



## 13.3 Traffic Impact Analysis

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# **BROOKHURST STREET/ADAMS AVENUE IMPROVEMENT PROJECT TRAFFIC IMPACT ANALYSIS**

Prepared for

**CITY OF HUNTINGTON BEACH**

Prepared by



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**June 11, 2013**

JN 10-107799

# TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	1
INTRODUCTION .....	2
Study Area .....	2
INTERSECTION ANALYSIS METHODOLOGY .....	2
Performance Criteria.....	3
City of Huntington Beach Threshold of Significance.....	3
Traffic Volumes & LOS Assumptions.....	3
Existing Conditions Intersection Peak Hour Level of Service .....	4
PROPOSED PROJECT IMPROVEMENTS.....	4
FORECAST EXISTING PLUS PROJECT CONDITIONS.....	5
Forecast Existing Plus Project Conditions Intersection Peak Hour Level of Service .....	5
FORECAST YEAR 2030 WITHOUT PROJECT CONDITIONS.....	5
Forecast Year 2030 Without Project Conditions Intersection Peak Hour Level of Service.....	5
FORECAST YEAR 2030 WITH PROJECT CONDITIONS .....	6
Forecast Year 2030 With Project Conditions Intersection Peak Hour Level of Service .....	6
MITIGATION MEASURES.....	7
CONCLUSIONS.....	7

## APPENDIX A LOS ANALYSIS SHEETS

## LIST OF TABLES

Table 1	Signalized Study Intersection V/C & LOS Ranges.....	3
Table 2	Existing Conditions AM & PM Peak Hour Intersection LOS.....	4
Table 3	Forecast Existing Plus Project Conditions AM & PM Peak Hour Intersection LOS.....	5
Table 4	Forecast Year 2030 Without Project Conditions AM & PM Peak Hour Intersection LOS.....	6
Table 5	Forecast Year 2030 With Project Conditions AM & PM Peak Hour Intersection LOS.....	6

## LIST OF EXHIBITS

		Follows Page
Exhibit 1	Regional Project Location .....	2
Exhibit 2	Proposed Project Improvements .....	2
Exhibit 3	Existing AM & PM Peak Hour Intersection Volumes .....	3
Exhibit 4	Forecast Year 2030 AM & PM Peak Hour Intersection Volumes .....	5

## **EXECUTIVE SUMMARY**

This study analyzes traffic conditions associated with the proposed Brookhurst Street/Adams Avenue Improvement Project in the City of Huntington Beach. The proposed project improvements consist of widening all four legs of the Brookhurst Street/Adams Avenue intersection to accommodate the forecast increased traffic demand and achieve the City-acceptable level of service based on projected year 2030 travel demand data. The analysis utilizes the existing and forecast future year 2030 traffic volumes contained in the *Brookhurst Street and Adams Avenue Intersection Improvements, CC-1377 Project Report (Harris & Associates, March 12, 2013)*.

The key components of the roadway improvements for the proposed project consist of the following:

- Modifying the northbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and two right-turn lanes;
- Modifying the southbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and one right-turn lane; and
- Modifying the eastbound and westbound Adams Avenue approaches from two left-turn lanes, three through lanes, and one right-turn lane to consist of two left-turn lanes, four through lanes, and one right-turn lane.

Based on City of Huntington Beach thresholds of significance, no significant traffic impacts are forecast to occur at the signalized Brookhurst Street/Adams Avenue study intersection for forecast existing plus project conditions or for forecast year 2030 with project conditions.

No traffic mitigation measures are required for the proposed project, since no significant traffic impacts are forecast to occur as a result of the proposed project.

## **INTRODUCTION**

This study analyzes traffic conditions associated with the proposed Brookhurst Street/Adams Avenue Improvement Project in the City of Huntington Beach. The proposed project improvements consist of widening all four legs of the Brookhurst Street/Adams Avenue intersection to accommodate the forecast increased traffic demand and achieve the City-acceptable level of service based on projected year 2030 travel demand data. The analysis utilizes the existing and forecast future year 2030 traffic volumes contained in the *Brookhurst Street and Adams Avenue Intersection Improvements, CC-1377 Project Report (Harris & Associates, March 12, 2013)*.

The key components of the roadway improvements for the proposed project consist of the following:

- Modifying the northbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and two right-turn lanes;
- Modifying the southbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and one right-turn lane; and
- Modifying the eastbound and westbound Adams Avenue approaches from two left-turn lanes, three through lanes, and one right-turn lane to consist of two left-turn lanes, four through lanes, and one right-turn lane.

Exhibit 1 shows the regional location of the project site. Exhibit 2 shows the proposed project improvements.

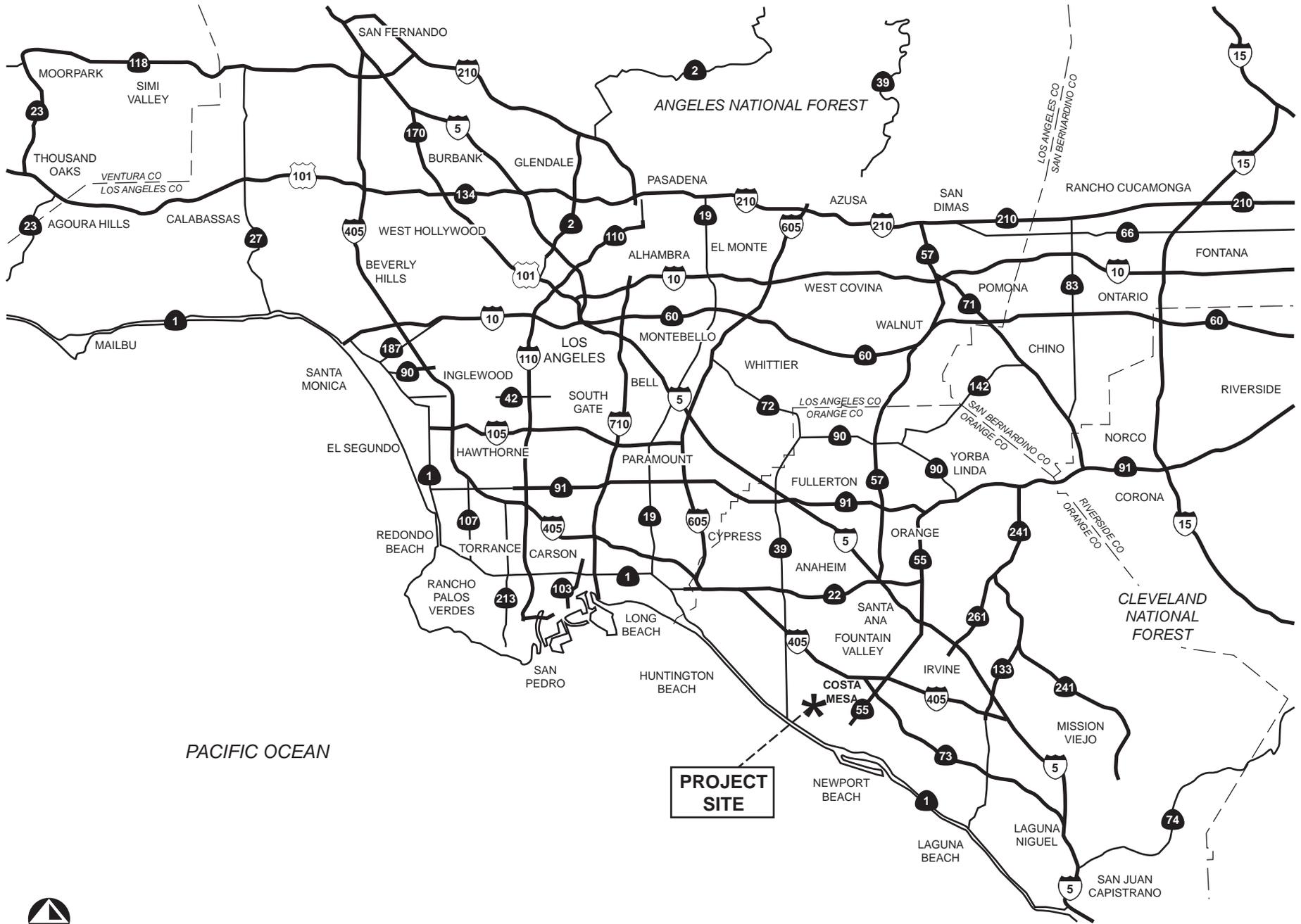
### **Study Area**

This study analyzes the signalized Brookhurst Street/Adams Avenue study intersection for the following four study scenarios:

- Existing Conditions;
- Forecast Existing Plus Project Conditions;
- Forecast Year 2030 Without Project Conditions; and
- Forecast Year 2030 With Project Conditions.

## **INTERSECTION ANALYSIS METHODOLOGY**

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection. The *Intersection Capacity Utilization (ICU)* analysis method is utilized by the City of Huntington Beach to determine the operating LOS of signalized intersections. The *ICU* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding volume to capacity (V/C) ratios shown in Table 1.



PACIFIC OCEAN

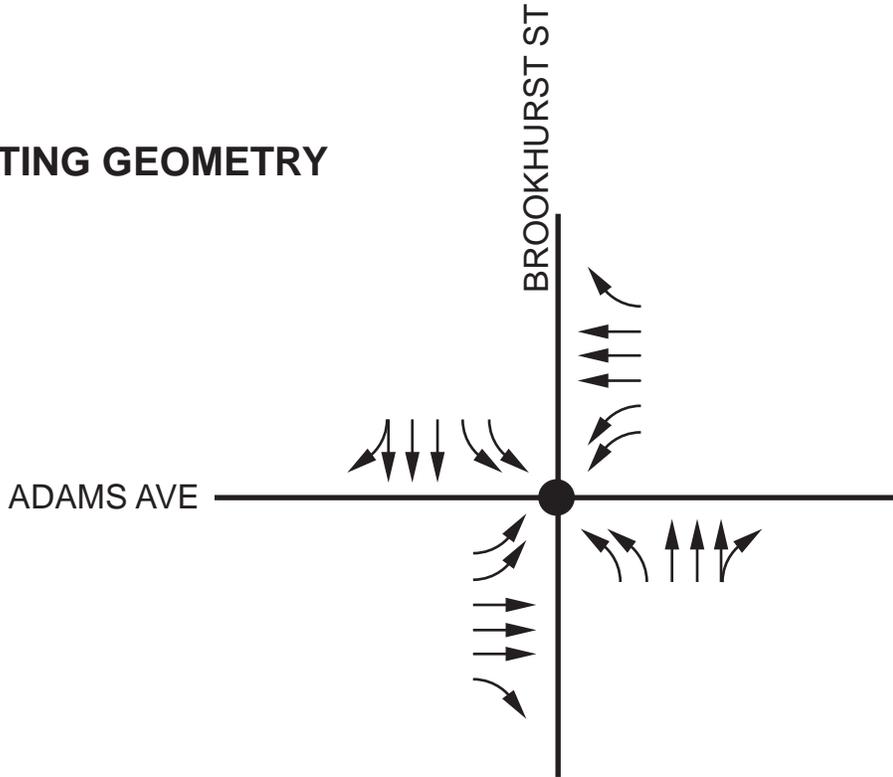
**PROJECT SITE**



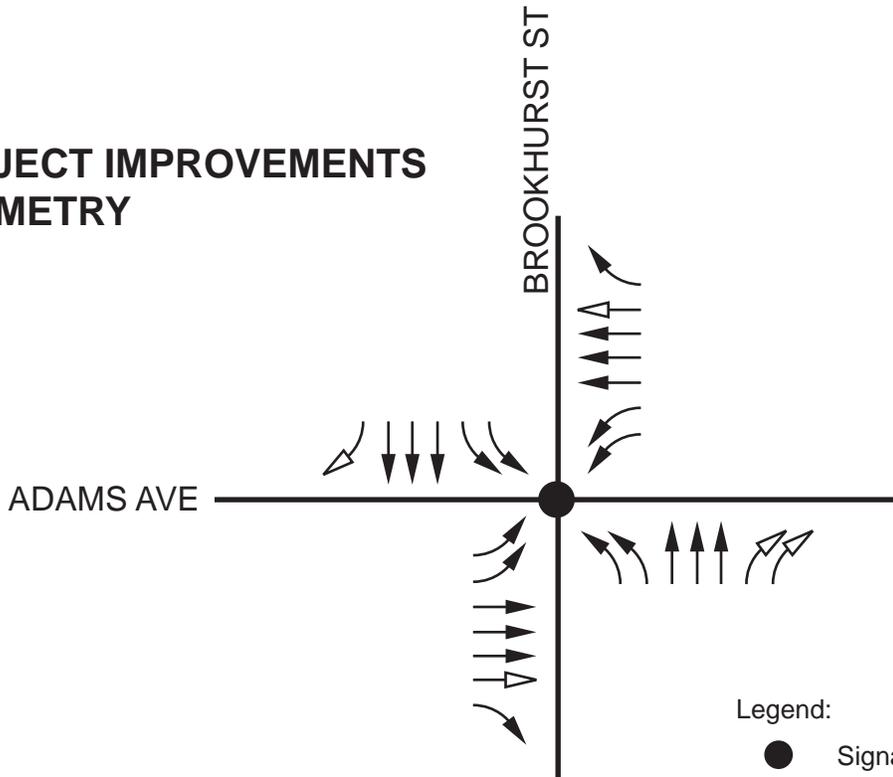
Not to Scale



# EXISTING GEOMETRY



# PROJECT IMPROVEMENTS GEOMETRY



Legend:

- Signal-Controlled Intersection
- ← Existing Lane
- ◁ Additional Lane



Not to Scale



**Table 1**  
**Signalized Study**  
**Intersection V/C & LOS Ranges**

V/C Ratio	LOS
≤ 0.60	A
0.61 to ≤ 0.70	B
0.71 to ≤ 0.80	C
0.81 to ≤ 0.90	D
0.91 to ≤ 1.00	E
> 1.00	F

**Note:** V/C Ratio = Volume to Capacity Ratio.

**Source:** 1990 Transportation Research Board.

### Performance Criteria

The City of Huntington Beach target for peak hour operation of the study intersection is LOS D or better.

### City of Huntington Beach Threshold of Significance

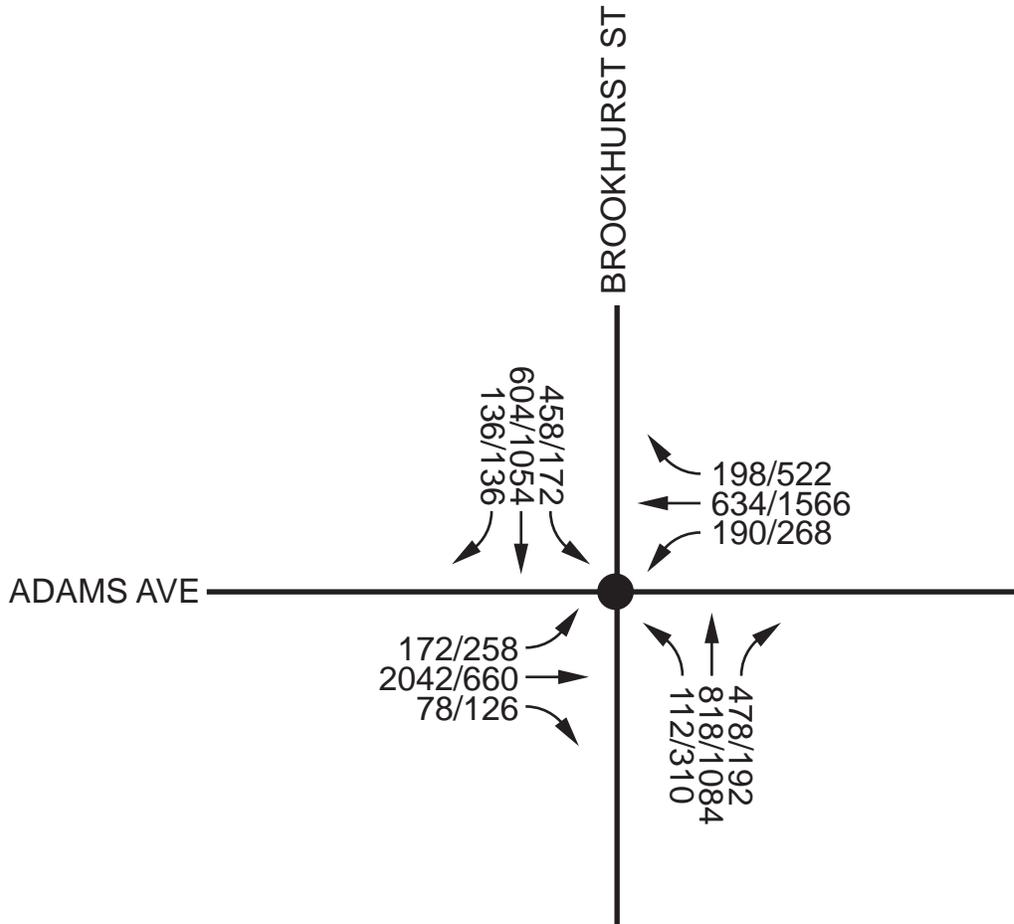
To determine whether the addition of project-generated trips at a signalized study intersection results in a significant impact, and thus requires mitigation, the City of Huntington Beach has established the following threshold of significance:

- A significant impact occurs when a proposed project causes an intersection to change from an acceptable LOS (LOS D or better) to a deficient LOS (LOS E or F); or
- A significant impact occurs when a proposed project increases the LOS by 0.01 at a study intersection operating at a deficient LOS (LOS E or F) without the project.

### Traffic Volumes & LOS Assumptions

As previously noted, this analysis utilizes existing and forecast future year 2030 traffic volumes at the study intersection contained in the *Brookhurst Street and Adams Avenue Intersection Improvements, CC-1377 Project Report (Harris & Associates, March 12, 2013)*. Additionally, ICU LOS results for existing conditions, forecast year 2030 without project conditions, and forecast year 2030 with project conditions are also from the *Project Report (Harris & Associates, March 12, 2013)*. Forecast existing plus project conditions has subsequently been prepared since it is not contained in the *Project Report (Harris & Associates, March 12, 2013)*.

Exhibit 3 shows existing a.m. and p.m. peak hour volumes at the Brookhurst Street/Adams Avenue study intersection.



Legend:

● Study Intersection

XX/XX AM/PM Intersection Volumes



Not to Scale



## Existing AM & PM Peak Hour Intersection Volumes

## Existing Conditions Intersection Peak Hour Level of Service

Table 2 summarizes existing conditions a.m. peak hour and p.m. peak hour LOS of the Brookhurst Street/Adams Avenue study intersection; detailed LOS analysis sheets are contained in Appendix A.

**Table 2**  
**Existing Conditions AM & PM Peak Hour Intersection LOS**

Study Intersection	Existing Conditions	
	AM Peak Hour	PM Peak Hour
	V/C – LOS	V/C – LOS
Brookhurst Street/Adams Avenue	0.89 – D	0.76 – C

**Note:** V/C = volume to capacity ratio.

As shown in Table 2, the Brookhurst Street/Adams Avenue study intersection is currently operating at an acceptable LOS (LOS D or better) according to City of Huntington Beach performance criteria.

## PROPOSED PROJECT IMPROVEMENTS

The proposed project consists of widening all four legs of the Brookhurst Street/Adams Avenue intersection with proposed 10-foot wide through lanes. The key components of the roadway improvements for the proposed project consist of the following:

- Modifying the northbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and two right-turn lanes;
- Modifying the southbound Brookhurst Street approach from two left-turn lanes, two through lanes and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes, and one right-turn lane; and
- Modifying the eastbound and westbound Adams Avenue approaches from two left-turn lanes, three through lanes, and one right-turn lane to consist of two left-turn lanes, four through lanes, and one right-turn lane.

As previously noted, Exhibit 2 shows the proposed project improvements.

## FORECAST EXISTING PLUS PROJECT CONDITIONS

Forecast existing plus project conditions assumes the proposed project geometry and the existing a.m. and p.m. peak hour volumes contained in the *Project Report (Harris & Associates, March 12, 2013)*.

### Forecast Existing Plus Project Conditions Intersection Peak Hour Level of Service

Table 3 summarizes forecast existing plus project conditions a.m. peak hour and p.m. peak hour LOS of the Brookhurst Street/Adams Avenue study intersection; detailed LOS analysis sheets are contained in Appendix A.

**Table 3**  
**Forecast Existing Plus Project**  
**Conditions AM & PM Peak Hour Intersection LOS**

Study Intersection	Existing Conditions		Forecast Existing Plus Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C – LOS	V/C – LOS	V/C – LOS	V/C – LOS	
Brookhurst Street/Adams Avenue	0.89 – D	0.76 – C	0.70 – B	0.66 – B	No

**Note:** V/C = volume to capacity ratio.

As shown in Table 3, with the proposed project intersection improvements, the Brookhurst Street/Adams Avenue study intersection is forecast to continue to operate at an acceptable LOS (LOS D or better) according to City of Huntington Beach performance criteria for forecast existing plus project conditions.

As also shown in Table 3, based on City of Huntington Beach established thresholds of significance, no significant impact at the Brookhurst Street/Adams Avenue study intersection is forecast to occur for forecast existing plus project conditions.

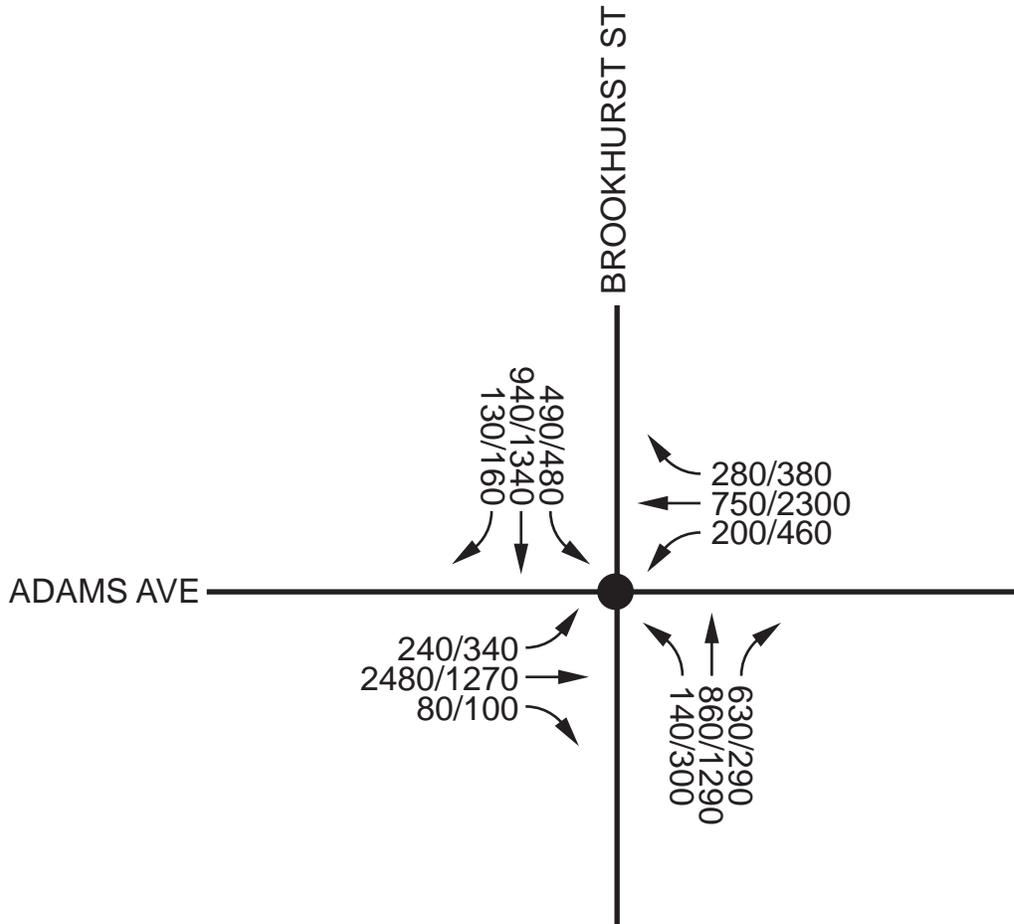
## FORECAST YEAR 2030 WITHOUT PROJECT CONDITIONS

To determine potential traffic impacts associated with the proposed project at forecast year 2030, forecast year 2030 without project conditions are examined prior to forecast year 2030 with project conditions.

Exhibit 4 shows forecast year 2030 a.m. and p.m. peak hour volumes at the Brookhurst Street/Adams Avenue study intersection.

### Forecast Year 2030 Without Project Conditions Intersection Peak Hour Level of Service

Table 4 summarizes forecast year 2030 without project conditions a.m. peak hour and p.m. peak hour LOS of the Brookhurst Street/Adams Avenue study intersection; detailed LOS analysis sheets are contained in Appendix A.



Legend:

● Study Intersection

XX/XX AM/PM Intersection Volumes



Not to Scale



## Forecast Year 2030 AM & PM Peak Hour Intersection Volumes

**Table 4**  
**Forecast Year 2030 Without**  
**Project Conditions AM & PM Peak Hour Intersection LOS**

Study Intersection	Forecast Year 2030 Without Project Conditions	
	AM Peak Hour	PM Peak Hour
	V/C – LOS	V/C – LOS
Brookhurst Street/Adams Avenue	1.03 – F	1.05 – F

**Note:** V/C = volume to capacity ratio.

As shown in Table 4, the Brookhurst Street/Adams Avenue study intersection is forecast to operate at a deficient LOS (LOS E or worse) during both the a.m. and p.m. peak hours according to City of Huntington Beach performance criteria for forecast year 2030 without project conditions.

### FORECAST YEAR 2030 WITH PROJECT CONDITIONS

Forecast year 2030 with project conditions assumes the proposed project geometry and the forecast year 2030 a.m. and p.m. peak hour volumes contained in the *Project Report (Harris & Associates, March 12, 2013)*.

### Forecast Year 2030 With Project Conditions Intersection Peak Hour Level of Service

Table 5 summarizes forecast year 2030 with project conditions a.m. peak hour and p.m. peak hour LOS of the Brookhurst Street/Adams Avenue study intersection; detailed LOS analysis sheets are contained in Appendix A.

**Table 5**  
**Forecast Year 2030 With Project**  
**Conditions AM & PM Peak Hour Intersection LOS**

Study Intersection	Forecast Year 2030 Without Project Conditions		Forecast Year 2030 With Project Conditions		Significant Impact?
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	
	V/C – LOS	V/C – LOS	V/C – LOS	V/C – LOS	
Brookhurst Street/Adams Avenue	1.03 – F	1.05 – F	0.79 – C	0.88 – D	No

**Note:** V/C = volume to capacity ratio.

As shown in Table 5, with the proposed project intersection improvements, the Brookhurst Street/Adams Avenue intersection is forecast to operate at an acceptable LOS (LOS D or better) according to City of Huntington Beach performance criteria for forecast year 2030 with project conditions.

As also shown in Table 5, based on City of Huntington Beach established thresholds of significance, no significant impact is forecast to occur at the Brookhurst Street/Adams Avenue study intersection for forecast year 2030 with project conditions.

## **MITIGATION MEASURES**

No traffic mitigation measures are required for the proposed project, since no significant traffic impacts are forecast to occur as a result of the proposed project based on City of Huntington Beach thresholds of significance.

## **CONCLUSIONS**

Based on City of Huntington Beach thresholds of significance, no significant traffic impacts are forecast to occur at the signalized Brookhurst Street/Adams Avenue study intersection for forecast existing plus project conditions or for forecast year 2030 with project conditions.

No traffic mitigation measures are required for the proposed project, since no significant traffic impacts are forecast to occur as a result of the proposed project.

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**APPENDIX A**  
**LOS Analysis Sheets**

## **Existing Conditions**

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (Existing Conditions)

Date: 1/11/2011  
 Analyst: AGA

Peak Hr: AM  
 Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	112	2	3400	112/3,400= 0.03		
NB Thru	818	3	5100	1,296/5,100= 0.25	< ==	
NB Right	478	0	0	----		
SB Left	458	2	3400	458/3,400= 0.14	< ==	
SB Thru	604	3	5100	740/5,100= 0.15		
SB Right	136	0	0	----		
EB Left	172	2	3400	172/3,400= 0.05		
EB Thru	2042	3	5100	2,042/5,100= 0.40	< ==	
EB Right	78	1	1700	78/1,700= 0.05		
WB Left	190	2	3400	190/3,400= 0.06	< ==	
WB Thru	634	3	5100	634/5,100= 0.12		
WB Right	198	1	1700	198/1,700= 0.12		
Sum of Critical V/C Ratios						0.84
Adjustment for Lost Time						0.05
Intersection Capacity Utilization (ICU)						<b>0.89</b>
Level of Service (LOS) - Refer to table below						<b>D</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (Existing Conditions)

Date: 1/11/2011

Peak Hr: PM

Analyst: AGA

Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	310	2	3400	310/3,400= 0.09	< ==	
NB Thru	1084	3	5100	1,276/5,100= 0.25		
NB Right	192	0	0	----		
SB Left	172	2	3400	172/3,400= 0.05		
SB Thru	1054	3	5100	1,190/5,100= 0.23	< ==	
SB Right	136	0	0	----		
EB Left	258	2	3400	258/3,400= 0.08	< ==	
EB Thru	660	3	5100	660/5,100= 0.13		
EB Right	126	1	1700	126/1,700= 0.07		
WB Left	268	2	3400	268/3,400= 0.08		
WB Thru	1566	3	5100	1,566/5,100= 0.31	< ==	
WB Right	522	1	1700	522/1,700= 0.31		
Sum of Critical V/C Ratios						0.71
Adjustment for Lost Time						0.05
Intersection Capacity Utilization (ICU)						<b>0.76</b>
Level of Service (LOS) - Refer to table below						<b>C</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

LOS	Maximum	
	V/C	
A	0.60	
B	0.70	
C	0.80	
D	0.90	
E	1.00	
F	n/a	

## **Forecast Existing Plus Project Conditions**

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St/Adams Ave  
 Date: 3/29/2013  
 Analyst: AH

Condition: Existing Plus Project  
 Peak Hour: AM  
 Agency: Huntington Beach

Movement	Volume	No. of Lanes	Capacity	V/C Ratio		Critical V/C	Total
NB Left	112	2	3400	112/3400	0.03		
NB Thru	818	3	5100	818/5100	0.16	<--	
NB Right	478	2	3400	478/3400	0.14		
SB Left	458	2	3400	458/3400	0.13	<--	
SB Thru	604	3	5100	604/5100	0.12		
SB Right	136	1	1700	136/1700	0.08		
EB Left	172	2	3400	172/3400	0.05		
EB Thru	2042	4	6800	2042/6800	0.30	<--	
EB Right	78	1	1700	78/1700	0.05		
WB Left	190	2	3400	190/3400	0.06	<--	
WB Thru	634	4	6800	634/6800	0.09		
WB Right	198	1	1700	198/1700	0.12		
Sum of Critical V/C Ratios							0.65
Adjustment for Lost Time							0.05
Intersection Capacity Utilization (ICU)							<b>0.70</b>
Level of Service (LOS) - Refer to table below							<b>B</b>

**\*NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 Dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	≤ 0.6
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St/Adams Ave  
 Date: 3/29/2013  
 Analyst: AH

Condition: Existing Plus Project  
 Peak Hour: PM  
 Agency: Huntington Beach

Movement	Volume	No. of Lanes	Capacity	V/C Ratio		Critical V/C	Total
NB Left	310	2	3400	310/3400	0.09	<--	
NB Thru	1084	3	5100	1084/5100	0.21		
NB Right	192	2	3400	192/3400	0.06		
SB Left	172	2	3400	172/3400	0.05		
SB Thru	1054	3	5100	1054/5100	0.21	<--	
SB Right	136	1	1700	136/1700	0.08		
EB Left	258	2	3400	258/3400	0.08	<--	
EB Thru	660	4	6800	660/6800	0.10		
EB Right	126	1	1700	126/1700	0.07		
WB Left	268	2	3400	268/3400	0.08		
WB Thru	1566	4	6800	1566/6800	0.23	<--	
WB Right	522	1	1700	522/1700	0.31		
Sum of Critical V/C Ratios							0.61
Adjustment for Lost Time							0.05
Intersection Capacity Utilization (ICU)							<b>0.66</b>
Level of Service (LOS) - Refer to table below							<b>B</b>

**\*NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 Dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	≤ 0.6
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

## **Forecast Year 2030 Without Project Conditions**

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (2030 Volumes No Improvements)

Date: 1/11/2011  
 Analyst: AGA

Peak Hr: AM  
 Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	140	2	3400	140/3,400= 0.04		
NB Thru	860	3	5100	1,490/5,100= 0.29	< ==	
NB Right	630	0	0	----		
SB Left	490	2	3400	490/3,400= 0.14	< ==	
SB Thru	940	3	5100	1,070/5,100= 0.21		
SB Right	130	0	0	----		
						<b>0.43</b>
EB Left	240	2	3400	240/3,400= 0.07		
EB Thru	2480	3	5100	2,480/5,100= 0.49	< ==	
EB Right	80	1	1700	80/1,700= 0.05		
WB Left	200	2	3400	200/3,400= 0.06	< ==	
WB Thru	750	3	5100	750/5,100= 0.15		
WB Right	280	1	1700	280/1,700= 0.17		
						<b>0.55</b>
Sum of Critical V/C Ratios						<b>0.98</b>
Adjustment for Lost Time						<b>0.05</b>
Intersection Capacity Utilization (ICU)						<b>1.03</b>
Level of Service (LOS) - Refer to table below						<b>F</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (2030 Volumes No Improvements)

Date: 1/11/2011

Peak Hr: PM

Analyst: AGA

Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	300	2	3400	300/3,400= 0.09		
NB Thru	1290	3	5100	1,580/5,100= 0.31	< ==	
NB Right	290	0	0	----		
SB Left	480	2	3400	480/3,400= 0.14	< ==	
SB Thru	1340	3	5100	1,500/5,100= 0.29		
SB Right	160	0	0	----		
EB Left	340	2	3400	340/3,400= 0.10	< ==	
EB Thru	1270	3	5100	1,270/5,100= 0.25		
EB Right	100	1	1700	100/1,700= 0.06		
WB Left	460	2	3400	460/3,400= 0.14		
WB Thru	2300	3	5100	2,300/5,100= 0.45	< ==	
WB Right	380	1	1700	380/1,700= 0.22		
Sum of Critical V/C Ratios						1.00
Adjustment for Lost Time						0.05
Intersection Capacity Utilization (ICU)						<b>1.05</b>
Level of Service (LOS) - Refer to table below						<b>F</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

## **Forecast Year 2030 With Project Conditions**

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (2030 Volumes with Improvements)

Date: 1/11/2011  
 Analyst: AGA

Peak Hr: AM  
 Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	140	2	3400	140/3,400= 0.04		
NB Thru	860	3	5100	860/5,100= 0.17	< ==	
NB Right	630	2	3400	630/3,400= 0.19		
SB Left	490	2	3400	490/3,400= 0.14	< ==	
SB Thru	940	3	5100	940/5,100= 0.18		
SB Right	130	1	1700	130/1,700= 0.08		
						<b>0.31</b>
EB Left	240	2	3400	240/3,400= 0.07		
EB Thru	2480	4	6800	2,480/6,800= 0.37	< ==	
EB Right	80	1	1700	80/1,700= 0.05		
WB Left	200	2	3400	200/3,400= 0.06	< ==	
WB Thru	750	4	6800	750/6,800= 0.11		
WB Right	280	1	1700	280/1,700= 0.17		
						<b>0.42</b>
Sum of Critical V/C Ratios						<b>0.74</b>
Adjustment for Lost Time						<b>0.05</b>
Intersection Capacity Utilization (ICU)						<b>0.79</b>
Level of Service (LOS) - Refer to table below						<b>C</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

Maximum	
LOS	V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a

# INTERSECTION CAPACITY UTILIZATION

Intersection: Brookhurst St / Adams Ave (2030 Volumes with Improvements)

Date: 1/11/2011

Peak Hr: PM

Analyst: AGA

Agency: City of Huntington Beach

Movement	Volume	No. of Lanes	Capacity*	V/C Ratio	Critical V/C	Total
NB Left	300	2	3400	300/3,400= 0.09		
NB Thru	1290	3	5100	1,290/5,100= 0.25	< ==	
NB Right	290	2	3400	290/3,400= 0.09		
SB Left	480	2	3400	480/3,400= 0.14	< ==	
SB Thru	1340	3	5100	1,340/5,100= 0.26		
SB Right	160	1	1700	160/1,700= 0.09		
EB Left	340	2	3400	340/3,400= 0.10	< ==	
EB Thru	1270	4	6800	1,270/6,800= 0.19		
EB Right	100	1	1700	100/1,700= 0.06		
WB Left	460	2	3400	460/3,400= 0.14		
WB Thru	2300	4	6800	2,300/6,800= 0.34	< ==	
WB Right	380	1	1700	380/1,700= 0.22		
Sum of Critical V/C Ratios						0.83
Adjustment for Lost Time						0.05
Intersection Capacity Utilization (ICU)						<b>0.88</b>
Level of Service (LOS) - Refer to table below						<b>D</b>

**\* NOTES**

Per-lane Capacity = 1,700 vehicles/hour  
 dual left turn lane capacity = 3,400 vph

LOS	Maximum V/C
A	0.60
B	0.70
C	0.80
D	0.90
E	1.00
F	n/a