

Preferred Alternative Transit Analysis

Trips generated in each zone by the Preferred Alternative were reduced based on the area's projected 2010 transit/HOV market share, as discussed in Chapter 3. Trip reductions for transit and HOV by zone were made based on the increased density within each zone. Further trip reductions were applied to zones which were within a 1/4 mile of the Lakeview and La Palma commuter rail station and associated shuttle bus route. These reductions are summarized in Table 13. The Preferred Alternative trip generation, assuming vehicular trip reductions due to transit growth, are summarized in Table 14.

Preferred Alternative Traffic Volumes

Based upon the model assignments of the "existing" land use-generated traffic and the Preferred Alternative-generated traffic (assuming transit reductions provided in Table 13), 2010 intersection traffic volumes for the Preferred Alternative were projected. Weekday morning peak-hour 2010 traffic volumes for the Preferred Alternative are presented in Figure 13. Figure 14 summarizes 2010 weekday evening peak-hour traffic volumes for the Preferred Alternative.

Daily traffic volumes on local road segments within the Northeast Area were projected by utilizing the 2010 evening peak-hour traffic volumes, and applying a peak-hour factor of 8.22 (in accordance with the City of Anaheim *Traffic Census*, 1989). Daily traffic volumes on freeway segments within the Northeast Area were projected utilizing the 1990 Caltrans *Traffic Counts*, applying a two (2) percent annual growth for through traffic, and adding the project-related traffic on each link. Figure 15 presents the projected 2010 daily traffic on study area roadway and freeway links for the Preferred Alternative.

INTERSECTION CAPACITY ANALYSIS

Levels of service analysis at 39 study intersections was performed for the morning and evening peak periods for the Preferred Alternative utilizing the ICU methodology.

TABLE 13

**NORTHEAST ANAHEIM REDEVELOPMENT AREA TRANSIT ANALYSIS
PREFERRED ALTERNATIVE**

Background Transit Usage: 4%
Percent HOV : 23 AVR= 2.50

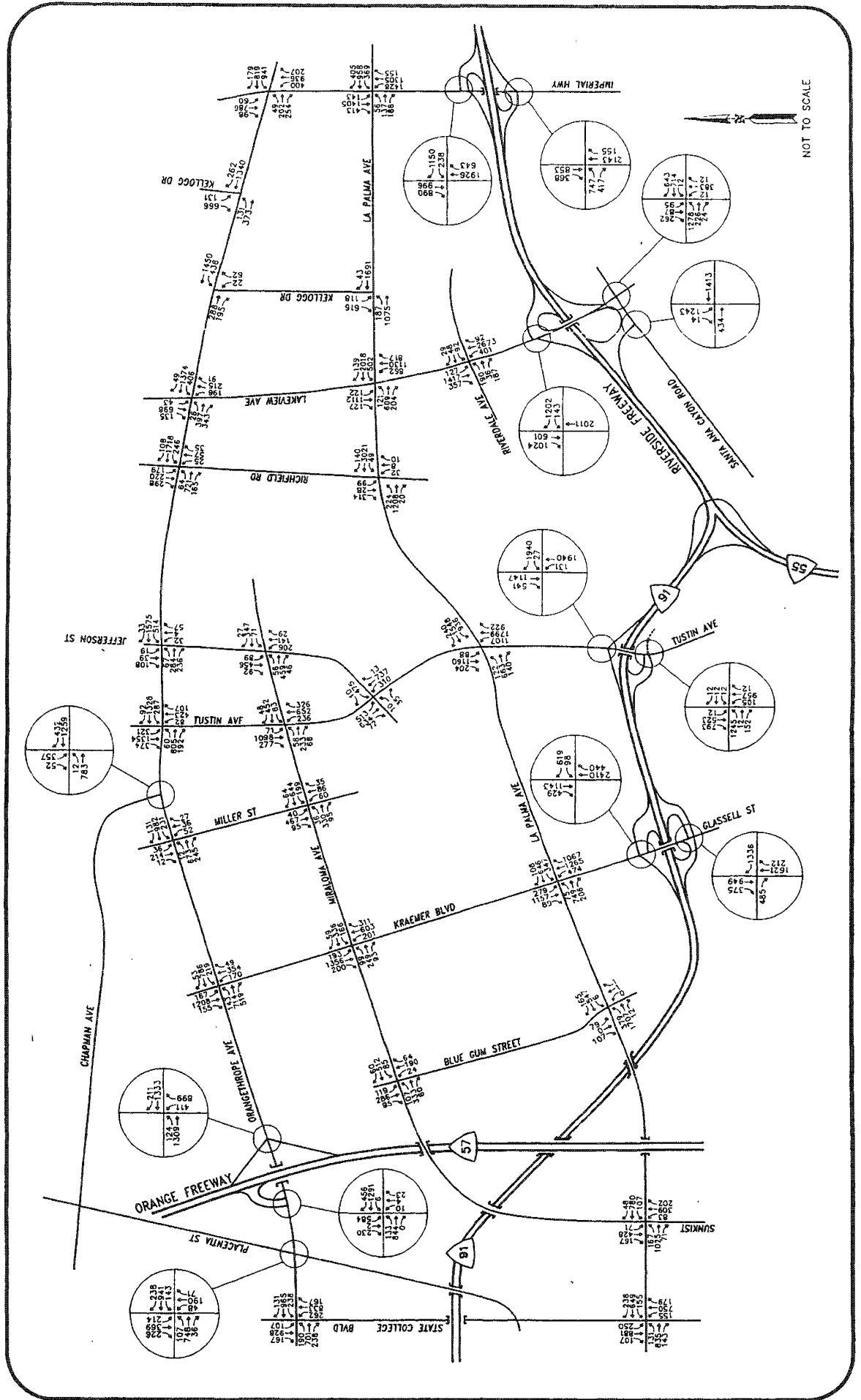
TAZ	Existing (s.f.)	Pref Alt (s.f.)	Growth	Auto Reduction Transit	HOV	Tot. Red	Station/Feeder Bus Proximity % Reduc.	Addl. Transit/HOV Reduction	
1	739,454	1,070,857	45%	1.79%	6.18%	7.98%		7.98%	
2	798,705	798,705	0%	0.00%	4.20%	4.20%		4.20%	
3	652,347	888,395	36%	1.45%	4.99%	6.44%		6.44%	
4	252,801	390,893	55%	2.18%	0.00%	2.18%		2.18%	
5	477,364	764,525	60%	2.41%	7.20%	9.61%		9.61%	
7	399,607	399,607	0%	0.00%	4.20%	4.20%		4.20%	
8	778,728	821,366	5%	0.22%	4.20%	4.42%		4.42%	
14	80,729	128,491	59%	2.37%	7.20%	9.57%		9.57%	
18	0	375,000	0%	8.00%	7.20%	15.20%		15.20%	
22	211,969	339,448	60%	2.41%	7.20%	9.61%		9.61%	
23	139,235	161,450	16%	0.64%	4.20%	4.84%		4.84%	
24	78,411	303,897	288%	8.00%	7.20%	15.20%		15.20%	
25	0	260,393	0%	8.00%	7.20%	15.20%		15.20%	
26	151,607	347,775	129%	5.18%	7.20%	12.38%		12.38%	
27	455,874	492,917	8%	0.33%	4.20%	4.53%		4.53%	
31	306,654	524,381	71%	2.84%	7.20%	10.04%		10.04%	
40	146,556	462,342	215%	8.00%	7.20%	15.20%		15.20%	
41	583,260	653,808	12%	0.48%	4.20%	4.68%		4.68%	
42	277,439	318,408	15%	0.59%	4.20%	4.79%		4.79%	
16	467,669	758,975	62%	2.49%	7.20%	9.69%	1	8.51%	18.20%
17	93,322	319,826	243%	8.00%	7.20%	15.20%	1	3.00%	18.20%
19	0	0	0%	0.00%	0.00%	0.00%	1	0.00%	0.00%
20	300,000	1,000,107	233%	8.00%	7.20%	15.20%	1	3.00%	18.20%
21	247,300	295,555	20%	0.78%	4.20%	4.98%	1	10.22%	15.20%
28	250,126	250,126	0%	0.00%	4.20%	4.20%	1	11.00%	15.20%
29	27,874	27,874	0%	0.00%	0.00%	0.00%	1	0.00%	0.00%
39	623,272	810,464	30%	1.20%	4.20%	5.40%	1	9.80%	15.20%
44	364,558	469,197	29%	1.15%	4.20%	5.35%	1	9.85%	15.20%
45	239,214	661,589	177%	7.06%	7.20%	14.26%	1	3.94%	18.20%
32	453,734	1,034,645	128%	5.12%	7.20%	12.32%	2	5.88%	18.20%
33	482,428	711,693	48%	1.90%	6.56%	8.46%	2	9.10%	17.56%
35	1,397,672	1,472,977	5%	0.22%	4.20%	4.42%	2	10.78%	15.20%
36	1,045,861	1,621,815	55%	2.20%	7.20%	9.40%	2	8.80%	18.20%
43	31,898	106,738	235%	8.00%	0.00%	8.00%	2	0.00%	8.00%
6	832,147	975,603	17%	0.69%	4.20%	4.89%	3	10.31%	15.20%
9	811,787	852,904	5%	0.20%	4.20%	4.40%	3	10.80%	15.20%
10	596,773	596,773	0%	0.00%	4.20%	4.20%	3	11.00%	15.20%
11	932,026	1,409,421	51%	2.05%	7.07%	9.12%	3	8.95%	18.07%
12	3,159,711	3,422,340	8%	0.33%	4.20%	4.53%	3	10.67%	15.20%
13	668,476	1,335,050	100%	3.99%	7.20%	11.19%	3	7.01%	18.20%
15	337,892	337,892	0%	0.00%	4.20%	4.20%	3	11.00%	15.20%
30	899,402	899,402	0%	0.00%	4.20%	4.20%	3	11.00%	15.20%
34	199,102	377,849	90%	3.59%	7.20%	10.79%	3	7.41%	18.20%
37	1,276,603	1,667,151	31%	1.22%	4.22%	5.45%	3	9.78%	15.22%
38	834,998	1,156,058	38%	1.54%	5.31%	6.84%	3	9.46%	16.31%

1 - La Palma Station
2 - Lakeview Station
3 - Feeder Bus Route

12.18%

TABLE 14
PREFERRED ALTERNATIVE TRIP GENERATION
WITH TRANSIT REDUCTION

Land Use	A.M. Peak Hour			P.M. Peak Hour			Average Weekday
	In	Out	Total	In	Out	Total	
Business Park	3,377	482	3,858	605	2,806	3,412	47,584
Corp. Headquarters	12,047	1,507	13,554	2,222	11,058	13,279	99,497
General Office	4,996	623	5,619	922	4,586	5,507	41,257
Industry	3,804	542	4,346	677	3,162	3,839	53,661
Retail	72	41	113	1,094	1,094	2,188	25,936
Warehousing	134	74	208	55	124	179	3,053
Total	24,430	3,268	27,698	5,575	22,829	28,404	270,988

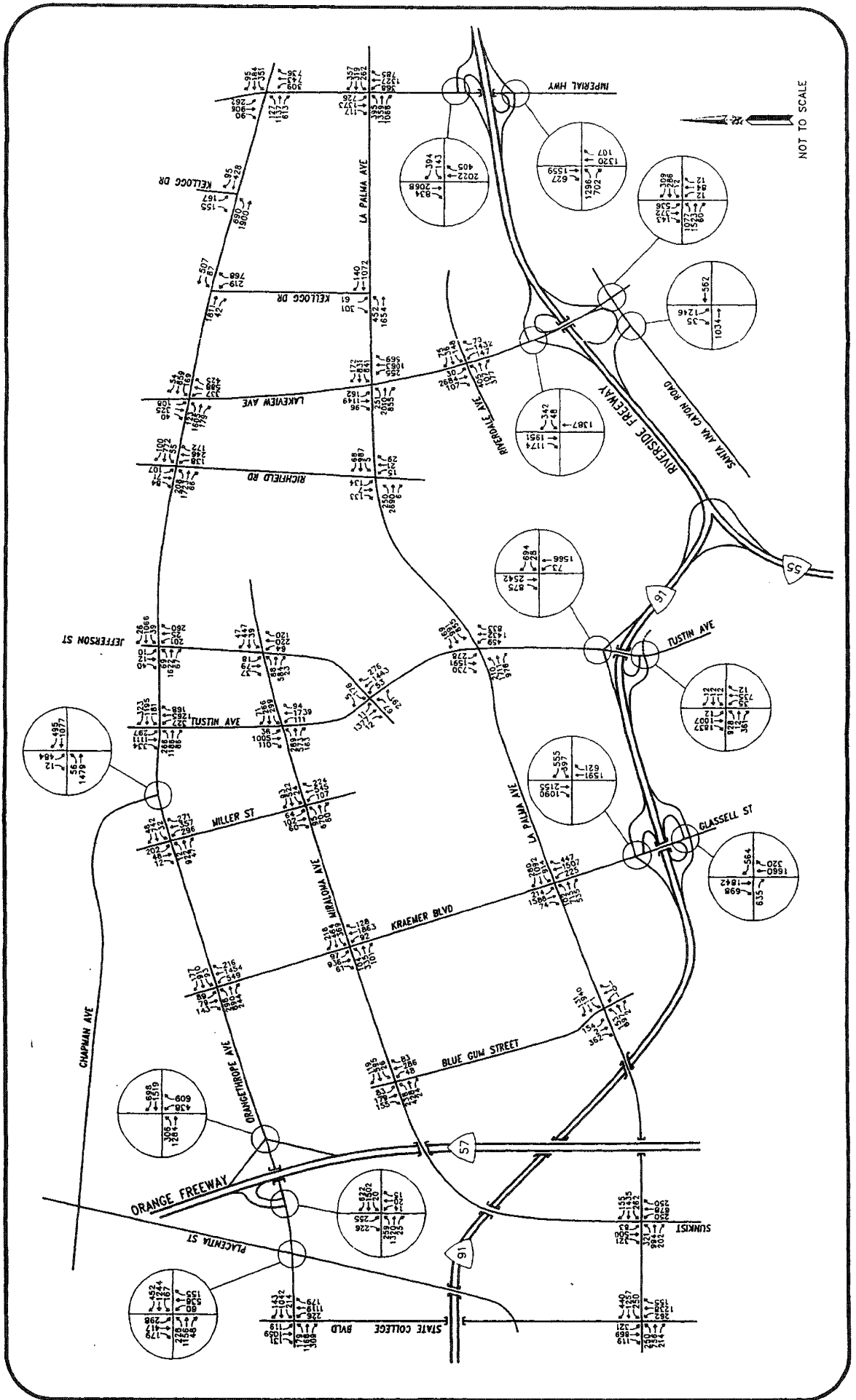


NOT TO SCALE

2010 MORNING PEAK HOUR TRAFFIC VOLUMES - PREFERRED ALTERNATIVE

Barton-Achman Associates Inc.

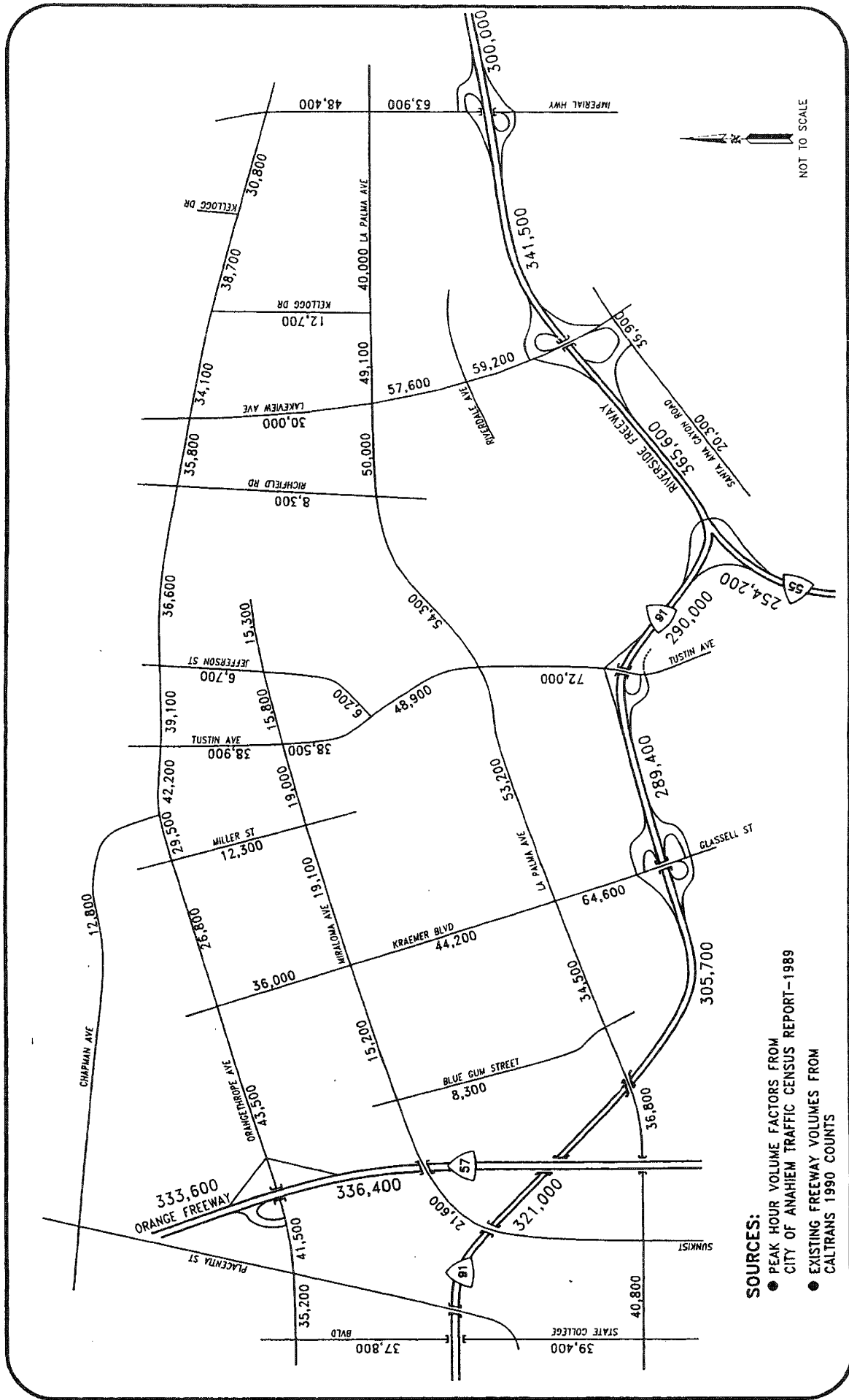
NORTHEAST ANAHEIM REDEVELOPMENT AREA



2010 EVENING PEAK HOUR TRAFFIC VOLUMES - PREFERRED ALTERNATIVE

Barton-Aschman Associates Inc.

NORTHEAST ANAHEIM REDEVELOPMENT AREA



SOURCES:

- PEAK HOUR VOLUME FACTORS FROM CITY OF ANAHEIM TRAFFIC CENSUS REPORT-1989
- EXISTING FREEWAY VOLUMES FROM CALTRANS 1990 COUNTS

2010 AVERAGE DAILY TRAFFIC VOLUMES - PREFERRED ALTERNATIVE

Barton-Aschman Associates Inc.
NORTHEAST ANAHEIM REDEVELOPMENT AREA

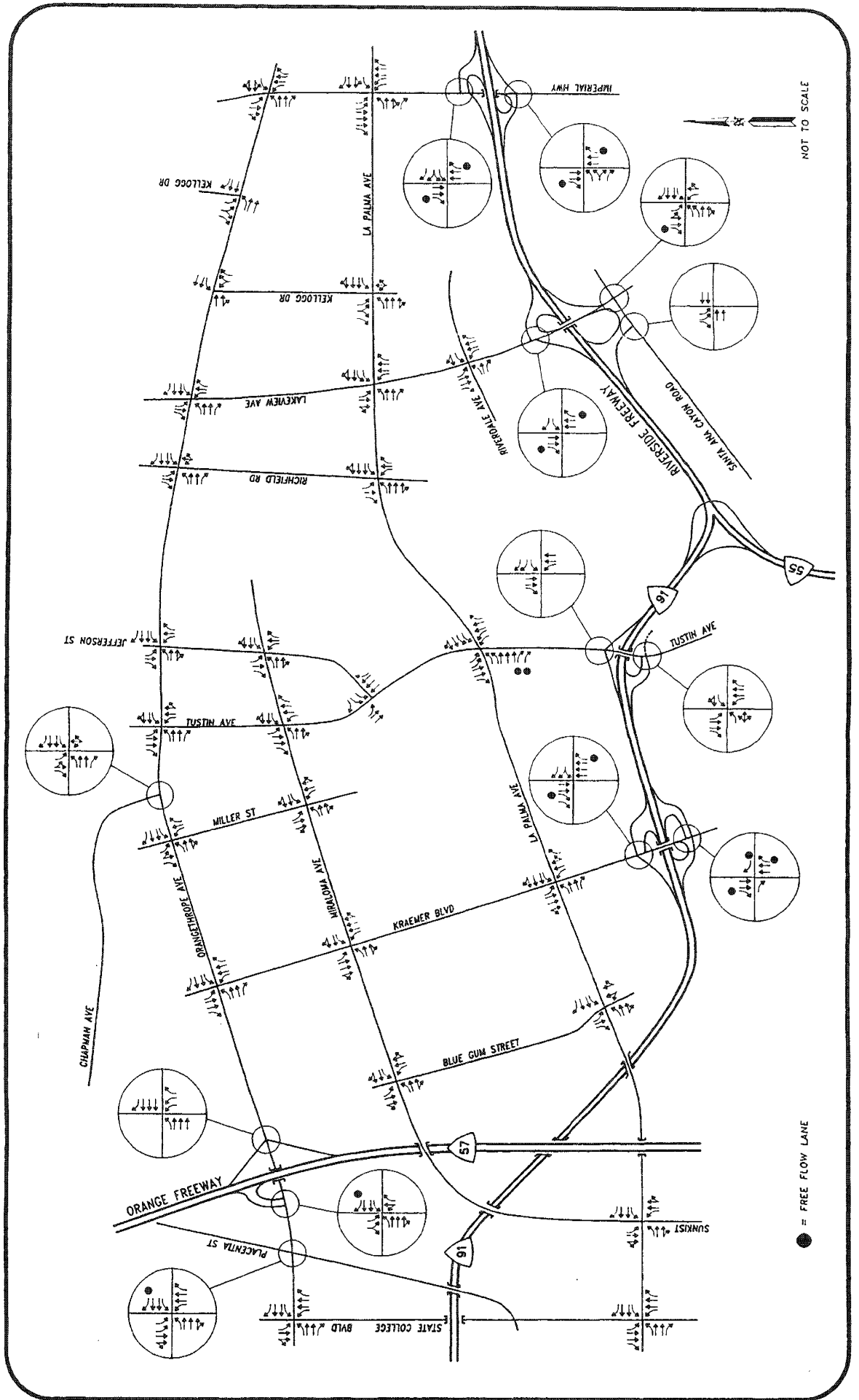
Preferred Alternative Level of Service

The analysis of future levels of service for the morning and evening peak-hour periods for the Preferred Alternative was based upon the peak-hour traffic volumes illustrated on Figures 13 and 14, respectively, and the updated existing intersection geometrics summarized on Figure 16. Tables 15 and 16 summarize the future Preferred Alternative levels of service during the morning and evening peak hour periods, respectively. Figure 17 illustrates the intersection levels-of-service for the morning and evening peak periods under unmitigated conditions. Appendix C provides the intersection capacity analysis ICU worksheets for the Preferred Alternative.

As can be seen from Table 15, fourteen (14) intersections are projected to operate at level of service E or worse in the morning peak-hour period. As can be seen from Table 16, twenty (20) intersections are projected to operate at level of service E or worse in the evening peak-hour period. For the Preferred Alternative analysis, ICU's at future critical intersections along La Palma and the intersection of La Palma and Imperial Highway were initially calculated assuming existing lane configurations.

PREFERRED ALTERNATIVE MITIGATION

Intersections improvements were identified for the study intersections that operated at Level of Service E or worse during either the morning or evening peak period. Table 17 provides a listing of improvements needed to achieve level of service D or better at twenty study intersections. This table lists improvements at study intersections which are both within and outside of the redevelopment area, and lists sources of outside funding, where appropriate. Three study intersections which are planned to be improved to critical intersection standards (La Palma - Kraemer, La Palma - Tustin and La Palma - Lakeview) and La Palma - Imperial Highway, which is part of a future Superstreet project, require even further mitigation to achieve level-of-service D or better. These further mitigations are provided on Table 18. Tables 15 and 16 provide the mitigated levels of service at these intersections during the morning and evening peak-hour periods, respectively. Mitigated lane configurations are shown graphically on Figure 18. Mitigated levels of service are shown graphically on Figure 19. Lane configuration for further mitigation is presented in Figure 20. Mitigated levels of service with further mitigation is shown graphically on Figure 21. Recommended link improvements for the Preferred Alternative are listed on Table 19.



EXISTING LANE CONFIGURATIONS - PREFERRED ALTERNATIVE

Barton-Aschman Associates, Inc.

NORTHEAST ANAHEIM REDEVELOPMENT AREA

TABLE 15
SUMMARY OF LEVEL OF SERVICE - MORNING PEAK HOUR
PREFERRED ALTERNATIVE

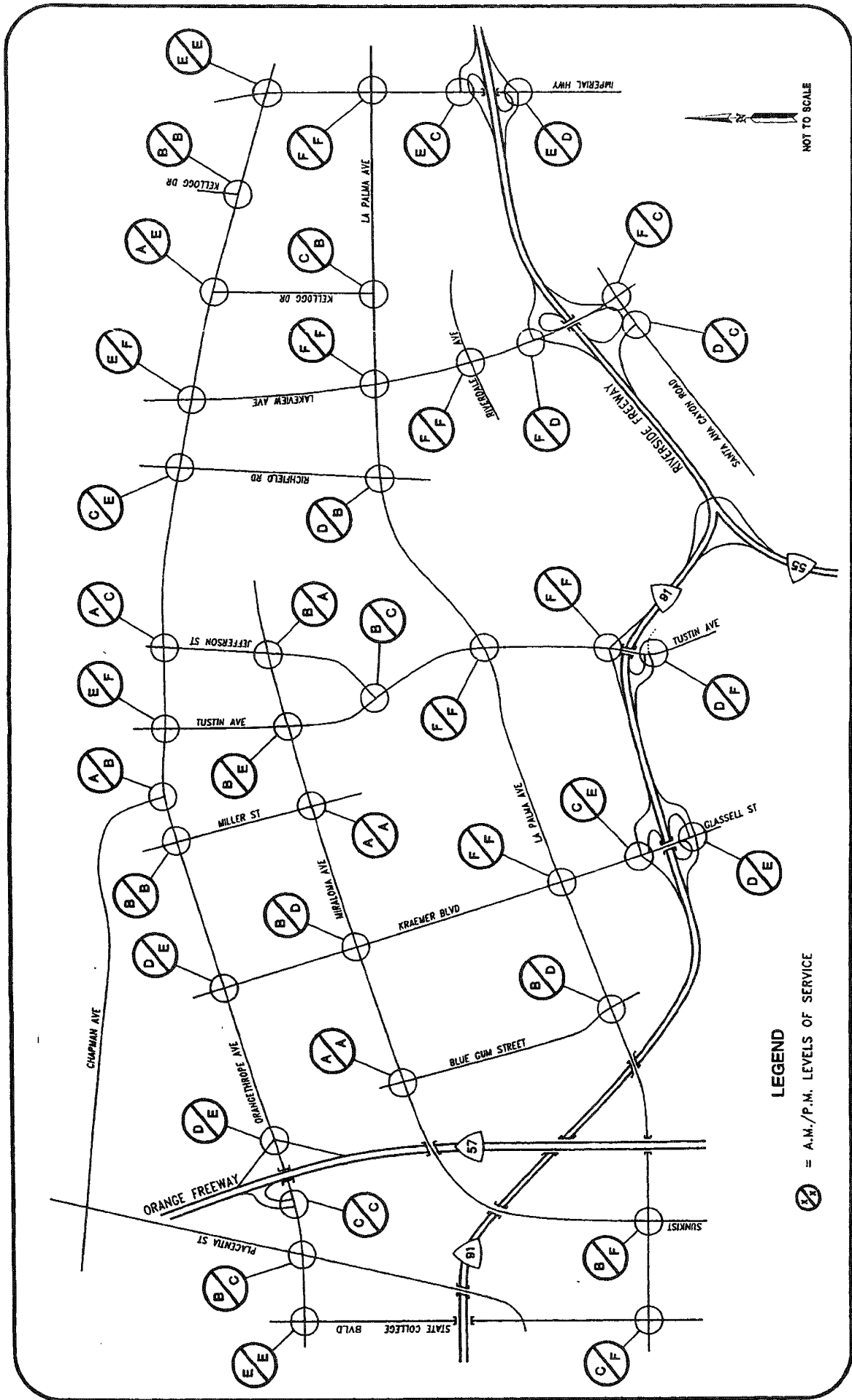
Intersection	Existing		Preferred Alt. w/o Mitigation		Preferred Alt. w/Mitigation		Preferred Alt. w/ Further Mitigation	
	v/c	LoS	v/c	LoS	v/c	LoS	v/c	LoS
Orangethorpe-State College	0.80 (1)	C	0.91	E	0.80	C		
Orangethorpe-Placentia	0.50 (1)	A	0.60	B				
Orangethorpe-57 SB Ramps	0.58	A	0.76	C				
Orangethorpe-57 NB Ramps	0.67	B	0.90	D	0.64	B		
Orangethorpe-Kraemer	0.64 (1)	B	0.85	D	0.85	D		
Orangethorpe-Miller	0.39 (1)	A	0.62	B				
Orangethorpe-Chapman	0.49	A	0.54	A				
Orangethorpe-Tustin	0.75 (1)	C	0.96	E	0.74	C		
Orangethorpe-Jefferson	0.46	A	0.59	A				
Orangethorpe-Richfield	0.59	A	0.78	C	0.61	B		
Orangethorpe-Lakeview	0.71 (1)	C	1.00	E	0.77	C		
Orangethorpe-Kellogg South	0.37 (1)	A	0.50	A	0.42	A		
Orangethorpe-Kellogg North	0.52 (1)	A	0.64	B				
Orangethorpe-Imperial	0.66 (1)	B	0.98	E	0.62	B		
Miraloma-Blue Gum	0.36 (1)	A	0.42	A				
Miraloma-Kraemer	0.53 (1)	A	0.68	B				
Miraloma-Miller	0.36 (1)	A	0.51	A				
Miraloma-Tustin	0.55 (1)	A	0.69	B	0.69	B		
Miraloma-Jefferson	0.44	A	0.63	B				
Tustin-Jefferson	0.45	A	0.66	B				
La Palma-State College	0.57 (1)	A	0.76	C	0.62	B		
La Palma-Sunkist	0.50 (1)	A	0.66	B	0.51	A		
La Palma-Blue Gum	0.43	A	0.61	B				
La Palma-Kraemer	0.71 (1)	C	1.13	F	0.91	E	0.67	B
La Palma-Tustin	0.71 (1)	C	1.29	F	1.13	F	0.89	D
La Palma-Richfield	0.53	A	0.87	D				
La Palma-Lakeview	0.79 (1)	C	1.36	F	0.96	E	0.90	D
La Palma-Kellogg	0.34	A	0.75	C				
La Palma-Imperial	0.71 (1)	C	1.06	F	0.92	E	0.78	C
Riverdale-Lakeview	0.72 (1)	C	1.07	F	0.72	C		
SR 91 WB Ramps-Kraemer	0.59 (1)	A	0.73	C	0.70	B		
SR 91 WB Ramps-Tustin	0.64 (1)	B	1.19	F	0.83	D		
SR 91 WB Ramps-Lakeview	0.79 (1)	C	1.35	F	0.90	D		
SR 91 WB Ramps-Imperial	0.61 (1)	B	0.96	E	0.77	C		
SR 91 EB Ramps-Glassell	0.56 (1)	A	0.82	D	0.67	B		
SR 91 EB Ramps-Tustin	0.64 (1)	B	0.85	D	0.73	C		
SR 91 EB Ramps-Imperial	0.68 (1)	B	0.91	E	0.90	D		
SR 91 EB Ramps-Santa Ana Cyn	0.67	B	0.84	D				
Santa Ana Cyn-Lakeview	0.71 (1)	C	1.04	F	0.90	D		

(1) Anaheim General Plan Traffic Analysis, Austin Foust Associates, Inc., August 10, 1992.

TABLE 16
SUMMARY OF LEVEL OF SERVICE - EVENING PEAK HOUR
PREFERRED ALTERNATIVE

Intersection	Existing		Preferred Alt. w/o Mitigation		Preferred Alt. w/Mitigation		Preferred Alt. w/ Further Mitigation	
	v/c	LoS	v/c	LoS	v/c	LoS	v/c	LoS
Orangethorpe-State College	0.92 (1)	E	1.00	E	0.88	D		
Orangethorpe-Placentia	0.70 (1)	B	0.80	C				
Orangethorpe-57 SB Ramps	0.62	B	0.79	C				
Orangethorpe-57 NB Ramps	0.74	C	1.00	E	0.85	D		
Orangethorpe-Kraemer	0.71 (1)	C	0.98	E	0.89	D		
Orangethorpe-Miller	0.39 (1)	A	0.65	B				
Orangethorpe-Chapman	0.51	A	0.63	B				
Orangethorpe-Tustin	0.89 (1)	D	1.25	F	0.90	D		
Orangethorpe-Jefferson	0.52	A	0.71	C				
Orangethorpe-Richfield	0.65	B	0.98	E	0.74	C		
Orangethorpe-Lakeview	0.75 (1)	C	1.03	F	0.80	C		
Orangethorpe-Kellogg South	0.68 (1)	B	0.94	E	0.75	C		
Orangethorpe-Kellogg North	0.55 (1)	A	0.67	B				
Orangethorpe-Imperial	0.79 (1)	C	0.96	E	0.72	C		
Miraloma-Blue Gum	0.48 (1)	A	0.56	A				
Miraloma-Kraemer	0.60 (1)	A	0.85	D				
Miraloma-Miller	0.40 (1)	A	0.56	A				
Miraloma-Tustin	0.64 (1)	B	0.98	E	0.83	D		
Miraloma-Jefferson	0.28	A	0.39	A				
Tustin-Jefferson	0.31	A	0.75	C				
La Palma-State College	0.88 (1)	D	1.12	F	0.83	D		
La Palma-Sunkist	0.82 (1)	D	1.05	F	0.87	D		
La Palma-Blue Gum	0.64	B	0.82	D				
La Palma-Kraemer	0.95 (1)	E	1.37	F	0.95	E	0.84	D
La Palma-Tustin	0.74 (1)	C	1.25	F	1.25	F	0.84	D
La Palma-Richfield	0.34	A	0.67	B				
La Palma-Lakeview	0.86 (1)	D	1.34	F	1.04	F	0.86	D
La Palma-Kellogg	0.44	A	0.60	B				
La Palma-Imperial	0.92 (1)	E	1.28	F	1.17	F	0.87	D
Riverdale-Lakeview	0.82 (1)	D	1.24	F	0.87	D		
SR 91 WB Ramps-Kraemer	0.75 (1)	C	0.96	E	0.87	D		
SR 91 WB Ramps-Tustin	0.55 (1)	A	1.04	F	0.74	C		
SR 91 WB Ramps-Lakeview	0.58 (1)	A	0.82	D	0.70	B		
SR 91 WB Ramps-Imperial	0.60 (1)	A	0.78	C	0.78	C		
SR 91 EB Ramps-Glassell	0.79 (1)	C	0.96	E	0.78	C		
SR 91 EB Ramps-Tustin	0.79 (1)	C	1.23	F	0.66	B		
SR 91 EB Ramps-Imperial	0.69 (1)	B	0.90	D	0.89	D		
SR 91 EB Ramps-Santa Ana Cyn	0.61	B	0.72	C				
Santa Ana Cyn-Lakeview	0.62 (1)	B	0.77	C	0.77	C		

(1) Anaheim General Plan Traffic Analysis, Austin Foust Associates, Inc., August 10, 1992.



2010 UNMITIGATED INTERSECTION LEVEL OF SERVICE - PREFERRED ALTERNATIVE
 Barton-Aschman Associates, Inc.
NORTHEAST ANAHEIM REDEVELOPMENT AREA

TABLE 17
RECOMMENDED INTERSECTION IMPROVEMENTS -
PREFERRED ALTERNATIVE

Improvements in Redevelopment Area:

Orangethorpe Avenue - Kraemer Avenue:

Westbound: Add third through lane.⁽¹⁾

Orangethorpe Avenue - Richfield Avenue:

Westbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.⁽¹⁾

Northbound: Add a left-turn lane.

Eastbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.⁽¹⁾

Orangethorpe Avenue - Lakeview Avenue:

Southbound: Add second through lane.

Westbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.⁽¹⁾

Northbound: Add second through lane.

Eastbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.⁽¹⁾

Orangethorpe Avenue - Kellogg Drive South:

Westbound: Add third through lane.⁽¹⁾

Eastbound: Add third through lane.⁽¹⁾

Orangethorpe Avenue - Imperial Highway (Mitigation to Super Street Standards):⁽²⁾

Southbound: Add second left-turn lane and two (third and fourth) through lanes.

Westbound: Add second left-turn lane and a right-turn lane.

Northbound: Add second left-turn lane, a third through lane and convert exclusive right-turn lane to an optional fourth through lane or right-turn lane.

Eastbound: Add third through lane.

Miraloma Avenue - Tustin Avenue:

Northbound: Convert exclusive right-turn lane to an optional third through or right-turn lane.

TABLE 17 (CONTINUED)
RECOMMENDED INTERSECTIONS IMPROVEMENTS
PREFERRED ALTERNATIVE

La Palma Avenue - Kraemer Boulevard (Improvements to Critical Intersection Design):

Southbound: Add second left-turn lane and a right-turn lane.
Westbound: Add second left-turn lane and a right-turn lane.
Northbound: Add second left-turn lane and third through lane.
Eastbound: Add second left-turn lane and third through lane.

La Palma Avenue - Tustin Avenue:

Westbound: Add third through lane and a right-turn lane.⁽³⁾

La Palma Avenue - Lakeview Avenue (Improvements to Critical Intersection Design):

Southbound: Add second left-turn lane, a third through lane and a right-turn lane.
Westbound: Add third through lane and a right-turn lane.
Northbound: Add third through lane.
Eastbound: Add second left-turn lane and third through lane.

La Palma Avenue - Imperial Highway (Improvements to Super Street Standards):⁽²⁾

Southbound: Add fourth through lane.
Westbound: Add second left-turn lane and third through lane.
Northbound: Add third through lane and convert the right turn lane to optional fourth through lane or right-turn lane.
Eastbound: Add second left-turn lane and third through lane.

SR-91 Westbound Ramps - Kraemer Avenue:

Westbound: Reconstruct westbound ramp to provide for a left-turn lane, an optional left-turn or right-turn lane and a right-turn lane.

SR-91 Eastbound Ramps - Kraemer Avenue:

Eastbound: Add second right-turn lane on the eastbound ramp.

SR-91 Westbound Ramps - Tustin Avenue:

Southbound: Add third through lane.⁽³⁾
Westbound: Add third right-turn lane.
Northbound: Add third through lane.⁽³⁾

TABLE 17 (CONTINUED)
RECOMMENDED INTERSECTIONS IMPROVEMENTS
PREFERRED ALTERNATIVE

SR-91 Eastbound Ramps - Tustin Avenue:

Southbound: Reconstruct to convert exclusive right-turn lane to free-flow right-turn lane.⁽³⁾

Eastbound: Convert optional through or left-turn lane to second left-turn lane and add a through lane.

Improvements outside Redevelopment Area:

Orangethorpe Avenue - State College Boulevard:

Southbound: Add third through lane.

Northbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Orangethorpe Avenue - SR-57 Northbound Ramps:

Northbound: Restripe northbound off-ramp for a left-turn lane, an optional left-turn or right-turn lane and a right-turn lane.

Orangethorpe Avenue - Tustin Avenue:

Southbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Westbound: Add third through lane and second left turn lane.⁽¹⁾

Northbound: Add third through lane.

Eastbound: Add second left-turn lane and convert exclusive right-turn lane to an optional third through lane or right-turn lane.⁽¹⁾

La Palma Avenue - State College Boulevard:

Southbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Westbound: Add second left-turn lane and third through lane.

Northbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Eastbound: Add second left-turn lane and convert exclusive right-turn lane to an optional third through lane or right-turn lane.

TABLE 17 (CONTINUED)
RECOMMENDED INTERSECTIONS IMPROVEMENTS
PREFERRED ALTERNATIVE

La Palma Avenue - Sunkist Avenue:

Southbound: Add a right-turn lane.

Westbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Eastbound: Add a through lane.

Riverdale Avenue - Lakeview Avenue:

Southbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Westbound: Reconstruct to provide for a left-turn lane, an optional left-turn or through lane and a right-turn lane.

Northbound: Convert exclusive right-turn lane to an optional third through lane or right-turn lane.

Eastbound: Convert through lane to optional through or second left-turn lane.

SR-91 Westbound Ramps - Lakeview Avenue:

Westbound: Convert exclusive left-turn lane to optional left-turn or second right-turn lane and add third right-turn lane.

Santa Ana Canyon Road - Lakeview Avenue:

Westbound: Add second right-turn lane.

SR-91 Westbound Ramps - Imperial Highway:

Northbound: Add third through lane.⁽²⁾

SR-91 Eastbound Ramps - Imperial Highway:

Eastbound: Reconstruct eastbound off ramp to provide for two left-turn lanes and a free-flow right-turn lane.

NOTES:

- (1) Improvements will be part of the Orange County Map Of Arterial Highways (OCMOAH) project of widening Orangethorpe Avenue to 6 lanes.
- (2) Improvements will be part of the Imperial Highway Super Street Project by Orange County Transportation Authority (OCTA).
- (3) Improvements will be part of the Santa Fe Pacific Plaza Project.

TABLE 18
RECOMMENDED FURTHER IMPROVEMENTS -
PREFERRED ALTERNATIVE⁽¹⁾

La Palma Avenue - Kraemer Avenue (Improvements beyond Critical Intersection Design):

Northbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane.

Eastbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane.

La Palma Avenue - Tustin Avenue:

Southbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane and add two (third and fourth) through lanes.⁽²⁾

Westbound: Add third left-turn lane.

Northbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane and add two (third and fourth) through lanes.⁽³⁾

Eastbound: Add fourth through lane.

La Palma Avenue - Lakeview Avenue (Improvements beyond Critical Intersection Design):

Southbound: Add fourth through lane.

Northbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane.

Eastbound: Reconstruct the exclusive right-turn lane to provide for a free-flow right-turn lane and add fourth through lane.

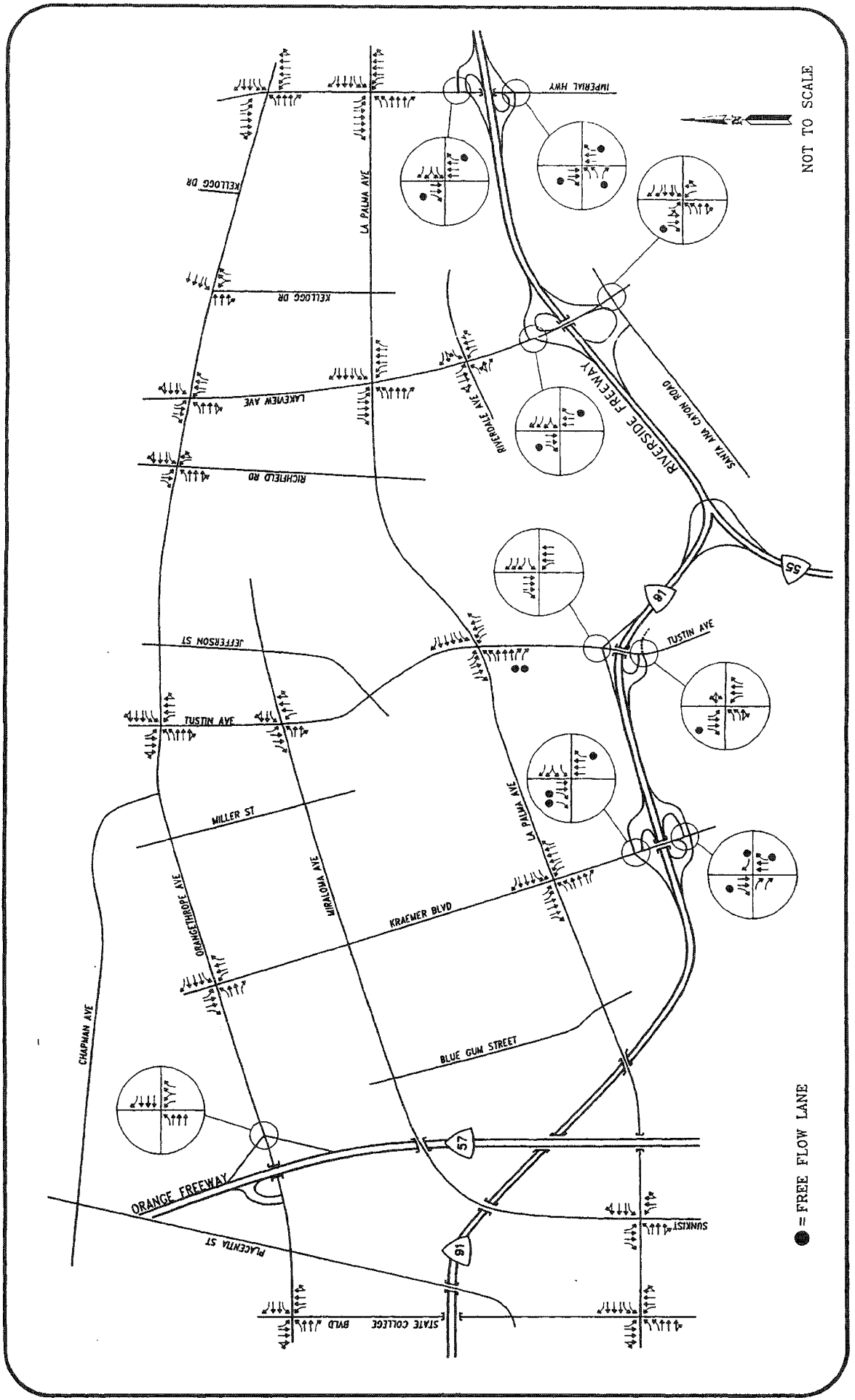
La Palma Avenue - Imperial Highway (Beyond Super Street Project Improvements):

Northbound: Convert one through lane to third left-turn lane and add a free-flow right-turn lane.

Eastbound: Reconstruct exclusive right-turn lane to a free-flow right-turn lane.

NOTES:

- (1) These improvements may be found infeasible by the City of Anaheim Engineering Department due to right-of-way and/or operational constraints.
- (2) One southbound through lane is required as part of the improvements for Santa Fe Pacific Plaza project.
- (3) One northbound through lane is required as part of the improvements for Santa Fe Pacific Plaza project.



MITIGATED LANE CONFIGURATIONS -- PREFERRED ALTERNATIVE

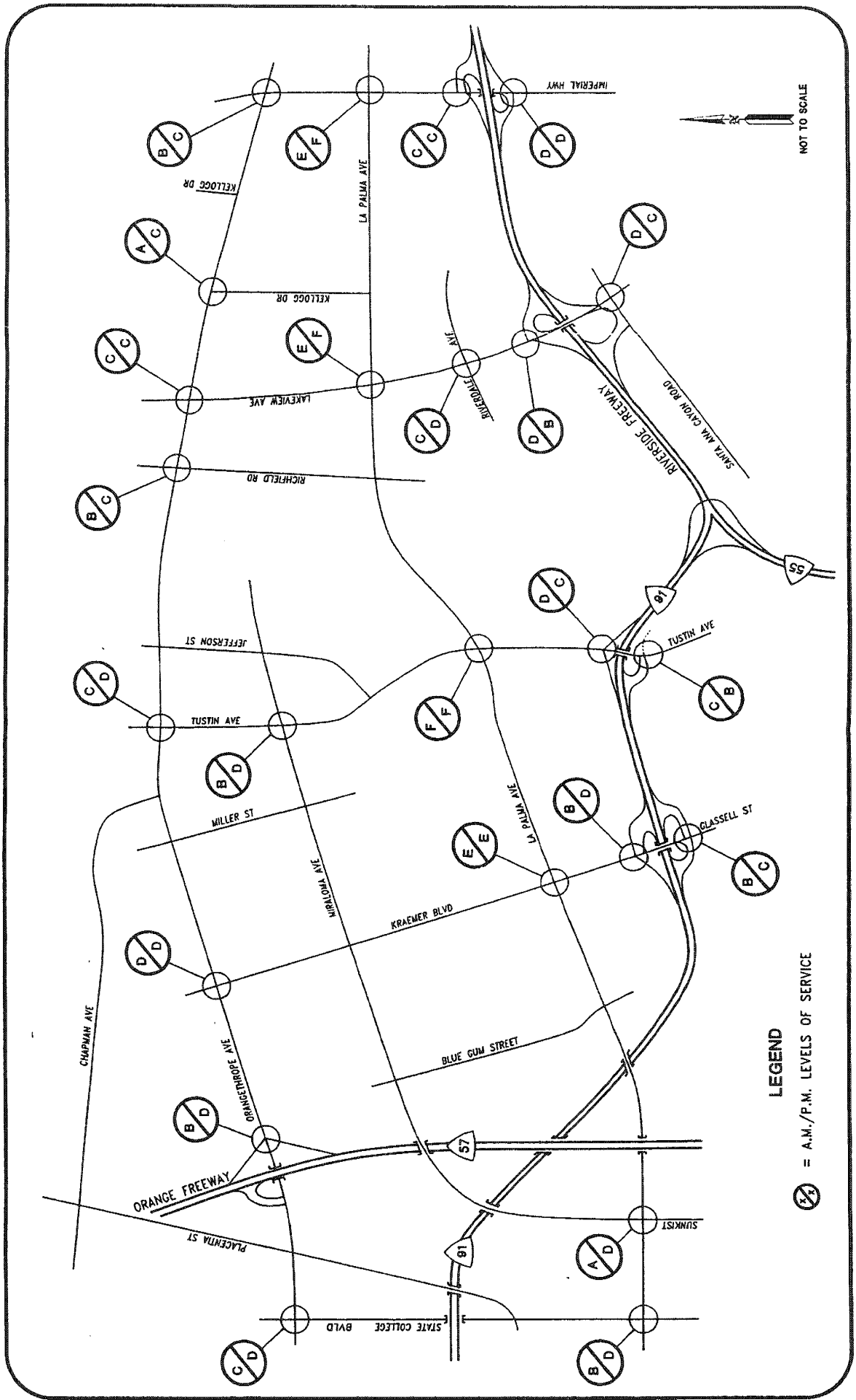
Barton-Aschman Associates, Inc.

NORTHEAST ANAHEIM REDEVELOPMENT AREA

6. CONCLUSIONS

Barton-Aschman Associates, Inc. has been providing traffic engineering services to the Redevelopment Agency in the development and transportation analysis of a redevelopment plan for the Northeast Industrial Area. The Redevelopment Agency's efforts have culminated in a Specific Plan that provides for future development of the Preferred Alternative.

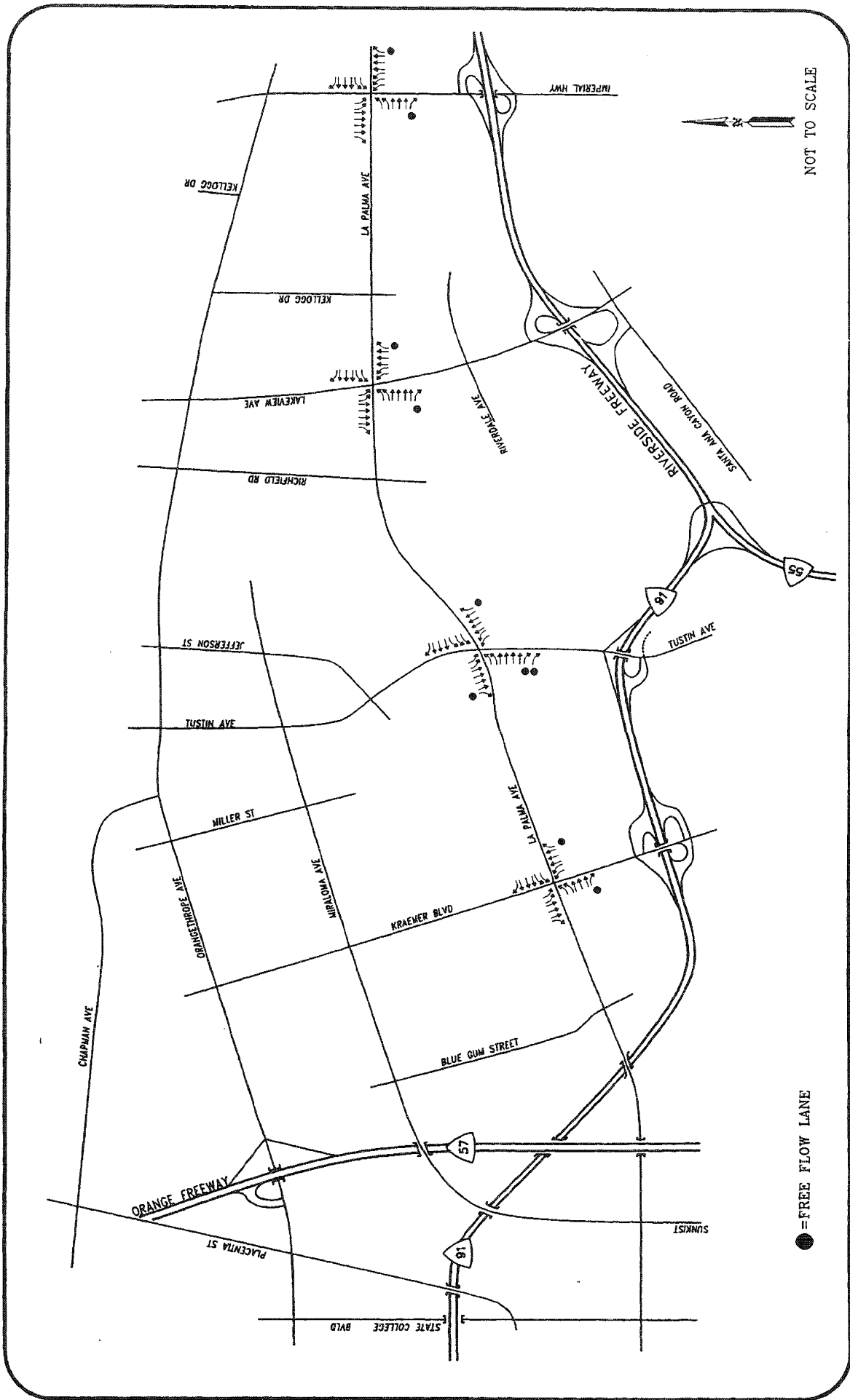
The transportation analysis performed for the Preferred Alternative assumes and recommends a combination of transit, HOV and roadway improvements that will mitigate the potential traffic impacts of the proposed plan. Specifically, the Northeast Area will benefit from a proposed multimodal transit station to be served by planned commuter rail service between Riverside and Los Angeles and Riverside and Irvine, enhanced local and express bus and area shuttle bus service, HOV facilities along the SR-91, SR-57 and SR-55 freeways, roadway segment widenings and proposed intersection improvements within and outside of the redevelopment area. The Specific Plan proposes implementation of these transportation improvements in order to mitigate the traffic impacts resulting from the development of Preferred Alternative land uses.



2010 INTERSECTION LEVELS OF SERVICE WITH MITIGATION - PREFERRED ALTERNATIVE

Barton-Aschman Associates Inc.

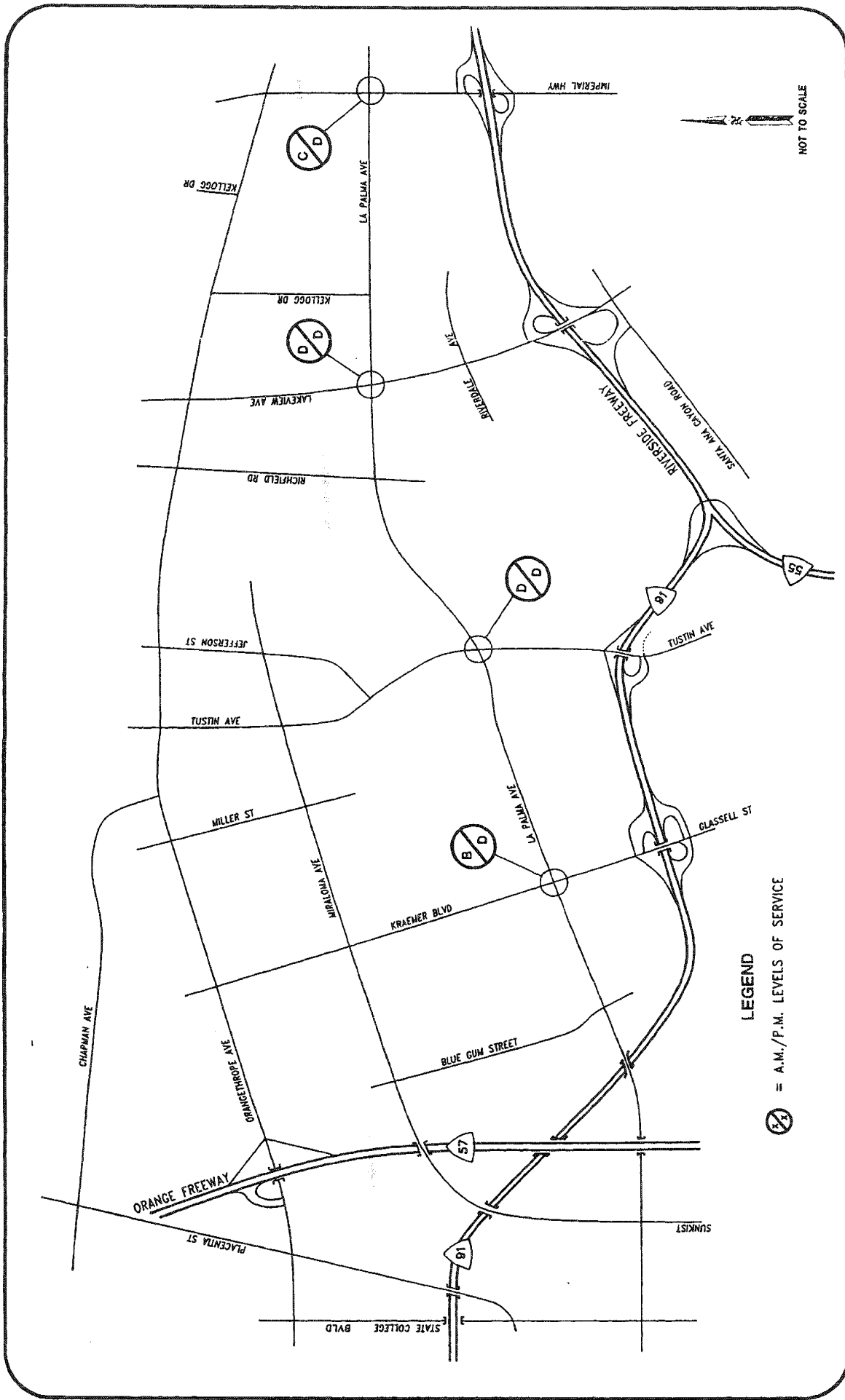
NORTHEAST ANAHEIM REDEVELOPMENT AREA



LANE CONFIGURATIONS - FURTHER MITIGATIONS - PREFERRED ALTERNATIVE

Barton-Aschman Associates Inc.

NORTHEAST ANAHEIM REDEVELOPMENT AREA



2010 INTERSECTION LEVEL OF SERVICE WITH FURTHER MITIGATIONS - PREFERRED ALTERNATIVE

Barton-Aschman Associates, Inc.

NORTHEAST ANAHEIM REDEVELOPMENT AREA

TABLE 19
RECOMMENDED LINK IMPROVEMENTS -
PREFERRED ALTERNATIVE

Orangethorpe Avenue -	<i>Widen to three lanes in each direction in the Northeast Redevelopment area.⁽¹⁾</i>
La Palma Avenue -	Widen to three lanes in each direction between Kraemer and Miller Avenue.
Lakeview Avenue -	Widen to three lanes in each direction between La Palma Avenue and SR-91 freeway.
Imperial Highway -	<i>Widen to four lanes in each direction between SR-91 freeway and Orangethorpe Avenue.⁽²⁾</i>
Tustin Avenue -	<i>Widen to four lanes in the southbound direction and three lanes in the northbound direction between La Palma Avenue and SR-91 freeway.⁽³⁾</i>

NOTES:

- (1) Improvements will be part of the OCMOAH project of widening Orangethorpe Avenue to 6 lanes.
- (2) Improvements will be part of the Imperial Highway Super Street Project by OCTA.
- (3) Improvements will be part of the Santa Fe Pacific Plaza Project.



APPENDIX A

TRANSIT ANALYSIS

TRANSIT ANALYSIS FOR THE NORTHEAST ANAHEIM REDEVELOPMENT AREA

By the year 2010, transit and High Occupancy Vehicles (HOV) will play a more important role than they do today in transporting people in Orange County. Recent demand forecasts performed for the Countywide Rail Study show transit usage within Orange County increasing by 110 percent from today to year 2010. The growth in transit usage (market share) in the future will be stimulated by improvements in transit service in Orange County coupled with more severe traffic congestion and more auto disincentives (parking costs, etc.) associated with higher land use densities.

In the future, developers and cities can maximize transit and HOV usage (and corresponding reductions in auto travel) by concentrating development around transit stations or along corridors that can be easily served by transit modes. For the Northeast Anaheim Redevelopment Area, land use Alternative II would be superior to the existing or Base Case scenarios in maximizing transit's market share because it assumes that two commuter rail stations would be developed along with a shuttle bus system, and that densities would be more concentrated near stations. In addition, the La Palma Commuter Rail Station would be a multimodal center with OCTD express bus service focusing there along with commuter rail, shuttle bus and local OCTD bus service. The Base Case scenario would only have one Commuter Rail station at Lakewood.

APPROACH AND METHODOLOGY

By using existing travel behavior studies and available forecasting work in Orange County, it is possible to quantify the parameters of the transit and HOV market shares that would be associated with varying land use densities and levels of service in the future.⁽¹⁻⁴⁾ The approach used by Barton-Aschman to estimate transit/HOV shares (and auto reductions) for this study is shown in Figure 1. The specific steps used are described below:

-
- (1) *Public Transportation And Land Use Policy*, Boris Pushkaver and Jeffrey Zupan.
 - (2) *Traveler Response to Transportation System Changes*, Barton-Aschman Associates, Inc.
 - (3) *Demand Characteristics for Bus/HOV Guideways*, Larry Wesemann, OCTD.
 - (4) *OCTA Countywide Rail Study (Travel Demand Forecasts)*, Barton-Aschman Associates, Inc.

- Determine existing transit and HOV market shares from available data for the Northeast Area.⁽⁵⁻⁷⁾ The existing transit market share is 3 percent of all trips. Seventeen percent of home to work trips are carried by HOV's with an occupancy of 2.25 persons per vehicle.
- Review Year 2010 transit and HOV forecasts for the Northeast Area from the *OCTA Countywide Rail Study*. Establish relationships between land use densities and transit market shares for year 2010.
- Determine background transit/HOV market shares associated with "existing" Northeast Area land use densities (4 percent for transit and 23 percent for HOV). Establish maximum allowable transit and HOV market shares for Northeast Area. Transit Maximum: 8 percent additional for higher land use density in a zone and 11 percent additional for proximity to rail station, multimodal center and/or feeder bus service. HOV maximum: 12 percent above background for higher land use density in a zone.
- Compute growth in square footage for all 45 zones in Northeast Anaheim Redevelopment Area from "existing" to the Base Case and Alternative II.
- Determine future increase in the Average Vehicle Ridership (AVR) for HOV's in the Northeast Area assuming that the SR 91, SR 57 and SR 55 carpool lanes will be restricted to 3 or more persons (Areawide HOV AVR increases from 2.25 to 2.50 persons per vehicle). Thus, a 12 percent increase in HOV market share will result in a 7.2 percent reduction in auto traffic.
- Compute percent reduction in auto trips associated with higher zonal employment densities for both the Base Case and Alternative II. (see table for percent reductions due to improved transit and HOV market shares)
- Compute further reductions in auto trips associated with higher transit use in close proximity to commuter rail stations (multimodal centers) and shuttle bus service.
- Total all vehicle reductions for the Base Case and Alternative II and factor into vehicle trip tables. Reductions in vehicle trips are incorporated into the traffic analysis for each land use scenario.

As shown in Table 1, Alternative II, with its superior transit service and more concentrated densities, generates a composite auto reduction of 10.73 percent above the background transit, while the Base Case achieves an overall 7.04 percent auto reduction in the Northeast Anaheim Redevelopment Area.

(5) *1976 Urban and Rural Travel Survey (Volume IV: Summary of Findings)*, Caltrans and SCAG.

(6) *Trips In Motion (TR/4)*, LARTS Study, Caltrans.

(7) OCTD Boardings and alightings for February, 1991 Service in Northeast Area.