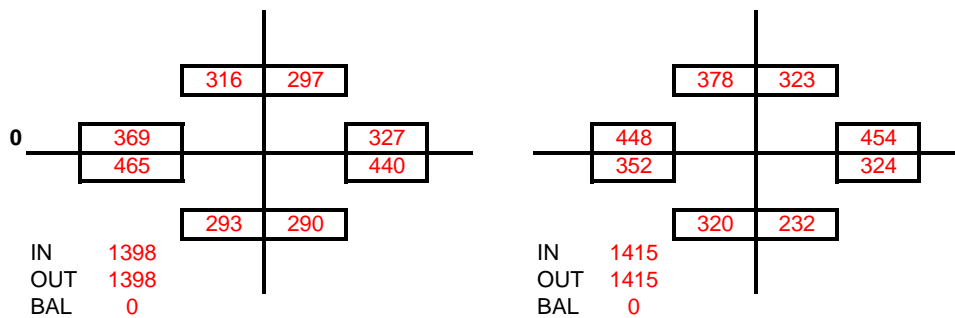
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**



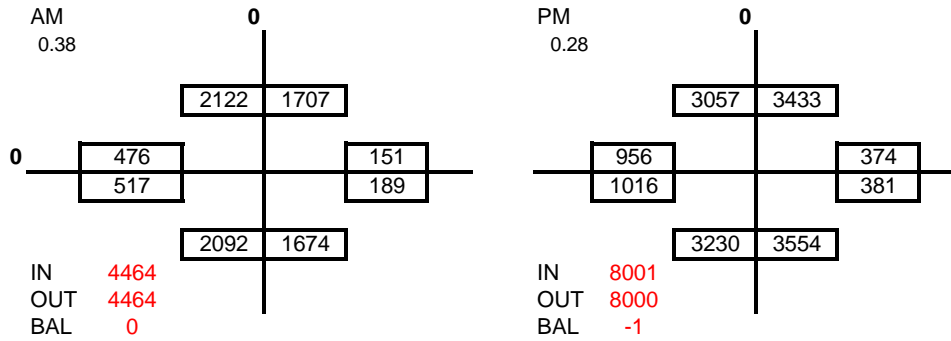


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 7  
**North/South Street** Vineyard Ave  
**East/West Street** 8th St

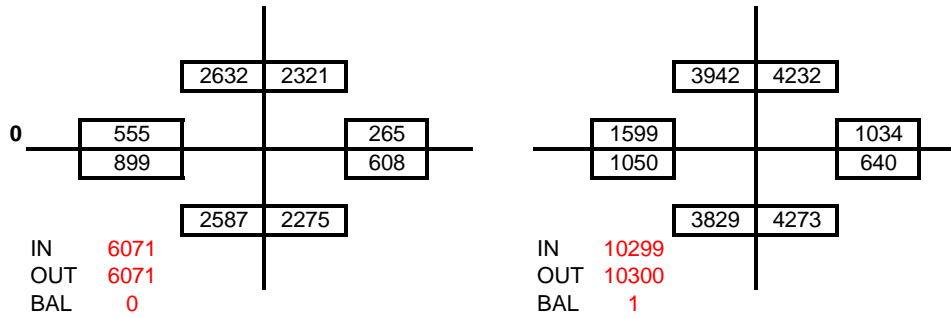
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

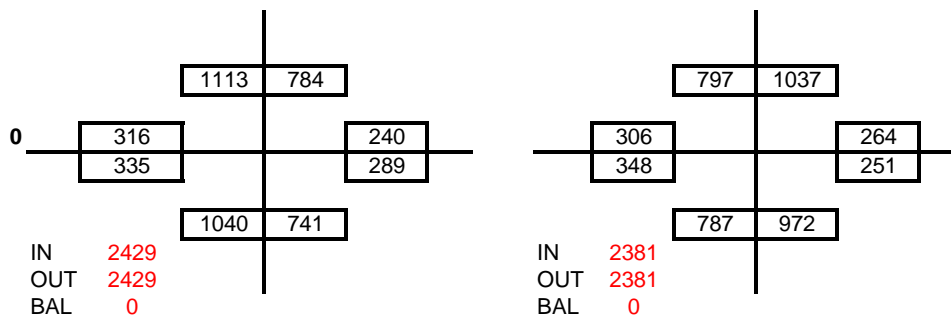
**Model Base Year: 2012**



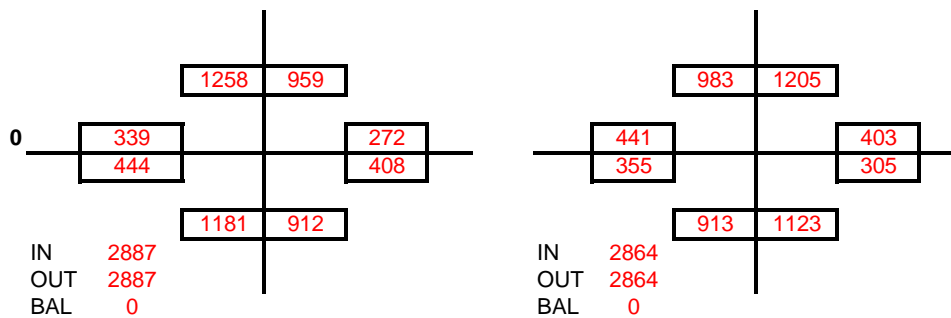
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

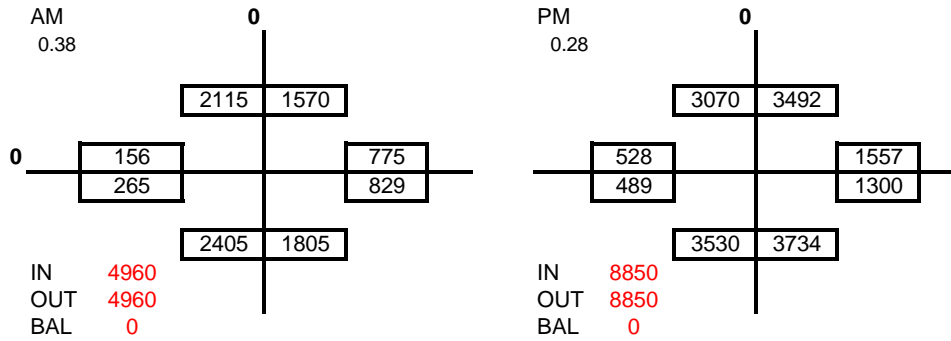


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 8  
**North/South Street** Vineyard Ave  
**East/West Street** 6th St

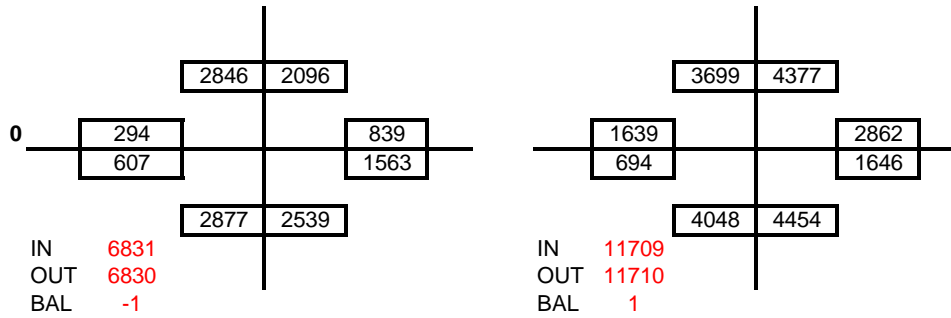
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

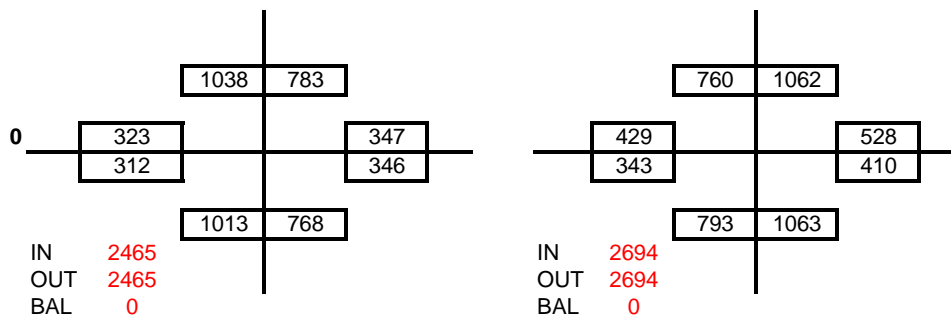
**Model Base Year: 2012**



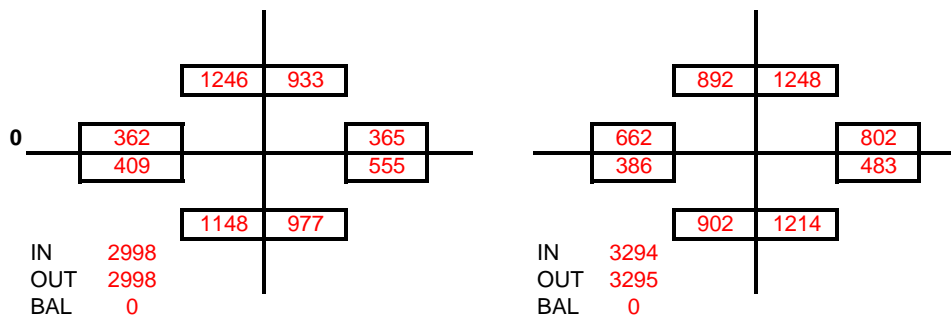
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

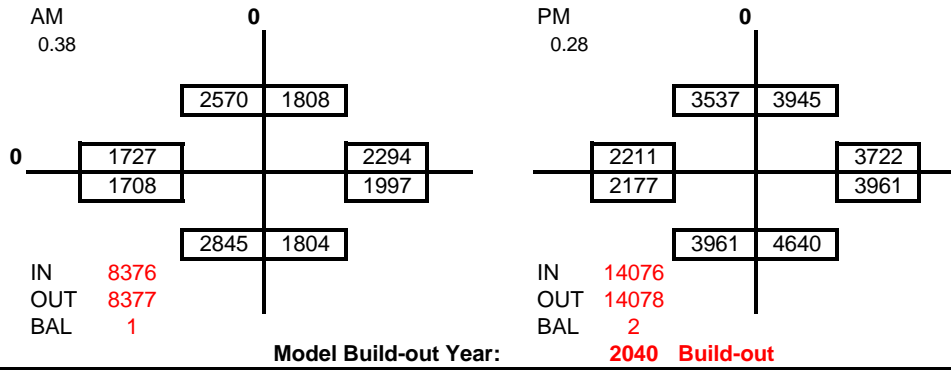


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 9  
**North/South Street** Vineyard Ave  
**East/West Street** 4th St

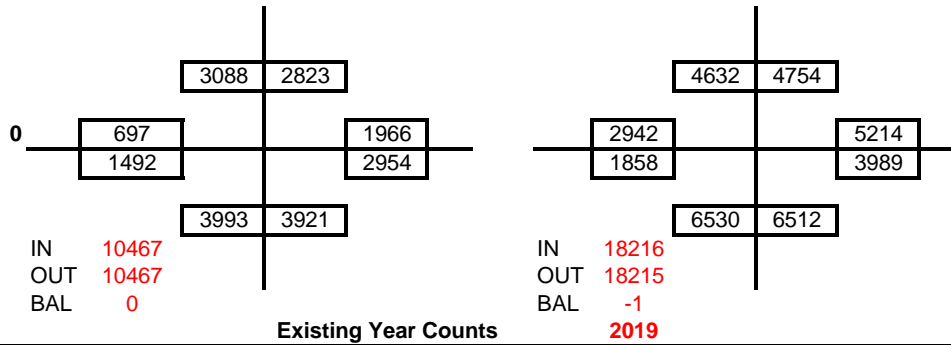
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

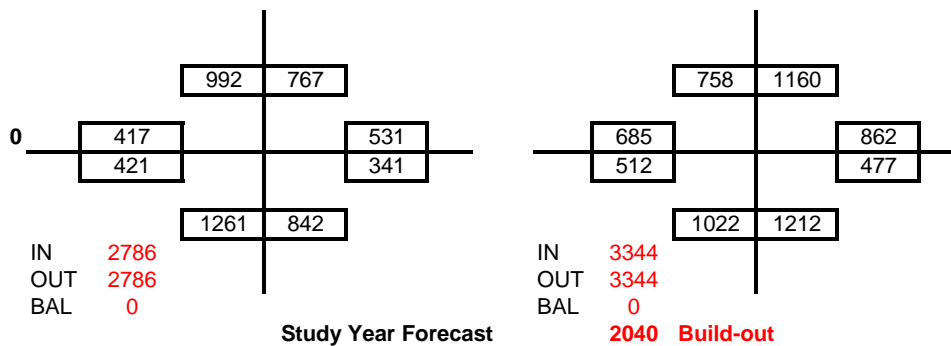
**Model Base Year: 2012**



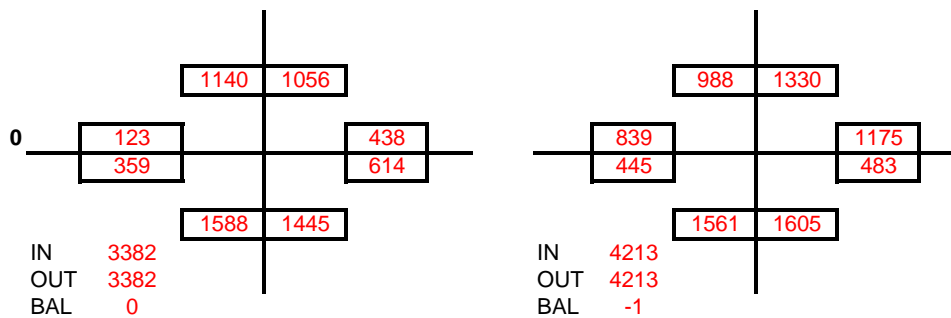
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

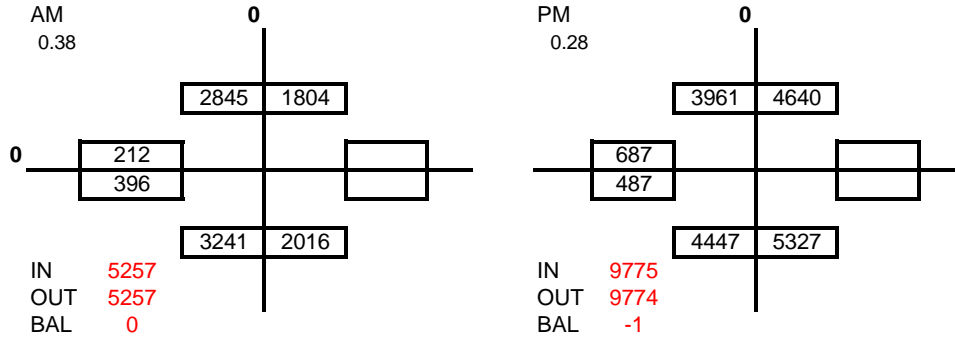


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 10  
**North/South Street** Vineyard Ave  
**East/West Street** Jay St

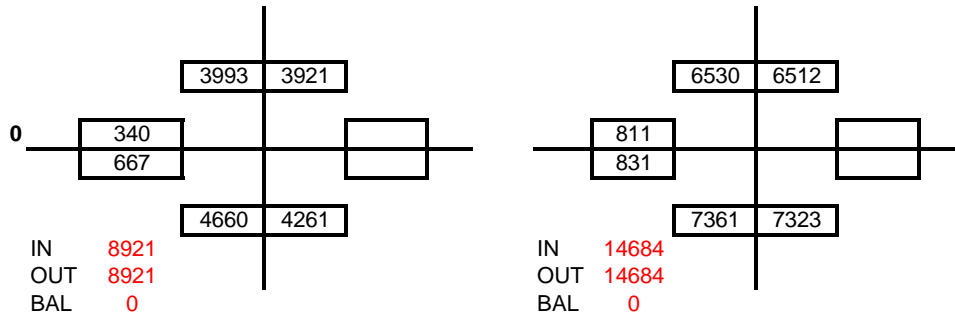
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

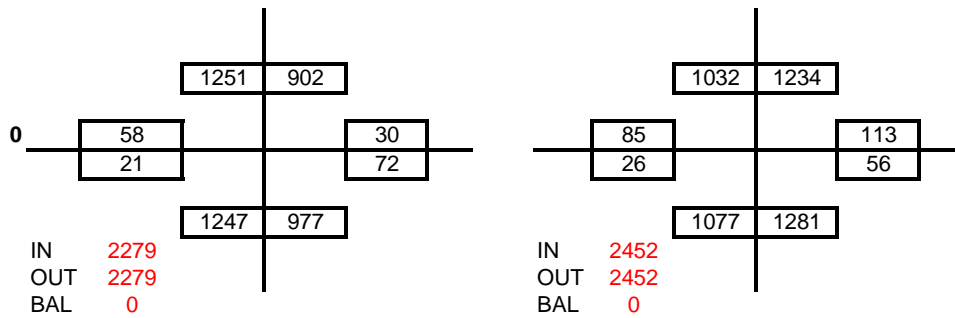
**Model Base Year: 2012**



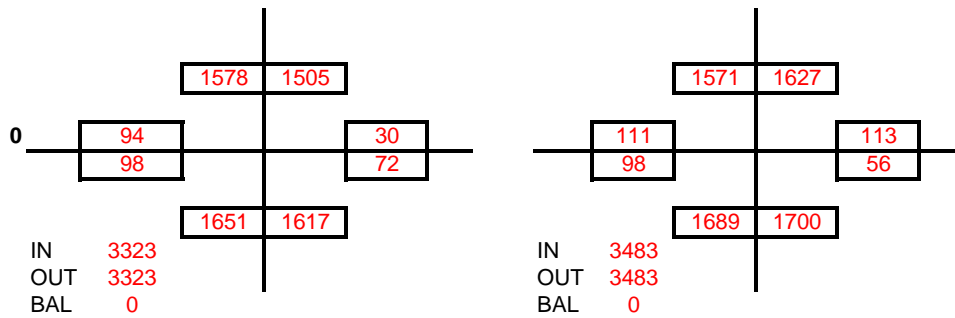
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

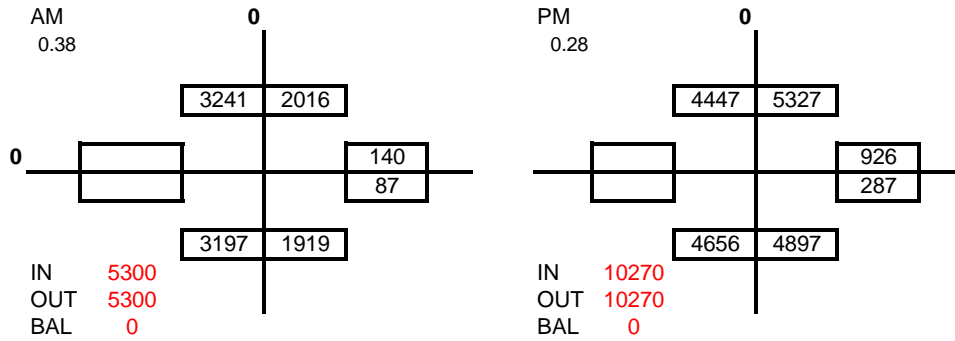


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 11  
**North/South Street** Vineyard Ave  
**East/West Street** Inland Empire Blvd

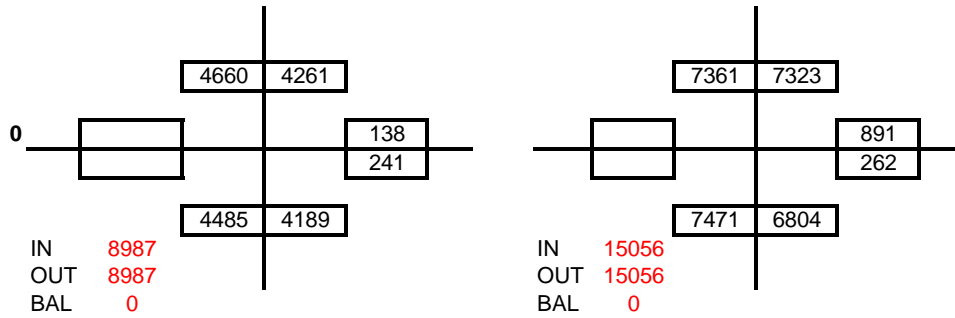
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

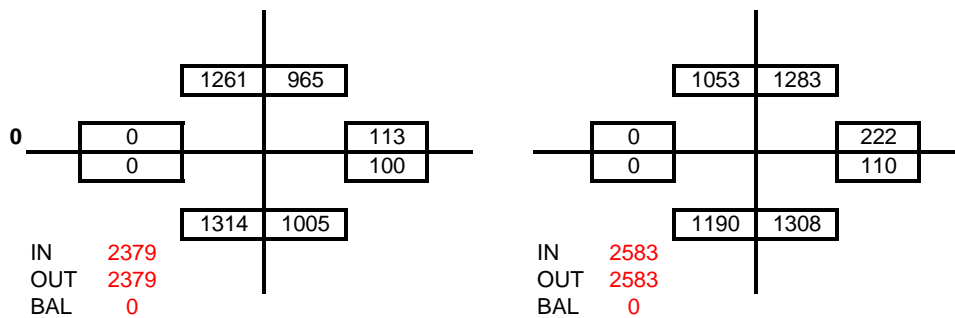
**Model Base Year: 2012**



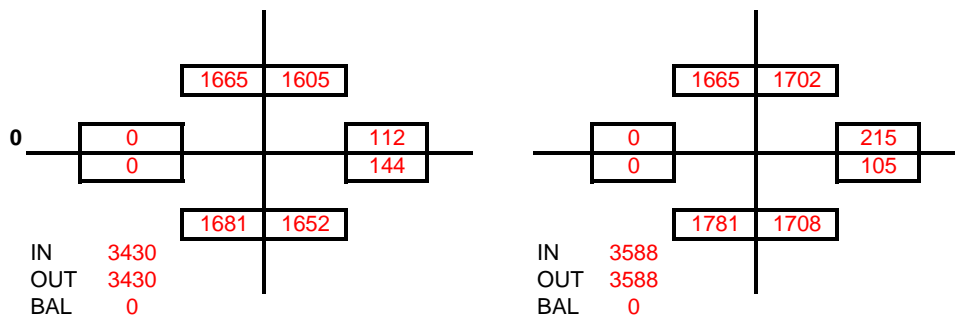
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

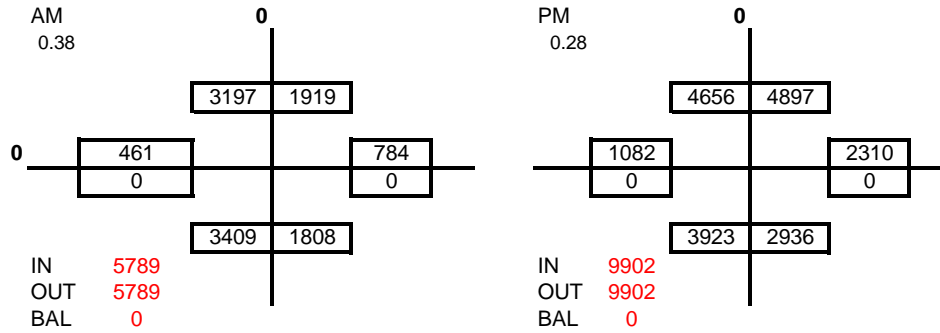


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 12  
**North/South Street** Vineyard Ave  
**East/West Street** I-10 WB Ramps

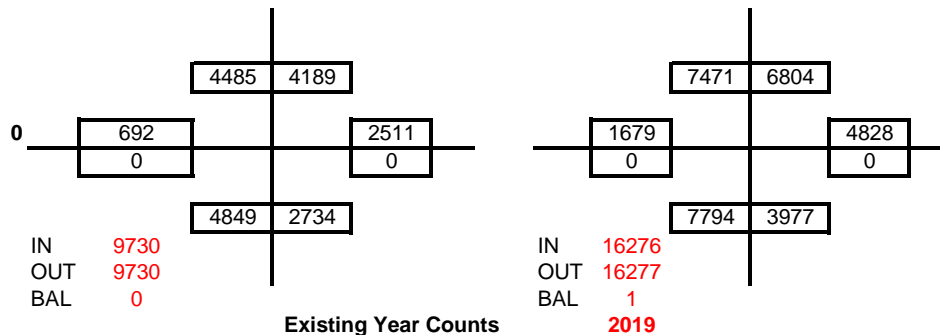
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

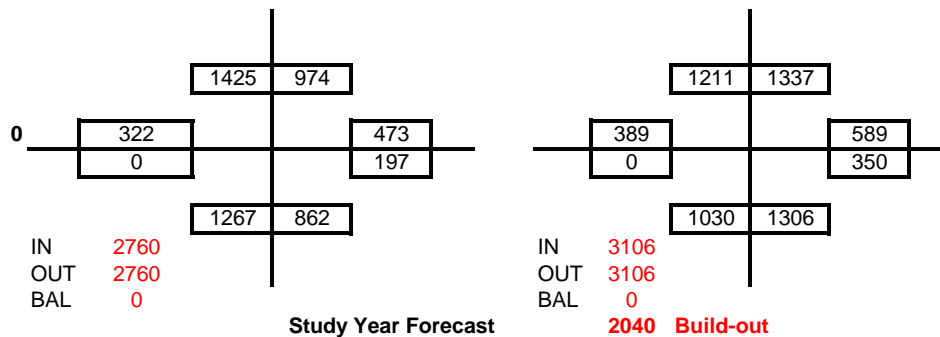
**Model Base Year: 2012**



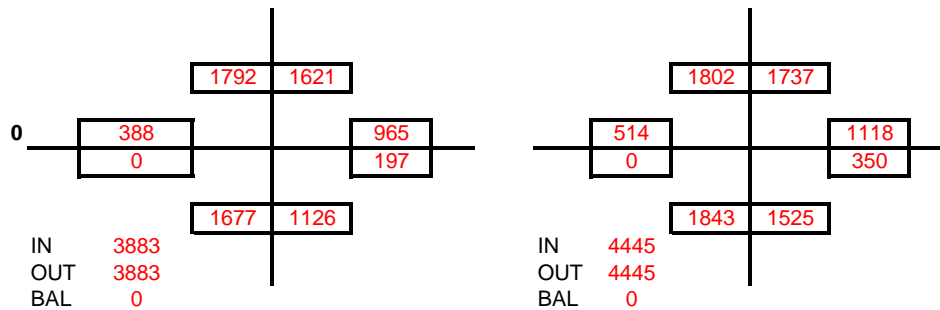
**Model Build-out Year: 2040 Build-out**



**Existing Year Counts**



**Study Year Forecast 2040 Build-out**

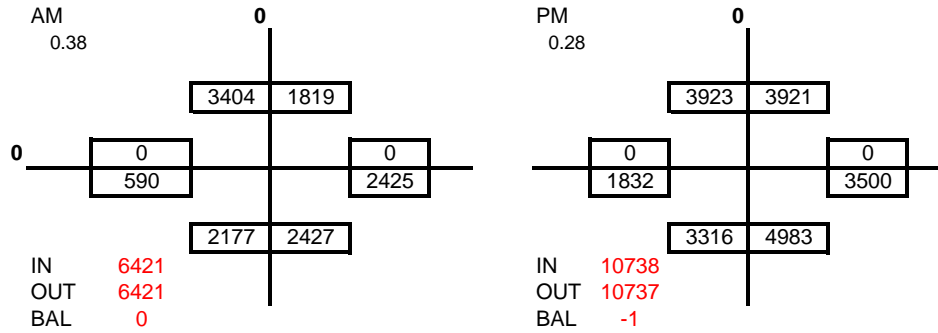


**Project:** RC - 9th and Vineyard  
**Condition:** Build-out  
**Intersection Number:** 13  
**North/South Street** Vineyard Ave  
**East/West Street** I-10 EB Ramps

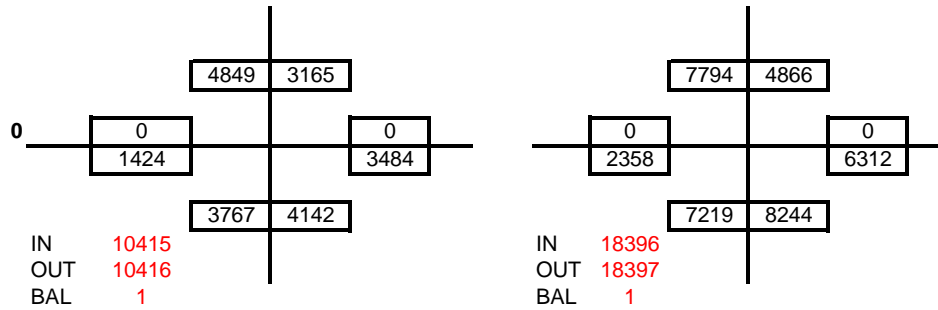
**Model Base Year** 2012  
**Model Build-out Year** 2040  
**Total Difference** 28  
**Existing Year Counts** 2019  
**Difference Ex to B-O** 21  
**Percent** 0.75  
**Study Year Forecast** 2040 Build-out  
**Difference Ex to Forecast** 21

Date: 10/18/19

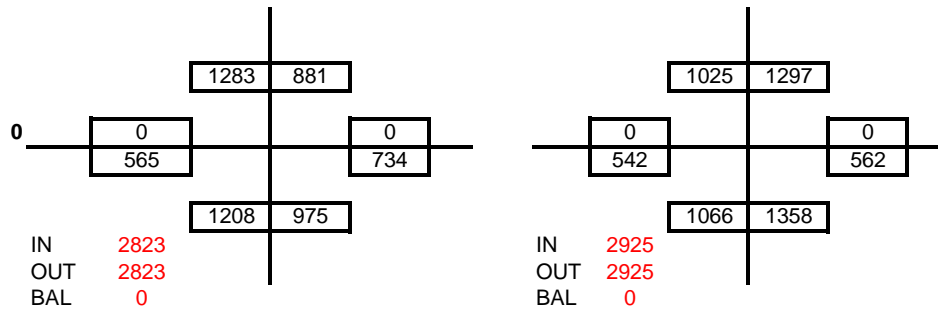
**Model Base Year: 2012**



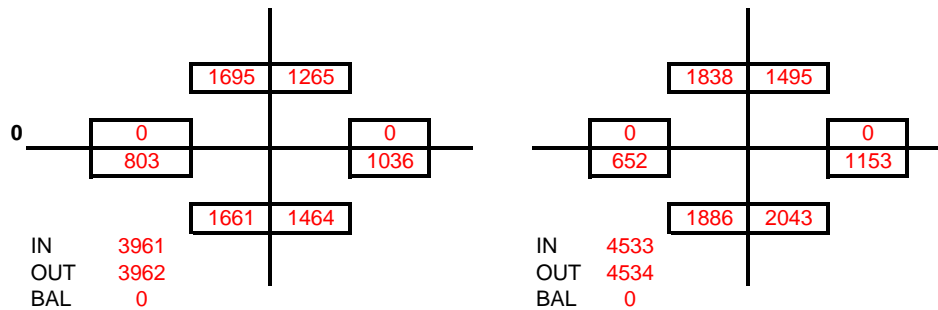
**Model Build-out Year: 2040 Build-out**



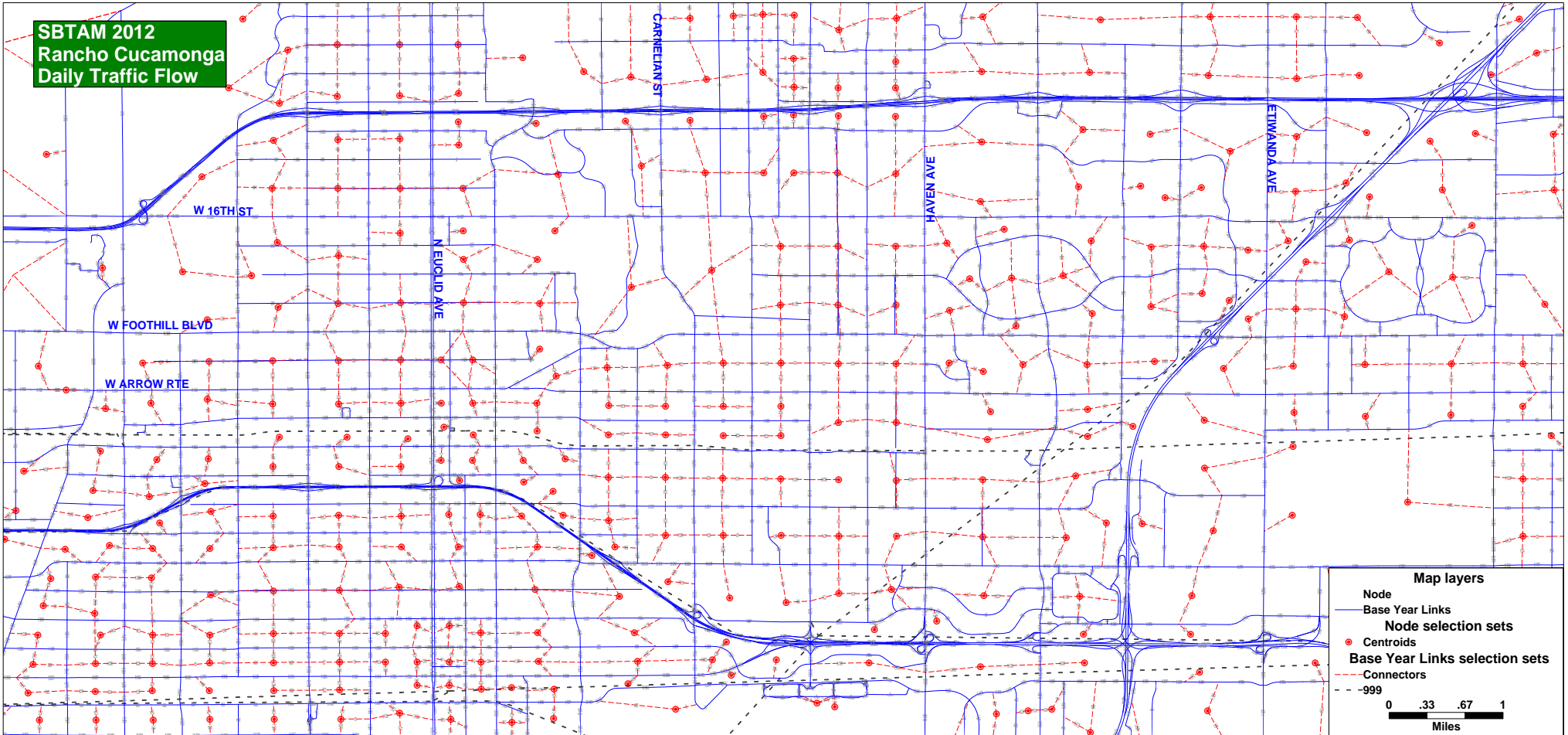
**Existing Year Counts 2019**



**Study Year Forecast 2040 Build-out**

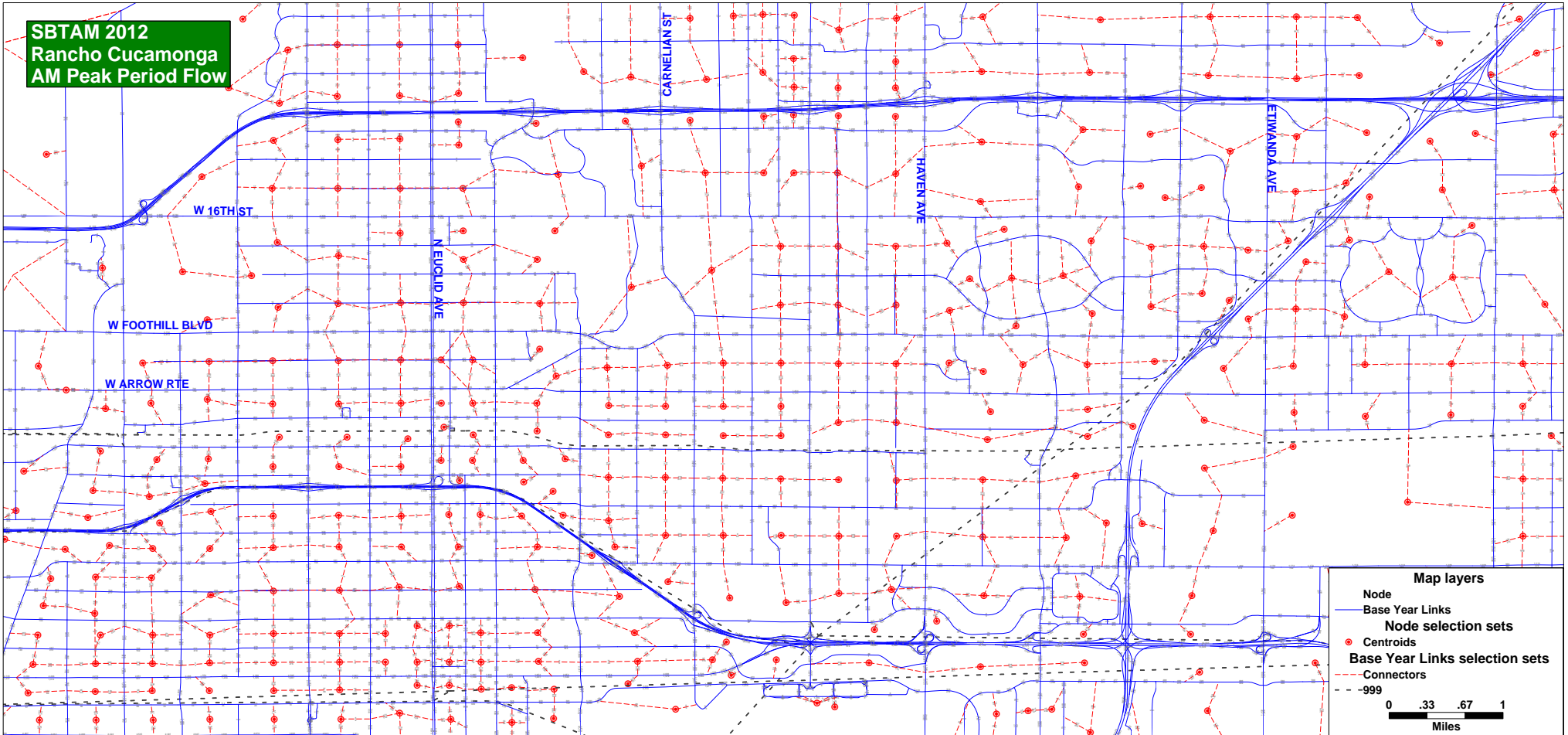


**SBTAM 2012  
Rancho Cucamonga  
Daily Traffic Flow**





**SBTAM 2012  
Rancho Cucamonga  
AM Peak Period Flow**

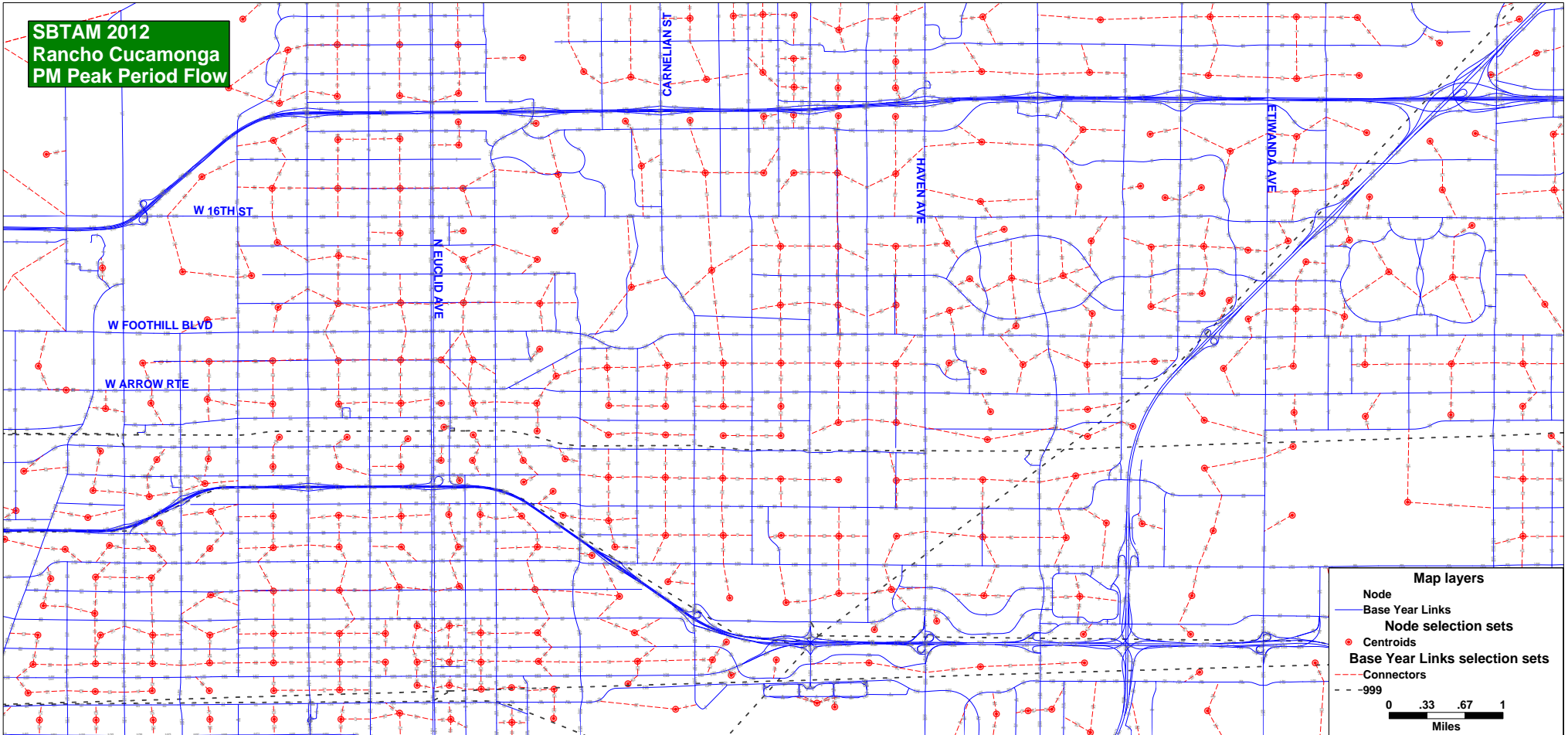


**Map layers**

- Node
- Base Year Links
- Node selection sets
- Centroids
- Base Year Links selection sets
- Connectors
- 999

0 .33 .67 1  
Miles

**SBTAM 2012  
Rancho Cucamonga  
PM Peak Period Flow**

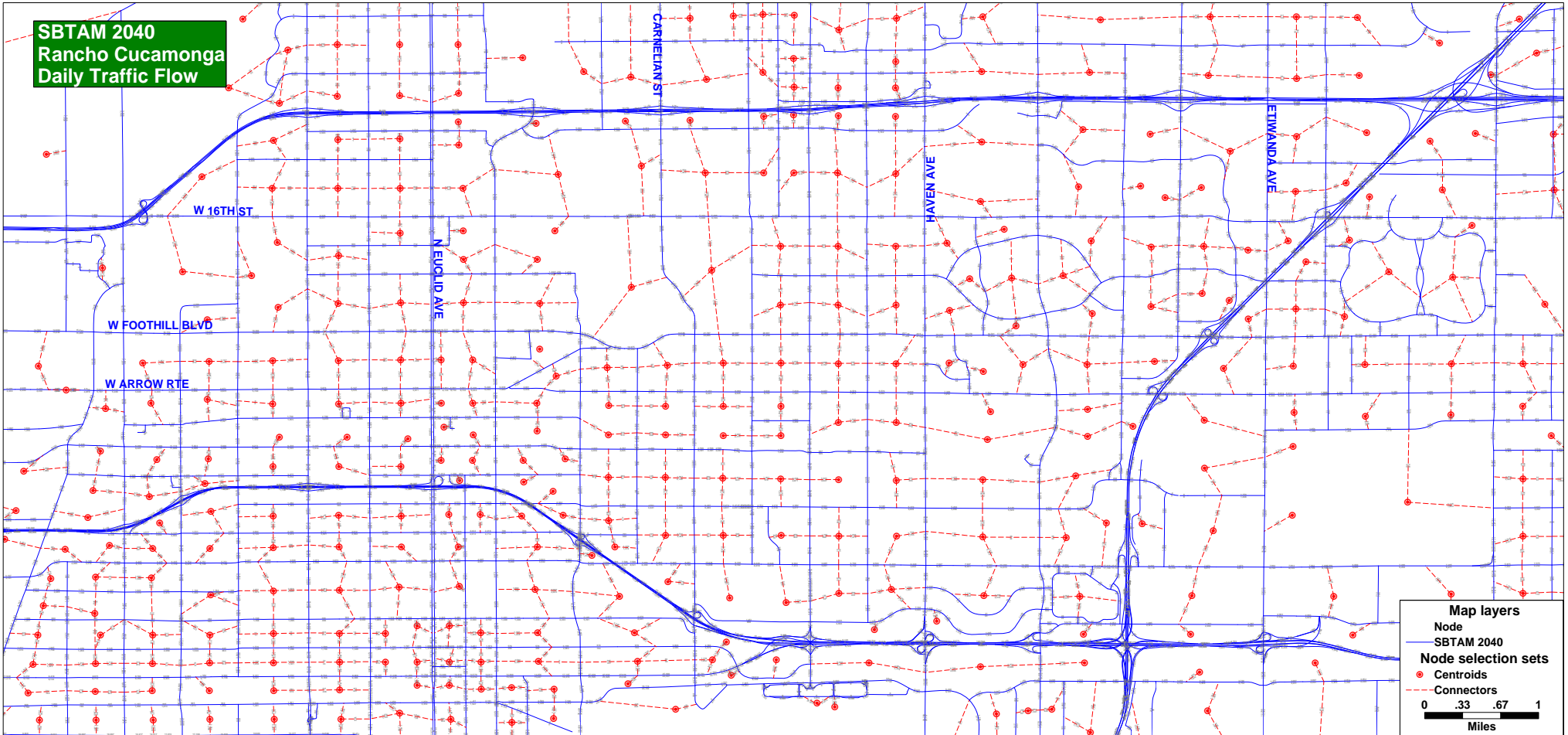


**Map layers**

- Node
- Base Year Links
- Node selection sets
- Centroids
- Base Year Links selection sets
- Connectors
- 999

0 .33 .67 1  
Miles

**SBTAM 2040  
Rancho Cucamonga  
Daily Traffic Flow**

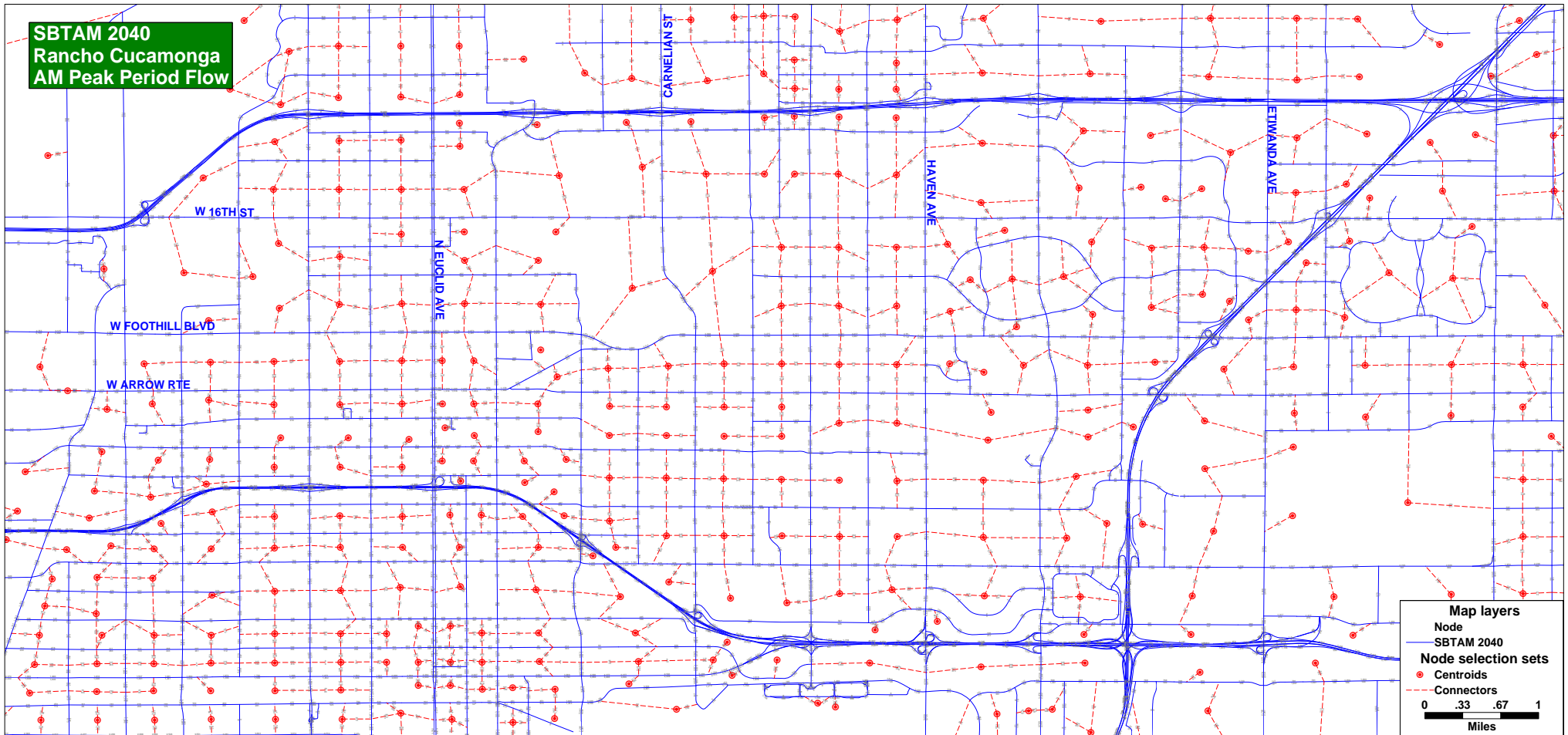


**Map layers**

- Node
- SBTAM 2040
- Node selection sets
- Centroids
- Connectors

0 .33 .67 1  
Miles

**SBTAM 2040  
Rancho Cucamonga  
AM Peak Period Flow**



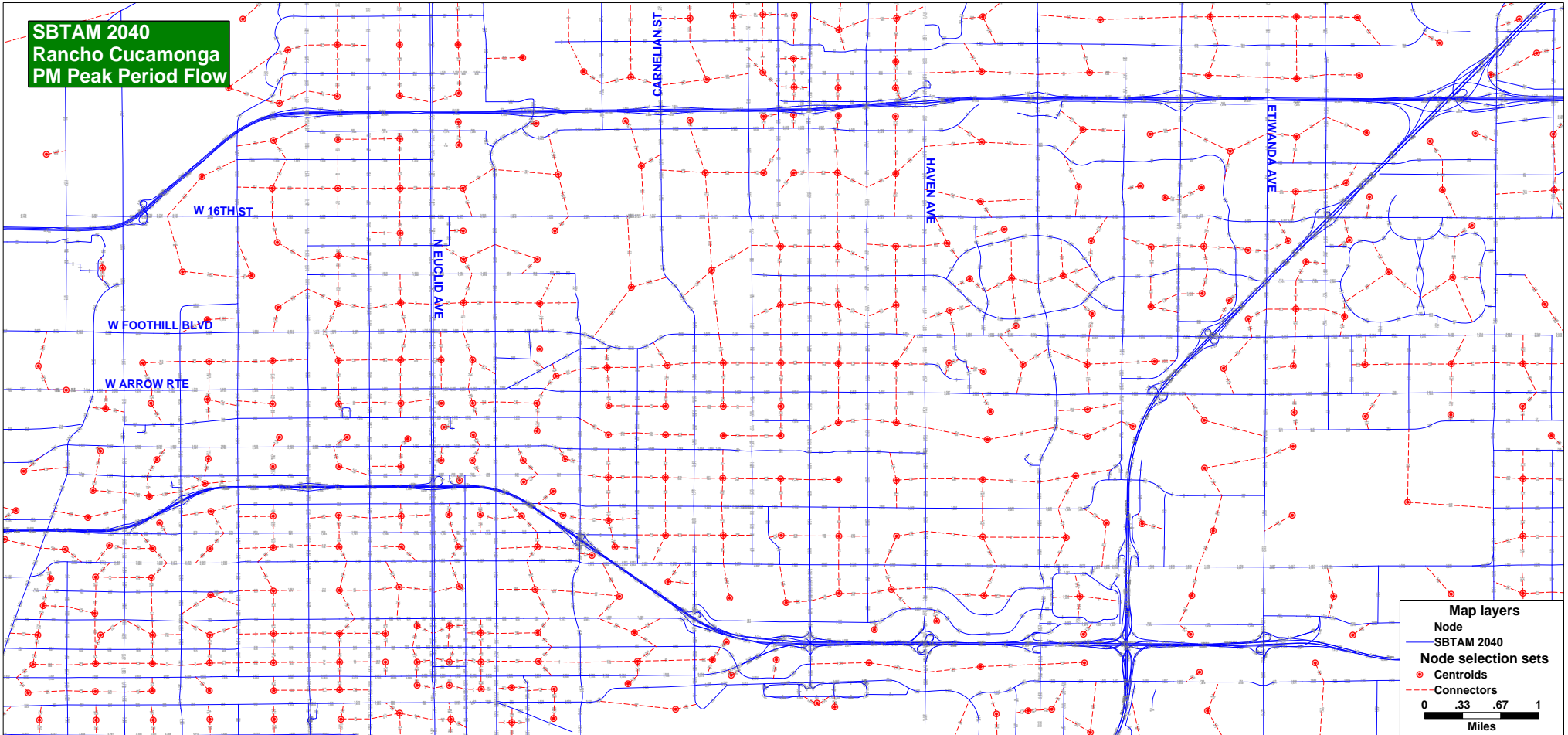
**Map layers**

- Node
- SBTAM 2040
- Node selection sets**
- Centroids
- Connectors

0 .33 .67 1  
Miles



**SBTAM 2040  
Rancho Cucamonga  
PM Peak Period Flow**



**Map layers**

- Node
- SBTAM 2040
- Node selection sets**
- Centroids
- Connectors

0 .33 .67 1  
Miles

# APPENDIX L

## QUEUEING ANALYSIS WORKSHEETS

9th and Vineyard TIA  
Queuing and Blocking Report

Horizon Year with Project  
AM Peak

Intersection: 17: Vineyard Ave & Driveway C

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	77	50
Average Queue (ft)	15	25
95th Queue (ft)	66	62
Link Distance (ft)	351	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

9th and Vineyard TIA  
Queuing and Blocking Report

Horizon Year with Project  
06/02/2021

Intersection: 17: Vineyard Ave & Driveway C

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	29	26
Average Queue (ft)	6	5
95th Queue (ft)	25	22
Link Distance (ft)	352	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		