

MOIOLA PARK RESIDENCES

TRAFFIC IMPACT ANALYSIS

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1 EXECUTIVE SUMMARY

This Traffic Impact Analysis (TIA) evaluates the potential transportation-related impacts of the proposed Moiola Park Residences (proposed project). The project would replace the Fred Moiola Elementary School (closed since June 2012) with 74 new single-family residential dwelling units. Access to the project site would be provided from two driveways on Finch Avenue. Four of the proposed residences would be accessed directly from Finch Avenue and the rest of the residences would be accessed by the proposed on-site roadways. In addition, the existing pedestrian bridge over the OCFD channel to the southeastern portion of the site would remain to continue to provide non-vehicular access to and through the project site. Based on the Institute of Transportation Engineers, *Trip Generation* 10th Edition vehicle trip generation rates, the project would generate approximately 699 daily trips including 55 trips during the AM peak hour and 73 trips during the PM peak hour.

Seven study area intersections were evaluated during the AM and PM peak hours, which are defined as the hours with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Conditions
- Existing plus Project Conditions
- Opening Year Baseline (Project Completion Year 2023)
- Opening Year plus Project

Existing traffic conditions were evaluated based on new traffic counts conducted at the existing study area intersections on Wednesday, December 11, 2019. Opening Year Baseline (2023) traffic volumes were developed by applying a growth rate of 2 percent per year to the existing (2019) traffic volumes and adding traffic generated by other approved and pending development projects. A total of four projects in the City of Fountain Valley were included in the Opening Year Baseline.

At the time the traffic counts were taken, the I-405 improvement project was under construction. City staff provided count data from 2017 and requested that the 2017 and 2019 traffic volumes be compared to ensure that the 2019 volumes were not atypical due to the freeway construction project. The 2019 conditions were worse in the am peak hour at both intersections. The PM peak hour showed similar LOS in both 2019 and 2017. Because the 2019 traffic volumes would provide a more conservative analysis than the 2017 volumes, the 2019 condition was used to prepare the traffic analysis.

All the study area intersections currently operate at satisfactory LOS D or better and are forecast to operate at satisfactory LOS in the Opening Year condition. With the addition of project traffic, all intersections would continue to operate with satisfactory LOS in the Existing and Opening Year conditions. No mitigation measures would be required.

A Vehicle Miles Traveled (VMT) analysis was prepared using the methodology and thresholds provided in the City's *Transportation Impact Assessment Guidelines for Land Use Projects in CEQA*

and for General Plan Consistency. The analysis found that the project would not exceed the City's draft thresholds for VMT/SP in the baseline and cumulative conditions. The project's effect on VMT within the City was also evaluated and the project would not exceed the City's draft thresholds. Based on the VMT analysis, the project would not have a significant impact on VMT/SP in the baseline and cumulative conditions.

2 INTRODUCTION

This Traffic Impact Analysis (TIA) has been prepared by EPD Solutions, Inc. (EPD) to analyze the potential transportation-related impacts of the proposed Moiola Park Residences (proposed project). The scope of work for this TIA was reviewed and approved by the City of Fountain Valley and is provided in Appendix A. The TIA was prepared according to the approved scope of work using methodologies and significance criteria consistent with the draft *City of Fountain Valley Transportation Impact Assessment Guidelines for Land Use Projects in CEQA and for General Plan Consistency*, the City of Fountain Valley General Plan, and applicable provisions of the California Environmental Quality Act (CEQA).

2.1 Project Description

The proposed project is located on an approximately 13-acre site at 9790 Finch Avenue in the City of Fountain Valley. The location of the project is shown in Figure 1 - Project Location, and the project site plan is shown in Figure 2 – Project Site Plan. The project site was previously utilized as the Fred Moiola Elementary School site. The project site is developed with 40,073 square feet of school buildings including four classroom buildings, each with six classrooms, a central multipurpose room, one administrative building, three restroom/custodial pods, three modular classrooms, paved play areas, and parking lots. The school site is currently unoccupied. The Fred Moiola school closed in June 2012 and then a private school—LePort Montessori—occupied the site until it closed this location at the end of the 2018 school year.

The project proposes to remove the existing on-site structures and construct 74 new single-family residential dwelling units. Access to the project site would be provided from two driveways on Finch Avenue. Four of the proposed residences would be accessed directly from Finch Avenue and the rest of the residences would be accessed by the proposed on-site roadways. In addition, the existing pedestrian bridge over the OCFD channel to the southeastern portion of the site would remain to continue to provide non-vehicular access to and through the project site.

Figure 1: Project Location

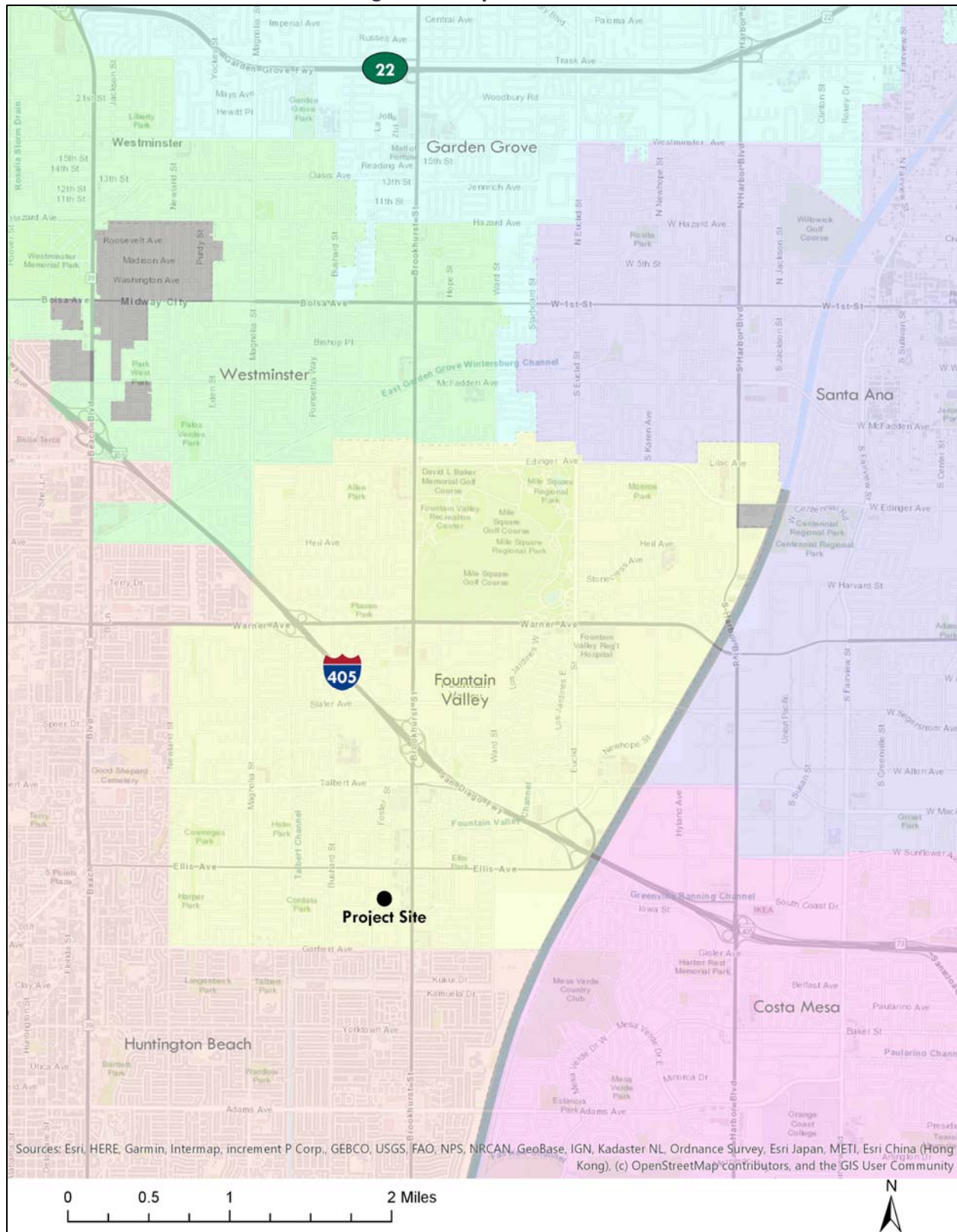


Figure 2: Project Site Plan



2.2 Study Area and Analysis Scenarios

The study area includes two signalized intersections and five unsignalized intersections that would serve project traffic. The following intersections were included in the analysis:

1. Bushard Street/Ellis Avenue
2. Redwood Street/Starling Avenue
3. Redwood Street/Finch Avenue
4. Redwood Street/Robin Avenue
5. Brookhurst Street/Ellis Avenue
6. Bushard Street/Starling Avenue
7. Hawthorn Street/Ellis Avenue

The location of the study area intersections is shown on Figure 3 – Project Study Area.

Study area intersections were evaluated during the AM and PM peak hours, which are defined as the hour with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Conditions
- Existing plus Project Conditions
- Cumulative Baseline (Project Completion Year 2023)
- Cumulative plus Project

Forecast traffic volumes for the Opening Year conditions were developed by applying a growth rate of 2 percent per year to the existing traffic counts and adding traffic from nearby cumulative development projects (approved and not yet build and those under review). Cumulative projects were provided by the City of Westminster Planning Department and are included in the Cumulative analysis.

Figure 3: Project Study Area

2.3 Methodology

Intersection operations are evaluated using Level of Service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating conditions. LOS F is an extremely congested condition and is the worst operating condition from the driver's perspective. In this report, LOS at signalized intersections is calculated using the Intersection Capacity Utilization (ICU) methodology, while LOS at unsignalized intersections is calculated using the Highway Capacity Manual (HCM), 6th Edition methodology.

The ICU methodology is a planning-level operational methodology and provides an estimate of the volume to capacity (v/c) ratio at a signalized intersection. The overall v/c ratio for the intersection is the sum of the individual v/c ratio for each critical movement, plus an additional factor for the clearance interval (yellow plus all red time). The ICU calculations for this analysis utilize a lane capacity of 1,700 vehicles per hour per lane and a clearance interval of 5 seconds. The LOS at the intersection is determined according to the values shown in Table 1.

Table 1. Relationship between ICU and LOS

LOS	ICU (V/C Ratio)
A	≤ 0.60
B	$0.61 \text{ to } \leq 0.70$
C	$0.71 \text{ to } \leq 0.80$
D	$0.81 \text{ to } \leq 0.90$
E	$0.91 \text{ to } \leq 1.00$
F	>1.00

Unsignalized intersections are categorized as either all-way stop control (AWSC) or two-way stop control (TWSC). For TWSC intersections, LOS is determined based on the delay for each minor-street movement, as well as the major-street left-turns. At AWSC intersections, LOS is determined based on the average delay per vehicle. The relationship between delay and LOS at unsignalized intersections is shown in Table 2.

Table 2. Relationship between Delay and LOS an Unsignalized Intersection

LOS	Delay (seconds)
A	0-10
B	$>10 - 15$
C	$>15 - 25$
D	$>25 - 35$
E	$>35 - 50$
F	>50

2.4 Significance Criteria

The City of Fountain Valley General Plan Circulation Element identifies LOS D as the worst-acceptable operating level for City roadway facilities. An impact would occur if the project causes:

- An intersection operating at an acceptable LOS to degrade to an unacceptable LOS; or
- The project causes an increase of 0.01 or greater at an intersection already operating at unacceptable LOS E or F.

3 BASELINE CONDITIONS

This section discusses the baseline (without project) conditions. Baseline conditions are those conditions that exist within the study area in the existing condition and that are forecast to occur in the future, without the proposed project.

3.1 Existing Transportation System

Arterials providing access to the project site include Bushard Street, Ellis Avenue and Brookhurst Street. Residential streets serving the project include Finch Avenue, Redwood Street, Starling Avenue and Robin Avenue. The characteristics of each roadway are discussed below:

- Bushard Street and Ellis Avenue are classified as a Secondary Arterials in the City's General Plan Circulation Element. Both streets are four-lane undivided roadways with a posted speed limit of 45 MPH. There are Class II on-road striped bike lanes along Bushard Street and Ellis Avenue. Both roadways have sidewalks on both sides of the roadway, except for Ellis Avenue between Starling Avenue and Robin Avenue, where there is a frontage road along the east side of the street.
- Brookhurst Street is classified as a Major Arterial and as a Designated Truck Route in the City's General Plan Circulation Element. Brookhurst Street is a six-lane divided roadway with a posted speed limit of 45 MPH. There are sidewalks on both sides of the roadway. Transit service is provided along Brookhurst Street by OCBus Route 35.
- Finch Avenue, Redwood Street, Starling Avenue and Robin Avenue are all residential roadways with a speed limit of 25 mph. Sidewalks and residential driveways are present on both sides of these roadways.

3.2 Existing Traffic Volumes and Levels of Service

Traffic counts at the existing study area intersections shown in Figure 3 – Project Study Area, were collected on Wednesday, December 11, 2019. The intersection traffic counts were taken on typical weekdays when schools were in session. The City requested the addition of Bushard Street/Starling Avenue and Hawthorn Street/Ellis Avenue after the Covid-19 stay at home order began. Therefore, it was not possible to collect counts at these intersections. Instead, existing traffic volumes were extrapolated using the existing traffic counts at Bushard Street/Ellis Avenue and Redwood Street/Starling Avenue. All traffic count sheets are provided in Appendix B. Existing AM and PM peak hour traffic volumes are shown on Figure 4 – Baseline AM and PM peak Hour Traffic Volumes.

At the time the traffic counts were taken, the I-405 improvement project was under construction. City staff provided count data from 2017 and requested that the 2017 and 2019 traffic volumes be compared to ensure that the 2019 volumes were not atypical due to the freeway construction project.

The existing Levels of Service at the study area intersections were determined using the methodology described in section 2.3. Table 3 shows the existing AM and PM peak hour levels of service at study intersections. LOS for both 2017 and 2019 conditions is included for the intersections of Bushard Street/Ellis Avenue and Brookhurst Street/Ellis Avenue. The results showed that the 2019 conditions were worse in the am peak hour at both intersections. The PM peak hour

showed similar LOS in both 2019 and 2017. Because the 2019 traffic volumes would provide a more conservative analysis than the 2017 volumes, the remainder of this traffic analysis is prepared using the 2019 traffic conditions, as shown in Figure 4 and Table 3. All LOS calculations are provided in Appendix C. As shown in Table 3, all intersections operate at satisfactory LOS C or better in the existing condition.

Figure 4: Baseline AM and PM Peak Hour Traffic Volumes



Table 3. Existing AM and PM Peak Hour Levels of Service

Intersection	Signal Control	AM Peak		PM Peak	
		ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²
1. Bushard St/Ellis Ave (2019)	Signal	0.619	B	0.625	B
Bushard St/Ellis Ave (2017)	Signal	0.580	A	0.641	B
2. Redwood St/Starling Ave	TWSC	8.6	A	8.7	A
3. Redwood St/Finch Ave	TWSC	8.5	A	8.9	A
4. Redwood St/Robin Ave	AWSC	6.9	A	7.2	A
5. Brookhurst St/Ellis Ave (2019)	Signal	0.708	C	0.769	C
Brookhurst St/Ellis Ave (2017)	Signal	0.662	B	0.739	C
6. Bushard St/Starling Ave	TWSC	12.2	B	20.1	C
7. Hawthorn St/Ellis Ave	TWSC	19.8	C	15.5	C

TWSC = Two-Way Stop Controlled, AWSC = All-Way Stop Controlled

¹ ICU in Volume/Capacity Ratio, Delay in Seconds² Level of Service

3.3 Opening Year Baseline (2023) Traffic Volumes and LOS

Opening Year Baseline (2023) traffic volumes were developed by applying a growth rate of 2 percent per year to the existing (2019) traffic volumes and adding traffic generated by other approved and pending development projects. A total of four projects in the City of Fountain Valley were included in the Opening Year Baseline. The locations of the cumulative projects are shown in Figure 5 – Location of Cumulative Projects. The project trip generation for each cumulative project was calculated using trip rates from the Institute of Transportation Engineers, *Trip Generation*, 10th Edition. Table 4 shows the trip generation for each cumulative project.

The traffic volumes generated by the cumulative projects were distributed to the study area intersections and are illustrated in Figure 6 – Cumulative Projects Trip Assignment. As noted in Section 2.2 – Study Area and Analysis Scenarios, forecast traffic volumes for the Cumulative Baseline condition were developed by applying a growth rate of 2 percent per year to the 2019 traffic counts and adding traffic from cumulative projects. The Opening Year Baseline traffic volumes were illustrated in Figure 5 – Baseline AM and PM Peak Hour Traffic Volumes.

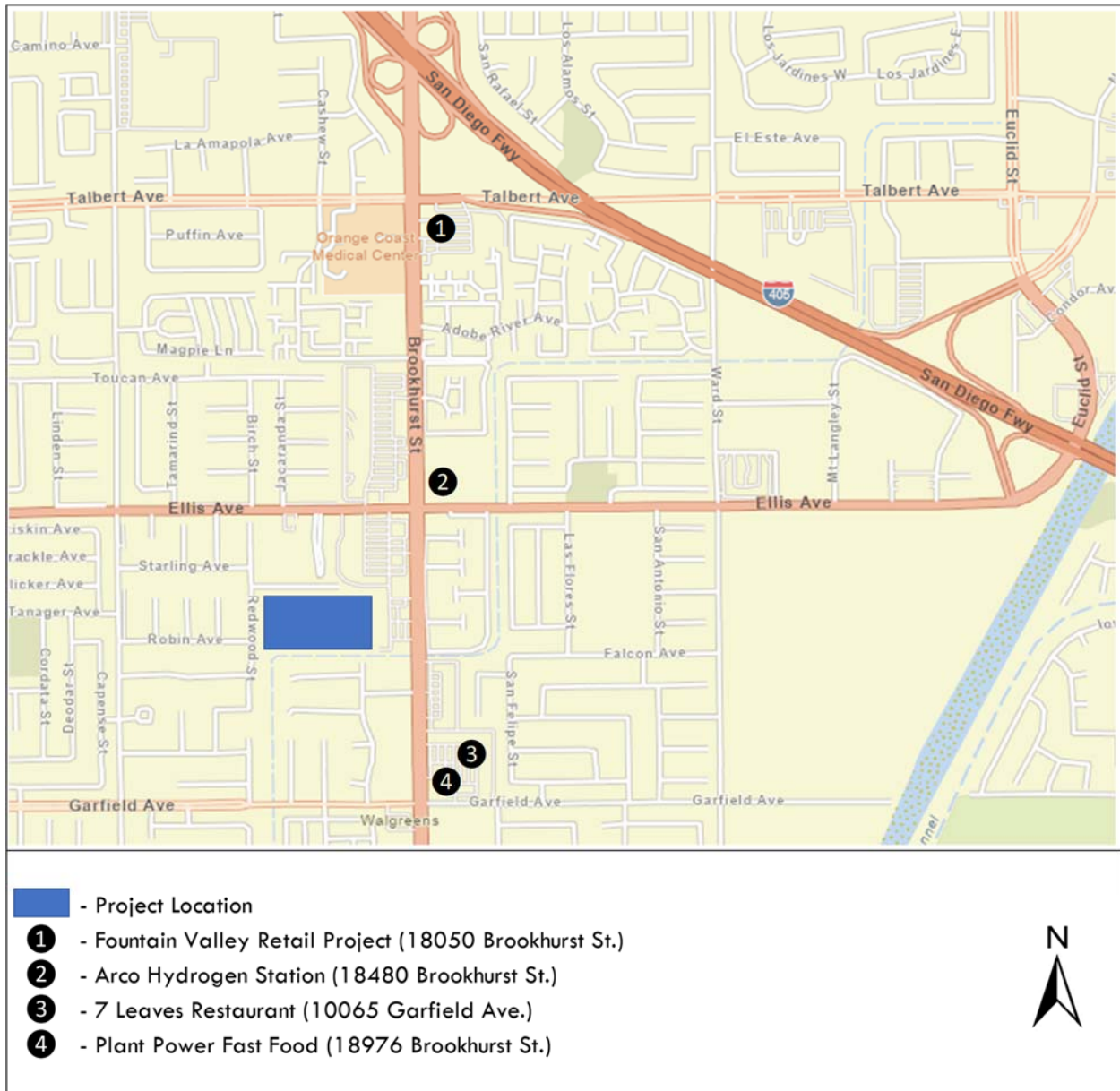
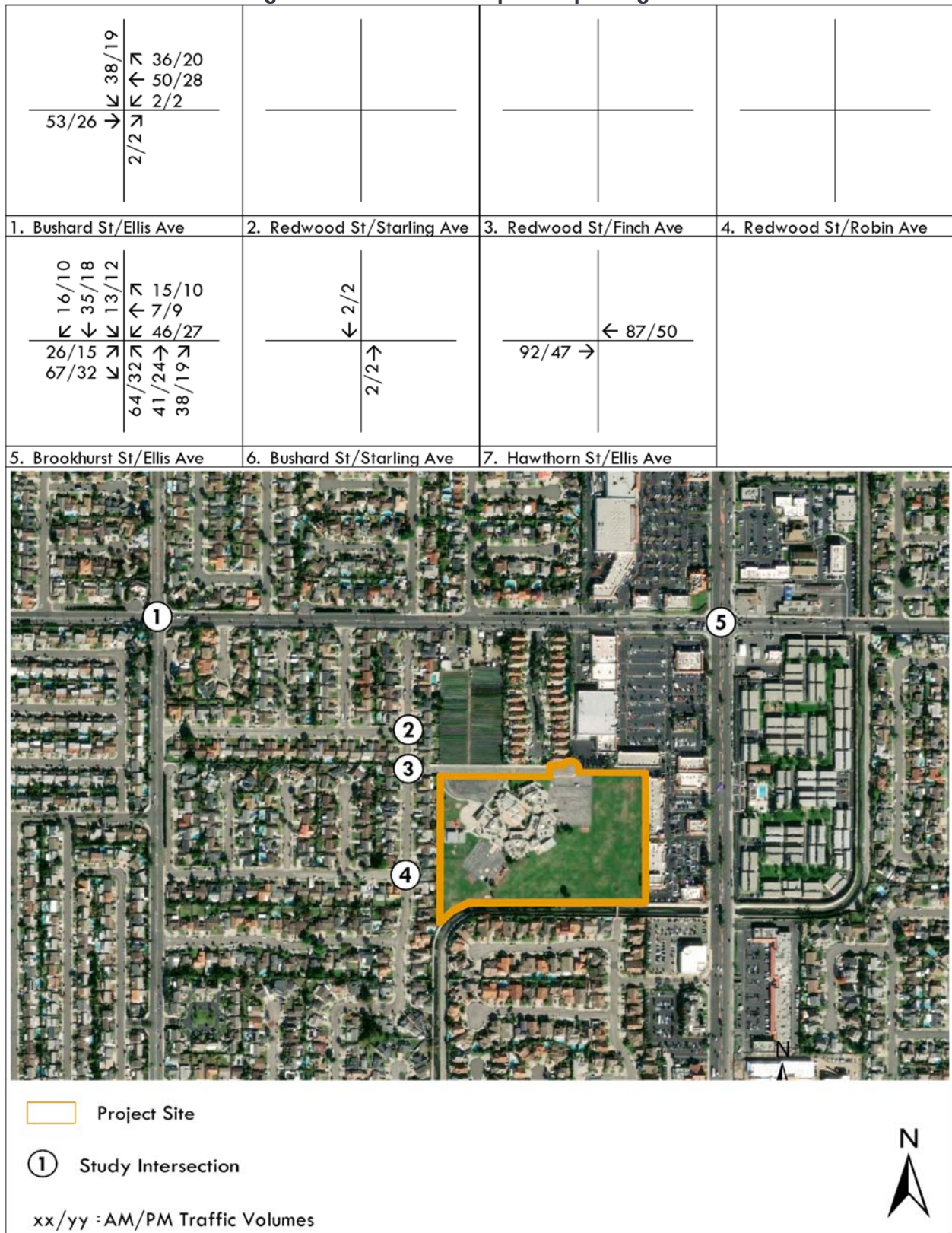
Figure 5: Location of Cumulative Projects**Moiola Park Residences**

Table 4. Cumulative Projects Trip Generation

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<u>Trip Rates</u>								
High-Turnover (Sit-Down) Restaurant ¹	TSF	112.18	5.47	4.47	9.94	6.06	3.71	9.77
Bank ²	TSF	12.13	11.72	10.82	22.54	13.46	12.94	26.40
Office ³	TSF	9.74	1.00	0.16	1.16	0.18	0.97	1.15
Gasoline/Service Station ⁴	VFP	172.01	5.14	5.14	10.28	7.02	7.02	14.03
Coffee/Donut Shop with Drive-Through ⁵	TSF	820.38	45.38	43.61	88.99	21.69	21.69	43.38
Fast-Food Restaurant with with Drive-Through ⁶	TSF	820.38	45.38	43.61	88.99	21.69	21.69	43.38
<u>Project Trip Generation</u>								
<i>Fountain Valley Retail Project (18050 Brookhurst St.)</i>								
Existing Claim Jumper Restaurant	(11,601) TSF	(1,301)	-	-	-	(70)	(43)	(113)
Proposed Restaurant	5,535 TSF	621	30	25	55	34	21	54
Proposed Bank	5,015 TSF	61	59	54	113	68	65	132
Proposed Office	5,335 TSF	52	5	1	6	1	5	6
	Total	(568)	94	80	174	32	48	79
<i>Arco Hydrogen Station (18480 Brookhurst St.)</i>								
Proposed Hydrogen Station	4,000 VFP	688	21	21	41	28	28	56
<i>7 Leaves Restaurant (10065 Garfield Ave.)</i>								
Coffee Shop with Drive-Through	3,576 DU	2,934	162	156	318	78	78	155
<i>Plant Power Fast Food (18976 Brookhurst St.)</i>								
Fast-Food Restaurant with Drive-Throug	2,300 DU	1,887	104	100	205	50	50	100
Total Trip Generation		4,373	382	357	738	187	203	390
TSF = Thousand Square Feet, VFP = Vehicle Fueling Positions								
¹ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 932 High-Turnover (Sit-Down) Restaurant.								
² Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 911 Walk-in Bank.								
³ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 710 General Office Building.								
⁴ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 944 Gasoline/Service Station.								
⁵ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 937 Coffee/Donut Shop with Drive-Through Window.								
⁶ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 934 Fast-Food Restaurant with Drive-Through Window.								

Figure 6: Cumulative Projects Trip Assignment



The Cumulative Baseline levels of service (LOS) at the four existing study area intersections were determined using the methodology described previously in Section 2.3 - Methodology. Table 5 shows the Cumulative Baseline AM and PM peak hour levels of service at study intersections. As shown in Table 5, all study area intersections would continue to operate at satisfactory LOS during the AM and PM peak hours in the Opening Year Baseline condition.

Table 5. Opening Year Baseline AM and PM Peak Hour Levels of Service

Intersection	Signal Control	AM Peak		PM Peak	
		ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²
1. Bushard St/Ellis Ave	Signal	0.704	C	0.697	B
2. Redwood St/Starling Ave	TWSC	8.6	A	8.7	A
3. Redwood St/Finch Ave	TWSC	8.6	A	9.0	A
4. Redwood St/Robin Ave	AWSC	6.9	A	7.2	A
5. Brookhurst St/Ellis Ave	Signal	0.810	D	0.848	D
6. Bushard St/Starling Ave	TWSC	12.9	B	24.7	C
7. Hawthorn St/Ellis Ave	TWSC	26.1	D	17.6	C

TWSC = Two-Way Stop Controlled

¹ ICU in Volume/Capacity Ratio, Delay in Seconds

² Level of Service

4 PROPOSED PROJECT

4.1 Project Description and Project Access

As described in Section 2.1 – Project Description, the proposed project would remove the existing on-site structures and construct 74 new single-family residential dwelling units. Access to the project site would be provided from two driveways on Finch Avenue. Four of the proposed residences would be accessed directly from Finch Avenue and the rest of the residences would be accessed by the proposed on-site roadways. In addition, the existing pedestrian bridge over the OCFD channel to the southeastern portion of the site would remain to continue to provide non-vehicular access to and through the project site.

4.2 Project Trip Generation

The project trip generation was calculated using trip rates from the Institute of Transportation Engineers, *Trip Generation 10th Edition*, 2017. As shown in Table 1, the project would generate approximately 699 daily trips including 55 trips during the AM peak hour and 73 trips during the PM peak hour.

Table 6. Project Trip Generation

Land Use			Units	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
<u>Trip Rates</u>										
Single Family Detached Housing ¹			DU	9.440	0.185	0.555	0.740	0.624	0.366	0.990
<u>Project Trip Generation</u>										
Dwelling Units			74 DU	699	14	41	55	46	27	73
Total Trip Generation				699	14	41	55	46	27	73
TSF = Thousand Square Feet										
¹ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 210 Single-Family Detached Housing.										

4.3 Project Trips

The project trips were distributed to the surrounding roadways based on the location of the project in relation to local and regional land uses and transportation facilities. Approximately 40 percent of trips would travel north, and 25 percent would travel south on Bushard Street and Brookhurst Street, 25 percent would travel east on Ellis Avenue and 10 percent would travel west on Ellis Avenue. Project trips were assigned to the study area intersections by multiplying the net project trip generation by the trip distribution percent at each location. The project trip distribution and assignment are shown in Figure 7 – Project Trip Distribution and Assignment.

Figure 7: Project Trip Distribution and Assignment

5 PROJECT IMPACTS

5.1 Existing Plus Project Traffic Volumes and Intersection Operations

Existing plus Project traffic volumes were determined by adding the project trips to Existing Without Project traffic volumes. Figure 8 – With Project AM and PM Peak Hour Traffic Volumes, shows the Existing plus Project weekday AM and PM peak hour traffic volumes and the Opening Year plus Project weekday AM and PM peak hour traffic volumes at the study intersections.

An intersection operations analysis was conducted for the study area to evaluate the Existing plus Project weekday AM and PM peak hour conditions. Intersection operations were calculated using the LOS methodology described previously in Section 2.3 - Methodology. Table 7 provides a comparison between the Existing Without and With Project conditions.

As shown in Table 7, all of the study area intersections would continue to operate with satisfactory LOS in the Existing condition with addition of traffic from the project. No mitigation measures for existing plus project conditions would be required.

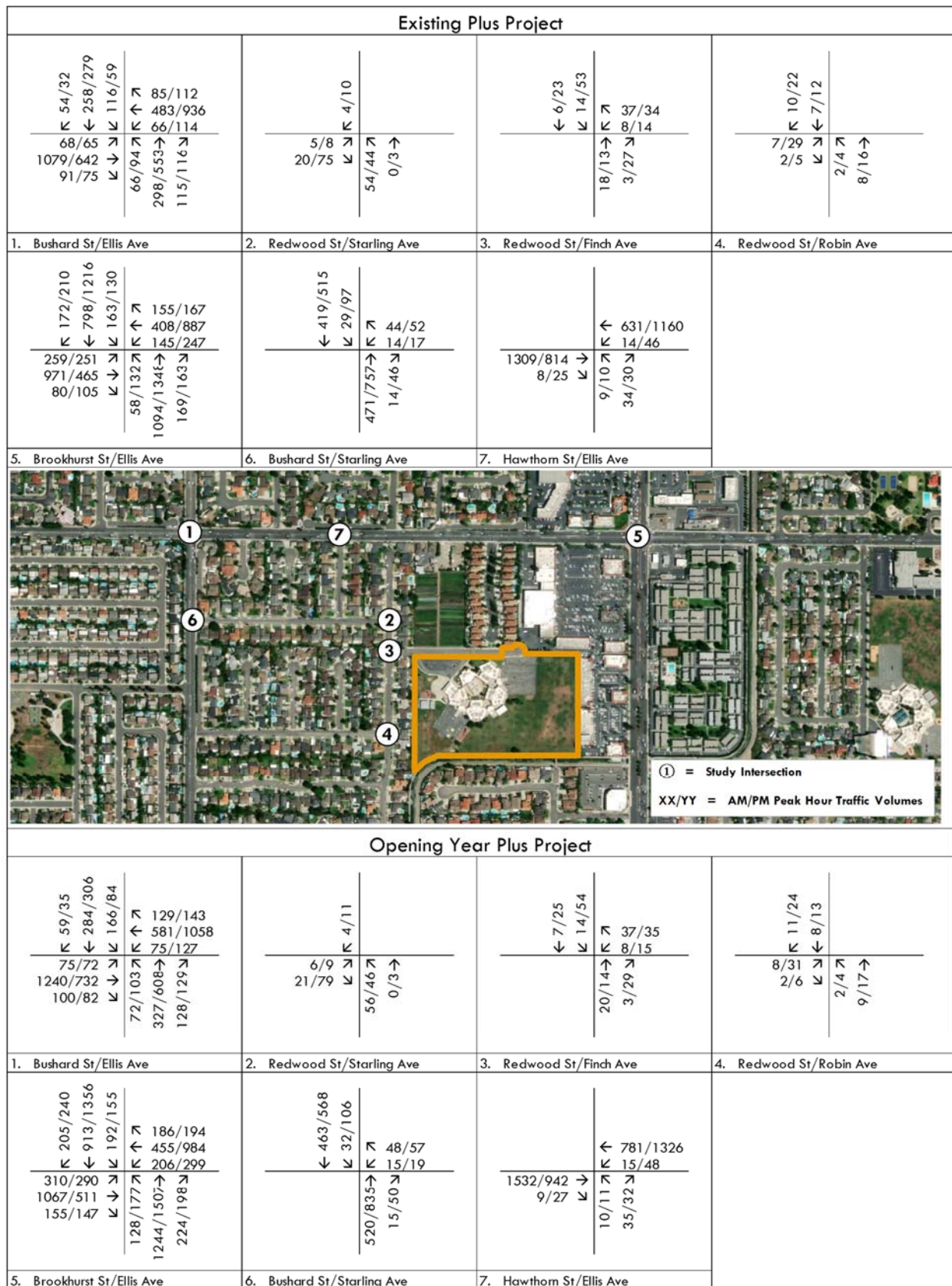
Table 7. Existing Baseline and Existing plus Project Peak Hour Levels of Service

Intersection	Signal Control	Existing				Existing plus Project				Impact?	
		AM Peak		PM Peak		AM Peak		PM Peak		AM	PM
		ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²		
1. Bushard St/Ellis Ave	Signal	0.619	B	0.625	B	0.623	B	0.628	B	No	No
2. Redwood St/Starling Ave	TWSC	8.6	A	8.7	A	8.7	A	8.8	A	No	No
3. Redwood St/Finch Ave	TWSC	8.5	A	8.9	A	8.9	A	9.3	A	No	No
4. Redwood St/Robin Ave	AWSC	6.9	A	7.2	A	6.9	A	7.3	A	No	No
5. Brookhurst St/Ellis Ave	Signal	0.708	C	0.769	C	0.712	C	0.775	C	No	No
6. Bushard St/Starling Ave	TWSC	12.2	B	20.1	C	12.4	B	20.8	C	No	No
7. Hawthorn St/Ellis Ave	TWSC	19.8	C	15.5	C	20.2	C	15.5	C	No	No

TWSC = Two-Way Stop Controlled

¹ ICU in Volume/Capacity Ratio, Delay in Seconds

² Level of Service

Figure 8: With Project AM and PM Peak Hour Traffic Volumes

5.2 Opening Year Plus Project Traffic Volumes and Intersection Operations

Opening Year plus Project traffic volumes were determined by adding the project trips to Opening Year Without Project traffic volumes. Figure 8 – With Project AM and PM Peak Hour Traffic Volumes, shows the Existing plus Project weekday AM and PM peak hour traffic volumes and the Opening Year plus Project weekday AM and PM peak hour traffic volumes at the study intersections.

An intersection operations analysis was conducted for the study area to evaluate the Opening Year plus Project weekday AM and PM peak hour conditions. Intersection operations were calculated using the LOS methodology described previously in Section 2.3 - Methodology. Table 8 provides a comparison between the Opening Year Without and With Project conditions.

As shown in Table 8, all the study area intersections would continue to operate with satisfactory LOS in the Opening Year conditions with addition of traffic from the project. No mitigation measures for Opening Year plus Project conditions would be required.

Table 8. Opening Year Baseline and Opening Year plus Project Peak Hour Levels of Service

Intersection	Signal Control	Opening Year				Opening Year plus Project				Impact?	
		AM Peak		PM Peak		AM Peak		PM Peak		AM	PM
		ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²	ICU/ Delay ¹	LOS ²		
1. Bushard St/Ellis Ave	Signal	0.704	C	0.697	B	0.707	C	0.700	C	No	No
2. Redwood St/Starling Ave	TWSC	8.6	A	8.7	A	8.7	A	8.9	A	No	No
3. Redwood St/Finch Ave	TWSC	8.6	A	9.0	A	8.9	A	9.4	A	No	No
4. Redwood St/Robin Ave	AWSC	6.9	A	7.2	A	6.9	A	7.3	A	No	No
5. Brookhurst St/Ellis Ave	Signal	0.810	D	0.848	D	0.813	D	0.854	D	No	No
6. Bushard St/Starling Ave	TWSC	12.9	B	24.7	C	13.2	B	26.1	D	No	No
7. Hawthorn St/Ellis Ave	TWSC	26.1	D	17.6	C	26.1	D	17.7	C	No	No

TWSC = Two-Way Stop Controlled

¹ ICU in Volume/Capacity Ratio, Delay in Seconds

² Level of Service

5.3 SB743 Compliance

Senate Bill 743, which was codified in Public Resources Code section 21099, was signed by the Governor in 2013 and directed the Governor's Office of Planning and Research (OPR) to identify alternative metrics for evaluating transportation impacts under CEQA. Pursuant to Section 21099, the criteria for determining the significance of transportation impacts must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Recently adopted changes to the CEQA Guidelines in response to Section 21099 include a new section (15064.3) that specifies that Vehicle Miles Traveled (VMT) is the most appropriate measure of transportation impacts. A separate Technical Advisory issued by OPR provides additional technical details on calculating VMT and assessing transportation impacts for various types of projects.

The City of Fountain Valley has prepared Draft Transportation Impact Assessment Guidelines for Land Use Projects in CEQA and for General Plan Consistency, which include VMT analysis methodology and thresholds. The City's document provides screening thresholds to assess whether further VMT analysis is required based on project location, size, or type. Based on the City's screening thresholds, the project is required to prepare a VMT analysis as the project is not located within a Transit Priority Area or a High-Quality Transit Area, is not located in a low VMT-generating zone, generates more than 110 daily trips, or is not considered to be locally-serving.

The project VMT analysis was prepared using the Orange County Traffic Analysis Model (OCTAM) Version 5. Two types of VMT are forecast: (1) VMT per service population, and (2) the total Citywide VMT within the City. The service population used for the project is population since the project proposes residential and commercial land uses. The City's draft guidelines propose the following thresholds for determining VMT impacts:

- A significant project impact would occur if the project VMT/SP exceeds the City's General Plan Build-Out average VMT/SP.
- A significant cumulative impact would occur if the project VMT/SP exceeds the City's General Plan Build-Out average VMT/SP.
- The project's effect on VMT would be considered significant if it results in an increase in the Citywide VMT under cumulative conditions.

5.3.1 VMT EVALUATION

Forecasts from the 2016 and 2045 OCTAM model were used to calculate the baseline citywide VMT/SP. For evaluation of direct and cumulative project impacts, a select zone was created for the project, the select zone was run using the 2016 and 2045 models, and the resulting data for the project was used to calculate project VMT/SP. 2020 VMT data was calculated by using data from the base year 2016 and future year 2045 models. Linear growth between 2016 and 2045 was assumed to calculate the 2020 conditions.

The project is in OCTAM TAZ 1048. This zone is bounded by Ellis Avenue, Garfield Avenue, Brookhurst Street and Bushard Street. The zone includes commercial land uses along the west side of Brookhurst Street and residential land uses throughout the remainder of the zone. In the baseline 2016 and 2045 model runs, the average trip length for TAZ 1048 is 6.0 and 6.2 miles. This is reasonably consistent with the average trip length for the City of 6.6 miles in 2016 and 6.8 miles in 2045. When the project (74 single family homes) is evaluated using OCTAM 5, the average trip length is over 11 miles in both 2016 and 2045. It is unreasonable to expect that 74 homes would have a trip length that is almost double the City average and the average for the project zone, especially because the project land uses are consistent with the existing land uses in TAZ 1048. Therefore, the project VMT was calculated using the trip length for Zone 1048 in both 2016 and 2045.

Table 9 shows the Year 2020 VMT calculations for the City and the project. As seen in Table 9, the project related VMT/SP is less than the VMT/SP for the City. Therefore, the project would not have an impact on the Year 2020 VMT/SP.

Table 9. Year 2020 VMT/SP

2016	Daily Total VMT	Total Service Population	VMT/Service Population
Project	3,955	230	17.2
City of Fountain Valley (GP Build Out)	2,564,479	89,688	28.6

Table 10 shows the Cumulative (Year 2045) VMT calculations for the City and the project. As seen in Table 10, the project related VMT/SP is less than the VMT/SP for the City. Therefore, the project would not have an impact on the Cumulative (Year 2045) VMT/SP.

Table 10. Cumulative (Year 2045) VMT/SP

Cumulative (2045)	Daily Total VMT	Total Service Population	VMT/Service Population
Project	4,022	230	17.5
City of Fountain Valley	2,564,479	89,688	28.6

The Citywide VMT without and with the project was obtained from the 2016 and 2045 models and includes only vehicle miles traveled within the City's boundary. Table 11 shows the Citywide VMT/SP without and with the project. The VMT shown in Table 11 is calculated using the "boundary method", which captures only VMT within the City limits. As seen in Table 11, in the baseline condition the Citywide VMT/SP would remain the same with the project. In the future 2045 cumulative condition, the Citywide VMT/SP would decrease by 0.2 and therefore the project effect on VMT would be less than significant.

Table 11. Project Effect on VMT

	2020	2045
Fountain Valley VMT (No Project)	1,792,708	1,915,849
Population	85,679	89,688
Fountain Valley (No Project) VMT/SP	20.92	21.36
Fountain Valley VMT with Project	1,792,387	1,907,086
Fountain Valley VMT/SP with Project	20.86	21.21
Change in VMT/SP	-0.06	-0.15

Based on the VMT analysis prepared for the project and presented in Tables 9, 10 and 11, the project would have a less than significant impact on VMT.

APPENDIX A – TRAFFIC STUDY SCOPING AGREEMENT

ENVIRONMENT | PLANNING | DEVELOPMENT SOLUTIONS, INC.

Date: February 5, 2020
Prepared by: Meghan Macias, TE; meghan@epdsolutions.com; 949-794-1186
To: Temo Galvez, PE; temo.galvez@fountainvalley.org
Site: Moiola Park Residences
Subject: **Traffic Impact Analysis Scope of Work**

This memo outlines the proposed scope of work for the traffic impact analysis (TIA) for the proposed Moiola Park Residences project. The project description and proposed scope of work is discussed in detail below.

Project Name: Moiola Park Residences

Project Address: 9790 Finch Avenue, on the site of the closed Fred Moiola School

Project Description and Trip Generation: The project is located on the site of the Fred Moiola School which closed in June 2012. The proposed project would redevelop approximately 13 acres of land with a new single-family residential community of up to 74 new homes and a 1.02-acre public park. The project site plan is attached.

Trip Generation Rate(s): The project trip generation was calculated using trip rates from the Institute of Transportation Engineers, *Trip Generation 10th Edition*, 2017. As shown in Table 1, the project would generate approximately 699 daily trips including 55 trips during the AM peak hour and 73 trips during the PM peak hour.

Table 1. Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use	Units		Daily	In	Out	Total	In	Out	Total
<u>Trip Rates</u>									
Single Family Detached Housing ¹	DU		9.440	0.185	0.555	0.740	0.624	0.366	0.990
<u>Project Trip Generation</u>									
Dwelling Units	74	DU	699	14	41	55	46	27	73
Total Trip Generation			699	14	41	55	46	27	73
TSF = Thousand Square Feet									
¹ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 210 Single-Family Detached Housing.									

Geographic Distribution: The proposed project trip distribution is shown on Figure 1 (attached). The distribution considers the location of the project in relation to local and regional land uses and transportation facilities. Approximately 40 percent of trips would travel north, and 25 percent would travel south on Bushard Street and Brookhurst Street, 25 percent would travel east on Ellis Avenue and 10 percent would travel west on Ellis Avenue. The project trip assignment is also shown on Figure 1 (attached).

Study Intersections: The following five intersections are proposed to be included in the study area:

1. Bushard Street/Ellis Avenue
2. Redwood Street/Starling Avenue
3. Redwood Street/Finch Avenue
4. Redwood Street/Robin Avenue
5. Brookhurst Street/Ellis Avenue

The proposed study area is shown in Figure 1 (attached), which also shows the project trip distribution and assignment.

Analysis Scenarios: The following scenarios will be evaluated in the Traffic Impact Analysis:

- Existing Conditions
- Existing plus Project Conditions
- Cumulative Baseline (Project Completion Year 2023)
- Cumulative plus Project

Cumulative Scenario: The cumulative scenario would include a 2 percent per year growth rate, plus traffic from approved projects in the project area. A list of cumulative projects was provided by City staff in December 2019. EPD staff has reviewed the list of projects and identified the following four projects for evaluation in the TIA:

1. Fountain Valley Retail Project (18050 Brookhurst Street)
2. Arco Hydrogen Station (18480 Brookhurst Street)
3. 7 Leaves Restaurant (10065 Garfield Avenue)
4. Plant Power Fast Food (18976 Brookhurst Street)

The trip generation for each cumulative project is shown in Table 2 (attached). The cumulative projects trip assignment is shown in Figure 2 (attached).

We appreciate your review of this information. Upon completion of your review, please forward any comments or approval of this methodology to meghan@epdsolutions.com. If you have any questions, please do not hesitate to contact me by e-mail or at (949) 794-1186.

Attachments: Project Site Plan
 Figure 1: Project Trip Distribution and Assignment
 Table 2: Cumulative Projects Trip Generation
 Figure 2: Cumulative Projects Trip Assignment

City Approval of Scope of Work:

Signature

Name

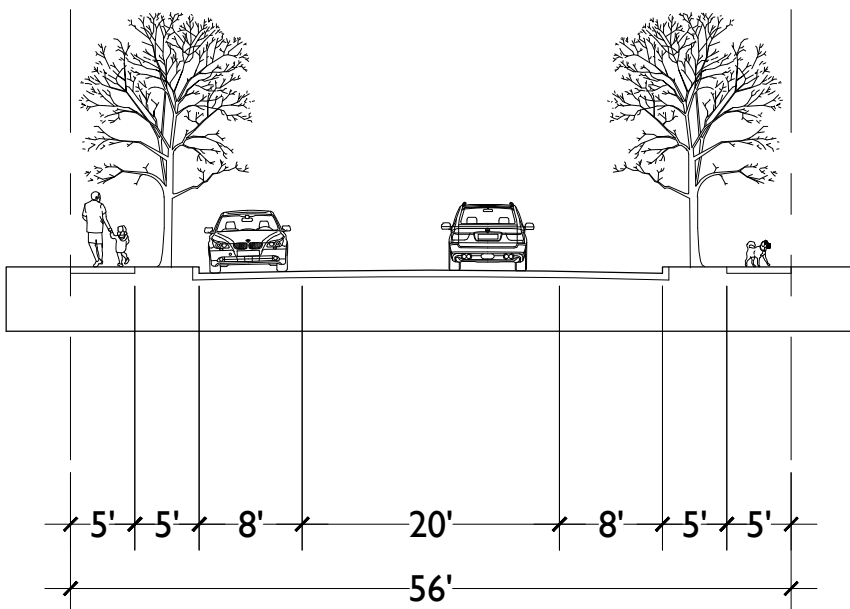
Date

Site Summary:

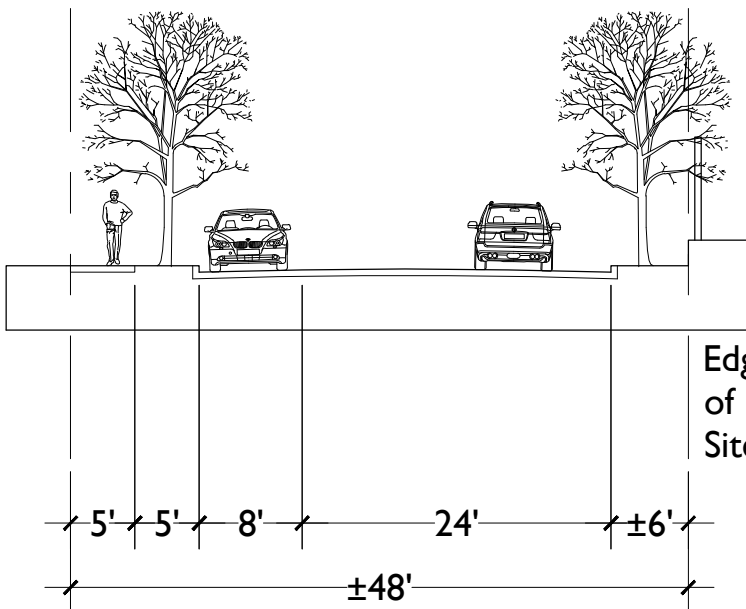
7,200 sf Lots and 4,500 sf Lots with Private Streets

Total Homes: 74
Site Area: ±12.99 Acres
Density: ±5.70 Homes/Acre
Typ. Lot Size: 60' x 120' (10)
50' x 90' (64)

Street Sections



Typical Private Street



Street at Northeast Corner

Legend

- Orange dashed line with arrow: Pedestrian access to park
- Blue dashed line: New community wall against existing wall
- Purple dashed line: New community wall
- Blue dashed line: Existing community wall to remain



CONCEPTUAL SITE PLAN - 74 HOMES
MOIOLA PARK RESIDENCES

Fountain Valley, California

0 25 50 100
SCALE: 1" = 50'-0"

3 6 9 . 1 8 3 3 8

Note:
This yield study is for the purpose of estimating the maximum density of a residential product type on a site of a given configuration. If specific entitlement requirements differ from the criteria shown on the plan (such as setbacks, minimum lot sizes, street standards, retention requirements, etc.) then the actual possible density may vary substantially.

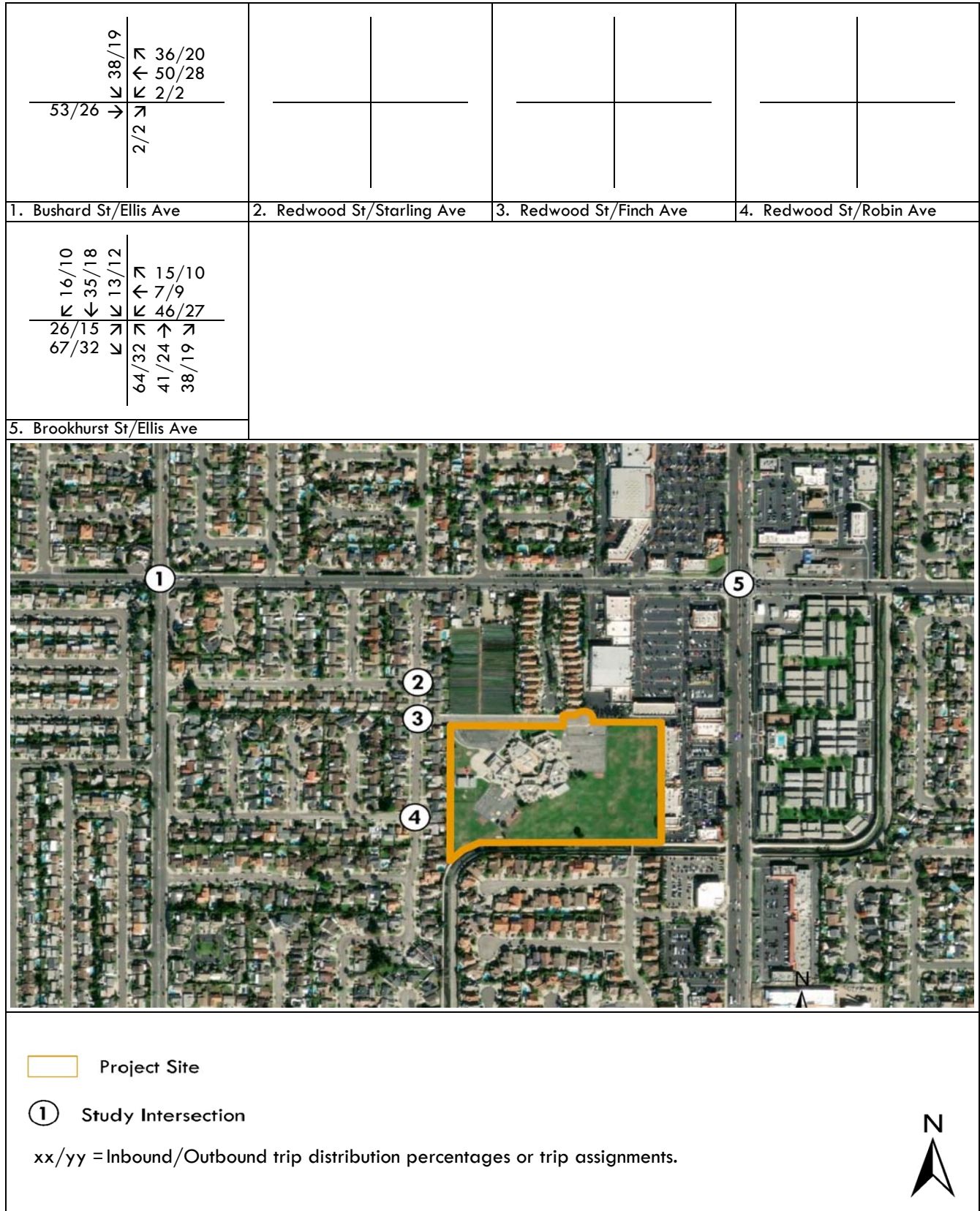
Figure 1: Project Trip Distribution and Assignment



Table 2. Cumulative Projects Trip Generation

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<u>Trip Rates</u>								
High-Turnover (Sit-Down) Restaurant ¹	TSF	112.180	5.467	4.473	9.940	6.057	3.713	9.770
Bank ²	TSF	12.130	11.721	10.819	22.540	13.464	12.936	26.400
Office ³	TSF	9.740	0.998	0.162	1.160	0.184	0.966	1.150
Gasoline/Service Station ⁴	VFP	172.010	5.140	5.140	10.280	7.015	7.015	14.030
Coffee/Donut Shop with Drive-Through ⁵	TSF	820.380	45.385	43.605	88.990	21.690	21.690	43.380
Fast-Food Restaurant with with Drive-Through ⁶	TSF	820.380	45.385	43.605	88.990	21.690	21.690	43.380
<i>Project Trip Generation</i>								
<i>Fountain Valley Retail Project (18050 Brookhurst St.)</i>								
Existing Claim Jumper Restaurant	(11.601) TSF	(1,301)	-	-	-	(70)	(43)	(113)
Proposed Restaurant	5.535 TSF	621	30	25	55	34	21	54
Proposed Bank	5.015 TSF	61	59	54	113	68	65	132
Proposed Office	5.335 TSF	52	5	1	6	1	5	6
	Total	(568)	94	80	174	32	48	79
<i>Arco Hydrogen Station (18480 Brookhurst St.)</i>								
Proposed Hydrogen Station	4.000 VFP	688	21	21	41	28	28	56
<i>7 Leaves Restaurant (10065 Garfield Ave.)</i>								
Coffee Shop with Drive-Through	3.576 TSF	2,934	162	156	318	78	78	155
<i>Plant Power Fast Food (18976 Brookhurst St.)</i>								
Fast-Food Restaurant with Drive-Through	2.300 TSF	1,887	104	100	205	50	50	100
Total Trip Generation		4,373	382	357	738	187	203	390
TSF = Thousand Square Feet, VFP = Vehicle Fueling Positions								
¹ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 932 High-Turnover (Sit-Down) Restaurant.								
² Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 911 Walk-in Bank.								
³ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 710 General Office Building.								
⁴ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 944 Gasoline/Service Station.								
⁵ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 937 Coffee/Donut Shop with Drive-Through Window.								
⁶ Trip rates from the Institute of Transportation Engineers, <i>Trip Generation, 10th Edition</i> , 2017. Land Use Code 934 Fast-Food Restaurant with Drive-Through Window.								

Figure 2: Cumulative Project Trips



Meghan Macias

From: Kyle Hilton <Kyle.Hilton@fountainvalley.org>
Sent: Friday, February 7, 2020 10:31 AM
To: Meghan Macias; Lauren Lockwood; Jeremy Krout
Subject: RE: Moiola Park Residences TIA Scope of Work

[NON-EPD]

The City is good with the proposed scope of work.

Regards,

Kyle Hilton

Associate Engineer

City of Fountain Valley Public Works

714-593-4516

Please note my email address has changed to kyle.hilton@fountainvalley.ca.gov

From: Meghan Macias [mailto:meghan@epdsolutions.com]
Sent: Wednesday, February 5, 2020 2:15 PM
To: Kyle Hilton <Kyle.Hilton@fountainvalley.org>; Lauren Lockwood <lauren@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>
Subject: RE: Moiola Park Residences TIA Scope of Work

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello Kyle,

Thank you for your comment on the scope. Of course we will provide without and with project level of service analysis for all intersections. I apologize if that wasn't clear in the scope. I have attached a revised scope that includes the analysis scenarios for your approval.

Meghan Macias, T.E.
E|P|D Solutions, Inc.

meghan@epdsolutions.com

949.794.1186 direct

949.794.1180 main

949.533.9182 cell

2 Park Plaza, Suite 1120

Irvine, CA 92614

www.epdsolutions.com

From: Kyle Hilton <Kyle.Hilton@fountainvalley.org>
Sent: Wednesday, February 5, 2020 10:08 AM
To: Lauren Lockwood <lauren@epdsolutions.com>; Meghan Macias <meghan@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>
Subject: RE: Moiola Park Residences TIA Scope of Work

[NON-EPD]

Good morning Lauren,

The scope of work for the TIA looks good. My only comment is provide before and after level of service analysis for all 5 study intersections.

Regards,

Kyle Hilton

Associate Engineer

City of Fountain Valley Public Works

714-593-4516

Please note my email address has changed to kyle.hilton@fountainvalley.ca.gov

From: Lauren Lockwood [<mailto:lauren@epdsolutions.com>]

Sent: Tuesday, February 4, 2020 8:52 AM

To: Kyle Hilton <Kyle.Hilton@fountainvalley.org>; Meghan Macias <meghan@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>

Cc: Temo Galvez <Temo.Galvez@fountainvalley.org>; John Nguyen <John.Nguyen@fountainvalley.org>

Subject: Re: Moiola Park Residences TIA Scope of Work

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Kyle,

Just following up on your last email. Are there updates on the status of the TIA scope of work for the Moiola project? Let me know if you need any additional information on our end.

Thank you,
Lauren Lockwood

Get [Outlook for iOS](#)

From: Kyle Hilton <Kyle.Hilton@fountainvalley.org>

Sent: Thursday, January 30, 2020 1:18:29 PM

To: Meghan Macias <meghan@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>; Lauren Lockwood <lauren@epdsolutions.com>

Cc: Temo Galvez <Temo.Galvez@fountainvalley.org>; John Nguyen <John.Nguyen@fountainvalley.org>

Subject: RE: Moiola Park Residences TIA Scope of Work

[NON-EPD]

Hi Meghan,

We are preparing our comments and finalizing our review. I will send over comments early next week.

Regards,

Kyle Hilton

Associate Engineer
City of Fountain Valley Public Works
714-593-4516

Please note my email address has changed to kyle.hilton@fountainvalley.ca.gov

From: Meghan Macias [<mailto:meghan@epdsolutions.com>]
Sent: Thursday, January 30, 2020 8:29 AM
To: Kyle Hilton <Kyle.Hilton@fountainvalley.org>; Jeremy Krout <jeremy@epdsolutions.com>
Cc: Temo Galvez <Temo.Galvez@fountainvalley.org>; John Nguyen <John.Nguyen@fountainvalley.org>
Subject: RE: Moiola Park Residences TIA Scope of Work

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Morning Kyle,

I'm following-up on the TIA scope. Would you please let us know when you expect to complete your review?

Thank you,
Meghan

Meghan Macias, T.E.
E|P|D Solutions, Inc.

meghan@epdsolutions.com
949.794.1186 direct
949.794.1180 main
949.533.9182 cell
2 Park Plaza, Suite 1120
Irvine, CA 92614
www.epdsolutions.com

From: Kyle Hilton <Kyle.Hilton@fountainvalley.org>
Sent: Monday, January 20, 2020 9:37 AM
To: Meghan Macias <meghan@epdsolutions.com>; Jeremy Krout <jeremy@epdsolutions.com>
Cc: Temo Galvez <Temo.Galvez@fountainvalley.org>; John Nguyen <John.Nguyen@fountainvalley.org>
Subject: Moiola Park Residences TIA Scope of Work

[NON-EPD]
Good morning Meghan,

The City has received your TIA scope of work for Moiola Park Residences. I will reach out to you if the City has any comments.

Regards,

Kyle Hilton
Associate Engineer

City of Fountain Valley Public Works

714-593-4516

Please note my email address has changed to kyle.hilton@fountainvalley.ca.gov

APPENDIX B – TRAFFIC COUNTS

DATE:

Wed, Dec 11, 19

LOCATION:

NORTH & SOUTH:

EAST & WEST:

Fountain Valley

Redwood

Finch

PROJECT #:

SC2462

LOCATION #:

1

CONTROL:

STOP W

NOTES:

☒ Add U-Turns to Left Turns

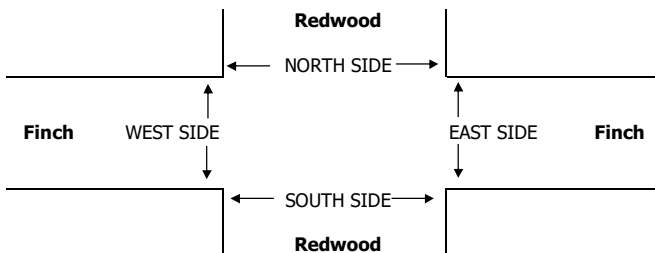
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Redwood			Redwood			Finch			Finch			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	X	1	0	0	0	X	X	X	X	0	X	0	

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

AM	7:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	5
	7:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	2
	7:30 AM	0	7	0	0	0	0	0	0	0	0	0	0	7
	7:45 AM	0	5	1	0	3	0	0	0	0	0	0	2	11
	8:00 AM	0	3	0	0	1	0	0	0	0	1	0	1	6
	8:15 AM	0	3	0	2	2	0	0	0	0	0	0	0	7
	8:30 AM	0	4	0	0	1	0	0	0	0	0	0	1	6
	8:45 AM	0	1	0	1	1	0	0	0	0	0	0	0	3
	VOLUMES	0	28	1	4	9	0	0	0	0	1	0	4	47
	APPROACH %	0%	97%	3%	31%	69%	0%	0%	0%	0%	20%	0%	80%	
APP/DEPART	29	/	32	13	/	10	0	/	5	5	/	0	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	0	18	1	2	6	0	0	0	0	1	0	3	31	
APPROACH %	0%	95%	5%	25%	75%	0%	0%	0%	0%	25%	0%	75%		
PEAK HR FACTOR	0.679 0.500 0.000 0.500													
APP/DEPART	19	/	21	8	/	7	0	/	3	4	/	0	0	

[illegible]

PM	4:00 PM	0	4	1	4	7	0	0	0	0	0	0	1	17
	4:15 PM	0	3	11	7	4	0	0	0	0	5	0	5	35
	4:30 PM	0	3	6	1	5	0	0	0	0	5	0	4	24
	4:45 PM	0	3	2	2	7	0	0	0	0	0	0	1	15
	5:00 PM	0	4	0	3	4	0	0	0	0	0	0	1	12
	5:15 PM	0	4	1	1	6	0	0	0	0	0	0	1	13
	5:30 PM	0	2	3	4	8	0	0	0	0	0	0	2	19
	5:45 PM	0	4	5	7	6	0	0	0	0	1	0	4	27
	VOLUMES	0	27	29	29	47	0	0	0	0	11	0	19	162
	APPROACH %	0%	48%	52%	38%	62%	0%	0%	0%	0%	37%	0%	63%	
APP/DEPART	56	/	46	76	/	58	0	/	58	30	/	0	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	13	20	14	23	0	0	0	0	10	0	11	91	
APPROACH %	0%	39%	61%	38%	62%	0%	0%	0%	0%	48%	0%	52%		
PEAK HR FACTOR	0.589		0.841		0.000		0.525		0.650					
APP/DEPART	33	/	24	37	/	33	0	/	34	21	/	0	0	

[illegible]

AM		7:00 AM
		7:15 AM
		7:30 AM
		7:45 AM
		8:00 AM
		8:15 AM
		8:30 AM
		8:45 AM
	TOTAL	
AM BEGIN PEAK HR		
PM		4:00 PM
		4:15 PM
		4:30 PM
		4:45 PM
		5:00 PM
		5:15 PM
		5:30 PM
		5:45 PM
	TOTAL	
PM BEGIN PEAK HR		

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	1	0	1
0	0	0	1	1
0	0	0	0	0
0	1	2	4	7
2	0	0	2	4
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
4	1	3	7	15
7:30 AM				
0	0	2	0	2
2	0	0	0	2
0	0	1	1	2
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	1	1	0	2
2	3	4	1	10
4:00 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	2	2	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
2	0	2	3	7
0	0	2	2	4
0	0	2	0	2
2	0	0	0	2
0	0	1	1	2
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	1	1	0	2
2	3	4	1	10
2	0	3	1	6

[illegible]

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Dec 11, 19	LOCATION: NORTH & SOUTH: EAST & WEST:	Fountain Valley Redwood Robin	PROJECT #: LOCATION #: CONTROL:	SC2462 3 STOB ALL
--------------------------	---	-------------------------------------	---------------------------------------	-------------------------

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

☐ Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Redwood			Redwood			Robin			Robin			
LANES:	NL 0	NT 1	NR X	SL X	ST 1	SR 0	EL 0	ET X	ER 0	WL X	WT X	WR X	TOTAL

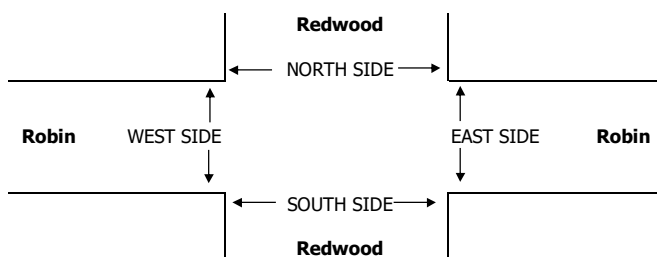
U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

AM	7:00 AM	0	1	0	0	1	0	0	0	0	0	3	
	7:15 AM	0	0	0	0	0	0	1	0	0	0	3	
	7:30 AM	0	3	0	0	0	0	0	0	0	0	5	
	7:45 AM	0	0	0	0	1	0	3	0	0	0	4	
	8:00 AM	0	2	0	0	1	2	2	0	1	0	8	
	8:15 AM	0	3	0	0	2	1	1	0	1	0	8	
	8:30 AM	1	2	0	0	0	1	1	0	0	0	5	
	8:45 AM	1	0	0	0	2	1	1	0	0	0	5	
	VOLUMES	2	11	0	0	7	5	13	0	3	0	0	43
	APPROACH %	15%	85%	0%	0%	54%	38%	76%	0%	18%	0%	0%	0%
APP/DEPART	13	/	25	13	/	10	17	/	0	0	/	8	
BEGIN PEAK HR	8:00 AM												
VOLUMES	2	7	0	0	5	5	5	0	2	0	0	27	
APPROACH %	22%	78%	0%	0%	50%	50%	63%	0%	25%	0%	0%	0%	
PEAK HR FACTOR	0.750			0.833			0.667			0.000			
APP/DEPART	9	/	12	10	/	7	8	/	0	0	/	8	

0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	1	1	0	2

PM	4:00 PM	0	2	0	0	3	3	3	0	1	0	0	0	12
	4:15 PM	1	4	0	0	2	7	12	0	1	0	0	0	27
	4:30 PM	1	5	0	0	4	6	6	0	2	0	0	0	24
	4:45 PM	2	3	0	0	2	3	2	0	1	0	0	0	13
	5:00 PM	1	2	0	0	2	2	1	0	0	0	0	0	8
	5:15 PM	1	2	0	0	2	4	2	0	1	0	0	0	12
	5:30 PM	0	1	0	0	5	3	3	0	1	0	0	0	13
	5:45 PM	1	6	0	0	3	3	5	0	1	0	0	0	19
	VOLUMES	7	25	0	0	23	31	34	0	8	0	0	0	129
	APPROACH %	21%	76%	0%	0%	43%	57%	81%	0%	19%	0%	0%	0%	
APP/DEPART	33	/	59	54	/	32	42	/	0	0	/	38	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	4	14	0	0	11	19	23	0	5	0	0	0	77	
APPROACH %	21%	74%	0%	0%	37%	63%	82%	0%	18%	0%	0%	0%		
PEAK HR FACTOR	0.792													
APP/DEPART	19	/	37	30	/	17	28	/	0	0	/	23	0	
	0.538													
	0.000													
	0.688													

0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1



AM		7:00 AM
		7:15 AM
		7:30 AM
		7:45 AM
		8:00 AM
		8:15 AM
		8:30 AM
		8:45 AM
	TOTAL	
AM BEGIN PEAK HR		
PM		4:00 PM
		4:15 PM
		4:30 PM
		4:45 PM
		5:00 PM
		5:15 PM
		5:30 PM
		5:45 PM
	TOTAL	
PM BEGIN PEAK HR		

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	3	6	9
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	3	10	13
8:00 AM				
0	0	0	3	3
2	0	0	2	4
0	0	0	0	0
0	0	0	3	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
2	0	0	10	12
4:00 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	2	5	7
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	9	11
0	0	0	2	2
0	0	0	3	3
2	0	0	2	4
0	0	0	0	0
0	0	0	3	3
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
2	0	0	10	12
2	0	0	8	10

[illegible]

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

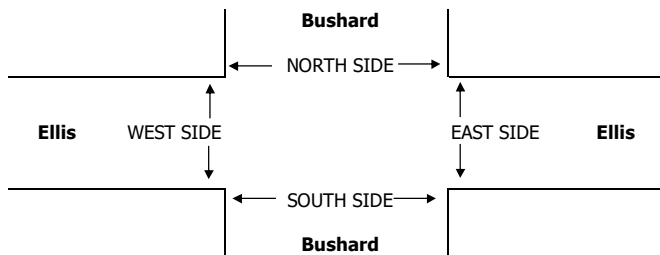
T218

DATE: Wed, Dec 11, 19	LOCATION: Fountain Valley	PROJECT #: SC2462
NORTH & SOUTH: Bushard	LOCATION #: 4	CONTROL: SIGNAL
EAST & WEST: Ellis		

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼
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☒ Add U-Turns to Left Turns

	NORTHBOUND Bushard			SOUTHBOUND Bushard			EASTBOUND Ellis			WESTBOUND Ellis			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
7:00 AM	7	60	26	11	27	13	8	203	10	10	83	6	464
7:15 AM	7	55	30	9	31	5	11	259	12	10	89	8	526
7:30 AM	9	92	19	28	53	10	26	241	13	9	105	37	642
7:45 AM	30	88	29	49	96	24	33	297	30	13	146	29	864
8:00 AM	10	52	30	22	68	15	4	284	28	23	100	8	644
8:15 AM	14	62	34	16	40	5	5	257	19	20	131	9	612
8:30 AM	15	80	34	15	61	6	9	230	33	12	89	5	589
8:45 AM	19	99	47	10	70	9	11	181	20	10	112	8	596
VOLUMES	111	588	249	160	446	87	107	1,952	165	107	855	110	4,937
APPROACH %	12%	62%	26%	23%	64%	13%	5%	88%	7%	10%	80%	10%	
APP/DEPART	948	/	804	693	/	719	2,224	/	2,361	1,072	/	1,053	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	63	294	112	115	257	54	68	1,079	90	65	482	83	2,762
APPROACH %	13%	63%	24%	27%	60%	13%	5%	87%	7%	10%	77%	13%	
PEAK HR FACTOR	0.798			0.630			0.859			0.838			0.799
APP/DEPART	469	/	445	426	/	412	1,237	/	1,306	630	/	599	0
4:00 PM	23	111	39	17	62	6	12	148	16	25	230	32	721
4:15 PM	25	127	28	8	64	10	13	170	26	25	234	22	752
4:30 PM	26	137	29	18	81	8	12	131	13	36	217	32	740
4:45 PM	26	146	32	18	67	9	17	166	20	28	244	30	803
5:00 PM	15	140	25	13	62	5	23	174	13	22	240	27	759
5:15 PM	18	131	36	17	52	6	18	170	19	23	234	27	751
5:30 PM	24	139	26	17	63	7	15	129	18	35	235	22	730
5:45 PM	25	107	22	8	56	7	13	150	11	29	261	28	717
VOLUMES	182	1,038	237	116	507	58	123	1,238	136	223	1,895	220	5,973
APPROACH %	12%	71%	16%	17%	74%	9%	8%	83%	9%	10%	81%	9%	
APP/DEPART	1,457	/	1,381	681	/	866	1,497	/	1,591	2,338	/	2,135	0
BEGIN PEAK HR	4:15 PM												
VOLUMES	92	550	114	57	274	32	65	641	72	111	935	111	3,054
APPROACH %	12%	73%	15%	16%	75%	9%	8%	82%	9%	10%	81%	10%	
PEAK HR FACTOR	0.926			0.848			0.926			0.958			0.951
APP/DEPART	756	/	726	363	/	457	778	/	812	1,157	/	1,059	0



AM	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	TOTAL	AM BEGIN PEAK HR
PM	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	TOTAL	PM BEGIN PEAK HR

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	2	0	2
1	1	10	1	13
0	3	3	0	6
0	0	0	0	0
0	1	0	0	1
1	0	3	1	5
1	1	0	0	2
3	6	18	2	29
7:30 AM				
0	2	1	0	3
0	1	0	0	1
1	0	1	1	3
1	0	0	3	4
0	0	0	0	0
1	1	0	0	2
0	0	0	0	0
0	1	0	0	1
3	5	2	4	14
4:15 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
1	0	0	0	1
1	0	2	0	3
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	4	0	0	4
0	0	0	0	0

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	0	0
0	0	2	0	2
1	1	10	1	13
0	3	3	0	6
0	0	0	0	0
0	1	0	0	1
1	0	1	1	3
0	1	0	0	1
2	6	16	2	26
0	0	1	0	1
0	1	0	0	1
1	0	1	1	3
1	0	0	3	4
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
3	1	2	4	10

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

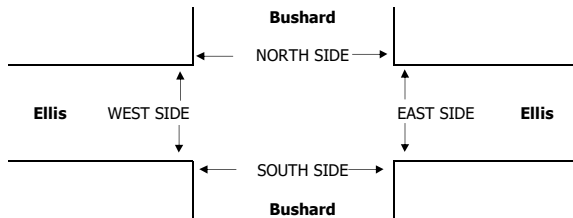
T816

DATE: Tue, Jun 6, 17	LOCATION: NORTH & SOUTH: EAST & WEST:	Fountain Valley Bushard Ellis	PROJECT #: SC1199 LOCATION #: 39 CONTROL: SIGNAL
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NOTES:	AM PM MD OTHER OTHER ▲ W ▼ N E S
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Add U-Turns to Left Turns

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
		Bushard			Bushard			Ellis			Ellis				NB	SB	EB	WB	TTL
LANES:		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	0	0	0	0	
AM	7:00 AM	10	74	26	8	35	6	11	170	8	9	64	9	430	0	0	0	0	0
	7:15 AM	5	70	32	12	48	14	11	218	9	11	78	7	515	0	0	0	0	0
	7:30 AM	9	110	27	17	59	1	25	233	8	7	85	19	600	0	0	0	0	0
	7:45 AM	17	99	34	15	91	20	30	246	15	17	118	18	720	0	0	0	0	0
	8:00 AM	12	71	31	22	103	14	14	275	30	24	106	4	706	0	0	0	0	0
	8:15 AM	16	107	35	15	93	17	11	224	18	15	124	9	684	0	0	0	0	0
	8:30 AM	14	97	37	11	81	14	14	214	12	9	125	8	636	0	0	0	0	0
	8:45 AM	11	112	26	26	79	15	11	212	14	16	106	9	637	0	0	0	0	0
	VOLUMES	94	740	248	126	589	101	127	1,792	114	108	806	83	4,928	0	0	0	0	0
	APPROACH %	9%	68%	23%	15%	72%	12%	6%	88%	6%	11%	81%	8%						
APP/DEPART	1,082	/	950	816	/	811	2,033	/	2,166	997	/	1,001	0						
MIDDAY	BEGIN PEAK HR	7:45 AM																	
	VOLUMES	59	374	137	63	368	65	69	959	75	65	473	39	2,746					
	APPROACH %	10%	66%	24%	13%	74%	13%	6%	87%	7%	11%	82%	7%						
	PEAK HR FACTOR	0.902			0.892			0.864			0.943			0.953					
	APP/DEPART	570	/	482	496	/	508	1,103	/	1,159	577	/	597	0					
	11:00 AM	9	71	30	13	62	14	8	125	9	20	140	11	512	0	0	0	0	0
	11:15 AM	11	90	26	20	62	11	9	146	15	16	135	22	563	0	0	0	0	0
	11:30 AM	8	60	29	18	73	20	6	135	5	15	127	21	517	0	0	0	0	0
	11:45 AM	16	73	30	18	84	20	13	131	8	17	149	23	582	0	0	0	0	0
	12:00 PM	12	99	32	17	84	15	13	130	12	27	147	17	605	0	0	0	0	0
12:15 PM	12	86	17	20	92	18	4	126	13	27	178	22	615	0	0	0	0	0	
12:30 PM	4	95	28	21	100	25	7	159	13	16	169	23	660	0	0	0	0	0	
12:45 PM	4	95	34	18	83	20	14	150	10	19	191	21	659	0	0	0	0	0	
VOLUMES	76	669	226	145	640	143	74	1,102	85	157	1,236	160	4,713	0	0	0	0	0	
APPROACH %	8%	69%	23%	16%	69%	15%	6%	87%	7%	10%	80%	10%							
APP/DEPART	971	/	903	928	/	882	1,261	/	1,473	1,553	/	1,455	0						
PM	BEGIN PEAK HR	12:00 PM																	
	VOLUMES	32	375	111	76	359	78	38	565	48	89	685	83	2,539					
	APPROACH %	6%	72%	21%	15%	70%	15%	6%	87%	7%	10%	80%	10%						
	PEAK HR FACTOR	0.906			0.878			0.909			0.927			0.962					
	APP/DEPART	518	/	496	513	/	496	651	/	752	857	/	795	0					
	4:00 PM	25	133	23	15	98	19	17	140	12	15	197	26	720	0	0	0	0	0
	4:15 PM	15	142	33	22	90	20	16	142	8	25	213	28	754	0	0	0	0	0
	4:30 PM	6	132	26	7	95	12	13	134	11	28	219	29	712	0	0	0	0	0
	4:45 PM	15	139	24	21	79	19	18	140	13	27	220	18	733	0	0	0	0	0
	5:00 PM	15	160	27	10	109	13	18	166	19	25	224	26	812	0	0	0	0	0
5:15 PM	12	163	38	14	98	20	10	151	15	30	235	20	806	0	0	0	0	0	
5:30 PM	18	150	34	16	74	9	15	155	16	30	257	31	805	0	0	0	0	0	
5:45 PM	12	114	16	10	93	12	9	131	12	35	253	31	728	0	0	0	0	0	
VOLUMES	118	1,133	221	115	736	124	116	1,159	106	215	1,818	209	6,070	0	0	0	0	0	
APPROACH %	8%	77%	15%	12%	75%	13%	8%	84%	8%	10%	81%	9%							
APP/DEPART	1,472	/	1,458	975	/	1,057	1,381	/	1,495	2,242	/	2,060	0						
PM	BEGIN PEAK HR	4:45 PM																	
	VOLUMES	60	612	123	61	360	61	61	612	63	112	936	95	3,156					
	APPROACH %	8%	77%	15%	13%	75%	13%	8%	83%	9%	10%	82%	8%						
	PEAK HR FACTOR	0.933			0.913			0.906			0.899			0.972					
	APP/DEPART	795	/	768	482	/	535	736	/	796	1,143	/	1,057	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	1	0	1	2	0	0	0	0	0	0	1	0	1	2
	7:15 AM	0	1	1	0	2	0	1	0	0	1	0	0	1	0	1
	7:30 AM	0	0	3	0	3	0	0	0	0	0	0	0	3	0	3
	7:45 AM	3	0	4	5	12	0	0	1	0	1	3	0	3	5	11
	8:00 AM	0	1	1	2	4	0	1	0	1	2	0	0	1	1	2
	8:15 AM	2	3	2	1	8	1	0	0	0	1	1	3	2	1	7
	8:30 AM	1	1	1	3	6	1	0	1	1	3	0	1	0	2	3
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		6	7	12	12	37	2	2	2	2	8	4	5	10	10	29
MIDDAY	11:00 AM	0	0	1	1	2	0	0	1	1	2	0	0	0	0	0
	11:15 AM	3	0	0	1	4	1	0	0	0	1	2	0	0	1	3
	11:30 AM	1	1	3	3	8	1	1	0	2	4	0	0	3	1	4
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	1	1	2	1	5	1	1	1	1	4	0	0	1	0	1
	12:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	12:30 PM	1	0	0	1	2	1	0	0	0	1	0	0	0	1	1
	12:45 PM	0	2	1	0	3	0	1	0	0	1	0	1	1	0	2
TOTAL		6	4	8	7	25	4	3	2	4	13	2	1	6	3	12
PM	4:00 PM	1	2	0	0	3	1	0	0	0	1	0	2	0	0	2
	4:15 PM	2	1	0	4	7	1	0	0	0	1	1	1	0	4	6
	4:30 PM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
	5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
	5:30 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	5:45 PM	1	3	0	0	4	1	0	0	0	1	0	3	0	0	3
TOTAL		4	7	3	6	20	3	0	0	0	3	1	7	3	6	17

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Wed, Dec 11, 19	LOCATION: NORTH & SOUTH: EAST & WEST:	Fountain Valley Brookhurst Ellis	PROJECT #: LOCATION #: CONTROL:	SC2462 5 SIGNAL
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NOTES:

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

☒ Add U-Turns to Left Turns

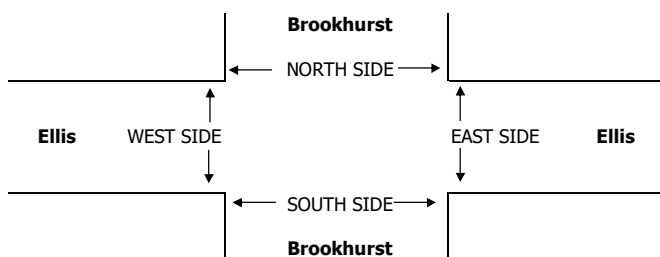
	NORTHBOUND Brookhurst			SOUTHBOUND Brookhurst			EASTBOUND Ellis			WESTBOUND Ellis			
LANES:	NL 1	NT 3	NR 1	SL 1	ST 3	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL

U-TURNS				
NB 0	SB 0	EB 0	WB 0	TTL

AM	7:00 AM	12	196	13	15	115	34	31	200	12	36	66	16	746
	7:15 AM	8	250	25	23	175	33	49	228	20	23	64	23	921
	7:30 AM	13	237	35	32	189	46	47	245	22	24	112	23	1,025
	7:45 AM	17	242	37	27	201	45	66	264	14	41	105	38	1,097
	8:00 AM	11	277	46	64	203	41	66	257	13	27	86	37	1,128
	8:15 AM	16	338	51	40	205	36	70	195	27	53	101	57	1,189
	8:30 AM	22	265	40	13	184	30	52	199	28	35	72	40	980
	8:45 AM	22	261	38	20	243	47	60	137	22	44	79	35	1,008
	VOLUMES	121	2,066	285	234	1,515	312	441	1,725	158	283	685	269	8,094
	APPROACH %	5%	84%	12%	11%	74%	15%	19%	74%	7%	23%	55%	22%	
PM	APP/DEPART	2,472	/	2,787	2,061	/	1,959	2,324	/	2,233	1,237	/	1,115	0
	BEGIN PEAK HR	7:30 AM												
	VOLUMES	57	1,094	169	163	798	168	249	961	76	145	404	155	4,439
	APPROACH %	4%	83%	13%	14%	71%	15%	19%	75%	6%	21%	57%	22%	
	PEAK HR FACTOR	0.815												
	APP/DEPART	1,320	/	1,505	1,129	/	1,021	1,286	/	1,286	704	/	627	0
	4:00 PM	34	340	43	35	263	44	69	119	17	44	220	44	1,272
	4:15 PM	41	311	50	31	290	41	55	117	20	72	201	31	1,260
	4:30 PM	36	352	35	37	291	58	64	109	17	56	183	40	1,278
	4:45 PM	31	310	39	34	320	52	77	127	20	66	205	40	1,321
PM	5:00 PM	28	342	42	33	278	47	59	133	30	56	236	38	1,322
	5:15 PM	28	373	40	28	368	42	63	111	25	50	177	29	1,334
	5:30 PM	30	286	37	42	258	62	56	125	31	59	254	58	1,298
	5:45 PM	42	347	44	27	312	47	66	89	17	82	208	42	1,323
	VOLUMES	270	2,661	330	267	2,380	393	509	930	177	485	1,684	322	10,408
	APPROACH %	8%	82%	10%	9%	78%	13%	31%	58%	11%	19%	68%	13%	
	APP/DEPART	3,261	/	3,522	3,040	/	3,054	1,616	/	1,497	2,491	/	2,335	0
	BEGIN PEAK HR	5:00 PM												
	VOLUMES	128	1,348	163	130	1,216	198	244	458	103	247	875	167	5,277
	APPROACH %	8%	82%	10%	8%	79%	13%	30%	57%	13%	19%	68%	13%	
	PEAK HR FACTOR	0.929												
	APP/DEPART	1,639	/	1,778	1,544	/	1,569	805	/	732	1,289	/	1,198	0

0	1	0	0	1
0	3	0	0	3
1	1	0	0	2
1	1	0	0	2
0	2	0	0	2
0	3	0	0	3
1	0	0	0	1
0	0	0	0	0
3	11	0	0	14

2	5	0	0	7
4	3	0	0	7
1	1	0	0	2
2	2	0	0	4
0	5	0	0	5
2	5	0	0	7
0	6	0	0	6
1	3	0	0	4
12	30	0	0	42



AM	7:00 AM	
	7:15 AM	
	7:30 AM	
	7:45 AM	
	8:00 AM	
	8:15 AM	
	8:30 AM	
	8:45 AM	
	TOTAL	
	AM BEGIN PEAK HR	
PM	4:00 PM	
	4:15 PM	
	4:30 PM	
	4:45 PM	
	5:00 PM	
	5:15 PM	
	5:30 PM	
	5:45 PM	
	TOTAL	
	PM BEGIN PEAK HR	

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
1	3	0	1	5
0	2	1	0	3
1	3	0	0	4
3	1	0	0	4
2	1	1	3	7
1	2	2	5	10
4	2	2	6	14
2	3	2	3	10
14	17	8	18	57
7:30 AM				
1	4	0	4	9
2	2	2	6	12
9	5	8	2	24
24	0	0	3	27
2	4	0	2	8
3	2	3	4	12
19	1	1	0	21
0	1	0	2	3
60	19	14	23	116
5:00 PM				

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
1	3	0	1	5
0	1	1	0	2
0	1	0	0	1
0	0	0	0	0
1	0	1	2	4
1	0	2	3	6
4	2	2	4	12
2	1	0	3	6
9	8	6	13	36
2	1	3	5	11
0	2	0	2	4
2	1	0	5	8
8	5	7	2	22
22	0	0	2	24
1	2	0	1	4
1	1	1	3	6
19	1	1	0	21
0	1	0	2	3
53	13	9	17	92
21	5	2	6	34

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
0	0	0	0	0
0	1	0	0	1
1	2	0	0	3
3	1	0	0	4
1	1	0	1	3
0	2	0	2	4
0	0	0	2	2
0	2	2	0	4
5	9	2	5	21
1	2	0	2	5
0	1	2	1	4
1	0	1	0	2
2	0	0	1	3
1	2	0	1	4
2	1	2	1	6
0	0	0	0	0
0	0	0	0	0
7	6	5	6	24

INTERSECTION TURNING MOVEMENT COUNTS

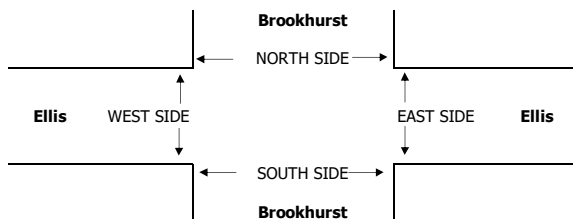
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T816

DATE: Wed, May 31, 17	LOCATION: NORTH & SOUTH: EAST & WEST:	Fountain Valley Brookhurst Ellis	PROJECT #: SC1199 LOCATION #: 34 CONTROL: SIGNAL
NOTES:		AM PM MD OTHER OTHER	▲ N ◀ W S ▼ E ▶

Add U-Turns to Left Turns

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
		Brookhurst			Brookhurst			Ellis			Ellis				NB	SB	EB	WB	TTL
LANES:		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		0	0	0	0	
AM	7:00 AM	7	244	36	13	106	26	51	175	17	21	40	25	761	1	1	0	0	2
	7:15 AM	7	245	36	8	132	27	46	166	17	22	54	17	777	0	2	0	0	2
	7:30 AM	9	265	58	9	171	38	58	221	12	27	77	20	965	1	0	0	0	1
	7:45 AM	16	292	45	26	174	59	51	226	21	32	95	21	1,058	0	0	0	0	0
	8:00 AM	15	269	60	43	188	56	57	224	18	33	91	28	1,082	1	0	0	0	1
	8:15 AM	24	279	51	28	186	48	60	204	20	58	111	47	1,116	0	2	0	0	2
	8:30 AM	10	304	34	20	182	51	55	182	16	49	77	39	1,019	1	3	0	0	4
	8:45 AM	23	262	35	14	218	62	62	143	12	57	77	16	981	2	0	0	0	2
	VOLUMES	111	2,160	355	161	1,357	367	440	1,541	133	299	622	213	7,759	6	8	0	0	14
	APPROACH %	4%	82%	14%	9%	72%	19%	21%	73%	6%	26%	55%	19%						
APP/DEPART	2,626	/	2,821	1,885	/	1,795	2,114	/	2,049	1,134	/	1,094	0						
BEGIN PEAK HR	7:45 AM																		
VOLUMES	65	1,144	190	117	730	214	223	836	75	172	374	135	4,275						
APPROACH %	5%	82%	14%	11%	69%	20%	20%	74%	7%	25%	55%	20%							
PEAK HR FACTOR	0.988			0.924			0.948			0.788			0.958						
APP/DEPART	1,399	/	1,507	1,061	/	979	1,134	/	1,138	681	/	651	0						
MIDDAY	1:00 PM	32	226	37	36	249	41	79	132	23	77	146	36	1,114	3	5	0	0	8
	1:15 PM	26	209	39	33	285	59	68	105	30	55	143	27	1,079	1	3	0	0	4
	1:30 PM	33	253	34	35	242	60	69	116	20	67	161	33	1,123	2	9	0	0	11
	1:45 PM	36	218	39	40	274	57	46	117	23	62	134	32	1,078	1	10	0	0	11
	2:00 PM	28	233	27	31	260	52	76	136	32	58	139	34	1,106	2	3	0	0	5
	2:15 PM	32	244	33	37	308	69	73	135	23	45	151	39	1,189	1	7	0	0	8
	2:30 PM	29	231	38	29	264	47	64	145	32	62	176	38	1,155	0	6	0	0	6
	2:45 PM	26	287	45	26	282	61	72	106	21	65	136	42	1,169	2	7	0	0	9
	VOLUMES	242	1,901	292	267	2,164	446	547	992	204	491	1,186	281	9,013	12	50	0	0	62
	APPROACH %	10%	78%	12%	9%	75%	16%	31%	57%	12%	25%	61%	14%						
APP/DEPART	2,435	/	2,779	2,877	/	2,871	1,743	/	1,501	1,958	/	1,862	0						
BEGIN PEAK HR	2:00 PM																		
VOLUMES	115	995	143	123	1,114	229	285	522	108	230	602	153	4,619						
APPROACH %	9%	79%	11%	8%	76%	16%	31%	57%	12%	23%	61%	16%							
PEAK HR FACTOR	0.875			0.885			0.938			0.892			0.971						
APP/DEPART	1,253	/	1,456	1,466	/	1,457	915	/	765	985	/	941	0						
PM	4:00 PM	37	259	17	30	291	39	64	120	23	47	172	29	1,128	1	6	0	0	7
	4:15 PM	32	313	30	24	290	38	65	106	19	63	163	35	1,178	4	5	0	0	9
	4:30 PM	39	330	31	26	287	53	68	96	17	61	184	26	1,218	1	5	0	0	6
	4:45 PM	35	285	34	33	275	46	61	99	28	52	204	22	1,174	1	5	0	0	6
	5:00 PM	22	347	44	30	261	41	66	102	12	58	201	37	1,221	0	3	0	0	3
	5:15 PM	35	335	37	27	260	41	62	107	17	51	212	30	1,214	3	3	0	0	6
	5:30 PM	30	351	28	31	305	41	59	122	23	70	197	35	1,292	2	7	0	0	9
	5:45 PM	34	290	40	36	270	44	77	99	30	68	217	19	1,224	1	6	0	0	7
	VOLUMES	264	2,510	261	237	2,239	343	522	851	169	470	1,550	233	9,649	13	40	0	0	53
	APPROACH %	9%	83%	9%	8%	79%	12%	34%	55%	11%	21%	69%	10%						
APP/DEPART	3,035	/	3,305	2,819	/	2,891	1,542	/	1,309	2,253	/	2,144	0						
BEGIN PEAK HR	5:00 PM																		
VOLUMES	121	1,323	149	124	1,096	167	264	430	82	247	827	121	4,951						
APPROACH %	8%	83%	9%	9%	79%	12%	34%	55%	11%	21%	69%	10%							
PEAK HR FACTOR	0.964			0.920			0.942			0.983			0.958						
APP/DEPART	1,593	/	1,727	1,387	/	1,431	776	/	684	1,195	/	1,109	0						



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1
	7:15 AM	4	1	1	2	8	3	1	1	2	7	1	0	0	0	1
	7:30 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	7:45 AM	7	0	5	1	13	5	0	3	1	9	2	0	2	0	4
	8:00 AM	3	3	4	2	12	2	0	2	0	4	1	3	2	2	8
	8:15 AM	1	1	1	3	6	1	1	1	3	6	0	0	0	0	0
	8:30 AM	2	0	0	1	3	2	0	0	1	3	0	0	0	0	0
	8:45 AM	0	3	2	1	6	0	2	1	1	4	0	1	1	0	2
TOTAL		19	9	14	10	52	13	4	9	8	34	6	5	5	2	18
MIDDAY	1:00 PM	3	1	2	2	8	3	1	2	2	8	0	0	0	0	0
	1:15 PM	1	1	1	0	3	0	0	0	0	0	1	1	1	0	3
	1:30 PM	3	1	1	0	5	3	0	1	0	4	0	1	0	0	1
	1:45 PM	1	4	2	2	9	1	3	1	1	6	0	1	1	1	3
	2:00 PM	4	1	3	3	11	3	1	2	2	8	1	0	1	1	3
	2:15 PM	1	2	0	0	3	1	1	0	0	2	0	1	0	0	1
	2:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
	2:45 PM	0	3	6	1	10	0	1	3	1	5	0	2	3	0	5
TOTAL		13	13	15	9	50	11	7	9	6	33	2	6	6	3	17
PM	4:00 PM	1	4	0	0	5	1	4	0	0	5	0	0	0	0	0
	4:15 PM	5	1	1	4	11	3	1	1	3	8	2	0	0	1	3
	4:30 PM	1	3	0	1	5	0	1	0	0	1	1	2	0	1	4
	4:45 PM	3	4	0	3	10	1	3	0	2	6	2	1	0	1	4
	5:00 PM	6	2	7	5	20	3	0	3	2	8	3	2	4	3	12
	5:15 PM	2	4	2	4	12	2	1	2	3	8	0	3	0	1	4
	5:30 PM	3	4	0	2	9	3	2	0	1	6	0	2	0	1	3
	5:45 PM	2	4	2	2	10	2	1	2	1	6	0	3	0	1	4
TOTAL		23	26	12	21	82	15	13	8	12	48	8	13	4	9	34

APPENDIX C – LEVEL OF SERVICE CALCULATIONS

Scenario Report

Scenario:	Existing AM
Command:	Default Command
Volume:	Existing AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	None
Trip Distribution:	None
Paths:	Default Path
Routes:	Default Route
Configuration:	Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.619	B	xxxxx 0.619	+ 0.000 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.708	C	xxxxx 0.708	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Bushard St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Base Vol:	63	294	112	115	257	54	68	1079	90	65	482	83
Growth 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
Initial Bse:	63	294	112	115	257	54	68	1079	90	65	482	83
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	63	294	112	115	257	54	68	1079	90	65	482	83
User 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
PHF 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
PHF Volume:	63	294	112	115	257	54	68	1079	90	65	482	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	294	112	115	257	54	68	1079	90	65	482	83
PCE 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
MLF 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
FinalVolume:	63	294	112	115	257	54	68	1079	90	65	482	83

Saturation Flow Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.45	0.55	1.00	1.65	0.35	1.00	1.85	0.15	1.00	1.71	0.29
Final Sat.:	1700	2462	938	1700	2810	590	1700	3138	262	1700	2901	499

Capacity Analysis Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Vol/Sat:	0.04	0.12	0.12	0.07	0.09	0.09	0.04	0.34	0.34	0.04	0.17	0.17
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.708
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Brookhurst St				Ellis Ave															
Approach:	North Bound		South Bound		East Bound		West Bound													
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected				Protected				Protected				Protected							
Rights:	Ovl				Ovl				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	1	1	0	2	0	1	1	0

Volume Module:												
Base Vol:	57	1094	169	163	798	168	249	961	76	145	404	155
Growth 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
Initial Bse:	57	1094	169	163	798	168	249	961	76	145	404	155
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	1094	169	163	798	168	249	961	76	145	404	155
User 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
PHF 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
PHF Volume:	57	1094	169	163	798	168	249	961	76	145	404	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	1094	169	163	798	168	249	961	76	145	404	155
PCE 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
MLF 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
FinalVolume:	57	1094	169	163	798	168	249	961	76	145	404	155
OvlAdjVol:	97			43								

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.85	0.15	2.00	1.45	0.55
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	3151	249	3400	2457	943

Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.10	0.10	0.16	0.10	0.07	0.31	0.30	0.04	0.16	0.16
OvlAdjV/S:	0.06			0.03								
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	8	20	0	0	4
Future Vol, veh/h	5	8	20	0	0	4
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	65	65	71	71	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	12	28	0	0	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	60	4	8	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	56	-	-	-	-	-
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	947	1080	1612	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	931	1080	1612	-	-	-
Mov Cap-2 Maneuver	931	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	7.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	1017	-	-	
HCM Lane V/C Ratio	0.017	-	0.02	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Intersection

Int Delay, s/veh 1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	18	1	2	6
Future Vol, veh/h	1	3	18	1	2	6
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	50	50	68	68	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	26	1	4	12

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	47	27	0
Stage 1	27	-	-
Stage 2	20	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	963	1048	-
Stage 1	996	-	-
Stage 2	1003	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	960	1048	-
Mov Cap-2 Maneuver	960	-	-
Stage 1	993	-	-
Stage 2	1003	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1025	1587
HCM Lane V/C Ratio	-	-	0.008	0.003
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	7	5	5
Future Vol, veh/h	5	2	2	7	5	5
Peak Hour Factor	0.67	0.67	0.75	0.75	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	3	3	9	6	6
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7	7.1	6.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	22%	71%	0%
Vol Thru, %	78%	0%	50%
Vol Right, %	0%	29%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	9	7	10
LT Vol	2	5	0
Through Vol	7	0	5
RT Vol	0	2	5
Lane Flow Rate	12	10	12
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.011	0.012
Departure Headway (Hd)	4.005	3.948	3.661
Convergence, Y/N	Yes	Yes	Yes
Cap	898	911	982
Service Time	2.01	1.954	1.666
HCM Lane V/C Ratio	0.013	0.011	0.012
HCM Control Delay	7.1	7	6.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	36	469	13	26	418
Future Vol, veh/h	12	36	469	13	26	418
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	39	510	14	28	454
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	800	262	0	0	524	0
Stage 1	517	-	-	-	-	-
Stage 2	283	-	-	-	-	-
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	322	737	-	-	1039	-
Stage 1	563	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	313	737	-	-	1039	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.2	0	0.5			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	551	1039	-	
HCM Lane V/C Ratio	-	-	0.095	0.027	-	
HCM Control Delay (s)	-	-	12.2	8.6	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1306	7	7	22	6	12
Future Vol, veh/h	1306	7	7	22	6	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	-	-	75	-	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	1420	8	8	24	7	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1428
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	472
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	472
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	262	-	-	472	-
HCM Lane V/C Ratio	0.075	-	-	0.016	-
HCM Control Delay (s)	19.8	-	-	12.8	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Scenario Report

Scenario: Existing PM

Command: Default Command
Volume: Existing PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: None
Trip Distribution: None
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.625	B	xxxxx 0.625	+ 0.000 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.769	C	xxxxx 0.769	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.625
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Bushard St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Base Vol:	92	550	114	57	274	32	65	641	72	111	935	111
Growth 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
Initial Bse:	92	550	114	57	274	32	65	641	72	111	935	111
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	550	114	57	274	32	65	641	72	111	935	111
User 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
PHF 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
PHF Volume:	92	550	114	57	274	32	65	641	72	111	935	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	550	114	57	274	32	65	641	72	111	935	111
PCE 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
MLF 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
FinalVolume:	92	550	114	57	274	32	65	641	72	111	935	111

Saturation Flow Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.66	0.34	1.00	1.79	0.21	1.00	1.80	0.20	1.00	1.79	0.21
Final Sat.:	1700	2816	584	1700	3044	356	1700	3057	343	1700	3039	361

Capacity Analysis Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Vol/Sat:	0.05	0.20	0.20	0.03	0.09	0.09	0.04	0.21	0.21	0.07	0.31	0.31
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.769
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Brookhurst St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	2	0	1	1	0	2

Volume Module:

Base Vol:	128	1348	163	130	1216	198	244	458	103	247	875	167
Growth 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
Initial Bse:	128	1348	163	130	1216	198	244	458	103	247	875	167
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	128	1348	163	130	1216	198	244	458	103	247	875	167
User 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
PHF 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
PHF Volume:	128	1348	163	130	1216	198	244	458	103	247	875	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	128	1348	163	130	1216	198	244	458	103	247	875	167
PCE 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
MLF 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
FinalVolume:	128	1348	163	130	1216	198	244	458	103	247	875	167
OvlAdjVol:	40			76								

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.63	0.37	2.00	1.68	0.32
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2776	624	3400	2855	545

Capacity Analysis Module:

Vol/Sat:	0.08	0.26	0.10	0.08	0.24	0.12	0.07	0.16	0.17	0.07	0.31	0.31
OvlAdjV/S:	0.02			0.04								
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	36	21	3	0	10
Future Vol, veh/h	8	36	21	3	0	10
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	79	79	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	46	28	4	0	20

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	70	10	20	0	0
Stage 1	10	-	-	-	-
Stage 2	60	-	-	-	-
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	934	1071	1596	-	-
Stage 1	1013	-	-	-	-
Stage 2	963	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	917	1071	1596	-	-
Mov Cap-2 Maneuver	917	-	-	-	-
Stage 1	995	-	-	-	-
Stage 2	963	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	6.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1039	-	-
HCM Lane V/C Ratio	0.018	-	0.054	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	11	13	20	14	23
Future Vol, veh/h	10	11	13	20	14	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	53	53	59	59	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	21	22	34	17	27

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	100	39	0
Stage 1	39	-	-
Stage 2	61	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	899	1033	-
Stage 1	983	-	-
Stage 2	962	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	889	1033	-
Mov Cap-2 Maneuver	889	-	-
Stage 1	972	-	-
Stage 2	962	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	959	1549
HCM Lane V/C Ratio	-	-	0.041	0.011
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection

Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	5	4	14	11	19
Future Vol, veh/h	23	5	4	14	11	19
Peak Hour Factor	0.54	0.54	0.79	0.79	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	9	5	18	15	25
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.2	6.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	22%	82%	0%
Vol Thru, %	78%	0%	37%
Vol Right, %	0%	18%	63%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	18	28	30
LT Vol	4	23	0
Through Vol	14	0	11
RT Vol	0	5	19
Lane Flow Rate	23	52	40
Geometry Grp	1	1	1
Degree of Util (X)	0.026	0.059	0.041
Departure Headway (Hd)	4.1	4.1	3.661
Convergence, Y/N	Yes	Yes	Yes
Cap	872	874	976
Service Time	2.13	2.121	1.692
HCM Lane V/C Ratio	0.026	0.059	0.041
HCM Control Delay	7.2	7.4	6.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1

Intersection

Int Delay, s/veh 1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	47	756	44	88	513
Future Vol, veh/h	16	47	756	44	88	513
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	-	-	-	80	-
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	17	51	822	48	96	558

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1317	435	0
Stage 1	846	-	-
Stage 2	471	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	149	569	-
Stage 1	381	-	-
Stage 2	594	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	130	569	-
Mov Cap-2 Maneuver	130	-	-
Stage 1	333	-	-
Stage 2	594	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.1	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	306	770
HCM Lane V/C Ratio	-	-	0.224	0.124
HCM Control Delay (s)	-	-	20.1	10.3
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.8	0.4

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↘	
Traffic Vol, veh/h	812	22	22	1157	8	16
Future Vol, veh/h	812	22	22	1157	8	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	883	24	24	1258	9	17

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	907
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	746
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	746
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	369	-	-	746	-
HCM Lane V/C Ratio	0.071	-	-	0.032	-
HCM Control Delay (s)	15.5	-	-	10	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Scenario Report
Scenario: Existing + Proj AM
Command: Default Command
Volume: Existing AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Project AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.619	B	xxxxx 0.623	+ 0.004 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.708	C	xxxxx 0.712	+ 0.004 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.623
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Bushard St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Base Vol:	63	294	112	115	257	54	68	1079	90	65	482	83
Growth 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
Initial Bse:	63	294	112	115	257	54	68	1079	90	65	482	83
Added Vol:	3	4	3	1	1	0	0	0	1	1	1	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	298	115	116	258	54	68	1079	91	66	483	85
User 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
PHF 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
PHF Volume:	66	298	115	116	258	54	68	1079	91	66	483	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	298	115	116	258	54	68	1079	91	66	483	85
PCE 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
MLF 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
FinalVolume:	66	298	115	116	258	54	68	1079	91	66	483	85

Saturation Flow Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.44	0.56	1.00	1.65	0.35	1.00	1.84	0.16	1.00	1.70	0.30
Final Sat.:	1700	2453	947	1700	2812	588	1700	3136	264	1700	2891	509

Capacity Analysis Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Vol/Sat:	0.04	0.12	0.12	0.07	0.09	0.09	0.04	0.34	0.34	0.04	0.17	0.17
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.712
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Brookhurst St				Ellis Ave			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected		Protected		Protected		Protected	
Rights:	Ovl		Ovl		Include		Include	
Min. Green:	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	2	0	1

Volume Module:												
Base Vol:	57	1094	169	163	798	168	249	961	76	145	404	155
Growth 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
Initial Bse:	57	1094	169	163	798	168	249	961	76	145	404	155
Added Vol:	1	0	0	0	0	4	10	10	4	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	1094	169	163	798	172	259	971	80	145	408	155
User 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
PHF 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
PHF Volume:	58	1094	169	163	798	172	259	971	80	145	408	155
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	1094	169	163	798	172	259	971	80	145	408	155
PCE 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
MLF 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
FinalVolume:	58	1094	169	163	798	172	259	971	80	145	408	155
OvlAdjVol:			97			43						

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.85	0.15	2.00	1.45	0.55
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	3141	259	3400	2464	936

Capacity Analysis Module:												
Vol/Sat:	0.03	0.21	0.10	0.10	0.16	0.10	0.08	0.31	0.31	0.04	0.17	0.17
OvlAdjV/S:			0.06			0.03						
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	7.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	20	54	0	0	4
Future Vol, veh/h	5	20	54	0	0	4
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	65	65	71	71	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	31	76	0	0	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	156	4	8	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	152	-	-	-	-	-
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	835	1080	1612	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	796	1080	1612	-	-	-
Mov Cap-2 Maneuver	796	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	7.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	1008	-	-	
HCM Lane V/C Ratio	0.047	-	0.038	-	-	
HCM Control Delay (s)	7.3	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Intersection

Int Delay, s/veh 6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	37	18	3	14	6
Future Vol, veh/h	8	37	18	3	14	6
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	50	50	68	68	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	74	26	4	28	12

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	96	28	0
Stage 1	28	-	-
Stage 2	68	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	903	1047	-
Stage 1	995	-	-
Stage 2	955	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	887	1047	-
Mov Cap-2 Maneuver	887	-	-
Stage 1	977	-	-
Stage 2	955	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	5.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1014	1583
HCM Lane V/C Ratio	-	-	0.089	0.018
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection

Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	2	8	7	10
Future Vol, veh/h	7	2	2	8	7	10
Peak Hour Factor	0.67	0.67	0.75	0.75	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	3	3	11	8	12
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.1	6.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	78%	0%
Vol Thru, %	80%	0%	41%
Vol Right, %	0%	22%	59%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	9	17
LT Vol	2	7	0
Through Vol	8	0	7
RT Vol	0	2	10
Lane Flow Rate	13	13	20
Geometry Grp	1	1	1
Degree of Util (X)	0.015	0.015	0.021
Departure Headway (Hd)	4.013	4.015	3.615
Convergence, Y/N	Yes	Yes	Yes
Cap	895	894	994
Service Time	2.021	2.026	1.623
HCM Lane V/C Ratio	0.015	0.015	0.02
HCM Control Delay	7.1	7.1	6.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.1

Intersection

Int Delay, s/veh 1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	44	471	14	29	419
Future Vol, veh/h	14	44	471	14	29	419
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	-	-	-	80	-
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	15	48	512	15	32	455

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	812	264	0
Stage 1	520	-	-
Stage 2	292	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	317	734	-
Stage 1	561	-	-
Stage 2	732	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	307	734	-
Mov Cap-2 Maneuver	307	-	-
Stage 1	544	-	-
Stage 2	732	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	550	1036
HCM Lane V/C Ratio	-	-	0.115	0.03
HCM Control Delay (s)	-	-	12.4	8.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1309	8	14	631	9	34
Future Vol, veh/h	1309	8	14	631	9	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	1423	9	15	686	10	37

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1432
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	470
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	470
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	284	-	-	470	-
HCM Lane V/C Ratio	0.165	-	-	0.032	-
HCM Control Delay (s)	20.2	-	-	12.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Scenario Report
Scenario: Existing + Proj PM
Command: Default Command
Volume: Existing PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Project PM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.625	B	xxxxx 0.628	+ 0.003 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.769	C	xxxxx 0.775	+ 0.006 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.628
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Bushard St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Base Vol:	92	550	114	57	274	32	65	641	72	111	935	111
Growth 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
Initial Bse:	92	550	114	57	274	32	65	641	72	111	935	111
Added Vol:	2	3	2	2	5	0	0	1	3	3	1	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	94	553	116	59	279	32	65	642	75	114	936	112
User 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
PHF 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
PHF Volume:	94	553	116	59	279	32	65	642	75	114	936	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	94	553	116	59	279	32	65	642	75	114	936	112
PCE 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
MLF 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
FinalVolume:	94	553	116	59	279	32	65	642	75	114	936	112

Saturation Flow Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.65	0.35	1.00	1.79	0.21	1.00	1.79	0.21	1.00	1.79	0.21
Final Sat.:	1700	2810	590	1700	3050	350	1700	3044	356	1700	3037	363

Capacity Analysis Module:	Bushard St NB			Bushard St SB			Ellis Ave EB			Ellis Ave WB		
Vol/Sat:	0.06	0.20	0.20	0.03	0.09	0.09	0.04	0.21	0.21	0.07	0.31	0.31
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.775
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Brookhurst St				Ellis Ave				
Approach:	North Bound		South Bound		East Bound		West Bound		
Movement:	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	2	0	1

Volume Module:												
Base Vol:	128	1348	163	130	1216	198	244	458	103	247	875	167
Growth 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
Initial Bse:	128	1348	163	130	1216	198	244	458	103	247	875	167
Added Vol:	4	0	0	0	0	12	7	7	2	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	1348	163	130	1216	210	251	465	105	247	887	167
User 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
PHF 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
PHF Volume:	132	1348	163	130	1216	210	251	465	105	247	887	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	1348	163	130	1216	210	251	465	105	247	887	167
PCE 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
MLF 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
FinalVolume:	132	1348	163	130	1216	210	251	465	105	247	887	167
OvlAdjVol:			40			85						

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.63	0.37	2.00	1.68	0.32
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2774	626	3400	2861	539

Capacity Analysis Module:												
Vol/Sat:	0.08	0.26	0.10	0.08	0.24	0.12	0.07	0.17	0.17	0.07	0.31	0.31
OvlAdjV/S:			0.02			0.05						
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	75	44	3	0	10
Future Vol, veh/h	8	75	44	3	0	10
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	79	79	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	95	59	4	0	20
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	132	10	20	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	122	-	-	-	-	-
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	862	1071	1596	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	830	1071	1596	-	-	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	6.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1596	-	1042	-	-	
HCM Lane V/C Ratio	0.037	-	0.101	-	-	
HCM Control Delay (s)	7.3	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

Intersection

Int Delay, s/veh 5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	34	13	27	53	23
Future Vol, veh/h	14	34	13	27	53	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	53	53	59	59	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	64	22	46	63	27

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	198	45	0
Stage 1	45	-	-
Stage 2	153	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	791	1025	-
Stage 1	977	-	-
Stage 2	875	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	758	1025	-
Mov Cap-2 Maneuver	758	-	-
Stage 1	936	-	-
Stage 2	875	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	5.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1533
HCM Lane V/C Ratio	-	-	0.097	0.041
HCM Control Delay (s)	-	-	9.3	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection

Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	5	4	16	12	22
Future Vol, veh/h	29	5	4	16	12	22
Peak Hour Factor	0.54	0.54	0.79	0.79	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	9	5	20	16	29
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	85%	0%
Vol Thru, %	80%	0%	35%
Vol Right, %	0%	15%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	20	34	34
LT Vol	4	29	0
Through Vol	16	0	12
RT Vol	0	5	22
Lane Flow Rate	25	63	45
Geometry Grp	1	1	1
Degree of Util (X)	0.029	0.072	0.046
Departure Headway (Hd)	4.119	4.139	3.675
Convergence, Y/N	Yes	Yes	Yes
Cap	867	866	971
Service Time	2.156	2.162	1.712
HCM Lane V/C Ratio	0.029	0.073	0.046
HCM Control Delay	7.3	7.5	6.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1

Intersection

Int Delay, s/veh 1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	52	757	46	97	515
Future Vol, veh/h	17	52	757	46	97	515
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	-	-	-	80	-
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	18	57	823	50	105	560

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1338	437	0
Stage 1	848	-	-
Stage 2	490	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	144	567	-
Stage 1	380	-	-
Stage 2	581	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	124	567	-
Mov Cap-2 Maneuver	124	-	-
Stage 1	328	-	-
Stage 2	581	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	302	768
HCM Lane V/C Ratio	-	-	0.248	0.137
HCM Control Delay (s)	-	-	20.8	10.4
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1	0.5

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↘	
Traffic Vol, veh/h	814	25	46	1160	10	30
Future Vol, veh/h	814	25	46	1160	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	885	27	50	1261	11	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	912
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	743
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	743
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	386	-	-	743	-
HCM Lane V/C Ratio	0.113	-	-	0.067	-
HCM Control Delay (s)	15.5	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

Scenario Report
Scenario: Opening Year AM

Command: Default Command
Volume: Existing AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cum AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.665	C	xxxxx 0.704	+ 0.040 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.761	D	xxxxx 0.810	+ 0.049 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.704
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Bushard St						Ellis Ave								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted			Permitted			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:												
Base Vol:	63	294	112	115	257	54	68	1079	90	65	482	83
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	68	318	121	124	278	58	73	1165	97	70	521	90
Added Vol:	0	0	2	38	0	0	0	53	0	2	50	36
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	318	123	162	278	58	73	1218	97	72	571	126
User 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
PHF 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
PHF Volume:	68	318	123	162	278	58	73	1218	97	72	571	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	318	123	162	278	58	73	1218	97	72	571	126
PCE 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
MLF 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
FinalVolume:	68	318	123	162	278	58	73	1218	97	72	571	126

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.44	0.56	1.00	1.65	0.35	1.00	1.85	0.15	1.00	1.64	0.36
Final Sat.:	1700	2451	949	1700	2810	590	1700	3149	251	1700	2786	614

Capacity Analysis Module:												
Vol/Sat:	0.04	0.13	0.13	0.10	0.10	0.10	0.04	0.39	0.39	0.04	0.20	0.20
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.810
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Brookhurst St						Ellis Ave								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected			Protected			Protected			Protected					
Rights:	Ovl			Ovl			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	3	0	1	1	0	3	0	1	2	0	1	1	0

Volume Module:												
Base Vol:	57	1094	169	163	798	168	249	961	76	145	404	155
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	62	1182	183	176	862	181	269	1038	82	157	436	167
Added Vol:	64	41	38	13	35	16	26	0	67	46	7	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	126	1223	221	189	897	197	295	1038	149	203	443	182
User 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
PHF 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
PHF Volume:	126	1223	221	189	897	197	295	1038	149	203	443	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	1223	221	189	897	197	295	1038	149	203	443	182
PCE 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
MLF 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
FinalVolume:	126	1223	221	189	897	197	295	1038	149	203	443	182
OvlAdjVol:			119			50						

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.75	0.25	2.00	1.42	0.58
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2973	427	3400	2409	991

Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.13	0.11	0.18	0.12	0.09	0.35	0.35	0.06	0.18	0.18
OvlAdjV/S:			0.07			0.03						
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	6.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	9	22	0	0	4
Future Vol, veh/h	5	9	22	0	0	4
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	65	65	71	71	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	14	31	0	0	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	66	4	8	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	939	1080	1612	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	921	1080	1612	-	-	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	7.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	1017	-	-	
HCM Lane V/C Ratio	0.019	-	0.021	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Intersection

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	19	1	2	6
Future Vol, veh/h	1	3	19	1	2	6
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	50	50	68	68	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	28	1	4	12

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	49	29	0
Stage 1	29	-	-
Stage 2	20	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	960	1046	-
Stage 1	994	-	-
Stage 2	1003	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	957	1046	-
Mov Cap-2 Maneuver	957	-	-
Stage 1	991	-	-
Stage 2	1003	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1022	1584
HCM Lane V/C Ratio	-	-	0.008	0.003
HCM Control Delay (s)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection

Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	2	8	5	5
Future Vol, veh/h	5	2	2	8	5	5
Peak Hour Factor	0.67	0.67	0.75	0.75	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	3	3	11	6	6
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7	7.1	6.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	71%	0%
Vol Thru, %	80%	0%	50%
Vol Right, %	0%	29%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	7	10
LT Vol	2	5	0
Through Vol	8	0	5
RT Vol	0	2	5
Lane Flow Rate	13	10	12
Geometry Grp	1	1	1
Degree of Util (X)	0.015	0.011	0.012
Departure Headway (Hd)	4.001	3.95	3.662
Convergence, Y/N	Yes	Yes	Yes
Cap	899	910	982
Service Time	2.006	1.958	1.668
HCM Lane V/C Ratio	0.014	0.011	0.012
HCM Control Delay	7.1	7	6.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0

HCM 6th TWSC
6: Bushard St. & Starling Ave.

06/25/2020

Intersection

Int Delay, s/veh 0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	40	518	14	29	462
Future Vol, veh/h	13	40	518	14	29	462
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	-	-	-	80	-
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	14	43	563	15	32	502

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	886	289	0
Stage 1	571	-	-
Stage 2	315	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	284	708	-
Stage 1	529	-	-
Stage 2	713	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	275	708	-
Mov Cap-2 Maneuver	275	-	-
Stage 1	512	-	-
Stage 2	713	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	511	992
HCM Lane V/C Ratio	-	-	0.113	0.032
HCM Control Delay (s)	-	-	12.9	8.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1529	8	8	780	7	13
Future Vol, veh/h	1529	8	8	780	7	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	1662	9	9	848	8	14

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1671
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	380
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	380
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	192	-	-	380	-
HCM Lane V/C Ratio	0.113	-	-	0.023	-
HCM Control Delay (s)	26.1	-	-	14.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Scenario Report

Scenario:	Opening Year PM
Command:	Default Command
Volume:	Existing PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Cum PM
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.671	B	xxxxx 0.697	+ 0.026 V/C
# 5 Brookhurst St/Ellis Ave	D	xxxxx 0.827	D	xxxxx 0.848	+ 0.022 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.697

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 100 Level Of Service: B

Street Name: Bushard St Ellis Ave

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:

Base Vol: 92 550 114 57 274 32 65 641 72 111 935 111

Growth Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08

Initial Bse: 99 594 123 62 296 35 70 692 78 120 1010 120

Added Vol: 0 0 2 19 0 0 0 26 0 2 28 20

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 99 594 125 81 296 35 70 718 78 122 1038 140

User 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

PHF 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

PHF Volume: 99 594 125 81 296 35 70 718 78 122 1038 140

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 99 594 125 81 296 35 70 718 78 122 1038 140

PCE 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

MLF 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

FinalVolume: 99 594 125 81 296 35 70 718 78 122 1038 140

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 1.65 0.35 1.00 1.79 0.21 1.00 1.80 0.20 1.00 1.76 0.24

Final Sat.: 1700 2808 592 1700 3044 356 1700 3068 332 1700 2996 404

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Capacity Analysis Module:

Vol/Sat: 0.06 0.21 0.21 0.05 0.10 0.10 0.04 0.23 0.23 0.07 0.35 0.35

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.848
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Brookhurst St						Ellis Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	1	2	0	1	1	1	0

Volume Module:	Brookhurst St NB			Brookhurst St SB			Ellis Ave EB			Ellis Ave WB		
Base Vol:	128	1348	163	130	1216	198	244	458	103	247	875	167
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	138	1456	176	140	1313	214	264	495	111	267	945	180
Added Vol:	32	24	19	12	18	10	15	0	32	27	9	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	170	1480	195	152	1331	224	279	495	143	294	954	190
User 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
PHF 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
PHF Volume:	170	1480	195	152	1331	224	279	495	143	294	954	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	1480	195	152	1331	224	279	495	143	294	954	190
PCE 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
MLF 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
FinalVolume:	170	1480	195	152	1331	224	279	495	143	294	954	190
OvlAdjVol:	48			85								

Saturation Flow Module:	Brookhurst St NB			Brookhurst St SB			Ellis Ave EB			Ellis Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.55	0.45	2.00	1.67	0.33
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2637	763	3400	2834	566

Capacity Analysis Module:	Brookhurst St NB			Brookhurst St SB			Ellis Ave EB			Ellis Ave WB		
Vol/Sat:	0.10	0.29	0.11	0.09	0.26	0.13	0.08	0.19	0.19	0.09	0.34	0.34
OvlAdjV/S:	0.03			0.05								
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	39	23	3	0	11
Future Vol, veh/h	9	39	23	3	0	11
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	79	79	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	49	31	4	0	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	77	11	22	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	926	1070	1593	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	907	1070	1593	-	-	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	6.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1593	-	1035	-	-	
HCM Lane V/C Ratio	0.019	-	0.059	-	-	
HCM Control Delay (s)	7.3	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

Intersection

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	12	14	22	15	25
Future Vol, veh/h	11	12	14	22	15	25
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	53	53	59	59	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	23	24	37	18	30

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	109	43	0
Stage 1	43	-	-
Stage 2	66	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	888	1027	-
Stage 1	979	-	-
Stage 2	957	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	877	1027	-
Mov Cap-2 Maneuver	877	-	-
Stage 1	967	-	-
Stage 2	957	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	949	1542
HCM Lane V/C Ratio	-	-	0.046	0.012
HCM Control Delay (s)	-	-	9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Intersection

Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	5	4	14	12	21
Future Vol, veh/h	25	5	4	14	12	21
Peak Hour Factor	0.54	0.54	0.79	0.79	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	9	5	18	16	28
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	22%	83%	0%
Vol Thru, %	78%	0%	36%
Vol Right, %	0%	17%	64%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	18	30	33
LT Vol	4	25	0
Through Vol	14	0	12
RT Vol	0	5	21
Lane Flow Rate	23	56	44
Geometry Grp	1	1	1
Degree of Util (X)	0.026	0.064	0.045
Departure Headway (Hd)	4.108	4.115	3.665
Convergence, Y/N	Yes	Yes	Yes
Cap	869	871	974
Service Time	2.143	2.139	1.7
HCM Lane V/C Ratio	0.026	0.064	0.045
HCM Control Delay	7.3	7.4	6.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1

HCM 6th TWSC
6: Bushard St. & Starling Ave.

06/25/2020

Intersection

Int Delay, s/veh 1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	52	834	48	97	566
Future Vol, veh/h	18	52	834	48	97	566
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	-	-	-	80	-
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	20	57	907	52	105	615

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1451	480	0
Stage 1	933	-	-
Stage 2	518	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	122	532	-
Stage 1	343	-	-
Stage 2	563	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	104	532	-
Mov Cap-2 Maneuver	104	-	-
Stage 1	293	-	-
Stage 2	563	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.7	0	1.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	258	713
HCM Lane V/C Ratio	-	-	0.295	0.148
HCM Control Delay (s)	-	-	24.7	10.9
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	1.2	0.5

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↘	
Traffic Vol, veh/h	940	24	24	1323	9	18
Future Vol, veh/h	940	24	24	1323	9	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	1022	26	26	1438	10	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1048
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	660
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	660
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	315	-	-	660	-
HCM Lane V/C Ratio	0.093	-	-	0.04	-
HCM Control Delay (s)	17.6	-	-	10.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Scenario Report

Scenario: OY + Proj AM

Command: Default Command
Volume: Existing AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cum+Proj AM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.665	C	xxxxx 0.707	+ 0.042 V/C
# 5 Brookhurst St/Ellis Ave	C	xxxxx 0.761	D	xxxxx 0.813	+ 0.053 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.707
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Bushard St						Ellis Ave								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted			Permitted			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:												
Base Vol:	63	294	112	115	257	54	68	1079	90	65	482	83
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	68	318	121	124	278	58	73	1165	97	70	521	90
Added Vol:	3	4	4	39	1	0	0	53	1	2	51	38
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	322	125	163	279	58	73	1218	98	72	572	128
User 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
PHF 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
PHF Volume:	71	322	125	163	279	58	73	1218	98	72	572	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	71	322	125	163	279	58	73	1218	98	72	572	128
PCE 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
MLF 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
FinalVolume:	71	322	125	163	279	58	73	1218	98	72	572	128

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.44	0.56	1.00	1.65	0.35	1.00	1.85	0.15	1.00	1.63	0.37
Final Sat.:	1700	2448	952	1700	2811	589	1700	3146	254	1700	2779	621

Capacity Analysis Module:												
Vol/Sat:	0.04	0.13	0.13	0.10	0.10	0.10	0.04	0.39	0.39	0.04	0.21	0.21
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.813
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Brookhurst St				Ellis Ave			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected		Protected		Protected		Protected	
Rights:	Ovl		Ovl		Include		Include	
Min. Green:	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	2	0	1

Volume Module:												
Base Vol:	57	1094	169	163	798	168	249	961	76	145	404	155
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	62	1182	183	176	862	181	269	1038	82	157	436	167
Added Vol:	65	41	38	13	35	20	36	10	70	46	10	15
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	127	1223	221	189	897	201	305	1048	152	203	446	182
User 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
PHF 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
PHF Volume:	127	1223	221	189	897	201	305	1048	152	203	446	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	127	1223	221	189	897	201	305	1048	152	203	446	182
PCE 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
MLF 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
FinalVolume:	127	1223	221	189	897	201	305	1048	152	203	446	182
OvlAdjVol:			119			49						

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.75	0.25	2.00	1.42	0.58
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2969	431	3400	2414	986

Capacity Analysis Module:												
Vol/Sat:	0.07	0.24	0.13	0.11	0.18	0.12	0.09	0.35	0.35	0.06	0.18	0.18
OvlAdjV/S:			0.07			0.03						
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	7.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	21	56	0	0	4
Future Vol, veh/h	5	21	56	0	0	4
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	65	65	71	71	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	32	79	0	0	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	162	4	8	0	-	0
Stage 1	4	-	-	-	-	-
Stage 2	158	-	-	-	-	-
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	829	1080	1612	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	788	1080	1612	-	-	-
Mov Cap-2 Maneuver	788	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	7.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1612	-	1008	-	-	
HCM Lane V/C Ratio	0.049	-	0.04	-	-	
HCM Control Delay (s)	7.3	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-	

Intersection						
Int Delay, s/veh	6.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	37	19	3	14	6
Future Vol, veh/h	8	37	19	3	14	6
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	50	50	68	68	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	74	28	4	28	12
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	98	30	0	0	32	0
Stage 1	30	-	-	-	-	-
Stage 2	68	-	-	-	-	-
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	901	1044	-	-	1580	-
Stage 1	993	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	885	1044	-	-	1580	-
Mov Cap-2 Maneuver	885	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.9	0		5.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1012		1580	-	
HCM Lane V/C Ratio	-	- 0.089		0.018	-	
HCM Control Delay (s)	-	- 8.9		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.3		0.1	-	

Intersection

Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	2	9	7	10
Future Vol, veh/h	7	2	2	9	7	10
Peak Hour Factor	0.67	0.67	0.75	0.75	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	3	3	12	8	12
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	7.1	6.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	18%	78%	0%
Vol Thru, %	82%	0%	41%
Vol Right, %	0%	22%	59%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	9	17
LT Vol	2	7	0
Through Vol	9	0	7
RT Vol	0	2	10
Lane Flow Rate	15	13	20
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.015	0.021
Departure Headway (Hd)	4.009	4.017	3.616
Convergence, Y/N	Yes	Yes	Yes
Cap	896	894	994
Service Time	2.018	2.028	1.624
HCM Lane V/C Ratio	0.017	0.015	0.02
HCM Control Delay	7.1	7.1	6.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.1

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	48	520	15	32	463
Future Vol, veh/h	15	48	520	15	32	463
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	-	-	-	80	-
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	16	52	565	16	35	503
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	895	291	0	0	581	0
Stage 1	573	-	-	-	-	-
Stage 2	322	-	-	-	-	-
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	280	706	-	-	989	-
Stage 1	527	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	706	-	-	989	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.2	0		0.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	510	989	-	
HCM Lane V/C Ratio	-	-	0.134	0.035	-	
HCM Control Delay (s)	-	-	13.2	8.8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-	

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1532	9	15	781	10	35
Future Vol, veh/h	1532	9	15	781	10	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	1665	10	16	849	11	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1675
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	379
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	379
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	219	-	-	379	-
HCM Lane V/C Ratio	0.223	-	-	0.043	-
HCM Control Delay (s)	26.1	-	-	14.9	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Scenario Report
Scenario: OY + Proj PM

Command: Default Command
Volume: Existing PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cum+Proj PM
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Bushard St/Ellis Ave	B	xxxxx 0.671	C	xxxxx 0.700	+ 0.029 V/C
# 5 Brookhurst St/Ellis Ave	D	xxxxx 0.827	D	xxxxx 0.854	+ 0.027 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Bushard St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Street Name:	Bushard St						Ellis Ave								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Permitted			Permitted			Permitted			Permitted					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:												
Base Vol:	92	550	114	57	274	32	65	641	72	111	935	111
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	99	594	123	62	296	35	70	692	78	120	1010	120
Added Vol:	2	3	4	21	5	0	0	28	3	5	29	22
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	597	127	83	301	35	70	720	81	125	1039	142
User 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
PHF 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
PHF Volume:	101	597	127	83	301	35	70	720	81	125	1039	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	101	597	127	83	301	35	70	720	81	125	1039	142
PCE 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
MLF 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
FinalVolume:	101	597	127	83	301	35	70	720	81	125	1039	142

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.65	0.35	1.00	1.79	0.21	1.00	1.80	0.20	1.00	1.76	0.24
Final Sat.:	1700	2803	597	1700	3050	350	1700	3057	343	1700	2991	409

Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.21	0.05	0.10	0.10	0.04	0.24	0.24	0.07	0.35	0.35
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Brookhurst St/Ellis Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	5	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Brookhurst St				Ellis Ave			
Approach:	North Bound		South Bound		East Bound		West Bound	
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Protected		Protected		Protected		Protected	
Rights:	Ovl		Ovl		Include		Include	
Min. Green:	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	2	0	1

Volume Module:												
Base Vol:	128	1348	163	130	1216	198	244	458	103	247	875	167
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	138	1456	176	140	1313	214	264	495	111	267	945	180
Added Vol:	36	24	19	12	18	21	22	7	34	27	21	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	174	1480	195	152	1331	235	286	502	145	294	966	190
User 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
PHF 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
PHF Volume:	174	1480	195	152	1331	235	286	502	145	294	966	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	1480	195	152	1331	235	286	502	145	294	966	190
PCE 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
MLF 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
FinalVolume:	174	1480	195	152	1331	235	286	502	145	294	966	190
OvlAdjVol:			48			92						

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	1.55	0.45	2.00	1.67	0.33
Final Sat.:	1700	5100	1700	1700	5100	1700	3400	2637	763	3400	2840	560

Capacity Analysis Module:												
Vol/Sat:	0.10	0.29	0.11	0.09	0.26	0.14	0.08	0.19	0.19	0.09	0.34	0.34
OvlAdjV/S:			0.03			0.05						
Crit Moves:	****			****			****			****		

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	78	46	3	0	11
Future Vol, veh/h	9	78	46	3	0	11
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	79	79	75	75	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	99	61	4	0	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	137	11	22	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	126	-	-	-	-	-
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	856	1070	1593	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	823	1070	1593	-	-	-
Mov Cap-2 Maneuver	823	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	6.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1593	-	1038	-	-	
HCM Lane V/C Ratio	0.039	-	0.106	-	-	
HCM Control Delay (s)	7.4	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-	

Intersection						
Int Delay, s/veh	5.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	35	14	29	54	25
Future Vol, veh/h	15	35	14	29	54	25
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	53	53	59	59	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	66	24	49	64	30
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	207	49	0	0	73	0
Stage 1	49	-	-	-	-	-
Stage 2	158	-	-	-	-	-
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	781	1020	-	-	1527	-
Stage 1	973	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	747	1020	-	-	1527	-
Mov Cap-2 Maneuver	747	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		5.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	919	1527	-	
HCM Lane V/C Ratio	-	-	0.103	0.042	-	
HCM Control Delay (s)	-	-	9.4	7.5	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-	

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	5	4	17	13	24
Future Vol, veh/h	31	5	4	17	13	24
Peak Hour Factor	0.54	0.54	0.79	0.79	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	9	5	22	17	32
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	7.3	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	19%	86%	0%
Vol Thru, %	81%	0%	35%
Vol Right, %	0%	14%	65%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	21	36	37
LT Vol	4	31	0
Through Vol	17	0	13
RT Vol	0	5	24
Lane Flow Rate	27	67	49
Geometry Grp	1	1	1
Degree of Util (X)	0.03	0.077	0.05
Departure Headway (Hd)	4.126	4.155	3.681
Convergence, Y/N	Yes	Yes	Yes
Cap	864	863	968
Service Time	2.167	2.178	1.722
HCM Lane V/C Ratio	0.031	0.078	0.051
HCM Control Delay	7.3	7.5	6.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	57	835	50	106	568
Future Vol, veh/h	19	57	835	50	106	568
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	-	-	-	80	-
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	21	62	908	54	115	617
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1474	481	0	0	962	0
Stage 1	935	-	-	-	-	-
Stage 2	539	-	-	-	-	-
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	117	531	-	-	711	-
Stage 1	342	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	98	531	-	-	711	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	26.1	0	1.7			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	252	711	-	
HCM Lane V/C Ratio	-	-	0.328	0.162	-	
HCM Control Delay (s)	-	-	26.1	11	-	
HCM Lane LOS	-	-	D	B	-	
HCM 95th %tile Q(veh)	-	-	1.4	0.6	-	

Intersection

Int Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	942	27	48	1326	11	32
Future Vol, veh/h	942	27	48	1326	11	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	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	1024	29	52	1441	12	35

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1053
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	657
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	657
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	329	-	-	657	-
HCM Lane V/C Ratio	0.142	-	-	0.079	-
HCM Control Delay (s)	17.7	-	-	11	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

