

Oceanside Circulation Element Update

Appendix E2

City of Carlsbad, County of San Diego and City of Vista
Adjacent Roadways Capacity 2030 Analysis
for the Three Alternatives

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ADJACENT ROADWAYS ANALYSIS

Subject City of Carlsbad, County of San Diego, and City of Vista Adjacent Roadways Capacity 2030 Analysis for the 3 Alternatives

In response to comments received on the Draft PEIR dated June 2011, a segment capacity analysis has been performed for the roadway segments adjacent to the City of Oceanside that reside in the jurisdiction of Carlsbad, Vista and the County of San Diego. The future 2030 traffic volumes for these additional roadway segments were taken from the Series 11 North County Sub-Area model for the Modified 1995 CE alternative, Alternative 1 and Alternative 2. LOS D is deemed as the acceptable level of service for roadways in all of the adjacent jurisdictions.

Roadway Classifications and Capacity/Level of Service Thresholds

CITY OF CARLSBAD

The City of Carlsbad does not have a roadway segment capacity table. Instead, the City of Carlsbad requires a peak hour roadway segment analysis. The peak hour segment LOS is determined by taking the average one-way traffic volume in either direction and dividing that volume by the segment peak hour capacity to yield the segment V/C ratio. A maximum capacity of 1,800 vehicles per hour per lane (VPHPL) is appropriate. The peak hour roadway segment analysis methodology is consistent with the City of Carlsbad Growth Management Program. The City of Carlsbad Growth Management Program circulation standards allow LOS D or better for operations for street segments during the peak hours.

CITY OF VISTA

The following table was taken from the City of Vista’s Draft Circulation Element (dated February 2011).

Table CE-1. Circulation Element Roadway Classifications – Capacity and Levels of Service

Roadway Classification	ADT Level of Service				
	A	B	C	D	E
6-Lane Prime Arterial (divided)	< 36,000	< 42,000	< 48,000	< 54,000	< 60,000
6-Lane Urban Major	< 30,000	< 35,000	< 40,000	< 45,000	< 50,000
4-Lane Major Arterial (divided)	< 24,000	< 28,000	< 32,000	< 36,000	< 40,000
4-Lane Collector (undivided)	< 15,000	< 17,500	< 20,000	< 22,500	< 25,000
2-Lane Collector with TWLTL ¹	< 9,000	< 10,500	< 12,000	< 13,500	< 15,000
2-Lane Collector Divided	< 5,280	< 6,160	< 7,040	< 7,920	< 8,800
2-Lane Semi-Rural ²					< 7,900

1. TWLTL = Two-way left-turn lane (striped center median)
2. Semi-Rural Streets – capacities identified are the maximum recommended volumes to maintain this classification. If volumes exceed this capacity, either a classification modification should be considered or measures should be taken to reduce through traffic.

COUNTY OF SAN DIEGO

The following table was taken from the County of San Diego’s Public Roads Standard document.

TABLE 1						
AVERAGE DAILY VEHICLE TRIPS						
CIRCULATION ELEMENT ROADS		LEVEL OF SERVICE				
CLASS	X-SECTION	A	B	C	D	E
Expressway	126/146	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial	102/122	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	78/98	<14,800	<24,700	<29,600	<33,400	<37,000
Collector	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Town Collector	54/74	<3,000	<6,000	<9,500	<13,500	<19,000
Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Collector	40/84	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
NON – CIRCULATION ELEMENT ROADS		LEVEL OF SERVICE				
CLASS	X-SECTION	A	B	C	D	E
Residential Collector	40/60	*	*	<4,500	*	*
Residential Road	36/56	*	*	<1,500	*	*
Residential Cul-de-sac or Loop Road	32/52	*	*	< 200	*	*

*Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Roadway Segment Analysis

Since the City of Carlsbad roadway capacity analysis is based on peak hour analysis, a detailed assessment of the roadway level of service has not been performed. The table below shows the forecast 2030 volumes for the three alternatives. Based on the volumes forecast for 2030 and the estimated ADT that each roadway is designed to carry, the segment on College Boulevard between the Oceanside City Limits and Tamarack Avenue may potentially have an impact.

**City of Carlsbad
2030 Roadway Segment Analysis**

Segment	# Future Lanes	Classification	Estimated ADT	Modified 1995 CE	Alternative 1	Alternative 2
				ADT	ADT	ADT
Carlsbad Boulevard: City Limits to Grand Ave	4	Major	20,000-40,000	17,700	17,700	16,600
El Camino Real: SR78 to Marron Road	6	Prime	40,000 or more	41,100	41,200	48,400
Rancho Del Oro Road: City Limits to Marron Road	4	Secondary Arterial	10,000-20,000	18,000	18,000	NA*
College Boulevard: City Limits to Tamarack Avenue	4	Major	20,000-40,000	40,900	41,500	41,000

*NA – Not Applicable because the RDO interchange is not included in the Alternative 2 scenario, so there would be no connection to Marron Road.

The two tables on the following page show the roadway capacity analysis for the City of Vista and the County of San Diego. There are no potential impacts shown on the City of Vista roadways. There is an impact shown on SR76 (Mission Avenue) between the Oceanside City Limits and E. Vista Way. This impact was also shown within the City of Oceanside city limits for all three alternatives and the recommended mitigation measure was to widen this roadway to a six-lane expressway.

Conclusions

The Modified 1995 Circulation Element alternative is essentially the current 1995 Circulation Element with minor modifications for the Old Ranch Road and Jeffries Ranch Road connections. The inputs into the Series 11 North County Subarea Model by Oceanside were based on the current Circulation Element (essentially the same as the Modified 1995 CE alternative) which was done through a collaboration of all the North County Cities. Therefore, the future growth in traffic volumes and proposed roadway networks were developed with the knowledge and collaboration of all the jurisdictions. As seen in the tables for each neighboring jurisdiction, the two additional alternatives (1 & 2) forecast volumes for the adjacent jurisdictions roadway segments do not vary drastically from the Modified 1995 CE alternative. The difference in volumes on the Carlsbad segments from Alternatives 1 and 2 are similar with the exception of El Camino Real. However, there is no expected potential impact on El Camino Real due to the increase in traffic volumes for Alternative 2 because this segment is classified as a prime arterial which

typically would carry up to 50,000-60,000 ADT. It should be noted that Alternative 1 and Alternative 2 were run using the Series 11 North County Subarea model. So, the removal of the Rancho Del Oro Road interchange and connection to Marron Road was modeled and the 2030 traffic volumes shown in the table are pulled directly from the model. Therefore, the diversion of traffic volumes to parallel roadways with the removal of Rancho Del Oro Road interchange are accounted for in the modeling assumptions and traffic volumes. As seen in the roadway capacity analysis table for the City of Vista, there are no potential traffic impacts associated with any of the alternatives on the adjacent roadways. State Route 76 within the County of San Diego's jurisdiction does show that the segment operates at unacceptable levels of service in 2030 for all three scenarios. However, the traffic volumes for Alternatives 1 and 2 are not significantly different than the Modified 1995 CE alternative. In fact, Alternative 2 shows a decrease in traffic volumes on SR76. Alternative 1 does increase by 3,200 trips but only increases the volume to capacity ratio by 0.09. Since the difference between the two alternatives and the Modified 1995 CE alternative (which is based on the currently approved 1995 Circulation Element) is minimal for the adjacent jurisdictions roadway segments, there are no foreseen significant impacts to the adjacent jurisdictions roadways segments.

**City of Vista
2030 Roadway Segment Analysis**

Segment	# Future Lanes	Classification	LOS E Capacity	Modified 1995 CE			Alternative 1			Alternative 2		
				ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Melrose Drive: City Limits to North Avenue	6	Urban Major	50,000	43,800	0.88	D	43,200	0.86	D	37,900	0.76	C
N. Santa Fe Avenue: City Limits to Osborne Street	4	Major	40,000	10,800	0.27	A	10,300	0.26	A	12,500	0.31	A
Bobier Drive: City Limits to N. Santa Fe Ave	4	Major	40,000	27,200	0.68	B	27,300	0.68	B	31,200	0.78	C

**County of San Diego
2030 Roadway Segment Analysis**

Segment	# Future Lanes	Classification	LOS E Capacity	Modified 1995 CE			Alternative 1			Alternative 2		
				ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS
SR76 (Mission Ave): City Limits to E. Vista Way	4	Major	37,000	62,900	1.7	F	66,100	1.79	F	58,900	1.59	F