

**Appendix E:**  
**Trip Generation Memorandum**





**Placentia Avenue  
Live/Work Project Traffic  
Study**

September 2013

Prepared For:  
City Ventures

2073008190

# Placentia Avenue Live/Work Project Traffic Study

City of Costa Mesa

**September 4, 2013**

Prepared for:

**City Ventures**

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## **1.0 Introduction**

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This report summarizes the results of a traffic study for the proposed 38 unit live/work project located at 2025 and 2027 Placentia Avenue in the City of Costa Mesa. The analysis evaluates the trip generation for the project and determines the effect of the project trips on the level of service (LOS) for two study area intersections.

## **2.0 Project Description**

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The proposed project comprises 38 live/work units located at 2025 and 2027 Placentia Avenue, near the intersection of West 20<sup>th</sup> Street in the City of Costa Mesa. The existing uses consist of a boat dock manufacturing and boat storage business, which will be replaced by the proposed project. The six-plex fronting Placentia Avenue is a live/work building where three of the units have a 477 square foot work space on the ground floor. The other 35 units are three-story live/work units that include a 195 square foot home office on the ground floor. Figure 1 illustrates the project site plan.

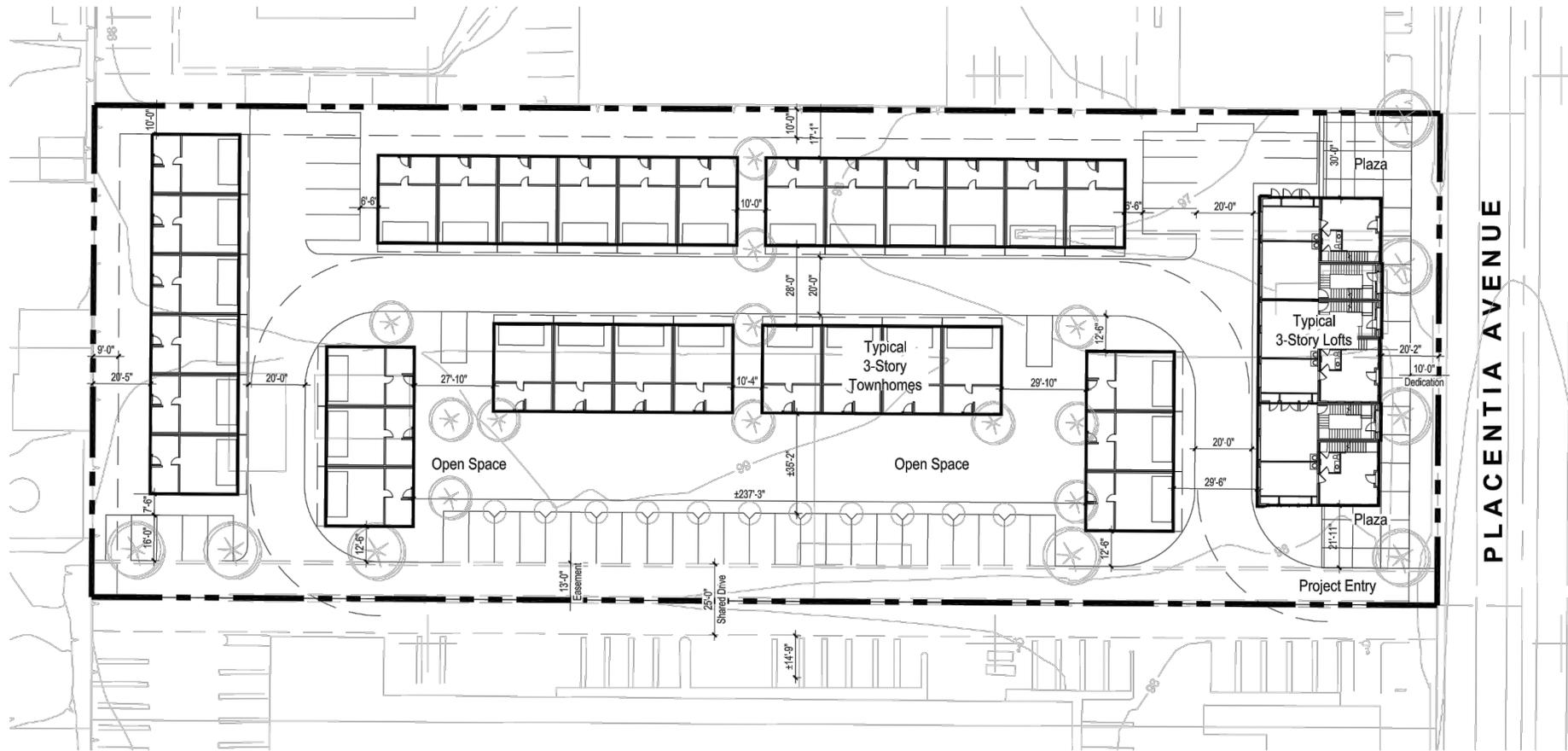
## **3.0 Trip Generation**

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The existing land uses comprise a boat dock manufacturing and boat storage site. A traffic count survey was performed in August 2013 to determine the existing trip generation for the site.

Table 1 summarizes the trip generation for the existing land uses and the proposed project. Trip generation rates were obtained from the Costa Mesa SOBECA/Westside GPA Traffic Analysis (Austin-Foust Associates, Inc., 2006), which utilized Institute of Transportation Engineers (ITE) "Trip Generation, Seventh Edition" data. For that study, the trip generation rates for live/work units utilized apartment trip rates for the residential component due to the apartment rates being more conservative than the ITE live/work rates, and a general office trip rate for the work component. For this analysis, an identical approach was utilized.

A 10 percent internal discount is taken to address the reduction in home-work trips due to the mixed-use component of the project. A credit is also taken for existing on-site trips and the project increment (net change) is the increase in trip generation due to the proposed project. As shown, the project will generate an additional 70 daily trips with 9 occurring in the AM peak hour and 5 occurring in the PM peak hour.



**Site Summary**

Site Area:	1.88 Acres	<b>Parking Summary:</b>	<b>Open Space:</b>
Units:		Required: 3.0 / unit	Required: 200 sf / unit
Townhome Units (1531 sf, 2 bd+live-work/2.5 ba)	32 units	(1 Covered per unit)	38 units x 200 sf= 7600 sf
Loft Units		38 units x 3= 114 spaces	Provided (Primary Courtyard only): 8795 sf (231 sf / unit)
		Provided: Garage Spaces: 73 Spaces	



Project Site Plan

Figure 1

**Table 1 Land Use and Trip Generation Summary**

Land Use Category	Amount	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
<b>EXISTING</b>								
Manufacturing/Storage <sup>1</sup>	--	6	6	12	8	13	21	200
Total		6	6	12	8	13	21	200
<b>PROPOSED PROJECT</b>								
Live/Work –Placentia Ave	3 DU	0	1	1	1	1	2	20
Live/Work Office	1.43 TSF	2	0	2	0	2	2	19
<i>Internal Capture for Live/Work Units (10%)</i>		-0	-0	-0	-0	-0	-0	-4
Interior Live/Work Units	35 DU	4	14	18	14	8	22	235
Total		6	15	21	15	11	26	270
<b>Project Increment</b>		<b>0</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>-2</b>	<b>5</b>	<b>70</b>
Trip Rates Category	Unit	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Apt./Townhome	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72
General Office	TSF	1.65	0.23	1.88	0.32	1.59	1.91	13.34
Trip Rate Source: Costa Mesa SOBEC/Westside GPA Traffic Analysis								
<sup>1</sup> Trip generation is based on actual peak hour survey performed 8/27/13 (ADT estimated).								

As shown, the proposed project increment results in a negligible change to the existing trip generation for the site.

## 4.0 Peak Hour Analysis

Existing traffic counts were collected in 2012 for the AM and PM peak hours. The project increment was then added to this data to generate the existing-plus-project scenario. The peak hour intersection capacity utilization (ICU) values and levels of service (LOS) were then calculated for two study area intersections and the results are summarized in Table 2 below. As can be seen, the intersections currently operate at LOS C or better and the project has a negligible effect on the ICUs.

**Table 2 ICU and LOS Summary**

Intersection	Existing (2012)				Existing plus Project			
	AM		PM		AM		PM	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1. Placentia Ave & W. 19 <sup>th</sup>	.74	C	.76	C	.74	C	.76	C
2. Placentia Ave & Victoria	.39	A	.54	A	.39	A	.54	A

## **5.0 CONCLUSION**

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The findings of the traffic study presented above are that the proposed project results in a negligible increase in traffic and does not have a significant traffic impact on the surrounding roadway network.

# Appendix A

## ICU Worksheet

1. Placentia & Victoria

Existing (2012) Count						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3200	240	.08*	616	.19*
NBT	2	3200	392	.12	716	.22
NBR	1	1600	99	.06	177	.11
SBL	1	1600	113	.07	75	.05
SBT	2	3200	503	.16*	427	.13*
SBR	1	1600	47	.03	71	.04
EBL	1	1600	55	.03	51	.03*
EBT	2	3200	1264	.40*	508	.16
EBR	1	1600	457	.29	285	.18
WBL	1	1600	166	.10*	131	.08
WBT	2	3200	546	.17	1300	.41*
WBR	1	1600	102	.06	79	.05
<b>TOTAL CAPACITY UTILIZATION</b>			<b>.74</b>		<b>.76</b>	

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	2	3200	240	.08*	616	.19*
NBT	2	3200	392	.12	715	.22
NBR	1	1600	99	.06	177	.11
SBL	1	1600	113	.07	75	.05
SBT	2	3200	505	.16*	429	.13*
SBR	1	1600	47	.03	71	.04
EBL	1	1600	55	.03	51	.03*
EBT	2	3200	1264	.40*	508	.16
EBR	1	1600	458	.29	286	.18
WBL	1	1600	167	.10*	132	.08
WBT	2	3200	546	.17	1300	.41*
WBR	1	1600	102	.06	79	.05
<b>TOTAL CAPACITY UTILIZATION</b>			<b>.74</b>		<b>.76</b>	

2. Placentia & 19th

Existing (2012) Count						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1600	1	.00	8	.01
NBT	2	3200	301	.09	662	.21*
NBR	1	1600	146	.09	172	.11
SBL	1	1600	145	.09	216	.14*
SBT	2	3200	475	.19*	432	.20
SBR	0	0	135		206	
EBL	2	3200	271	.08	309	.10*
EBT	2	3200	420	.15*	401	.14
EBR	0	0	45		38	
WBL	2	3200	166	.05*	169	.05
WBT	2	3200	234	.07	290	.09*
WBR	1	1600	147	.09	189	.12
<b>TOTAL CAPACITY UTILIZATION</b>			<b>.39</b>		<b>.54</b>	

Existing plus Project						
	LANES	CAPACITY	AM PK HOUR		PM PK HOUR	
			VOL	V/C	VOL	V/C
NBL	1	1600	1	.00	8	.01
NBT	2	3200	302	.09	663	.21*
NBR	1	1600	146	.09	172	.11
SBL	1	1600	145	.09	216	.14*
SBT	2	3200	475	.19*	432	.20
SBR	0	0	135		206	
EBL	2	3200	272	.09	310	.10*
EBT	2	3200	420	.15*	401	.14
EBR	0	0	45		38	
WBL	2	3200	166	.05*	169	.05
WBT	2	3200	234	.07	290	.09*
WBR	1	1600	150	.09	191	.12
<b>TOTAL CAPACITY UTILIZATION</b>			<b>.39</b>		<b>.54</b>	