Volume II: Technical Appendices

MARBLEHEAD COASTAL

GENERAL PLAN AMENDMENT 96-01
SPECIFIC PLAN 95-02
TENTATIVE TRACT MAP

CITY OF SAN CLEMENTE

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CHAPTER 15.0 - APPENDICES

Appendices 15.1 (Initial Study/Notice of Preparation), 15.2 (NOP Distribution List/NOP Comments), ~~and~~ 15.3 (Correspondence), and 15.9 (Response to Comments) are contained in this ~~Draft~~Final Environmental Impact Report.

The following appendices are bound under separate cover in *Volume II: Technical Appendices,* which is available for public review at the City of San Clemente:

- 15.4 Traffic Analysis
- 15.5 Acoustical Analysis
- 15.6 Air Quality Analysis
- 15.7 Cultural/Scientific Resources Assessment
- 15.8 Biological Resources Assessment

APPENDIX 15.4

Traffic Analysis

MARBLEHEAD COASTAL PROJECT

TRAFFIC ANALYSIS

JANUARY 1998

AUSTIN-FOUST ASSOCIATES, INC.

MARBLEHEAD COASTAL PROJECT
Traffic Analysis

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I

INTRODUCTION

This report describes the results of a comprehensive traffic analysis for the Marblehead Coastal development. The purpose of this study is to provide the technical documentation to support the General Plan Amendment, Specific Plan, and Local Coastal Program being prepared for the project and to serve as a technical source for the Marblehead Coastal Environmental Impact Report.

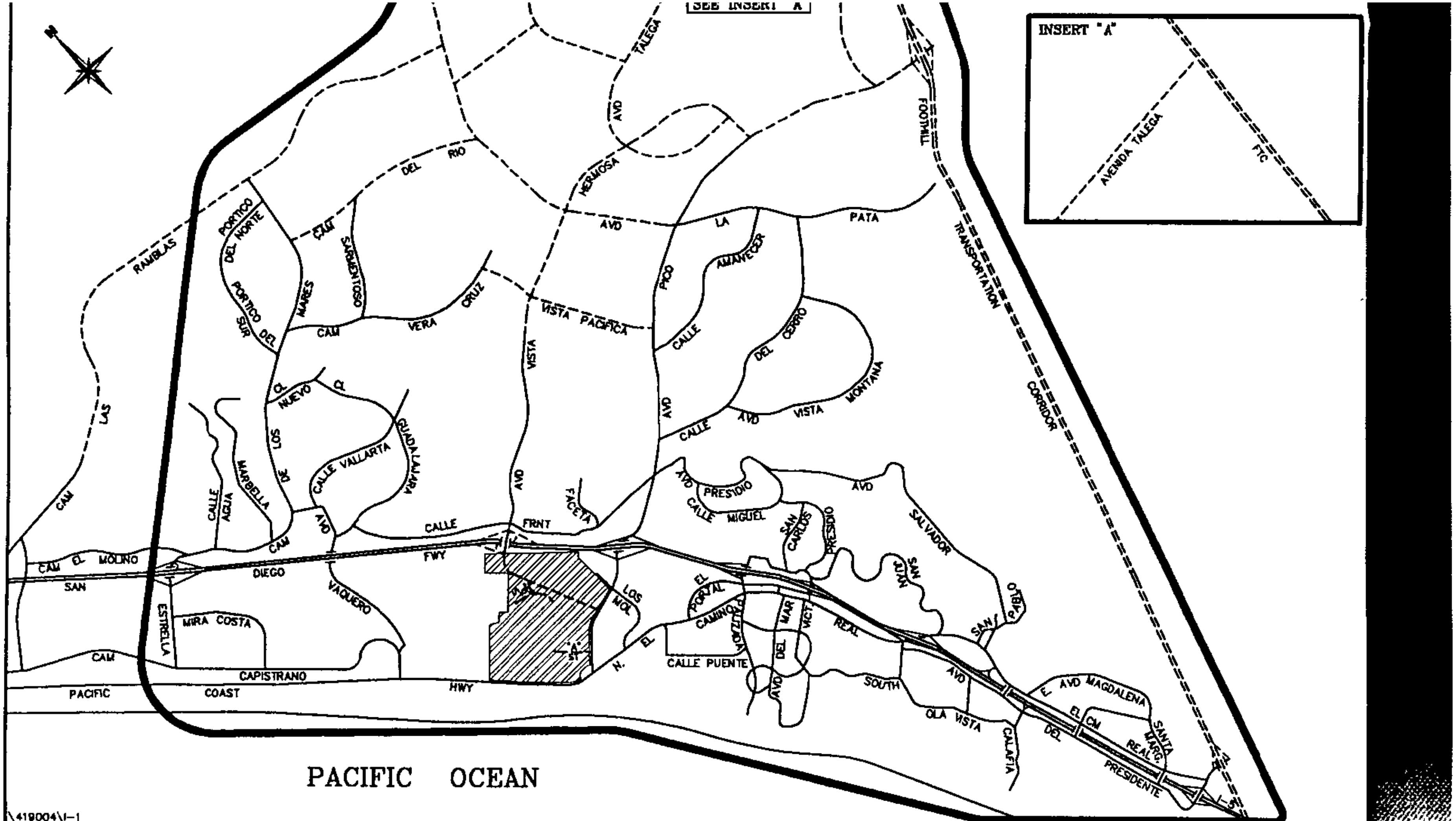
ANALYSIS SCOPE

The Marblehead Coastal project is located in the City of San Clemente on the coastal bluffs. The project is bounded by the I-5 Freeway, El Camino Real, Avenida Pico and the southeast perimeter of the existing communities of Colony Cove and Shorecliffs.

The proposed land uses for the 250.6 acre project consist of 440 low/medium density residential units, 720,000 square feet of retail uses, a 4,500-seat theater, a 10-acre passive view park, and over 75 acres of open space. A portion of the proposed retail uses is a 60,000 square foot strip commercial center located near the intersection of El Camino Real/Avenida Pico and a 307,700 square foot outlet center proposed to be located on the northeast corner of Vista Hermosa and Avenida Pico intersection.

The traffic analysis study area (see Figure I-1) for the project encompasses the City limits and Sphere of Influence of the City of San Clemente. Within this area, the traffic impacts on the circulation system are identified.

This traffic analysis addresses the proposed project in three time frames. The first time frame (interim year 2000) examines the potential impacts of the proposed project on the existing circulation system in a cumulative context (City approved projects with and without building permits also



LEGEND

Project Site

Study Area Boundary

Future Roadway

Figure I-1

PROJECT SITE AND STUDY AREA

assumed). A new four-lane Vista Pacifica roadway assumed with the development of Plaza Pacifica (see Reference 1 at the end of this chapter) is the only addition to the existing circulation system.

The second time frame (interim year 2005) is based on the cumulative database (approved projects with and without building permits) introduced for the 2000 interim year analysis with the addition of any pending projects including any associated circulation improvements that the City expects to be developed by the year 2005. These projects include Forster Ranch on the west side of the ridge and Rancho San Clemente which are assumed built out. Talega development of 1,300 residential units and 230,000 square feet of business park uses are also assumed.

The third time frame (long-range) is for buildout conditions which assumes completion of the project and buildout of the surrounding land uses. For this time frame, use is made of land use data from the City of San Clemente General Plan as quantified for the City's Regional Circulation Financing and Phasing Program (RCFPP) which was recently updated in November 1997 (see Reference 2 at the end of this chapter). Outside the City and its sphere of influence, buildout land uses consistent with OCP-92 were used as the basis for the traffic forecasts. Long-range project impacts on the circulation system are based on conditions reflecting the Foothill Transportation Corridor (FTC) as a tollway.

METHODOLOGY

The traffic forecast database used in this analysis was derived from the San Clemente Traffic Model (SCTM). The SCTM is a subarea derivation of the Orange County Traffic Analysis Model (OCTAM) and is described in the Traffic Model Description Report (see Reference 3 at the end of this chapter). This model has the ability to forecast peak hour intersection volumes and average daily traffic (ADT) link volumes and is used as a traffic forecasting tool for a variety of traffic studies within the study area circulation system. Through its derivation from the OCTAM parent model, it maintains consistency with the countywide regional traffic forecasting methodology and database. In particular, it projects future traffic volumes on the study area circulation system in a regional context, thereby reflecting future growth in both the City and the surrounding areas. The SCTM interim year 2005 time period is consistent with the Orange County Growth Management Plan (GMP) and Congestion Management Program (CMP) guidelines. Furthermore, the model structure will provide subarea model compatibility with OCTAM-3 now under preparation by the Orange County Transportation Authority (OCTA).

Detailed land use was provided by the City of San Clemente for the traffic zones within the City limits and sphere of influence for the buildout time frame. The City also maintains an inventory of land use each year determined by approved projects (with and without building permits). This constitutes the land use for the 2000 time frame. The City's last update to this database was in November 1997. For the 2005 interim year analysis, the City provided an update to the November 1997 land use data with anticipated approved projects (with and without building permits) and pending projects (Forster Ranch, Rancho San Clemente and Talega developments). The projected changes in traffic volumes determined by the model was added to the most recent City traffic count database. A summary of the land use data assumptions for the study area can be found in Appendix A.

The impact evaluation in this report focuses on intersection capacity and examines AM and PM peak hour intersection capacity utilization (ICU) values to determine level of service (LOS). Volumes and capacities are compared by means of ICU values. The purpose of determining mitigation for project impact is to specify target levels of service on the arterial highway system. Traffic levels of service are designated "A" through "F" and a general description of these level of service ranges can be found in Table I-1.

For this traffic study, the target level of service is "D" or better, which is equivalent to a maximum acceptable ICU value of .90. If either the AM or PM peak hour ICU value at an intersection is greater than the acceptable level of service (ICU greater than .90) and the project contribution is .02 or more, mitigation is required to bring the intersection back to an acceptable level of service or to no-development conditions. For the 2005 interim year, two specific levels of service requirements are addressed, one according to the Orange County GMP and the other for the statewide CMP guidelines.

REFERENCES

1. "San Clemente Traffic Model, Plaza Pacifica Project Sensitivity Runs," Austin-Foust Associates, Inc., November 1996.

Table I-1

PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

LEVEL OF SERVICE	TRAFFIC FLOW QUALITY	V/C VALUE
I. VOLUME/CAPACITY RELATIONSHIPS[1]		
A	Low volumes; high speeds; speed not restricted by other vehicles, all signal cycles clear with no vehicles waiting through more than one signal cycle.	0 - .60
B	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods	61 - 70
C	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods; recommended ideal design standards	71 - .80
D	Tolerable operating speeds, 31 to 70 percent of the signal cycle have one or more vehicles which wait through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.	.81 - .90
E	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.	.91 - 1.00
F	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero, traffic volume will be less than the volume which occurs at Level of Service "E."	Above 1.00
II. INTERSECTION DELAY RELATIONSHIPS[2]		
A	Low delay (less than 5.0 seconds per vehicle). Occurs when progression is extremely favorable, and most vehicles arrive during the green phase and do not stop at all	
B	Delay in the range of 5 to 15 seconds per vehicle. Generally occurs with good progression and/or short cycle lengths.	
C	Delay in the range of 15 to 25 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	
D	Delay in the range of 25 to 40 seconds per vehicle, and the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	
E	Delay in the range of 40 to 60 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	
F	Delay in excess of 60 seconds per vehicle This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i e, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	

Sources: (1)Highway Capacity Manual, Highway Research Board Special Report 87, National Academy of Sciences, 1965
(2)Highway Capacity Manual, Transportation Research Board Special Report 209, National Research Council, 1985

2. "City of San Clemente Traffic Shares Analysis (RCFPP 1997 Update)," Austin-Foust Associates, Inc., November 1997.

3. "San Clemente Traffic Model Description and Validation Report, 1996 Update," Austin-Foust Associates, Inc., October 1996.

II

PROJECT DESCRIPTION

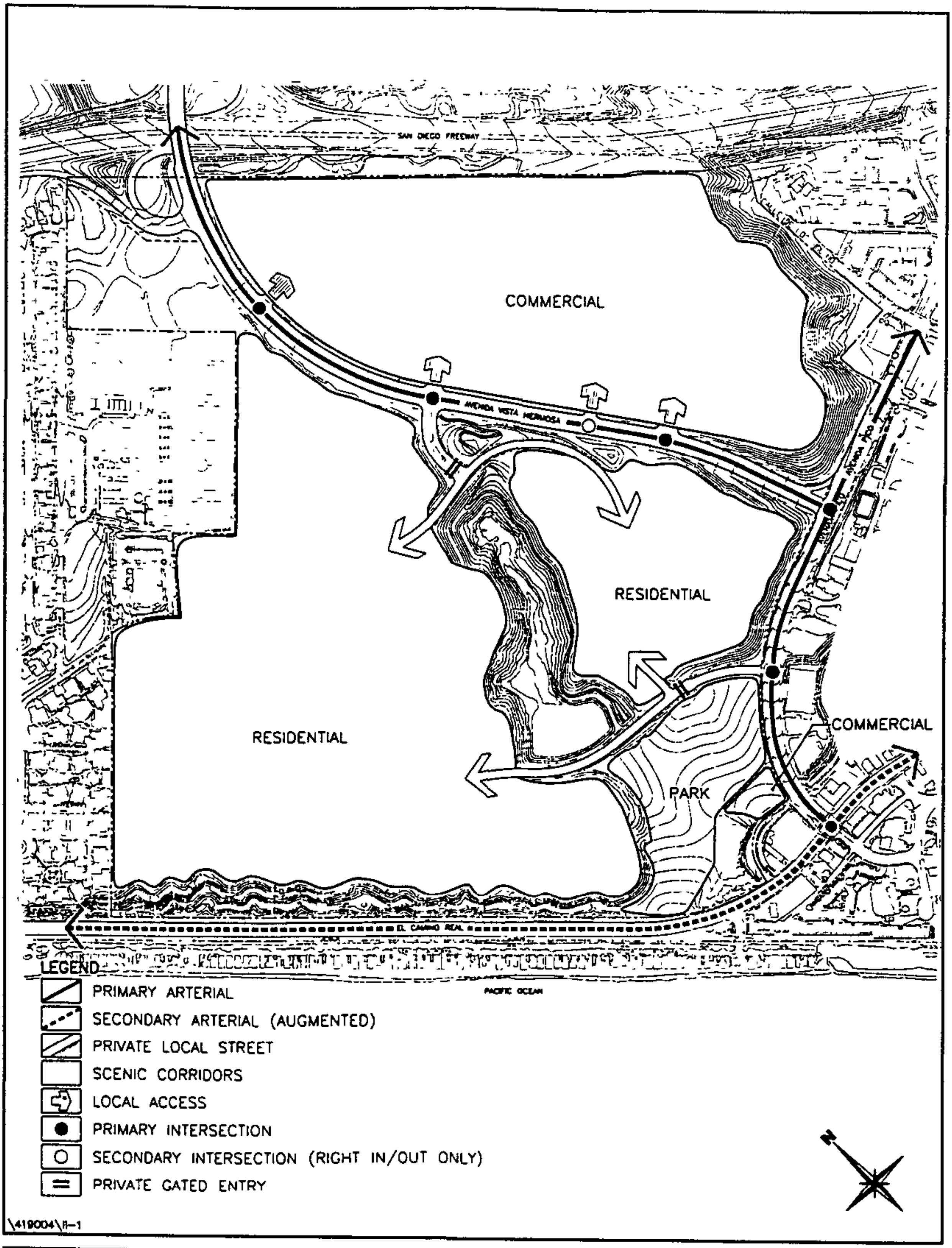
This chapter describes the traffic characteristics of the proposed Marblehead Coastal project. The project site and its proposed land uses are summarized, and project trip generation and distribution are presented. This data is used in a later chapter of this report to analyze the 2000 and 2005 interim years and long-range impacts of the project. Information relative to on-site access and circulation can be found in Chapter V.

PROJECT SITE

The project site is currently undeveloped. The site layout can be seen from the Circulation Plan for the proposed project illustrated in Figure II-1.

Primary access to the commercial portion of the proposed project will occur along the future Vista Hermosa extension, a four-lane primary arterial, which will be constructed from its current terminus at Calle Frontera east of I-5 to Avenida Pico west of I-5, approximately 1,600 feet northeast of the existing intersection of North El Camino Real/Avenida Pico, including an interchange at the I-5 Freeway. Access to the northern residential portion of the project also will occur along the future extension Vista Hermosa via "B" Street ("AAA" Street on Tentative Tract Map No. 8817). Access to the southern residential portion of the site will occur on Avenida Pico via "A" Street ("BBB" Street on Tentative Tract Map No. 8817). The new roadways described here are constructed as part of or by the proposed project. A detailed discussion of the project driveways can be found in Chapter V.

Regional accessibility will be via the I-5 Freeway with interchanges at Vista Hermosa and Avenida Pico and via the Pacific Coast Highway/El Camino Real corridor.



MAP SOURCE

Robert Bein, William Frost & Associates

Figure II-1

PROPOSED PROJECT CIRCULATION PLAN

LAND USE AND TRIP GENERATION

A summary of the land use and trip generation for the project is shown in Table II-1. The project consists of two components. The residential area located west of the future Vista Hermosa extension, and the commercial portion located east of the future Vista Hermosa extension. The residential area is enhanced by parks and surrounding open space areas, and the commercial center provides neighborhood, regional and outlet shopping opportunities.

The project consists of 440 low/medium density residential units, 720,000 square feet of retail uses (including regional and neighborhood commercial shops, a discount store and an outlet center), a 4,500 seat movie theater, and fast food and quality sit-down restaurants. There is a 10-acre passive view park located near the intersection of El Camino Real/Avenida Pico, north of the proposed 60,000 square foot strip commercial center.

The project is estimated to generate approximately 47,200 average daily trips, of which, around 1,220 are expected to occur during the AM peak hour, and around 4,320 are expected to occur during the PM peak hour.

General Plan Comparison

The land uses under the City's Current General Plan for the project area consists of 240 dwelling units, golf course, hotel and park with an approximate trip generation of 13,200 vehicle trips per day compared to 47,200 for the proposed project. The City General Plan land uses would be assumed for a "no-project" scenario. Based on the trip generation for the no-project (General Plan) scenario versus the proposed project scenario, the impacts under no-project conditions would expected to be approximately 28 percent of that shown in this report for the proposed project over no-development conditions (no land uses within the project site).

TRIP DISTRIBUTION

The future trip distribution patterns for the project are related to local and regional future employment and population centers throughout the County. Derivation of the project trip

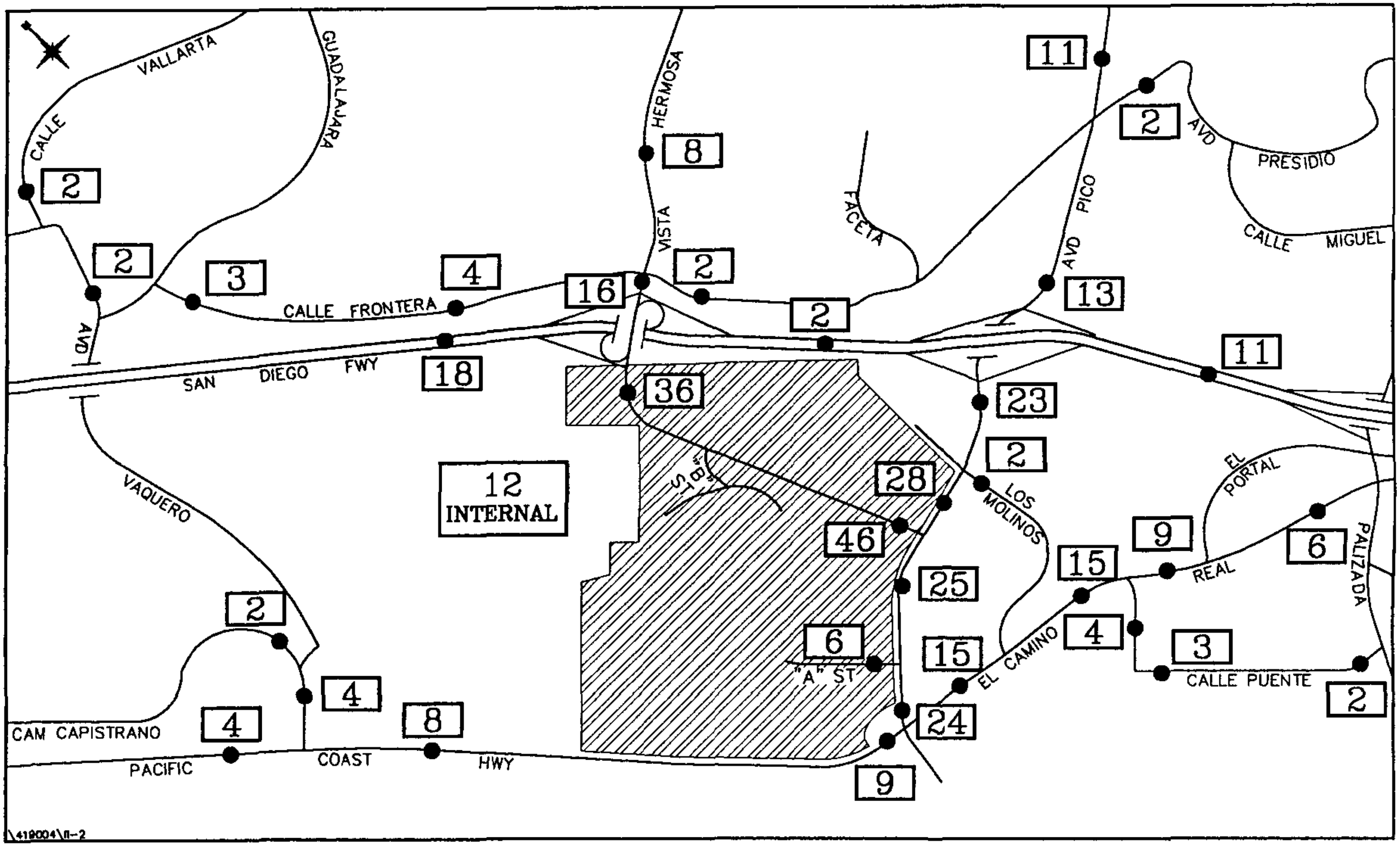
Table II-1

MARBLEHEAD COASTAL LAND USE AND TRIP GENERATION SUMMARY

LAND USE		UNITS		---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR--- IN	OUT	TOTAL	ADT
PROPOSED PROJECT										
3	Res - Low/Med (18.2)	440.00	DU	132	352	484	352	220	572	5,280
13.	Strip Commercial (6.1)	60.00	TSF	27	24	51	87	93	180	2,100
14.	Neigh Comm. (6.2)	78.00	TSF	70	62	132	226	242	468	5,460
17.	Fast Food Rest(6.5)	6.00	TSF	84	84	168	102	98	200	1,896
19.	Quality Rest./Bar (6.7)	26.50	TSF	22	2	24	133	60	193	2,534
45.	Park (16 0)	10.00	ACRE	2	1	3	1	2	3	70
48	Theater (23 0)	4500 00	SEAT	0	0	0	1,080	90	1,170	7,920
56.	Vacant (0.0)	8.80	ACRE	0	0	0	0	0	0	0
100.	Discount Store	145.80	TSF	36	38	74	258	241	499	10,225
102.	Regional Center (600)	96.00	TSF	47	28	75	164	164	328	3,489
107.	Outlet Center	307.70	TSF	151	55	206	332	372	704	8,182
	TOTAL			571	646	1,217	2,735	1,582	4,317	47,156
CURRENT GENERAL PLAN										
3	Res - Low/Med (18.2)	240.00	DU	72	192	264	192	120	312	2,880
40	Resort Hotel (12.0)	500.00	ROOM	75	45	120	140	110	250	9,200
45	Park (16.0)	10.00	ACRE	2	1	3	1	2	3	70
46	Golf Course (16.1)	152.00	ACRE	30	8	38	8	30	38	1,064
	TOTAL			179	246	425	341	262	603	13,214
TRIP RATES										
3.	Res - Low/Medium (18.2)		DU	.30	.80	1.10	.80	.50	1.30	12.00
13.	Strip Commercial (6.1)		TSF	.45	.40	.85	1.45	1.55	3.00	35.00
14	Neighborhood Comm. (6.2)		TSF	.90	.80	1 70	2.90	3.10	6 00	70.00
17	Fast Food Restaurant (6.5)		TSF	13.96	13.96	27.92	16.96	16.30	33.26	316.07
19	Quality Rest./Bar (6 7)		TSF	.82	.09	.91	5.00	2 25	7.25	95.62
40	Resort Hotel (12.0)		ROOM	.15	.09	.24	.28	.22	.50	18.40
45.	Park (16.0)		ACRE	.20	05	.25	.05	.20	.25	7.00
46.	Golf Course (16.1)		ACRE	.20	.05	.25	.05	.20	.25	7 00
48.	Theater (23 0)		SEAT	.00	.00	.00	.24	.02	.26	1.76
56.	Vacant (0.0)		ACRE	.00	.00	00	.00	.00	.00	.00
100	Discount Store		TSF	.25	.26	.51	1.77	1.65	3.42	70.13
102.	Regional Center (600)		TSF	49	.29	.78	1.70	1.71	3.41	36.35
107	Outlet Center		TSF	.49	18	.67	1.08	1.21	2.29	26.59

distribution is from the San Clemente Traffic Model (SCTM) and reflects the local and regional distribution of employment and population centers.

Figure II-2 shows the distribution patterns for the long-range buildout time frame, and summarizes the percentage of project trips at various locations on the circulation system. The long-range buildout trip distribution pattern assumes full buildout of the City of San Clemente Circulation Element including the construction of Foothill Transportation Corridor (FTC), the easterly extension of Avenida Pico to the FTC with an interchange, and various new roadways serving the Forster Ranch and Talega project areas located in the northern city limits and sphere of influence (see the discussion on the future roadway system in the next chapter).



LEGEND

Project Site

X Percent of project trip distribution

Figure II-2

PROJECT TRIP DISTRIBUTION
- LONG-RANGE

III

TRANSPORTATION SETTING

The transportation setting for the proposed project is discussed in this chapter. Existing traffic conditions are summarized, followed by discussions of future land uses and transportation improvements.

EXISTING TRAFFIC CHARACTERISTICS

The existing circulation system together with the average daily traffic volumes can be seen on Figure III-1. While average daily traffic (ADT) volumes were not used specifically to ascertain existing level of service (LOS) conditions, they are shown here for comparison with the projected future ADT volumes presented later in this report.

Existing and future levels of service are evaluated based on peak hour intersection data. Intersection performance is considered the key determinant of capacity within the analysis area circulation system, and hence is used for evaluating project impacts. It is also the methodology required by the Orange County Growth Management Plan (GMP) and Congestion Management Program (CMP) guidelines. Most peak hour intersection counts were conducted in 1996 for the intersections shown on Figure III-2.

The corresponding intersection capacity utilization (ICU) values are listed in Table III-1. For simplicity in calculating these ICUs, signalization is assumed for each intersection. Actual worksheets for each intersection are included in Appendix B. An ICU value of .90 (LOS "D") is considered the maximum desirable ICU value for the City of San Clemente, while an ICU value of 1.00 exceeds the theoretical capacity of an intersection. As shown, none of the intersections currently exceeds the

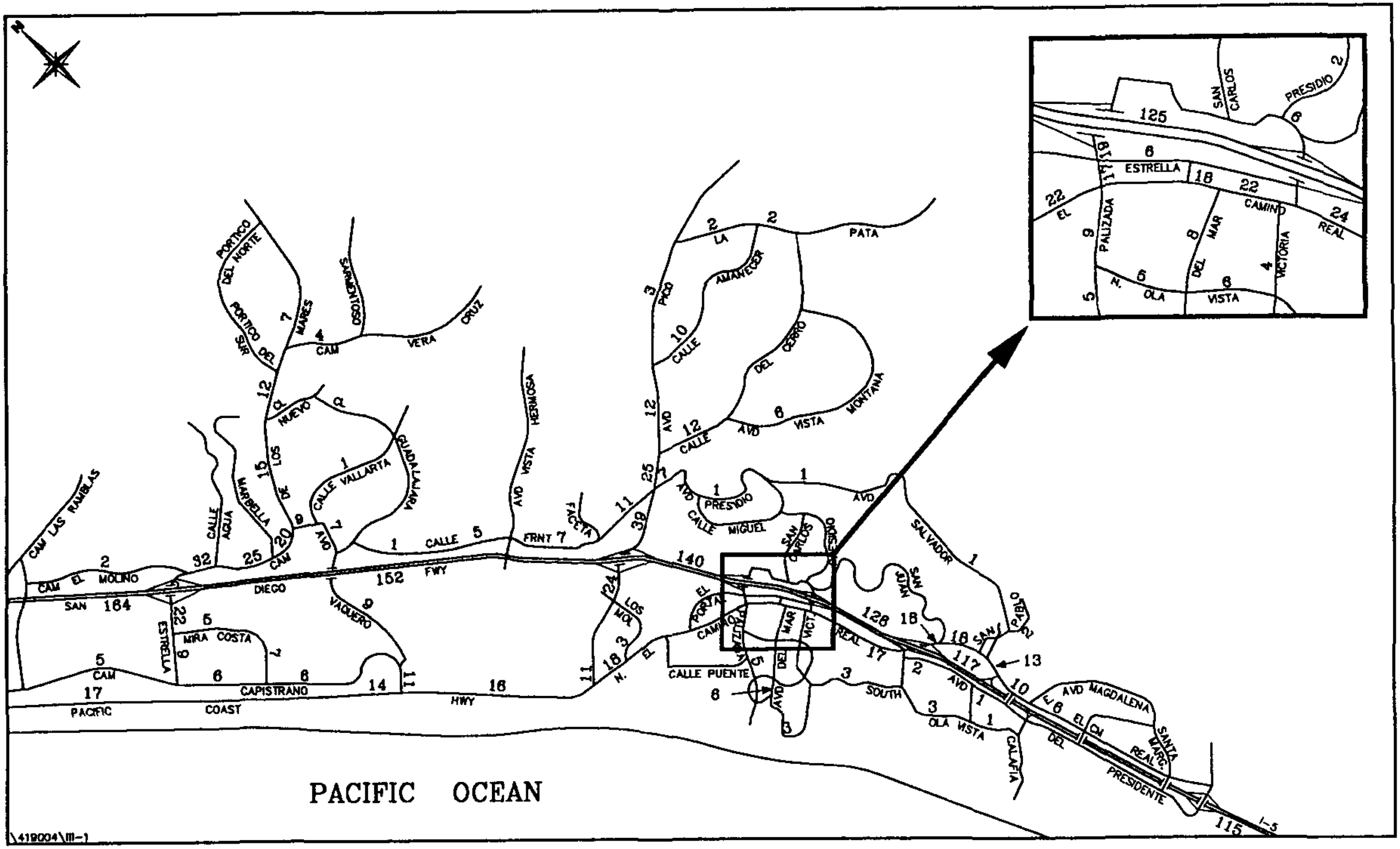


Figure III-1
EXISTING 1996 ADT VOLUMES (000s)

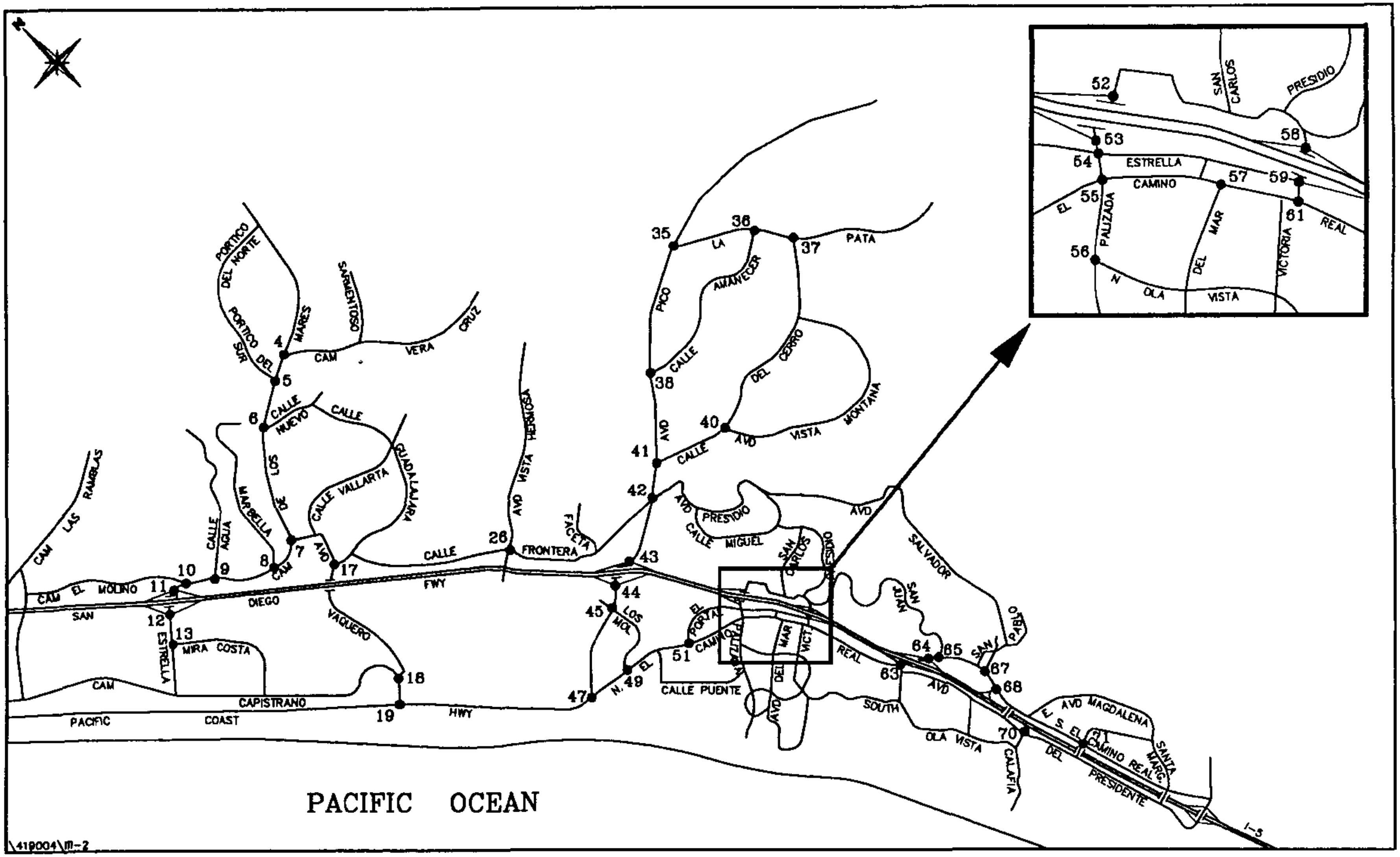


Figure III–2

EXISTING 1996 INTERSECTION LOCATION MAP

Table III-1

EXISTING 1996 ICU SUMMARY

INTERSECTION	AM	DATE	PM	DATE
4 Cm Vera Cruz & Los Mares	.21	1996*	.18	1996*
5 Port Del Sur & Los Mares	.21	1996*	.19	1996*
6 Calle Nuevo & Los Mares	.34	1996*	.36	1996*
7. Avd Vaquero & Los Mares	.23	4/9/96	.32	4/9/96
8 Marbella & Los Mares	.20	1996*	.23	1996*
9. Calle Agua & Los Mares	.37	1996*	.56	1996*
10. Cm El Molino & Los Mares	.36	4/11/96	.44	4/11/96
11. I-5 NB Ramps & Estrella	.47	4/10/96	.66	4/10/96
12 I-5 SB Ramps & Estrella	.38	4/10/96	.75	4/10/96
13 Cm Mira Costa & Estrella	.23	4/10/96	34	4/10/96
17 Avd Vaquero & Guadalajara	.19	1996*	.30	1996*
18 Avd Vaquero & Cm Capistrano	.35	4/2/96	.34	4/2/96
19 PCH & Cm Capistrano	46	4/2/96	.53	4/2/96
26 Frontera & Vista Hermosa	.12	1996*	.17	1996*
35. La Pata & Avd Pico	.05	1996*	.06	1996*
36. La Pata & Calle Amanecer	.08	1996*	11	1996*
37 La Pata & Del Cerro	.02	1996*	.03	1996*
38 Calle Amanecer & Avd Pico	.54	4/17/96	.31	4/17/96
40 W. Vista Montana & Del Cerro	46	1996*	.30	1996*
41. Calle del Cerro & Avd Pico	.45	4/17/96	.49	4/17/96
42. Avd Presidio & Avd Pico	.62	4/18/96	.67	4/18/96
43 I-5 NB Ramps & Avd Pico	48	4/18/96	.49	4/18/96
44 I-5 SB Ramps & Avd Pico	.70	4/18/96	83	4/18/96
45 Los Molinos & Avd Pico	.36	4/18/96	.49	4/18/96
47 N. El Cm Real & Avd Pico	.37	4/16/96	45	4/16/96
49 N El Cm Real & Los Molinos	.24	1996*	.34	1996*
51 N. El Cm Real & El Portal	.37	1996*	.44	1996*
52. I-5 NB Ramp & Palizada	.36	1996*	.37	1996*
53. I-5 SB Ramp & Palizada	.32	3/27/96	.44	3/27/96
54. Estrella & Palizada	.48	3/27/96	.64	3/27/96
55. N. El Cm Real & Palizada	.37	4/16/96	.55	4/16/96
56 N. Ola Vista & Palizada	.24	1996*	.40	1996*
57. El Cm Real & Del Mar	.25	4/16/96	.41	4/16/96
58. I-5 NB Ramp & Avd Presidio	.45	1996*	.52	1996*
59. Estrella & Avd Presidio	.28	1996*	.43	1996*
61 N. El Cm Real & Avd Presidio	.20	4/16/96	.31	4/16/96
63. I-5 SB Off Ramps & El Cm Real	.34	4/16/96	.48	4/16/96
64. I-5 NB Ramps & S. El Cm Real	.31	4/16/96	.34	4/16/96
65. El Camino Real & San Juan	.23	1996*	.27	1996*
67. El Camino Real & San Gabriel	.29	1996*	.35	1996*

(Continued)

Table III-1 (cont)
EXISTING 1996 ICU SUMMARY

INTERSECTION	AM	DATE	PM	DATE
68. S. El Cm Real & I-5 NB Ramps	.41	1996*	.34	1996*
70. Avd Presidente & Avd Calafia	.26	1996*	26	1996*
71. El Camino Real & San Luis Rey	11	1996*	20	1996*

* These represent 1989 - 1992 counts that were factored to 1996

Notes: 1. See Figure III-2 for intersection locations

2. Level of service ranges
.00 - .60 A
.61 - .70 B
71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above - 1.00 F

acceptable level of service standard. The existing lane configurations used in calculating the ICUs are shown on Figure III-3.

FUTURE TRANSPORTATION IMPROVEMENTS

The City of San Clemente General Plan shows a variety of future roadway improvements aimed at maintaining adequate levels of service on the City street system. The following discusses the assumptions made in this regard for the interim years and long-range buildout analysis.

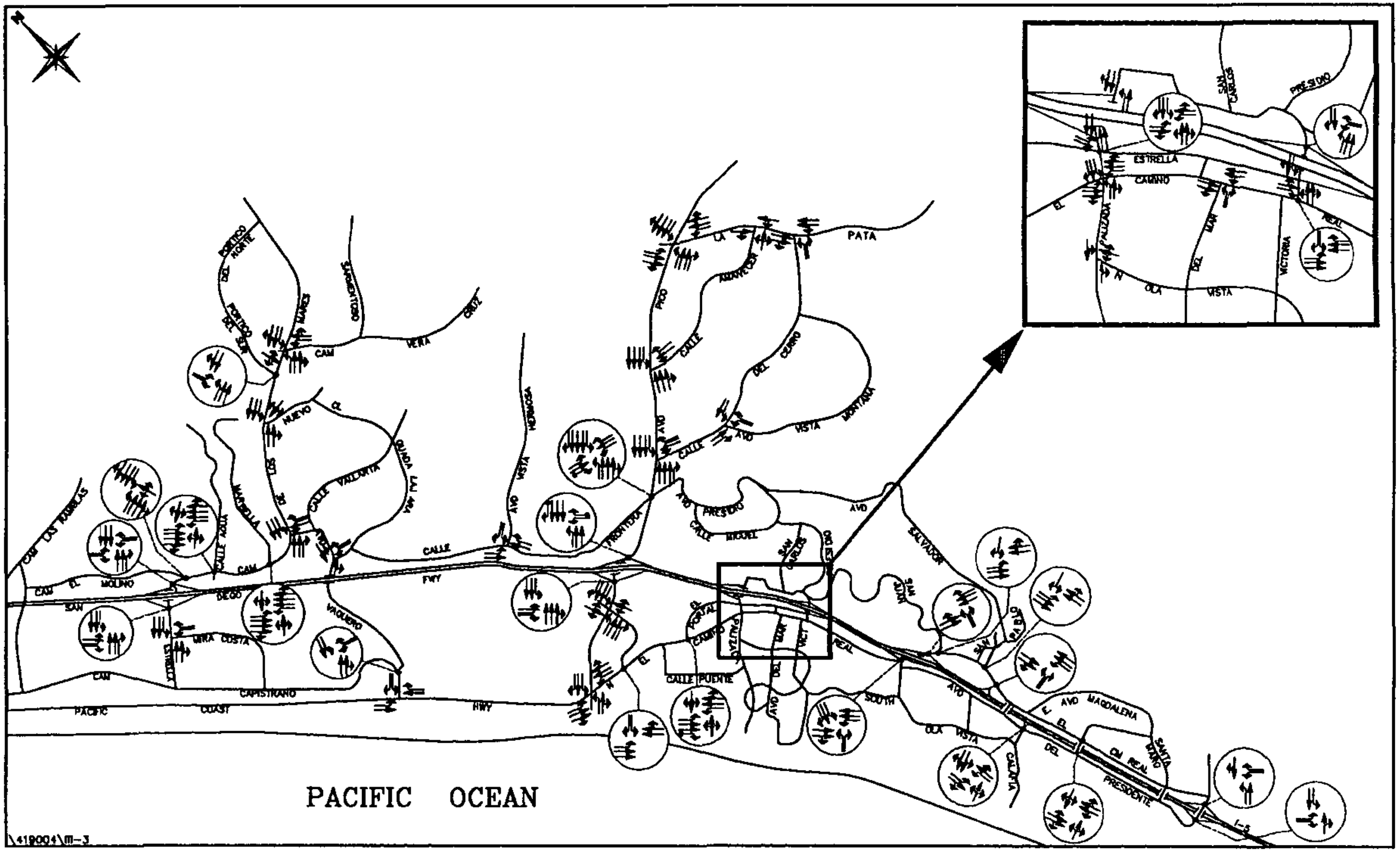
Interim Years

The database for the interim year of 2000 consists of approved projects (with and without building permits) as well as the recently approved Plaza Pacifica project. The database for the year 2005 includes the 2000 database, as well as other projects that have been processed since the last model update and pending projects along with any associated circulation improvements deemed appropriate by the City. The only improvement expected to occur for interim year 2000 time frame is the new four-lane Vista Pacifica Roadway, which will be completed as part of the approved Plaza Pacifica development.

For interim year 2005, Forster Ranch on the west side of the ridge and Rancho San Clemente are assumed built out, and 1,300 residential units and 230,000 square feet of business park uses are assumed for the Talega area. The most significant circulation improvement is the extension of Vista Pacifica to Camino Vera Cruz.

The intensity of this development requires the completion or partial completion of certain intersection improvements identified in the City's Regional Circulation Financing and Phasing Program (RCFPP) in November 1997. Table III-2 summarizes the RCFPP improvements reflected in this traffic study as background conditions for interim year 2005 and long-range buildout. As required by the City, the Marblehead Coastal project will pay for its fair share in the implementation of these intersection improvements.

Two other major improvements will be implemented as part of or by the Marblehead Coastal project. These are the four-lane Vista Hermosa extension from its current terminus at Calle Frontera



LEGEND

Free-Right Turn Lane

Figure III-3

EXISTING 1996 LANE CONFIGURATIONS

Table III-2

RCFPP INTERSECTION IMPROVEMENTS

INTERSECTION	2005	LONG-RANGE BUILDOUT
11. I-5 NB Ramps & Estrella	3rd EBT	
19. PCH & Camino Capistrano		2nd SBT & 2nd NBT
25 Vista Pacifica & Vista Hermosa	New T-intersection. SBT, shared SBT/R, NBL dual NBT, shared EBL/R, & EBR	Construct east leg SBL, WBL, WBT, shared WBT/R, convert NBT to shared NBT/R, convert shared EBL/R to EBL, add EBT & convert EBR to shared EBT/R
26. Frontera & Vista Hermosa	*Construct west leg: SBR, dual WBT, convert WBR to shared WBT/R, add NBL, convert NBT to NBL, convert NBR to shared NBT/R	
27. I-5 NB Ramps & Vista Hermosa	*New: NBL, NBR, dual EBT, EBR, WBL, shared WBL/T, WBT	Convert EBR to free EBR, convert WBL, shared WBL/T & WBT to WBT, shared WBT/R & WBR
28. I-5 SB Ramps & Vista Hermosa	*New: SBL, shared SBL/R, SBR, EBL, triple EBT, dual WBT, free WBR	
35 La Pata & Avd Pico		Convert shared SBT/R to SBT, add free SBR, 2nd WBL, WBR
38 Calle Amanecer & Avd Pico	2nd WBL	Construct north leg: shared SBL/T/R, convert NBL/R to NBL/T/R, EBL, EBR
42. Avd Presidio & Avd Pico		Convert WBR to shared WBT/R & add EBT
43. I-5 NB Ramps & Avd Pico		2nd NBR
44. I-5 SB Ramps & Avd Pico	Convert WBT to shared WBL/T & add EBR	
47. N. El Camino Real & Avd Pico	2nd SBL, 2nd WBL	Convert shared NBT/R to NBT, & add NBR

* With-project only, also for 2000 with-project

First street of intersection description is oriented north/south.
2005 improvements are assumed carried to long-range buildout conditions.

RCFPP - Regional Circulation Financing and Phasing Program, November 1997.
EBL - eastbound left-turn lane, EBT - eastbound through lane, EBR - eastbound right-turn lane, etc for westbound, southbound and northbound

east of I-5 to Avenida Pico west of I-5 including a partial interchange at the I-5 (full interchange assumed for buildout). With the exception of the northbound I-5 slip on-ramp from westbound Vista Hermosa, the partial interchange is the same as the full interchange.

Long-Range Buildout

The buildout circulation system for the study area reflects the City of San Clemente Circulation Element and is consistent with the Orange County Master Plan of Arterial Highways (MPAH). Facility types are shown in Figure III-4 and consist of the following roadway designations:

Major - Six-lanes divided
Primary - Four-lanes divided
Secondary - Four-lanes undivided

The long-range transportation improvements will include completing the City of San Clemente Circulation Element plus additional intersection enhancements at selected locations. Future roadways which affect traffic in the study area are shown on Table III-3. Long-range buildout traffic forecasts are presented under conditions reflecting the Foothill Transportation Corridor (FTC) as a toll facility.

LAND USE PROJECTIONS

Future traffic volumes on the study area circulation system are influenced by growth in and around the study area. Growth in land use development projected for the City of San Clemente and its sphere of influence can be seen on Table III-4. Land use data is listed here for 1996, 2000, 2005, and long-range buildout.

As can be seen from these projections, growth in trip generation for the City and sphere of influence is estimated to be 96,571 trips per day between 1996 and 2000 (an increase of around 24 percent) 147,336 trips per day in 2005 (an increase of around 36 percent), and 328,590 trips per day upon long-range buildout (an increase of 80 percent). These projections in addition to those from surrounding areas form the basis for the traffic forecast data presented in this report.

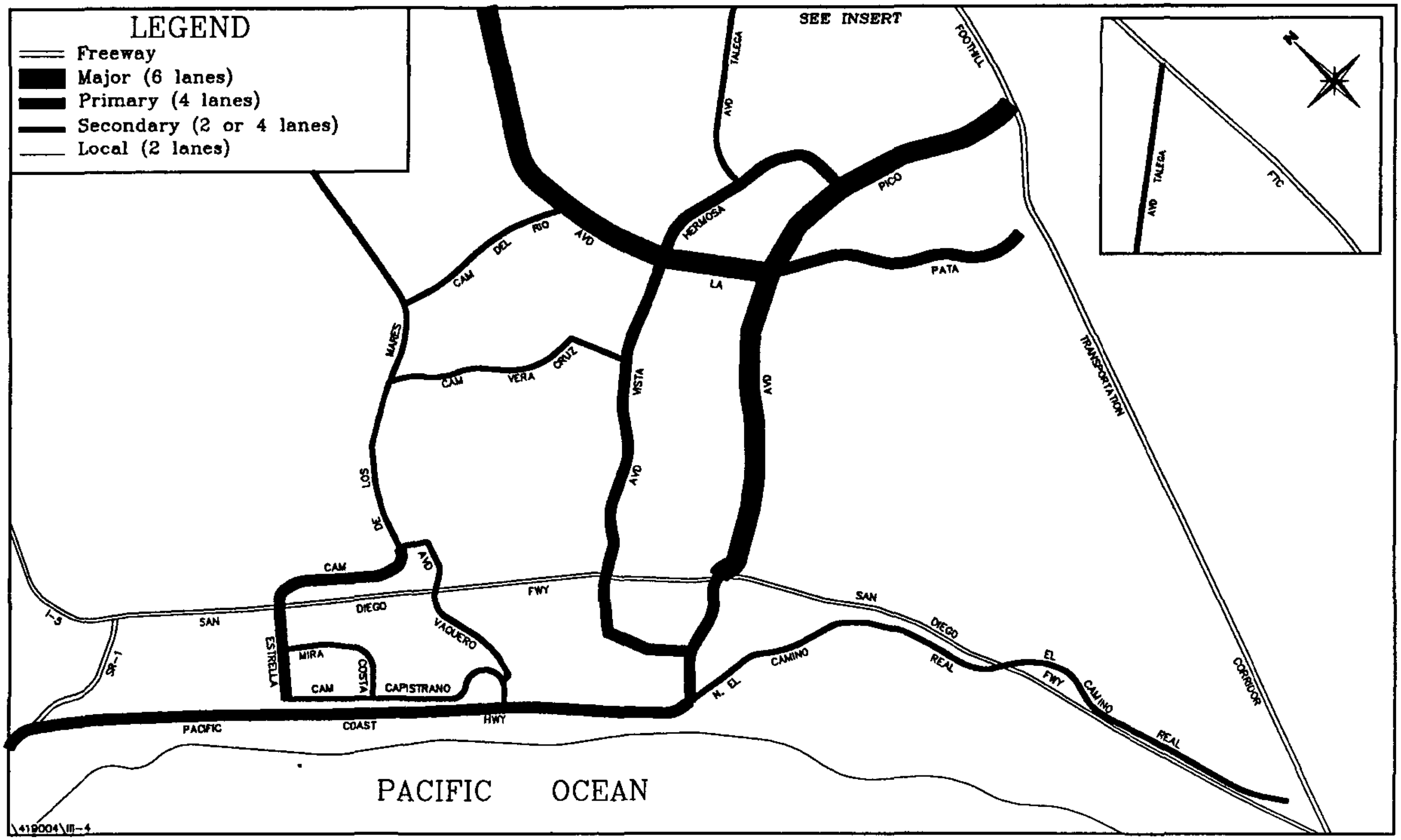


Figure III-4

CITY OF SAN CLEMENTE
CIRCULATION ELEMENT

Table III-3

FUTURE LONG-RANGE ROADWAY IMPROVEMENTS

Foothill Transportation Corridor (FTC)	
City limits to I-5	New 6-lane facility
Vista Hermosa	
Calle Frontera to Avenida Pico	New 4-lane primary facility with augmentation from Avenida Pico to first commercial driveway (additional northbound through lane)*
I-5 interchange	Widen to 4 lanes with interchange (interim years -partial, buildout-full)**
Avenida La Pata to Avenida Pico	New 4-lane primary facility
Camino Del Rio	
Sarmentoso to Avenida La Pata	New 4-lane secondary facility
Camino Vera Cruz	
Current terminus to Avenida Vista Hermosa	New 4-lane secondary facility
Vista Pacifica	
Avenida Vista Hermosa to Avenida Pico	New 4-lane secondary facility
Avenida La Pata	
City limits to Avenida Pico	New 6-lane major facility
Avenida Talega	
FTC to Avenida Vista Hermosa	New 4-lane primary facility
Camino Las Ramblas (City of San Juan Capistrano)	
Current terminus to Avenida La Pata	New 4-lane primary facility

* Improvement funded fully by the proposed Marblehead Coastal project and is assumed not constructed under no-development conditions

** Funded through the RCFPP with fair share contribution by development within the benefit zones (assumed not constructed under no-development conditions).

Table III-4

SAN CLEMENTE LAND USE AND TRIP GENERATION SUMMARY

Land Use Category	Units	----- 1996 ----- Amount	ADT	----- 2000 ----- Amount	ADT	----- 2005 ----- Amount	ADT	- LONG-RANGE - Amount	ADT
Residential	DU	18,731.00	193,527	19,636 00	205,562	22,755.00	241,160	27,453.00	286,346
Commercial	TSF	1,584.32	112,921	2,810 79	180,692	2,810 79	180,692	4,116.00	274,591
Office	TSF	778.24	18,674	673 45	14,937	673 45	14,937	1,125.28	20,599
Industrial/R&D	TSF	2,262.76	23,486	2,394.44	24,913	3,701.05	38,133	5,191.44	54,526
Other	--	--	62,111	--	81,186	--	83,133	--	103,247
TOTAL			410,719		507,290		558,055		739,309

ADT - average daily traffic
R&D - Research and Development
SCTM - *San Clemente Traffic Model*

Notes. 1 The land use projections for 2000, 2005 and long-range buildout time frames include the Marblehead project.

2. "Other" category includes uses such as schools, churches, parks, etc., not covered by the other three non-residential land use categories.

3 Dana Point and San Juan Capistrano land uses are not included in this summary (San Clemente City and sphere of influence only).

CMP CONSISTENCY

The 2005 interim year time period is consistent with the statewide Congestion Management Program (CMP) guidelines. However, the CMP has a defined highway network with designated intersections which are subject to evaluation for project impacts, and there are no designated CMP intersection with the City or Sphere of San Clemente. Therefore, no CMP impacts are caused by the project.

IV

IMPACT ANALYSIS

The analysis results presented in this chapter show how the proposed project impacts the study area circulation system. The interim year impacts (2000 and 2005) are addressed, followed by the long-range buildout analysis.

INTERIM YEAR ANALYSES

The two interim year time frame analyses (2000 and 2005) provide short-range and intermediate range time frames in which to analyze the impacts of the project. A no-development scenario (assumes no project site development) is presented first, followed by an analysis of the full project for both the 2000 and 2005 time frames. The 2005 analysis provides a representative time frame for Congestion Management Program (CMP) and Growth Management Plan (GMP) purposes.

The interim year 2000 circulation system and intersection lane configurations are the same as those shown for existing conditions with the exception of the new four-lane Vista Pacifica roadway which will be completed as part of the approved Plaza Pacifica development.

For interim year 2005, the buildout of Forster Ranch (on the west side of the ridge) and Rancho San Clemente developments and partial buildout of the Talega development (1,300 residential units and 230,000 square feet of business park uses) require certain project-related improvements and improvements as identified in the City's Regional Circulation Financing and Phasing Program (as outlined in Chapter III for intersections).

When the project is being analyzed, the roadway system includes the new four-lane Vista Hermosa extension from Calle Frontera to Avenida Pico and the new I-5 interchange with Vista

Hermosa and, for interim year 2005 only, intersection improvements to North El Camino Real and Avenida Pico (second westbound left-turn lane on Avenida Pico and second southbound left-turn lane on North El Camino Real) which will be implemented with the proposed project.

2000 Average Daily Traffic Volumes

This analysis includes the City's cumulative land use database (approved projects with and without building permits) updated in November 1997 with the addition of the recently approved Plaza Pacifica project and its accompanying Vista Pacifica roadway. The no-development analysis assumes the approved projects which are expected to occur by 2000 but without the Marblehead Coastal project. The resulting average daily traffic (ADT) is shown in Figure IV-1. In comparison with the existing ADT volumes in Chapter III, the biggest increase occurs on Avenida Pico east of the I-5 (39,000 to 54,000) which is attributed mainly to the development of the approved Plaza Pacifica project.

The addition of project traffic results in increases of ADT volumes in the vicinity of the project. This with-project analysis assumes the buildout project land uses with the Vista Hermosa extension from Calle Frontera to Avenida Pico including a partial interchange at the I-5 (same as the ultimate interchange configuration except not provided in the interim years is the westbound Vista Hermosa to northbound I-5 slip on-ramp; all other movements are accommodated). Figure IV-2 shows that the addition of the project and associated circulation system improvements results in a decrease in ADT on Avenida Pico east of the I-5 (54,000 to 49,000). The ADT volumes on the Vista Hermosa extension to Avenida Pico range between 24,000 and 26,000.

2000 Peak Hour Levels of Service

Figure IV-3 shows the intersections studied for 2000 and 2005 interim years, and Table IV-1 compares the no-development and with-project peak hour intersection capacity utilization (ICU) values for the 2000 time frame. (For actual turn movement volumes see Appendix B.) The intersection lanes outside of the project area are essentially the same as existing (see Figure III-3). As can be seen in this table, the PM peak hour ICU at the I-5 southbound ramps and Avenida Pico is the only intersection that exceeds the acceptable level of service (ICU greater than .90) under no-development and with-project conditions, but is not a project contributed deficiency since the project

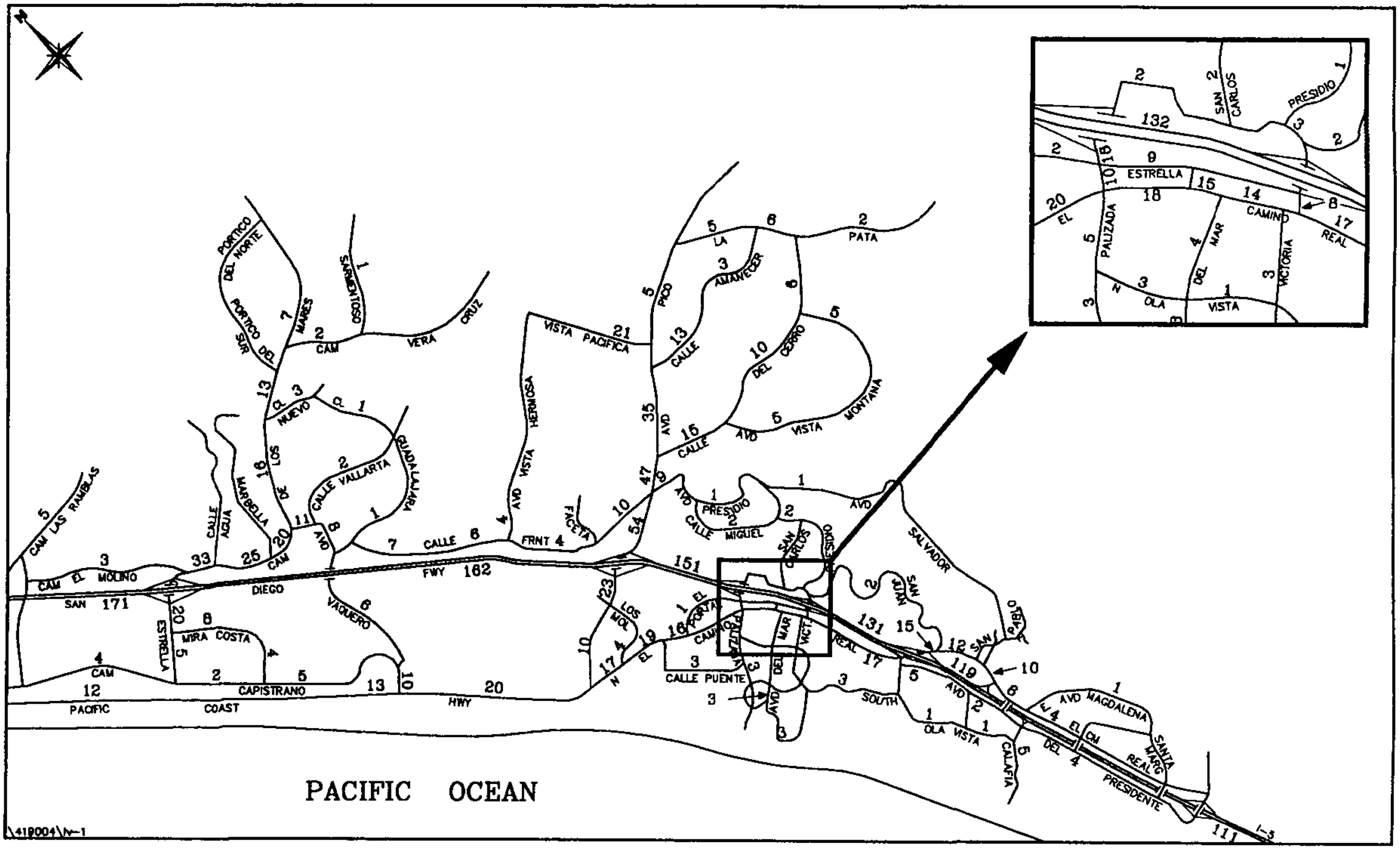


Figure IV-1

INTERIM YEAR 2000
ADT VOLUMES (000s)
– NO-DEVELOPMENT

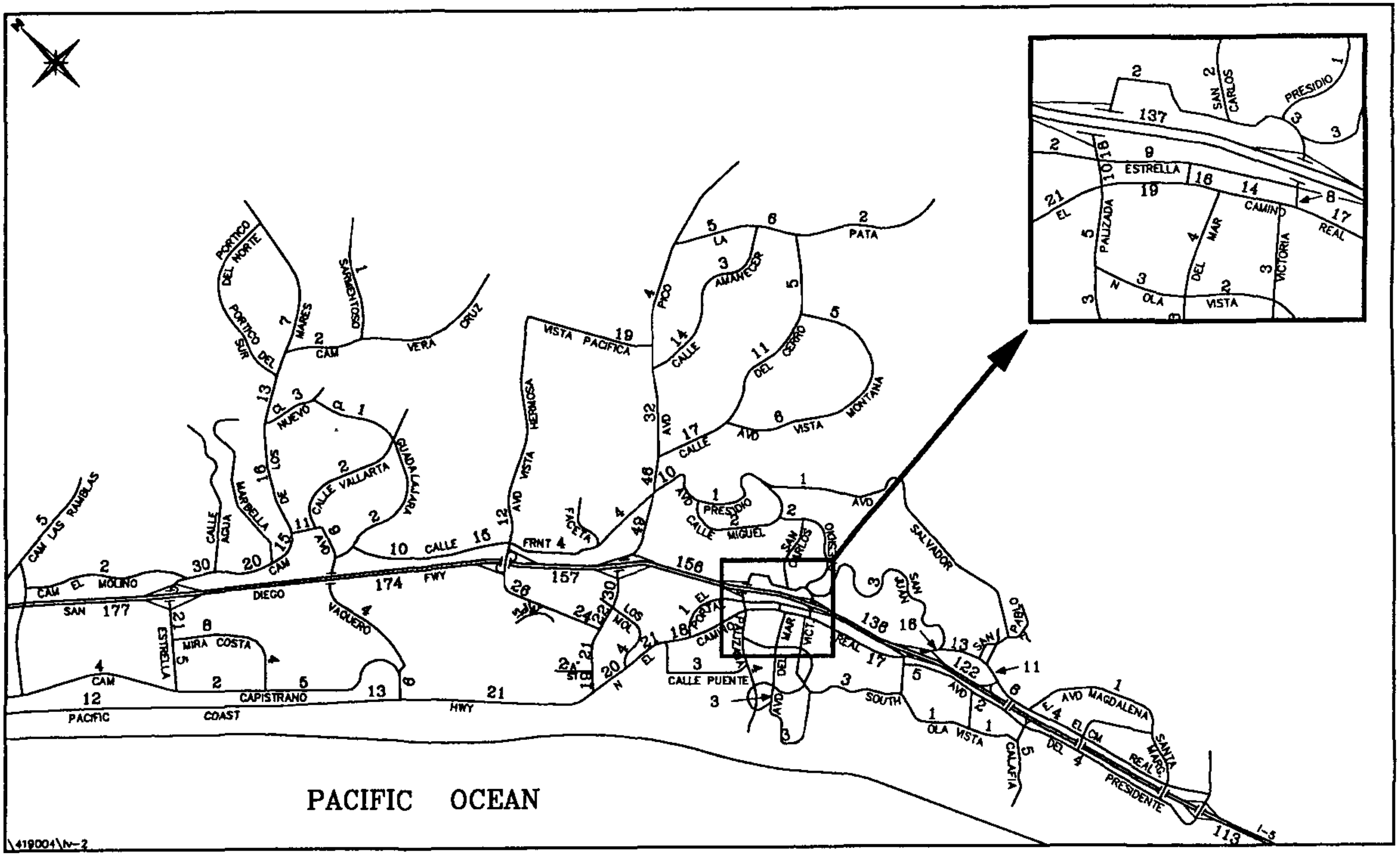
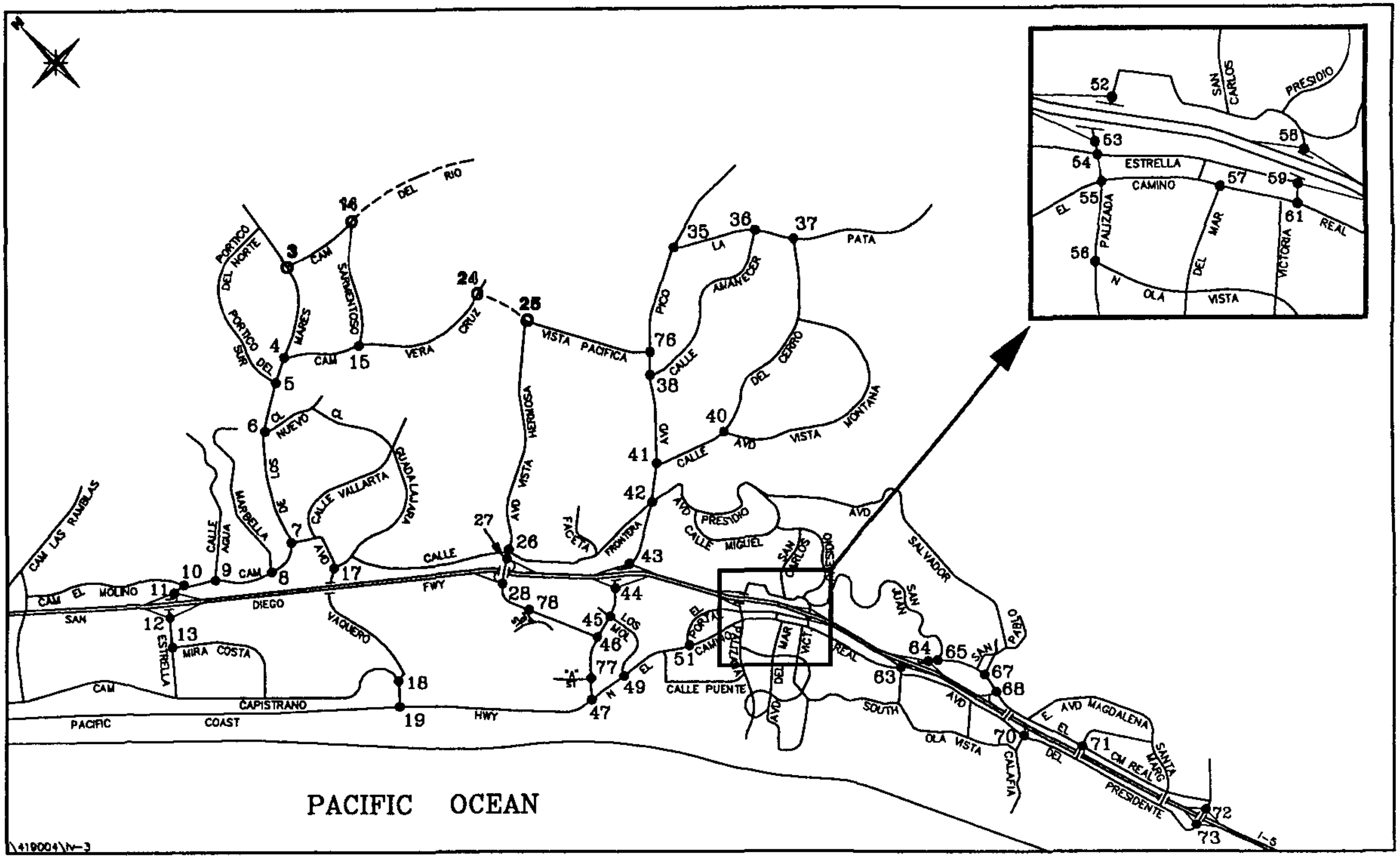


Figure IV-2

INTERIM YEAR 2000
ADT VOLUMES (000s)
– WITH–PROJECT



LEGEND

---- Roadway in for 2005 only

14 O Intersection analyzed for 2005 only

Figure IV-3

INTERIM YEARS 2000 AND 2005
INTERSECTION LOCATION MAP

Table IV-1

INTERIM YEAR 2000 ICU SUMMARY

INTERSECTION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
4 Cm Vera Cruz & Los Mares	.23	.23	.00	.19	.19	.00
5. Port Del Sur & Los Mares	.22	.22	.00	.20	.21	.01
6. Calle Nuevo & Los Mares	.35	.34	-01	.36	.36	.00
7. Avd Vaquero & Los Mares	.23	.23	.00	.32	.38	.06
8. Marbella & Los Mares	.20	.20	.00	.23	.23	.00
9. Calle Agua & Los Mares	.37	.38	.01	.63	.58	-.05
10 Cm El Molino & Los Mares	40	.39	-01	62	61	-.01
11. I-5 NB Ramps & Estrella	48	.49	.01	.78	73	-05
12. I-5 SB Ramps & Estrella	.40	.38	-.02	.78	80	02
13 Cm Mira Costa & Estrella	.23	23	.00	40	.42	.02
15. Cm Vera Cruz & Sarmentoso	.06	.09	.03	05	.08	.03
17 Avd Vaquero & Guadalajara	.22	.20	-.02	.30	31	01
18. Avd Vaquero & Cm Capistrano	.35	.35	.00	.34	36	.02
19. PCH & Cm Capistrano	.46	.46	.00	.53	.53	.00
26. Frontera & Vista Hermosa	.21	.43	.22	.31	.59	.28
27. I-5 NB Ramps & Vista Hermosa	--	.34	--	--	50	--
28. I-5 SB Ramps & Vista Hermosa	--	18	--	--	.49	--
35 La Pata & Avd Pico	.09	.09	00	16	.15	-.01
36. La Pata & Calle Amanecer	.36	.37	.01	.39	.38	-.01
37. La Pata & Del Cerro	.22	.21	-.01	.26	.25	-01
38 Calle Amanecer & Avd Pico	.74	.83	.09	.63	.59	-.04
40. W. Vista Montana & Del Cerro	46	.47	.01	.38	.44	.06
41. Del Cerro & Avd Pico	.46	.46	.00	.50	.51	.01
42. Avd Presidio & Avd Pico	.67	.64	-.03	.76	.76	.00
43. I-5 NB Ramps & Avd Pico	.51	.51	.00	66	.75	09
44 I-5 SB Ramps & Avd Pico	.76	.71	-.05	1 15	1.07	-.08
45. Los Molinos & Avd Pico	.38	.39	.01	.53	.63	.10
47. N. El Cm Real & Avd Pico	.37	.40	.03	.50	.69	.19
49. N. El Cm Real & Los Molinos	.27	.28	.01	.33	.35	02
51. N. El Cm Real & El Portal	.23	.23	.00	.30	.32	.02
52. I-5 NB Ramp & Palizada	.44	.40	-.04	.28	.29	.01
53. I-5 SB Ramp & Palizada	.23	.23	.00	.45	.47	.02
54 Estrella & Palizada	.43	.43	.00	.60	.60	00
55. N. El Cm Real & Palizada	.29	.29	.00	.54	.55	.01
56. N. Ola Vista & Palizada	.24	.23	-.01	.30	.31	.01
57 N El Cm Real & Del Mar	.20	.19	-.01	24	.26	.02
58 I-5 NB Ramp & Avd Presidio	.35	.37	.02	.31	.32	01
59 Estrella & Avd Presidio	.29	.25	-.04	.26	.26	00
61. N. El Cm Real & Avd Presidio	.28	.30	.02	.26	.26	.00
63. I-5 SB Ramps & S. El Cm Real	.35	.34	-.01	.48	.51	.03

(Continued)

Table IV-1 (cont)
INTERIM YEAR 2000 ICU SUMMARY

INTERSECTION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
64. I-5 NB Ramps & S El Cm Real	.42	.42	.00	.30	.32	02
65. S El Cm Real & San Juan	.32	.32	.00	.33	.35	02
67. S. El Cm Real & San Gabnel	.09	.10	.01	.27	27	.00
68 S. El Cm Real & I-5 NB Ramps	.35	.36	.01	.20	.23	.03
70 Avd Presidente & Avd Calafia	.25	.26	.01	.32	.34	.02
71. S. El Cm Real & San Luis Rey	.13	.13	.00	21	23	02
72. I-5 NB Ramps & Cristianitos	.10	.10	.00	.05	05	.00
73. I-5 SB Ramps & Cristianitos	.09	.09	00	.05	.06	.01
76. Vista Pacifica & Pico	42	.52	.10	.68	.64	-.04
77. "A" Street & Pico	--	.02	--	--	.02	--
78. Vista Hermosa & "B" Street	--	.41	--	--	57	--

NO-DEV = No-development scenario does not include project site development, the I-5/Vista Hermosa interchange, and the Vista Hermosa extension through the project to Avenida Pico.

WITH-PROJ = Project land uses with associated project circulation system improvements

Level of service ranges .00 - .60 A
61 - 70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1 00 F

actually decreases the deficiency (ICUs = 1.15 and 1.07 for no-development and with-project, respectively).

2005 Average Daily Traffic Volumes

This analysis is based on the cumulative database (approved projects with and without building permits) introduced above for the 2000 interim year analysis with the addition of pending projects and any project-related circulation improvements that the City expects to be developed by 2005.

The no-development analysis does not include the Vista Hermosa extension to Avenida Pico, or the Vista Hermosa partial interchange at the I-5. The resulting ADT volumes without development of the project site are shown in Figure IV-4. The with-project analysis assumes the project built with the Vista Hermosa extension to Avenida Pico including a partial interchange at the I-5. Figure IV-5 shows that the addition of the project results in 29,000 ADT on Avenida Pico west of the I-5, compared to the no-development scenario ADT volume of 25,000. The ADT volume on Vista Hermosa east of Calle Frontera is 17,000 with project compared to 3,000 without project site development. The addition of the Vista Hermosa extension to Avenida Pico relieves the traffic congestion on Avenida Pico east of the I-5 with an ADT of 53,000 compared to 64,000 without development of the project site. The ADT volumes on Vista Hermosa extension to Avenida Pico itself range between 23,000 and 26,000.

2005 Peak Hour Levels of Service

Table IV-2 compares the 2005 no-development and with-project peak hour ICU values (see Appendix B for detailed ICU worksheets). The lane configurations assumed in these ICU calculations are shown in Figure IV-6. As discussed in Chapter III, intense development within the City during interim year 2005 requires that certain RCFPP improvements are completed or partially completed. The with-project analysis assumes intersection improvements at North El Camino Real and Avenida Pico (second westbound left-turn lane on Avenida Pico and second southbound left-turn lane on North El Camino Real). The intersections of I-5 southbound ramps/Avenida Pico and Vista Pacifica/Avenida Pico are the only locations that exceed the acceptable LOS (ICU greater than .90) during the PM peak hour which occurs under the no-development scenario only. There are no project contributed deficiencies for interim year 2005.

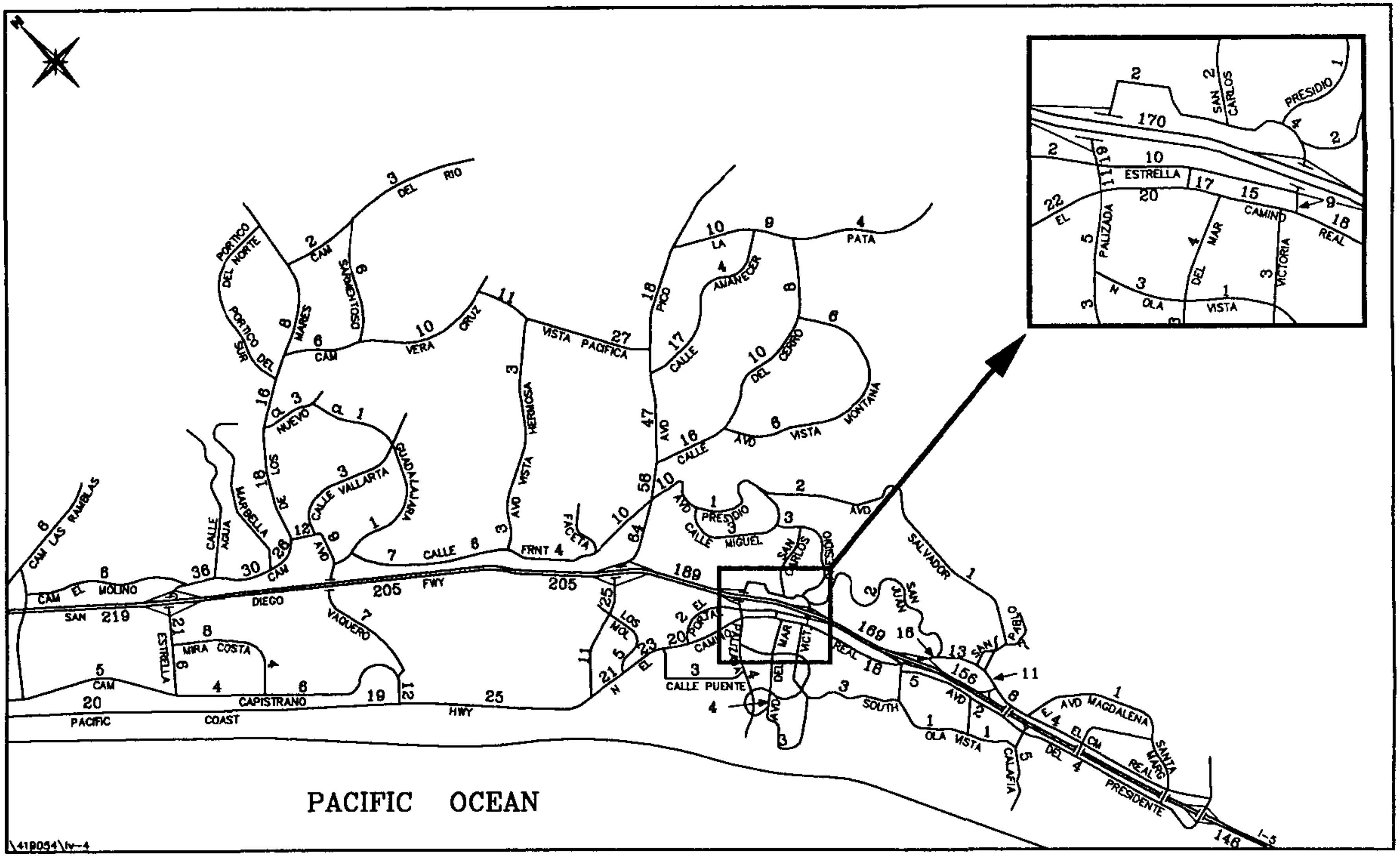


Figure IV–4

INTERIM YEAR 2005
ADT VOLUMES (000s)
– NO–DEVELOPMENT

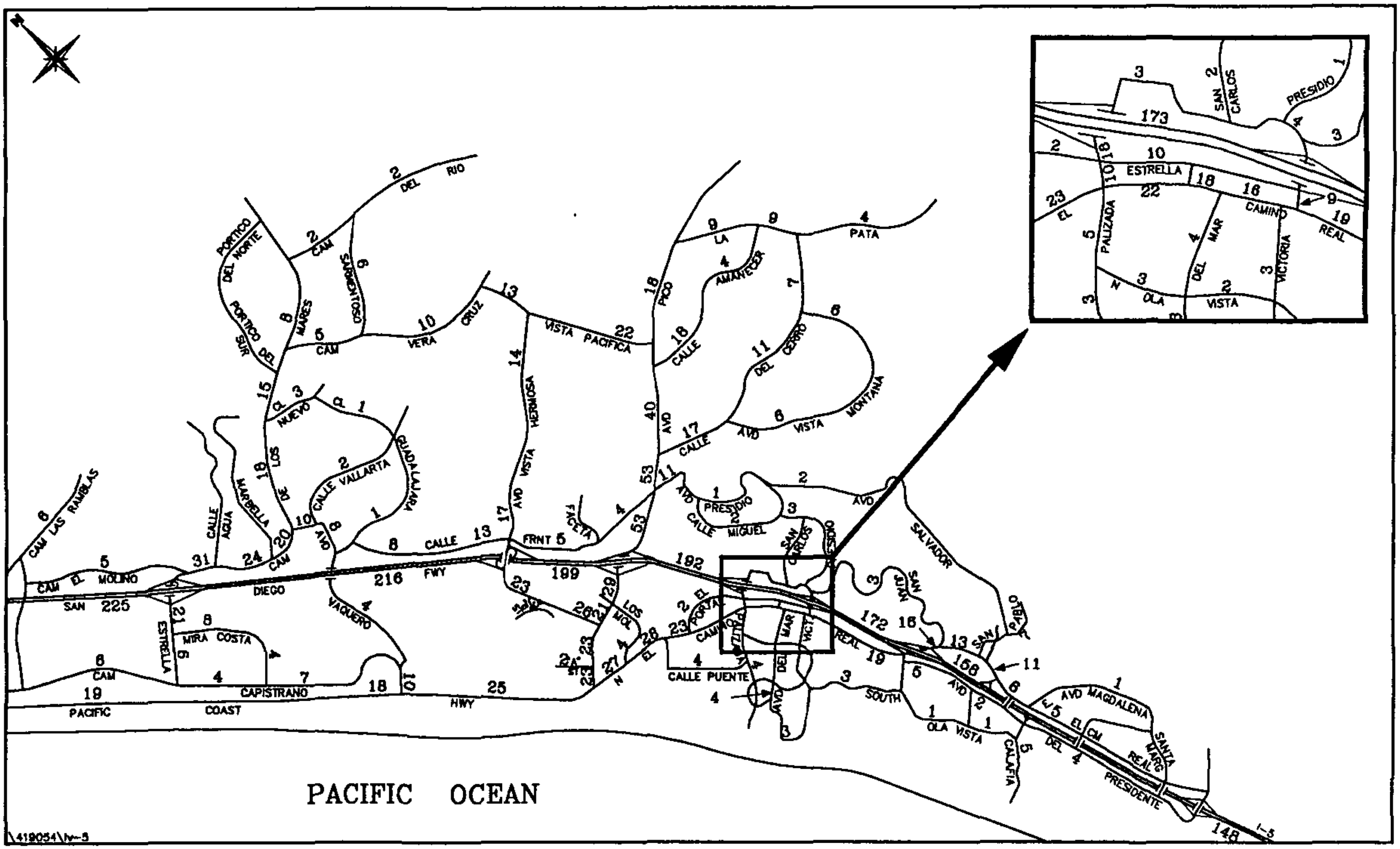


Figure IV–5

INTERIM YEAR 2005
ADT VOLUMES (000s)
– WITH–PROJECT

Table IV-2

INTERIM YEAR 2005 ICU SUMMARY

INTERSECTION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
3. Cm Del Rio & Los Mares	.09	.10	.01	.10	.09	- 01
4. Cm Vera Cruz & Los Mares	.33	.31	-.02	.38	.36	- 02
5. Port Del Sur & Los Mares	.23	.23	.00	.27	.27	.00
6. Calle Nuevo & Los Mares	.35	.36	.01	.45	.43	-.02
7. Avd Vaquero & Los Mares	.26	.23	-.03	.44	40	-.04
8. Marbella & Los Mares	.24	.22	-.02	.30	.27	- 03
9. Calle Agua & Los Mares	.40	.37	-.03	.73	.70	-.03
10. Cm El Molino & Los Mares	.55	.54	-.01	.65	.60	- 05
11. I-5 NB Ramps & Estrella*	.59	.61	.02	.82	.75	-.07
12. I-5 SB Ramps & Estrella	.41	.39	-.02	.78	.75	-.03
13. Cm Mira Costa & Estrella	.23	.23	.00	.42	.42	.00
14. Cm Del Rio & Sarmentoso	.12	.12	.00	.17	.17	00
15. Cm Vera Cruz & Sarmentoso	.35	.34	-.01	.34	.34	.00
17. Avd Vaquero & Guadalajara	.28	.22	-.06	.39	.39	.00
18. Avd Vaquero & Cm Capistrano	.44	.45	.01	.39	46	.07
19. PCH & Cm Capistrano	.70	.67	-.03	.72	.74	.02
24. Vs Pacifica & Cm Vera Cruz	.24	.24	.00	.25	.24	-.01
25. Vs Pacifica & Vs Hermosa	.34	.47	.13	.33	.73	.40
26. Frontera & Vista Hermosa	.19	.43	.24	.29	.70	41
27. I-5 NB Ramps & Vista Hermosa	--	.37	--	--	.65	--
28. I-5 SB Ramps & Vista Hermosa	--	.19	--	--	.54	--
35. La Pata & Avd Pico	.42	.42	.00	.53	.55	.02
36. La Pata & Calle Amanecer	.57	.56	-.01	.61	.59	- 02
37. La Pata & Del Cerro	.29	.29	.00	.40	.39	-.01
38. Calle Amanecer & Avd Pico*	.78	.79	.01	.79	.74	-.05
40. W. Vista Montana & Del Cerro	.41	.44	.03	.48	.52	.04
41. Del Cerro & Avd Pico	.55	.51	-.04	.55	.53	-.02
42. Avd Presidio & Avd Pico	.74	.71	-.03	.90	.84	-.06
43. I-5 NB Ramps & Avd Pico	.72	.66	-.06	.69	.71	.02
44. I-5 SB Ramps & Avd Pico*	.79	.70	-.09	.93	.88	-.05
45. Los Molinos & Avd Pico	.42	.41	-.01	.63	.66	.03
46. W. Vista Hermosa & Avd Pico	--	.24	--	--	.71	--
47. N. El Cm Real & Avd Pico*	.48	.49	.01	.67	.78	.11
49. N. El Cm Real & Los Molinos	.40	.43	.03	.52	.55	.03
51. N. El Cm Real & El Portal	.34	.36	.02	.46	.53	.07
52. I-5 NB Ramp & Palizada	.35	.36	.01	.28	.30	.02
53 I-5 SB Ramp & Palizada	.21	.24	.03	.46	.41	-.05
54. Estrella & Palizada	.39	42	.03	.66	.64	-.02
55. N. El Cm Real & Palizada	.31	.32	.01	.63	.64	01
56. N. Ola Vista & Palizada	.22	.24	.02	.32	.33	01

(Continued)

Table IV-2 (cont)
INTERIM YEAR 2005 ICU SUMMARY

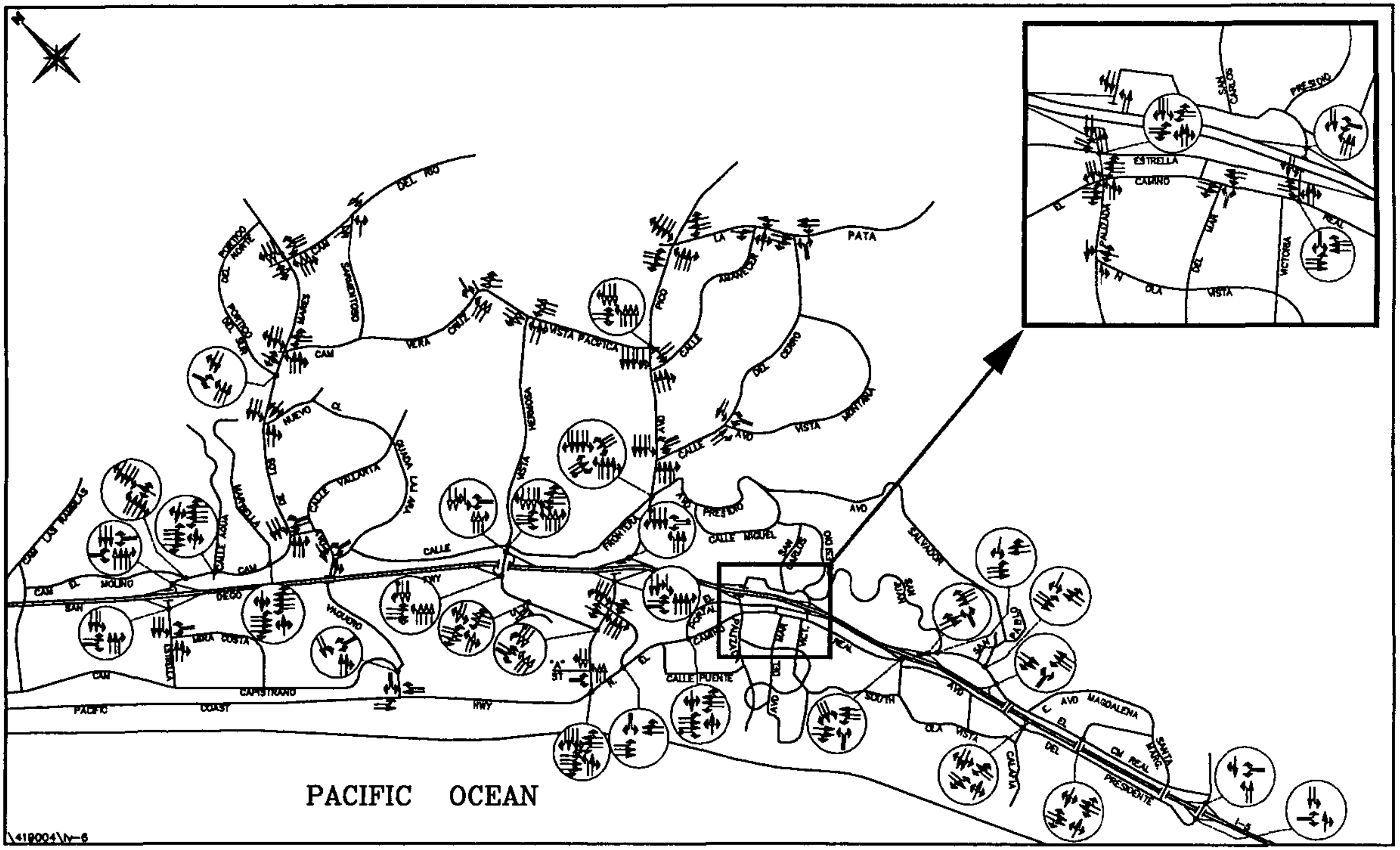
INTERSECTION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
57. N. El Cm Real & Del Mar	.22	.24	.02	.29	.36	.07
58. I-5 NB Ramp & Avd Presidio	.34	.33	-.01	.46	.45	-.01
59. Estrella & Avd Presidio	.23	.22	-.01	.43	.43	.00
61. N. El Cm Real & Avd Presidio	.30	.28	-.02	.37	.37	.00
63 I-5 SB Ramps & S. El Cm Real	.32	.32	.00	.50	.58	.08
64. I-5 NB Ramps & S. El Cm Real	.38	.38	.00	.34	.36	.02
65. S. El Cm Real & San Juan	.33	.33	.00	.37	40	.03
67. S. El Cm Real & San Gabriel	.09	.09	.00	.28	.30	02
68 S. El Cm Real & I-5 NB Ramps	.34	.35	.01	.21	.24	.03
70 Avd Presidente & Avd Calafia	.26	.25	-.01	.31	.34	.03
71. S El Cm Real & San Luis Rey	.12	.12	.00	.21	.23	.02
72. I-5 NB Ramps & Cristianitos	.07	.08	.01	.04	.05	.01
73. I-5 SB Ramps & Cristianitos	.07	.07	.00	.05	.05	.00
76. Vista Pacifica & Pico	.72	69	-.03	1.02	.88	-.14
77. "A" Street & Pico	--	.01	--	--	.02	--
78. Vista Hermosa & "B" Street	--	.37	--	--	.70	--

* Completion or partial completion of RCFPP improvements

NO-DEV = No-development scenario does not include project site development, the I-5/Vista Hermosa interchange, the Vista Hermosa extension through the project to Avenida Pico, or the intersection improvements at North El Camino Real and Avenida Pico.

WITH-PROJ = Project land uses with associated project circulation system improvements.

Level of service ranges: .00 - .60 A
.61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F



LEGEND

- Existing Lane
- Future Lane
- Free-Right Turn Lane

Figure IV-6

INTERIM YEAR 2005
LANE CONFIGURATIONS

GMP AND CMP ANALYSIS

The 2005 interim year time frame period is consistent with Orange County GMP and CMP guidelines. The following discussion outlines the GMP and CMP responsibilities.

Orange County Growth Management Plan

The Orange County GMP examines project impacts on the Master Plan of Arterial Highways (MPAH) roadway network within the study area. A significant impact is determined by ICU values that exceed LOS "D" and have a project impact of greater than one percent (an ICU of .02 or more). The project does not significantly impact any location, therefore all locations meet the GMP criteria during 2005.

Congestion Management Program

The CMP has a defined highway network with designated intersections which are subject to evaluation for project impacts. There are no designated CMP intersections within the City or Sphere of San Clemente. Therefore, no CMP impacts are caused by the project.

LONG-RANGE BUILDOUT IMPACT ANALYSIS

The long-range forecasts presented here are based on buildout land uses specified in the General Plan and the Master Plan of Arterial Highways (MPAH) roadway network. This time frame also presents traffic forecasts under conditions reflecting the Foothill Transportation Corridor (FTC) as a toll facility. Also it should be noted that for the no-development forecasts presented here, the I-5 interchange at Vista Hermosa or the Vista Hermosa extension from Calle Frontera to Avenida Pico are not assumed. Under with-project conditions the I-5/Vista Hermosa interchange is a full configuration with a westbound Vista Hermosa slip on-ramp to the I-5 northbound direction.

Long-Range Buildout Average Daily Traffic

Figures IV-7 and IV-8 show the no-development and with-project ADT volumes under long-range buildout conditions. The addition of project traffic and associated circulation system improvements (the Vista Hermosa extension and I-5 interchange) mainly results in increases near the project vicinity. Volumes on Vista Hermosa increase from 4,000 to 24,000 ADT east of Calle Frontera without development of the project site and with the project, respectively. Immediately west of the I-5, the volumes on Avenida Pico increase from 29,000 to 34,000 ADT with the project. Increases are also shown on the I-5, particularly north of the project. In contrast, volumes on Avenida Pico east of the I-5 decrease from 66,000 ADT without development of the project site to 53,000 ADT with the project due to the new capacity created by the Vista Hermosa extension and interchange. Volumes on the new Vista Hermosa extension range from 20,000 to 25,000 ADT.

It should be noted that Avenida Pico west of I-5 is showing a potential capacity deficiency for the with-project scenario. This segment of Avenida Pico has been identified in the City RCFPP for widening to eliminate a forecast potential deficiency. Further discussion on this location is given in the next chapter.

Long-Range Buildout Peak Hour Levels of Service

Figure IV-9 shows the long-range buildout intersections studied here, and Table IV-3 shows the peak hour ICU values for no-development and with-project scenarios at these intersections. (See Appendix B for detailed ICU calculations.) Figure IV-10 illustrates the long-range buildout intersection lane configurations assumed in these ICU calculations. It should be noted that all intersection improvements identified in the RCFPP have been assumed as background conditions. (See Table III-2 for a specific list of RCFPP improvements.) The Marblehead Coastal project will pay for its fair share in the implementation of these improvements.

There are two locations where the acceptable LOS "D" is exceeded but these deficiencies are not directly caused by the project (i.e., the project indirectly contributes to these deficiencies along with other cumulative growth in the region). These are Avenida La Pata at Avenida Pico (AM ICUs = .93 and .82 and PM ICUs = 1.25 and 1.24 for no-development and with-project, respectively) and Calle Amanecer at Avenida Pico (PM ICUs = 1.07 and .94).

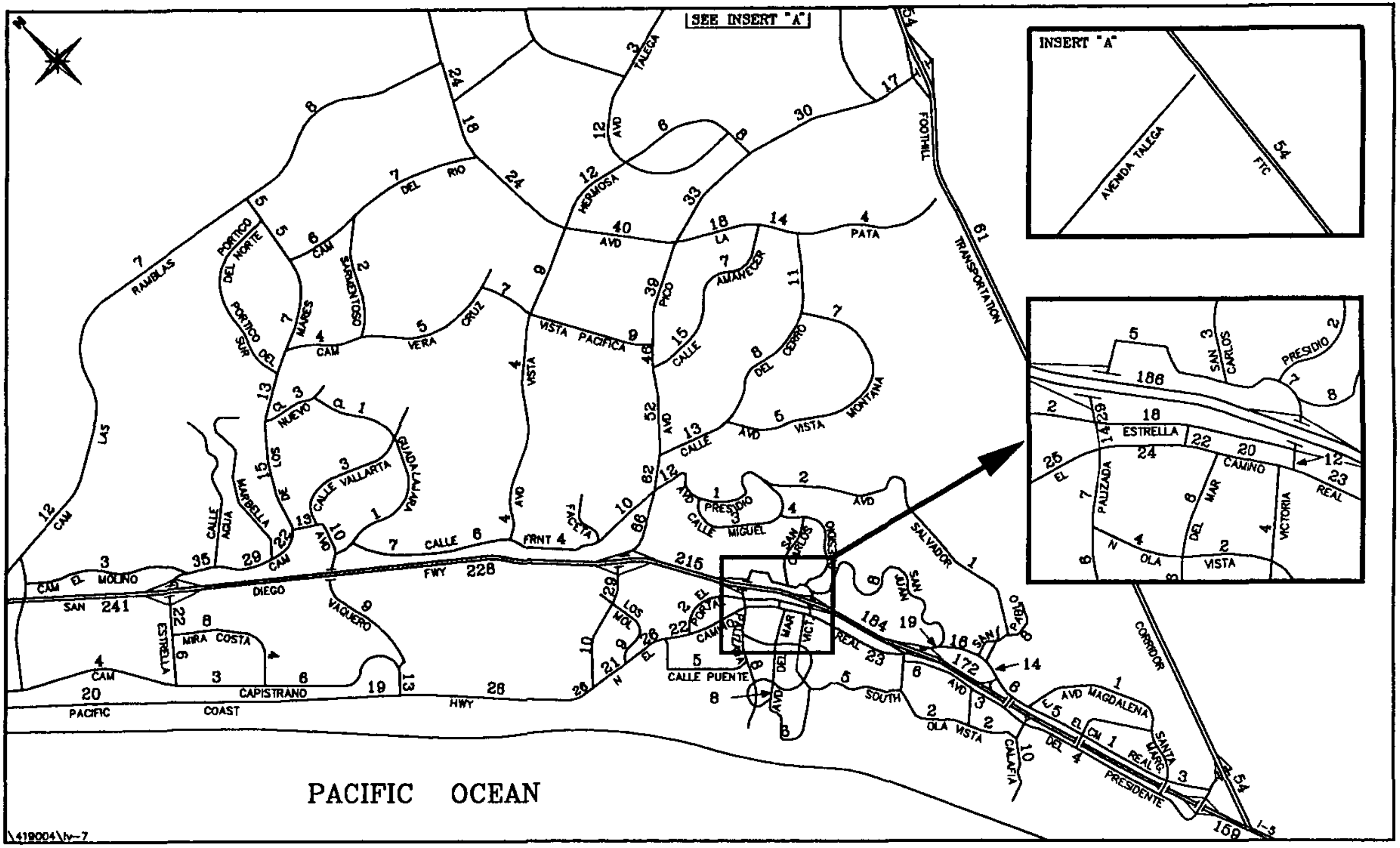


Figure IV-7

LONG-RANGE BUILDOUT
ADT VOLUMES (000s)
– NO-DEVELOPMENT

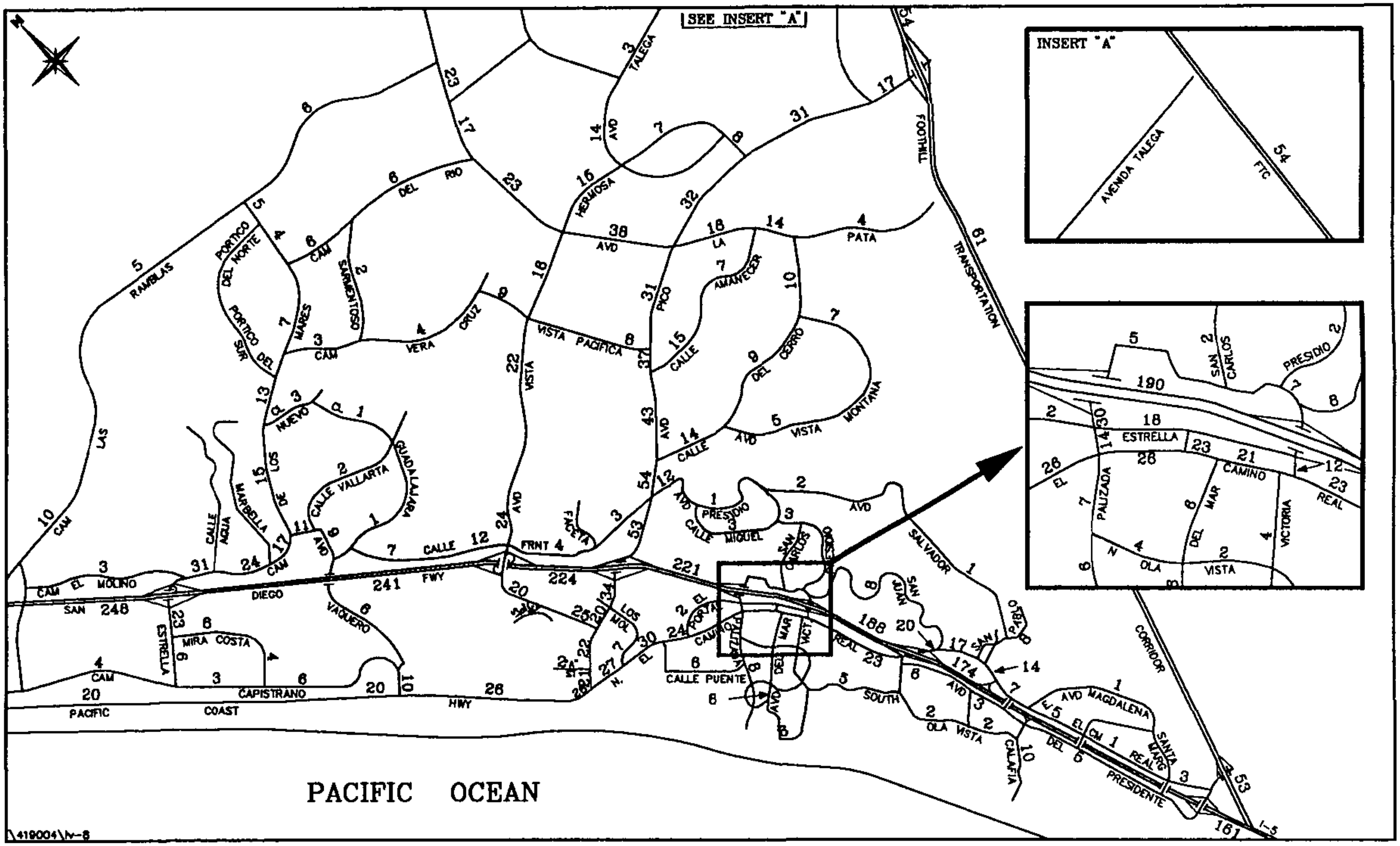


Figure IV-8

LONG-RANGE BUILDOUT
ADT VOLUMES (000s)
– WITH-PROJECT

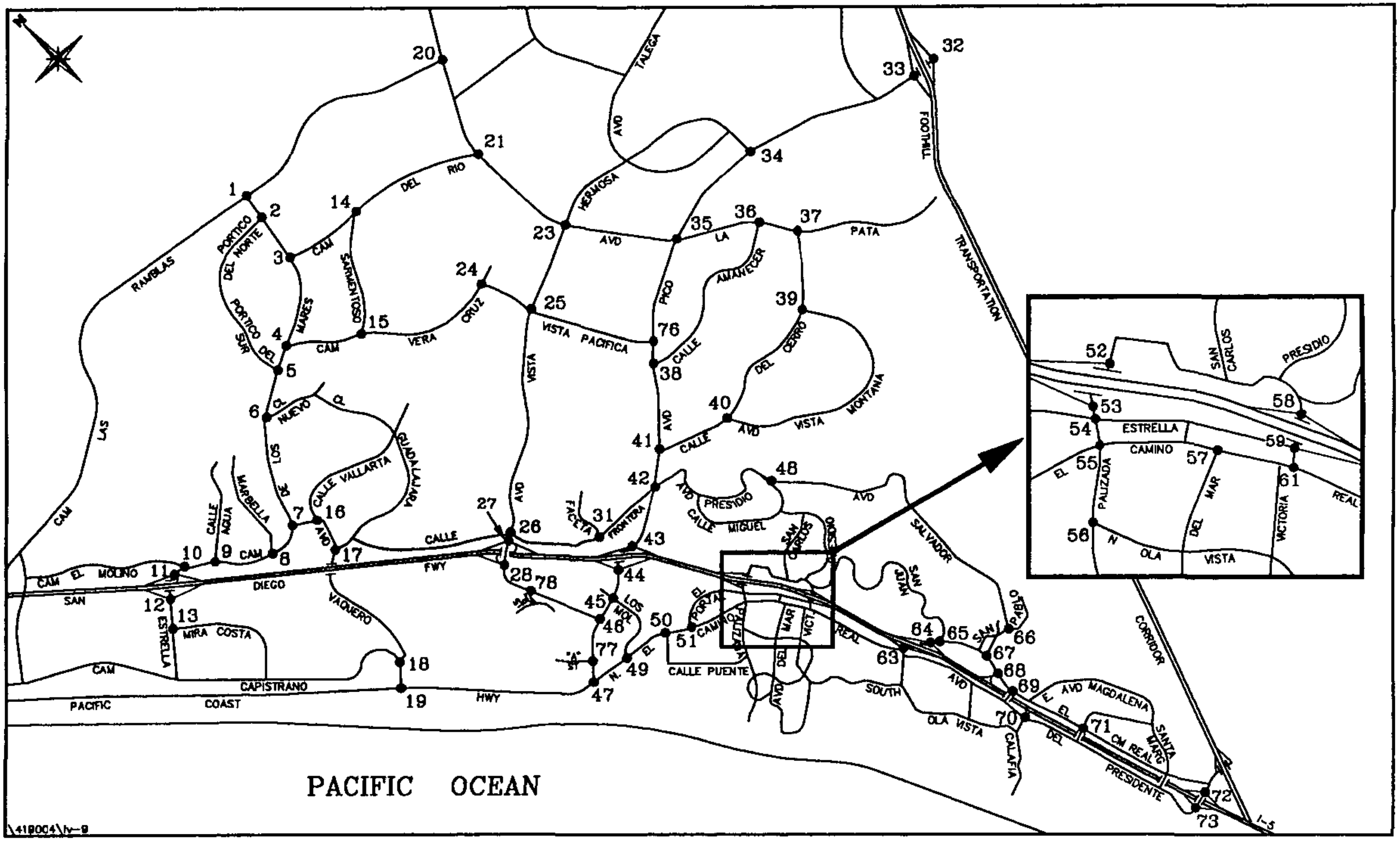


Figure IV-9

LONG-RANGE BUILDOUT
INTERSECTION LOCATION MAP

Table IV-3

LONG-RANGE BUILDOUT ICU SUMMARY

LOCATION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
1. Cm Las Ramblas & Los Mares	.30	25	- 05	.24	24	.00
2. Port Del Norte & Los Mares	.20	.19	- 01	.16	.16	.00
3 Cm Del Rio & Los Mares	.37	.34	- 03	.25	.24	-.01
4. Cm Vera Cruz & Los Mares	.19	.18	-.01	27	.26	- 01
5. Port Del Sur & Los Mares	.19	17	- 02	.29	.30	01
6 Calle Nuevo & Los Mares	26	.24	-.02	.28	.26	- 02
7. Avd Vaquero & Los Mares	.25	.21	-.04	.35	.31	-.04
8. Marbella & Los Mares	.20	.18	-.02	24	.20	- 04
9 Calle Agua & Los Mares	.26	.22	- 04	.47	.42	- 05
10. Cm El Molino & Los Mares	.25	.23	- 02	.52	.50	-.02
11 I-5 NB Ramps & Estrella	.28	.28	.00	.63	66	.03
12. I-5 SB Ramps & Estrella	.35	.32	- 03	.59	65	.06
13 Cm Mira Costa & Estrella	.22	.23	.01	.37	.41	.04
14. Cm Del Rio & Sarmentoso	.57	.51	-.06	.38	.36	-.02
15. Cm Vera Cruz & Sarmentoso	.10	.10	.00	.16	18	.02
16. Avd Vaquero & Calle Vallarta	.35	23	-.12	.56	.45	- 11
17. Avd Vaquero & Guadalajara	.41	.27	-.14	.50	40	- 10
18. Avd Vaquero & Cm Capistrano	.43	.33	-.10	.42	.34	- 08
19. PCH & Cm Capistrano	.60	.58	-.02	.64	.59	-.05
20. La Pata & Cm Las Ramblas	.49	.48	-.01	.55	.53	-.02
21 La Pata & Cm Del Rio	.81	.74	-.07	.69	.68	- 01
23. La Pata & Avd Vista Hermosa	.58	.73	.15	.55	.55	.00
24. Vs Pacifica & Cm Vera Cruz	.12	.12	00	.16	.16	.00
25. Vs Pacifica & Vs Hermosa	.25	.51	.26	.27	.68	41
26. Frontera & Vista Hermosa	.19	.47	.28	.24	.66	.42
27. I-5 NB Ramps & Vista Hermosa	--	.47	--	--	.50	--
28. I-5 SB Ramps & Vista Hermosa	--	.32	--	--	.46	--
31. Frontera & Faceta	.30	.14	-.16	.28	.13	-.15
32. FTC NB Ramps & Avd Pico	.33	.33	.00	.19	.18	- 01
33 FTC SB Ramps & Avd Pico	17	16	-.01	.43	.42	- 01
34. Vista Hermosa & Avd Pico	.40	.38	-.02	.52	.50	-.02
35. La Pata & Avd Pico	.93	.82	-.11	1.25	1.24	-.01
36. La Pata & Calle Amanecer	.49	.51	.02	.66	.67	01
37. La Pata & Del Cerro	.48	.48	.00	48	.47	- 01
38 Calle Amanecer & Avd Pico	.62	.55	-.07	1.07	.94	- 13
39. E. Vista Montana & Del Cerro	.67	.65	-.02	.47	.45	-.02
40. W. Vista Montana & Del Cerro	.34	.33	-.01	.39	42	03
41 Calle del Cerro & Avd Pico	.65	.57	-.08	.76	.67	- 09
42. Avd Presidio & Avd Pico	.72	.64	- 08	.80	71	-.09
43. I-5 NB Ramps & Avd Pico	.87	.76	-.11	.67	.70	.03

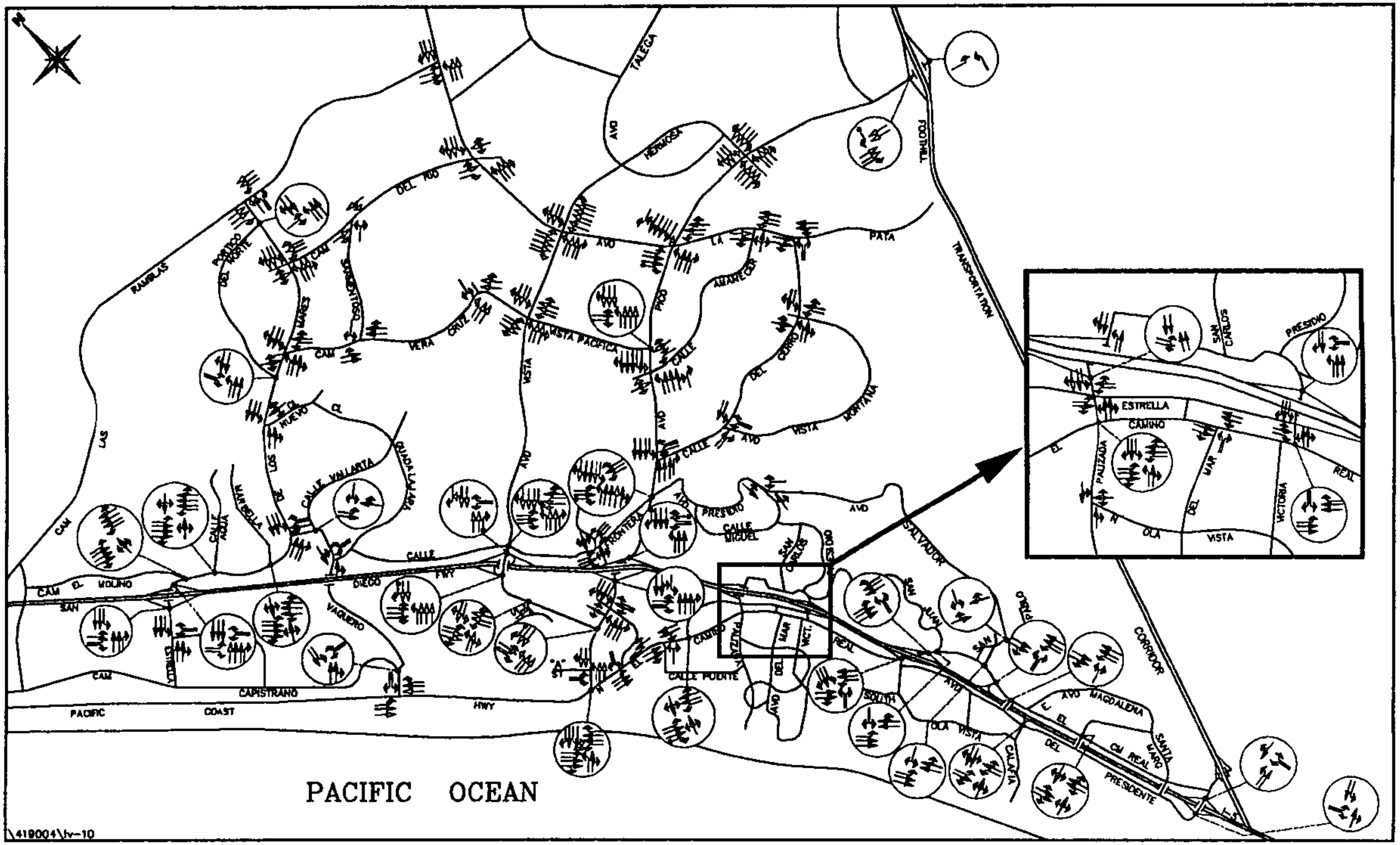
(Continued)

Table IV-3 (cont)
LONG-RANGE BUILDOUT ICU SUMMARY

LOCATION	AM PEAK HOUR NO-DEV	AM PEAK HOUR WITH-PROJ	AM PEAK HOUR DIFF	PM PEAK HOUR NO-DEV	PM PEAK HOUR WITH-PROJ	PM PEAK HOUR DIFF
44. I-5 SB Ramps & Avd Pico	.80	.56	-.24	.89	.76	-.13
45 Los Molinos & Avd Pico	.38	.33	-.05	.52	.60	.08
46. W. Vista Hermosa & Avd Pico	--	.27	--	--	.55	--
47 N. El Cm Real & Avd Pico	.56	.60	.04	.53	.69	.16
48. Avd Presidio & Avd Salvador	.07	.06	-.01	.11	.10	-.01
49. N El Cm Real & Los Molinos	.47	.46	-.01	.65	.64	-.01
50. N. El Cm Real & La Grulla	.63	.65	02	.63	.71	.08
51. N. El Cm Real & El Portal	.34	.35	.01	.49	.52	.03
52. I-5 NB Ramp & Palizada	.39	.42	.03	42	.46	.04
53. I-5 SB Ramp & Palizada	.37	.39	.02	.59	.60	.01
54. Estrella & Palizada	.55	.59	.04	.69	.69	.00
55. N. El Cm Real & Palizada	.38	.41	03	.68	.74	06
56 N Ola Vista & Palizada	.30	.30	00	.40	.42	.02
57. N. El Cm Real & Del Mar	.25	.24	-.01	.39	40	.01
58. I-5 NB Ramp & Avd Presidio	.43	.44	.01	.62	.61	-.01
59 Estrella & Avd Presidio	.29	29	.00	43	.43	.00
61 N. El Cm Real & Avd Presidio	.36	.36	.00	48	48	00
63. I-5 SB Ramps & S. El Cm Real	.43	.44	01	.61	.64	.03
64. I-5 NB Ramps & S. El Cm Real	.41	.42	.01	.37	.40	.03
65. S. El Cm Real & San Juan	.36	.37	.01	.50	.53	.03
66. Avd Salvador & Avd San Pablo	.27	.27	.00	26	.27	.01
67. S El Cm Real & San Gabriel	.11	12	.01	.33	.34	.01
68. S El Cm Real & I-5 NB Ramps	.32	.32	.00	.40	.42	02
69 S. El Cm Real & Mendocino	.25	.25	.00	.29	.29	.00
70. Avd Presidente & Avd Calafia	.29	.29	.00	.45	.47	.02
71. S. El Cm Real & San Luis Rey	.17	.17	.00	.24	.25	01
72. I-5 NB Ramps & Cristianitos	.19	18	-.01	.38	.40	02
73. I-5 SB Ramps & Cristianitos	.23	.22	-.01	.14	.14	.00
76. Vista Pacifica & Pico	.51	.38	-.13	63	.53	-.10
77. "A" Street & Pico	--	.27	--	--	30	--
78 Vista Hermosa & "B" Street	--	.51	--	--	.75	--

NO-DEV = No-development scenario does not include project site development, the I-5/Vista Hermosa interchange, and the Vista Hermosa extension through the project to Avenida Pico.
WITH-PROJ = Project land uses with associated project circulation system improvements.

Level of service ranges: .00 - .60 A
61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1.00 F



LEGEND

- Existing Lane
- Future Lane
- Free-Right Turn Lane

Figure IV-10

LONG-RANGE BUILDOUT
LANE CONFIGURATIONS

CONCLUSIONS

For daily impacts, one link location, Avenida Pico west of I-5 shows a potential capacity deficiency for the with-project scenario. Discussion of this potentially deficient link location is presented in the next chapter.

Table IV-4 summarizes the interim years 2000 and 2005 and long-range buildout peak hour impacts. From 2000 to long-range buildout time frames, the project does not directly impact any intersection. However, there are locations identified in the City's RCFPP targeted for improvements (assumed as background conditions in this traffic study) that the project will be responsible to pay for its fair share in their implementation.

Table IV-4

ICU SUMMARY

INTERSECTION	EXISTING 1996 AM	EXISTING 1996 PM	INTERIM YEAR 2000 NO-DEVELOPMENT AM	INTERIM YEAR 2000 NO-DEVELOPMENT PM	INTERIM YEAR 2000 WITH-PROJECT AM	INTERIM YEAR 2000 WITH-PROJECT PM	INTERIM YEAR 2005 NO-DEVELOPMENT AM	INTERIM YEAR 2005 NO-DEVELOPMENT PM	INTERIM YEAR 2005 WITH-PROJECT AM	INTERIM YEAR 2005 WITH-PROJECT PM	LONG-RANGE BUILDOUT NO-DEVELOPMENT AM	LONG-RANGE BUILDOUT NO-DEVELOPMENT PM	LONG-RANGE BUILDOUT WITH-PROJECT AM	LONG-RANGE BUILDOUT WITH-PROJECT PM
1. Cm Las Ramblas & Los Mares	--	--	--	--	--	--	--	--	--	--	.30	24	.25	.24
2. Port Del Norte & Los Mares	--	--	--	--	--	--	--	--	--	--	.20	16	.19	.16
3 Cm Del Rio & Los Mares	--	--	--	--	--	--	09	.10	10	09	37	.25	.34	24
4. Cm Vera Cruz & Los Mares	21	.18	.23	.19	.23	19	.33	38	.31	36	19	.27	.18	26
5 Port Del Sur & Los Mares	.21	.19	.22	.20	.22	21	.23	.27	.23	27	19	.29	17	30
6 Calle Nuevo & Los Mares	.34	.36	.35	.36	34	.36	.35	.45	36	43	26	.28	.24	.26
7. Avd Vaquero & Los Mares	.23	32	23	.32	.23	.38	26	44	.23	40	25	.35	21	.31
8 Marbella & Los Mares	20	23	.20	.23	.20	23	24	30	.22	27	20	.24	.18	.20
9. Calle Agua & Los Mares	37	.56	.37	.63	.38	58	.40	73	.37	.70	.26	47	.22	42
10 Cm El Molino & Los Mares	36	.44	.40	.62	.39	61	.55	65	.54	.60	.25	.52	23	.50
11 I-5 NB Ramps & Estrella	47	66	.48	.78	49	73	59	.82	61	75	28	.63	.28	66
12 I-5 SB Ramps & Estrella	38	.75	.40	.78	38	.80	41	.78	.39	75	.35	59	.32	65
13. Cm Mira Costa & Estrella	.23	.34	.23	.40	.23	.42	.23	.42	.23	42	.22	.37	.23	41
14. Cm Del Rio & Sarmentoso	--	--	--	--	--	--	.12	17	.12	17	57	38	51	.36
15 Cm Vera Cruz & Sarmentoso	--	--	.06	.05	09	08	35	.34	34	34	10	16	10	.18
16 Avd Vaquero & Calle Vallarta	--	--	--	--	--	--	--	--	--	--	35	56	23	45
17. Avd Vaquero & Guadalajara	19	30	.22	.30	20	.31	28	39	22	39	.41	.50	27	40
18 Avd Vaquero & Cm Capistrano	35	34	.35	.34	.35	.36	.44	39	45	46	43	.42	.33	34
19 PCH & Cm Capistrano	46	53	46	.53	46	.53	70	72	67	74	60	64	.58	59
20. La Pata & Cm Las Ramblas	--	--	--	--	--	--	--	--	--	--	49	55	.48	53
21 La Pata & Cm Del Rio	--	--	--	--	--	--	--	--	--	--	81	69	74	68
23. La Pata & Avd Vista Hermosa	--	--	--	--	--	--	--	--	--	--	58	55	.73	55
24 Vs Pacifica & Cm Vera Cruz	--	--	--	--	--	--	24	25	24	24	12	.16	12	16
25 Vs Pacifica & Vs Hermosa	--	--	--	--	--	--	.34	.33	.47	73	25	27	.51	68
26 Frontera & Vista Hermosa	.12	17	.21	31	43	59	.19	.29	.43	70	.19	24	.47	.66

(Continued)

Table IV-4 (cont)
ICU SUMMARY

INTERSECTION	EXISTING 1996		INTERIM YEAR 2000 NO-DEVELOPMENT		INTERIM YEAR 2000 WITH-PROJECT		INTERIM YEAR 2005 NO-DEVELOPMENT		INTERIM YEAR 2005 WITH-PROJECT		LONG-RANGE BUILDOUT NO-DEVELOPMENT		LONG-RANGE BUILDOUT WITH-PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
27. I-5 NB Ramps & Vista Hermosa	--	--	--	--	.34	.50	--	--	37	.65	--	--	47	.50
28 I-5 SB Ramps & Vista Hermosa	--	--	--	--	18	49	--	--	.19	.54	--	--	.32	46
31. Frontera & Faceta	--	--	--	--	--	--	--	--	--	--	.30	.28	.14	.13
32. FTC NB Ramps & Avd Pico	--	--	--	--	--	--	--	--	--	--	.33	.19	.33	18
33. FTC SB Ramps & Avd Pico	--	--	--	--	--	--	--	--	--	--	.17	.43	.16	.42
34 Vista Hermosa & Avd Pico	--	--	--	--	--	--	--	--	--	--	.40	.52	38	.50
35 La Pata & Avd Pico	05	06	.09	.16	09	.15	.42	.53	.42	55	.93	1.25	82	1.24
36 La Pata & Calle Amanecer	--	--	.36	.39	.37	.38	.57	61	56	.59	.49	.66	.51	67
37. La Pata & Del Cerro	--	--	.22	.26	.21	25	.29	.40	29	.39	.48	.48	.48	47
38 Calle Amanecer & Avd Pico	54	.31	.74	.63	.83	59	.78	.79	.79	.74	.62	1.07	.55	.94
39 E Vista Montana & Del Cerro	--	--	--	--	--	--	--	--	--	--	.67	47	.65	45
40 W Vista Montana & Del Cerro	--	--	.46	.38	47	44	.41	.48	44	.52	.34	.39	33	42
41. Calle del Cerro & Avd Pico	.45	49	.46	.50	46	51	.55	55	51	.53	.65	.76	.57	67
42. Avd Presidio & Avd Pico	.62	67	.67	.76	64	.76	.74	.90	71	.84	.72	.80	64	.71
43 I-5 NB Ramps & Avd Pico	48	.49	.51	66	51	.75	72	.69	.66	.71	.87	.67	.76	.70
44. I-5 SB Ramps & Avd Pico	.70	83	.76	1.15	71	1 07	79	93	.70	.88	.80	.89	.56	.76
45 Los Molinos & Avd Pico	.36	49	.38	.53	39	63	42	63	41	.66	38	.52	.33	.60
46 W Vista Hermosa & Avd Pico	--	--	--	--	.17	.47	--	--	.24	.71	--	--	27	.55
47. N. El Cm Real & Avd Pico	.37	.45	.37	50	40	69	.48	.67	.49	.78	.56	.53	60	.69
48. Avd Presidio & Avd Salvador	--	--	--	--	--	--	--	--	--	--	.07	11	.06	.10
49 N El Cm Real & Los Molinos	--	--	27	33	.28	35	40	.52	.43	.55	.47	.65	.46	64
50 N El Cm Real & La Grulla	--	--	--	--	--	--	--	--	--	--	.63	63	.65	.71
51. N. El Cm Real & El Portal	--	--	.23	.30	23	32	34	46	.36	.53	.34	49	.35	.52
52. I-5 NB Ramp & Palizada	--	--	.44	.28	.40	29	.35	28	.36	.30	.39	.42	.42	.46
53. I-5 SB Ramp & Palizada	--	--	.23	.45	.23	.47	.21	.46	.24	41	.37	.59	.39	.60

(Continued)

Table IV-4 (cont)
ICU SUMMARY

INTERSECTION	EXISTING 1996 AM	EXISTING 1996 PM	INTERIM YEAR 2000 NO-DEVELOPMENT AM	INTERIM YEAR 2000 NO-DEVELOPMENT PM	INTERIM YEAR 2000 WITH-PROJECT AM	INTERIM YEAR 2000 WITH-PROJECT PM	INTERIM YEAR 2005 NO-DEVELOPMENT AM	INTERIM YEAR 2005 NO-DEVELOPMENT PM	INTERIM YEAR 2005 WITH-PROJECT AM	INTERIM YEAR 2005 WITH-PROJECT PM	LONG-RANGE BUILDOUT NO-DEVELOPMENT AM	LONG-RANGE BUILDOUT NO-DEVELOPMENT PM	LONG-RANGE BUILDOUT WITH-PROJECT AM	LONG-RANGE BUILDOUT WITH-PROJECT PM
54. Estrella & Palizada	--	--	.43	60	43	60	.39	.66	42	64	55	69	59	69
55. N El Cm Real & Palizada	--	--	.29	.54	29	.55	.31	63	.32	64	38	.68	.41	.74
56 N Ola Vista & Palizada	--	--	24	.30	23	.31	.22	.32	.24	.33	30	40	.30	.42
57. N. El Cm Real & Del Mar	--	--	.20	24	.19	.26	22	.29	.24	.36	.25	39	24	.40
58 I-5 NB Ramp & Avd Presidio	--	--	.35	.31	.37	.32	.34	.46	.33	45	43	62	.44	61
59 Estrella & Avd Presidio	--	--	.29	26	25	26	23	43	.22	.43	.29	43	29	43
61 N. El Cm Real & Avd Presidio	--	--	.28	.26	.30	.26	30	.37	28	.37	36	.48	.36	.48
63 I-5 SB Ramps & S. El Cm Real	--	--	.35	.48	.34	.51	.32	.50	.32	58	.43	.61	.44	64
64. I-5 NB Ramps & S El Cm Real	--	--	42	.30	.42	.32	.38	34	.38	36	.41	.37	.42	.40
65. S. El Cm Real & San Juan	--	--	.32	33	.32	.35	.33	.37	33	40	36	.50	37	53
66 Avd Salvador & Avd San Pablo	--	--	--	--	--	--	--	--	--	--	.27	26	27	.27
67 S El Cm Real & San Gabriel	--	--	.09	.27	10	.27	.09	28	09	30	.11	33	.12	.34
68 S El Cm Real & I-5 NB Ramps	--	--	.35	.20	.36	23	.34	.21	.35	24	.32	.40	.32	42
69. S. El Cm Real & Mendocino	--	--	--	--	--	--	--	--	--	--	25	.29	.25	.29
70 Avd Presidente & Avd Calafia	--	--	.25	.32	26	34	.26	.31	.25	.34	29	45	.29	47

(Continued)

Table IV-4 (cont)
ICU SUMMARY

INTERSECTION	EXISTING 1996 AM	EXISTING 1996 PM	INTERIM YEAR 2000 NO-DEVELOPMENT AM	INTERIM YEAR 2000 NO-DEVELOPMENT PM	INTERIM YEAR 2000 WITH-PROJECT AM	INTERIM YEAR 2000 WITH-PROJECT PM	INTERIM YEAR 2005 NO-DEVELOPMENT AM	INTERIM YEAR 2005 NO-DEVELOPMENT PM	INTERIM YEAR 2005 WITH-PROJECT AM	INTERIM YEAR 2005 WITH-PROJECT PM	LONG-RANGE BUILDOUT NO-DEVELOPMENT AM	LONG-RANGE BUILDOUT NO-DEVELOPMENT PM	LONG-RANGE BUILDOUT WITH-PROJECT AM	LONG-RANGE BUILDOUT WITH-PROJECT PM
71. S. El Cm Real & San Luis Rey	--	--	.13	.21	.13	.23	.12	.21	.12	.23	.17	.24	.17	25
72. I-5 NB Ramps & Cristianitos	--	--	.10	.05	.10	05	07	.04	.08	.05	.19	.38	.18	40
73 I-5 SB Ramps & Cristianitos	--	--	.09	.05	09	.06	.07	.05	.07	05	.23	.14	.22	.14
76 Vista Pacifica & Pico	--	--	.42	.68	.52	64	.72	1.02	69	.88	.51	63	.38	.53
77. "A" Street & Pico	--	--	--	--	.02	.02	--	--	01	.02	--	--	27	.30
78. Vista Hermosa & "B" Street	--	--	--	--	.41	57	--	--	.37	.70	--	--	51	.75

NO-DEVELOPMENT = No-development scenario does not include project site development, the I-5/Vista Hermosa interchange, the Vista Hermosa extension through the project to Avenida Pico, or the intersection improvements at North El Camino Real and Avenida Pico (interim year 2005 only).

WITH-PROJECT = Project land uses with associated project circulation system improvements.

Level of service ranges:
.00 - 60 A
61 - .70 B
.71 - .80 C
.81 - .90 D
.91 - 1.00 E
Above 1 00 F

V

LOCAL CIRCULATION AND PROJECT-RELATED IMPROVEMENTS

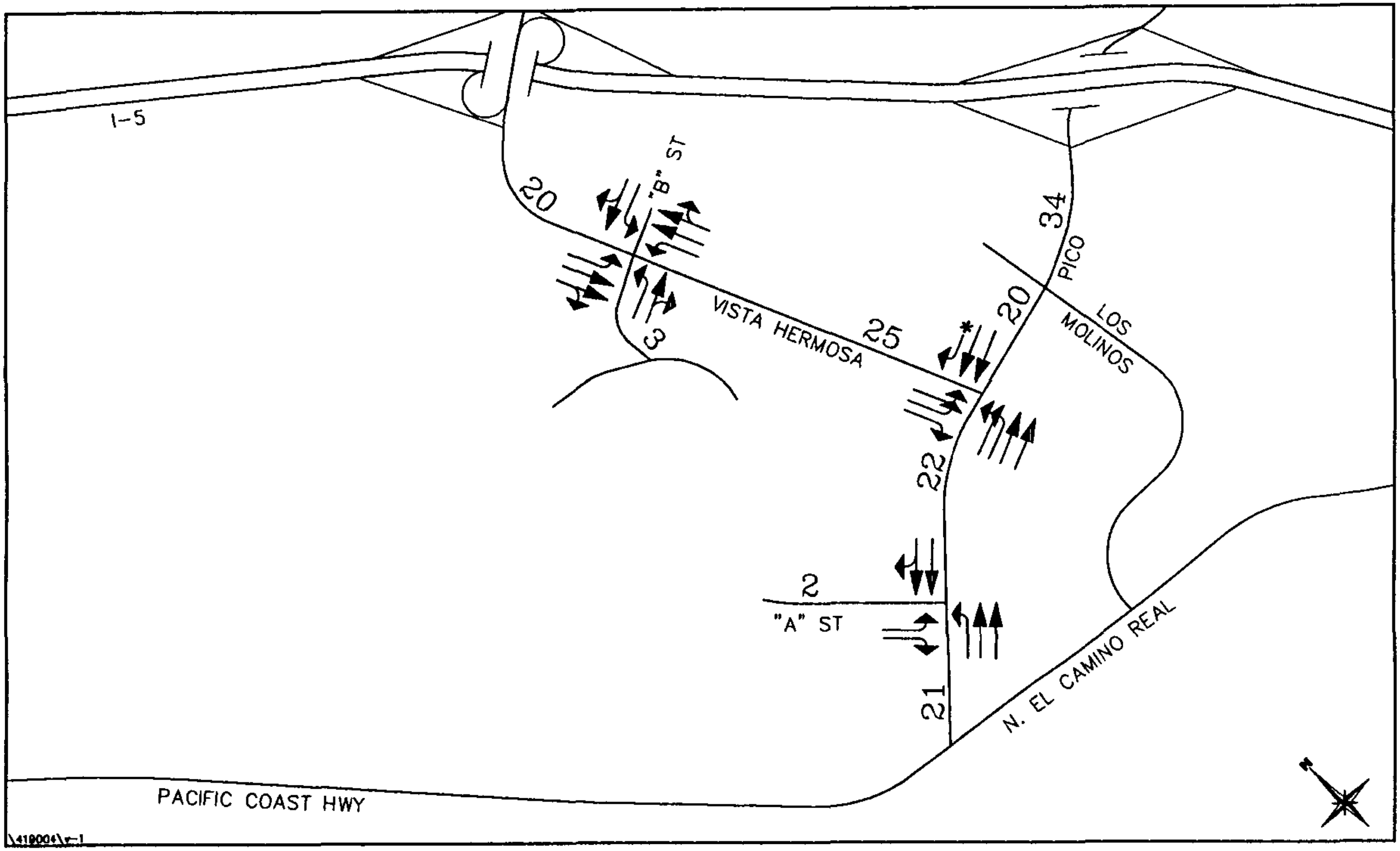
This chapter discusses recommended transportation improvements for the proposed Marblehead Coastal project. The project's local circulation is first presented followed by discussion on project-related improvements to any off-site and on-site impacts.

PROJECT ACCESS

The local circulation for the project is analyzed at the project access points by determining the need for signalization and defining the appropriate intersection lane geometry.

Two local roadways with gated entries are proposed to serve the residential portion of the project; "A" Street ("BBB" Street in Tentative Tract Map N. 8817) located off Avenida Pico and "B" Street ("AAA" Street in Tentative Tract Map No. 8817) located off Vista Hermosa. The new intersection of Vista Hermosa and Avenida Pico also provides direct access to the site. Figure V-1 shows the project's local circulation including the location of the private access roadways, corresponding intersection lane configurations and long-range buildout average daily traffic (ADT) volumes.

Several internal roadways are provided for local access, and signal warrant analyses were carried out for the locations where these intersect the arterial highway system.



LEGEND

XX Long-Range Buildout ADT Volumes (000s)

* Free-Right Turn Lane

Figure V-1

PROJECT LOCAL CIRCULATION

Traffic signal warrants as adopted by the Federal Highway Administration and Caltrans were used to determine the need for signalization. Figure V-2 shows the ADT signal warrant methodology. In applying this warrant, the volumes of both the major and minor street must meet or exceed those shown in this figure. Determining the major street signal warrant volume involves calculating the number of daily vehicles approaching the intersection on both major street legs. The minor street signal warrant volume is the number of daily vehicles approaching the intersection on only the highest volume leg.

Rural or urban classifications are determined by the speed on the major street. Warrants are based on rural when the speed on the major street is 40 miles per hour (mph) or higher. For urban areas, the speed on the major street is 35 mph or lower. Since the design speeds on the major streets analyzed here for signal warrants are expected to be 40 mph or higher, the analysis has been based on rural conditions.

Table V-1 summarizes the results of the signal warrant analysis, and indicates that both local private project entries ("A" and "B" Streets) and the new intersection of Vista Hermosa/Avenida Pico require signalization. Typically, signals are not installed until actual volumes warrant such an installation.

PROJECT IMPACTS

Average daily volumes were compared for no-development and with-project land uses, and one roadway link location shows a potential capacity deficiency. This location is Avenida Pico west of I-5 which is included in the City of San Clemente's Regional Circulation Financing and Phasing Program (RCFPP) and is targeted for improvement by widening from four to six lanes which will mitigate the potential forecast deficiency. The long-range buildout analysis presented in this traffic study further demonstrates that this improvement will need to be implemented. Each new development in certain benefit zones is subject to RCFPP fees which are collected when the development pulls building permits.

As for peak hour impacts, intersection volumes were compared for no-development and with-project land uses, and there were no locations determined to have significant increases in intersection

Figure 9-4
TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note)

URBAN .... RURAL	Minimum Requirements EADT			
1 Minimum Vehicular Satisfied ______ Not Satisfied ______	Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor street approach (one direction only)	
Number of lanes for moving traffic on each approach				
Major Street / Minor Street	Urban	Rural	Urban	Rural
1 .... / 1	8,000	5,600	2,400	1,680
2 or more .... / 1	9,600	6,720	2,400	1,680
2 or more .... / 2 or more	9,600	6,720	3,200	2,240
1 .... / 2 or more	8,000	5,600	3,200	2,240
2. Interuption of Continuous Traffic Satisfied ______ Not Satisfied ______	Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor street approach (one direction only)	
Number of lanes for moving traffic on each approach				
Major Street / Minor Street	Urban	Rural	Urban	Rural
1 .... / 1	12,000	8,400	1,200	850
2 or more .... / 1	14,400	10,080	1,200	850
2 or more .... / 2 or more	14,400	10,080	1,600	1,120
1 .... / 2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied ______ Not Satisfied ______ No one warrant satisfied, but following warrants fulfilled 80% or more .... ______ 1 ______ 2	2 Warrants		2 Warrants	

NOTE: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

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SOURCE.

Caltrans Traffic Manual, July 1996

Figure V-2

SIGNAL WARRANT ANALYSIS

Table V-1

ADT SIGNAL WARRANT SUMMARY

INTERSECTION		ESTIMATED ADT
46 Avenida Pico & Vista Hermosa		
Major Approach	EB	11,000
	WB	10,000
	TOTAL	21,000
Minor Approach	SB	12,500
Warrant 1 satisfied?	6,720/2,240	YES
Warrant 2 satisfied?	10,080/1,120	YES
77. Avenida Pico & "A" Street		
Major Approach	EB	10,500
	WB	11,000
	TOTAL	21,500
Minor Approach	SB	1,000
Warrant 1 satisfied?	6,720/1,680	NO
Warrant 2 satisfied?	10,080/850	YES
78 Vista Hermosa & "B" Street		
Major Approach	SB	10,000
	NB	12,500
	TOTAL	22,500
Minor Approach	WB	5,000
Warrant 1 satisfied?	6,720/1,680	YES
Warrant 2 satisfied?	10,080/850	YES

Note: First street of intersection description is assumed the major approach.

capacity utilization (ICU) values for interim years 2000 and 2005 and long-range buildout. For this analysis a significant project impact is defined when a location does not meet the level of service (LOS) criteria (LOS "D"), and when the project either causes the deficiency, or increases the deficiency by .02 or more.

PROJECT-RELATED IMPROVEMENTS

Project-related improvements are summarized in the following sections and include on-site and off-site improvements.

Off-Site Improvements

Several intersections are cumulatively adversely impacted by the project and regional growth exceeding the acceptable LOS "D" criteria. The lane assumptions used throughout this report were provided by the City as the recommended buildout General Plan lane configurations which were recently updated in November 1997 as part of the City's RCFPP. Table V-2 lists the RCFPP intersection improvements. The project is required to pay its fair share in the implementation of these improvements.

On-Site Improvements

The project will be responsible for all on-site improvements, including intersection enhancements and new on-site arterials. On-site arterial improvements include the four-lane Vista Hermosa extension from west of the new I-5 interchange through the project to Avenida Pico. Another on-site improvement expected to relieve traffic impact in the Shorecliffs neighborhood is the provision for a direct access on Vista Hermosa north of "B" Street ("AAA" Street in Tentative Tract Map No. 8817) to the existing Shorecliffs Middle School. However, residents from this neighborhood will not have direct access to the project area.

On-site intersection improvements include the project local roadway lane configurations (shown on Figure V-1) and signal warrant requirements. The project would also be required to provide the intersection improvements at the intersection of Vista Hermosa/Avenida Pico. It should be noted that a high eastbound left-turn volume during the PM peak hour at this intersection

Table V-2

RCFPP INTERSECTION IMPROVEMENTS

INTERSECTION	2005	LONG-RANGE BUILDOUT
11. I-5 NB Ramps & Estrella	3rd EBT	
19. PCH & Camino Capistrano		2nd SBT & 2nd NBT
25. Vista Pacifica & Vista Hermosa	New T-intersection: SBT, shared SBT/R, NBL dual NBT, shared EBL/R, & EBR	Construct east leg: SBL, WBL, WBT, shared WBT/R, convert NBT to shared NBT/R, convert shared EBL/R to EBL, add EBT & convert EBR to shared EBT/R
26 Frontera & Vista Hermosa	*Construct west leg SBR, dual WBT, convert WBR to shared WBT/R, add NBL, convert NBT to NBL, convert NBR to shared NBT/R	
27 I-5 NB Ramps & Vista Hermosa	*New: NBL, NBR, dual EBT, EBR, WBL, shared WBL/T, WBT	Convert EBR to free EBR, convert WBL, shared WBL/T & WBT to WBT, shared WBT/R & WBR
28 I-5 SB Ramps & Vista Hermosa	*New: SBL, shared SBL/R, SBR, EBL, triple EBT, dual WBT, free WBR	
35 La Pata & Avd Pico		Convert shared SBT/R to SBT, add free SBR, 2nd WBL, WBR
38. Calle Amanecer & Avd Pico	2nd WBL	Construct north leg: shared SBL/T/R, convert NBL/R to NBL/T/R, EBL, EBR
42 Avd Presidio & Avd Pico		Convert WBR to shared WBT/R & add EBT
43 I-5 NB Ramps & Avd Pico		2nd NBR
44 I-5 SB Ramps & Avd Pico	Convert WBT to shared WBL/T & add EBR	
47 N. El Camino Real & Avd Pico	2nd SBL, 2nd WBL	Convert shared NBT/R to NBT, & add NBR

* With-project only, also for 2000 with-project

First street of intersection description is oriented north/south.
2005 improvements are assumed carried to long-range buildout conditions.

RCFPP - Regional Circulation Financing and Phasing Program, November 1997
EBL - eastbound left-turn lane, EBT - eastbound through lane, EBR - eastbound right-turn lane, etc for westbound, southbound and northbound.

warrants dual left-turn lanes on Avenida Pico, and a high westbound right-turn volume during the PM peak hour warrants a free right-turn lane. The implementation of dual eastbound left-turn lanes and a westbound free right-turn lane may require the widening of existing Avenida Pico and/or readjusting its alignment with Vista Hermosa. A future technical study will be required to determine the most feasible design for this intersection in relation to the adjacent existing driveway southwest of the proposed location of this intersection, but a preliminary site engineering analysis indicates that these intersection improvements are feasible.

Improvement Summary

The improvements presented for the project are given in Table V-3. Two categories of improvements are summarized:

I. On-Site Direct Project Responsibility
II. Off-Site Fair Share Project Responsibility

The first category involves improvements located on-site which directly benefit the project. The second involves accounting for the project's use of capacity at intersections and arterial roadways where improvements were assumed for the interim year 2005 and long-range buildout time frames. The arterial improvements were previously indicated on Table III-3 and the intersection improvements were previously shown in Figure IV-10 and introduced in Table III-2. The project will contribute on a fair share basis through the RCFPP or any funding mechanism acceptable to the City and the applicant at these locations where the project has a greater than one percent contribution.

Table V-3

IMPROVEMENT SUMMARY

LOCATION	IMPROVEMENT	PROJECT CONTRIBUTION
I. ON-SITE DIRECT PROJECT RESPONSIBILITY		
ARTERIALS		
Vista Hermosa Extension (west of I-5 interchange to Avenida Pico)	New four-lane roadway through the project	Full share
On-Site Access Roadways ("A" St & "B" St)	New two-lane roadway	Full share
On-Site Direct Access Roadway to Shorecliffs Middle School (on Vista Hermosa north of "B" St)	New two-lane roadway	Full share
INTERSECTIONS		
"A" Street & Avenida Pico	Ingress & Egress	Full share
Vista Hermosa & "B" Street	Ingress & Egress	Full share
Avenida Pico & Vista Hermosa	Ingress & Egress	Full share
II. OFF-SITE FAIR SHARE PROJECT RESPONSIBILITY		
All buildout intersection and arterial improvements through RCFPP or any funding mechanism acceptable to the City (See Table V-2 for list of intersection locations)		Fair share contribution

VI

COASTAL ACCESS

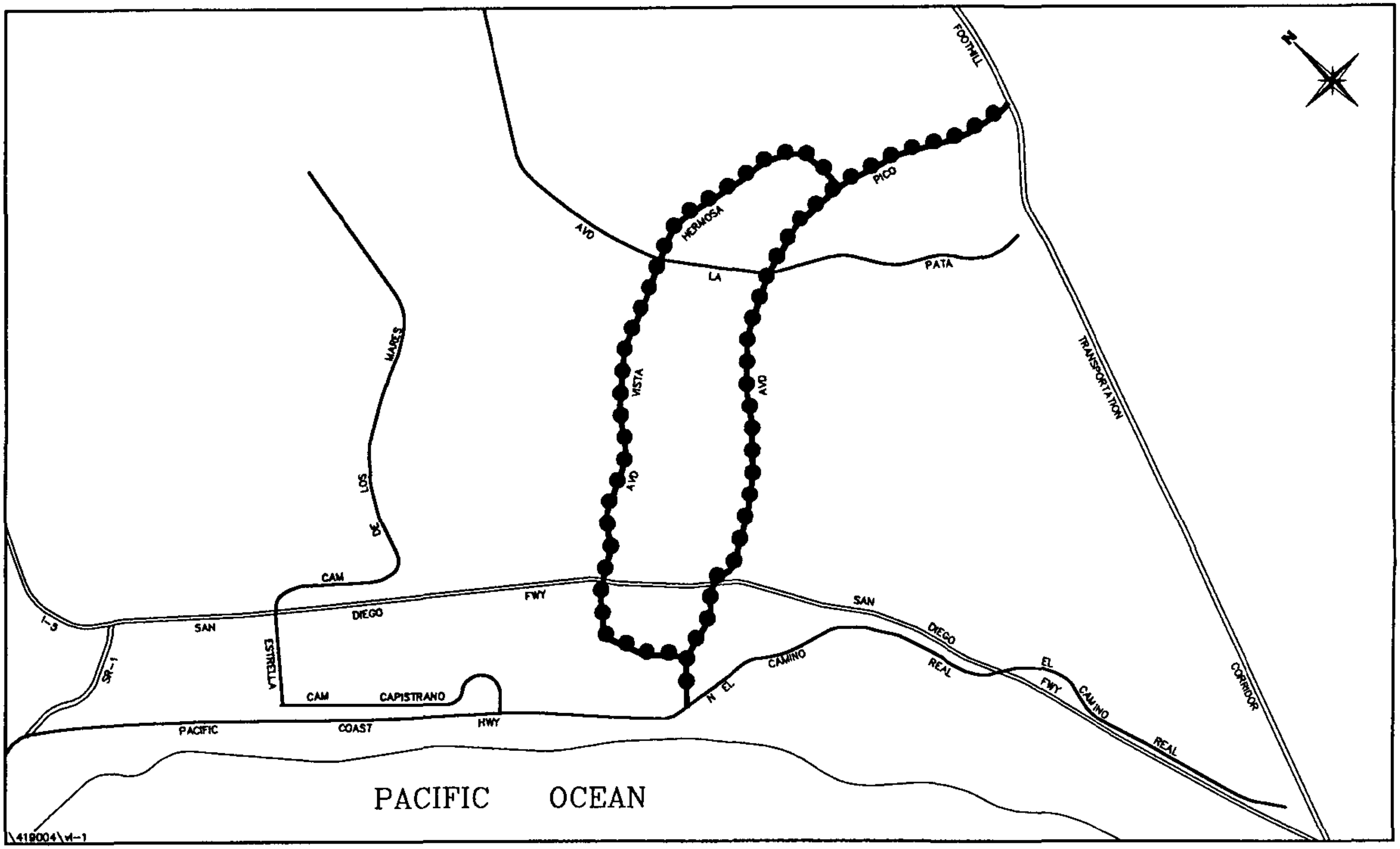
The project's Vista Hermosa interchange and extension of Vista Hermosa from inland east of I-5 towards the coastal area has the dual role of providing access for the Marblehead Coastal project, as well as providing increased regional and local coastal area access as presented in this chapter.

ENHANCED COASTAL ACCESS

The proposed project is located in an area where planned additions to the regional and local transportation system will significantly influence future access to the coastal area of the City of San Clemente.

Figure VI-1 shows the master-planned coastal access system for the San Clemente area. As shown in this figure, the planned Vista Hermosa extension over I-5 towards the coastal area and the new Vista Hermosa/I-5 interchange together with Avenida Pico provide the primary coastal access routes in San Clemente. The future planned extension of Avenida Pico easterly to an interchange with the future extension of the Foothill Transportation Corridor (FTC) also provides additional regional coastal access opportunities. Secondary, less direct access to the City's coastal area is provided to the south by El Camino Real, and to the north by Camino Capistrano.

The project's westerly extension of Vista Hermosa from inland east of I-5 (with an interchange at I-5) towards the coast is a key component of the City of San Clemente General Plan Circulation Element. In addition to serving existing and planned development within the City, the project provides an alternative route to the coastal area from both I-5 and the inland portions of the City. This allows coastal oriented traffic to bypass the congested Avenida Pico/I-5 interchange and



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Primary Coastal Access Route

Figure VI-1

SAN CLEMENTE AREA
COASTAL ACCESS SYSTEM

Avenida Pico commercial area west of I-5, thus enhancing coastal area access both regionally from I-5 and locally from the inland portions of the City.

From a regional standpoint, the new Vista Hermosa interchange significantly enhances coastal recreation access by providing a new interchange with coastal access at I-5, a major Southern California freeway facility traversing the region. Secondly, the new Vista Hermosa interchange will improve coastal regional access at the existing Avenida Pico/I-5 interchange by diverting traffic from the congested Avenida Pico/I-5 interchange to the Vista Hermosa/I-5 interchange. This results in the Avenida Pico interchange operating at an improved level of service, hence, providing more accessibility through less congestion at Avenida Pico as a result of the new adjacent Vista Hermosa interchange.

From a local perspective, the extension of Vista Hermosa over I-5 towards the coastal area provides inland city residents with additional coastal access via another crossing of I-5, which currently acts as a barrier with limited crossings to the coast from the inland portions of the City. Additionally, inland residents are provided with additional access to I-5 at Vista Hermosa, which results in substantial diversion from Avenida Pico to Vista Hermosa. This is important because the inland area of San Clemente is expected to experience substantial growth in residential development in future years in accordance with the City's General Plan, shown in Figure VI-2.

With the planned southerly extension of the FTC, the future Avenida Pico/FTC interchange will provide both regional and inland Orange County foothill community residents (Foothill Ranch, Portola Hills, Rancho Santa Margarita, Trabuco Canyon, Coto de Caza, Las Flores, etc.) with a link to the coastal area via Avenida Pico and via inland connections to Vista Hermosa as shown in Figure VI-3. Without the Vista Hermosa interchange and resulting diversion of traffic from Avenida Pico to Vista Hermosa, Avenida Pico would have substantially less capacity available to accommodate coastal oriented traffic exiting the FTC at Avenida Pico and heading towards the coastal area as shown in Figure VI-4.

Graphic to be provided by the City at a later date.

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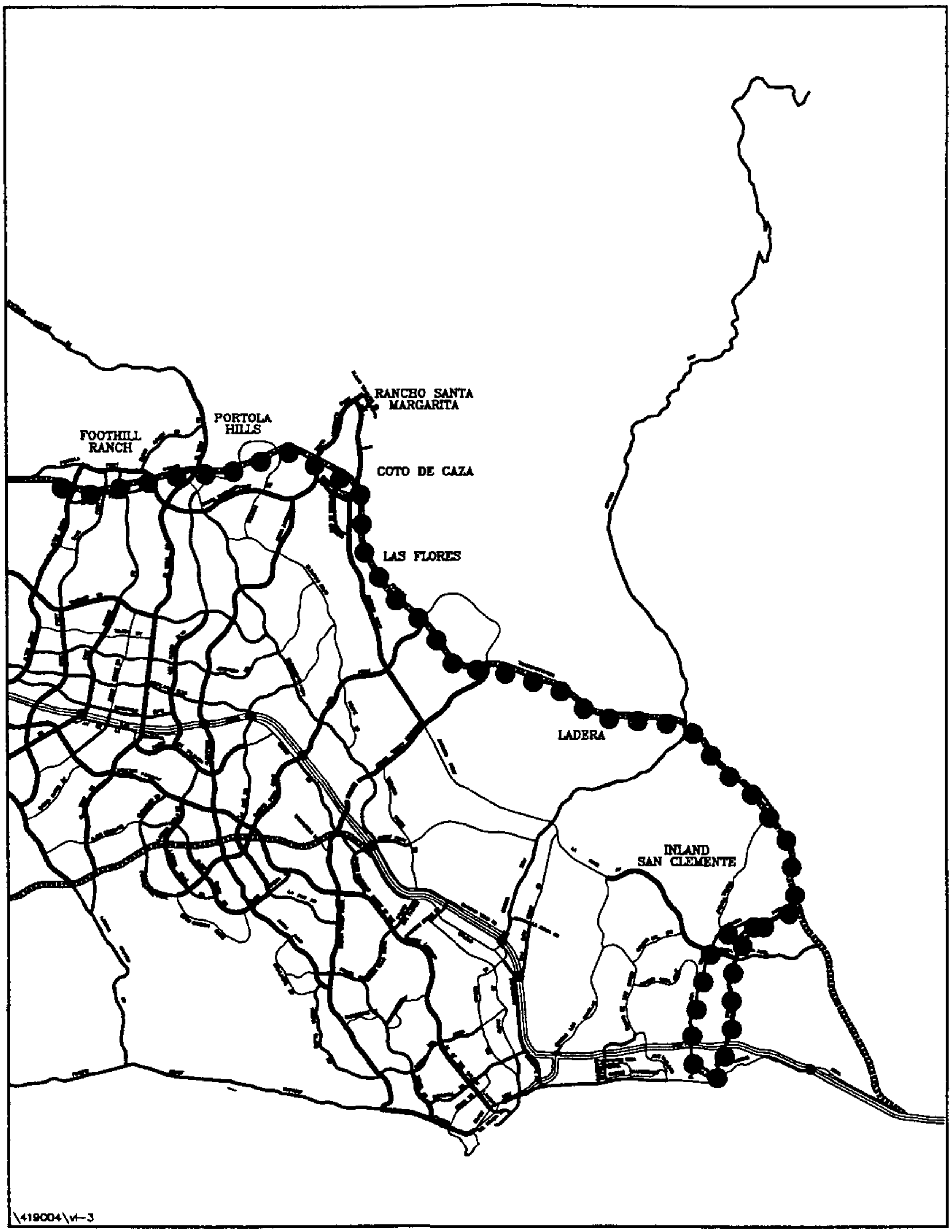
Figure VI-2

CITY OF SAN CLEMENTE
GENERAL PLAN
LAND USE ELEMENT



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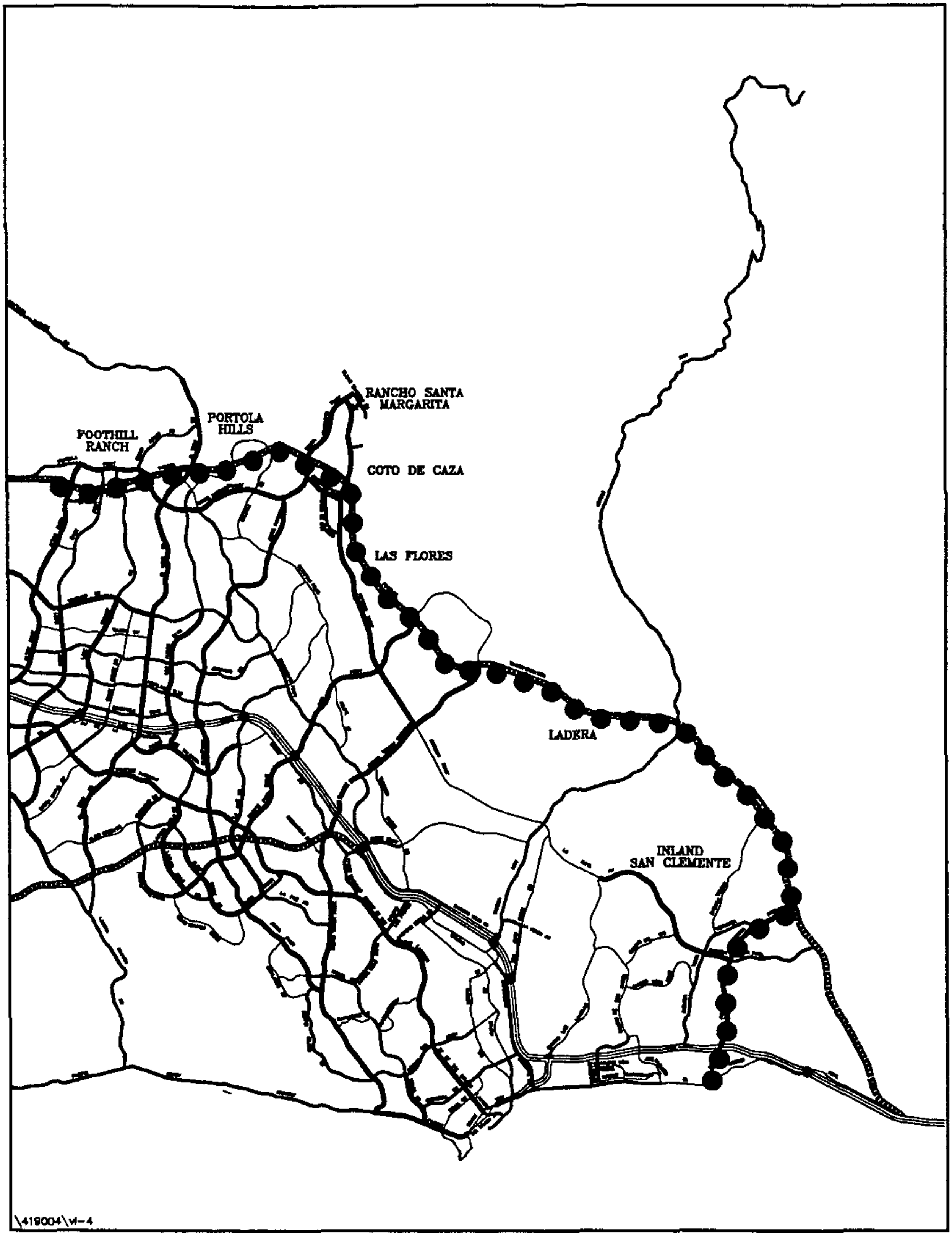
Regional & Inland Coastal Linkage

Figure VI-3

REGIONAL & INLAND COASTAL LINKAGE (WITH-PROJECT)



LEGEND

●●●● Regional & Inland Coastal Linkage

Figure VI-4

REGIONAL & INLAND COASTAL LINKAGE
(NO-DEVELOPMENT)

AVENIDA PICO TO VISTA HERMOSA DIVERSION

The project's extension of Vista Hermosa from inland east of I-5 westerly towards the coast with an interchange at I-5 is forecast to result in diversion from Avenida Pico to Vista Hermosa as indicated in Table VI-1. As shown in this table during the long-range buildout scenario, without the project's Vista Hermosa extension and interchange with I-5, Avenida Pico experiences significantly higher average daily traffic (ADT) volumes than with the project.

A key indicator of the effectiveness of the project's Vista Hermosa interchange and extension in reducing congestion at the I-5 southbound ramps at Avenida Pico intersection with traffic diversion to the Vista Hermosa interchange is shown by the intersection capacity utilization (ICU) values for I-5 southbound ramps and Avenida Pico intersection presented in Table VI-2. As shown in this table, without the project's Vista Hermosa extension and interchange with I-5, the Avenida Pico/I-5 interchange experiences higher PM peak hour congestion.

CAPACITY NEEDS

Vista Hermosa is designed to meet at a minimum the design standards associated with a primary arterial highway consistent with the City of San Clemente General Plan Circulation Element. According to the City's Circulation Element, a primary arterial highway is a four-lane divided highway with a level of service (LOS) threshold of LOS "C" capable of carrying approximately 30,000 average daily traffic (ADT). A project design feature of the proposed project increases the capacity of Vista Hermosa north of Avenida Pico along the frontage of the entertainment center portion of the project site to approximately 37,500 ADT through augmentation with the addition of a third northbound through lane and a second southbound left-turn lane at the intersection with Avenida Pico.

The forecast ADT on Vista Hermosa ranges from 26,000 ADT and 23,000 ADT in the interim years 2000 and 2005 to 20,000 ADT in the long-range buildout forecasts on the non-augmented section of Vista Hermosa. Forecast ADT for the augmented section of Vista Hermosa north of Avenida Pico near the entertainment center ranges from 24,000 ADT and 26,000 ADT in the interim years 2000 and 2005 to 25,000 ADT in the long-range buildout forecasts.

Table VI-1

AVENIDA PICO ADT SUMMARY

	ADT	
	No-Development	Project
Avenida Pico east of I-5		
Interim Year 2000	54,000	49,000
Interim Year 2005	64,000	53,000
Long Range (Buildout)	66,000	53,000
Avenida Pico east of Avenida Presidio		
Interim Year 2000	47,000	46,000
Interim Year 2005	58,000	53,000
Long Range (Buildout)	62,000	54,000
Avenida Pico east of Vista Pacifica		
Interim Year 2000	5,000	4,000
Interim Year 2005	18,000	18,000
Long Range (Buildout)	39,000	31,000

ADT - average daily traffic

Table VI-2

I-5 SOUTHBOUND RAMPS & AVENIDA PICO
ICU SUMMARY

TIME FRAME	AM PEAK HOUR NO-PROJECT	AM PEAK HOUR PROJECT	PM PEAK HOUR NO-PROJECT	PM PEAK HOUR PROJECT
Interim Year 2000	.76	.71	1.15	1.07
Interim Year 2005*	.79	.70	.93	88
Long Range (Buildout)*	.80	.56	.89	76

* Assumes RCFPP improvements
ICU - intersection capacity utilization

Hence, the Vista Hermosa extension provides adequate capacity for the proposed project, the associated traffic diversion from Avenida Pico to Vista Hermosa, plus provides significant new capacity for coastal recreation access oriented traffic, thereby increasing accessibility to the coast on a local and regional basis.

COASTAL AREA CIRCULATION FUNCTIONALITY

The project's Vista Hermosa extension and interchange with I-5 will provide significant coastal recreation access capacity, on a functional basis, as well as a system capacity basis, because coastal recreation traffic and commuter traffic flow in opposite directions on the Vista Hermosa extension during the peak hours.

In the AM peak hour, coastal access oriented traffic is typically southbound on I-5 and westbound on Vista Hermosa toward the coast, while the commute pattern flows eastbound on Vista Hermosa to I-5 and then northbound on I-5. In the PM peak hour the opposing directionality relationship between commute traffic and coastal oriented traffic reverse directions. Therefore, the Vista Hermosa extension and interchange with I-5 will provide significant new capacity available for coastal recreation access traffic, as well as making available additional capacity on Avenida Pico for coastal recreation access traffic.

It is worth noting that the majority of project-generated trips (approximately 90 percent of ADT and 60 to 85 percent of peak hour traffic) on the Vista Hermosa extension and the surrounding roadway circulation system are generated by the commercial portion of the project. As noted in the City's General Plan Circulation Element, the peak hour to ADT relationship for commercial land use oriented trips is different than trips generated by other types of land use, since most commercial activity occurs after the AM peak hour on the adjacent roadway, and is somewhat consistent throughout the remainder of the day, with commercial-generated traffic impacts heaviest during the non-peak hours.

Thus, factoring in the commercial land use generated characteristics of the traffic utilizing the Vista Hermosa extension and the reverse directionality relationship between coastal oriented traffic and commute traffic, significant portions of the capacity provided by the new Vista Hermosa extension and I-5 interchange are functionally available for coastal recreation-visitor serving traffic to accommodate additional increments of areawide regional coastal traffic during the summer period for increased coastal access opportunities.

APPENDIX A

LAND USE AND TRIP GENERATION

The material contained in this appendix summarizes the existing (1996), 2000 and 2005 interim years and long-range buildout land use and trip generation for the San Clemente Traffic Model (SCTM) within the City of San Clemente and its sphere of influence.

TRIP GENERATION RATES

Table A-1 summarizes the peak hour and ADT trip generation rates currently being used in SCTM for all time frames presented in this traffic study.

LAND USE AND TRIP GENERATION SUMMARIES

For traffic forecasting purposes, land use data has been specified according to the traffic zones designated in the analysis area for the model (see Figure A-1) which encompasses small portions of the Cities of Dana Point and San Juan Capistrano for which land uses are not included here (zones 206 through 210).

The following tables summarize the existing (1996), 2000 and 2005 interim years and the long-range buildout land use by traffic analysis zone for the City of San Clemente area only, including the corresponding trip generation used in SCTM. It should be noted that when there are no land uses, the zone will not be listed.

Table A-1

SCTM - ADT AND PEAK HOUR TRIP RATE SUMMARY

LAND USE		UNITS	---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR--- IN	OUT	TOTAL	ADT
1.	Res - Estate	DU	.40	.90	1.30	.90	.60	1.50	15.00
2	Res - Low (18.1)	DU	.30	.80	1.10	.80	.50	1.30	12.00
3.	Res - Low/Medium (18.2)	DU	.30	.80	1.10	.80	.50	1.30	12.00
4.	Res - Medium (19 1)	DU	.30	.80	1.10	.80	.50	1.30	12.00
5.	Res - Medium/High (19.2)	DU	.10	.50	.60	.50	.20	.70	7 00
6.	Res - High (19.3)	DU	.10	.50	.60	.50	.20	.70	7.00
7	Apartment (19.4)	DU	.10	.50	.60	.50	.20	.70	7.00
8	Mobile Home (20.0)	DU	.12	.30	.42	.35	.21	.56	4.81
9.	Senior Housing (19.5)	DU	.12	.30	.42	.35	.21	.56	4.81
10	Single-Family Res.	DU	.20	.60	.80	.60	.40	1.00	10.00
11	Multi-Family Res.	DU	.20	.50	.70	.40	.30	.70	8.00
12.	General Commercial	TSF	.90	.80	1.70	2.90	3 10	6.00	70.00
13.	Strip Commercial (6.1)	TSF	.45	.40	.85	1 45	1.55	3.00	35.00
14.	Neighborhood Comm. (6.2)	TSF	.90	80	1.70	2.90	3.10	6.00	70.00
15.	District Commercial (6.3)	TSF	.90	.80	1.70	2.90	3.10	6.00	70.00
16.	Reg Ctr/Town Ctr (6 4)	TSF	.71	.31	1.02	1.68	1 89	3.57	43.71
17.	Fast Food Restaurant(6.5)	TSF	13.96	13 96	27.92	16.96	16.30	33 26	316.07
18.	Family Restaurant (6.6)	TSF	10.70	8.41	19.11	10.56	9.37	19.93	200.90
19	Quality Rest./Bar (6.7)	TSF	.82	.09	.91	5.00	2.25	7.25	95.62
20	Light Industrial (2.0)	TSF	.84	.12	.96	.12	.91	1.03	6.97
21.	Lt Manuf/Bus Park (15-85)	TSF	.80	20	1.00	.20	.90	1.10	8.00
22.	R&D/Bus Park (50-50)(2.2)	TSF	1.40	.20	1.60	.30	1.30	1.60	11.00
23.	Storage (2.3)	TSF	09	.08	.17	.14	.12	.26	2.60
24.	Mixed-Use Facility (2.4)	TSF	1.11	.36	1 47	.27	.84	1.11	24.32
25.	Heavy Industrial (3.0)	TSF	.84	.12	.96	.12	.91	1.03	6.97
26.	General Office (14.0)	TSF	1.90	.30	2.20	.27	1.36	1.63	12.30
27.	Medical Office (14.1)	TSF	.91	.72	1.63	.98	2.65	3.63	34.17
28.	Government Office (15.0)	TSF	2.43	.27	2.70	1.08	2.52	3.60	30.00
29.	Retail Employment	EMP	.60	.14	.74	.51	.74	1.25	13 15
30.	Total Employment	EMP	.23	.03	.26	.07	.18	.25	2.40
31.	Banks/Saving & Loan (7.0)	TSF	3.86	2.91	6.77	13.37	13.91	27.28	291.11
32.	Serv Stat (Gas) (8.0)	STAT	10.50	10.50	21.00	12.50	12.50	25.00	748.00
33	Serv. Stat. (W/Serv. Bay)	STAT	10.50	10.50	21.00	12.50	12.50	25 00	748.00
34.	Serv. Stat. (W/Mini Mart)	STAT	10.50	10.50	21.00	12.50	12.50	25.00	748.00
35.	Auto Sales - New (9.0)	ACRE	6.70	9.30	16.00	5.50	7.30	12.80	150.00
36.	Auto Sales - Used (10.0)	ACRE	6.70	9.30	16.00	5.50	7.30	12.80	150.00
37.	Auto Repair (11.0)	TSF	2.88	1.92	4.80	2.40	3.60	6.00	60.00
38	Motel (12.0)	ROOM	.40	.30	.70	.31	.31	.62	10.19
39.	Hotel (12.0)	ROOM	.46	.24	.70	.36	.30	.66	8.70
40.	Resort Hotel (12.0)	ROOM	.15	.09	.24	.28	.22	.50	18.40

(Continued)

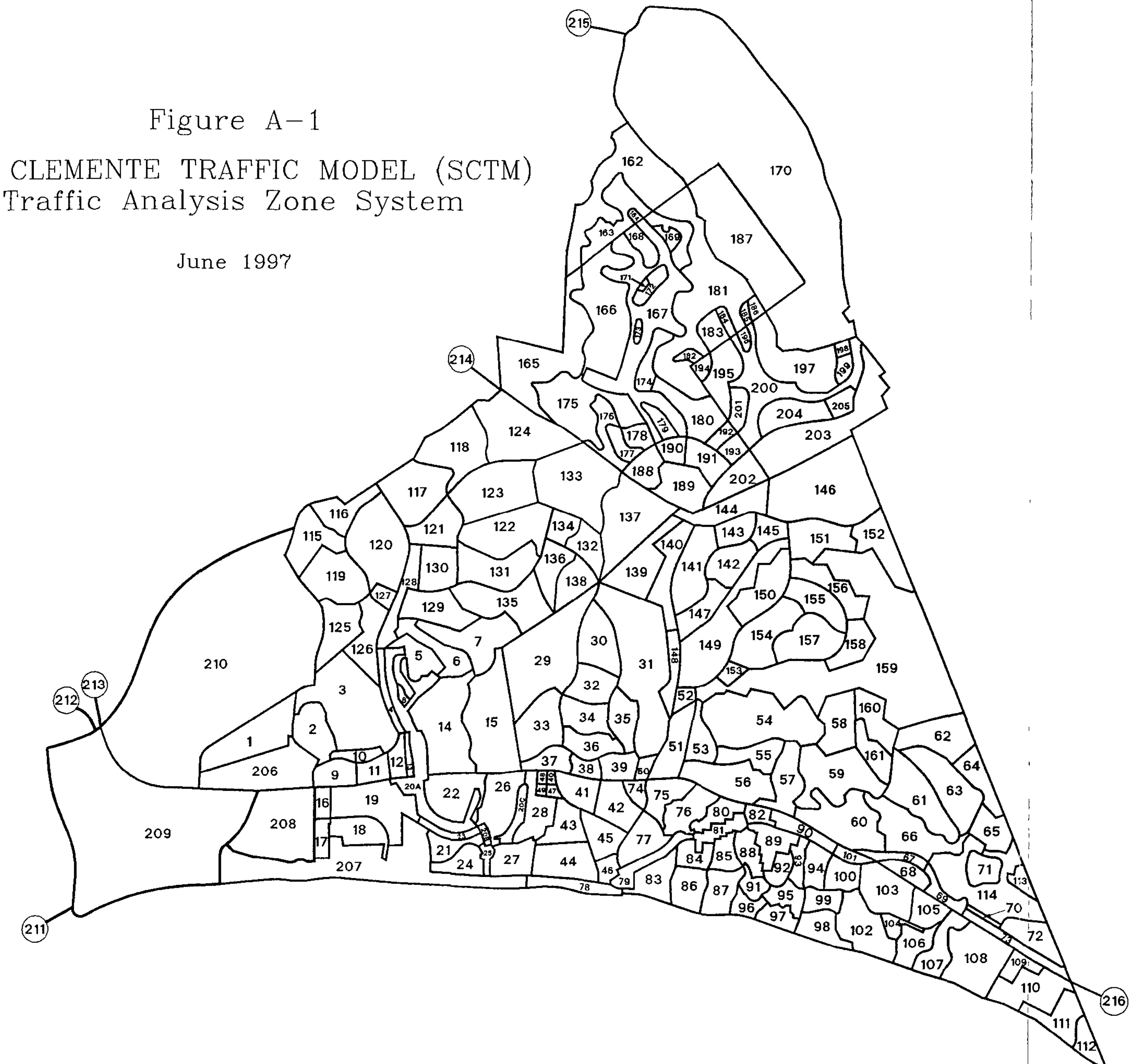
Table A-1 (cont)
SCTM - ADT AND PEAK HOUR TRIP RATE SUMMARY

LAND USE		UNITS	---AM PEAK HOUR--- IN	OUT	TOTAL	---PM PEAK HOUR--- IN	OUT	TOTAL	ADT
41.	Church (13.0)	TSF	.08	.03	11	.34	.30	.64	7.70
42.	Hospital (21.0)	BED	.70	.30	1.00	.50	80	1.30	11.40
43	Elem/Middle School (17.0)	STU	.17	09	.26	.10	14	.24	1.00
44.	High School (17.1)	STU	.22	.07	.29	.13	.11	.24	1.39
45.	Park (16.0)	ACRE	.20	05	.25	.05	.20	.25	7.00
46.	Golf Course (16.1)	ACRE	.20	.05	.25	.05	.20	.25	7.00
47.	Agriculture/Fishing (1.0)	ACRE	.00	.00	.00	.00	.00	.00	2 00
48.	Theater (23.0)	SEAT	.00	.00	.00	.24	.02	.26	1.76
49.	Club/Organization (24.0)	TSF	.88	.88	1.76	.76	.76	1.52	15.94
50	Mortuary (25 0)	TSF	1.90	.30	2.20	.27	1.36	1.63	12.30
51.	Banquet Hall (26.0)	TSF	00	.00	.00	.00	.00	00	0.00
52.	Fire/Police Stat. (27.0)	TSF	.00	.00	.00	.00	.00	.00	15.00
53	Public Utilities (5.0)	ACRE	1.59	.90	2.49	.48	.84	1.32	2.62
54.	Beach Parking (22.0)	SPC	.16	.00	.16	.16	.16	.32	4.00
55	Transport. Services (4.0)	ACRE	29.40	12 60	42.00	13.50	31.50	45.00	272.25
56.	Vacant (0.0)	ACRE	.00	.00	.00	.00	.00	00	0 00
57.	Lt. Manuf. Contract (2.1)	TSF	.84	.12	.96	.12	.91	1.03	6.97
58.	Sports Complex	ACRE	.20	.05	.25	.05	.20	.25	7.00
59.	Adult Daycare	TSF	6.02	5.35	11.37	5.90	6.40	12.30	67.00
60.	State Beach	ACRE	.00	.00	.00	.00	.00	.00	10 00
61.	Mixed Use	TSF	1.40	.31	1.71	.69	1.58	2.27	20.05
62.	Pageant Site	TSF	00	.00	.00	.00	00	.00	0.00
63.	Congregate Care	ROOM	.04	.02	.06	.10	.07	.17	2.15
64.	Retirement Housing	DU	.18	.22	.40	.22	.18	.40	4.00
65.	Junior College	ACRE	8 64	.96	9 60	1.92	4.48	6 40	80 00
66.	Senior Assisted Living	BED	.12	07	19	07	.10	.17	2.60
100.	Discount Store	TSF	.25	.26	.51	1.77	1.65	3 42	70 13
101.	Regional Center (500)	TSF	.53	.31	.84	1.83	1.83	3.66	38.65
102.	Regional Center (600)	TSF	.49	.29	.78	1.70	1.71	3.41	36.35
103.	Day Care Facility	TSF	5.89	5.03	10.92	5.15	6.04	11.19	57.00
104.	Health Club	TSF	1.06	71	1.77	1.10	73	1.83	17.14
105.	Train Station	PKSP	.50	.10	.60	.10	.50	.60	2.00
106	Regional Center (400)	TSF	.58	.34	.92	1.99	1.98	3.97	42.02
107.	Outlet Center	TSF	.49	.18	.67	1.08	1.21	2.29	26.59

Figure A-1

SAN CLEMENTE TRAFFIC MODEL (SCTM)
Traffic Analysis Zone System

June 1997



SCTM - BUILDOUT MARBLEHEAD COASTAL PROJECT ZONAL LAND USE AND TRIP GENERATION

Zone	Land Use Type	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
40	56. Vacant (0.0)	8.80 ACRE	0	0	0	0	0	0	0
	SUB-TOTAL		0	0	0	0	0	0	0
41	14. Neighborhood Comm. (6.2)	78.00 TSF	70	62	132	226	242	468	5460
	17. Fast Food Restaurant(6.5)	6.00 TSF	84	84	168	102	98	200	1896
	19. Quality Rest./Bar (6.7)	26.50 TSF	22	2	24	133	60	193	2534
	100. Discount Store	145.80 TSF	36	38	74	258	241	499	10225
	102. Regional Center (600)	18.00 TSF	9	5	14	31	31	62	654
	SUB-TOTAL		221	191	412	750	672	1422	20769
42	48. Theater (23.0)	4500.00 SEAT	0	0	0	1080	90	1170	7920
	102. Regional Center (600)	78.00 TSF	38	23	61	133	133	266	2835
	107. Outlet Center	307.70 TSF	151	55	206	332	372	704	8182
	SUB-TOTAL		189	78	267	1545	595	2140	18937
43	3. Res - Low/Medium (18.2)	190.00 DU	57	152	209	152	95	247	2280
	SUB-TOTAL		57	152	209	152	95	247	2280
44	3. Res - Low/Medium (18.2)	150.00 DU	45	120	165	120	75	195	1800
	SUB-TOTAL		45	120	165	120	75	195	1800
45	3. Res - Low/Medium (18.2)	100.00 DU	30	80	110	80	50	130	1200
	SUB-TOTAL		30	80	110	80	50	130	1200
46	13. Strip Commercial (6.1)	60.00 TSF	27	24	51	87	93	180	2100
	45. Park (16.0)	10.00 ACRE	2	1	3	1	2	3	70
	SUB-TOTAL		29	25	54	88	95	183	2170

TOTALS - Buildout Marblehead Coastal

Land Use Type	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
3. Res - Low/Medium (18.2)	440.00 DU	132	352	484	352	220	572	5280
13. Strip Commercial (6.1)	60.00 TSF	27	24	51	87	93	180	2100
14. Neighborhood Comm. (6.2)	78.00 TSF	70	62	132	226	242	468	5460
17. Fast Food Restaurant(6.5)	6.00 TSF	84	84	168	102	98	200	1896
19. Quality Rest./Bar (6.7)	26.50 TSF	22	2	24	133	60	193	2534
45. Park (16.0)	10.00 ACRE	2	1	3	1	2	3	70
48. Theater (23.0)	4500.00 SEAT	0	0	0	1080	90	1170	7920
56. Vacant (0.0)	8.80 ACRE	0	0	0	0	0	0	0
100. Discount Store	145.80 TSF	36	38	74	258	241	499	10225
102. Regional Center (600)	96.00 TSF	47	28	75	164	164	328	3489
107. Outlet Center	307.70 TSF	151	55	206	332	372	704	8182
TOTAL		571	646	1217	2735	1582	4317	47156

SCTM LAND USE AND TRIP GENERATION SUMMARY

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
1	2. Res - Low (18.1)	DU	278.00	3,336	278.00	3,336	280.00	3,360	287.00	3,444
	3. Res - Low/Medium (18.2)	DU	2.00	24	2.00	24	2.00	24	--	--
	SUB-TOTAL			3,360		3,360		3,384		3,444
2	4. Res - Medium (19.1)	DU	250.00	3,000	275.00	3,300	275.00	3,300	275.00	3,300
	53. Public Utilities (5.0)	ACRE	22.00	58	22.00	58	22.00	58	22.00	58
	SUB-TOTAL			3,058		3,358		3,358		3,358
3	2. Res - Low (18.1)	DU	240.00	2,880	177.00	2,124	201.00	2,412	271.00	3,252
	53. Public Utilities (5.0)	ACRE	22.00	58	22.00	58	22.00	58	22.00	58
	SUB-TOTAL			2,938		2,182		2,470		3,310
4	2. Res - Low (18.1)	DU	59.00	708	59.00	708	59.00	708	59.00	708
	SUB-TOTAL			708		708		708		708
5	4. Res - Medium (19.1)	DU	197.00	2,364	189.00	2,268	189.00	2,268	189.00	2,268
	SUB-TOTAL			2,364		2,268		2,268		2,268
6	2. Res - Low (18.1)	DU	82.00	984	82.00	984	83.00	996	86.00	1,032
	SUB-TOTAL			984		984		996		1,032
7	2. Res - Low (18.1)	DU	74.00	888	74.00	888	75.00	900	77.00	924
	SUB-TOTAL			888		888		900		924
8	4. Res - Medium (19.1)	DU	23.00	276	23.00	276	23.00	276	23.00	276
	SUB-TOTAL			276		276		276		276
9	14. Neighborhood Comm. (6.2)	TSF	103.80	7,266	220.80	15,456	220.80	15,456	220.80	15,456
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	1.00	748
	104. Health Club	TSF	11.21	192	--	--	--	--	--	--
	SUB-TOTAL			8,206		16,204		16,204		16,204
10	14. Neighborhood Comm. (6.2)	TSF	--	--	55.52	3,886	55.52	3,886	55.52	3,886
	27. Medical Office (14.1)	TSF	232.10	7,931	166.21	5,679	166.21	5,679	166.21	5,679
	41. Church (13.0)	TSF	8.00	62	--	--	--	--	--	--
	48. Theater (23.0)	SEAT	--	--	1,260.00	2,218	1,260.00	2,218	1,260.00	2,218
	SUB-TOTAL			7,993		11,783		11,783		11,783
11	12. General Commercial	TSF	--	--	--	--	--	--	87.27	6,109
	26. General Office (14.0)	TSF	18.35	226	17.50	215	17.50	215	51.08	628
	31. Banks/Saving & Loan (7.0)	TSF	6.67	1,942	--	--	--	--	--	--
	42. Hospital (21.0)	BED	116.00	1,322	126.00	1,436	126.00	1,436	126.00	1,436
	52. Fire/Police Stat. (27.0)	TSF	8.00	120	7.20	108	7.20	108	7.20	108
	SUB-TOTAL			3,610		1,759		1,759		8,281
12	5. Res - Medium/High (19.2)	DU	172.00	1,204	170.00	1,190	170.00	1,190	170.00	1,190
	SUB-TOTAL			1,204		1,190		1,190		1,190
13	2. Res - Low (18.1)	DU	24.00	288	23.00	276	23.00	276	23.00	276
	SUB-TOTAL			288		276		276		276

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
14	2. Res - Low (18.1)	DU	318.00	3,816	318.00	3,816	324.00	3,888	340.00	4,080
	SUB-TOTAL			3,816		3,816		3,888		4,080
15	2. Res - Low (18.1)	DU	256.00	3,072	256.00	3,072	263.00	3,156	283.00	3,396
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	--	--
	41. Church (13.0)	TSF	--	--	--	--	--	--	10.00	77
	SUB-TOTAL			3,084		3,084		3,168		3,473
16	15. District Commercial (6.3)	TSF	201.16	14,081	152.48	10,674	152.48	10,674	152.48	10,674
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	1.00	748
	SUB-TOTAL			14,829		11,422		11,422		11,422
17	13. Strip Commercial (6.1)	TSF	7.24	253	--	--	--	--	--	--
	14. Neighborhood Comm. (6.2)	TSF	13.02	911	37.08	2,596	37.08	2,596	37.08	2,596
	27. Medical Office (14.1)	TSF	8.26	282	8.26	282	8.26	282	8.26	282
	41. Church (13.0)	TSF	4.11	32	10.91	84	10.91	84	10.91	84
	56. Vacant (0.0)	ACRE	7.29	0	7.29	0	7.29	0	--	--
	66. Senior Assisted Living	BED	--	--	--	--	--	--	225.00	585
	SUB-TOTAL			1,478		2,962		2,962		3,547
18	4. Res - Medium (19.1)	DU	218.00	2,616	270.00	3,240	270.00	3,240	270.00	3,240
	45. Park (16.0)	ACRE	3.85	27	3.85	27	3.85	27	3.85	27
	SUB-TOTAL			2,643		3,267		3,267		3,267
19	2. Res - Low (18.1)	DU	66.00	792	66.00	792	66.00	792	67.00	804
	4. Res - Medium (19.1)	DU	409.00	4,908	407.00	4,884	407.00	4,884	407.00	4,884
	14. Neighborhood Comm. (6.2)	TSF	23.84	1,669	--	--	--	--	--	--
	SUB-TOTAL			7,369		5,676		5,676		5,688
20	40. Resort Hotel (12.0)	ROOM	--	--	--	--	--	--	250.00	4,600
	46. Golf Course (16.1)	ACRE	136.00	952	136.00	952	136.00	952	136.00	952
	SUB-TOTAL			952		952		952		5,552
21	2. Res - Low (18.1)	DU	13.00	156	13.00	156	13.00	156	13.00	156
	4. Res - Medium (19.1)	DU	225.00	2,700	192.00	2,304	192.00	2,304	192.00	2,304
	41. Church (13.0)	TSF	4.56	35	4.56	35	4.56	35	4.56	35
	43. Elem/Middle School (17.0)	STU	91.00	91	91.00	91	91.00	91	91.00	91
	SUB-TOTAL			2,982		2,586		2,586		2,586
22	3. Res - Low/Medium (18.2)	DU	126.00	1,512	126.00	1,512	126.00	1,512	126.00	1,512
	45. Park (16.0)	ACRE	12.00	84	12.00	84	12.00	84	12.00	84
	SUB-TOTAL			1,596		1,596		1,596		1,596
23	2. Res - Low (18.1)	DU	35.00	420	36.00	432	36.00	432	36.00	432
	3. Res - Low/Medium (18.2)	DU	3.00	36	--	--	--	--	--	--
	SUB-TOTAL			456		432		432		432
24	2. Res - Low (18.1)	DU	4.00	48	30.00	360	30.00	360	30.00	360
	4. Res - Medium (19.1)	DU	91.00	1,092	109.00	1,308	109.00	1,308	109.00	1,308
	SUB-TOTAL			1,140		1,668		1,668		1,668

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
25	13. Strip Commercial (6.1)	TSF	15.12	529	12.42	435	12.42	435	12.42	435
	14. Neighborhood Comm. (6.2)	TSF	34.62	2,423	25.71	1,800	25.71	1,800	49.41	3,459
	26. General Office (14.0)	TSF	7.09	87	9.41	116	9.41	116	9.41	116
	27. Medical Office (14.1)	TSF	8.03	274	7.78	266	7.78	266	7.78	266
	32. Serv Stat (Gas) (8.0)	STAT	2.00	1,496	1.00	748	1.00	748	1.00	748
	37. Auto Repair (11.0)	TSF	--	--	2.90	174	2.90	174	2.90	174
	54. Beach Parking (22.0)	SPC	103.00	412	103.00	412	103.00	412	103.00	412
	56. Vacant (0.0)	ACRE	2.00	0	2.00	0	2.00	0	--	--
	SUB-TOTAL			5,221		3,951		3,951		5,610
26	2. Res - Low (18.1)	DU	190.00	2,280	191.00	2,292	191.00	2,292	191.00	2,292
	SUB-TOTAL			2,280		2,292		2,292		2,292
27	2. Res - Low (18.1)	DU	16.00	192	16.00	192	16.00	192	16.00	192
	4. Res - Medium (19.1)	DU	129.00	1,548	129.00	1,548	129.00	1,548	129.00	1,548
	8. Mobile Home (20.0)	DU	127.00	611	127.00	611	127.00	611	127.00	611
	SUB-TOTAL			2,351		2,351		2,351		2,351
28	2. Res - Low (18.1)	DU	124.00	1,488	124.00	1,488	124.00	1,488	124.00	1,488
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	1.00	12
	41. Church (13.0)	TSF	19.16	148	19.16	148	19.16	148	19.16	148
	43. Elem/Middle School (17.0)	STU	802.00	802	802.00	802	802.00	802	1,200.00	1,200
	SUB-TOTAL			2,450		2,450		2,450		2,848
29	56. Vacant (0.0)	ACRE	179.50	0	179.50	0	179.50	0	179.50	0
	SUB-TOTAL			--		--		--		--
30	2. Res - Low (18.1)	DU	--	--	18.00	216	18.00	216	18.00	216
	SUB-TOTAL			--		216		216		216
31	56. Vacant (0.0)	ACRE	283.00	0	283.00	0	283.00	0	283.00	0
	SUB-TOTAL			--		--		--		--
32	2. Res - Low (18.1)	DU	117.00	1,404	128.00	1,536	128.00	1,536	128.00	1,536
	43. Elem/Middle School (17.0)	STU	--	--	--	--	--	--	600.00	600
	45. Park (16.0)	ACRE	4.00	28	4.00	28	4.00	28	4.00	28
	SUB-TOTAL			1,432		1,564		1,564		2,164
33	3. Res - Low/Medium (18.2)	DU	225.00	2,700	225.00	2,700	225.00	2,700	225.00	2,700
	SUB-TOTAL			2,700		2,700		2,700		2,700
34	2. Res - Low (18.1)	DU	231.00	2,772	233.00	2,796	233.00	2,796	233.00	2,796
	SUB-TOTAL			2,772		2,796		2,796		2,796
35	2. Res - Low (18.1)	DU	68.00	816	134.00	1,608	134.00	1,608	144.00	1,728
	SUB-TOTAL			816		1,608		1,608		1,728
36	2. Res - Low (18.1)	DU	95.00	1,140	95.00	1,140	95.00	1,140	95.00	1,140
	SUB-TOTAL			1,140		1,140		1,140		1,140

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	----- 1996 ----- Amount	ADT	--- 2000+MC ---- Amount	ADT	--- 2005+MC ---- Amount	ADT	----- BO+MC ---- Amount	ADT
37	4. Res - Medium (19.1)	DU	192.00	2,304	192.00	2,304	192.00	2,304	192.00	2,304
	SUB-TOTAL			2,304		2,304		2,304		2,304
38	41. Church (13.0)	TSF	16.48	127	16.48	127	16.48	127	50.00	385
	SUB-TOTAL			127		127		127		385
39	4. Res - Medium (19.1)	DU	144.00	1,728	144.00	1,728	144.00	1,728	144.00	1,728
	SUB-TOTAL			1,728		1,728		1,728		1,728
40	56. Vacant (0.0)	ACRE	--	--	8.80	0	8.80	0	8.80	0
	SUB-TOTAL			--		--		--		--
41	14. Neighborhood Comm. (6.2)	TSF	--	--	78.00	5,460	78.00	5,460	78.00	5,460
	17. Fast Food Restaurant(6.5)	TSF	--	--	6.00	1,896	6.00	1,896	6.00	1,896
	19. Quality Rest./Bar (6.7)	TSF	--	--	26.50	2,534	26.50	2,534	26.50	2,534
	100. Discount Store	TSF	--	--	145.80	10,225	145.80	10,225	145.80	10,225
	102. Regional Center (600)	TSF	--	--	18.00	654	18.00	654	18.00	654
	SUB-TOTAL			--		20,769		20,769		20,769
42	48. Theater (23.0)	SEAT	--	--	4,500.00	7,920	4,500.00	7,920	4,500.00	7,920
	102. Regional Center (600)	TSF	--	--	78.00	2,835	78.00	2,835	78.00	2,835
	107. Outlet Center	TSF	--	--	307.70	8,182	307.70	8,182	307.70	8,182
	SUB-TOTAL			--		18,937		18,937		18,937
43	3. Res - Low/Medium (18.2)	DU	--	--	190.00	2,280	190.00	2,280	190.00	2,280
	SUB-TOTAL			--		2,280		2,280		2,280
44	3. Res - Low/Medium (18.2)	DU	--	--	150.00	1,800	150.00	1,800	150.00	1,800
	SUB-TOTAL			--		1,800		1,800		1,800
45	3. Res - Low/Medium (18.2)	DU	--	--	100.00	1,200	100.00	1,200	100.00	1,200
	SUB-TOTAL			--		1,200		1,200		1,200
46	13. Strip Commercial (6.1)	TSF	--	--	60.00	2,100	60.00	2,100	60.00	2,100
	45. Park (16.0)	ACRE	--	--	10.00	70	10.00	70	10.00	70
	SUB-TOTAL			--		2,170		2,170		2,170
50	41. Church (13.0)	TSF	6.40	49	19.96	154	19.96	154	19.96	154
	59. Adult Daycare	TSF	8.17	547	8.00	536	8.00	536	8.00	536
	103. Day Care Facility	TSF	--	--	7.67	437	7.67	437	7.67	437
	SUB-TOTAL			596		1,127		1,127		1,127
51	17. Fast Food Restaurant(6.5)	TSF	2.94	929	2.94	929	2.94	929	2.94	929
	18. Family Restaurant (6.6)	TSF	4.38	880	3.70	743	3.70	743	3.70	743
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	1.00	748
	44. High School (17.1)	STU	2,040.00	2,836	2,040.00	2,836	2,040.00	2,836	2,500.00	3,475
	SUB-TOTAL			5,393		5,256		5,256		5,895
52	14. Neighborhood Comm. (6.2)	TSF	70.41	4,929	73.00	5,110	73.00	5,110	73.00	5,110
	SUB-TOTAL			4,929		5,110		5,110		5,110

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
53	2. Res - Low (18.1)	DU	66.00	792	66.00	792	66.00	792	66.00	792
	43. Elem/Middle School (17.0)	STU	--	--	--	--	--	--	506.00	506
	45. Park (16.0)	ACRE	2.10	15	2.10	15	2.10	15	2.10	15
	SUB-TOTAL			807		807		807		1,313
54	2. Res - Low (18.1)	DU	443.00	5,316	443.00	5,316	443.00	5,316	443.00	5,316
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	1.00	12
	45. Park (16.0)	ACRE	3.10	22	3.10	22	3.10	22	3.10	22
	53. Public Utilities (5.0)	ACRE	0.74	2	0.74	2	0.74	2	0.74	2
	SUB-TOTAL			5,352		5,352		5,352		5,352
55	2. Res - Low (18.1)	DU	107.00	1,284	107.00	1,284	111.00	1,332	122.00	1,464
	45. Park (16.0)	ACRE	--	--	--	--	--	--	10.00	70
	SUB-TOTAL			1,284		1,284		1,332		1,534
56	2. Res - Low (18.1)	DU	83.00	996	83.00	996	89.00	1,068	110.00	1,320
	3. Res - Low/Medium (18.2)	DU	5.00	60	5.00	60	5.00	60	--	--
	43. Elem/Middle School (17.0)	STU	560.00	560	560.00	560	560.00	560	750.00	750
	53. Public Utilities (5.0)	ACRE	0.50	1	0.50	1	0.50	1	0.50	1
	SUB-TOTAL			1,617		1,617		1,689		2,071
57	2. Res - Low (18.1)	DU	88.00	1,056	88.00	1,056	88.00	1,056	90.00	1,080
	3. Res - Low/Medium (18.2)	DU	--	--	--	--	4.00	48	14.00	168
	12. General Commercial	TSF	--	--	--	--	--	--	37.03	2,592
	41. Church (13.0)	TSF	13.08	101	13.08	101	13.08	101	13.08	101
	43. Elem/Middle School (17.0)	STU	276.00	276	276.00	276	276.00	276	276.00	276
	SUB-TOTAL			1,433		1,433		1,481		4,217
58	2. Res - Low (18.1)	DU	81.00	972	90.00	1,080	91.00	1,092	97.00	1,164
	3. Res - Low/Medium (18.2)	DU	2.00	24	2.00	24	2.00	24	--	--
	SUB-TOTAL			996		1,104		1,116		1,164
59	2. Res - Low (18.1)	DU	85.00	1,020	85.00	1,020	85.00	1,020	87.00	1,044
	3. Res - Low/Medium (18.2)	DU	37.00	444	37.00	444	37.00	444	37.00	444
	12. General Commercial	TSF	--	--	--	--	--	--	141.57	9,910
	26. General Office (14.0)	TSF	--	--	--	--	--	--	76.23	938
	28. Government Office (15.0)	TSF	18.59	558	18.59	558	18.59	558	--	--
	52. Fire/Police Stat. (27.0)	TSF	6.00	90	6.00	90	6.00	90	--	--
	53. Public Utilities (5.0)	ACRE	25.00	66	25.00	66	25.00	66	--	--
	SUB-TOTAL			2,178		2,178		2,178		12,336
60	2. Res - Low (18.1)	DU	143.00	1,716	143.00	1,716	155.00	1,860	191.00	2,292
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	1.00	12
	5. Res - Medium/High (19.2)	DU	86.00	602	86.00	602	86.00	602	86.00	602
	6. Res - High (19.3)	DU	48.00	336	48.00	336	48.00	336	48.00	336
	7. Apartment (19.4)	DU	27.00	189	27.00	189	27.00	189	27.00	189
	SUB-TOTAL			2,855		2,855		2,999		3,431
61	2. Res - Low (18.1)	DU	50.00	600	50.00	600	53.00	636	66.00	792
	3. Res - Low/Medium (18.2)	DU	4.00	48	4.00	48	4.00	48	--	--

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
61	45. Park (16.0)	ACRE	--	--	--	--	--	--	15.00	105
	SUB-TOTAL			648		648		684		897
62	2. Res - Low (18.1)	DU	16.00	192	16.00	192	18.00	216	24.00	288
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	--	--
	SUB-TOTAL			204		204		228		288
63	2. Res - Low (18.1)	DU	267.00	3,204	267.00	3,204	267.00	3,204	268.00	3,216
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	--	--
	SUB-TOTAL			3,216		3,216		3,216		3,216
64	2. Res - Low (18.1)	DU	42.00	504	42.00	504	43.00	516	45.00	540
	SUB-TOTAL			504		504		516		540
65	2. Res - Low (18.1)	DU	286.00	3,432	286.00	3,432	286.00	3,432	286.00	3,432
	SUB-TOTAL			3,432		3,432		3,432		3,432
66	2. Res - Low (18.1)	DU	128.00	1,536	129.00	1,548	129.00	1,548	112.00	1,344
	3. Res - Low/Medium (18.2)	DU	173.00	2,076	173.00	2,076	175.00	2,100	196.00	2,352
	41. Church (13.0)	TSF	6.84	53	6.84	53	6.84	53	5.40	42
	43. Elem/Middle School (17.0)	STU	150.00	150	150.00	150	150.00	150	150.00	150
	SUB-TOTAL			3,815		3,827		3,851		3,888
67	12. General Commercial	TSF	--	--	--	--	--	--	100.42	7,029
	13. Strip Commercial (6.1)	TSF	14.10	494	14.10	494	14.10	494	--	--
	17. Fast Food Restaurant(6.5)	TSF	4.57	1,444	4.57	1,444	4.57	1,444	--	--
	19. Quality Rest./Bar (6.7)	TSF	9.24	884	9.24	884	9.24	884	--	--
	26. General Office (14.0)	TSF	0.84	10	0.84	10	0.84	10	59.09	727
	32. Serv Stat (Gas) (8.0)	STAT	3.00	2,244	3.00	2,244	3.00	2,244	--	--
	37. Auto Repair (11.0)	TSF	13.81	829	13.81	829	13.81	829	--	--
	38. Motel (12.0)	ROOM	51.00	520	51.00	520	51.00	520	--	--
	56. Vacant (0.0)	ACRE	0.42	0	0.42	0	0.42	0	--	--
	57. Lt. Manuf. Contract (2.1)	TSF	2.79	19	2.79	19	2.79	19	--	--
	SUB-TOTAL			6,444		6,444		6,444		7,756
68	2. Res - Low (18.1)	DU	1.00	12	1.00	12	1.00	12	--	--
	3. Res - Low/Medium (18.2)	DU	67.00	804	67.00	804	67.00	804	66.00	792
	4. Res - Medium (19.1)	DU	--	--	--	--	22.00	264	87.00	1,044
	6. Res - High (19.3)	DU	12.00	84	12.00	84	12.00	84	12.00	84
	12. General Commercial	TSF	--	--	--	--	--	--	18.46	1,292
	26. General Office (14.0)	TSF	--	--	--	--	--	--	11.82	145
	SUB-TOTAL			900		900		1,164		3,357
69	7. Apartment (19.4)	DU	2.00	14	2.00	14	2.00	14	2.00	14
	13. Strip Commercial (6.1)	TSF	63.03	2,206	63.03	2,206	63.03	2,206	63.03	2,206
	14. Neighborhood Comm. (6.2)	TSF	16.86	1,180	16.86	1,180	16.86	1,180	16.86	1,180
	17. Fast Food Restaurant(6.5)	TSF	2.29	724	2.29	724	2.29	724	2.29	724
	18. Family Restaurant (6.6)	TSF	5.86	1,177	5.86	1,177	5.86	1,177	5.86	1,177
	19. Quality Rest./Bar (6.7)	TSF	3.38	323	3.38	323	3.38	323	3.38	323
	26. General Office (14.0)	TSF	8.52	105	8.52	105	8.52	105	8.52	105

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
69	27. Medical Office (14.1)	TSF	1.00	34	1.00	34	1.00	34	1.00	34
	32. Serv Stat (Gas) (8.0)	STAT	2.00	1,496	2.00	1,496	2.00	1,496	2.00	1,496
	37. Auto Repair (11.0)	TSF	17.22	1,033	17.22	1,033	17.22	1,033	17.22	1,033
	38. Motel (12.0)	ROOM	32.00	326	32.00	326	32.00	326	32.00	326
	SUB-TOTAL			8,618		8,618		8,618		8,618
70	4. Res - Medium (19.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	6. Res - High (19.3)	DU	81.00	567	81.00	567	82.00	574	89.00	623
	SUB-TOTAL			615		615		622		623
71	2. Res - Low (18.1)	DU	1.00	12	1.00	12	1.00	12	--	--
	3. Res - Low/Medium (18.2)	DU	102.00	1,224	102.00	1,224	105.00	1,260	114.00	1,368
	SUB-TOTAL			1,236		1,236		1,272		1,368
72	2. Res - Low (18.1)	DU	17.00	204	17.00	204	17.00	204	--	--
	3. Res - Low/Medium (18.2)	DU	251.00	3,012	251.00	3,012	251.00	3,012	266.00	3,192
	4. Res - Medium (19.1)	DU	12.00	144	15.00	180	15.00	180	--	--
	5. Res - Medium/High (19.2)	DU	118.00	826	118.00	826	126.00	882	166.00	1,162
	SUB-TOTAL			4,186		4,222		4,278		4,354
73	3. Res - Low/Medium (18.2)	DU	9.00	108	9.00	108	9.00	108	9.00	108
	7. Apartment (19.4)	DU	4.00	28	4.00	28	4.00	28	4.00	28
	13. Strip Commercial (6.1)	TSF	28.08	983	28.08	983	28.08	983	28.08	983
	17. Fast Food Restaurant(6.5)	TSF	4.00	1,264	4.00	1,264	4.00	1,264	4.00	1,264
	18. Family Restaurant (6.6)	TSF	2.60	522	2.60	522	2.60	522	2.60	522
	19. Quality Rest./Bar (6.7)	TSF	1.16	111	1.16	111	1.16	111	1.16	111
	26. General Office (14.0)	TSF	12.19	150	12.19	150	12.19	150	12.19	150
	27. Medical Office (14.1)	TSF	2.40	82	2.40	82	2.40	82	2.40	82
	37. Auto Repair (11.0)	TSF	1.12	67	1.12	67	1.12	67	1.12	67
	38. Motel (12.0)	ROOM	48.00	489	48.00	489	48.00	489	48.00	489
	41. Church (13.0)	TSF	6.69	52	6.69	52	6.69	52	6.69	52
	43. Elem/Middle School (17.0)	STU	22.00	22	22.00	22	22.00	22	22.00	22
	56. Vacant (0.0)	ACRE	0.92	0	0.92	0	0.92	0	0.92	0
	SUB-TOTAL			3,878		3,878		3,878		3,878
74	2. Res - Low (18.1)	DU	1.00	12	1.00	12	1.00	12	1.00	12
	7. Apartment (19.4)	DU	3.00	21	--	--	--	--	--	--
	14. Neighborhood Comm. (6.2)	TSF	42.43	2,970	34.39	2,407	34.39	2,407	34.39	2,407
	18. Family Restaurant (6.6)	TSF	3.36	675	3.36	675	3.36	675	3.36	675
	20. Light Industrial (2.0)	TSF	2.91	20	2.91	20	2.91	20	2.91	20
	22. R&D/Bus Park (50-50)(2.2)	TSF	2.33	26	2.33	26	2.33	26	2.33	26
	23. Storage (2.3)	TSF	8.86	23	8.86	23	8.86	23	8.86	23
	25. Heavy Industrial (3.0)	TSF	7.49	52	10.18	71	10.18	71	10.18	71
	32. Serv Stat (Gas) (8.0)	STAT	3.00	2,244	1.00	748	1.00	748	1.00	748
	37. Auto Repair (11.0)	TSF	6.56	394	14.17	850	14.17	850	14.17	850
	56. Vacant (0.0)	ACRE	0.88	0	0.88	0	0.88	0	0.88	0
	57. Lt. Manuf. Contract (2.1)	TSF	29.36	205	12.40	86	12.40	86	12.40	86
	SUB-TOTAL			6,642		4,918		4,918		4,918
75	7. Apartment (19.4)	DU	10.00	70	--	--	--	--	--	--

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
75	13. Strip Commercial (6.1)	TSF	8.42	295	8.47	296	8.47	296	8.47	296
	15. District Commercial (6.3)	TSF	98.80	6,916	113.68	7,958	113.68	7,958	113.68	7,958
	17. Fast Food Restaurant(6.5)	TSF	0.74	234	0.65	205	0.65	205	0.65	205
	19. Quality Rest./Bar (6.7)	TSF	3.00	287	--	--	--	--	--	--
	20. Light Industrial (2.0)	TSF	15.44	108	15.44	108	15.44	108	15.44	108
	25. Heavy Industrial (3.0)	TSF	13.37	93	13.37	93	13.37	93	13.37	93
	28. Government Office (15.0)	TSF	72.75	2,183	21.69	651	21.69	651	21.69	651
	31. Banks/Saving & Loan (7.0)	TSF	6.62	1,927	19.10	5,560	19.10	5,560	19.10	5,560
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	1.00	748
	37. Auto Repair (11.0)	TSF	35.11	2,107	35.11	2,107	35.11	2,107	35.11	2,107
	38. Motel (12.0)	ROOM	110.00	1,121	110.00	1,121	110.00	1,121	110.00	1,121
	56. Vacant (0.0)	ACRE	0.61	0	0.61	0	0.61	0	0.61	0
	57. Lt. Manuf. Contract (2.1)	TSF	34.85	243	34.85	243	34.85	243	34.85	243
	SUB-TOTAL			16,332		19,090		19,090		19,090
76	2. Res - Low (18.1)	DU	11.00	132	11.00	132	11.00	132	--	--
	3. Res - Low/Medium (18.2)	DU	157.00	1,884	157.00	1,884	163.00	1,956	193.00	2,316
	5. Res - Medium/High (19.2)	DU	8.00	56	8.00	56	10.00	70	14.00	98
	45. Park (16.0)	ACRE	11.00	77	11.00	77	11.00	77	11.00	77
	SUB-TOTAL			2,149		2,149		2,235		2,491
77	2. Res - Low (18.1)	DU	3.00	36	2.00	24	2.00	24	2.00	24
	7. Apartment (19.4)	DU	19.00	133	4.00	28	4.00	28	4.00	28
	13. Strip Commercial (6.1)	TSF	24.57	860	31.26	1,094	31.26	1,094	33.26	1,164
	22. R&D/Bus Park (50-50)(2.2)	TSF	12.76	140	13.78	152	13.78	152	15.78	174
	23. Storage (2.3)	TSF	53.89	140	72.00	187	72.00	187	72.00	187
	25. Heavy Industrial (3.0)	TSF	33.65	235	18.22	127	18.22	127	18.22	127
	26. General Office (14.0)	TSF	3.95	49	3.95	49	3.95	49	3.95	49
	37. Auto Repair (11.0)	TSF	16.61	997	24.95	1,497	24.95	1,497	24.95	1,497
	38. Motel (12.0)	ROOM	31.00	316	42.00	428	42.00	428	42.00	428
	53. Public Utilities (5.0)	ACRE	19.00	50	19.00	50	19.00	50	19.00	50
	57. Lt. Manuf. Contract (2.1)	TSF	64.81	452	54.96	383	54.96	383	58.14	405
	SUB-TOTAL			3,408		4,019		4,019		4,133
78	2. Res - Low (18.1)	DU	4.00	48	4.00	48	4.00	48	4.00	48
	8. Mobile Home (20.0)	DU	90.00	433	90.00	433	90.00	433	90.00	433
	105. Train Station	PKSP	45.00	90	45.00	90	45.00	90	45.00	90
	SUB-TOTAL			571		571		571		571
79	2. Res - Low (18.1)	DU	--	--	--	--	7.00	84	27.00	324
	7. Apartment (19.4)	DU	17.00	119	6.00	42	6.00	42	6.00	42
	13. Strip Commercial (6.1)	TSF	63.83	2,234	95.35	3,337	95.35	3,337	95.35	3,337
	17. Fast Food Restaurant(6.5)	TSF	20.03	6,331	5.01	1,584	5.01	1,584	5.01	1,584
	18. Family Restaurant (6.6)	TSF	7.91	1,589	6.40	1,286	6.40	1,286	6.40	1,286
	19. Quality Rest./Bar (6.7)	TSF	10.95	1,047	--	--	--	--	--	--
	23. Storage (2.3)	TSF	3.03	8	3.03	8	3.03	8	3.03	8
	26. General Office (14.0)	TSF	18.48	227	35.00	431	35.00	431	45.00	554
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	1.00	748
	36. Auto Sales - Used (10.0)	ACRE	0.48	72	0.48	72	0.48	72	0.48	72
	37. Auto Repair (11.0)	TSF	5.70	342	7.38	443	7.38	443	7.38	443

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
79	38. Motel (12.0)	ROOM	51.00	520	44.00	448	44.00	448	44.00	448
	48. Theater (23.0)	SEAT	950.00	1,672	950.00	1,672	950.00	1,672	950.00	1,672
	49. Club/Organization (24.0)	TSF	14.08	224	14.08	224	14.08	224	14.08	224
	51. Banquet Hall (26.0)	TSF	16.28	0	16.28	0	16.28	0	16.28	0
	56. Vacant (0.0)	ACRE	1.83	0	1.83	0	1.83	0	1.83	0
	57. Lt. Manuf. Contract (2.1)	TSF	6.49	45	13.54	94	13.54	94	13.54	94
	SUB-TOTAL			15,178		10,389		10,473		10,836
80	3. Res - Low/Medium (18.2)	DU	10.00	120	10.00	120	10.00	120	--	--
	5. Res - Medium/High (19.2)	DU	212.00	1,484	212.00	1,484	228.00	1,596	284.00	1,988
	26. General Office (14.0)	TSF	1.73	21	1.73	21	1.73	21	--	--
	41. Church (13.0)	TSF	21.50	166	21.50	166	21.50	166	--	--
	43. Elem/Middle School (17.0)	STU	30.00	30	30.00	30	30.00	30	--	--
	SUB-TOTAL			1,821		1,821		1,933		1,988
81	2. Res - Low (18.1)	DU	2.00	24	2.00	24	2.00	24	2.00	24
	3. Res - Low/Medium (18.2)	DU	6.00	72	6.00	72	6.00	72	6.00	72
	7. Apartment (19.4)	DU	65.00	455	65.00	455	65.00	455	65.00	455
	13. Strip Commercial (6.1)	TSF	113.97	3,989	119.55	4,184	119.55	4,184	119.55	4,184
	18. Family Restaurant (6.6)	TSF	5.92	1,189	5.92	1,189	5.92	1,189	5.92	1,189
	26. General Office (14.0)	TSF	20.75	255	20.75	255	20.75	255	20.75	255
	27. Medical Office (14.1)	TSF	7.04	241	7.04	241	7.04	241	7.04	241
	28. Government Office (15.0)	TSF	5.58	167	--	--	--	--	--	--
	31. Banks/Saving & Loan (7.0)	TSF	23.56	6,859	23.56	6,859	23.56	6,859	23.56	6,859
	35. Auto Sales - New (9.0)	ACRE	1.34	201	1.34	201	1.34	201	1.34	201
	36. Auto Sales - Used (10.0)	ACRE	0.18	27	0.18	27	0.18	27	0.18	27
	37. Auto Repair (11.0)	TSF	8.00	480	8.00	480	8.00	480	8.00	480
	41. Church (13.0)	TSF	1.80	14	1.80	14	1.80	14	1.80	14
	43. Elem/Middle School (17.0)	STU	30.00	30	30.00	30	30.00	30	30.00	30
	55. Transport. Services (4.0)	ACRE	0.23	63	0.23	63	0.23	63	0.23	63
	56. Vacant (0.0)	ACRE	3.63	0	3.63	0	3.63	0	3.63	0
	SUB-TOTAL			14,066		14,094		14,094		14,094
82	6. Res - High (19.3)	DU	--	--	--	--	7.00	49	46.00	322
	7. Apartment (19.4)	DU	17.00	119	17.00	119	17.00	119	--	--
	12. General Commercial	TSF	--	--	--	--	--	--	244.25	17,098
	13. Strip Commercial (6.1)	TSF	82.50	2,888	82.50	2,888	82.50	2,888	--	--
	17. Fast Food Restaurant(6.5)	TSF	2.81	888	2.81	888	2.81	888	--	--
	19. Quality Rest./Bar (6.7)	TSF	22.79	2,179	22.79	2,179	22.79	2,179	--	--
	26. General Office (14.0)	TSF	62.47	768	62.47	768	62.47	768	93.18	1,146
	27. Medical Office (14.1)	TSF	8.29	283	8.29	283	8.29	283	--	--
	32. Serv Stat (Gas) (8.0)	STAT	1.00	748	1.00	748	1.00	748	--	--
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	46.00	400
	41. Church (13.0)	TSF	52.10	401	52.10	401	52.10	401	--	--
	SUB-TOTAL			8,274		8,274		8,323		18,966
83	2. Res - Low (18.1)	DU	8.00	96	8.00	96	8.00	96	8.00	96
	3. Res - Low/Medium (18.2)	DU	44.00	528	44.00	528	44.00	528	44.00	528
	5. Res - Medium/High (19.2)	DU	305.00	2,135	305.00	2,135	325.00	2,275	383.00	2,681
	6. Res - High (19.3)	DU	92.00	644	92.00	644	106.00	742	149.00	1,043

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
83	13. Strip Commercial (6.1)	TSF	33.50	1,173	33.50	1,173	33.50	1,173	--	--
	SUB-TOTAL			4,576		4,576		4,814		4,348
84	2. Res - Low (18.1)	DU	--	--	2.00	24	2.00	24	--	--
	3. Res - Low/Medium (18.2)	DU	12.00	144	12.00	144	12.00	144	--	--
	5. Res - Medium/High (19.2)	DU	269.00	1,883	269.00	1,883	288.00	2,016	359.00	2,513
	45. Park (16.0)	ACRE	3.62	25	3.62	25	3.62	25	3.62	25
	SUB-TOTAL			2,052		2,076		2,209		2,538
85	2. Res - Low (18.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	3. Res - Low/Medium (18.2)	DU	12.00	144	12.00	144	12.00	144	--	--
	4. Res - Medium (19.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	5. Res - Medium/High (19.2)	DU	354.00	2,478	354.00	2,478	374.00	2,618	452.00	3,164
	SUB-TOTAL			2,718		2,718		2,858		3,164
86	2. Res - Low (18.1)	DU	2.00	24	2.00	24	2.00	24	--	--
	3. Res - Low/Medium (18.2)	DU	2.00	24	2.00	24	2.00	24	--	--
	4. Res - Medium (19.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	5. Res - Medium/High (19.2)	DU	413.00	2,891	413.00	2,891	436.00	3,052	513.00	3,591
	41. Church (13.0)	TSF	8.68	67	8.68	67	8.68	67	--	--
	43. Elem/Middle School (17.0)	STU	676.00	676	676.00	676	676.00	676	750.00	750
	SUB-TOTAL			3,730		3,730		3,891		4,341
87	2. Res - Low (18.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	3. Res - Low/Medium (18.2)	DU	2.00	24	2.00	24	2.00	24	--	--
	4. Res - Medium (19.1)	DU	3.00	36	9.00	108	9.00	108	--	--
	5. Res - Medium/High (19.2)	DU	413.00	2,891	413.00	2,891	457.00	3,199	603.00	4,221
	54. Beach Parking (22.0)	SPC	25.00	100	25.00	100	25.00	100	25.00	100
	SUB-TOTAL			3,099		3,171		3,479		4,321
88	3. Res - Low/Medium (18.2)	DU	4.00	48	4.00	48	4.00	48	--	--
	4. Res - Medium (19.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	5. Res - Medium/High (19.2)	DU	344.00	2,408	344.00	2,408	365.00	2,555	437.00	3,059
	28. Government Office (15.0)	TSF	30.00	900	30.00	900	30.00	900	30.00	900
	SUB-TOTAL			3,404		3,404		3,551		3,959
89	3. Res - Low/Medium (18.2)	DU	32.00	384	32.00	384	32.00	384	--	--
	5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	25.00	175
	6. Res - High (19.3)	DU	--	--	--	--	--	--	175.00	1,225
	7. Apartment (19.4)	DU	182.00	1,274	182.00	1,274	182.00	1,274	--	--
	12. General Commercial	TSF	--	--	--	--	--	--	442.69	30,988
	13. Strip Commercial (6.1)	TSF	52.44	1,835	52.44	1,835	52.44	1,835	--	--
	15. District Commercial (6.3)	TSF	136.97	9,588	136.97	9,588	136.97	9,588	--	--
	17. Fast Food Restaurant(6.5)	TSF	9.36	2,958	9.36	2,958	9.36	2,958	--	--
	19. Quality Rest./Bar (6.7)	TSF	5.55	531	5.55	531	5.55	531	--	--
	26. General Office (14.0)	TSF	76.37	939	76.37	939	76.37	939	139.50	1,716
	27. Medical Office (14.1)	TSF	43.54	1,488	43.54	1,488	43.54	1,488	--	--
	28. Government Office (15.0)	TSF	3.50	105	3.50	105	3.50	105	--	--
	31. Banks/Saving & Loan (7.0)	TSF	2.00	582	2.00	582	2.00	582	--	--
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	100.00	870

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
89	41. Church (13.0)	TSF	7.20	55	7.20	55	7.20	55	7.20	55
	43. Elem/Middle School (17.0)	STU	108.00	108	108.00	108	108.00	108	--	--
	48. Theater (23.0)	SEAT	59.00	104	59.00	104	59.00	104	--	--
	56. Vacant (0.0)	ACRE	0.92	0	0.92	0	0.92	0	--	--
	SUB-TOTAL			19,951		19,951		19,951		35,029
90	6. Res - High (19.3)	DU	--	--	--	--	6.00	42	31.00	217
	7. Apartment (19.4)	DU	7.00	49	7.00	49	7.00	49	--	--
	12. General Commercial	TSF	--	--	--	--	--	--	269.54	18,868
	13. Strip Commercial (6.1)	TSF	103.11	3,609	103.11	3,609	103.11	3,609	--	--
	14. Neighborhood Comm. (6.2)	TSF	26.18	1,833	26.18	1,833	26.18	1,833	--	--
	17. Fast Food Restaurant(6.5)	TSF	4.02	1,271	4.02	1,271	4.02	1,271	--	--
	18. Family Restaurant (6.6)	TSF	2.00	402	2.00	402	2.00	402	--	--
	19. Quality Rest./Bar (6.7)	TSF	13.42	1,283	13.42	1,283	13.42	1,283	--	--
	26. General Office (14.0)	TSF	16.88	208	16.88	208	16.88	208	122.77	1,510
	31. Banks/Saving & Loan (7.0)	TSF	4.70	1,368	4.70	1,368	4.70	1,368	--	--
	32. Serv Stat (Gas) (8.0)	STAT	3.00	2,244	3.00	2,244	3.00	2,244	--	--
	37. Auto Repair (11.0)	TSF	11.82	709	11.82	709	11.82	709	--	--
	38. Motel (12.0)	ROOM	18.00	183	18.00	183	18.00	183	--	--
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	26.00	226
	50. Mortuary (25.0)	TSF	4.96	61	4.96	61	4.96	61	--	--
	56. Vacant (0.0)	ACRE	0.11	0	0.11	0	0.11	0	--	--
	SUB-TOTAL			13,220		13,220		13,262		20,821
91	3. Res - Low/Medium (18.2)	DU	6.00	72	6.00	72	6.00	72	--	--
	5. Res - Medium/High (19.2)	DU	224.00	1,568	224.00	1,568	232.00	1,624	263.00	1,841
	SUB-TOTAL			1,640		1,640		1,696		1,841
92	3. Res - Low/Medium (18.2)	DU	11.00	132	11.00	132	11.00	132	11.00	132
	4. Res - Medium (19.1)	DU	3.00	36	3.00	36	3.00	36	3.00	36
	5. Res - Medium/High (19.2)	DU	319.00	2,233	319.00	2,233	319.00	2,233	319.00	2,233
	12. General Commercial	TSF	4.33	303	4.33	303	4.33	303	4.33	303
	SUB-TOTAL			2,704		2,704		2,704		2,704
93	3. Res - Low/Medium (18.2)	DU	8.00	96	8.00	96	8.00	96	--	--
	5. Res - Medium/High (19.2)	DU	274.00	1,918	274.00	1,918	289.00	2,023	343.00	2,401
	SUB-TOTAL			2,014		2,014		2,119		2,401
94	3. Res - Low/Medium (18.2)	DU	167.00	2,004	167.00	2,004	169.00	2,028	176.00	2,112
	SUB-TOTAL			2,004		2,004		2,028		2,112
95	3. Res - Low/Medium (18.2)	DU	11.00	132	11.00	132	11.00	132	--	--
	4. Res - Medium (19.1)	DU	6.00	72	6.00	72	6.00	72	--	--
	5. Res - Medium/High (19.2)	DU	232.00	1,624	232.00	1,624	244.00	1,708	291.00	2,037
	6. Res - High (19.3)	DU	143.00	1,001	143.00	1,001	150.00	1,050	178.00	1,246
	SUB-TOTAL			2,829		2,829		2,962		3,283
96	6. Res - High (19.3)	DU	196.00	1,372	196.00	1,372	305.00	2,135	634.00	4,438
	7. Apartment (19.4)	DU	4.00	28	4.00	28	4.00	28	--	--
	18. Family Restaurant (6.6)	TSF	--	--	--	--	--	--	15.00	3,014

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
96	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	150.00	1,305
	45. Park (16.0)	ACRE	3.75	26	3.75	26	3.75	26	--	--
	51. Banquet Hall (26.0)	TSF	15.00	0	15.00	0	15.00	0	--	--
	54. Beach Parking (22.0)	SPC	65.00	260	65.00	260	65.00	260	--	--
	SUB-TOTAL			1,686		1,686		2,449		8,757
97	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	--	--
	5. Res - Medium/High (19.2)	DU	22.00	154	22.00	154	23.00	161	26.00	182
	6. Res - High (19.3)	DU	298.00	2,086	298.00	2,086	308.00	2,156	337.00	2,359
	12. General Commercial	TSF	--	--	--	--	--	--	180.99	12,669
	15. District Commercial (6.3)	TSF	5.90	413	5.90	413	5.90	413	--	--
	17. Fast Food Restaurant(6.5)	TSF	10.57	3,341	10.57	3,341	10.57	3,341	--	--
	19. Quality Rest./Bar (6.7)	TSF	3.00	287	3.00	287	3.00	287	--	--
	26. General Office (14.0)	TSF	5.10	63	5.10	63	5.10	63	26.14	322
	38. Motel (12.0)	ROOM	71.00	723	71.00	723	71.00	723	--	--
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	225.00	1,958
	45. Park (16.0)	ACRE	0.08	1	0.08	1	0.08	1	--	--
	54. Beach Parking (22.0)	SPC	133.00	532	133.00	532	133.00	532	133.00	532
	56. Vacant (0.0)	ACRE	0.15	0	0.15	0	0.15	0	--	--
	SUB-TOTAL			7,612		7,612		7,689		18,022
98	2. Res - Low (18.1)	DU	1.00	12	1.00	12	1.00	12	--	--
	3. Res - Low/Medium (18.2)	DU	99.00	1,188	99.00	1,188	102.00	1,224	112.00	1,344
	SUB-TOTAL			1,200		1,200		1,236		1,344
99	3. Res - Low/Medium (18.2)	DU	114.00	1,368	114.00	1,368	116.00	1,392	121.00	1,452
	SUB-TOTAL			1,368		1,368		1,392		1,452
100	2. Res - Low (18.1)	DU	163.00	1,956	163.00	1,956	163.00	1,956	--	--
	3. Res - Low/Medium (18.2)	DU	--	--	--	--	6.00	72	194.00	2,328
	5. Res - Medium/High (19.2)	DU	2.00	14	2.00	14	2.00	14	--	--
	6. Res - High (19.3)	DU	6.00	42	6.00	42	6.00	42	--	--
	SUB-TOTAL			2,012		2,012		2,084		2,328
101	13. Strip Commercial (6.1)	TSF	17.62	617	17.62	617	17.62	617	17.62	617
	17. Fast Food Restaurant(6.5)	TSF	10.32	3,262	10.32	3,262	10.32	3,262	10.32	3,262
	18. Family Restaurant (6.6)	TSF	2.30	462	2.30	462	2.30	462	2.30	462
	26. General Office (14.0)	TSF	4.18	51	4.18	51	4.18	51	4.18	51
	31. Banks/Saving & Loan (7.0)	TSF	2.12	617	2.12	617	2.12	617	2.12	617
	32. Serv Stat (Gas) (8.0)	STAT	2.00	1,496	2.00	1,496	2.00	1,496	2.00	1,496
	35. Auto Sales - New (9.0)	ACRE	0.43	65	0.43	65	0.43	65	0.43	65
	37. Auto Repair (11.0)	TSF	1.06	64	1.06	64	1.06	64	1.06	64
	SUB-TOTAL			6,634		6,634		6,634		6,634
102	2. Res - Low (18.1)	DU	4.00	48	4.00	48	4.00	48	--	--
	3. Res - Low/Medium (18.2)	DU	323.00	3,876	323.00	3,876	336.00	4,032	377.00	4,524
	54. Beach Parking (22.0)	SPC	10.00	40	10.00	40	10.00	40	10.00	40
	SUB-TOTAL			3,964		3,964		4,120		4,564
103	2. Res - Low (18.1)	DU	5.00	60	8.00	96	8.00	96	--	--

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
103	3. Res - Low/Medium (18.2)	DU	321.00	3,852	321.00	3,852	328.00	3,936	355.00	4,260
	SUB-TOTAL			3,912		3,948		4,032		4,260
104	2. Res - Low (18.1)	DU	7.00	84	8.00	96	8.00	96	7.00	84
	3. Res - Low/Medium (18.2)	DU	44.00	528	44.00	528	48.00	576	61.00	732
	SUB-TOTAL			612		624		672		816
105	2. Res - Low (18.1)	DU	51.00	612	51.00	612	55.00	660	67.00	804
	3. Res - Low/Medium (18.2)	DU	14.00	168	14.00	168	15.00	180	19.00	228
	SUB-TOTAL			780		780		840		1,032
106	2. Res - Low (18.1)	DU	3.00	36	4.00	48	4.00	48	--	--
	3. Res - Low/Medium (18.2)	DU	105.00	1,260	105.00	1,260	106.00	1,272	114.00	1,368
	54. Beach Parking (22.0)	SPC	10.00	40	10.00	40	10.00	40	10.00	40
	SUB-TOTAL			1,336		1,348		1,360		1,408
107	3. Res - Low/Medium (18.2)	DU	16.00	192	16.00	192	16.00	192	--	--
	4. Res - Medium (19.1)	DU	--	--	3.00	36	3.00	36	--	--
	5. Res - Medium/High (19.2)	DU	319.00	2,233	319.00	2,233	322.00	2,254	370.00	2,590
	7. Apartment (19.4)	DU	22.00	154	22.00	154	22.00	154	--	--
	12. General Commercial	TSF	--	--	--	--	--	--	99.32	6,952
	26. General Office (14.0)	TSF	--	--	--	--	--	--	24.83	305
	54. Beach Parking (22.0)	SPC	214.00	856	214.00	856	214.00	856	--	--
	SUB-TOTAL			3,435		3,471		3,492		9,847
108	54. Beach Parking (22.0)	SPC	473.00	1,892	473.00	1,892	473.00	1,892	473.00	1,892
	SUB-TOTAL			1,892		1,892		1,892		1,892
109	6. Res - High (19.3)	DU	22.00	154	22.00	154	22.00	154	22.00	154
	7. Apartment (19.4)	DU	130.00	910	130.00	910	130.00	910	130.00	910
	41. Church (13.0)	TSF	28.89	222	28.89	222	28.89	222	28.89	222
	43. Elem/Middle School (17.0)	STU	650.00	650	650.00	650	650.00	650	750.00	750
	SUB-TOTAL			1,936		1,936		1,936		2,036
110	2. Res - Low (18.1)	DU	181.00	2,172	182.00	2,184	185.00	2,220	212.00	2,544
	3. Res - Low/Medium (18.2)	DU	18.00	216	18.00	216	18.00	216	--	--
	SUB-TOTAL			2,388		2,400		2,436		2,544
111	2. Res - Low (18.1)	DU	108.00	1,296	109.00	1,308	124.00	1,488	170.00	2,040
	3. Res - Low/Medium (18.2)	DU	1.00	12	1.00	12	1.00	12	--	--
	SUB-TOTAL			1,308		1,320		1,500		2,040
112	2. Res - Low (18.1)	DU	4.00	48	4.00	48	6.00	72	16.00	192
	3. Res - Low/Medium (18.2)	DU	3.00	36	3.00	36	3.00	36	--	--
	SUB-TOTAL			84		84		108		192
113	3. Res - Low/Medium (18.2)	DU	66.00	792	66.00	792	66.00	792	66.00	792
	SUB-TOTAL			792		792		792		792
114	46. Golf Course (16.1)	ACRE	32.26	226	32.26	226	32.26	226	32.26	226
	SUB-TOTAL			226		226		226		226

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
115	56. Vacant (0.0)	ACRE	65.78	0	65.78	0	--	--	--	--
	62. Pageant Site	TSF	--	--	--	--	65.78	0	65.78	0
	SUB-TOTAL			--		--		--		--
116	2. Res - Low (18.1)	DU	2.00	24	4.00	48	22.00	264	22.00	264
	SUB-TOTAL			24		48		264		264
117	2. Res - Low (18.1)	DU	191.00	2,292	192.00	2,304	192.00	2,304	192.00	2,304
	SUB-TOTAL			2,292		2,304		2,304		2,304
118	2. Res - Low (18.1)	DU	--	--	--	--	85.00	1,020	85.00	1,020
	SUB-TOTAL			--		--		1,020		1,020
119	2. Res - Low (18.1)	DU	150.00	1,800	150.00	1,800	150.00	1,800	150.00	1,800
	SUB-TOTAL			1,800		1,800		1,800		1,800
120	2. Res - Low (18.1)	DU	289.00	3,468	289.00	3,468	289.00	3,468	289.00	3,468
	3. Res - Low/Medium (18.2)	DU	--	--	194.00	2,328	194.00	2,328	194.00	2,328
	5. Res - Medium/High (19.2)	DU	194.00	1,358	--	--	--	--	--	--
	SUB-TOTAL			4,826		5,796		5,796		5,796
121	2. Res - Low (18.1)	DU	388.00	4,656	388.00	4,656	388.00	4,656	388.00	4,656
	SUB-TOTAL			4,656		4,656		4,656		4,656
122	2. Res - Low (18.1)	DU	--	--	--	--	184.00	2,208	184.00	2,208
	SUB-TOTAL			--		--		2,208		2,208
123	2. Res - Low (18.1)	DU	--	--	--	--	270.00	3,240	270.00	3,240
	SUB-TOTAL			--		--		3,240		3,240
124	2. Res - Low (18.1)	DU	--	--	--	--	97.00	1,164	97.00	1,164
	SUB-TOTAL			--		--		1,164		1,164
125	2. Res - Low (18.1)	DU	29.00	348	38.00	456	50.00	600	50.00	600
	SUB-TOTAL			348		456		600		600
126	3. Res - Low/Medium (18.2)	DU	--	--	--	--	65.00	780	65.00	780
	SUB-TOTAL			--		--		780		780
127	3. Res - Low/Medium (18.2)	DU	--	--	--	--	91.00	1,092	91.00	1,092
	SUB-TOTAL			--		--		1,092		1,092
128	3. Res - Low/Medium (18.2)	DU	99.00	1,188	99.00	1,188	99.00	1,188	99.00	1,188
	SUB-TOTAL			1,188		1,188		1,188		1,188
129	2. Res - Low (18.1)	DU	81.00	972	81.00	972	81.00	972	81.00	972
	SUB-TOTAL			972		972		972		972
130	2. Res - Low (18.1)	DU	115.00	1,380	115.00	1,380	115.00	1,380	115.00	1,380
	SUB-TOTAL			1,380		1,380		1,380		1,380

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

			----- 1996 -----		--- 2000+MC ----		--- 2005+MC ----		----- BO+MC ----	
Zone	Land Use Category	Units	Amount	ADT	Amount	ADT	Amount	ADT	Amount	ADT
131	2. Res - Low (18.1)	DU	34.00	408	34.00	408	34.00	408	34.00	408
	43. Elem/Middle School (17.0)	STU	672.00	672	672.00	672	2,000.00	2,000	2,000.00	2,000
	45. Park (16.0)	ACRE	--	--	--	--	22.00	154	22.00	154
	SUB-TOTAL			1,080		1,080		2,562		2,562
132	2. Res - Low (18.1)	DU	--	--	--	--	95.00	1,140	95.00	1,140
	SUB-TOTAL			--		--		1,140		1,140
133	28. Government Office (15.0)	TSF	--	--	--	--	--	--	92.00	2,760
	65. Junior College	ACRE	--	--	--	--	--	--	132.00	10,560
	SUB-TOTAL			--		--		--		13,320
134	2. Res - Low (18.1)	DU	--	--	--	--	70.00	840	70.00	840
	SUB-TOTAL			--		--		840		840
135	2. Res - Low (18.1)	DU	94.00	1,128	94.00	1,128	94.00	1,128	94.00	1,128
	SUB-TOTAL			1,128		1,128		1,128		1,128
136	2. Res - Low (18.1)	DU	--	--	--	--	115.00	1,380	115.00	1,380
	SUB-TOTAL			--		--		1,380		1,380
137	12. General Commercial	TSF	--	--	--	--	--	--	92.00	6,440
	65. Junior College	ACRE	--	--	--	--	--	--	60.00	4,800
	SUB-TOTAL			--		--		--		11,240
138	2. Res - Low (18.1)	DU	--	--	--	--	121.00	1,452	121.00	1,452
	SUB-TOTAL			--		--		1,452		1,452
139	4. Res - Medium (19.1)	DU	--	--	246.00	2,952	246.00	2,952	246.00	2,952
	SUB-TOTAL			--		2,952		2,952		2,952
140	14. Neighborhood Comm. (6.2)	TSF	--	--	224.58	15,721	224.58	15,721	224.58	15,721
	17. Fast Food Restaurant(6.5)	TSF	--	--	13.71	4,333	13.71	4,333	13.71	4,333
	18. Family Restaurant (6.6)	TSF	--	--	4.50	904	4.50	904	4.50	904
	31. Banks/Saving & Loan (7.0)	TSF	--	--	10.00	2,911	10.00	2,911	10.00	2,911
	48. Theater (23.0)	SEAT	--	--	2,200.00	3,872	2,200.00	3,872	2,200.00	3,872
	100. Discount Store	TSF	--	--	136.45	9,569	136.45	9,569	136.45	9,569
	SUB-TOTAL			--		37,310		37,310		37,310
141	22. R&D/Bus Park (50-50)(2.2)	TSF	734.20	8,076	824.30	9,067	857.77	9,435	857.77	9,435
	26. General Office (14.0)	TSF	80.26	987	80.26	987	80.26	987	80.26	987
	52. Fire/Police Stat. (27.0)	TSF	8.60	129	8.60	129	20.90	314	20.90	314
	SUB-TOTAL			9,192		10,183		10,736		10,736
142	22. R&D/Bus Park (50-50)(2.2)	TSF	206.11	2,267	206.11	2,267	425.75	4,683	425.75	4,683
	SUB-TOTAL			2,267		2,267		4,683		4,683
143	22. R&D/Bus Park (50-50)(2.2)	TSF	339.65	3,736	339.65	3,736	387.35	4,261	387.35	4,261
	SUB-TOTAL			3,736		3,736		4,261		4,261

Zone	Land Use Category	Units	----- 1996 ----- Amount	ADT	--- 2000+MC ---- Amount	ADT	--- 2005+MC ---- Amount	ADT	----- BO+MC ---- Amount	ADT
144	22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	276.39	3,040	276.39	3,040
	SUB-TOTAL			--		--		3,040		3,040
145	22. R&D/Bus Park (50-50)(2.2)	TSF	171.19	1,883	196.15	2,158	212.77	2,340	212.77	2,340
	SUB-TOTAL			1,883		2,158		2,340		2,340
146	46. Golf Course (16.1)	ACRE	220.00	1,540	220.00	1,540	220.00	1,540	220.00	1,540
	SUB-TOTAL			1,540		1,540		1,540		1,540
147	22. R&D/Bus Park (50-50)(2.2)	TSF	266.11	2,927	270.37	2,974	393.18	4,325	393.18	4,325
	SUB-TOTAL			2,927		2,974		4,325		4,325
148	32. Serv Stat (Gas) (8.0)	STAT	--	--	1.00	748	1.00	748	1.00	748
	SUB-TOTAL			--		748		748		748
150	4. Res - Medium (19.1)	DU	464.00	5,568	464.00	5,568	464.00	5,568	464.00	5,568
	7. Apartment (19.4)	DU	250.00	1,750	250.00	1,750	250.00	1,750	250.00	1,750
	SUB-TOTAL			7,318		7,318		7,318		7,318
151	22. R&D/Bus Park (50-50)(2.2)	TSF	253.47	2,788	279.20	3,071	353.32	3,887	353.32	3,887
	SUB-TOTAL			2,788		3,071		3,887		3,887
152	25. Heavy Industrial (3.0)	TSF	--	--	--	--	285.86	1,992	285.86	1,992
	45. Park (16.0)	ACRE	43.42	304	--	--	--	--	--	--
	58. Sports Complex	ACRE	--	--	43.42	304	43.42	304	43.42	304
	SUB-TOTAL			304		304		2,296		2,296
153	49. Club/Organization (24.0)	TSF	--	--	11.75	187	11.75	187	11.75	187
	SUB-TOTAL			--		187		187		187
154	2. Res - Low (18.1)	DU	297.00	3,564	297.00	3,564	297.00	3,564	297.00	3,564
	SUB-TOTAL			3,564		3,564		3,564		3,564
155	2. Res - Low (18.1)	DU	204.00	2,448	204.00	2,448	204.00	2,448	204.00	2,448
	49. Club/Organization (24.0)	TSF	--	--	--	--	10.00	159	10.00	159
	SUB-TOTAL			2,448		2,448		2,607		2,607
156	2. Res - Low (18.1)	DU	149.00	1,788	243.00	2,916	259.00	3,108	259.00	3,108
	SUB-TOTAL			1,788		2,916		3,108		3,108
157	3. Res - Low/Medium (18.2)	DU	195.00	2,340	198.00	2,376	198.00	2,376	198.00	2,376
	4. Res - Medium (19.1)	DU	357.00	4,284	368.00	4,416	368.00	4,416	368.00	4,416
	43. Elem/Middle School (17.0)	STU	679.00	679	679.00	679	800.00	800	800.00	800
	45. Park (16.0)	ACRE	7.00	49	7.00	49	7.00	49	7.00	49
	SUB-TOTAL			7,352		7,520		7,641		7,641
158	2. Res - Low (18.1)	DU	130.00	1,560	130.00	1,560	130.00	1,560	130.00	1,560
	SUB-TOTAL			1,560		1,560		1,560		1,560
160	2. Res - Low (18.1)	DU	10.00	120	10.00	120	47.00	564	47.00	564
	SUB-TOTAL			120		120		564		564

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
163	2. Res - Low (18.1)	DU	--	--	--	--	--	--	167.00	2,004
	SUB-TOTAL			--		--		--		2,004
164	2. Res - Low (18.1)	DU	--	--	--	--	--	--	57.00	684
	SUB-TOTAL			--		--		--		684
166	2. Res - Low (18.1)	DU	--	--	--	--	--	--	420.00	5,040
	3. Res - Low/Medium (18.2)	DU	--	--	--	--	--	--	70.00	840
	SUB-TOTAL			--		--		--		5,880
167	46. Golf Course (16.1)	ACRE	--	--	--	--	--	--	160.80	1,126
	SUB-TOTAL			--		--		--		1,126
168	2. Res - Low (18.1)	DU	--	--	--	--	--	--	46.00	552
	45. Park (16.0)	ACRE	--	--	--	--	--	--	5.00	35
	SUB-TOTAL			--		--		--		587
169	2. Res - Low (18.1)	DU	--	--	--	--	--	--	19.00	228
	SUB-TOTAL			--		--		--		228
170	3. Res - Low/Medium (18.2)	DU	--	--	--	--	--	--	79.00	948
	SUB-TOTAL			--		--		--		948
171	12. General Commercial	TSF	--	--	--	--	--	--	33.00	2,310
	SUB-TOTAL			--		--		--		2,310
172	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	145.00	1,740
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	200.00	1,740
	SUB-TOTAL			--		--		--		3,480
173	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	66.00	792
	SUB-TOTAL			--		--		--		792
174	2. Res - Low (18.1)	DU	--	--	--	--	--	--	14.00	168
	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	59.00	708
	SUB-TOTAL			--		--		--		876
175	2. Res - Low (18.1)	DU	--	--	--	--	--	--	335.00	4,020
	SUB-TOTAL			--		--		--		4,020
176	3. Res - Low/Medium (18.2)	DU	--	--	--	--	250.00	3,000	--	--
	45. Park (16.0)	ACRE	--	--	--	--	--	--	16.00	112
	SUB-TOTAL			--		--		3,000		112
177	45. Park (16.0)	ACRE	--	--	--	--	--	--	16.50	116
	SUB-TOTAL			--		--		--		116
178	3. Res - Low/Medium (18.2)	DU	--	--	--	--	100.00	1,200	86.00	1,032
	SUB-TOTAL			--		--		1,200		1,032

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
179	3. Res - Low/Medium (18.2)	DU	--	--	--	--	100.00	1,200	73.00	876
	SUB-TOTAL			--		--		1,200		876
180	2. Res - Low (18.1)	DU	--	--	--	--	--	--	45.00	540
	3. Res - Low/Medium (18.2)	DU	--	--	--	--	100.00	1,200	96.00	1,152
	SUB-TOTAL			--		--		1,200		1,692
183	2. Res - Low (18.1)	DU	--	--	--	--	--	--	38.00	456
	SUB-TOTAL			--		--		--		456
184	3. Res - Low/Medium (18.2)	DU	--	--	--	--	--	--	20.00	240
	SUB-TOTAL			--		--		--		240
186	3. Res - Low/Medium (18.2)	DU	--	--	--	--	--	--	22.00	264
	SUB-TOTAL			--		--		--		264
188	22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	--	--	558.00	6,138
	SUB-TOTAL			--		--		--		6,138
190	22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	--	--	274.00	3,014
	SUB-TOTAL			--		--		--		3,014
191	5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	313.00	2,191
	SUB-TOTAL			--		--		--		2,191
192	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	28.00	336
	SUB-TOTAL			--		--		--		336
195	2. Res - Low (18.1)	DU	--	--	--	--	--	--	198.00	2,376
	45. Park (16.0)	ACRE	--	--	--	--	--	--	10.30	72
	SUB-TOTAL			--		--		--		2,448
197	3. Res - Low/Medium (18.2)	DU	--	--	--	--	250.00	3,000	94.00	1,128
	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	847.00	10,164
	SUB-TOTAL			--		--		3,000		11,292
198	63. Congregate Care	ROOM	--	--	--	--	--	--	100.00	215
	SUB-TOTAL			--		--		--		215
199	6. Res - High (19.3)	DU	--	--	--	--	--	--	251.00	1,757
	SUB-TOTAL			--		--		--		1,757
200	46. Golf Course (16.1)	ACRE	--	--	--	--	--	--	110.60	774
	SUB-TOTAL			--		--		--		774
201	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	57.00	684
	5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	124.00	868
	SUB-TOTAL			--		--		--		1,552
202	22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	180.00	1,980	179.00	1,969
	SUB-TOTAL			--		--		1,980		1,969

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	----- 1996 ----- Amount	ADT	--- 2000+MC ---- Amount	ADT	--- 2005+MC ---- Amount	ADT	----- BO+MC ---- Amount	ADT
203	12. General Commercial	TSF	--	--	--	--	--	--	60.00	4,200
	22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	50.00	550	707.00	7,777
	SUB-TOTAL			--		--		550		11,977
204	3. Res - Low/Medium (18.2)	DU	--	--	--	--	500.00	6,000	66.00	792
	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	149.00	1,788
	5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	58.00	406
	SUB-TOTAL			--		--		6,000		2,986
205	4. Res - Medium (19.1)	DU	--	--	--	--	--	--	111.00	1,332
	6. Res - High (19.3)	DU	--	--	--	--	--	--	247.00	1,729
	SUB-TOTAL			--		--		--		3,061
206	10. Single-Family Res.	DU	363.00	3,630	363.00	3,630	363.00	3,630	363.00	3,630
	11. Multi-Family Res.	DU	27.00	216	27.00	216	27.00	216	27.00	216
	29. Retail Employment	EMP	146.00	1,920	146.00	1,920	146.00	1,920	146.00	1,920
	SUB-TOTAL			5,766		5,766		5,766		5,766
207	10. Single-Family Res.	DU	432.00	4,320	432.00	4,320	432.00	4,320	432.00	4,320
	11. Multi-Family Res.	DU	402.00	3,216	402.00	3,216	402.00	3,216	402.00	3,216
	29. Retail Employment	EMP	31.00	408	31.00	408	31.00	408	31.00	408
	30. Total Employment	EMP	126.00	302	126.00	302	126.00	302	126.00	302
	SUB-TOTAL			8,246		8,246		8,246		8,246
208	10. Single-Family Res.	DU	432.00	4,320	432.00	4,320	432.00	4,320	432.00	4,320
	11. Multi-Family Res.	DU	402.00	3,216	402.00	3,216	402.00	3,216	402.00	3,216
	29. Retail Employment	EMP	31.00	408	31.00	408	31.00	408	31.00	408
	30. Total Employment	EMP	126.00	302	126.00	302	126.00	302	126.00	302
	SUB-TOTAL			8,246		8,246		8,246		8,246
209	10. Single-Family Res.	DU	215.00	2,150	215.00	2,150	215.00	2,150	215.00	2,150
	11. Multi-Family Res.	DU	322.00	2,576	322.00	2,576	322.00	2,576	322.00	2,576
	29. Retail Employment	EMP	61.00	802	61.00	802	61.00	802	61.00	802
	30. Total Employment	EMP	649.00	1,558	649.00	1,558	649.00	1,558	649.00	1,558
	SUB-TOTAL			7,086		7,086		7,086		7,086
210	10. Single-Family Res.	DU	364.00	3,640	364.00	3,640	364.00	3,640	364.00	3,640
	11. Multi-Family Res.	DU	28.00	224	28.00	224	28.00	224	28.00	224
	29. Retail Employment	EMP	147.00	1,933	147.00	1,933	147.00	1,933	147.00	1,933
	SUB-TOTAL			5,797		5,797		5,797		5,797

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
TOTAL	2. Res - Low (18.1)	DU	6,923.00	83,076	7,108.00	85,296	8,329.00	99,948	9,772.00	117,264
	3. Res - Low/Medium (18.2)	DU	2,915.00	34,980	3,549.00	42,588	5,059.00	60,708	4,598.00	55,176
	4. Res - Medium (19.1)	DU	2,739.00	32,868	3,060.00	36,720	3,082.00	36,984	4,560.00	54,720
	5. Res - Medium/High (19.2)	DU	4,280.00	29,960	4,084.00	28,588	4,296.00	30,072	5,599.00	39,193
	6. Res - High (19.3)	DU	898.00	6,286	898.00	6,286	1,052.00	7,364	2,219.00	15,533
	7. Apartment (19.4)	DU	759.00	5,313	720.00	5,040	720.00	5,040	488.00	3,416
	8. Mobile Home (20.0)	DU	217.00	1,044	217.00	1,044	217.00	1,044	217.00	1,044
	10. Single-Family Res.	DU	1,806.00	18,060	1,806.00	18,060	1,806.00	18,060	1,806.00	18,060
	11. Multi-Family Res.	DU	1,181.00	9,448	1,181.00	9,448	1,181.00	9,448	1,181.00	9,448
	12. General Commercial	TSF	4.33	303	4.33	303	4.33	303	1,810.87	126,760
	13. Strip Commercial (6.1)	TSF	627.53	21,965	721.43	25,251	721.43	25,251	437.78	15,322
	14. Neighborhood Comm. (6.2)	TSF	331.16	23,181	792.12	55,449	792.12	55,449	789.64	55,275
	15. District Commercial (6.3)	TSF	442.83	30,998	409.03	28,633	409.03	28,633	266.16	18,632
	17. Fast Food Restaurant(6.5)	TSF	71.65	22,646	76.25	24,099	76.25	24,099	44.92	14,197
	18. Family Restaurant (6.6)	TSF	34.33	6,896	36.64	7,360	36.64	7,360	49.64	9,972
	19. Quality Rest./Bar (6.7)	TSF	72.49	6,932	85.04	8,132	85.04	8,132	31.04	2,968
	20. Light Industrial (2.0)	TSF	18.35	128	18.35	128	18.35	128	18.35	128
	22. R&D/Bus Park (50-50)(2.2)	TSF	1,985.82	21,843	2,131.89	23,451	3,152.64	34,679	4,642.64	51,069
	23. Storage (2.3)	TSF	65.78	171	83.89	218	83.89	218	83.89	218
	25. Heavy Industrial (3.0)	TSF	54.51	380	41.77	291	327.63	2,283	327.63	2,283
	26. General Office (14.0)	TSF	337.16	4,146	355.15	4,368	355.15	4,368	788.90	9,704
	27. Medical Office (14.1)	TSF	310.66	10,615	244.52	8,355	244.52	8,355	192.69	6,584
	28. Government Office (15.0)	TSF	130.42	3,913	73.78	2,214	73.78	2,214	143.69	4,311
	29. Retail Employment	EMP	416.00	5,471	416.00	5,471	416.00	5,471	416.00	5,471
	30. Total Employment	EMP	901.00	2,162	901.00	2,162	901.00	2,162	901.00	2,162
	31. Banks/Saving & Loan (7.0)	TSF	45.67	13,295	61.48	17,897	61.48	17,897	54.78	15,947
	32. Serv Stat (Gas) (8.0)	STAT	21.00	15,708	19.00	14,212	19.00	14,212	12.00	8,976
	35. Auto Sales - New (9.0)	ACRE	1.77	266	1.77	266	1.77	266	1.77	266
	36. Auto Sales - Used (10.0)	ACRE	0.66	99	0.66	99	0.66	99	0.66	99
	37. Auto Repair (11.0)	TSF	117.01	7,022	137.54	8,253	137.54	8,253	111.91	6,715
	38. Motel (12.0)	ROOM	412.00	4,198	416.00	4,238	416.00	4,238	276.00	2,812
	39. Hotel (12.0)	ROOM	--	--	--	--	--	--	747.00	6,499
	40. Resort Hotel (12.0)	ROOM	--	--	--	--	--	--	250.00	4,600
	41. Church (13.0)	TSF	205.49	1,584	217.85	1,679	217.85	1,679	177.65	1,369
	42. Hospital (21.0)	BED	116.00	1,322	126.00	1,436	126.00	1,436	126.00	1,436
	43. Elem/Middle School (17.0)	STU	4,746.00	4,746	4,746.00	4,746	6,195.00	6,195	7,925.00	7,925
	44. High School (17.1)	STU	2,040.00	2,836	2,040.00	2,836	2,040.00	2,836	2,500.00	3,475
	45. Park (16.0)	ACRE	93.92	658	60.50	424	82.50	578	151.47	1,061
	46. Golf Course (16.1)	ACRE	388.26	2,718	388.26	2,718	388.26	2,718	659.66	4,618
	48. Theater (23.0)	SEAT	1,009.00	1,776	8,969.00	15,786	8,969.00	15,786	8,910.00	15,682
	49. Club/Organization (24.0)	TSF	14.08	224	25.83	411	35.83	570	35.83	570
	50. Mortuary (25.0)	TSF	4.96	61	4.96	61	4.96	61	--	--
	51. Banquet Hall (26.0)	TSF	31.28	0	31.28	0	31.28	0	16.28	0
	52. Fire/Police Stat. (27.0)	TSF	22.60	339	21.80	327	34.10	512	28.10	422
	53. Public Utilities (5.0)	ACRE	89.24	235	89.24	235	89.24	235	64.24	169
	54. Beach Parking (22.0)	SPC	1,033.00	4,132	1,033.00	4,132	1,033.00	4,132	754.00	3,016
	55. Transport. Services (4.0)	ACRE	0.23	63	0.23	63	0.23	63	0.23	63
	56. Vacant (0.0)	ACRE	547.04	0	555.84	0	490.06	0	479.17	0
	57. Lt. Manuf. Contract (2.1)	TSF	138.30	964	118.54	825	118.54	825	118.93	828
	58. Sports Complex	ACRE	--	--	43.42	304	43.42	304	43.42	304

SCTM LAND USE AND TRIP GENERATION SUMMARY (cont)

Zone	Land Use Category	Units	1996 Amount	1996 ADT	2000+MC Amount	2000+MC ADT	2005+MC Amount	2005+MC ADT	BO+MC Amount	BO+MC ADT
TOTAL	59. Adult Daycare	TSF	8.17	547	8.00	536	8.00	536	8.00	536
	62. Pageant Site	TSF	--	--	--	--	65.78	0	65.78	0
	63. Congregate Care	ROOM	--	--	--	--	--	--	100.00	215
	65. Junior College	ACRE	--	--	--	--	--	--	192.00	15,360
	66. Senior Assisted Living	BED	--	--	--	--	--	--	225.00	585
	100. Discount Store	TSF	--	--	282.25	19,794	282.25	19,794	282.25	19,794
	102. Regional Center (600)	TSF	--	--	96.00	3,489	96.00	3,489	96.00	3,489
	103. Day Care Facility	TSF	--	--	7.67	437	7.67	437	7.67	437
	104. Health Club	TSF	11.21	192	--	--	--	--	--	--
	105. Train Station	PKSP	45.00	90	45.00	90	45.00	90	45.00	90
	107. Outlet Center	TSF	--	--	307.70	8,182	307.70	8,182	307.70	8,182
	TOTAL			445,860		542,431		593,196		774,450

SCTM 1996 LAND USE AND TRIP GENERATION SUMMARY

Land Use Type	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	ADT
2. Res - Low (18.1)	6923.00 DU	2075	5537	7612	5537	3478	9015	83076
3. Res - Low/Medium (18.2)	2915.00 DU	876	2336	3212	2336	1471	3807	34980
4. Res - Medium (19.1)	2739.00 DU	822	2190	3012	2190	1374	3564	32868
5. Res - Medium/High (19.2)	4280.00 DU	426	2143	2569	2143	857	3000	29960
6. Res - High (19.3)	898.00 DU	90	450	540	450	179	629	6286
7. Apartment (19.4)	759.00 DU	76	383	459	383	150	533	5313
8. Mobile Home (20.0)	217.00 DU	26	65	91	76	46	122	1044
10. Single-Family Res.	1806.00 DU	361	1083	1444	1083	723	1806	18060
11. Multi-Family Res.	1181.00 DU	235	591	826	473	355	828	9448
12. General Commercial	4.33 TSF	4	3	7	13	13	26	303
13. Strip Commercial (6.1)	627.53 TSF	282	251	533	911	973	1884	21965
14. Neighborhood Comm. (6.2)	331.16 TSF	297	264	561	960	1026	1986	23181
15. District Commercial (6.3)	442.83 TSF	398	355	753	1284	1373	2657	30998
17. Fast Food Restaurant(6.5)	71.65 TSF	1001	1001	2002	1217	1167	2384	22646
18. Family Restaurant (6.6)	34.33 TSF	368	289	657	362	321	683	6896
19. Quality Rest./Bar (6.7)	72.49 TSF	60	5	65	363	164	527	6932
20. Light Industrial (2.0)	18.35 TSF	15	2	17	2	17	19	128
22. R&D/Bus Park (50-50)(2.2)	1985.82 TSF	2782	397	3179	596	2583	3179	21843
23. Storage (2.3)	65.78 TSF	6	5	11	9	7	16	171
25. Heavy Industrial (3.0)	54.51 TSF	45	7	52	7	50	57	380
26. General Office (14.0)	337.16 TSF	640	103	743	91	459	550	4146
27. Medical Office (14.1)	310.66 TSF	283	224	507	304	823	1127	10615
28. Government Office (15.0)	130.42 TSF	318	36	354	141	329	470	3913
29. Retail Employment	416.00 EMP	251	58	309	212	308	520	5471
30. Total Employment	901.00 EMP	207	27	234	63	163	226	2162
31. Banks/Saving & Loan (7.0)	45.67 TSF	177	133	310	611	635	1246	13295
32. Serv Stat (Gas) (8.0)	21.00 STAT	225	225	450	267	267	534	15708
35. Auto Sales - New (9.0)	1.77 ACRE	12	16	28	9	13	22	266
36. Auto Sales - Used (10.0)	0.66 ACRE	4	6	10	4	5	9	99
37. Auto Repair (11.0)	117.01 TSF	337	225	562	281	423	704	7022
38. Motel (12.0)	412.00 ROOM	163	122	285	129	129	258	4198
41. Church (13.0)	205.49 TSF	18	5	23	70	62	132	1584
42. Hospital (21.0)	116.00 BED	81	35	116	58	93	151	1322
43. Elem/Middle School (17.0)	4746.00 STU	806	428	1234	475	664	1139	4746
44. High School (17.1)	2040.00 STU	449	143	592	265	224	489	2836
45. Park (16.0)	93.92 ACRE	19	4	23	4	19	23	658
46. Golf Course (16.1)	388.26 ACRE	77	20	97	20	77	97	2718
48. Theater (23.0)	1009.00 SEAT	0	0	0	242	20	262	1776
49. Club/Organization (24.0)	14.08 TSF	12	12	24	11	11	22	224
50. Mortuary (25.0)	4.96 TSF	9	1	10	1	7	8	61

SCTM 1996 LAND USE AND TRIP GENERATION SUMMARY (cont.)

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
51. Banquet Hall (26.0)	31.28 TSF	0	0	0	0	0	0	0
52. Fire/Police Stat. (27.0)	22.60 TSF	0	0	0	0	0	0	339
53. Public Utilities (5.0)	89.24 ACRE	142	81	223	43	74	117	235
54. Beach Parking (22.0)	1033.00 SPC	165	0	165	165	165	330	4132
55. Transport. Services (4.0)	0.23 ACRE	7	3	10	3	7	10	63
56. Vacant (0.0)	547.04 ACRE	0	0	0	0	0	0	0
57. Lt. Manuf. Contract (2.1)	138.30 TSF	115	17	132	17	127	144	964
59. Adult Daycare	8.17 TSF	49	44	93	48	52	100	547
104. Health Club	11.21 TSF	12	8	20	12	8	20	192
105. Train Station	45.00 PKSP	23	5	28	5	23	28	90
TOTAL		14846	19338	34184	23946	21514	45460	445860

SCTM INTERIM YEAR 2000 + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY

Land Use Type	Units		-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
2. Res - Low (18.1)	7108.00	DU	2131	5684	7815	5684	3568	9252	85296
3. Res - Low/Medium (18.2)	3549.00	DU	1065	2843	3908	2843	1787	4630	42588
4. Res - Medium (19.1)	3060.00	DU	920	2446	3366	2446	1535	3981	36720
5. Res - Medium/High (19.2)	4084.00	DU	407	2045	2452	2045	818	2863	28588
6. Res - High (19.3)	898.00	DU	90	450	540	450	179	629	6286
7. Apartment (19.4)	720.00	DU	72	362	434	362	142	504	5040
8. Mobile Home (20.0)	217.00	DU	26	65	91	76	46	122	1044
10. Single-Family Res.	1806.00	DU	361	1083	1444	1083	723	1806	18060
11. Multi-Family Res.	1181.00	DU	235	591	826	473	355	828	9448
12. General Commercial	4.33	TSF	4	3	7	13	13	26	303
13. Strip Commercial (6.1)	721.43	TSF	325	288	613	1046	1118	2164	25251
14. Neighborhood Comm. (6.2)	792.12	TSF	713	634	1347	2298	2455	4753	55449
15. District Commercial (6.3)	409.03	TSF	367	328	695	1186	1268	2454	28633
17. Fast Food Restaurant(6.5)	76.25	TSF	1065	1065	2130	1295	1243	2538	24099
18. Family Restaurant (6.6)	36.64	TSF	392	308	700	387	343	730	7360
19. Quality Rest./Bar (6.7)	85.04	TSF	71	6	77	426	192	618	8132
20. Light Industrial (2.0)	18.35	TSF	15	2	17	2	17	19	128
22. R&D/Bus Park (50-50)(2.2)	2131.89	TSF	2986	426	3412	640	2772	3412	23451
23. Storage (2.3)	83.89	TSF	7	7	14	11	10	21	218
25. Heavy Industrial (3.0)	41.77	TSF	35	5	40	5	38	43	291
26. General Office (14.0)	355.15	TSF	675	108	783	96	484	580	4368
27. Medical Office (14.1)	244.52	TSF	223	177	400	240	648	888	8355
28. Government Office (15.0)	73.78	TSF	180	20	200	79	187	266	2214
29. Retail Employment	416.00	EMP	251	58	309	212	308	520	5471
30. Total Employment	901.00	EMP	207	27	234	63	163	226	2162
31. Banks/Saving & Loan (7.0)	61.48	TSF	238	180	418	822	855	1677	17897
32. Serv Stat (Gas) (8.0)	19.00	STAT	205	205	410	243	243	486	14212
35. Auto Sales - New (9.0)	1.77	ACRE	12	16	28	9	13	22	266
36. Auto Sales - Used (10.0)	0.66	ACRE	4	6	10	4	5	9	99
37. Auto Repair (11.0)	137.54	TSF	396	264	660	330	496	826	8253
38. Motel (12.0)	416.00	ROOM	166	124	290	130	130	260	4238
41. Church (13.0)	217.85	TSF	19	6	25	75	66	141	1679
42. Hospital (21.0)	126.00	BED	88	38	126	63	101	164	1436
43. Elem/Middle School (17.0)	4746.00	STU	806	428	1234	475	664	1139	4746
44. High School (17.1)	2040.00	STU	449	143	592	265	224	489	2836
45. Park (16.0)	60.50	ACRE	12	3	15	3	12	15	424
46. Golf Course (16.1)	388.26	ACRE	77	20	97	20	77	97	2718
48. Theater (23.0)	8969.00	SEAT	0	0	0	2152	179	2331	15786
49. Club/Organization (24.0)	25.83	TSF	22	22	44	20	20	40	411
50. Mortuary (25.0)	4.96	TSF	9	1	10	1	7	8	61

SCTM INTERIM YEAR 2000 + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY (cont.)

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
51. Banquet Hall (26.0)	31.28 TSF	0	0	0	0	0	0	0
52. Fire/Police Stat. (27.0)	21.80 TSF	0	0	0	0	0	0	327
53. Public Utilities (5.0)	89.24 ACRE	142	81	223	43	74	117	235
54. Beach Parking (22.0)	1033.00 SPC	165	0	165	165	165	330	4132
55. Transport. Services (4.0)	0.23 ACRE	7	3	10	3	7	10	63
56. Vacant (0.0)	555.84 ACRE	0	0	0	0	0	0	0
57. Lt. Manuf. Contract (2.1)	118.54 TSF	98	14	112	14	108	122	825
58. Sports Complex	43.42 ACRE	9	2	11	2	9	11	304
59. Adult Daycare	8.00 TSF	48	43	91	47	51	98	536
100. Discount Store	282.25 TSF	70	73	143	500	466	966	19794
102. Regional Center (600)	96.00 TSF	47	28	75	164	164	328	3489
103. Day Care Facility	7.67 TSF	45	39	84	40	46	86	437
105. Train Station	45.00 PKSP	23	5	28	5	23	28	90
107. Outlet Center	307.70 TSF	151	55	206	332	372	704	8182
TOTAL		16131	20830	36961	29388	24989	54377	542431

SCTM INTERIM YEAR 2005 + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
2. Res - Low (18.1)	8329.00 DU	2500	6661	9161	6661	4185	10846	99948
3. Res - Low/Medium (18.2)	5059.00 DU	1520	4051	5571	4051	2542	6593	60708
4. Res - Medium (19.1)	3082.00 DU	927	2464	3391	2464	1546	4010	36984
5. Res - Medium/High (19.2)	4296.00 DU	431	2151	2582	2151	859	3010	30072
6. Res - High (19.3)	1052.00 DU	107	527	634	527	209	736	7364
7. Apartment (19.4)	720.00 DU	72	362	434	362	142	504	5040
8. Mobile Home (20.0)	217.00 DU	26	65	91	76	46	122	1044
10. Single-Family Res.	1806.00 DU	361	1083	1444	1083	723	1806	18060
11. Multi-Family Res.	1181.00 DU	235	591	826	473	355	828	9448
12. General Commercial	4.33 TSF	4	3	7	13	13	26	303
13. Strip Commercial (6.1)	721.43 TSF	325	288	613	1046	1118	2164	25251
14. Neighborhood Comm. (6.2)	792.12 TSF	713	634	1347	2298	2455	4753	55449
15. District Commercial (6.3)	409.03 TSF	367	328	695	1186	1268	2454	28633
17. Fast Food Restaurant(6.5)	76.25 TSF	1065	1065	2130	1295	1243	2538	24099
18. Family Restaurant (6.6)	36.64 TSF	392	308	700	387	343	730	7360
19. Quality Rest./Bar (6.7)	85.04 TSF	71	6	77	426	192	618	8132
20. Light Industrial (2.0)	18.35 TSF	15	2	17	2	17	19	128
22. R&D/Bus Park (50-50)(2.2)	3152.64 TSF	4413	631	5044	946	4098	5044	34679
23. Storage (2.3)	83.89 TSF	7	7	14	11	10	21	218
25. Heavy Industrial (3.0)	327.63 TSF	275	39	314	39	298	337	2283
26. General Office (14.0)	355.15 TSF	675	108	783	96	484	580	4368
27. Medical Office (14.1)	244.52 TSF	223	177	400	240	648	888	8355
28. Government Office (15.0)	73.78 TSF	180	20	200	79	187	266	2214
29. Retail Employment	416.00 EMP	251	58	309	212	308	520	5471
30. Total Employment	901.00 EMP	207	27	234	63	163	226	2162
31. Banks/Saving & Loan (7.0)	61.48 TSF	238	180	418	822	855	1677	17897
32. Serv Stat (Gas) (8.0)	19.00 STAT	205	205	410	243	243	486	14212
35. Auto Sales - New (9.0)	1.77 ACRE	12	16	28	9	13	22	266
36. Auto Sales - Used (10.0)	0.66 ACRE	4	6	10	4	5	9	99
37. Auto Repair (11.0)	137.54 TSF	396	264	660	330	496	826	8253
38. Motel (12.0)	416.00 ROOM	166	124	290	130	130	260	4238
41. Church (13.0)	217.85 TSF	19	6	25	75	66	141	1679
42. Hospital (21.0)	126.00 BED	88	38	126	63	101	164	1436
43. Elem/Middle School (17.0)	6195.00 STU	1053	559	1612	620	867	1487	6195
44. High School (17.1)	2040.00 STU	449	143	592	265	224	489	2836
45. Park (16.0)	82.50 ACRE	16	4	20	4	16	20	578
46. Golf Course (16.1)	388.26 ACRE	77	20	97	20	77	97	2718
48. Theater (23.0)	8969.00 SEAT	0	0	0	2152	179	2331	15786
49. Club/Organization (24.0)	35.83 TSF	31	31	62	28	28	56	570
50. Mortuary (25.0)	4.96 TSF	9	1	10	1	7	8	61

SCTM INTERIM YEAR 2005 + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY (cont.)

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
51. Banquet Hall (26.0)	31.28 TSF	0	0	0	0	0	0	0
52. Fire/Police Stat. (27.0)	34.10 TSF	0	0	0	0	0	0	512
53. Public Utilities (5.0)	89.24 ACRE	142	81	223	43	74	117	235
54. Beach Parking (22.0)	1033.00 SPC	165	0	165	165	165	330	4132
55. Transport. Services (4.0)	0.23 ACRE	7	3	10	3	7	10	63
56. Vacant (0.0)	490.06 ACRE	0	0	0	0	0	0	0
57. Lt. Manuf. Contract (2.1)	118.54 TSF	98	14	112	14	108	122	825
58. Sports Complex	43.42 ACRE	9	2	11	2	9	11	304
59. Adult Daycare	8.00 TSF	48	43	91	47	51	98	536
62. Pageant Site	65.78 TSF	0	0	0	0	0	0	0
100. Discount Store	282.25 TSF	70	73	143	500	466	966	19794
102. Regional Center (600)	96.00 TSF	47	28	75	164	164	328	3489
103. Day Care Facility	7.67 TSF	45	39	84	40	46	86	437
105. Train Station	45.00 PKSP	23	5	28	5	23	28	90
107. Outlet Center	307.70 TSF	151	55	206	332	372	704	8182
TOTAL		18930	23596	42526	32268	28244	60512	593196

SCTM LONG-RANGE BUILDOUT + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
2. Res - Low (18.1)	9772.00 DU	2934	7821	10755	7821	4904	12725	117264
3. Res - Low/Medium (18.2)	4598.00 DU	1381	3680	5061	3680	2308	5988	55176
4. Res - Medium (19.1)	4560.00 DU	1370	3648	5018	3648	2287	5935	54720
5. Res - Medium/High (19.2)	5599.00 DU	559	2805	3364	2805	1122	3927	39193
6. Res - High (19.3)	2219.00 DU	223	1113	1336	1113	443	1556	15533
7. Apartment (19.4)	488.00 DU	49	245	294	245	97	342	3416
8. Mobile Home (20.0)	217.00 DU	26	65	91	76	46	122	1044
10. Single-Family Res.	1806.00 DU	361	1083	1444	1083	723	1806	18060
11. Multi-Family Res.	1181.00 DU	235	591	826	473	355	828	9448
12. General Commercial	1810.87 TSF	1630	1448	3078	5253	5613	10866	126760
13. Strip Commercial (6.1)	437.78 TSF	198	174	372	634	679	1313	15322
14. Neighborhood Comm. (6.2)	789.64 TSF	710	632	1342	2290	2447	4737	55275
15. District Commercial (6.3)	266.16 TSF	239	213	452	772	825	1597	18632
17. Fast Food Restaurant(6.5)	44.92 TSF	627	627	1254	763	732	1495	14197
18. Family Restaurant (6.6)	49.64 TSF	532	417	949	524	465	989	9972
19. Quality Rest./Bar (6.7)	31.04 TSF	26	2	28	156	71	227	2968
20. Light Industrial (2.0)	18.35 TSF	15	2	17	2	17	19	128
22. R&D/Bus Park (50-50)(2.2)	4642.64 TSF	6500	929	7429	1393	6035	7428	51069
23. Storage (2.3)	83.89 TSF	7	7	14	11	10	21	218
25. Heavy Industrial (3.0)	327.63 TSF	275	39	314	39	298	337	2283
26. General Office (14.0)	788.90 TSF	1498	238	1736	214	1074	1288	9704
27. Medical Office (14.1)	192.69 TSF	175	140	315	189	511	700	6584
28. Government Office (15.0)	143.69 TSF	350	39	389	154	363	517	4311
29. Retail Employment	416.00 EMP	251	58	309	212	308	520	5471
30. Total Employment	901.00 EMP	207	27	234	63	163	226	2162
31. Banks/Saving & Loan (7.0)	54.78 TSF	212	160	372	732	762	1494	15947
32. Serv Stat (Gas) (8.0)	12.00 STAT	130	130	260	154	154	308	8976
35. Auto Sales - New (9.0)	1.77 ACRE	12	16	28	9	13	22	266
36. Auto Sales - Used (10.0)	0.66 ACRE	4	6	10	4	5	9	99
37. Auto Repair (11.0)	111.91 TSF	322	214	536	269	403	672	6715
38. Motel (12.0)	276.00 ROOM	111	83	194	86	86	172	2812
39. Hotel (12.0)	747.00 ROOM	344	179	523	269	225	494	6499
40. Resort Hotel (12.0)	250.00 ROOM	38	23	61	70	55	125	4600
41. Church (13.0)	177.65 TSF	15	5	20	61	54	115	1369
42. Hospital (21.0)	126.00 BED	88	38	126	63	101	164	1436
43. Elem/Middle School (17.0)	7925.00 STU	1349	716	2065	793	1110	1903	7925
44. High School (17.1)	2500.00 STU	550	175	725	325	275	600	3475
45. Park (16.0)	151.47 ACRE	29	9	38	9	29	38	1061
46. Golf Course (16.1)	659.66 ACRE	131	34	165	34	131	165	4618
48. Theater (23.0)	8910.00 SEAT	0	0	0	2138	178	2316	15682

SCTM LONG-RANGE BUILDOUT + MC PROJECT LAND USE AND TRIP GENERATION SUMMARY (cont.)

Land Use Type	Units	-- AM Peak Hour -- In	Out	Total	-- PM Peak Hour -- In	Out	Total	ADT
49. Club/Organization (24.0)	35.83 TSF	31	31	62	28	28	56	570
51. Banquet Hall (26.0)	16.28 TSF	0	0	0	0	0	0	0
52. Fire/Police Stat. (27.0)	28.10 TSF	0	0	0	0	0	0	422
53. Public Utilities (5.0)	64.24 ACRE	102	58	160	31	53	84	169
54. Beach Parking (22.0)	754.00 SPC	121	0	121	121	121	242	3016
55. Transport. Services (4.0)	0.23 ACRE	7	3	10	3	7	10	63
56. Vacant (0.0)	479.17 ACRE	0	0	0	0	0	0	0
57. Lt. Manuf. Contract (2.1)	118.93 TSF	99	14	113	14	108	122	828
58. Sports Complex	43.42 ACRE	9	2	11	2	9	11	304
59. Adult Daycare	8.00 TSF	48	43	91	47	51	98	536
62. Pageant Site	65.78 TSF	0	0	0	0	0	0	0
63. Congregate Care	100.00 ROOM	4	2	6	10	7	17	215
65. Junior College	192.00 ACRE	1658	185	1843	368	860	1228	15360
66. Senior Assisted Living	225.00 BED	27	16	43	16	23	39	585
100. Discount Store	282.25 TSF	70	73	143	500	466	966	19794
102. Regional Center (600)	96.00 TSF	47	28	75	164	164	328	3489
103. Day Care Facility	7.67 TSF	45	39	84	40	46	86	437
105. Train Station	45.00 PKSP	23	5	28	5	23	28	90
107. Outlet Center	307.70 TSF	151	55	206	332	372	704	8182
TOTAL		26155	28385	54540	40310	37815	78125	774450

SAN CLEMENTE COMMUNITIES SAN CLEMENTE TRAFFIC MODEL (SCTM) CORRESPONDENCE FILE

PLANNING AREA 1 (NORTH CITY)
1-28

PLANNING AREA 2A (MARBLEHEAD INLAND)
29-39

PLANNING AREA 2B (MARBLEHEAD COASTAL)
40-49

PLANNING AREA 3 (SOUTH CITY)
50-114

PLANNING AREA 4 (FORSTER RANCH WEST SIDE)
115-132,134-136,138

PLANNING AREA 4 (FORSTER RANCH EAST SIDE)
133,137

PLANNING AREA 5 (RANCHO SAN CLEMENTE)
139-161

PLANNING AREA 6A (TALEGA CITY)
165-169,171-193,202

PLANNING AREA 6B (TALEGA COUNTY)
162-164,170,194-201,203-205

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY

Land Use Category	Units	----- 1996 ----- Amount	ADT	----- 2000 ----- Amount	ADT	----- 2005 ----- Amount	ADT	--- BUILDOUT --- Amount	ADT
PLANNING AREA 1 (NORTH CITY)									
2. Res - Low (18.1)	DU	1,779.00	21,348	1,743.00	20,916	1,784.00	21,408	1,903.00	22,836
3. Res - Low/Medium (18.2)	DU	133.00	1,596	130.00	1,560	130.00	1,560	127.00	1,524
4. Res - Medium (19.1)	DU	1,542.00	18,504	1,594.00	19,128	1,594.00	19,128	1,594.00	19,128
5. Res - Medium/High (19.2)	DU	172.00	1,204	170.00	1,190	170.00	1,190	170.00	1,190
8. Mobile Home (20.0)	DU	127.00	611	127.00	611	127.00	611	127.00	611
12. General Commercial	TSF	--	--	--	--	--	--	87.27	6,109
13. Strip Commercial (6.1)	TSF	22.36	782	12.42	435	12.42	435	12.42	435
14. Neighborhood Comm. (6.2)	TSF	175.28	12,269	339.11	23,738	339.11	23,738	362.81	25,397
15. District Commercial (6.3)	TSF	201.16	14,081	152.48	10,674	152.48	10,674	152.48	10,674
26. General Office (14.0)	TSF	25.44	313	26.91	331	26.91	331	60.49	744
27. Medical Office (14.1)	TSF	248.39	8,487	182.25	6,227	182.25	6,227	182.25	6,227
31. Banks/Saving & Loan (7.0)	TSF	6.67	1,942	--	--	--	--	--	--
32. Serv Stat (Gas) (8.0)	STAT	4.00	2,992	3.00	2,244	3.00	2,244	3.00	2,244
37. Auto Repair (11.0)	TSF	--	--	2.90	174	2.90	174	2.90	174
40. Resort Hotel (12.0)	ROOM	--	--	--	--	--	--	250.00	4,600
41. Church (13.0)	TSF	35.83	277	34.63	267	34.63	267	44.63	344
42. Hospital (21.0)	BED	116.00	1,322	126.00	1,436	126.00	1,436	126.00	1,436
43. Elem/Middle School (17.0)	STU	893.00	893	893.00	893	893.00	893	1,291.00	1,291
45. Park (16.0)	ACRE	15.85	111	15.85	111	15.85	111	15.85	111
46. Golf Course (16.1)	ACRE	136.00	952	136.00	952	136.00	952	136.00	952
48. Theater (23.0)	SEAT	--	--	1,260.00	2,218	1,260.00	2,218	1,260.00	2,218
52. Fire/Police Stat. (27.0)	TSF	8.00	120	7.20	108	7.20	108	7.20	108
53. Public Utilities (5.0)	ACRE	44.00	116	44.00	116	44.00	116	44.00	116
54. Beach Parking (22.0)	SPC	103.00	412	103.00	412	103.00	412	103.00	412
56. Vacant (0.0)	ACRE	9.29	0	9.29	0	9.29	0	--	--
66. Senior Assisted Living	BED	--	--	--	--	--	--	225.00	585
104. Health Club	TSF	11.21	192	--	--	--	--	--	--
SUB-TOTAL			88,524		93,741		94,233		109,466
PLANNING AREA 2A (MARBLEHEAD INLAND)									
2. Res - Low (18.1)	DU	511.00	6,132	608.00	7,296	608.00	7,296	618.00	7,416
3. Res - Low/Medium (18.2)	DU	225.00	2,700	225.00	2,700	225.00	2,700	225.00	2,700
4. Res - Medium (19.1)	DU	336.00	4,032	336.00	4,032	336.00	4,032	336.00	4,032
41. Church (13.0)	TSF	16.48	127	16.48	127	16.48	127	50.00	385
43. Elem/Middle School (17.0)	STU	--	--	--	--	--	--	600.00	600
45. Park (16.0)	ACRE	4.00	28	4.00	28	4.00	28	4.00	28
56. Vacant (0.0)	ACRE	462.50	0	462.50	0	462.50	0	462.50	0
SUB-TOTAL			13,019		14,183		14,183		15,161
PLANNING AREA 2B (MARBLEHEAD COASTAL)									
3. Res - Low/Medium (18.2)	DU	--	--	440.00	5,280	440.00	5,280	440.00	5,280
13. Strip Commercial (6.1)	TSF	--	--	60.00	2,100	60.00	2,100	60.00	2,100
14. Neighborhood Comm. (6.2)	TSF	--	--	78.00	5,460	78.00	5,460	78.00	5,460
17. Fast Food Restaurant(6.5)	TSF	--	--	6.00	1,896	6.00	1,896	6.00	1,896
19. Quality Rest./Bar (6.7)	TSF	--	--	26.50	2,534	26.50	2,534	26.50	2,534

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY (cont)

Land Use Category	Units	1996 Amount	1996 ADT	2000 Amount	2000 ADT	2005 Amount	2005 ADT	BUILDOUT Amount	BUILDOUT ADT
PLANNING AREA 2B (MARBLEHEAD COASTAL)									
45. Park (16.0)	ACRE	--	--	10.00	70	10.00	70	10.00	70
48. Theater (23.0)	SEAT	--	--	4,500.00	7,920	4,500.00	7,920	4,500.00	7,920
56. Vacant (0.0)	ACRE	--	--	8.80	0	8.80	0	8.80	0
100. Discount Store	TSF	--	--	145.80	10,225	145.80	10,225	145.80	10,225
102. Regional Center (600)	TSF	--	--	96.00	3,489	96.00	3,489	96.00	3,489
107. Outlet Center	TSF	--	--	307.70	8,182	307.70	8,182	307.70	8,182
SUB-TOTAL			--		47,156		47,156		47,156
PLANNING AREA 3 (SOUTH CITY)									
2. Res - Low (18.1)	DU	2,470.00	29,640	2,488.00	29,856	2,548.00	30,576	2,523.00	30,276
3. Res - Low/Medium (18.2)	DU	2,263.00	27,156	2,263.00	27,156	2,317.00	27,804	2,553.00	30,636
4. Res - Medium (19.1)	DU	40.00	480	52.00	624	74.00	888	90.00	1,080
5. Res - Medium/High (19.2)	DU	3,914.00	27,398	3,914.00	27,398	4,126.00	28,882	4,934.00	34,538
6. Res - High (19.3)	DU	898.00	6,286	898.00	6,286	1,052.00	7,364	1,721.00	12,047
7. Apartment (19.4)	DU	509.00	3,563	470.00	3,290	470.00	3,290	238.00	1,666
8. Mobile Home (20.0)	DU	90.00	433	90.00	433	90.00	433	90.00	433
12. General Commercial	TSF	4.33	303	4.33	303	4.33	303	1,538.60	107,701
13. Strip Commercial (6.1)	TSF	605.17	21,183	649.01	22,716	649.01	22,716	365.36	12,787
14. Neighborhood Comm. (6.2)	TSF	155.88	10,912	150.43	10,530	150.43	10,530	124.25	8,697
15. District Commercial (6.3)	TSF	241.67	16,917	256.55	17,959	256.55	17,959	113.68	7,958
17. Fast Food Restaurant(6.5)	TSF	71.65	22,646	56.54	17,870	56.54	17,870	25.21	7,968
18. Family Restaurant (6.6)	TSF	34.33	6,896	32.14	6,456	32.14	6,456	45.14	9,068
19. Quality Rest./Bar (6.7)	TSF	72.49	6,932	58.54	5,598	58.54	5,598	4.54	434
20. Light Industrial (2.0)	TSF	18.35	128	18.35	128	18.35	128	18.35	128
22. R&D/Bus Park (50-50)(2.2)	TSF	15.09	166	16.11	178	16.11	178	18.11	200
23. Storage (2.3)	TSF	65.78	171	83.89	218	83.89	218	83.89	218
25. Heavy Industrial (3.0)	TSF	54.51	380	41.77	291	41.77	291	41.77	291
26. General Office (14.0)	TSF	231.46	2,846	247.98	3,050	247.98	3,050	648.15	7,973
27. Medical Office (14.1)	TSF	62.27	2,128	62.27	2,128	62.27	2,128	10.44	357
28. Government Office (15.0)	TSF	130.42	3,913	73.78	2,214	73.78	2,214	51.69	1,551
31. Banks/Saving & Loan (7.0)	TSF	39.00	11,353	51.48	14,986	51.48	14,986	44.78	13,036
32. Serv Stat (Gas) (8.0)	STAT	17.00	12,716	15.00	11,220	15.00	11,220	8.00	5,984
35. Auto Sales - New (9.0)	ACRE	1.77	266	1.77	266	1.77	266	1.77	266
36. Auto Sales - Used (10.0)	ACRE	0.66	99	0.66	99	0.66	99	0.66	99
37. Auto Repair (11.0)	TSF	117.01	7,022	134.64	8,079	134.64	8,079	109.01	6,541
38. Motel (12.0)	ROOM	412.00	4,198	416.00	4,238	416.00	4,238	276.00	2,812
39. Hotel (12.0)	ROOM	--	--	--	--	--	--	547.00	4,759
41. Church (13.0)	TSF	153.18	1,180	166.74	1,285	166.74	1,285	83.02	640
43. Elem/Middle School (17.0)	STU	2,502.00	2,502	2,502.00	2,502	2,502.00	2,502	3,234.00	3,234
44. High School (17.1)	STU	2,040.00	2,836	2,040.00	2,836	2,040.00	2,836	2,500.00	3,475
45. Park (16.0)	ACRE	23.65	166	23.65	166	23.65	166	44.82	314
46. Golf Course (16.1)	ACRE	32.26	226	32.26	226	32.26	226	32.26	226
48. Theater (23.0)	SEAT	1,009.00	1,776	1,009.00	1,776	1,009.00	1,776	950.00	1,672
49. Club/Organization (24.0)	TSF	14.08	224	14.08	224	14.08	224	14.08	224
50. Mortuary (25.0)	TSF	4.96	61	4.96	61	4.96	61	--	--
51. Banquet Hall (26.0)	TSF	31.28	0	31.28	0	31.28	0	16.28	0
52. Fire/Police Stat. (27.0)	TSF	6.00	90	6.00	90	6.00	90	--	--

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY (cont)

Land Use Category	Units	1996 Amount	1996 ADT	2000 Amount	2000 ADT	2005 Amount	2005 ADT	BUILDOUT Amount	BUILDOUT ADT
PLANNING AREA 3 (SOUTH CITY)									
53. Public Utilities (5.0)	ACRE	45.24	119	45.24	119	45.24	119	20.24	53
54. Beach Parking (22.0)	SPC	930.00	3,720	930.00	3,720	930.00	3,720	651.00	2,604
55. Transport. Services (4.0)	ACRE	0.23	63	0.23	63	0.23	63	0.23	63
56. Vacant (0.0)	ACRE	9.47	0	9.47	0	9.47	0	7.87	0
57. Lt. Manuf. Contract (2.1)	TSF	138.30	964	118.54	825	118.54	825	118.93	828
59. Adult Daycare	TSF	8.17	547	8.00	536	8.00	536	8.00	536
103. Day Care Facility	TSF	--	--	7.67	437	7.67	437	7.67	437
105. Train Station	PKSP	45.00	90	45.00	90	45.00	90	45.00	90
SUB-TOTAL			240,695		238,526		242,720		323,900
PLANNING AREA 4 (FORSTER RANCH WEST SIDE)									
2. Res - Low (18.1)	DU	1,373.00	16,476	1,385.00	16,620	2,452.00	29,424	2,452.00	29,424
3. Res - Low/Medium (18.2)	DU	99.00	1,188	293.00	3,516	449.00	5,388	449.00	5,388
5. Res - Medium/High (19.2)	DU	194.00	1,358	--	--	--	--	--	--
43. Elem/Middle School (17.0)	STU	672.00	672	672.00	672	2,000.00	2,000	2,000.00	2,000
45. Park (16.0)	ACRE	--	--	--	--	22.00	154	22.00	154
56. Vacant (0.0)	ACRE	65.78	0	65.78	0	--	--	--	--
62. Pageant Site	TSF	--	--	--	--	65.78	0	65.78	0
SUB-TOTAL			19,694		20,808		36,966		36,966
PLANNING AREA 4 (FORSTER RANCH EAST SIDE)									
12. General Commercial	TSF	--	--	--	--	--	--	92.00	6,440
28. Government Office (15.0)	TSF	--	--	--	--	--	--	92.00	2,760
65. Junior College	ACRE	--	--	--	--	--	--	192.00	15,360
SUB-TOTAL			--		--		--		24,560
PLANNING AREA 5 (RANCHO SAN CLEMENTE)									
2. Res - Low (18.1)	DU	790.00	9,480	884.00	10,608	937.00	11,244	937.00	11,244
3. Res - Low/Medium (18.2)	DU	195.00	2,340	198.00	2,376	198.00	2,376	198.00	2,376
4. Res - Medium (19.1)	DU	821.00	9,852	1,078.00	12,936	1,078.00	12,936	1,078.00	12,936
7. Apartment (19.4)	DU	250.00	1,750	250.00	1,750	250.00	1,750	250.00	1,750
14. Neighborhood Comm. (6.2)	TSF	--	--	224.58	15,721	224.58	15,721	224.58	15,721
17. Fast Food Restaurant(6.5)	TSF	--	--	13.71	4,333	13.71	4,333	13.71	4,333
18. Family Restaurant (6.6)	TSF	--	--	4.50	904	4.50	904	4.50	904
22. R&D/Bus Park (50-50)(2.2)	TSF	1,970.73	21,677	2,115.78	23,273	2,906.53	31,971	2,906.53	31,971
25. Heavy Industrial (3.0)	TSF	--	--	--	--	285.86	1,992	285.86	1,992
26. General Office (14.0)	TSF	80.26	987	80.26	987	80.26	987	80.26	987
31. Banks/Saving & Loan (7.0)	TSF	--	--	10.00	2,911	10.00	2,911	10.00	2,911
32. Serv Stat (Gas) (8.0)	STAT	--	--	1.00	748	1.00	748	1.00	748
43. Elem/Middle School (17.0)	STU	679.00	679	679.00	679	800.00	800	800.00	800
45. Park (16.0)	ACRE	50.42	353	7.00	49	7.00	49	7.00	49
46. Golf Course (16.1)	ACRE	220.00	1,540	220.00	1,540	220.00	1,540	220.00	1,540
48. Theater (23.0)	SEAT	--	--	2,200.00	3,872	2,200.00	3,872	2,200.00	3,872
49. Club/Organization (24.0)	TSF	--	--	11.75	187	21.75	346	21.75	346
52. Fire/Police Stat. (27.0)	TSF	8.60	129	8.60	129	20.90	314	20.90	314

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY (cont)

Land Use Category	Units	1996 Amount	1996 ADT	2000 Amount	2000 ADT	2005 Amount	2005 ADT	BUILDOUT Amount	BUILDOUT ADT
PLANNING AREA 5 (*RANCHO SAN CLEMENTE*)									
58. Sports Complex	ACRE	--	--	43.42	304	43.42	304	43.42	304
100. Discount Store	TSF	--	--	136.45	9,569	136.45	9,569	136.45	9,569
SUB-TOTAL			48,787		92,876		104,667		104,667
PLANNING AREA 6A (TALEGA CITY)									
2. Res - Low (18.1)	DU	--	--	--	--	--	--	917.00	11,004
3. Res - Low/Medium (18.2)	DU	--	--	--	--	550.00	6,600	367.00	4,404
4. Res - Medium (19.1)	DU	--	--	--	--	--	--	298.00	3,576
5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	313.00	2,191
12. General Commercial	TSF	--	--	--	--	--	--	33.00	2,310
22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	180.00	1,980	1,011.00	11,121
39. Hotel (12.0)	ROOM	--	--	--	--	--	--	200.00	1,740
45. Park (16.0)	ACRE	--	--	--	--	--	--	37.50	263
46. Golf Course (16.1)	ACRE	--	--	--	--	--	--	160.80	1,126
SUB-TOTAL			--		--		8,580		37,735
PLANNING AREA 6B (TALEGA COUNTY)									
2. Res - Low (18.1)	DU	--	--	--	--	--	--	422.00	5,064
3. Res - Low/Medium (18.2)	DU	--	--	--	--	750.00	9,000	239.00	2,868
4. Res - Medium (19.1)	DU	--	--	--	--	--	--	1,164.00	13,968
5. Res - Medium/High (19.2)	DU	--	--	--	--	--	--	182.00	1,274
6. Res - High (19.3)	DU	--	--	--	--	--	--	498.00	3,486
12. General Commercial	TSF	--	--	--	--	--	--	60.00	4,200
22. R&D/Bus Park (50-50)(2.2)	TSF	--	--	--	--	50.00	550	707.00	7,777
45. Park (16.0)	ACRE	--	--	--	--	--	--	10.30	72
46. Golf Course (16.1)	ACRE	--	--	--	--	--	--	110.60	774
63. Congregate Care	ROOM	--	--	--	--	--	--	100.00	215
SUB-TOTAL			--		--		9,550		39,698

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY (cont)

Land Use Category	Units	----- 1996 ----- Amount	ADT	----- 2000 ----- Amount	ADT	----- 2005 ----- Amount	ADT	--- BUILDOUT --- Amount	ADT
TOTAL									
2. Res - Low (18.1)	DU	6,923.00	83,076	7,108.00	85,296	8,329.00	99,948	9,772.00	117,264
3. Res - Low/Medium (18.2)	DU	2,915.00	34,980	3,549.00	42,588	5,059.00	60,708	4,598.00	55,176
4. Res - Medium (19.1)	DU	2,739.00	32,868	3,060.00	36,720	3,082.00	36,984	4,560.00	54,720
5. Res - Medium/High (19.2)	DU	4,280.00	29,960	4,084.00	28,588	4,296.00	30,072	5,599.00	39,193
6. Res - High (19.3)	DU	898.00	6,286	898.00	6,286	1,052.00	7,364	2,219.00	15,533
7. Apartment (19.4)	DU	759.00	5,313	720.00	5,040	720.00	5,040	488.00	3,416
8. Mobile Home (20.0)	DU	217.00	1,044	217.00	1,044	217.00	1,044	217.00	1,044
12. General Commercial	TSF	4.33	303	4.33	303	4.33	303	1,810.87	126,760
13. Strip Commercial (6.1)	TSF	627.53	21,965	721.43	25,251	721.43	25,251	437.78	15,322
14. Neighborhood Comm. (6.2)	TSF	331.16	23,181	792.12	55,449	792.12	55,449	789.64	55,275
15. District Commercial (6.3)	TSF	442.83	30,998	409.03	28,633	409.03	28,633	266.16	18,632
17. Fast Food Restaurant(6.5)	TSF	71.65	22,646	76.25	24,099	76.25	24,099	44.92	14,197
18. Family Restaurant (6.6)	TSF	34.33	6,896	36.64	7,360	36.64	7,360	49.64	9,972
19. Quality Rest./Bar (6.7)	TSF	72.49	6,932	85.04	8,132	85.04	8,132	31.04	2,968
20. Light Industrial (2.0)	TSF	18.35	128	18.35	128	18.35	128	18.35	128
22. R&D/Bus Park (50-50)(2.2)	TSF	1,985.82	21,843	2,131.89	23,451	3,152.64	34,679	4,642.64	51,069
23. Storage (2.3)	TSF	65.78	171	83.89	218	83.89	218	83.89	218
25. Heavy Industrial (3.0)	TSF	54.51	380	41.77	291	327.63	2,283	327.63	2,283
26. General Office (14.0)	TSF	337.16	4,146	355.15	4,368	355.15	4,368	788.90	9,704
27. Medical Office (14.1)	TSF	310.66	10,615	244.52	8,355	244.52	8,355	192.69	6,584
28. Government Office (15.0)	TSF	130.42	3,913	73.78	2,214	73.78	2,214	143.69	4,311
31. Banks/Saving & Loan (7.0)	TSF	45.67	13,295	61.48	17,897	61.48	17,897	54.78	15,947
32. Serv Stat (Gas) (8.0)	STAT	21.00	15,708	19.00	14,212	19.00	14,212	12.00	8,976
35. Auto Sales - New (9.0)	ACRE	1.77	266	1.77	266	1.77	266	1.77	266
36. Auto Sales - Used (10.0)	ACRE	0.66	99	0.66	99	0.66	99	0.66	99
37. Auto Repair (11.0)	TSF	117.01	7,022	137.54	8,253	137.54	8,253	111.91	6,715
38. Motel (12.0)	ROOM	412.00	4,198	416.00	4,238	416.00	4,238	276.00	2,812
39. Hotel (12.0)	ROOM	--	--	--	--	--	--	747.00	6,499
40. Resort Hotel (12.0)	ROOM	--	--	--	--	--	--	250.00	4,600
41. Church (13.0)	TSF	205.49	1,584	217.85	1,679	217.85	1,679	177.65	1,369
42. Hospital (21.0)	BED	116.00	1,322	126.00	1,436	126.00	1,436	126.00	1,436
43. Elem/Middle School (17.0)	STU	4,746.00	4,746	4,746.00	4,746	6,195.00	6,195	7,925.00	7,925
44. High School (17.1)	STU	2,040.00	2,836	2,040.00	2,836	2,040.00	2,836	2,500.00	3,475
45. Park (16.0)	ACRE	93.92	658	60.50	424	82.50	578	151.47	1,061
46. Golf Course (16.1)	ACRE	388.26	2,718	388.26	2,718	388.26	2,718	659.66	4,618
48. Theater (23.0)	SEAT	1,009.00	1,776	8,969.00	15,786	8,969.00	15,786	8,910.00	15,682
49. Club/Organization (24.0)	TSF	14.08	224	25.83	411	35.83	570	35.83	570
50. Mortuary (25.0)	TSF	4.96	61	4.96	61	4.96	61	--	--
51. Banquet Hall (26.0)	TSF	31.28	0	31.28	0	31.28	0	16.28	0
52. Fire/Police Stat. (27.0)	TSF	22.60	339	21.80	327	34.10	512	28.10	422
53. Public Utilities (5.0)	ACRE	89.24	235	89.24	235	89.24	235	64.24	169
54. Beach Parking (22.0)	SPC	1,033.00	4,132	1,033.00	4,132	1,033.00	4,132	754.00	3,016
55. Transport. Services (4.0)	ACRE	0.23	63	0.23	63	0.23	63	0.23	63
56. Vacant (0.0)	ACRE	547.04	0	555.84	0	490.06	0	479.17	0
57. Lt. Manuf. Contract (2.1)	TSF	138.30	964	118.54	825	118.54	825	118.93	828
58. Sports Complex	ACRE	--	--	43.42	304	43.42	304	43.42	304
59. Adult Daycare	TSF	8.17	547	8.00	536	8.00	536	8.00	536
62. Pageant Site	TSF	--	--	--	--	65.78	0	65.78	0

SAN CLEMENTE PLANNING AREA LAND USE AND TRIP GENERATION SUMMARY (cont)

Land Use Category	Units	1996 Amount	1996 ADT	2000 Amount	2000 ADT	2005 Amount	2005 ADT	BUILDOUT Amount	BUILDOUT ADT
TOTAL									
63. Congregate Care	ROOM	--	--	--	--	--	--	100.00	215
65. Junior College	ACRE	--	--	--	--	--	--	192.00	15,360
66. Senior Assisted Living	BED	--	--	--	--	--	--	225.00	585
100. Discount Store	TSF	--	--	282.25	19,794	282.25	19,794	282.25	19,794
102. Regional Center (600)	TSF	--	--	96.00	3,489	96.00	3,489	96.00	3,489
103. Day Care Facility	TSF	--	--	7.67	437	7.67	437	7.67	437
104. Health Club	TSF	11.21	192	--	--	--	--	--	--
105. Train Station	PKSP	45.00	90	45.00	90	45.00	90	45.00	90
107. Outlet Center	TSF	--	--	307.70	8,182	307.70	8,182	307.70	8,182
TOTAL			410,719		507,290		558,055		739,309

APPENDIX B
INTERSECTION CAPACITY UTILIZATION WORKSHEETS

Peak hour intersection volume/capacity (V/C) ratios are calculated by means of intersection capacity utilization (ICU) values. For simplicity, signalization is assumed at each intersection. Precise ICU calculations of existing non-signalized intersections would require a more detailed analysis.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move.

A "de facto" or unstriped right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both through and right-turn traffic (typically with a width of 19 feet from curb to outside of thru-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes. When a free right-turn is designated, the V/C ratio for that right-turn movement is ignored during the critical movement analysis calculations, and a special notation is made on the output printed ICU calculation worksheet where the letter "f" is used in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability is calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example For Northbound Right

<u>1. Right-Turn-On-Green (RTOG)</u>

If NBT is critical move, then:
RTOG = V/C (NBT)
Otherwise,
RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:
RTOR = V/C (WBL)
Otherwise,
RTOR = V/C (EBL) + V/C (WBT) - V/C (EBT)

3. Total Right-Turn Capacity (RTC) Availability For NBR

RTC = RTOG + factor x RTOR
Where factor = .75 (to reflect lower saturation flow rate for RTOR)
Right-turn adjustment is then as follows:
Additional ICU = V/C (NBR) - RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/thru, thru/right, left/thru/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Thru Lane

1. Average Lane Volume (ALV)

$$\text{ALV} = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$\text{ALV (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$\text{ALV (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and thru V/C ratios for this case are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$\text{V/C (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Thru) is greater than ALV then full dedication to the thru approach is warranted, and left-turn and thru V/C ratios are calculated as follows:

$$\text{V/C (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$\text{V/C (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Thru) are both less than ALV, the left/thru lane is assumed to be truly shared and each left, left/thru or thru approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/thru V/C ratio is calculated as follows:

$$\text{V/C (Left/Thru)} = \frac{\text{Left-Turn Volume + Thru Volume}}{\text{Total Left + Thru Approach Capacity (including shared lane)}}$$

This V/C (Left/Thru) ratio is assigned as the V/C (Thru) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Thru) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:
V/C (Left) = V/C (Thru)

If approach has only one left-turn lane (shared lane), then:

$$V/C\ (Left) = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared thru/right lanes. If full dedication of a shared thru/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the thru/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/thru and thru/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

ICU CALCULATION SETTINGS

The following outlines the ICU calculation settings for intersection analyses in this study:

Saturation Flow Rate: 1,600 vehicles/hour/lane
Clearance Interval: None
Right-Turn-On-Red (RTOR) Allowed: Yes[1]
RTOR Saturation Flow Factor: .75
No minimum volume/capacity assumed

ICU WORKSHEETS

Figure B-1 shows the intersections in the study area for which ICUs were calculated. The ICU worksheets follow, sorted according to intersection number.

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[2] "Unofficial" de facto right-turn lane is used in the ICU calculation if 19 feet from edge to outside of thru-lane exists and parking is prohibited during peak periods.

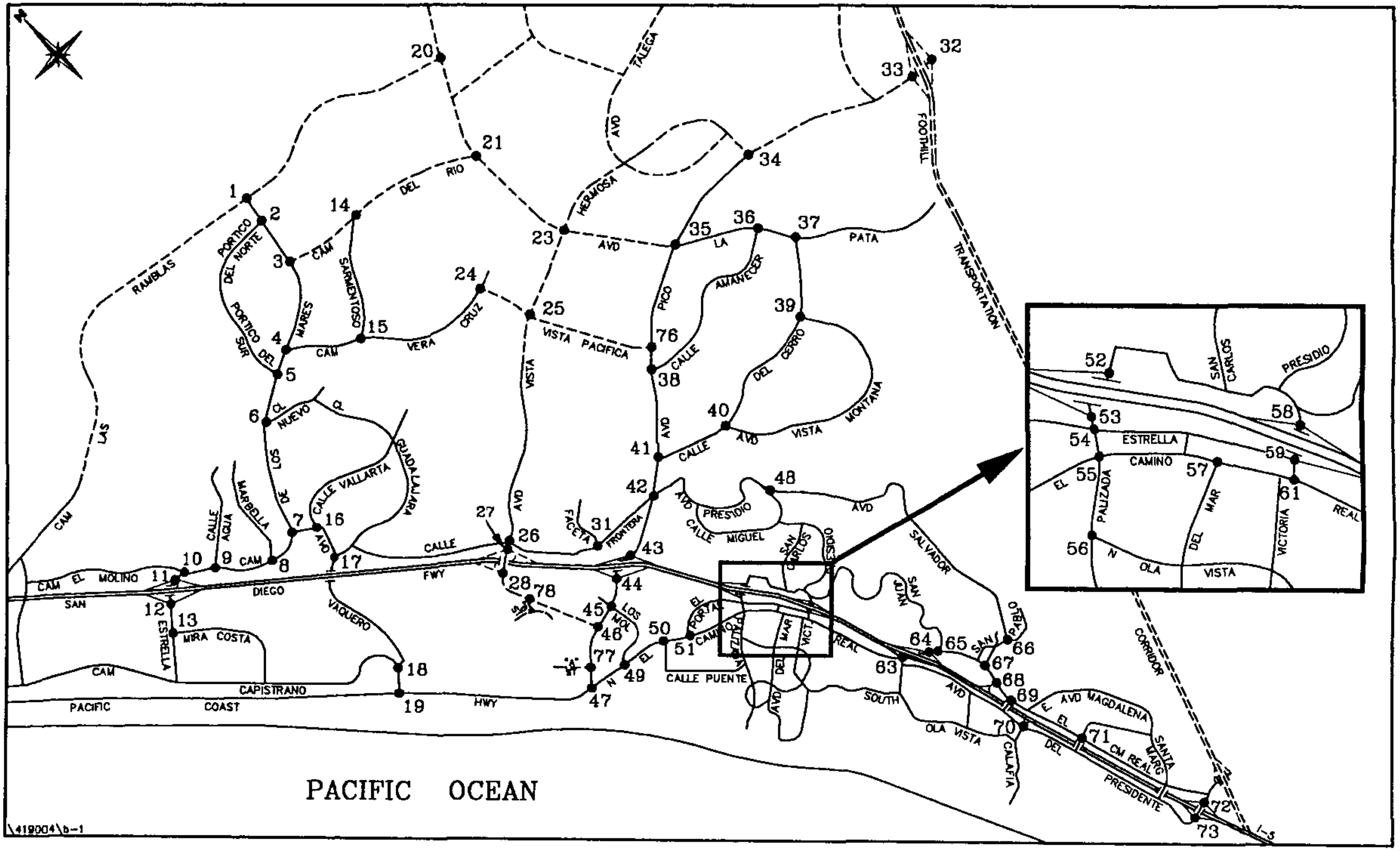

Figure B-1
INTERSECTION LOCATION MAP

1. Cm Las Ramblas & Los Mares

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	84	.05*	192	.12*
NBT	2	3200	110	.03	345	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	447	.14*	316	.10*
SBR	1	1600	103	.06	193	.12
EBL	2	3200	241	.08*	50	.02*
EBT	0	0	0		0	
EBR	1	1600	244	.15	108	.07
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.03*		
TOTAL CAPACITY UTILIZATION				.30		.24

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	84	.05*	199	.12*
NBT	2	3200	73	.02	287	.09
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	285	.09*	235	.07*
SBR	1	1600	99	.06	186	.12
EBL	2	3200	200	.06*	48	.02*
EBT	0	0	0		0	
EBR	1	1600	247	.15	104	.07
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.05*	SBR	.03*
TOTAL CAPACITY UTILIZATION				.25		.24

2. Port Del Norte & Los Mares

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	93		20	
SBT	1	1600	0	.08*	0	.02*
SBR	0	0	36		11	
EBL	1	1600	3	.00	29	.02*
EBT	2	3200	392	.12*	138	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	135	.06	311	.12*
WBR	0	0	52		74	
TOTAL CAPACITY UTILIZATION				.20		.16

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	93		21	
SBT	1	1600	0	.08*	0	.02*
SBR	0	0	35		10	
EBL	1	1600	2	.00	29	.02*
EBT	2	3200	354	.11*	131	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	127	.06	312	.12*
WBR	0	0	56		73	
TOTAL CAPACITY UTILIZATION				.19		.16

3. Cm Del Rio & Los Mares

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02*	47	.03*
NBT	1	1600	7	.00	21	.01
NBR	1	1600	4	.00	51	.03
SBL	0	0	5		4	
SBT	1	1600	22	.02*	15	.02*
SBR	0	0	12		15	
EBL	1	1600	5	.00	6	.00
EBT	2	3200	34	.02*	73	.04*
EBR	0	0	25		47	
WBL	1	1600	51	.03*	19	.01*
WBT	2	3200	67	.02	51	.02
WBR	0	0	6		4	
TOTAL CAPACITY UTILIZATION				.09		.10

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	30	.02*	36	.02*
NBT	1	1600	7	.00	20	.01
NBR	1	1600	4	.00	53	.03
SBL	0	0	5		4	
SBT	1	1600	24	.03*	15	.02*
SBR	0	0	12		14	
EBL	1	1600	5	.00	5	.00
EBT	2	3200	34	.02*	74	.04*
EBR	0	0	22		43	
WBL	1	1600	52	.03*	19	.01*
WBT	2	3200	67	.02	56	.02
WBR	0	0	6		4	
TOTAL CAPACITY UTILIZATION				.10		.09

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	142	.09*
NBT	1	1600	21	.01	130	.08
NBR	1	1600	155	.10	137	.09
SBL	0	0	37		8	
SBT	1	1600	162	.13*	44	.04*
SBR	0	0	8		10	
EBL	1	1600	1	.00	5	.00
EBT	2	3200	172	.11*	77	.03*
EBR	0	0	219	.14	25	
WBL	1	1600	155	.10*	143	.09*
WBT	2	3200	44	.02	149	.06
WBR	0	0	16		35	
Right Turn Adjustment			EBR	.03*		
TOTAL CAPACITY UTILIZATION				.37		.25

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	134	.08*
NBT	1	1600	21	.01	125	.08
NBR	1	1600	119	.07	134	.08
SBL	0	0	37		8	
SBT	1	1600	150	.12*	43	.04*
SBR	0	0	8		9	
EBL	1	1600	1	.00	4	.00
EBT	2	3200	169	.11*	78	.03*
EBR	0	0	198	.12	22	
WBL	1	1600	155	.10*	141	.09*
WBT	2	3200	36	.02	157	.06
WBR	0	0	16		35	
Right Turn Adjustment			EBR	.01*		
TOTAL CAPACITY UTILIZATION				.34		.24

4. Cm Vera Cruz & Los Mares

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	235	.15*	122	.08*
NBT	1	1600	0	.02	2	.02
NBR	0	0	25		22	
SBL	0	0	1		0	
SBT	1	1600	3	.01*	1	.01*
SBR	0	0	19		17	
EBL	1	1600	7	.00	34	.02
EBT	2	3200	45	.03*	127	.08*
EBR	0	0	149	.09	211	.13
WBL	1	1600	36	.02*	10	.01*
WBT	2	3200	97	.03	112	.04
WBR	0	0	1		0	

TOTAL CAPACITY UTILIZATION .21 .18

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	235	.15*	122	.08*
NBT	1	1600	0	.02	2	.02
NBR	0	0	25		22	
SBL	0	0	1		0	
SBT	1	1600	3	.03*	1	.02*
SBR	0	0	36		25	
EBL	1	1600	18	.01	47	.03
EBT	2	3200	45	.03*	127	.08*
EBR	0	0	149	.09	211	.13
WBL	1	1600	36	.02*	10	.01*
WBT	2	3200	97	.03	112	.04
WBR	0	0	1		0	

TOTAL CAPACITY UTILIZATION .23 .19

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	235	.15*	122	.08*
NBT	1	1600	0	.02	2	.02
NBR	0	0	25		22	
SBL	0	0	1		0	
SBT	1	1600	3	.03*	1	.02*
SBR	0	0	38		31	
EBL	1	1600	19	.01	47	.03
EBT	2	3200	50	.03*	127	.08*
EBR	0	0	149	.09	211	.13
WBL	1	1600	36	.02*	10	.01*
WBT	2	3200	97	.03	129	.04
WBR	0	0	1		0	

TOTAL CAPACITY UTILIZATION .23 .19

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	290	.18*	273	.17*
NBT	1	1600	0	.02	2	.07
NBR	0	0	36		107	
SBL	0	0	1		0	
SBT	1	1600	38	.04*	14	.02*
SBR	0	0	19		23	
EBL	1	1600	10	.01	34	.02
EBT	2	3200	69	.04*	127	.08*
EBR	0	0	282	.18	482	.30
WBL	1	1600	100	.06*	28	.02*
WBT	2	3200	97	.03	156	.05
WBR	0	0	1		0	
Right Turn Adjustment			EBR	.01*	EBR	.09*

TOTAL CAPACITY UTILIZATION .33 .38

4. Cm Vera Cruz & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	256	.16*	249	.16*
NBT	1	1600	0	.02	2	.07
NBR	0	0	36		104	
SBL	0	0	1		0	
SBT	1	1600	38	.04*	11	.02*
SBR	0	0	19		28	
EBL	1	1600	10	.01	34	.02
EBT	2	3200	64	.04*	127	.08*
EBR	0	0	274	.17	445	.28
WBL	1	1600	93	.06*	25	.02*
WBT	2	3200	97	.03	133	.04
WBR	0	0	1		0	
Right Turn Adjustment			EBR	.01*	EBR	.08*
TOTAL CAPACITY UTILIZATION				.31		.36

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	37	.02*	208	.13*
NBT	1	1600	0	.01	0	.01
NBR	0	0	23		15	
SBL	0	0	0		0	
SBT	1	1600	1	.01*	1	.02*
SBR	0	0	9		36	
EBL	1	1600	4	.00	25	.02*
EBT	2	3200	312	.16*	123	.08
EBR	0	0	211		181	.11
WBL	1	1600	3	.00	8	.01
WBT	2	3200	41	.01	309	.10*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.19		.27

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	39	.02*	196	.12*
NBT	1	1600	0	.01	0	.01
NBR	0	0	21		23	
SBL	0	0	0		0	
SBT	1	1600	1	.01*	1	.03*
SBR	0	0	11		40	
EBL	1	1600	4	.00	20	.01*
EBT	2	3200	289	.15*	118	.07
EBR	0	0	193		138	.09
WBL	1	1600	4	.00	10	.01
WBT	2	3200	33	.01	307	.10*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.18		.26

5. Port Del Sur & Los Mares

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	25	.02*	14	.01*
SBT	0	0	0		0	
SBR	1	1600	128	.08	71	.04
EBL	1	1600	48	.03*	168	.11*
EBT	2	3200	165	.05	380	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	360	.12*	203	.07*
WBR	0	0	10		15	
Right Turn Adjustment			SBR	.04*		
TOTAL CAPACITY UTILIZATION				.21		.19

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	25	.02*	15	.01*
SBT	0	0	0		0	
SBR	1	1600	143	.09	84	.05
EBL	1	1600	53	.03*	185	.12*
EBT	2	3200	173	.05	380	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	370	.12*	205	.07*
WBR	0	0	10		15	
Right Turn Adjustment			SBR	.05*		
TOTAL CAPACITY UTILIZATION				.22		.20

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	25	.02*	15	.01*
SBT	0	0	0		0	
SBR	1	1600	146	.09	98	.06
EBL	1	1600	54	.03*	206	.13*
EBT	2	3200	175	.05	380	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	360	.12*	219	.07*
WBR	0	0	10		15	
Right Turn Adjustment			SBR	.05*		
TOTAL CAPACITY UTILIZATION				.22		.21

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	96	.06*	34	.02*
SBT	0	0	0		0	
SBR	1	1600	128	.08	107	.07
EBL	1	1600	85	.05*	191	.12*
EBT	2	3200	254	.08	591	.18
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	360	.12*	343	.13*
WBR	0	0	14		76	
TOTAL CAPACITY UTILIZATION				.23		.27

5. Port Del Sur & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	94	.06*	33	.02*
SBT	0	0	0		0	
SBR	1	1600	132	.08	126	.08
EBL	1	1600	85	.05*	208	.13*
EBT	2	3200	243	.08	544	.17
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	360	.12*	300	.12*
WBR	0	0	14		77	
TOTAL CAPACITY UTILIZATION				.23		.27

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	56	.04*	7	.00
SBT	0	0	0		0	
SBR	1	1600	116	.07	154	.10
EBL	1	1600	56	.04	157	.10*
EBT	2	3200	471	.15*	322	.10
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	83	.03	504	.17*
WBR	0	0	4		49	
Right Turn Adjustment					SBR	.02*
TOTAL CAPACITY UTILIZATION				.19		.29

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	56	.04*	7	.00
SBT	0	0	0		0	
SBR	1	1600	136	.09	165	.10
EBL	1	1600	60	.04	177	.11*
EBT	2	3200	430	.13*	269	.08
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	80	.03	496	.17*
WBR	0	0	3		47	
Right Turn Adjustment					SBR	.02*
TOTAL CAPACITY UTILIZATION				.17		.30

6. Calle Nuevo & Los Mares

Existing (1996) Count

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	123	(.08)*	57	(.04)*
NBT	1	1600	0	.08	0	.04
NBR	0	0	3		2	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	405	.13	922	.32*
EBR	0	0	25		96	
WBL	1	1600	9	.01	2	.00
WBT	2	3200	832	.26*	511	.16
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.34		.36

Interim Year 2000 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	123	(.08)*	58	(.04)*
NBT	1	1600	0	.08	0	.04
NBR	0	0	3		2	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	422	.14	937	.32*
EBR	0	0	25		96	
WBL	1	1600	10	.01	2	.00
WBT	2	3200	856	.27*	533	.17
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.35		.36

Interim Year 2000 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	123	(.08)*	57	(.04)*
NBT	1	1600	0	.08	0	.04
NBR	0	0	3		2	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	425	.14	925	.32*
EBR	0	0	25		96	
WBL	1	1600	10	.01	2	.00
WBT	2	3200	832	.26*	561	.18
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.34		.36

Interim Year 2005 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	123		64	
NBT	1	1600	0	.09*	0	.05*
NBR	0	0	27		10	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	507	.17	1148	.39*
EBR	0	0	25		96	
WBL	1	1600	9	.01	21	.01*
WBT	2	3200	832	.26*	668	.21
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.35		.45

6. Calle Nuevo & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	123		57	{.04}*
NBT	1	1600	0	.10*	0	.04
NBR	0	0	29		8	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	494	.16	1120	.38*
EBR	0	0	26		96	
WBL	1	1600	9	.01	18	.01*
WBT	2	3200	832	.26*	647	.20
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.36		.43

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	99		93	
NBT	1	1600	0	.10*	0	.07*
NBR	0	0	65		14	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	462	.16*	465	.18*
EBR	0	0	64		120	
WBL	1	1600	7	.00	48	.03*
WBT	2	3200	192	.06	610	.19
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.26		.28

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	86		80	
NBT	1	1600	0	.09*	0	.06*
NBR	0	0	60		14	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	430	.15*	432	.17*
EBR	0	0	65		118	
WBL	1	1600	7	.00	51	.03*
WBT	2	3200	209	.07	610	.19
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.24		.26

7. Avd Vaquero & Los Mares

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	238	.07*	202	.06*
NBT	0	0	0		0	
NBR	1	1600	29	.02	85	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	177	.06	688	.22*
EBR	1	1600	120	.08	376	.24
WBL	1	1600	63	.04	58	.04*
WBT	2	3200	503	.16*	354	.11
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.32

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	238	.07*	206	.06*
NBT	0	0	0		0	
NBR	1	1600	29	.02	85	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	194	.06	711	.22*
EBR	1	1600	127	.08	376	.24
WBL	1	1600	88	.06	58	.04*
WBT	2	3200	503	.16*	389	.12
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.32

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	238	.07*	202	.06*
NBT	0	0	0		0	
NBR	1	1600	65	.04	179	.11
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	177	.06	688	.22*
EBR	1	1600	120	.08	376	.24
WBL	1	1600	71	.04	160	.10*
WBT	2	3200	503	.16*	354	.11
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.38

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	309	.10*	309	.10*
NBT	0	0	0		0	
NBR	1	1600	29	.02	85	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	277	.09	947	.30*
EBR	1	1600	156	.10	440	.28
WBL	1	1600	63	.04	58	.04*
WBT	2	3200	525	.16*	568	.18
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.26		.44

7. Avd Vaquero & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	238	.07*	210	.07*
NBT	0	0	0		0	
NBR	1	1600	29	.02	85	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	257	.08	882	.28*
EBR	1	1600	123	.08	376	.24
WBL	1	1600	63	.04	79	.05*
WBT	2	3200	503	.16*	467	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.40

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	218	.07*	414	.13*
NBT	0	0	0		0	
NBR	1	1600	92	.06	88	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	429	.13*	520	.16*
EBR	1	1600	279	.17	415	.26
WBL	1	1600	87	.05*	99	.06*
WBT	2	3200	221	.07	616	.19
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.25		.35

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	78	.02*	229	.07*
NBT	0	0	0		0	
NBR	1	1600	106	.07	138	.09
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	384	.12*	437	.14*
EBR	1	1600	185	.12	305	.19
WBL	1	1600	93	.06*	153	.10*
WBT	2	3200	220	.07	550	.17
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.01*		
TOTAL CAPACITY UTILIZATION				.21		.31

8. Marbella & Los Mares

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	{.01}*	18	{.01}*
NBT	1	1600	0	.01	0	.01
NBR	0	0	7		2	
SBL	0	0	8		8	
SBT	1	1600	0	.01*	0	.02*
SBR	0	0	14		19	
EBL	1	1600	37	.02*	33	.02
EBT	3	4800	268	.06	962	.20*
EBR	0	0	4		0	
WBL	1	1600	3	.00	0	.00
WBT	3	4800	777	.16*	538	.11
WBR	0	0	8		2	
TOTAL CAPACITY UTILIZATION				.20		.23

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	{.01}*	18	{.01}*
NBT	1	1600	0	.01	0	.01
NBR	0	0	7		2	
SBL	0	0	8		8	
SBT	1	1600	0	.01*	0	.02*
SBR	0	0	14		20	
EBL	1	1600	37	.02*	33	.02
EBT	3	4800	302	.06	962	.20*
EBR	0	0	4		0	
WBL	1	1600	3	.00	0	.00
WBT	3	4800	777	.16*	583	.12
WBR	0	0	8		2	
TOTAL CAPACITY UTILIZATION				.20		.23

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	{.01}*	18	{.01}*
NBT	1	1600	0	.01	0	.01
NBR	0	0	7		2	
SBL	0	0	8		8	
SBT	1	1600	0	.01*	0	.02*
SBR	0	0	14		19	
EBL	1	1600	37	.02*	33	.02
EBT	3	4800	268	.06	962	.20*
EBR	0	0	4		0	
WBL	1	1600	3	.00	0	.00
WBT	3	4800	777	.16*	538	.11
WBR	0	0	8		2	
TOTAL CAPACITY UTILIZATION				.20		.23

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	{.01}*	19	{.01}*
NBT	1	1600	0	.01	0	.01
NBR	0	0	7		2	
SBL	0	0	19		8	
SBT	1	1600	0	.02*	0	.02*
SBR	0	0	14		25	
EBL	1	1600	39	.02*	33	.02
EBT	3	4800	386	.08	1303	.27*
EBR	0	0	5		0	
WBL	1	1600	3	.00	0	.00
WBT	3	4800	883	.19*	850	.18
WBR	0	0	8		2	
TOTAL CAPACITY UTILIZATION				.24		.30

8. Marbella & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	(.01)*	18	(.01)*
NBT	1	1600	0	.01	0	.01
NBR	0	0	7		2	
SBL	0	0	32		8	
SBT	1	1600	0	.03*	0	.02*
SBR	0	0	14		24	
EBL	1	1600	39	.02*	33	.02
EBT	3	4800	317	.07	1154	.24*
EBR	0	0	5		0	
WBL	1	1600	3	.00	0	.00
WBT	3	4800	777	.16*	625	.13
WBR	0	0	8		15	
TOTAL CAPACITY UTILIZATION				.22		.27

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	29	(.02)*	4	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	68		13	
SBT	1	1600	0	.05*	0	.02*
SBR	0	0	14		26	
EBL	1	1600	4	.00	11	.01*
EBT	3	4800	604	.13*	918	.20
EBR	0	0	13		46	
WBL	0	0	0		0	
WBT	3	4800	432	.09	985	.21*
WBR	0	0	6		41	
TOTAL CAPACITY UTILIZATION				.20		.24

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	29	(.02)*	4	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	85		21	
SBT	1	1600	0	.06*	0	.03*
SBR	0	0	14		24	
EBL	1	1600	4	.00	11	.01*
EBT	3	4800	446	.10*	712	.16
EBR	0	0	14		41	
WBL	0	0	0		0	
WBT	3	4800	291	.06	720	.16*
WBR	0	0	6		44	
TOTAL CAPACITY UTILIZATION				.18		.20

9. Calle Agua & Los Mares

Existing (1996) Count

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	127	(.08)*	289	(.18)*
NBT	1	1600	12	.10	14	.20
NBR	0	0	13		23	
SBL	0	0	7		21	
SBT	1	1600	7	.06*	11	.08*
SBR	0	0	80		90	
EBL	1	1600	95	.06*	95	.06
EBT	3	4800	556	.15	983	.28*
EBR	0	0	157		380	
WBL	1	1600	26	.02	27	.02*
WBT	3	4800	820	.17*	792	.17
WBR	0	0	3		13	

TOTAL CAPACITY UTILIZATION .37 .56

Interim Year 2000 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	127	(.08)*	289	(.18)*
NBT	1	1600	19	.11	33	.25
NBR	0	0	23		83	
SBL	0	0	7		28	
SBT	1	1600	13	.06*	24	.09*
SBR	0	0	80		90	
EBL	1	1600	99	.06*	95	.06
EBT	3	4800	595	.16	1102	.31*
EBR	0	0	157		380	
WBL	1	1600	39	.02	72	.05*
WBT	3	4800	820	.17*	792	.17
WBR	0	0	3		13	

TOTAL CAPACITY UTILIZATION .37 .63

Interim Year 2000 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	127	(.08)*	289	
NBT	1	1600	18	.10	29	.25*
NBR	0	0	19		85	
SBL	0	0	7		26	(.02)*
SBT	1	1600	12	.06*	18	.08
SBR	0	0	80		90	
EBL	1	1600	104	.07*	95	.06
EBT	3	4800	556	.15	983	.28*
EBR	0	0	157		380	
WBL	1	1600	35	.02	45	.03*
WBT	3	4800	820	.17*	792	.17
WBR	0	0	3		13	

TOTAL CAPACITY UTILIZATION .38 .58

Interim Year 2005 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	127	(.08)*	289	
NBT	1	1600	18	.10	38	.28*
NBR	0	0	22		123	
SBL	0	0	12		25	(.02)*
SBT	1	1600	14	.07*	31	.09
SBR	0	0	80		90	
EBL	1	1600	95	.06*	95	.06
EBT	3	4800	683	.18	1396	.37*
EBR	0	0	157		380	
WBL	1	1600	53	.03	95	.06*
WBT	3	4800	902	.19*	882	.19
WBR	0	0	3		13	

TOTAL CAPACITY UTILIZATION .40 .73

9. Calle Agua & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	127	(.08)*	289	
NBT	1	1600	18	.10	37	.30*
NBR	0	0	22		157	
SBL	0	0	9		30	(.02)*
SBT	1	1600	14	.06*	27	.09
SBR	0	0	80		90	
EBL	1	1600	95	.06*	95	.06
EBT	3	4800	618	.16	1210	.33*
EBR	0	0	157		380	
WBL	1	1600	44	.03	81	.05*
WBT	3	4800	820	.17*	792	.17
WBR	0	0	3		17	

TOTAL CAPACITY UTILIZATION .37 .70

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	16	.03	42	.12*
NBR	0	0	27		151	
SBL	0	0	49		26	(.02)*
SBT	1	1600	14	.09*	40	.08
SBR	0	0	86		60	
EBL	1	1600	61	.04	139	.09*
EBT	3	4800	731	.15*	958	.20
EBR	0	0	0		0	
WBL	1	1600	38	.02*	129	.08
WBT	3	4800	447	.10	1086	.24*
WBR	0	0	24		67	

TOTAL CAPACITY UTILIZATION .26 .47

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	16	.03	41	.12*
NBR	0	0	27		144	
SBL	0	0	33		24	(.01)*
SBT	1	1600	14	.08*	37	.08
SBR	0	0	73		60	
EBL	1	1600	66	.04	148	.09*
EBT	3	4800	596	.12*	789	.16
EBR	0	0	0		0	
WBL	1	1600	32	.02*	113	.07
WBT	3	4800	317	.07	872	.20*
WBR	0	0	23		65	

TOTAL CAPACITY UTILIZATION .22 .42

10. Cm El Molino & Los Mares

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	141		106	
NBT	1	1600	11	.11*	27	.09*
NBR	0	0	19		12	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	48	.03	93	.06
EBT	3	4800	811	.19*	1302	.30*
EBR	0	0	79		148	
WBL	1	1600	95	.06*	83	.05*
WBT	3	4800	928	.20	961	.21
WBR	0	0	19		64	
TOTAL CAPACITY UTILIZATION				.36		.44

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	167		254	
NBT	1	1600	20	.13*	65	.21*
NBR	0	0	19		12	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	48	.03	93	.06
EBT	3	4800	854	.21*	1394	.36*
EBR	0	0	136		340	
WBL	1	1600	95	.06*	83	.05*
WBT	3	4800	928	.21	961	.21
WBR	0	0	56		65	
TOTAL CAPACITY UTILIZATION				.40		.62

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	174		262	
NBT	1	1600	20	.13*	63	.21*
NBR	0	0	19		12	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	48	.03	105	.07
EBT	3	4800	811	.20*	1302	.35*
EBR	0	0	142		371	
WBL	1	1600	95	.06*	83	.05*
WBT	3	4800	928	.20	961	.21
WBR	0	0	38		64	
TOTAL CAPACITY UTILIZATION				.39		.61

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	166		189	
NBT	1	1600	38	.14*	85	.18*
NBR	0	0	19		12	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	264	.17*	93	.06
EBT	3	4800	935	.22	1695	.42*
EBR	0	0	139		332	
WBL	1	1600	95	.06	83	.05*
WBT	3	4800	928	.24*	961	.25
WBR	0	0	229		218	
TOTAL CAPACITY UTILIZATION				.55		.65

10. Cm El Molino & Los Mares

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	166		165	
NBT	1	1600	38	.14*	82	.16*
NBR	0	0	19		12	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	266	.17*	94	.06
EBT	3	4800	870	.21	1500	.39*
EBR	0	0	150		351	
WBL	1	1600	95	.06	83	.05*
WBT	3	4800	928	.23*	961	.24
WBR	0	0	191		186	
TOTAL CAPACITY UTILIZATION				.54		.60

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	53		269	
NBT	1	1600	48	.06*	86	.22*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	30	.02	101	.06
EBT	3	4800	792	.19*	1097	.30*
EBR	0	0	126		337	
WBL	1	1600	0	.00	0	.00
WBT	3	4800	323	.10	909	.24
WBR	0	0	210	.13	237	
TOTAL CAPACITY UTILIZATION				.25		.52

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	53		285	
NBT	1	1600	48	.06*	83	.23*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	34	.02	115	.07
EBT	3	4800	662	.17*	937	.27*
EBR	0	0	133		362	
WBL	1	1600	0	.00	0	.00
WBT	3	4800	229	.07	742	.19
WBR	0	0	161	.10	190	
TOTAL CAPACITY UTILIZATION				.23		.50

11. I-5 NB Ramps & Estrella

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	97	.06*	182	.11*
NBT	0	0	0		0	
NBR	1	1600	249	.16	341	.21
SBL	1	1600	81	.05	82	.05
SBT	0	0	0		0	
SBR	1	1600	99	.06	102	.06
EBL	0	0	0		0	
EBT	2	3200	515	.16	1131	.35*
EBR	1	1600	312	.20	307	.19
WBL	0	0	0		0	
WBT	2	3200	1095	.34*	1076	.34
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.07*	Multi	.20*
TOTAL CAPACITY UTILIZATION				.47		.66

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	97	.06*	214	.13
NBT	0	0	0		0	
NBR	1	1600	283	.18	449	.28
SBL	1	1600	81	.05	221	.14*
SBT	0	0	0		0	
SBR	1	1600	101	.06	102	.06
EBL	0	0	0		0	
EBT	2	3200	575	.18	1163	.36*
EBR	1	1600	312	.20	307	.19
WBL	0	0	0		0	
WBT	3	4800	1095	.23*	1136	.24
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.19*	NBR	.28*
TOTAL CAPACITY UTILIZATION				.48		.78

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06*	232	.15*
NBT	0	0	0		0	
NBR	1	1600	300	.19	428	.27
SBL	1	1600	81	.05	183	.11
SBT	0	0	0		0	
SBR	1	1600	114	.07	129	.08
EBL	0	0	0		0	
EBT	2	3200	516	.16	1131	.35*
EBR	1	1600	312	.20	307	.19
WBL	0	0	0		0	
WBT	3	4800	1095	.23*	1076	.22
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.20*	NBR	.23*
TOTAL CAPACITY UTILIZATION				.49		.73

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	97	.06	182	.11
NBT	0	0	0		0	
NBR	1	1600	488	.31	360	.23
SBL	1	1600	131	.08*	529	.33*
SBT	0	0	0		0	
SBR	1	1600	99	.06	102	.06
EBL	0	0	0		0	
EBT	3	4800	626	.13	1235	.26*
EBR	1	1600	312	.20	307	.19
WBL	0	0	0		0	
WBT	3	4800	1095	.23*	1093	.23
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.28*	NBR	.23*
TOTAL CAPACITY UTILIZATION				.59		.82

11. I-5 NB Ramps & Estrella

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	107	.07*	210	.13
NBT	0	0	0		0	
NBR	1	1600	509	.32	341	.21
SBL	1	1600	115	.07	483	.30*
SBT	0	0	0		0	
SBR	1	1600	106	.07	102	.06
EBL	0	0	0		0	
EBT	3	4800	569	.12	1135	.24*
EBR	1	1600	312	.20	307	.19
WBL	0	0	0		0	
WBT	3	4800	1095	.23*	1076	.22
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.31*	NBR	.21*
TOTAL CAPACITY UTILIZATION				.61		.75

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	83	.05*	198	.12
NBT	0	0	0		0	
NBR	1	1600	141	.09	304	.19
SBL	1	1600	53	.03	245	.15*
SBT	0	0	0		0	
SBR	1	1600	102	.06	157	.10
EBL	0	0	0		0	
EBT	3	4800	754	.16*	986	.21
EBR	1	1600	142	.09	253	.16
WBL	0	0	0		0	
WBT	3	4800	376	.08	1178	.25*
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.07*	Multi	.23*
TOTAL CAPACITY UTILIZATION				.28		.63

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	99	.06*	250	.16*
NBT	0	0	0		0	
NBR	1	1600	166	.10	326	.20
SBL	1	1600	38	.02	235	.15
SBT	0	0	0		0	
SBR	1	1600	133	.08	188	.12
EBL	0	0	0		0	
EBT	3	4800	625	.13*	853	.18
EBR	1	1600	143	.09	244	.15
WBL	0	0	0		0	
WBT	3	4800	282	.06	1027	.21*
WBR	0	0	0		0	
Right Turn Adjustment			Multi	.09*	Multi	.29*
TOTAL CAPACITY UTILIZATION				.28		.66

12. I-5 SB Ramps & Estrella

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	403	.13*	953	.30*
SBT	0	0	0		0	
SBR	1	1600	166	.10	481	.30
EBL	0	0	0		0	
EBT	2	3200	415	.13*	668	.21*
EBR	1	1600	124	.08	213	.13
WBL	1	1600	192	.12*	380	.24*
WBT	2	3200	276	.09	469	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.38		.75

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	473	.15*	960	.30*
SBT	0	0	0		0	
SBR	1	1600	166	.10	481	.30
EBL	0	0	0		0	
EBT	2	3200	415	.13*	676	.21*
EBR	1	1600	128	.08	368	.23
WBL	1	1600	192	.12*	429	.27*
WBT	2	3200	276	.09	474	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.40		.78

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	418	.13*	953	.30*
SBT	0	0	0		0	
SBR	1	1600	166	.10	481	.30
EBL	0	0	0		0	
EBT	2	3200	415	.13*	668	.21*
EBR	1	1600	142	.09	541	.34
WBL	1	1600	192	.12*	472	.29*
WBT	2	3200	276	.09	471	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.38		.80

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	511	.16*	1014	.32*
SBT	0	0	0		0	
SBR	1	1600	166	.10	481	.30
EBL	0	0	0		0	
EBT	2	3200	415	.13*	690	.22*
EBR	1	1600	126	.08	429	.27
WBL	1	1600	192	.12*	380	.24*
WBT	2	3200	276	.09	469	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.41		.78

12. I-5 SB Ramps & Estrella

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	456	.14*	953	.30*
SBT	0	0	0		0	
SBR	1	1600	166	.10	481	.30
EBL	0	0	0		0	
EBT	2	3200	415	.13*	677	.21*
EBR	1	1600	141	.09	418	.26
WBL	1	1600	192	.12*	380	.24*
WBT	2	3200	284	.09	469	.15
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.39		.75

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	601	.19*	691	.22*
SBT	0	0	0		0	
SBR	1	1600	240	.15	394	.25
EBL	0	0	0		0	
EBT	2	3200	295	.09*	548	.17*
EBR	1	1600	209	.13	445	.28
WBL	1	1600	109	.07*	316	.20*
WBT	2	3200	162	.05	463	.14
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.35		.59

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	493	.15*	572	.18*
SBT	0	0	0		0	
SBR	1	1600	239	.15	406	.25
EBL	0	0	0		0	
EBT	2	3200	275	.09*	525	.16*
EBR	1	1600	272	.17	604	.38
WBL	1	1600	126	.08*	362	.23*
WBT	2	3200	175	.05	493	.15
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.08*
TOTAL CAPACITY UTILIZATION				.32		.65

13. Cm Mira Costa & Estrella

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	21	.01*	57	.04*
NBT	0	0	0		0	
NBR	1	1600	258	.16	252	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	123	.05*	197	.08*
EBR	0	0	22		45	
WBL	1	1600	145	.09*	357	.22*
WBT	2	3200	134	.04	216	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.08*		
TOTAL CAPACITY UTILIZATION				.23		.34

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	24	.02*	57	.04*
NBT	0	0	0		0	
NBR	1	1600	261	.16	252	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	123	.05*	398	.14*
EBR	0	0	24		45	
WBL	1	1600	145	.09*	357	.22*
WBT	2	3200	136	.04	216	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.07*		
TOTAL CAPACITY UTILIZATION				.23		.40

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	23	.01*	57	.04*
NBT	0	0	0		0	
NBR	1	1600	262	.16	272	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	123	.05*	468	.16*
EBR	0	0	24		45	
WBL	1	1600	145	.09*	357	.22*
WBT	2	3200	135	.04	216	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.08*		
TOTAL CAPACITY UTILIZATION				.23		.42

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	27	.02*	60	.04*
NBT	0	0	0		0	
NBR	1	1600	258	.16	252	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	123	.05*	480	.16*
EBR	0	0	29		46	
WBL	1	1600	145	.09*	357	.22*
WBT	2	3200	146	.05	220	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.07*		
TOTAL CAPACITY UTILIZATION				.23		.42

13. Cm Mira Costa & Estrella

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	28	.02*	57	.04*
NBT	0	0	0		0	
NBR	1	1600	258	.16	252	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	123	.05*	457	.16*
EBR	0	0	29		46	
WBL	1	1600	145	.09*	357	.22*
WBT	2	3200	147	.05	220	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.07*		
TOTAL CAPACITY UTILIZATION				.23		.42

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	60	.04*	24	.02*
NBT	0	0	0		0	
NBR	1	1600	265	.17	269	.17
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	69	.02*	434	.15*
EBR	0	0	9		48	
WBL	1	1600	161	.10*	322	.20*
WBT	2	3200	138	.04	227	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.06*		
TOTAL CAPACITY UTILIZATION				.22		.37

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	60	.04*	24	.02*
NBT	0	0	0		0	
NBR	1	1600	302	.19	295	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	64	.02*	526	.18*
EBR	0	0	9		48	
WBL	1	1600	160	.10*	342	.21*
WBT	2	3200	142	.04	231	.07
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.07*		
TOTAL CAPACITY UTILIZATION				.23		.41

14. Cm Del Rio & Sarmentoso

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	69	{.04}*	42	{.03}*
NBT	1	1600	33	.06	51	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	25	.06*	50	.05*
SBR	0	0	73		31	
EBL	0	0	8		68	
EBT	1	1600	0	.02*	0	.09*
EBR	0	0	19		74	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.12		.17

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	70	{.04}*	49	{.03}*
NBT	1	1600	33	.06	40	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	25	.06*	46	.05*
SBR	0	0	73		31	
EBL	0	0	8		69	
EBT	1	1600	0	.02*	0	.09*
EBR	0	0	19		80	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.12		.17

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	23	{.01}*	130	
NBT	1	1600	51	.05	359	.31*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	467	.34*	98	.13
SBR	0	0	69		114	
EBL	0	0	129		50	
EBT	1	1600	0	.22*	0	.07*
EBR	0	0	218		54	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.57		.38

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	23	{.01}*	125	
NBT	1	1600	48	.04	338	.29*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	432	.31*	95	.13
SBR	0	0	71		111	
EBL	0	0	96		55	
EBT	1	1600	0	.19*	0	.07*
EBR	0	0	208		53	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.51		.36

15. Cm Vera Cruz & Sarmentoso

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	0	.00	3	.00*
NBR	0	0	1		37	.02
SBL	0.5		23		24	.02*
SBT	1.5	3200	25	.02*	5	.00
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	48		2	
WBT	1	1600	0	.04*	0	.02*
WBR	0	0	21		36	
Right Turn Adjustment					NBR	.01*
TOTAL CAPACITY UTILIZATION				.06		.05

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	0	.00	8	.01*
NBR	0	0	1		92	.06
SBL	0.5		19		24	.02*
SBT	1.5	3200	42	.02*	14	.01
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	99		2	
WBT	1	1600	0	.07*	0	.02*
WBR	0	0	12		32	
Right Turn Adjustment					NBR	.03*
TOTAL CAPACITY UTILIZATION				.09		.08

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	13	.01	199	.12*
NBR	0	0	47	.03	308	.19
SBL	0.5		73		111	(.07)*
SBT	1.5	3200	244	.10*	267	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	281		137	
WBT	1	1600	0	.25*	0	.15*
WBR	0	0	113		108	
TOTAL CAPACITY UTILIZATION				.35		.34

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	13	.01	181	.11*
NBR	0	0	52	.03	348	.22
SBL	0.5		74		97	(.06)*
SBT	1.5	3200	239	.10*	250	.11
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	299		175	
WBT	1	1600	0	.24*	0	.17*
WBR	0	0	86		104	
TOTAL CAPACITY UTILIZATION				.34		.34

15. Ca Vera Cruz & Sarmentoso

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	6	.00	78	.04*
NBR	0	0	88	.06	50	
SBL	0.5		66		37	(.02)*
SBT	1.5	3200	131	.06*	93	.04
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	6		37	
WBT	1	1600	0	.01*	0	.10*
WBR	0	0	8		117	
Right Turn Adjustment			NBR	.03*		
TOTAL CAPACITY UTILIZATION				.10		.16

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	5	.00	83	.05*
NBR	0	0	80	.05	75	
SBL	0.5		65		33	(.02)*
SBT	1.5	3200	114	.06*	56	.03
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	27		63	
WBT	1	1600	0	.02*	0	.11*
WBR	0	0	9		111	
Right Turn Adjustment			NBR	.02*		
TOTAL CAPACITY UTILIZATION				.10		.18

16. Avd Vaquero & Calle Vallarta

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	0	.00	0	.00
NBR	0	0	0		0	
SBL	1	1600	109	.07	118	.07
SBT	1	1600	0	.16*	0	.24*
SBR	0	0	255		386	
EBL	0	0	191	{.12}*	336	{.21}*
EBT	0	0	0		2	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	5	.07*	2	.11*
WBR	0	0	110		166	

TOTAL CAPACITY UTILIZATION .35 .56

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	0	.00	0	.00
NBR	0	0	0		0	
SBL	1	1600	88	.06	99	.06
SBT	1	1600	0	.12*	0	.22*
SBR	0	0	187		352	
EBL	0	0	125	{.08}*	263	{.16}*
EBT	0	0	0		2	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	4	.03*	4	.07*
WBR	0	0	48		105	

TOTAL CAPACITY UTILIZATION .23 .45

17. Avd Vaquero & Guadalajara

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	67	.05	145	.15*
NBR	0	0	19		98	
SBL	0	0	84		194	{.12}*
SBT	1	1600	83	.10*	135	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	33	.02*	43	.03*
WBT	0	0	0		0	
WBR	1	1600	209	.13	112	.07
Right Turn Adjustment			WBR	.07*		
TOTAL CAPACITY UTILIZATION				.19		.30

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	67	.07	145	.15*
NBR	0	0	42		98	
SBL	0	0	104		194	{.12}*
SBT	1	1600	99	.13*	135	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	33	.02*	44	.03*
WBT	0	0	0		0	
WBR	1	1600	209	.13	138	.09
Right Turn Adjustment			WBR	.07*		
TOTAL CAPACITY UTILIZATION				.22		.30

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	67	.05	145	.15*
NBR	0	0	19		98	
SBL	0	0	143		195	{.12}*
SBT	1	1600	83	.14*	135	.21
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	33	.02*	43	.03*
WBT	0	0	0		0	
WBR	1	1600	209	.13	206	.13
Right Turn Adjustment			WBR	.04*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.20		.31

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	67	.12*	162	.18*
NBR	0	0	131		130	
SBL	0	0	84	{.05}*	210	{.13}*
SBT	1	1600	83	.10	135	.22
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	97	.06*	129	.08*
WBT	0	0	0		0	
WBR	1	1600	245	.15	138	.09
Right Turn Adjustment			WBR	.05*		
TOTAL CAPACITY UTILIZATION				.28		.39

17. Avd Vaquero & Guadalajara

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	67	.07*	145	.21*
NBR	0	0	51		198	
SBL	0	0	109	{.07}*	242	{.15}*
SBT	1	1600	83	.12	135	.24
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	33	.02*	51	.03*
WBT	0	0	0		0	
WBR	1	1600	209	.13	171	.11
Right Turn Adjustment			WBR	.06*		
TOTAL CAPACITY UTILIZATION				.22		.39

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	93	.18*	161	.25*
NBR	0	0	200		244	
SBL	0	0	130	{.08}*	194	{.12}*
SBT	1	1600	130	.16	194	.24
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	241	.15*	214	.13*
WBT	0	0	0		0	
WBR	1	1600	98	.06	177	.11
TOTAL CAPACITY UTILIZATION				.41		.50

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	88	.14*	147	.19*
NBR	0	0	134		163	
SBL	0	0	94	{.06}*	205	{.13}*
SBT	1	1600	97	.12	151	.22
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	106	.07*	135	.08*
WBT	0	0	0		0	
WBR	1	1600	37	.02	118	.07
TOTAL CAPACITY UTILIZATION				.27		.40

18. Avd Vaquero & Cm Capistrano

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	322	.20*	274	.17*
NBT	0	0	0		0	
NBR	1	1600	94	.06	74	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	103	.06*	189	.12*
EBR	0	0	344	.22	347	.22
WBL	1	1600	126	.08*	75	.05*
WBT	1	1600	97	.06	137	.09
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
TOTAL CAPACITY UTILIZATION				.35		.34

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	322	.20*	274	.17*
NBT	0	0	0		0	
NBR	1	1600	94	.06	76	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	103	.06*	189	.12*
EBR	0	0	344	.22	347	.22
WBL	1	1600	126	.08*	75	.05*
WBT	1	1600	112	.07	137	.09
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
TOTAL CAPACITY UTILIZATION				.35		.34

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	322	.20*	274	.17*
NBT	0	0	0		0	
NBR	1	1600	94	.06	74	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	103	.06*	229	.14*
EBR	0	0	344	.22	347	.22
WBL	1	1600	126	.08*	75	.05*
WBT	1	1600	118	.07	137	.09
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
TOTAL CAPACITY UTILIZATION				.35		.36

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	322	.20*	274	.17*
NBT	0	0	0		0	
NBR	1	1600	118	.07	100	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	247	.15*	204	.13*
EBR	0	0	388	.24	347	.22
WBL	1	1600	142	.09*	136	.09*
WBT	1	1600	104	.07	137	.09
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.44		.39

18. Avd Vaquero & Cm Capistrano

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	322	.20*	274	.17*
NBT	0	0	0		0	
NBR	1	1600	103	.06	76	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	249	.16*	231	.14*
EBR	0	0	344	.22	347	.22
WBL	1	1600	142	.09*	234	.15*
WBT	1	1600	114	.07	186	.12
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.45		.46

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	421	.26*	345	.22*
NBT	0	0	0		0	
NBR	1	1600	94	.06	113	.07
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	121	.08*	170	.11*
EBR	0	0	221	.14	498	.31
WBL	1	1600	137	.09*	76	.05*
WBT	1	1600	123	.08	128	.08
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
TOTAL CAPACITY UTILIZATION				.43		.42

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	272	.17*	236	.15*
NBT	0	0	0		0	
NBR	1	1600	79	.05	108	.07
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	122	.08*	184	.12*
EBR	0	0	179	.11	401	.25
WBL	1	1600	129	.08*	75	.05*
WBT	1	1600	129	.08	128	.08
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.02*
TOTAL CAPACITY UTILIZATION				.33		.34

19. PCH & Cm Capistrano

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	297	.19*	313	.20
NBR	1	1600	344	.22	364	.23
SBL	1	1600	108	.07*	158	.10
SBT	1	1600	234	.15	517	.32*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	319	.20*	333	.21*
WBT	0	0	0		0	
WBR	1	1600	129	.08	90	.06
TOTAL CAPACITY UTILIZATION				.46		.53

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	297	.19*	313	.20
NBR	1	1600	344	.22	364	.23
SBL	1	1600	108	.07*	182	.11
SBT	1	1600	234	.15	517	.32*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	319	.20*	333	.21*
WBT	0	0	0		0	
WBR	1	1600	129	.08	90	.06
TOTAL CAPACITY UTILIZATION				.46		.53

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	297	.19*	313	.20
NBR	1	1600	344	.22	364	.23
SBL	1	1600	108	.07*	158	.10
SBT	1	1600	245	.15	517	.32*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	319	.20*	333	.21*
WBT	0	0	0		0	
WBR	1	1600	129	.08	90	.06
TOTAL CAPACITY UTILIZATION				.46		.53

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	598	.37*	658	.41*
NBR	1	1600	441	.28	369	.23
SBL	1	1600	204	.13*	160	.10*
SBT	1	1600	299	.19	710	.44
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	319	.20*	333	.21*
WBT	0	0	0		0	
WBR	1	1600	178	.11	167	.10
TOTAL CAPACITY UTILIZATION				.70		.72

19. PCH & Cm Capistrano

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	600	.38*	689	.43*
NBR	1	1600	429	.27	364	.23
SBL	1	1600	143	.09*	158	.10*
SBT	1	1600	312	.20	774	.48
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	319	.20*	333	.21*
WBT	0	0	0		0	
WBR	1	1600	129	.08	110	.07
TOTAL CAPACITY UTILIZATION				.67		.74

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	1154	.36*	800	.25*
NBR	1	1600	255	.16	500	.31
SBL	1	1600	134	.08*	268	.17*
SBT	2	3200	277	.09	1014	.32
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	261	.16*	359	.22*
WBT	0	0	0		0	
WBR	1	1600	316	.20	206	.13
TOTAL CAPACITY UTILIZATION				.60		.64

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	1168	.37*	832	.26*
NBR	1	1600	247	.15	465	.29
SBL	1	1600	105	.07*	222	.14*
SBT	2	3200	298	.09	1239	.39
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	224	.14*	310	.19*
WBT	0	0	0		0	
WBR	1	1600	211	.13	149	.09
TOTAL CAPACITY UTILIZATION				.58		.59

20. La Pata & Cm Las Ramblas

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	100	.06	303	.19*
NBT	2	3200	997	.31*	846	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	675	.21	895	.28*
SBR	1	1600	94	.06	234	.15
EBL	0.5		273		126	.08*
EBT	0	3200	0	{.18}*	0	
EBR	1.5		418		298	{.04}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.49		.55

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	63	.04	261	.16*
NBT	2	3200	1001	.31*	820	.26
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	676	.21	938	.29*
SBR	1	1600	94	.06	225	.14
EBL	0.5		277	.17*	122	.08*
EBT	0	3200	0		0	
EBR	1.5		255	.16	217	{.02}
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.48		.53

21. La Pata & Cm Del Rio

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	72	.05*	643	.40*
NBT	2	3200	720	.23	840	.26
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	791	.26*	779	.26*
SBR	0	0	39		48	
EBL	0	0	46	{.03}*	51	{.03}*
EBT	1	1600	0	.03	0	.03
EBR	1	1600	856	.54	189	.12
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.47*		
TOTAL CAPACITY UTILIZATION				.81		.69

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	71	.04*	618	.39*
NBT	2	3200	720	.23	817	.26
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	662	.22*	779	.26*
SBR	0	0	39		48	
EBL	0	0	45	{.03}*	47	{.03}*
EBT	1	1600	0	.03	0	.03
EBR	1	1600	815	.51	193	.12
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.45*		
TOTAL CAPACITY UTILIZATION				.74		.68

23. La Pata & Avd Vista Hermosa

Long-Range Buildout No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3200	241	.08*	167	.05
NBT	3	4800	839	.17	1202	.25*
NBR	1	1600	113	.07	443	.28
SBL	1	1600	55	.03	6	.00
SBT	3	4800	1041	.22*	847	.18
SBR	1	1600	132	.08	40	.03
EBL	1	1600	34	.02	24	.02
EBT	2	3200	39	.01*	103	.03*
EBR	1	1600	210	.13	355	.22
WBL	1	1600	338	.21*	213	.13*
WBT	2	3200	112	.07	50	.03
WBR	0	0	97		151	.09
Right Turn Adjustment			EBR	.06*	EBR	.14*
TOTAL CAPACITY UTILIZATION				.58		.55

Long-Range Buildout w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	2	3200	344	.11*	448	.14*
NBT	3	4800	744	.16	1141	.24
NBR	1	1600	106	.07	425	.27
SBL	1	1600	57	.04	5	.00
SBT	3	4800	941	.20*	794	.17*
SBR	1	1600	142	.09	118	.07
EBL	1	1600	94	.06	36	.02
EBT	2	3200	114	.04*	215	.07*
EBR	1	1600	491	.31	391	.24
WBL	1	1600	298	.19*	183	.11*
WBT	2	3200	231	.10	241	.12
WBR	0	0	101		143	
Right Turn Adjustment			EBR	.19*	EBR	.06*
TOTAL CAPACITY UTILIZATION				.73		.55

24. Vs Pacifica & Cm Vera Cruz

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	180	.06	639	.22*
NBR	0	0	12		59	
SBL	1	1600	3	.00	9	.01*
SBT	2	3200	627	.20*	544	.17
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	58		27	
WBT	1	1600	0	.04*	0	.02*
WBR	0	0	6		5	
TOTAL CAPACITY UTILIZATION				.24		.25

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	138	.05	596	.21*
NBR	0	0	17		72	
SBL	1	1600	2	.00	7	.00
SBT	2	3200	603	.19*	556	.17
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	64		37	
WBT	1	1600	0	.05*	0	.03*
WBR	0	0	10		4	
TOTAL CAPACITY UTILIZATION				.24		.24

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	119	.04	308	.12*
NBR	0	0	12		67	
SBL	1	1600	4	.00	11	.01*
SBT	2	3200	246	.08*	192	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	54		36	
WBT	1	1600	0	.04*	0	.03*
WBR	0	0	9		6	
TOTAL CAPACITY UTILIZATION				.12		.16

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	73	.03	311	.12*
NBR	0	0	12		82	
SBL	1	1600	7	.00	11	.01*
SBT	2	3200	268	.08*	158	.05
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	59		47	
WBT	1	1600	0	.04*	0	.03*
WBR	0	0	6		5	
TOTAL CAPACITY UTILIZATION				.12		.16

25. Vs Pacifica & Vs Hermosa

Interim Year 2005 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	17	.01*	264	.17*
NBT	2	3200	76	.02	745	.23
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	777	.24*	516	.16*
SBR	0	0	5		8	
EBL	0.5		16		7	
EBT	0	3200	0	.09*	0	
EBR	1.5		283		46	(.00)
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .34 .33

Interim Year 2005 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	33	.02*	697	.44*
NBT	2	3200	72	.02	631	.20
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	674	.26*	433	.19*
SBR	0	0	157		185	
EBL	0.5		51		167	.10*
EBT	0	3200	0	(.19)*	0	
EBR	1.5		576		325	(.00)
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .47 .73

Long-Range Buildout No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	4	.00	145	.09
NBT	2	3200	16	.01*	315	.10*
NBR	0	0	1		1	
SBL	1	1600	169	.11*	120	.08*
SBT	2	3200	262	.08	84	.03
SBR	0	0	4		2	
EBL	1	1600	1	.00	4	.00
EBT	2	3200	273	.13*	61	.03
EBR	0	0	156		35	
WBL	1	1600	0	.00	0	.00
WBT	2	3200	27	.02	147	.09*
WBR	0	0	59	.04	161	.10

TOTAL CAPACITY UTILIZATION .25 .27

Long-Range Buildout w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	4	.00	343	.21*
NBT	2	3200	14	.00	231	.07
NBR	0	0	1		1	
SBL	1	1600	163	.10	111	.07
SBT	2	3200	186	.12*	62	.04*
SBR	0	0	182		78	.05
EBL	1	1600	28	.02	171	.11*
EBT	2	3200	960	.39*	406	.15
EBR	0	0	279		89	
WBL	1	1600	0	.00	1	.00
WBT	2	3200	361	.13	871	.32*
WBR	0	0	57		164	

TOTAL CAPACITY UTILIZATION .51 .68

26. Frontera & Vista Hermosa

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	85	.05	245	.15*
NBR	1	1600	17	.01	23	.01
SBL	1	1600	3	.00	10	.01*
SBT	1	1600	162	.10*	147	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	32	.02*	14	.01*
WBT	0	0	0		0	
WBR	1	1600	10	.01	2	.00

TOTAL CAPACITY UTILIZATION .12 .17

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	85	.05*	245	.15*
NBR	1	1600	37	.02	34	.02
SBL	1	1600	221	.14*	79	.05*
SBT	1	1600	162	.10	147	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	32	.02*	14	.01*
WBT	0	0	0		0	
WBR	1	1600	10	.01	236	.15
Right Turn Adjustment					WBR	.10*

TOTAL CAPACITY UTILIZATION .21 .31

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	119	.04	60	.02
NBT	1	1600	85	.07*	245	.17*
NBR	0	0	33		23	
SBL	1	1600	211	.13*	18	.01*
SBT	1	1600	162	.10	147	.09
SBR	1	1600	517	.32	568	.36
EBL	1	1600	140	.09*	450	.28*
EBT	2	3200	382	.12	497	.16
EBR	1	1600	57	.04	145	.09
WBL	1	1600	32	.02	14	.01
WBT	3	4800	225	.05*	419	.13*
WBR	0	0	10		210	.13
Right Turn Adjustment			SBR	.09*		

TOTAL CAPACITY UTILIZATION .43 .59

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	97	.06*	245	.15*
NBR	1	1600	53	.03	28	.02
SBL	1	1600	171	.11*	24	.02*
SBT	1	1600	162	.10	147	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	32	.02*	14	.01*
WBT	0	0	0		0	
WBR	1	1600	31	.02	202	.13
Right Turn Adjustment					WBR	.11*

TOTAL CAPACITY UTILIZATION .19 .29

26. Frontera & Vista Hermosa

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	53	.02	85	.03
NBT	1	1600	85	.08*	245	.17*
NBR	0	0	35		23	
SBL	1	1600	129	.08*	10	.01*
SBT	1	1600	162	.10	147	.09
SBR	1	1600	509	.32	652	.41
EBL	1	1600	115	.07	411	.26*
EBT	2	3200	437	.14*	633	.20
EBR	1	1600	82	.05	216	.14
WBL	1	1600	32	.02*	14	.01
WBT	3	4800	327	.07	758	.19*
WBR	0	0	10		157	
Right Turn Adjustment			SBR	.11*	SBR	.07*
TOTAL CAPACITY UTILIZATION				.43		.70

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	1	1600	29	.02*	133	.08*
NBR	1	1600	61	.04	27	.02
SBL	1	1600	230	.14*	95	.06*
SBT	1	1600	67	.04	100	.06
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	46	.03*	18	.01*
WBT	0	0	0		0	
WBR	1	1600	49	.03	225	.14
Right Turn Adjustment					WBR	.09*
TOTAL CAPACITY UTILIZATION				.19		.24

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	51	.02	109	.03*
NBT	1	1600	7	.04*	28	.03
NBR	0	0	55		14	
SBL	1	1600	158	.10*	47	.03
SBT	1	1600	10	.01	41	.03*
SBR	1	1600	405	.25	486	.30
EBL	1	1600	123	.08	323	.20*
EBT	2	3200	1016	.32*	786	.25
EBR	1	1600	102	.06	146	.09
WBL	1	1600	12	.01*	7	.00
WBT	3	4800	649	.14	1173	.28*
WBR	0	0	10		172	
Right Turn Adjustment					SBR	.12*
TOTAL CAPACITY UTILIZATION				.47		.66

27. I-5 NB Ramps & Vista Hermosa

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	2	.00	104	.07*
NBT	0	0	0		0	
NBR	1	1600	72	.05	308	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	507	.16*	784	.25*
EBR	1	1600	190	.12	281	.18
WBL	1.5		381	{.18}*	283	.18*
WBT	1.5	4800	480	.18	764	.24
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.34		.50

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	1	.00	64	.04*
NBT	0	0	0		0	
NBR	1	1600	69	.04	307	.19
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	565	.18*	953	.30*
EBR	1	1600	164	.10	199	.12
WBL	1.5		463	{.19}*	526	{.31}*
WBT	1.5	4800	426	.19	969	.31
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.37		.65

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	26	.02*
NBT	0	0	0		0	
NBR	1	1600	269	.17	294	.18
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	972	.30*	961	.30
EBR	f		137		213	
WBL	0	0	0		0	
WBT	1.5	4800	369	.23	950	{.36}*
WBR	1.5		736		818	
Right Turn Adjustment			NBR	.17*	NBR	.12*
TOTAL CAPACITY UTILIZATION				.47		.50

28. I-5 SB Ramps & Vista Hermosa

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		354	.11*	519	
SBT	0	4800	0		0	(.27)*
SBR	1.5		136	.09	812	
EBL	1	1600	2	.00	18	.01*
EBT	3	4800	343	.07*	546	.11
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	85	.03	656	.21*
WBR	f		397		212	

TOTAL CAPACITY UTILIZATION .18 .49

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		427	.13*	597	
SBT	0	4800	0		0	(.30)*
SBR	1.5		85	.05	877	
EBL	1	1600	7	.00	11	.01*
EBT	3	4800	302	.06*	555	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	116	.04	746	.23*
WBR	f		311		287	

TOTAL CAPACITY UTILIZATION .19 .54

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		816	.26*	659	
SBT	0	4800	0		0	.27*
SBR	1.5		144	.09	660	
EBL	1	1600	4	.00	5	.00
EBT	3	4800	293	.06*	515	.11
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	101	.03	602	.19*
WBR	f		268		374	

TOTAL CAPACITY UTILIZATION .32 .46

31. Frontera & Faceta

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	26	.02*	71	.04*
NBT	1	1600	42	.03	202	.13
NBR	1	1600	153	.10	264	.17
SBL	1	1600	2	.00	7	.00
SBT	1	1600	152	.10*	137	.09*
SBR	1	1600	0	.00	0	.00
EBL	0	0	0		0	
EBT	1	1600	3	.04*	3	.03*
EBR	0	0	66		44	
WBL	0	0	225	{.14}*	197	{.12}*
WBT	1	1600	0	.15	1	.13
WBR	0	0	10		6	
TOTAL CAPACITY UTILIZATION				.30		.28

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	46	.03
NBT	1	1600	8	.01	61	.04*
NBR	1	1600	31	.02	136	.09
SBL	1	1600	36	.02	31	.02*
SBT	1	1600	42	.03*	33	.02
SBR	1	1600	0	.00	0	.00
EBL	0	0	0		0	
EBT	1	1600	3	.03*	2	.01
EBR	0	0	40		18	
WBL	0	0	122	{.08}*	48	
WBT	1	1600	0	.10	1	.06*
WBR	0	0	35		54	
Right Turn Adjustment					NBR	.01*
TOTAL CAPACITY UTILIZATION				.14		.13

32. FTC NB Ramps & Avd Pico

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	529	.33*	300	.19*
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	0	0	0		0	
EBR	0	0	262		293	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .33 .19

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	520	.33*	287	.18*
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	0	0	0		0	
EBR	0	0	269		285	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .33 .18

33. FTC SB Ramps & Avd Pico

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	f		210		438	
EBL	0	0	0		0	
EBT	2	3200	262	.08	293	.09
EBR	1	1600	103	.06	691	.43
WBL	0	0	0		0	
WBT	2	3200	529	.17*	300	.09*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.34*
TOTAL CAPACITY UTILIZATION				.17		.43

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	f		209		455	
EBL	0	0	0		0	
EBT	2	3200	269	.08	285	.09
EBR	1	1600	100	.06	672	.42
WBL	0	0	0		0	
WBT	2	3200	520	.16*	287	.09*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.33*
TOTAL CAPACITY UTILIZATION				.16		.42

34. Vista Hermosa & Avd Pico

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	15	.01	113	.07
NBT	2	3200	2	.00*	22	.01*
NBR	0	0	11	.01	48	.03
SBL	1	1600	152	.10*	152	.10*
SBT	2	3200	31	.02	4	.00
SBR	0	0	206	.13	218	.14
EBL	1	1600	80	.05*	134	.08*
EBT	3	4800	750	.18	1247	.26
EBR	0	0	122		18	
WBL	1	1600	43	.03	16	.01
WBT	3	4800	1061	.25*	1159	.29*
WBR	0	0	124		215	
Right Turn Adjustment					SBR	.04*
TOTAL CAPACITY UTILIZATION				.40		.52

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	15	.01	120	.08
NBT	2	3200	2	.00*	22	.01*
NBR	0	0	11	.01	47	.03
SBL	1	1600	152	.10*	147	.09*
SBT	2	3200	31	.02	4	.00
SBR	0	0	170	.11	180	.11
EBL	1	1600	53	.03*	120	.08*
EBT	3	4800	768	.19	1251	.26
EBR	0	0	128		18	
WBL	1	1600	42	.03	16	.01
WBT	3	4800	1060	.25*	1201	.29*
WBR	0	0	124		213	
Right Turn Adjustment					SBR	.03*
TOTAL CAPACITY UTILIZATION				.38		.50

35. La Pata & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	16	.01*	53	.03*
NBT	2	3200	0	.00	0	.00
NBR	0	0	8		8	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	2	3200	112	.04*	32	.01
EBR	1	1600	34	.02	71	.04
WBL	1	1600	7	.00	10	.01
WBT	3	4800	6	.00	119	.02*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.01*
TOTAL CAPACITY UTILIZATION				.05		.06

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	56	.04*	216	.14*
NBT	2	3200	0	.00	10	.01
NBR	0	0	8		8	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	17	.01*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	2	3200	112	.04*	32	.01
EBR	1	1600	113	.07	184	.12
WBL	1	1600	7	.00	10	.01
WBT	3	4800	6	.00	119	.02*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.09		.16

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	55	.03*	212	.13*
NBT	2	3200	0	.00	10	.01
NBR	0	0	8		8	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	17	.01*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	2	3200	112	.04*	32	.01
EBR	1	1600	112	.07	178	.11
WBL	1	1600	7	.00	10	.01
WBT	3	4800	6	.00	119	.02*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.01*		
TOTAL CAPACITY UTILIZATION				.09		.15

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	90	.06*	540	.34*
NBT	2	3200	0	.01	9	.01
NBR	0	0	38		184	.12
SBL	1	1600	0	.00	2	.00
SBT	2	3200	14	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	2	3200	519	.16*	510	.16*
EBR	1	1600	441	.28	219	.14
WBL	1	1600	196	.12*	51	.03*
WBT	3	4800	417	.09	734	.15
WBR	0	0	0		1	
Right Turn Adjustment			EBR	.08*		
TOTAL CAPACITY UTILIZATION				.42		.53

35. La Pata & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	89	.06*	554	.35*
NBT	2	3200	0	.01	7	.00
NBR	0	0	38		179	.11
SBL	1	1600	0	.00	2	.00
SBT	2	3200	14	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	2	3200	527	.16*	529	.17*
EBR	1	1600	445	.28	218	.14
WBL	1	1600	199	.12*	50	.03*
WBT	3	4800	418	.09	758	.16
WBR	0	0	0		1	
Right Turn Adjustment			EBR	.08*		
TOTAL CAPACITY UTILIZATION				.42		.55

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	50	.03	292	.18
NBT	2	3200	338	.15*	712	.36*
NBR	0	0	128		437	
SBL	1	1600	289	.18*	472	.29*
SBT	2	3200	666	.21	297	.09
SBR	f		544		1106	
EBL	1	1600	781	.49*	661	.41*
EBT	2	3200	537	.17	582	.18
EBR	1	1600	174	.11	85	.05
WBL	2	3200	426	.13	178	.06
WBT	2.5	6400	461	{.11}*	916	{.19}*
WBR	1.5		485		421	{.05}
TOTAL CAPACITY UTILIZATION				.93		1.25

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	36	.02	252	.16
NBT	2	3200	351	.15*	796	.39*
NBR	0	0	127		437	
SBL	1	1600	359	.22*	520	.33*
SBT	2	3200	805	.25	308	.10
SBR	f		379		835	
EBL	1	1600	562	.35*	553	.35*
EBT	2	3200	465	.15	527	.16
EBR	1	1600	132	.08	74	.05
WBL	2	3200	429	.13	179	.06
WBT	2.5	6400	352	{.10}*	824	{.17}*
WBR	1.5		554		526	{.08}
TOTAL CAPACITY UTILIZATION				.82		1.24

36. La Pata & Calle Amanecer

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	224	{.14}*	38	
NBT	1	1600	49	.17	232	.17*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	118	.18*	122	.08
SBR	0	0	168		5	
EBL	0	0	2		129	
EBT	1	1600	0	.04*	0	.22*
EBR	0	0	69		221	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .36 .39

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	217	{.14}*	38	
NBT	1	1600	48	.17	232	.17*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	132	.18*	116	.08
SBR	0	0	153		5	
EBL	0	0	2		125	
EBT	1	1600	0	.05*	0	.21*
EBR	0	0	73		211	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .37 .38

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	224	{.14}*	67	
NBT	1	1600	152	.24	405	.30*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	281	.37*	225	.16
SBR	0	0	304		24	
EBL	0	0	10		280	
EBT	1	1600	0	.06*	0	.31*
EBR	0	0	86		216	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .57 .61

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	221	{.14}*	63	
NBT	1	1600	150	.23	407	.29*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	292	.37*	222	.15
SBR	0	0	292		24	
EBL	0	0	10		272	
EBT	1	1600	0	.05*	0	.30*
EBR	0	0	71		206	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .56 .59

36. La Pata & Calle Amanecer

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	159	.10*	51	.03
NBT	2	3200	490	.15	708	.22*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	507	.32*	465	.18
SBR	0	0	536	.34	113	
EBL	0	0	57		533	
EBT	1	1600	0	.07*	0	.44*
EBR	0	0	60		165	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.49		.66

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	159	.10*	49	.03
NBT	2	3200	488	.15	729	.23*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	566	.35*	466	.18
SBR	0	0	571	.36	112	
EBL	0	0	57		544	
EBT	1	1600	0	.06*	0	.44*
EBR	0	0	43		163	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.51		.67

37. La Pata & Del Cerro

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		6		20	.01*
NBT	1.5	3200	10	.01*	15	.01
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	5	.00	9	.01*
SBR	0	0	78	.05	364	.23
EBL	1	1600	333	.21*	128	.08*
EBT	0	0	0		0	
EBR	1	1600	24	.02	2	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.16*
TOTAL CAPACITY UTILIZATION				.22		.26

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		6		19	.01*
NBT	1.5	3200	10	.01*	16	.01
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	5	.00	9	.01*
SBR	0	0	76	.05	344	.22
EBL	1	1600	313	.20*	118	.07*
EBT	0	0	0		0	
EBR	1	1600	27	.02	2	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.16*
TOTAL CAPACITY UTILIZATION				.21		.25

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		5		197	.12*
NBT	1.5	3200	43	.02	96	.06
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	71	.04*	53	.03*
SBR	0	0	156	.10	403	.25
EBL	1	1600	401	.25*	208	.13*
EBT	0	0	0		0	
EBR	1	1600	158	.10	5	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.12*
TOTAL CAPACITY UTILIZATION				.29		.40

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		5		189	.12*
NBT	1.5	3200	43	.02	104	.07
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	71	.04*	53	.03*
SBR	0	0	156	.10	389	.24
EBL	1	1600	404	.25*	195	.12*
EBT	0	0	0		0	
EBR	1	1600	158	.10	5	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.12*
TOTAL CAPACITY UTILIZATION				.29		.39

37. La Pata & Del Cerro

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		5		120	{.08}*
NBT	1.5	3200	58	.02	272	.12
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	121	.08*	85	.05*
SBR	0	0	283	.18	555	.35
EBL	1	1600	639	.40*	301	.19*
EBT	0	0	0		0	
EBR	1	1600	111	.07	4	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.16*
TOTAL CAPACITY UTILIZATION				.48		.48

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		5		108	
NBT	1.5	3200	58	.02	300	.13*
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	135	.08*	85	.05
SBR	0	0	310	.19	553	.35
EBL	1	1600	639	.40*	287	.18*
EBT	0	0	0		0	
EBR	1	1600	97	.06	4	.00
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.16*
TOTAL CAPACITY UTILIZATION				.48		.47

38. Calle Amanecer & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		106	{.03}*	858	{.27}*
NBT	0	3200	0	.03	0	.27
NBR	0.5		2		1	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	214	.07*	56	.02
EBR	0	0	846	.53	129	.08
WBL	1	1600	2	.00	0	.00
WBT	3	4800	32	.01	187	.04*
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.44*		
TOTAL CAPACITY UTILIZATION				.54		.31

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		145	{.05}*	858	{.36}*
NBT	0	3200	0	.05	0	.36
NBR	0.5		16		279	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	459	.14*	1028	.25*
EBR	0	0	846	.53	167	
WBL	1	1600	314	.20*	27	.02*
WBT	3	4800	337	.07	821	.17
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.35*		
TOTAL CAPACITY UTILIZATION				.74		.63

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		155	{.05}*	858	{.36}*
NBT	0	3200	0	.05	0	.36
NBR	0.5		16		294	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	328	.10*	822	.21*
EBR	0	0	846	.53	189	
WBL	1	1600	465	.29*	25	.02*
WBT	3	4800	350	.07	600	.13
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.39*		
TOTAL CAPACITY UTILIZATION				.83		.59

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		185	{.07}*	923	{.45}*
NBT	0	3200	0	.07	0	.45
NBR	0.5		37		531	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	842	.26*	1273	.31*
EBR	0	0	934	.58	212	
WBL	2	3200	569	.18*	95	.03*
WBT	3	4800	830	.17	1394	.29
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.27*		
TOTAL CAPACITY UTILIZATION				.78		.79

38. Calle Amanecer & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		188	{.07}*	953	{.47}*
NBT	0	3200	0	.07	0	.47
NBR	0.5		37		561	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	660	.21*	945	.24*
EBR	0	0	892	.56	222	
WBL	2	3200	661	.21*	96	.03*
WBT	3	4800	718	.15	1004	.21
WBR	0	0	0		0	
Right Turn Adjustment			EBR	.30*		
TOTAL CAPACITY UTILIZATION				.79		.74

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	108	.07*	1040	.65*
NBT	1	1600	0	.06	0	.28
NBR	0	0	89		455	
SBL	0	0	1		4	
SBT	1	1600	0	.01*	0	.01*
SBR	0	0	7		8	
EBL	1	1600	9	.01	9	.01*
EBT	2.5	6400	1407	{.39}*	1386	.29
EBR	1.5		1183		144	
WBL	2	3200	480	.15*	105	.03
WBT	3	4800	936	.20	1906	.40*
WBR	0	0	0		2	
TOTAL CAPACITY UTILIZATION				.62		1.07

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	110	.07*	1014	.63*
NBT	1	1600	0	.06	0	.32
NBR	0	0	89		507	
SBL	0	0	1		5	
SBT	1	1600	0	.01*	0	.01*
SBR	0	0	7		5	
EBL	1	1600	7	.00	9	.01*
EBT	2.5	6400	960	.30*	1114	.23
EBR	1.5		1170	.37	157	
WBL	2	3200	481	.15*	103	.03
WBT	3	4800	558	.12	1377	.29*
WBR	0	0	0		2	
Right Turn Adjustment			EBR	.02*		
TOTAL CAPACITY UTILIZATION				.55		.94

39. E. Vista Montana & Del Cerro

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	66	.04	60	.04
NBT	1	1600	9	.24*	18	.09*
NBR	0	0	381		132	
SBL	0	0	243	{.15}*	86	{.05}*
SBT	1	1600	16	.16	13	.06
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	353	.24*	50	.08
EBR	0	0	31		78	
WBL	1	1600	71	.04*	332	.21
WBT	1	1600	35	.05	285	.33*
WBR	0	0	44		243	
TOTAL CAPACITY UTILIZATION				.67		.47

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	71	.04	78	.05
NBT	1	1600	9	.24*	16	.09*
NBR	0	0	380		120	
SBL	0	0	240	{.15}*	80	{.05}*
SBT	1	1600	16	.16	10	.06
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	321	.22*	49	.08
EBR	0	0	32		86	
WBL	1	1600	71	.04*	333	.21
WBT	1	1600	35	.05	257	.31*
WBR	0	0	44		240	
TOTAL CAPACITY UTILIZATION				.65		.45

40. W. Vista Montana & Del Cerro

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	292	.18*	199	.12*
NBT	0	0	0		0	
NBR	1	1600	3	.00	5	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	349	.22	393	.25
EBR	1	1600	131	.08	293	.18
WBL	1	1600	5	.00	3	.00
WBT	1	1600	440	.28*	424	.26*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.46		.38

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	299	.19*	224	.14*
NBT	0	0	0		0	
NBR	1	1600	3	.00	5	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	359	.22	439	.27
EBR	1	1600	139	.09	312	.20
WBL	1	1600	5	.00	3	.00
WBT	1	1600	455	.28*	478	.30*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.47		.44

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	240	.15*	235	.15*
NBT	0	0	0		0	
NBR	1	1600	6	.00	9	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	403	.25*	334	.21
EBR	1	1600	134	.08	276	.17
WBL	1	1600	9	.01*	5	.00
WBT	1	1600	350	.22	527	.33*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.41		.48

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	249	.16*	263	.16*
NBT	0	0	0		0	
NBR	1	1600	6	.00	6	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	426	.27*	378	.24
EBR	1	1600	137	.09	301	.19
WBL	1	1600	9	.01*	6	.00
WBT	1	1600	366	.23	576	.36*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.44		.52

40. W. Vista Montana & Del Cerro

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	215	.13*	216	.14*
NBT	0	0	0		0	
NBR	1	1600	5	.00	5	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	331	.21*	270	.17
EBR	1	1600	138	.09	273	.17
WBL	1	1600	5	.00	4	.00
WBT	1	1600	232	.15	393	.25*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.34		.39

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	220	.14*	249	.16*
NBT	0	0	0		0	
NBR	1	1600	5	.00	5	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	304	.19*	301	.19
EBR	1	1600	142	.09	290	.18
WBL	1	1600	5	.00	4	.00
WBT	1	1600	247	.15	413	.26*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.33		.42

41. Calle del Cerro & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	761	.24*	388	.12*
NBT	0	0	0		0	
NBR	1	1600	13	.01	3	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	1012	.21*	184	.04
EBR	1	1600	425	.27	715	.45
WBL	1	1600	3	.00	17	.01
WBT	3	4800	131	.03	1030	.21*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.16*
TOTAL CAPACITY UTILIZATION				.45		.49

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	761	.24*	388	.12*
NBT	0	0	0		0	
NBR	1	1600	28	.02	78	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	1012	.21*	1096	.23
EBR	1	1600	425	.27	715	.45
WBL	1	1600	16	.01*	34	.02
WBT	3	4800	438	.09	1344	.28*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.10*
TOTAL CAPACITY UTILIZATION				.46		.50

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	772	.24*	388	.12*
NBT	0	0	0		0	
NBR	1	1600	22	.01	73	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	1012	.21*	917	.19
EBR	1	1600	425	.27	728	.46
WBL	1	1600	16	.01*	30	.02
WBT	3	4800	461	.10	1162	.24*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.15*
TOTAL CAPACITY UTILIZATION				.46		.51

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	761	.24*	402	.13*
NBT	0	0	0		0	
NBR	1	1600	60	.04	89	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	1403	.29*	1381	.29
EBR	1	1600	430	.27	715	.45
WBL	1	1600	37	.02*	54	.03
WBT	3	4800	952	.20	2005	.42*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.55		.55

41. Calle del Cerro & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	761	.24*	489	.15*
NBT	0	0	0		0	
NBR	1	1600	59	.04	79	.05
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	1180	.25*	1073	.22
EBR	1	1600	455	.28	715	.45
WBL	1	1600	38	.02*	63	.04
WBT	3	4800	842	.18	1637	.34*
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.04*
TOTAL CAPACITY UTILIZATION				.51		.53

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	349	.11*	547	.17*
NBT	0	0	0		0	
NBR	1	1600	98	.06	62	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	2501	.52*	1477	.31
EBR	1	1600	441	.28	438	.27
WBL	1	1600	28	.02*	105	.07
WBT	3	4800	1023	.21	2849	.59*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.65		.76

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	371	.12*	602	.19*
NBT	0	0	0		0	
NBR	1	1600	96	.06	60	.04
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	3	4800	2041	.43*	1220	.25
EBR	1	1600	418	.26	487	.30
WBL	1	1600	28	.02*	104	.07
WBT	3	4800	647	.13	2292	.48*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.57		.67

42. Avd Presidio & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	265	.17*	244	.15*
NBT	1	1600	84	.05	82	.05
NBR	1	1600	44	.03	26	.02
SBL	1	1600	137	.09	73	.05
SBT	1	1600	198	.12*	54	.03*
SBR	f		328		245	
EBL	1	1600	165	.10	399	.25*
EBT	3	4800	1232	.30*	751	.21
EBR	0	0	225		274	
WBL	1	1600	47	.03*	27	.02
WBT	3	4800	720	.15	1169	.24*
WBR	1	1600	83	.05	77	.05
TOTAL CAPACITY UTILIZATION				.62		.67

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	265	.17*	244	.15*
NBT	1	1600	84	.05	82	.05
NBR	1	1600	44	.03	72	.05
SBL	1	1600	137	.09	73	.05
SBT	1	1600	198	.12*	54	.03*
SBR	f		358		245	
EBL	1	1600	165	.10	399	.25*
EBT	3	4800	1430	.34*	1575	.39
EBR	0	0	225		287	
WBL	1	1600	62	.04*	27	.02
WBT	3	4800	983	.20	1607	.33*
WBR	1	1600	95	.06	77	.05
TOTAL CAPACITY UTILIZATION				.67		.76

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	265	.17*	263	.16*
NBT	1	1600	84	.05	82	.05
NBR	1	1600	44	.03	65	.04
SBL	1	1600	137	.09	73	.05
SBT	1	1600	198	.12*	54	.03*
SBR	f		328		245	
EBL	1	1600	165	.10	399	.25*
EBT	3	4800	1252	.31*	1493	.38
EBR	0	0	238		316	
WBL	1	1600	62	.04*	27	.02
WBT	3	4800	1039	.22	1525	.32*
WBR	1	1600	90	.06	77	.05
TOTAL CAPACITY UTILIZATION				.64		.76

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	265	.17*	244	.15*
NBT	1	1600	84	.05	82	.05
NBR	1	1600	123	.08	74	.05
SBL	1	1600	137	.09	105	.07
SBT	1	1600	198	.12*	63	.04*
SBR	f		328		245	
EBL	1	1600	165	.10	400	.25*
EBT	3	4800	1751	.41*	1716	.41
EBR	0	0	225		274	
WBL	1	1600	64	.04*	155	.10
WBT	3	4800	1309	.27	2186	.46*
WBR	1	1600	107	.07	77	.05
TOTAL CAPACITY UTILIZATION				.74		.90

42. Avd Presidio & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	265	.17*	256	.16*
NBT	1	1600	84	.05	82	.05
NBR	1	1600	104	.07	74	.05
SBL	1	1600	137	.09	122	.08
SBT	1	1600	198	.12*	54	.03*
SBR	f		328		245	
EBL	1	1600	165	.10	399	.25*
EBT	3	4800	1593	.38*	1451	.36
EBR	0	0	225		286	
WBL	1	1600	62	.04*	122	.08
WBT	3	4800	1229	.26	1936	.40*
WBR	1	1600	105	.07	77	.05
TOTAL CAPACITY UTILIZATION				.71		.84

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	134	.08	171	.11*
NBT	1	1600	7	.00*	24	.02
NBR	1	1600	337	.21	149	.09
SBL	1	1600	145	.09*	56	.04
SBT	1	1600	15	.01	44	.03*
SBR	f		283		278	
EBL	1	1600	189	.12	341	.21*
EBT	4	6400	2460	.40*	1710	.31
EBR	0	0	118		243	
WBL	1	1600	94	.06*	491	.31
WBT	4	6400	1253	.20	2733	.45*
WBR	0	0	25		172	
Right Turn Adjustment			NBR	.17*		
TOTAL CAPACITY UTILIZATION				.72		.80

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	139	.09*	201	.13*
NBT	1	1600	7	.00	23	.01
NBR	1	1600	321	.20	147	.09
SBL	1	1600	145	.09	44	.03
SBT	1	1600	11	.01*	21	.01*
SBR	f		48		34	
EBL	1	1600	11	.01	54	.03
EBT	4	6400	1993	.33*	1516	.28*
EBR	0	0	124		282	
WBL	1	1600	93	.06*	459	.29*
WBT	4	6400	899	.14	2269	.38
WBR	0	0	26		166	
Right Turn Adjustment			NBR	.15*		
TOTAL CAPACITY UTILIZATION				.64		.71

43. I-5 NB Ramps & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	102	.06*	182	.11*
NBT	0	0	0		0	
NBR	f		641		502	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	163	.10	296	.19*
EBT	2	3200	1348	.42*	1097	.34
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	661	.14	907	.19*
WBR	f		845		848	

TOTAL CAPACITY UTILIZATION .48 .49

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	102	.06*	183	.11*
NBT	0	0	0		0	
NBR	f		765		718	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	163	.10	317	.20
EBT	2	3200	1427	.45*	1755	.55*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	661	.14	1016	.21
WBR	f		1164		1138	

TOTAL CAPACITY UTILIZATION .51 .66

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	137	.09*	405	.25*
NBT	0	0	0		0	
NBR	f		713		612	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	163	.10	308	.19
EBT	2	3200	1348	.42*	1596	.50*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	661	.14	1104	.23
WBR	f		1007		872	

TOTAL CAPACITY UTILIZATION .51 .75

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	235	.15*	182	.11*
NBT	0	0	0		0	
NBR	f		731		760	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	163	.10	296	.19
EBT	2	3200	1811	.57*	1853	.58*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	729	.15	1167	.24
WBR	f		1237		1656	

TOTAL CAPACITY UTILIZATION .72 .69

43. I-5 NB Ramps & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	253	.16*	375	.23*
NBT	0	0	0		0	
NBR	f		704		579	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	163	.10	296	.19
EBT	2	3200	1589	.50*	1541	.48*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	661	.14	1178	.25
WBR	f		1113		1217	
TOTAL CAPACITY UTILIZATION				.66		.71

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	348	.22*	152	.10*
NBT	0	0	0		0	
NBR	f		977		589	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	93	.06	176	.11
EBT	2	3200	2078	.65*	1836	.57*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	690	.14	1539	.32
WBR	f		900		1741	
TOTAL CAPACITY UTILIZATION				.87		.67

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	378	.24*	350	.22*
NBT	0	0	0		0	
NBR	f		784		469	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	56	.04	165	.10
EBT	2	3200	1649	.52*	1533	.48*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	505	.11	1489	.31
WBR	f		511		1135	
TOTAL CAPACITY UTILIZATION				.76		.70

44. I-5 SB Ramps & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1008	.32*	872	.27*
SBT	0	0	0		0	
SBR	1	1600	223	.14	445	.28
EBL	0	0	0		0	
EBT	3	4800	517	.13*	828	.24*
EBR	0	0	107		305	
WBL	1	1600	406	.25*	510	.32*
WBT	2	3200	439	.14	542	.17
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.70		.83

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1122	.35*	1485	.46*
SBT	0	0	0		0	
SBR	1	1600	223	.14	469	.29
EBL	0	0	0		0	
EBT	3	4800	517	.13*	894	.26*
EBR	0	0	107		366	
WBL	1	1600	451	.28*	684	.43*
WBT	2	3200	439	.14	542	.17
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.76		1.15

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1008	.32*	1215	.38*
SBT	0	0	0		0	
SBR	1	1600	223	.14	445	.28
EBL	0	0	0		0	
EBT	3	4800	563	.14*	996	.31*
EBR	0	0	126		506	.32
WBL	1	1600	406	.25*	605	.38*
WBT	2	3200	469	.15	867	.27
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.71		1.07

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1482	.46*	1440	.45*
SBT	0	0	0		0	
SBR	1	1600	223	.14	470	.29
EBL	0	0	0		0	
EBT	3	4800	517	.11*	1012	.21*
EBR	1	1600	107	.07	364	.23
WBL	1.5		406	{.22}*	608	{.27}*
WBT	1.5	4800	643	.22	704	.27
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.79		.93

44. I-5 SB Ramps & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1204	.38*	1147	.36*
SBT	0	0	0		0	
SBR	1	1600	249	.16	445	.28
EBL	0	0	0		0	
EBT	3	4800	521	.11*	957	.20*
EBR	1	1600	129	.08	474	.30
WBL	1.5		406	{.21}*	554	{.32}*
WBT	1.5	4800	611	.21	962	.32
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.70		.88

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	1402	.44*	1109	.35*
SBT	0	0	0		0	
SBR	1	1600	148	.09	297	.19
EBL	0	0	0		0	
EBT	3	4800	769	.16*	903	.19*
EBR	1	1600	56	.04	404	.25
WBL	1.5		319	.20*	683	{.35}*
WBT	1.5	4800	719	.22	1008	.35
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.80		.89

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	967	.30*	810	.25*
SBT	0	0	0		0	
SBR	1	1600	149	.09	246	.15
EBL	0	0	0		0	
EBT	3	4800	738	.15*	888	.19*
EBR	1	1600	82	.05	643	.40
WBL	1.5		176	.11*	487	.30*
WBT	1.5	4800	707	.22	1352	.42
WBR	0	0	0		0	
Right Turn Adjustment					EBR	.02*
TOTAL CAPACITY UTILIZATION				.56		.76

45. Los Molinos & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	20		20	
NBT	1	1600	11	.14*	12	.21*
NBR	0	0	190		305	
SBL	0	0	12	{.01}*	15	{.01}*
SBT	1	1600	10	.02	8	.03
SBR	0	0	10		20	
EBL	1	1600	13	.01	15	.01
EBT	2	3200	349	.11*	333	.10*
EBR	1	1600	21	.01	28	.02
WBL	1	1600	161	.10*	278	.17*
WBT	2	3200	292	.09	415	.13
WBR	1	1600	9	.01	17	.01
TOTAL CAPACITY UTILIZATION				.36		.49

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	20		20	
NBT	1	1600	12	.16*	13	.23*
NBR	0	0	224		335	
SBL	0	0	12	{.01}*	15	{.01}*
SBT	1	1600	11	.02	13	.03
SBR	0	0	13		20	
EBL	1	1600	13	.01	15	.01
EBT	2	3200	349	.11*	377	.12*
EBR	1	1600	21	.01	28	.02
WBL	1	1600	165	.10*	278	.17*
WBT	2	3200	292	.09	415	.13
WBR	1	1600	9	.01	17	.01
TOTAL CAPACITY UTILIZATION				.38		.53

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	20		44	
NBT	1	1600	12	.15*	13	.23*
NBR	0	0	210		315	
SBL	0	0	12	{.01}*	15	{.01}*
SBT	1	1600	10	.03	14	.04
SBR	0	0	23		36	
EBL	1	1600	13	.01	22	.01
EBT	2	3200	414	.13*	714	.22*
EBR	1	1600	21	.01	42	.03
WBL	1	1600	166	.10*	278	.17*
WBT	2	3200	381	.12	762	.24
WBR	1	1600	9	.01	17	.01
TOTAL CAPACITY UTILIZATION				.39		.63

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	20		20	
NBT	1	1600	11	.19*	12	.23*
NBR	0	0	268		336	
SBL	0	0	12	{.01}*	15	{.01}*
SBT	1	1600	10	.02	15	.03
SBR	0	0	15		20	
EBL	1	1600	13	.01	15	.01
EBT	2	3200	349	.11*	507	.16*
EBR	1	1600	21	.01	28	.02
WBL	1	1600	174	.11*	370	.23*
WBT	2	3200	469	.15	415	.13
WBR	1	1600	9	.01	17	.01
TOTAL CAPACITY UTILIZATION				.42		.63

45. Los Molinos & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	35		70	
NBT	1	1600	11	.18*	12	.24*
NBR	0	0	242		305	
SBL	0	0	12	{.01}*	15	{.01}*
SBT	1	1600	10	.03	9	.05
SBR	0	0	28		53	
EBL	1	1600	17	.01	37	.02
EBT	2	3200	349	.11*	776	.24*
EBR	1	1600	26	.02	88	.06
WBL	1	1600	171	.11*	278	.17*
WBT	2	3200	545	.17	880	.28
WBR	1	1600	9	.01	17	.01
TOTAL CAPACITY UTILIZATION				.41		.66

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		14	{.01}*
NBT	1	1600	16	.01	27	.03
NBR	1	1600	409	.26	316	.20
SBL	0	0	25		33	
SBT	1	1600	5	.03*	34	.06*
SBR	0	0	25		36	
EBL	1	1600	16	.01*	27	.02
EBT	2	3200	223	.07	440	.14*
EBR	1	1600	9	.01	47	.03
WBL	1	1600	117	.07	496	.31*
WBT	2	3200	509	.16*	307	.10
WBR	1	1600	55	.03	82	.05
Right Turn Adjustment			NBR	.18*		
TOTAL CAPACITY UTILIZATION				.38		.52

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12	{.01}*	63	{.04}*
NBT	1	1600	18	.02	27	.06
NBR	1	1600	322	.20	229	.14
SBL	0	0	15		26	
SBT	1	1600	5	.04*	28	.09*
SBR	0	0	40		83	
EBL	1	1600	24	.02*	45	.03
EBT	2	3200	330	.10	805	.25*
EBR	1	1600	37	.02	74	.05
WBL	1	1600	95	.06	344	.22*
WBT	2	3200	550	.17*	838	.26
WBR	1	1600	50	.03	75	.05
Right Turn Adjustment			NBR	.09*		
TOTAL CAPACITY UTILIZATION				.33		.60

46. W. Vista Hermosa & Avd Pico

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	101	.03*	360	.11*
SBT	0	0	0		0	
SBR	1	1600	99	.06	503	.31
EBL	2	3200	198	.06*	349	.11*
EBT	2	3200	449	.14	352	.11
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	249	.08*	425	.13*
WBR	f		172		556	
Right Turn Adjustment					SBR	.12*
TOTAL CAPACITY UTILIZATION				.17		.47

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	89	.03*	395	.12*
SBT	0	0	0		0	
SBR	1	1600	132	.08	833	.52
EBL	2	3200	193	.06*	468	.15*
EBT	2	3200	398	.12	440	.14
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	436	.14*	490	.15*
WBR	f		173		652	
Right Turn Adjustment			SBR	.01*	SBR	.29*
TOTAL CAPACITY UTILIZATION				.24		.71

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	2	3200	92	.03*	335	.10*
SBT	0	0	0		0	
SBR	1	1600	171	.11	634	.40
EBL	2	3200	205	.06*	501	.16*
EBT	2	3200	299	.09	589	.18
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	470	.15*	349	.11*
WBR	f		132		635	
Right Turn Adjustment			SBR	.03*	SBR	.18*
TOTAL CAPACITY UTILIZATION				.27		.55

47. N. El Cm Real & Avd Pico

Existing (1996) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	20	.01	42	.03
NBT	2	3200	304	.11*	414	.16*
NBR	0	0	61		89	
SBL	1	1600	209	.13*	162	.10*
SBT	2	3200	349	.11	530	.18
SBR	0	0	11		60	
EBL	1	1600	79	.05	79	.05
EBT	1	1600	102	.07*	91	.07*
EBR	0	0	16		22	
WBL	1	1600	103	.06*	185	.12*
WBT	1	1600	59	.04	106	.07
WBR	1	1600	163	.10	199	.12
TOTAL CAPACITY UTILIZATION				.37		.45

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	20	.01	42	.03
NBT	2	3200	304	.11*	414	.16*
NBR	0	0	61		89	
SBL	1	1600	209	.13*	222	.14*
SBT	2	3200	381	.12	530	.18
SBR	0	0	12		60	
EBL	1	1600	79	.05	79	.05
EBT	1	1600	102	.07*	100	.08*
EBR	0	0	16		22	
WBL	1	1600	103	.06*	185	.12*
WBT	1	1600	59	.04	114	.07
WBR	1	1600	163	.10	199	.12
TOTAL CAPACITY UTILIZATION				.37		.50

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	20	.01	42	.03
NBT	2	3200	304	.12*	414	.20*
NBR	0	0	93		228	
SBL	1	1600	209	.13*	340	.21*
SBT	2	3200	349	.11	530	.18
SBR	0	0	12		60	
EBL	1	1600	79	.05	79	.05
EBT	1	1600	118	.08*	111	.08*
EBR	0	0	16		22	
WBL	1	1600	113	.07*	315	.20*
WBT	1	1600	59	.04	119	.07
WBR	1	1600	178	.11	305	.19
TOTAL CAPACITY UTILIZATION				.40		.69

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	21	.01	45	.03
NBT	2	3200	476	.17*	740	.26*
NBR	0	0	61		89	
SBL	1	1600	209	.13*	335	.21*
SBT	2	3200	380	.12	530	.19
SBR	0	0	15		63	
EBL	1	1600	79	.05	79	.05
EBT	1	1600	116	.08*	105	.08*
EBR	0	0	16		25	
WBL	1	1600	103	.06*	185	.12*
WBT	1	1600	59	.04	132	.08
WBR	1	1600	364	.23	199	.12
Right Turn Adjustment			WBR	.04*		
TOTAL CAPACITY UTILIZATION				.48		.67

47. N. El Cm Real & Avd Pico

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	21	.01	42	.03
NBT	2	3200	445	.17*	634	.32*
NBR	0	0	110		374	
SBL	2	3200	209	.07*	440	.14*
SBT	2	3200	349	.11	530	.18
SBR	0	0	15		60	
EBL	1	1600	79	.05	79	.05
EBT	1	1600	139	.10*	136	.10*
EBR	0	0	16		22	
WBL	2	3200	146	.05*	716	.22*
WBT	1	1600	59	.04	158	.10
WBR	1	1600	405	.25	312	.20
Right Turn Adjustment			WBR	.10*		
TOTAL CAPACITY UTILIZATION				.49		.78

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	30	.02
NBT	2	3200	863	.27*	1037	.32*
NBR	1	1600	14	.01	25	.02
SBL	2	3200	141	.04*	466	.15*
SBT	2	3200	417	.13	858	.27
SBR	0	0	3		10	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	93	.07*	23	.02
EBR	0	0	17		14	
WBL	2	3200	76	.02*	0	.00
WBT	1	1600	13	.01	85	.05*
WBR	1	1600	445	.28	272	.17
Right Turn Adjustment			WBR	.16*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.56		.53

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	27	.02
NBT	2	3200	824	.26*	942	.29*
NBR	1	1600	165	.10	356	.22
SBL	2	3200	184	.06*	709	.22*
SBT	2	3200	366	.12	814	.26
SBR	0	0	3		8	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	109	.08*	46	.04*
EBR	0	0	15		12	
WBL	2	3200	163	.05*	443	.14*
WBT	1	1600	15	.01	114	.07
WBR	1	1600	505	.32	390	.24
Right Turn Adjustment			WBR	.15*		
TOTAL CAPACITY UTILIZATION				.60		.69

48. Avd Presidio & Avd Salvador

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	21		27	{.02}*
NBT	1	1600	72	.06*	11	.02
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	34	.02	125	.08*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	0	.01*	0	.01*
EBR	0	0	9		23	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.07		.11

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	24		32	{.02}*
NBT	1	1600	63	.05*	11	.03
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	1	1600	29	.02	110	.07*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	0	.01*	0	.01*
EBR	0	0	8		23	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.06		.10

49. N. El Cm Real & Los Molinos

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	438	.21*	448	.19*
NBR	0	0	235		144	
SBL	1	1600	59	.04*	15	.01*
SBT	2	3200	328	.10	404	.13
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	30	.02*	215	.13*
WBT	0	0	0		0	
WBR	1	1600	18	.01	205	.13

TOTAL CAPACITY UTILIZATION .27 .33

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	498	.23*	551	.22*
NBR	0	0	227		137	
SBL	1	1600	49	.03*	13	.01*
SBT	2	3200	271	.08	491	.15
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	30	.02*	190	.12*
WBT	0	0	0		0	
WBR	1	1600	16	.01	137	.09

TOTAL CAPACITY UTILIZATION .28 .35

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	862	.36*	841	.31*
NBR	0	0	274		139	
SBL	1	1600	47	.03*	15	.01*
SBT	2	3200	321	.10	632	.20
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	20	.01*	315	.20*
WBT	0	0	0		0	
WBR	1	1600	21	.01	216	.14

TOTAL CAPACITY UTILIZATION .40 .52

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	959	.39*	1046	.37
NBR	0	0	280		132	
SBL	1	1600	42	.03*	14	.01
SBT	2	3200	305	.10	1267	.40*
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	20	.01*	239	.15*
WBT	0	0	0		0	
WBR	1	1600	17	.01	126	.08

TOTAL CAPACITY UTILIZATION .43 .55

49. N. El Cm Real & Los Molinos

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	756	.38*	788	.35*
NBR	0	0	469		337	
SBL	1	1600	94	.06*	31	.02*
SBT	2	3200	293	.09	693	.22
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	49	.03*	443	.28*
WBT	0	0	0		0	
WBR	1	1600	21	.01	332	.21
TOTAL CAPACITY UTILIZATION				.47		.65

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	850	.39*	1000	.39*
NBR	0	0	404		263	
SBL	1	1600	75	.05*	27	.02*
SBT	2	3200	325	.10	969	.30
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	29	.02*	369	.23*
WBT	0	0	0		0	
WBR	1	1600	19	.01	206	.13
TOTAL CAPACITY UTILIZATION				.46		.64

50. N. El Cm Real & La Grulla

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		21		93	{.06}*
NBT	1.5	3200	848	.27*	1014	.35
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	282	.13	854	.40*
SBR	0	0	120		426	
EBL	0	0	486		217	
EBT	1	1600	0	.36*	0	.17*
EBR	0	0	86		51	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.63		.63

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		21		81	{.05}*
NBT	1.5	3200	843	.27*	1101	.37
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	287	.13	996	.46*
SBR	0	0	125		482	
EBL	0	0	520		280	
EBT	1	1600	0	.38*	0	.20*
EBR	0	0	86		41	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.65		.71

51. N. El Cm Real & El Portal

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	60	.04
NBT	2	3200	397	.13*	590	.19*
NBR	0	0	6		12	
SBL	1	1600	45	.03*	48	.03*
SBT	2	3200	375	.12	458	.14
SBR	f		10		42	
EBL	0	0	59	(.04)*	16	(.01)*
EBT	1	1600	10	.07	1	.02
EBR	0	0	40		20	
WBL	0	0	6		9	
WBT	1	1600	1	.03*	6	.07*
WBR	0	0	43		102	
TOTAL CAPACITY UTILIZATION				.23		.30

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	58	.04
NBT	2	3200	401	.13*	640	.20*
NBR	0	0	6		12	
SBL	1	1600	31	.02*	53	.03*
SBT	2	3200	313	.10	470	.15
SBR	f		10		50	
EBL	0	0	66	(.04)*	19	(.01)*
EBT	1	1600	7	.07	1	.02
EBR	0	0	37		19	
WBL	0	0	6		9	
WBT	1	1600	1	.04*	3	.08*
WBR	0	0	51		114	
TOTAL CAPACITY UTILIZATION				.23		.32

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	9	.01	57	.04
NBT	2	3200	725	.23*	875	.28*
NBR	0	0	8		13	
SBL	1	1600	41	.03*	61	.04*
SBT	2	3200	345	.11	698	.22
SBR	f		10		56	
EBL	0	0	71	(.04)*	23	(.01)*
EBT	1	1600	6	.07	3	.03
EBR	0	0	36		23	
WBL	0	0	7		12	
WBT	1	1600	1	.04*	6	.13*
WBR	0	0	62		184	
TOTAL CAPACITY UTILIZATION				.34		.46

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	9	.01	48	.03*
NBT	2	3200	796	.25*	980	.31
NBR	0	0	8		12	
SBL	1	1600	38	.02*	86	.05
SBT	2	3200	310	.10	1122	.35*
SBR	f		11		72	
EBL	0	0	71	(.04)*	31	(.02)*
EBT	1	1600	6	.07	2	.03
EBR	0	0	40		18	
WBL	0	0	7		11	
WBT	1	1600	1	.05*	4	.13*
WBR	0	0	70		198	
TOTAL CAPACITY UTILIZATION				.36		.53

51. N. El Cm Real & El Portal

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	55	.03
NBT	2	3200	707	.22*	852	.27*
NBR	0	0	8		12	
SBL	1	1600	33	.02*	82	.05*
SBT	2	3200	326	.10	751	.23
SBR	f		9		72	
EBL	0	0	87	{.05}*	20	{.01}*
EBT	1	1600	4	.08	1	.03
EBR	0	0	38		30	
WBL	0	0	6		12	
WBT	1	1600	1	.05*	6	.16*
WBR	0	0	75		235	
TOTAL CAPACITY UTILIZATION				.34		.49

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	10	.01	58	.04
NBT	2	3200	707	.22*	920	.29*
NBR	0	0	8		12	
SBL	1	1600	44	.03*	86	.05*
SBT	2	3200	319	.10	876	.27
SBR	f		10		75	
EBL	0	0	86	{.05}*	26	{.02}*
EBT	1	1600	8	.08	1	.03
EBR	0	0	38		27	
WBL	0	0	6		11	
WBT	1	1600	1	.05*	4	.16*
WBR	0	0	71		236	
TOTAL CAPACITY UTILIZATION				.35		.52

52. I-5 NB Ramp & Palizada

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	586	.37*	377	.24*
EBT	1	1600	78	.05	178	.11
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	36	.02*	64	.04*
WBR	0	0	110	.07	62	
Right Turn Adjustment			WBR	.05*		
TOTAL CAPACITY UTILIZATION				.44		.28

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	535	.33*	393	.25*
EBT	1	1600	96	.06	195	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	34	.02*	62	.04*
WBR	0	0	108	.07	69	.04
Right Turn Adjustment			WBR	.05*		
TOTAL CAPACITY UTILIZATION				.40		.29

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	473	.30*	390	.24*
EBT	1	1600	91	.06	187	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	91	.05*	66	.04*
WBR	0	0	76		59	
TOTAL CAPACITY UTILIZATION				.35		.28

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	473	.30*	401	.25*
EBT	1	1600	104	.07	192	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	85	.05*	71	.04*
WBR	0	0	93	.06	72	.05
Right Turn Adjustment			WBR	.01*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.36		.30

52. I-5 NB Ramp & Palizada

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	519	.32*	549	.34*
EBT	1	1600	158	.10	221	.14
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	129	.07*	159	.08*
WBR	0	0	93		88	
TOTAL CAPACITY UTILIZATION				.39		.42

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	567	.35*	615	.38*
EBT	1	1600	172	.11	232	.15
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	122	.07*	163	.08*
WBR	0	0	116		102	
TOTAL CAPACITY UTILIZATION				.42		.46

53. I-5 SB Ramp & Palizada

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		36		124	
SBT	0	3200	0	{.03}*	0	{.32}*
SBR	1.5		295		1040	
EBL	0	0	0		0	
EBT	2	3200	628	.20*	431	.13*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	36	.01	64	.02
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.45

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		39		142	
SBT	0	3200	0	{.04}*	0	{.33}*
SBR	1.5		318		1061	
EBL	0	0	0		0	
EBT	2	3200	592	.19*	446	.14*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	34	.01	62	.02
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.47

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		37		128	
SBT	0	3200	0	{.05}*	0	{.32}*
SBR	1.5		288		1032	
EBL	0	0	0		0	
EBT	2	3200	527	.16*	449	.14*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	91	.03	66	.02
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.21		.46

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		49		134	
SBT	0	3200	0	{.07}*	0	{.27}*
SBR	1.5		331		881	
EBL	0	0	0		0	
EBT	2	3200	528	.17*	459	.14*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	85	.03	71	.02
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.24		.41

53. I-5 SB Ramp & Palizada

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		96		143	
SBT	0	3200	0	{.19}*	0	{.39}*
SBR	1.5		667		1288	
EBL	0	0	0		0	
EBT	2	3200	581	.18*	627	.20*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	129	.04	159	.05
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.37		.59

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0.5		93		164	
SBT	0	3200	0	{.19}*	0	{.39}*
SBR	1.5		706		1280	
EBL	0	0	0		0	
EBT	2	3200	646	.20*	683	.21*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	122	.04	163	.05
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.39		.60

54. Estrella & Palizada

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	6	.00
NBT	1	1600	25	.18*	113	.12*
NBR	0	0	261		78	
SBL	1	1600	97	.06*	21	.01*
SBT	1	1600	38	.02	23	.02
SBR	0	0	1		1	
EBL	0.5		0		1	
EBT	1.5	3200	270	.08*	332	.11
EBR	0		0		3	
WBL	1	1600	178	.11*	272	.17
WBT	1	1600	148	.09	751	.47*
WBR	1	1600	5	.00	81	.05

TOTAL CAPACITY UTILIZATION .43 .60

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	4	.00
NBT	1	1600	25	.17*	121	.12*
NBR	0	0	246		77	
SBL	1	1600	73	.05*	22	.01*
SBT	1	1600	34	.02	21	.01
SBR	0	0	1		1	
EBL	0.5		0		1	
EBT	1.5	3200	273	.09*	347	.11
EBR	0		0		3	
WBL	1	1600	195	.12*	290	.18
WBT	1	1600	152	.10	758	.47*
WBR	1	1600	5	.00	75	.05

TOTAL CAPACITY UTILIZATION .43 .60

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	4	.00
NBT	1	1600	29	.17*	182	.18*
NBR	0	0	245		98	
SBL	1	1600	84	.05*	16	.01*
SBT	1	1600	27	.02	41	.03
SBR	0	0	1		3	
EBL	0.5		1		1	
EBT	1.5	3200	198	.06*	335	.11
EBR	0		0		8	
WBL	1	1600	178	.11*	251	.16
WBT	1	1600	199	.12	758	.47*
WBR	1	1600	2	.00	89	.06

TOTAL CAPACITY UTILIZATION .39 .66

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	4	.00	6	.00
NBT	1	1600	33	.18*	187	.18*
NBR	0	0	251		108	
SBL	1	1600	73	.05*	18	.01*
SBT	1	1600	30	.02	56	.04
SBR	0	0	1		3	
EBL	0.5		1		1	
EBT	1.5	3200	204	.06*	333	.11
EBR	0		0		8	
WBL	1	1600	206	.13*	140	.09
WBT	1	1600	208	.13	727	.45*
WBR	1	1600	2	.00	85	.05

TOTAL CAPACITY UTILIZATION .42 .64

54. Estrella & Palizada

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	6	.00	9	.01
NBT	1	1600	32	.19*	201	.25*
NBR	0	0	276		202	
SBL	1	1600	61	.04*	20	.01*
SBT	1	1600	35	.03	54	.04
SBR	0	0	6		4	
EBL	0.5		3		2	
EBT	1.5	3200	244	.08*	405	.13*
EBR	0		0		3	
WBL	1	1600	376	.24*	475	.30*
WBT	2	3200	415	.13	839	.30
WBR	0	0	5		133	
TOTAL CAPACITY UTILIZATION				.55		.69

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	6	.00	9	.01
NBT	1	1600	35	.20*	192	.25*
NBR	0	0	288		212	
SBL	1	1600	78	.05*	15	.01*
SBT	1	1600	37	.03	50	.03
SBR	0	0	4		4	
EBL	0.5		2		1	
EBT	1.5	3200	280	.09*	456	.14*
EBR	0		0		2	
WBL	1	1600	395	.25*	464	.29*
WBT	2	3200	428	.14	863	.31
WBR	0	0	5		116	
TOTAL CAPACITY UTILIZATION				.59		.69

55. N. El Cm Real & Palizada

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	3	.00	8	.01
NBT	2	3200	255	.09	583	.24*
NBR	0	0	19		170	
SBL	1	1600	81	.05	96	.06*
SBT	2	3200	413	.14*	431	.16
SBR	0	0	33		67	
EBL	1	1600	95	.06	57	.04
EBT	1	1600	170	.12*	70	.06*
EBR	0	0	27		18	
WBL	1	1600	50	.03*	290	.18*
WBT	1	1600	36	.02	281	.18
WBR	1	1600	67	.04	187	.12

TOTAL CAPACITY UTILIZATION .29 .54

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	3	.00	10	.01
NBT	2	3200	256	.09*	615	.25*
NBR	0	0	26		186	
SBL	1	1600	85	.05*	103	.06*
SBT	2	3200	346	.12	436	.16
SBR	0	0	35		69	
EBL	1	1600	93	.06	68	.04
EBT	1	1600	162	.12*	62	.05*
EBR	0	0	25		18	
WBL	1	1600	52	.03*	299	.19*
WBT	1	1600	34	.02	272	.17
WBR	1	1600	71	.04	192	.12

TOTAL CAPACITY UTILIZATION .29 .55

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	8	.01
NBT	2	3200	440	.14*	833	.32*
NBR	0	0	3		181	
SBL	1	1600	66	.04*	104	.07*
SBT	2	3200	360	.12	619	.22
SBR	0	0	32		78	
EBL	1	1600	123	.08	71	.04
EBT	1	1600	130	.09*	59	.05*
EBR	0	0	19		17	
WBL	1	1600	56	.04*	306	.19*
WBT	1	1600	24	.02	280	.18
WBR	1	1600	124	.08	179	.11

TOTAL CAPACITY UTILIZATION .31 .63

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	6	.00	10	.01
NBT	2	3200	476	.15*	876	.34*
NBR	0	0	12		205	
SBL	1	1600	52	.03*	88	.06*
SBT	2	3200	324	.11	953	.33
SBR	0	0	30		89	
EBL	1	1600	129	.08	81	.05
EBT	1	1600	141	.10*	49	.04*
EBR	0	0	20		13	
WBL	1	1600	60	.04*	316	.20*
WBT	1	1600	26	.02	284	.18
WBR	1	1600	127	.08	136	.09

TOTAL CAPACITY UTILIZATION .32 .64

55. N. El Cm Real & Palizada

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	17	.01
NBT	2	3200	341	.11*	800	.32*
NBR	0	0	11		230	
SBL	1	1600	58	.04*	77	.05*
SBT	2	3200	364	.13	642	.23
SBR	0	0	40		90	
EBL	1	1600	143	.09	83	.05
EBT	1	1600	178	.13*	103	.08*
EBR	0	0	31		27	
WBL	1	1600	160	.10*	370	.23*
WBT	1	1600	103	.06	338	.21
WBR	1	1600	164	.10	144	.09

TOTAL CAPACITY UTILIZATION .38 .68

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	15	.01
NBT	2	3200	367	.12*	838	.35*
NBR	0	0	5		269	
SBL	1	1600	86	.05*	88	.06*
SBT	2	3200	348	.12	702	.25
SBR	0	0	41		96	
EBL	1	1600	126	.08	100	.06
EBT	1	1600	191	.14*	102	.08*
EBR	0	0	30		23	
WBL	1	1600	164	.10*	394	.25*
WBT	1	1600	109	.07	356	.22
WBR	1	1600	165	.10	126	.08

TOTAL CAPACITY UTILIZATION .41 .74

56. N. Ola Vista & Palizada

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	15		49	
NBT	1	1600	0	.10*	0	.08*
NBR	0	0	142		82	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	150	.11*	63	.06
EBR	0	0	27		29	
WBL	0	0	43	(.03)*	187	
WBT	1	1600	29	.05	169	.22*
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .24 .30

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	15		50	
NBT	1	1600	0	.10*	0	.09*
NBR	0	0	140		92	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	140	.10*	56	.05
EBR	0	0	27		26	
WBL	0	0	45	(.03)*	188	
WBT	1	1600	27	.05	163	.22*
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .23 .31

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	16		53	
NBT	1	1600	0	.11*	0	.09*
NBR	0	0	165		84	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	107	.09*	63	.06
EBR	0	0	31		35	
WBL	0	0	39	(.02)*	219	
WBT	1	1600	22	.04	147	.23*
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .22 .32

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	16		48	
NBT	1	1600	0	.11*	0	.09*
NBR	0	0	167		98	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	123	.10*	45	.05
EBR	0	0	32		32	
WBL	0	0	41	(.03)*	230	
WBT	1	1600	21	.04	153	.24*
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .24 .33

56. N. Ola Vista & Palizada

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	14		84	
NBT	1	1600	0	.12*	0	.12*
NBR	0	0	172		107	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	180	.15*	106	.10
EBR	0	0	53		48	
WBL	0	0	53	{.03}*	207	
WBT	1	1600	95	.09	238	.28*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.30		.40

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	15		82	
NBT	1	1600	0	.12*	0	.13*
NBR	0	0	171		124	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	1	1600	176	.14*	101	.09
EBR	0	0	52		47	
WBL	0	0	57	{.04}*	223	
WBT	1	1600	98	.10	244	.29*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.30		.42

57. N. El Cm Real & Del Mar

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		35	{.02}*	66	{.04}*
NBT	1.5	3200	268	.09	388	.14
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	232	.09*	427	.16*
SBR	0	0	41		97	
EBL	1	1600	147	.09*	67	.04*
EBT	0	0	0		0	
EBR	1	1600	46	.03	27	.02
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .20 .24

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		35	{.02}*	66	{.04}*
NBT	1.5	3200	276	.10	425	.15
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	238	.09*	423	.17*
SBR	0	0	43		108	
EBL	1	1600	125	.08*	72	.05*
EBT	0	0	0		0	
EBR	1	1600	45	.03	26	.02
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .19 .26

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		26		85	{.05}*
NBT	1.5	3200	441	.15*	631	.22
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	250	.09	560	.20*
SBR	0	0	34		80	
EBL	1	1600	114	.07*	67	.04*
EBT	0	0	0		0	
EBR	1	1600	49	.03	30	.02
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .22 .29

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		26		74	{.05}*
NBT	1.5	3200	469	.15*	673	.23
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	235	.09	779	.26*
SBR	0	0	40		69	
EBL	1	1600	139	.09*	80	.05*
EBT	0	0	0		0	
EBR	1	1600	49	.03	30	.02
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	

TOTAL CAPACITY UTILIZATION .24 .36

57. N. El Cm Real & Del Mar

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		40	{.02}*	160	{.10}*
NBT	1.5	3200	376	.13	618	.24
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	364	.14*	595	.23*
SBR	0	0	68		132	
EBL	1	1600	138	.09*	100	.06*
EBT	0	0	0		0	
EBR	1	1600	89	.06	56	.04
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.25		.39

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		38	{.02}*	149	{.09}*
NBT	1.5	3200	403	.14	639	.25
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	360	.13*	626	.24*
SBR	0	0	71		128	
EBL	1	1600	137	.09*	112	.07*
EBT	0	0	0		0	
EBR	1	1600	83	.05	62	.04
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.24		.40

58. I-5 NB Ramp & Avd Presidio

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	46	.03*	166	.10*
NBT	0	0	0		0	
NBR	1	1600	25	.02	33	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	376	.24*	194	.12*
EBT	2	3200	94	.03	100	.03
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	107	.07*	145	.09*
WBR	1	1600	159	.10	44	.03
Right Turn Adjustment			WBR	.01*		
TOTAL CAPACITY UTILIZATION				.35		.31

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	44	.03*	175	.11*
NBT	0	0	0		0	
NBR	1	1600	24	.02	31	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	411	.26*	186	.12*
EBT	2	3200	75	.02	99	.03
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	107	.07*	140	.09*
WBR	1	1600	167	.10	64	.04
Right Turn Adjustment			WBR	.01*		
TOTAL CAPACITY UTILIZATION				.37		.32

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	59	.04*	267	.17*
NBT	0	0	0		0	
NBR	1	1600	90	.06	37	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	381	.24*	174	.11*
EBT	2	3200	120	.04	104	.03
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	103	.06*	294	.18*
WBR	1	1600	119	.07	50	.03
TOTAL CAPACITY UTILIZATION				.34		.46

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	60	.04*	283	.18*
NBT	0	0	0		0	
NBR	1	1600	89	.06	38	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	353	.22*	179	.11*
EBT	2	3200	127	.04	118	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	105	.07*	262	.16*
WBR	1	1600	127	.08	64	.04
TOTAL CAPACITY UTILIZATION				.33		.45

58. I-5 NB Ramp & Avd Presidio

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	39	.02*	262	.16*
NBT	0	0	0		0	
NBR	1	1600	92	.06	95	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	502	.31*	437	.27*
EBT	2	3200	132	.04	200	.06
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	113	.07*	306	.19*
WBR	1	1600	188	.12	236	.15
Right Turn Adjustment			WBR	.03*		
TOTAL CAPACITY UTILIZATION				.43		.62

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	36	.02*	266	.17*
NBT	0	0	0		0	
NBR	1	1600	98	.06	89	.06
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	509	.32*	422	.26*
EBT	2	3200	120	.04	218	.07
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	113	.07*	280	.18*
WBR	1	1600	187	.12	253	.16
Right Turn Adjustment			WBR	.03*		
TOTAL CAPACITY UTILIZATION				.44		.61

59. Estrella & Avd Presidio

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	45		18	
SBT	1	1600	164	.13*	60	.05*
SBR	1	1600	0	.00	0	.00
EBL	0.5		0		42	{.03}*
EBT	1.5	3200	425	.14*	276	.12
EBR	0		18		76	
WBL	1	1600	29	.02*	16	.01
WBT	1	1600	100	.08	207	.18*
WBR	0	0	24		88	
TOTAL CAPACITY UTILIZATION				.29		.26

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	24		19	
SBT	1	1600	109	.08*	60	.05*
SBR	1	1600	0	.00	0	.00
EBL	0.5		0		39	{.02}*
EBT	1.5	3200	462	.15*	266	.12
EBR	0		16		73	
WBL	1	1600	29	.02*	15	.01
WBT	1	1600	99	.08	214	.19*
WBR	0	0	23		86	
TOTAL CAPACITY UTILIZATION				.25		.26

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	49		23	
SBT	1	1600	64	.07*	99	.08*
SBR	1	1600	0	.00	12	.01
EBL	0.5		0		40	{.02}*
EBT	1.5	3200	452	.15*	255	.12
EBR	0		19		75	
WBL	1	1600	20	.01*	35	.02
WBT	1	1600	125	.09	376	.33*
WBR	0	0	17		150	
TOTAL CAPACITY UTILIZATION				.23		.43

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	54		36	
SBT	1	1600	61	.07*	105	.09*
SBR	1	1600	0	.00	0	.00
EBL	0.5		0		40	{.02}*
EBT	1.5	3200	426	.14*	261	.11
EBR	0		19		65	
WBL	1	1600	19	.01*	31	.02
WBT	1	1600	128	.09	353	.32*
WBR	0	0	18		161	
TOTAL CAPACITY UTILIZATION				.22		.43

59. Estrella & Avd Presidio

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	124		120	
SBT	1	1600	55	.11*	105	.14*
SBR	1	1600	0	.00	0	.00
EBL	0.5		0		39	(.02)*
EBT	1.5	3200	510	.17*	517	.20
EBR	0		41		88	
WBL	1	1600	13	.01*	23	.01
WBT	1	1600	116	.07	439	.27*
WBR	1	1600	23	.01	106	.07
TOTAL CAPACITY UTILIZATION				.29		.43

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	118		145	
SBT	1	1600	54	.11*	99	.15*
SBR	1	1600	0	.00	0	.00
EBL	0.5		0		40	(.02)*
EBT	1.5	3200	511	.17*	495	.19
EBR	0		41		88	
WBL	1	1600	11	.01*	20	.01
WBT	1	1600	115	.07	415	.26*
WBR	1	1600	23	.01	111	.07
TOTAL CAPACITY UTILIZATION				.29		.43

61. N. El Cm Real & Avd Presidio

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	248	.08*	410	.13*
NBR	1	1600	321	.20	253	.16
SBL	1	1600	122	.08*	141	.09*
SBT	2	3200	326	.10	384	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	21	.01*	51	.03*
WBT	0	0	0		0	
WBR	1	1600	79	.05	156	.10
Right Turn Adjustment			NBR	.11*	NBR	.01*
TOTAL CAPACITY UTILIZATION				.28		.26

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	248	.08*	438	.14*
NBR	1	1600	338	.21	243	.15
SBL	1	1600	140	.09*	135	.08*
SBT	2	3200	331	.10	381	.12
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	20	.01*	52	.03*
WBT	0	0	0		0	
WBR	1	1600	79	.05	162	.10
Right Turn Adjustment			NBR	.12*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.30		.26

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	379	.12*	595	.19*
NBR	1	1600	335	.21	228	.14
SBL	1	1600	136	.09*	142	.09*
SBT	2	3200	333	.10	501	.16
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	25	.02*	138	.09*
WBT	0	0	0		0	
WBR	1	1600	100	.06	250	.16
Right Turn Adjustment			NBR	.07*		
TOTAL CAPACITY UTILIZATION				.30		.37

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	395	.12*	628	.20*
NBR	1	1600	338	.21	233	.15
SBL	1	1600	107	.07*	133	.08*
SBT	2	3200	325	.10	732	.23
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	26	.02*	118	.07*
WBT	0	0	0		0	
WBR	1	1600	102	.06	235	.15
Right Turn Adjustment			NBR	.07*	WBR	.02*
TOTAL CAPACITY UTILIZATION				.28		.37

61. N. El Cm Real & Avd Presidio

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	376	.12*	666	.21*
NBR	1	1600	367	.23	314	.20
SBL	1	1600	184	.12*	330	.21*
SBT	2	3200	492	.15	625	.20
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	36	.02*	82	.05*
WBT	0	0	0		0	
WBR	1	1600	80	.05	357	.22
Right Turn Adjustment			NBR	.10*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.36		.48

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	395	.12*	685	.21*
NBR	1	1600	366	.23	319	.20
SBL	1	1600	186	.12*	304	.19*
SBT	2	3200	481	.15	652	.20
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	1	1600	36	.02*	71	.04*
WBT	0	0	0		0	
WBR	1	1600	79	.05	344	.22
Right Turn Adjustment			NBR	.10*	WBR	.04*
TOTAL CAPACITY UTILIZATION				.36		.48

63. I-5 SB Ramps & S. El Cm Real

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	72	.05	98	.06
NBT	0	0	0		0	
NBR	1	1600	258	.16	111	.07
SBL	1	1600	124	.08*	428	.27*
SBT	1	1600	39	.02	229	.14
SBR	1	1600	67	.04	361	.23
EBL	0	0	0		0	
EBT	2	3200	269	.11*	321	.13*
EBR	0	0	69		97	
WBL	1	1600	16	.01*	29	.02*
WBT	2	3200	217	.07	356	.11
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.15*	NBR	.06*
TOTAL CAPACITY UTILIZATION				.35		.48

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	72	.05*	97	.06
NBT	0	0	0		0	
NBR	1	1600	261	.16	134	.08
SBL	1	1600	134	.08	460	.29*
SBT	1	1600	42	.03*	242	.15
SBR	1	1600	68	.04	390	.24
EBL	0	0	0		0	
EBT	2	3200	265	.10*	319	.13*
EBR	0	0	68		95	
WBL	1	1600	16	.01*	29	.02*
WBT	2	3200	224	.07	359	.11
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.15*	NBR	.07*
TOTAL CAPACITY UTILIZATION				.34		.51

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	127	.08*	130	.08
NBT	0	0	0		0	
NBR	1	1600	219	.14	109	.07
SBL	1	1600	131	.08	363	.23*
SBT	1	1600	42	.03*	209	.13
SBR	1	1600	55	.03	318	.20
EBL	0	0	0		0	
EBT	2	3200	223	.09*	393	.17*
EBR	0	0	73		150	
WBL	1	1600	26	.02*	36	.02*
WBT	2	3200	240	.08	472	.15
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.10*	Multi	.08*
TOTAL CAPACITY UTILIZATION				.32		.50

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	132	.08*	139	.09
NBT	0	0	0		0	
NBR	1	1600	211	.13	123	.08
SBL	1	1600	138	.09	410	.26*
SBT	1	1600	49	.03*	234	.15
SBR	1	1600	64	.04	328	.21
EBL	0	0	0		0	
EBT	2	3200	227	.09*	579	.23*
EBR	0	0	64		146	
WBL	1	1600	26	.02*	36	.02*
WBT	2	3200	246	.08	473	.15
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.10*	NBR	.07*
TOTAL CAPACITY UTILIZATION				.32		.58

63. I-5 SB Ramps & S. El Cm Real

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	121	.08	161	.10
NBT	0	0	0		0	
NBR	1	1600	254	.16	133	.08
SBL	1	1600	204	.13*	384	.24*
SBT	1	1600	64	.04	209	.13
SBR	1	1600	92	.06	409	.26
EBL	0	0	0		0	
EBT	2	3200	355	.13*	601	.23*
EBR	0	0	75		144	
WBL	1	1600	28	.02*	51	.03*
WBT	2	3200	269	.08	556	.17
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.15*	Multi	.11*
TOTAL CAPACITY UTILIZATION				.43		.61

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	121	.08	154	.10
NBT	0	0	0		0	
NBR	1	1600	264	.17	155	.10
SBL	1	1600	211	.13*	433	.27*
SBT	1	1600	66	.04	227	.14
SBR	1	1600	101	.06	439	.27
EBL	0	0	0		0	
EBT	2	3200	346	.13*	601	.23*
EBR	0	0	77		141	
WBL	1	1600	29	.02*	52	.03*
WBT	2	3200	279	.09	554	.17
WBR	0	0	0		0	
Right Turn Adjustment			NBR	.16*	Multi	.11*
TOTAL CAPACITY UTILIZATION				.44		.64

64. I-5 NB Ramps & S. El Cm Real

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	20	.01*	74	.05*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0.5		241	(.15)*	92	
EBT	1.5	3200	309	.17	716	.25*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	220	.07*	313	.10
WBR	1	1600	434	.27	204	.13
Right Turn Adjustment			WBR	.19*		
TOTAL CAPACITY UTILIZATION				.42		.30

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	21	.01*	78	.05*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0.5		243	(.15)*	116	
EBT	1.5	3200	316	.17	745	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	226	.07*	312	.10
WBR	1	1600	438	.27	253	.16
Right Turn Adjustment			WBR	.19*		
TOTAL CAPACITY UTILIZATION				.42		.32

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	9	.01*	126	.08*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0.5		203	(.13)*	91	
EBT	1.5	3200	290	.15	729	.26*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	265	.08*	385	.12
WBR	1	1600	402	.25	243	.15
Right Turn Adjustment			WBR	.16*		
TOTAL CAPACITY UTILIZATION				.38		.34

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	9	.01*	125	.08*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0.5		196	(.12)*	97	
EBT	1.5	3200	299	.15	789	.28*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	271	.08*	387	.12
WBR	1	1600	418	.26	284	.18
Right Turn Adjustment			WBR	.17*		
TOTAL CAPACITY UTILIZATION				.38		.36

64. I-5 NB Ramps & S. El Cm Real

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	32	.02*	173	.11*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	246	.15*	194	.12*
EBT	2	3200	409	.13	798	.25
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	270	.08*	447	.14*
WBR	1	1600	400	.25	354	.22
Right Turn Adjustment			WBR	.16*		
TOTAL CAPACITY UTILIZATION				.41		.37

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	33	.02*	184	.12*
NBT	0	0	0		0	
NBR	1	1600	0	.00	0	.00
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	253	.16*	207	.13
EBT	2	3200	413	.13	856	.27*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	280	.09*	435	.14
WBR	1	1600	417	.26	391	.24
Right Turn Adjustment			WBR	.15*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.42		.40

65. S. El Cm Real & San Juan

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	489	.16*	410	.14*
NBR	0	0	27		43	
SBL	1	1600	68	.04*	168	.11*
SBT	2	3200	241	.08	548	.17
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	23		26	
WBT	1	1600	0	.12*	0	.08*
WBR	0	0	165		107	
TOTAL CAPACITY UTILIZATION				.32		.33

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	497	.16*	456	.16*
NBR	0	0	28		43	
SBL	1	1600	70	.04*	179	.11*
SBT	2	3200	246	.08	566	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	23		26	
WBT	1	1600	0	.12*	0	.08*
WBR	0	0	167		109	
TOTAL CAPACITY UTILIZATION				.32		.35

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	504	.17*	516	.18*
NBR	0	0	27		54	
SBL	1	1600	59	.04*	163	.10*
SBT	2	3200	231	.07	566	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	28		29	
WBT	1	1600	0	.12*	0	.09*
WBR	0	0	163		112	
TOTAL CAPACITY UTILIZATION				.33		.37

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	521	.17*	546	.19*
NBR	0	0	27		54	
SBL	1	1600	61	.04*	170	.11*
SBT	2	3200	238	.07	619	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	28		29	
WBT	1	1600	0	.12*	0	.10*
WBR	0	0	168		125	
TOTAL CAPACITY UTILIZATION				.33		.40

65. S. El Cm Real & San Juan

Long-Range Buildout No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	0		0	
NBT	2	3200	505	.17*	658	.24*
NBR	0	0	45		121	
SBL	1	1600	89	.06*	213	.13*
SBT	2	3200	320	.10	585	.18
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	44		66	
WBT	1	1600	0	.13*	0	.13*
WBR	0	0	165		143	
TOTAL CAPACITY UTILIZATION				.36		.50

Long-Range Buildout w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	0		0	
NBT	2	3200	531	.18*	679	.25*
NBR	0	0	44		119	
SBL	1	1600	88	.06*	238	.15*
SBT	2	3200	325	.10	618	.19
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	44		67	
WBT	1	1600	0	.13*	0	.13*
WBR	0	0	166		147	
TOTAL CAPACITY UTILIZATION				.37		.53

66. Avd Salvador & Avd San Pablo

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	10		45	
SBT	1	1600	0	.01*	0	.03*
SBR	0	0	1		2	
EBL	0	0	0		0	
EBT	1	1600	112	.07	364	.23*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	387	.26*	240	.16
WBR	0	0	27		14	
TOTAL CAPACITY UTILIZATION				.27		.26

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	10		39	
SBT	1	1600	0	.01*	0	.03*
SBR	0	0	1		2	
EBL	0	0	0		1	
EBT	1	1600	114	.07	384	.24*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	403	.26*	258	.17
WBR	0	0	18		14	
TOTAL CAPACITY UTILIZATION				.27		.27

67. S. El Cm Real & San Gabriel

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	99	.04*	228	.10*
NBR	0	0	44		77	
SBL	1	1600	79	.05*	269	.17*
SBT	2	3200	203	.06	266	.08
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.09		.27

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	104	.05*	243	.10*
NBR	0	0	43		77	
SBL	1	1600	81	.05*	273	.17*
SBT	2	3200	205	.06	273	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.10		.27

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	121	.05*	291	.12*
NBR	0	0	41		93	
SBL	1	1600	67	.04*	256	.16*
SBT	2	3200	209	.07	300	.09
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.09		.28

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	121	.05*	294	.12*
NBR	0	0	41		93	
SBL	1	1600	70	.04*	293	.18*
SBT	2	3200	211	.07	308	.10
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	0	.00*	0	.00*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.09		.30

67. S. El Cm Real & San Gabriel

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	149	.06*	402	.18*
NBR	0	0	40		173	
SBL	1	1600	87	.05*	237	.15*
SBT	2	3200	256	.08	349	.11
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.11		.33

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	2	3200	156	.06*	397	.18*
NBR	0	0	40		171	
SBL	1	1600	89	.06*	257	.16*
SBT	2	3200	256	.08	356	.11
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	0	0	0		0	
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.12		.34

68. S. El Cm Real & I-5 NB Ramps

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	445	.28*	167	.10*
NBT	2	3200	128	.04	270	.08
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	203	.06*	266	.08*
SBR	0	0	0		0	
EBL	1	1600	15	.01*	35	.02*
EBT	0	0	0		0	
EBR	1	1600	21	.01	49	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.35		.20

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	456	.29*	195	.12*
NBT	2	3200	132	.04	284	.09
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	205	.06*	273	.09*
SBR	0	0	0		0	
EBL	1	1600	15	.01*	36	.02*
EBT	0	0	0		0	
EBR	1	1600	21	.01	50	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.36		.23

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	423	.26*	148	.09*
NBT	2	3200	152	.05	337	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	209	.07*	300	.09*
SBR	0	0	0		0	
EBL	1	1600	10	.01*	47	.03*
EBT	0	0	0		0	
EBR	1	1600	8	.01	44	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.34		.21

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	432	.27*	170	.11*
NBT	2	3200	152	.05	337	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	211	.07*	308	.10*
SBR	0	0	0		0	
EBL	1	1600	10	.01*	50	.03*
EBT	0	0	0		0	
EBR	1	1600	8	.01	46	.03
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.35		.24

68. S. El Cm Real & I-5 NB Ramps

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	352	.22*	249	.16*
NBT	2	3200	156	.05	372	.12
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	256	.08*	349	.11*
SBR	0	0	0		0	
EBL	1	1600	33	.02*	203	.13*
EBT	0	0	0		0	
EBR	1	1600	19	.01	72	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.32		.40

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	355	.22*	281	.18*
NBT	2	3200	164	.05	367	.11
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	256	.08*	356	.11*
SBR	0	0	0		0	
EBL	1	1600	32	.02*	201	.13*
EBT	0	0	0		0	
EBR	1	1600	19	.01	73	.05
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.32		.42

69. S. El Cm Real & Mendocino

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	11	.01*	17	.01*
NBT	2	3200	231	.07	257	.08
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	133	.06*	157	.09*
SBR	0	0	59		134	
EBL	0	0	241		227	
EBT	1	1600	0	.18*	0	.19*
EBR	0	0	48		74	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.25		.29

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	12	.01*	16	.01*
NBT	2	3200	237	.07	275	.09
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	2	3200	132	.06*	160	.09*
SBR	0	0	59		137	
EBL	0	0	246		234	
EBT	1	1600	0	.18*	0	.19*
EBR	0	0	49		75	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.25		.29

70. Avd Presidente & Avd Calafia

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	18	.01	27	.02*
NBT	1	1600	67	.04*	34	.02
NBR	0	0	1		0	
SBL	1	1600	41	.03*	24	.02
SBT	1	1600	1	.03	0	.04*
SBR	0	0	42		61	
EBL	0	0	153		74	
EBT	1	1600	17	.12*	10	.07*
EBR	0	0	21		22	
WBL	0.5		99	.06*	307	.19*
WBT	1.5	3200	56	.04	160	.14
WBR	0		11		62	
TOTAL CAPACITY UTILIZATION				.25		.32

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	19	.01	27	.02*
NBT	1	1600	71	.05*	34	.02
NBR	0	0	1		0	
SBL	1	1600	40	.03*	23	.01
SBT	1	1600	1	.03	0	.04*
SBR	0	0	42		60	
EBL	0	0	153		80	
EBT	1	1600	17	.12*	10	.07*
EBR	0	0	22		20	
WBL	0.5		103	.06*	330	.21*
WBT	1.5	3200	56	.04	174	.15
WBR	0		11		69	
TOTAL CAPACITY UTILIZATION				.26		.34

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	22	.01	30	.02*
NBT	1	1600	104	.07*	40	.03
NBR	0	0	0		0	
SBL	1	1600	26	.02*	13	.01
SBT	1	1600	1	.02	1	.04*
SBR	0	0	39		63	
EBL	0	0	152		86	
EBT	1	1600	10	.12*	7	.07*
EBR	0	0	36		24	
WBL	0.5		72	.05*	294	.18*
WBT	1.5	3200	57	.04	183	.14
WBR	0		9		48	
TOTAL CAPACITY UTILIZATION				.26		.31

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	22	.01	30	.02*
NBT	1	1600	96	.06*	39	.02
NBR	0	0	0		0	
SBL	1	1600	26	.02*	12	.01
SBT	1	1600	1	.02	1	.04*
SBR	0	0	39		68	
EBL	0	0	153		89	
EBT	1	1600	10	.12*	7	.08*
EBR	0	0	36		27	
WBL	0.5		76	.05*	316	.20*
WBT	1.5	3200	60	.04	183	.15
WBR	0		8		52	
TOTAL CAPACITY UTILIZATION				.25		.34

70. Avd Presidente & Avd Calafia

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	32	.02	103	.06*
NBT	1	1600	79	.05*	39	.02
NBR	0	0	0		0	
SBL	1	1600	8	.01*	21	.01
SBT	1	1600	1	.03	0	.06*
SBR	0	0	42		93	
EBL	0	0	176		252	
EBT	1	1600	23	.17*	32	.20*
EBR	0	0	71		40	
WBL	0.5		101	{.06}*	215	{.13}*
WBT	1.5	3200	114	.07	265	.16
WBR	0		14		29	
TOTAL CAPACITY UTILIZATION				.29		.45

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	32	.02	98	.06*
NBT	1	1600	83	.05*	38	.02
NBR	0	0	0		0	
SBL	1	1600	8	.01*	21	.01
SBT	1	1600	1	.03	0	.06*
SBR	0	0	42		91	
EBL	0	0	176		257	
EBT	1	1600	23	.17*	32	.21*
EBR	0	0	70		40	
WBL	0.5		103	{.06}*	230	{.14}*
WBT	1.5	3200	114	.07	286	.17
WBR	0		13		30	
TOTAL CAPACITY UTILIZATION				.29		.47

71. S. El Cm Real & San Luis Rey

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		19		24	
NBT	1.5	3200	129	.05*	118	.05*
NBR	0		4		5	
SBL	0.5		0		0	
SBT	1.5	3200	54	.03	67	.03
SBR	0		27		31	
EBL	0	0	53	{.03}*	70	
EBT	1	1600	0	.08	43	.16*
EBR	0	0	71		148	
WBL	0	0	3		2	
WBT	1	1600	10	.05*	5	.02
WBR	0	0	61		24	
TOTAL CAPACITY UTILIZATION				.13		.21

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20		24	
NBT	1.5	3200	136	.05*	130	.05*
NBR	0		4		5	
SBL	0.5		0		0	
SBT	1.5	3200	53	.03	69	.03
SBR	0		27		31	
EBL	0	0	52	{.03}*	79	
EBT	1	1600	0	.08	44	.18*
EBR	0	0	75		157	
WBL	0	0	3		2	
WBT	1	1600	10	.05*	5	.02
WBR	0	0	62		26	
TOTAL CAPACITY UTILIZATION				.13		.23

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		13	{.01}*	21	{.01}*
NBT	1.5	3200	126	.04	114	.04
NBR	0		1		6	
SBL	0.5		0		0	
SBT	1.5	3200	54	.03*	95	.04*
SBR	0		30		41	
EBL	0	0	42	{.03}*	90	
EBT	1	1600	1	.06	41	.16*
EBR	0	0	58		131	
WBL	0	0	5		1	
WBT	1	1600	16	.05*	9	.02
WBR	0	0	65		27	
TOTAL CAPACITY UTILIZATION				.12		.21

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		12	{.01}*	21	
NBT	1.5	3200	129	.04	122	.05*
NBR	0		1		6	
SBL	0.5		0		0	
SBT	1.5	3200	51	.03*	84	.04
SBR	0		30		45	
EBL	0	0	48	{.03}*	91	
EBT	1	1600	1	.07	48	.18*
EBR	0	0	61		144	
WBL	0	0	5		1	
WBT	1	1600	17	.05*	9	.02
WBR	0	0	64		29	
TOTAL CAPACITY UTILIZATION				.12		.23

71. S. El Cm Real & San Luis Rey

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	88	{.05}*
NBT	1.5	3200	110	.04	134	.07
NBR	0		1		13	
SBL	0.5		0		0	
SBT	1.5	3200	133	.05*	123	.05*
SBR	0		24		42	
EBL	0	0	45		89	
EBT	1	1600	1	.10*	28	.14*
EBR	0	0	112		106	
WBL	0	0	12	{.01}*	0	
WBT	1	1600	14	.04	6	.02
WBR	0	0	34		19	
TOTAL CAPACITY UTILIZATION				.17		.24

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0.5		20	{.01}*	83	{.05}*
NBT	1.5	3200	113	.04	139	.07
NBR	0		1		13	
SBL	0.5		0		0	
SBT	1.5	3200	133	.05*	125	.05*
SBR	0		24		41	
EBL	0	0	47		95	
EBT	1	1600	1	.10*	30	.15*
EBR	0	0	113		112	
WBL	0	0	12	{.01}*	0	
WBT	1	1600	14	.04	6	.02
WBR	0	0	34		22	
TOTAL CAPACITY UTILIZATION				.17		.25

72. I-5 NB Ramps & Cristianitos

Interim Year 2000 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	10	.01*	20	.01*
NBT	0	0	0		0	
NBR	1	1600	11	.01	28	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	89	.06*	25	.02*
EBT	1	1600	5	.00	5	.00
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	33	.03*	20	.02*
WBR	0	0	18		8	
TOTAL CAPACITY UTILIZATION				.10		.05

Interim Year 2000 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	10	.01*	20	.01*
NBT	0	0	0		0	
NBR	1	1600	11	.01	29	.02
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	91	.06*	32	.02*
EBT	1	1600	5	.00	5	.00
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	34	.03*	19	.02*
WBR	0	0	14		7	
TOTAL CAPACITY UTILIZATION				.10		.05

Interim Year 2005 No-Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	4	.00	12	.01*
NBT	0	0	0		0	
NBR	1	1600	5	.00	19	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	86	.05*	18	.01*
EBT	1	1600	6	.00	8	.01
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	17	.02*	13	.02*
WBR	0	0	21		11	
TOTAL CAPACITY UTILIZATION				.07		.04

Interim Year 2005 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	1	1600	4	.00	12	.01*
NBT	0	0	0		0	
NBR	1	1600	5	.00	19	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	91	.06*	29	.02*
EBT	1	1600	6	.00	8	.01
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	17	.02*	13	.02*
WBR	0	0	21		11	
TOTAL CAPACITY UTILIZATION				.08		.05

72. I-5 NB Ramps & Cristianitos

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	8	.01*
NBT	0	0	0		0	
NBR	1	1600	6	.00	10	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	62	.04	36	.02*
EBT	1	1600	301	.19*	147	.09
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	23	.06	103	.35*
WBR	0	0	65		464	
TOTAL CAPACITY UTILIZATION				.19		.38

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	5	.00	8	.01*
NBT	0	0	0		0	
NBR	1	1600	6	.00	10	.01
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1600	58	.04	42	.03*
EBT	1	1600	292	.18*	140	.09
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1600	23	.05	104	.36*
WBR	0	0	64		469	
TOTAL CAPACITY UTILIZATION				.18		.40

73. I-5 SB Ramps & Cristianitos

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	8	.01	45	.03
EBL	0	0	0		0	
EBT	1	1600	94	.07*	30	.02*
EBR	0	0	22		8	
WBL	1	1600	26	.02*	14	.01*
WBT	1	1600	17	.01	26	.02
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.02*
TOTAL CAPACITY UTILIZATION				.09		.05

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	9	.01	49	.03
EBL	0	0	0		0	
EBT	1	1600	96	.07*	37	.03*
EBR	0	0	22		8	
WBL	1	1600	27	.02*	13	.01*
WBT	1	1600	17	.01	26	.02
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.02*
TOTAL CAPACITY UTILIZATION				.09		.06

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	13	.01	59	.04
EBL	0	0	0		0	
EBT	1	1600	92	.06*	26	.02*
EBR	0	0	6		5	
WBL	1	1600	15	.01*	7	.00
WBT	1	1600	6	.00	18	.01
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.03*
TOTAL CAPACITY UTILIZATION				.07		.05

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	13	.01	59	.04
EBL	0	0	0		0	
EBT	1	1600	97	.06*	37	.03*
EBR	0	0	6		5	
WBL	1	1600	15	.01*	7	.00
WBT	1	1600	6	.00	18	.01
WBR	0	0	0		0	
Right Turn Adjustment					SBR	.02*
TOTAL CAPACITY UTILIZATION				.07		.05

73. I-5 SB Ramps & Cristianitos

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	194	.12*	123	.08*
SBT	0	0	0		0	
SBR	1	1600	21	.01	55	.03
EBL	0	0	0		0	
EBT	1	1600	169	.11*	60	.04
EBR	0	0	2		6	
WBL	1	1600	5	.00	8	.01
WBT	1	1600	23	.01	103	.06*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.23		.14

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	185	.12*	116	.07*
SBT	0	0	0		0	
SBR	1	1600	21	.01	58	.04
EBL	0	0	0		0	
EBT	1	1600	165	.10*	66	.05
EBR	0	0	2		6	
WBL	1	1600	5	.00	8	.01
WBT	1	1600	23	.01	104	.07*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.22		.14

76. Vista Pacifica & Pico

Interim Year 2000 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		66	.04*	0	
SBT	0	3200	0		0	
SBR	0.5		613	.38	660	.41
EBL	1	1600	275	.17*	1002	.63*
EBT	3	4800	174	.04	262	.05
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	15	.00*	189	.05*
WBR	0	0	0		53	
Right Turn Adjustment			SBR	.21*		
TOTAL CAPACITY UTILIZATION				.42		.68

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		106	.07*	0	
SBT	0	3200	0		0	
SBR	0.5		777	.49	469	.29
EBL	1	1600	183	.11*	922	.58*
EBT	3	4800	135	.03	151	.03
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	15	.00*	157	.05*
WBR	0	0	0		92	.06
Right Turn Adjustment			SBR	.34*	WBR	.01*
TOTAL CAPACITY UTILIZATION				.52		.64

Interim Year 2005 No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		356	.22*	98	.06*
SBT	0	3200	0		0	
SBR	0.5		923	.58	735	.46
EBL	1	1600	266	.17*	1197	.75*
EBT	3	4800	587	.12	564	.12
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	453	.10*	755	.21*
WBR	0	0	8		275	
Right Turn Adjustment			SBR	.23*		
TOTAL CAPACITY UTILIZATION				.72		1.02

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		461	.29*	85	.05*
SBT	0	3200	0		0	
SBR	0.5		909	.57	471	.29
EBL	1	1600	177	.11*	931	.58*
EBT	3	4800	494	.10	532	.11
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	447	.09*	630	.20*
WBR	0	0	8		458	.29
Right Turn Adjustment			SBR	.20*	WBR	.05*
TOTAL CAPACITY UTILIZATION				.69		.88

76. Vista Pacifica & Pico

Long-Range Buildout No-Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		93	.06*	0	
SBT	0	3200	0		0	
SBR	0.5		441	.28	318	.20
EBL	1	1600	65	.04	312	.20*
EBT	3	4800	1432	.30*	1533	.32
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	975	.20	1695	.38*
WBR	0	0	0		140	
Right Turn Adjustment			SBR	.15*	SBR	.05*
TOTAL CAPACITY UTILIZATION				.51		.63

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		123	.08*	0	
SBT	0	3200	0		0	
SBR	0.5		352	.22	215	.13
EBL	1	1600	28	.02	375	.23*
EBT	3	4800	1022	.21*	1251	.26
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	3	4800	687	.14	1267	.30*
WBR	0	0	0		158	
Right Turn Adjustment			SBR	.09*		
TOTAL CAPACITY UTILIZATION				.38		.53

77. "A" Street & Pico

Interim Year 2000 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	1	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	20	.01	5	.00
EBL	1	1600	6	.00	13	.01*
EBT	2	3200	10	.00	21	.01
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	28	.01*	21	.01*
WBR	0	0	0		0	
Right Turn Adjustment			SBR	.01*		
TOTAL CAPACITY UTILIZATION				.02		.02

Interim Year 2005 w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	2	.00	0	.00
SBT	0	0	0		0	
SBR	1	1600	2	.00	3	.00
EBL	1	1600	4	.00	10	.01*
EBT	2	3200	7	.00	17	.01
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	36	.01*	21	.01*
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.01		.02

Long-Range Buildout w/Project

			AM PK HOUR		PM PK HOUR	
	LANES	CAPACITY	VOL	V/C	VOL	V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1600	283	.18*	78	.05*
SBT	0	0	0		0	
SBR	1	1600	7	.00	12	.01
EBL	1	1600	10	.01	15	.01*
EBT	2	3200	288	.09*	135	.04
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	80	.03	561	.24*
WBR	0	0	31		200	
TOTAL CAPACITY UTILIZATION				.27		.30

78. Vista Hermosa & "B" Street

Interim Year 2000 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	2	3200	0	.00	0	.00
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	559	.41*	861	.57*
EBR	0	0	101		52	
WBL	1	1600	7	.00	2	.00
WBT	1	1600	240	.15	388	.24
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.41		.57

Interim Year 2005 w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	2	3200	0	.00	0	.00
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	495	.36*	886	.70*
EBR	0	0	81		226	
WBL	1	1600	8	.01*	3	.00
WBT	1	1600	272	.17	509	.32
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.37		.70

Long-Range Buildout w/Project

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	0	.00	0	.00
NBT	2	3200	0	.00	0	.00
NBR	0	0	0		0	
SBL	1	1600	0	.00	0	.00
SBT	2	3200	0	.00*	0	.00*
SBR	0	0	0		0	
EBL	1	1600	0	.00	0	.00
EBT	1	1600	666	.51*	1063	.74*
EBR	0	0	155		126	
WBL	1	1600	5	.00	13	.01*
WBT	1	1600	308	.19	606	.38
WBR	0	0	0		0	
TOTAL CAPACITY UTILIZATION				.51		.75

244

APPENDIX 15.5

Noise Impact Analysis

Giroux & Associates
Environmental Consultants

NOISE IMPACT ANALYSIS

MARBLEHEAD COASTAL PROJECT

SAN CLEMENTE, CALIFORNIA

Prepared for:

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Date:

January 16, 1998

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NOISE SETTING

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally described as unwanted sound. Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Any further reference in this report to decibels expressed as "dB" should be understood to be A-weighted.

Several rating scales have been developed for the analysis of adverse effects of community noise on human beings. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. Upon this premise, a number of noise scales have been developed including the Equivalent Noise Level (LEQ) and the Community Noise Equivalent Level (CNEL).

LEQ is the sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period. LEQ is the "energy" average noise level. CNEL is similar to LEQ but is based on a 24 hour period, and applies a time-weighting factor that places greater significance on noise events occurring during the evening and night hours (when sleep disturbance is a concern). "Time-weighted" refers to the fact that noise occurring during certain sensitive time periods is penalized for occurring at these times. The evening period (7 p.m. to 10 p.m.) penalizes noises by 5 dB, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dB. This weighting system is functionally equivalent for every noise source (car, truck, airplane, etc.) in the evening counting as three sources, and every source from 10 p.m. to 7 a.m. has a noise impact equivalence of 10 sources. The CNEL scale is specified by the City of San Clemente for community noise analysis.

An interior CNEL of 45 dB(A) has been required by the State noise insulation standards (contained in Title 24 of the California Code of Regulations) for all multiple family dwelling units and hotel/motel rooms since 1974. In 1988, the State Building Standards Commission recommended that this standard be expanded to include all habitable rooms, including single family or low density residential uses. All development in close proximity to automotive traffic, rail or industrial noise sources with baseline levels exceeding 60 dB CNEL must undergo an analysis to verify that the 45 dB interior standard is attainable.

Exterior to interior noise attenuation is typically 20 dB when windows facing a noise source are closed. A 65 dB CNEL exterior noise exposure thus generally allows the 45 dB CNEL interior standard to be met without any special acoustical upgrades other than closing windows to shut out the noise. A level of 65 dB is also the threshold where noise begins to intrude significantly into normal activities such as having a conversation. Although people may express annoyance if traffic noise levels in usable exterior space such as yards, patios, porches, etc. are below 65 dB, the percentage of "highly annoyed" people increases dramatically when noise exceeds 65 dB.

Noise/land use compatibility standards for various classes of land uses are generally expressed in the Noise Element of the General Plan to insure that noise exposure is considered in any development decisions. Local noise suitability criteria are based on state model guidelines shown in Figure 1.

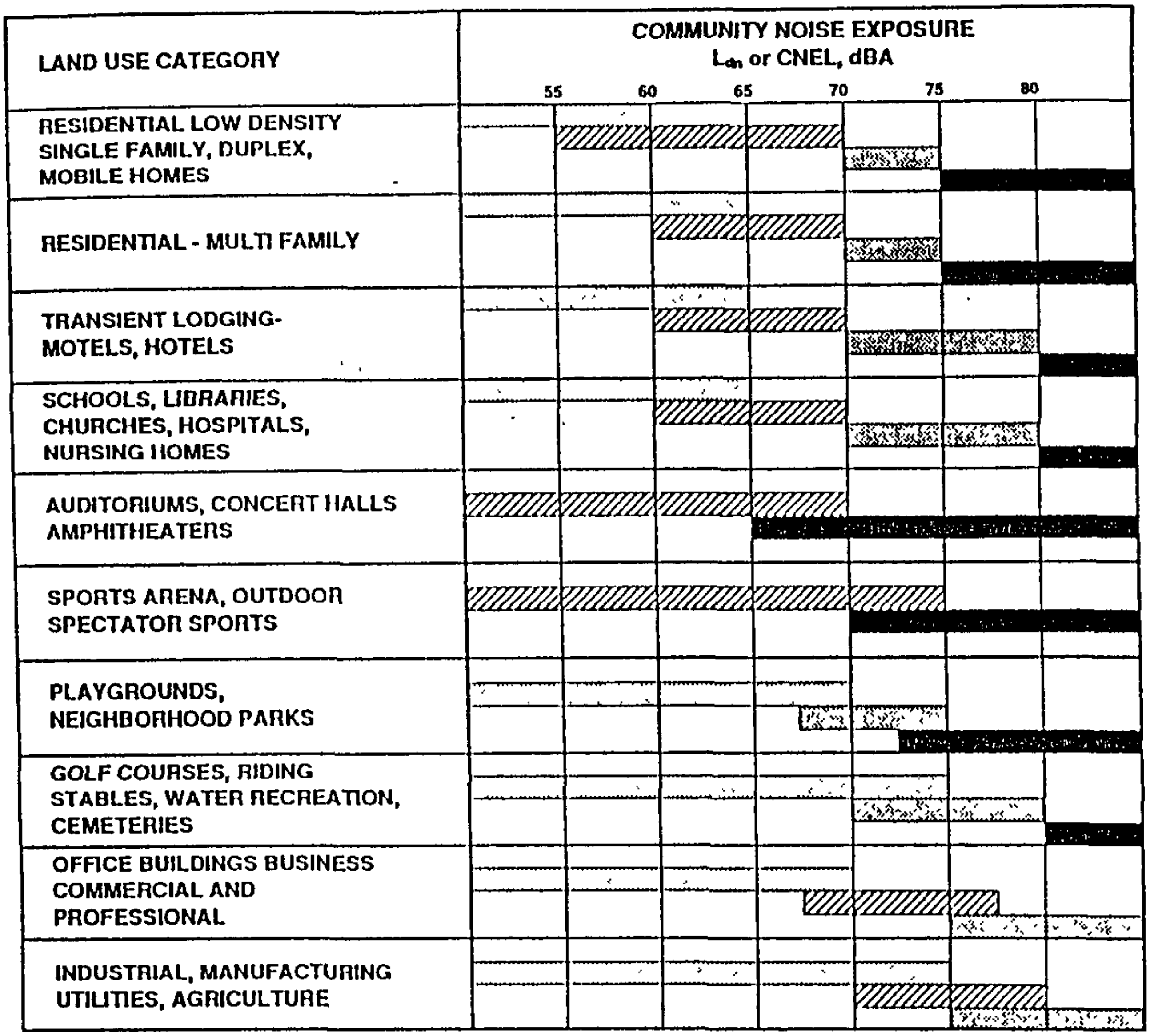
Figure 1 contains four classes of acceptability and has a number of overlapping compatibility noise levels within several criteria. In order to reduce the potential ambiguity of various conditional acceptabilities, the City of San Clemente developed a more clear-cut matrix of acceptable noise levels.

City noise standards specify two classes of exposure as "Desirable Maximum" and "Maximum Acceptable." The City's noise standard matrix is as follows:

	NOISE LEVELS (dB CNEL)	
Land Use	**Desirable Maximum**	**Maximum Acceptable**
Low Density Residential	55	65
Medium Density Residential	60	65
Schools	60	70
High Density Residential	65	70
Commercial & Office	65	75
Industrial	70	75

If exterior levels exceed 60 dB CNEL, City guidelines call for adequate structural noise insulation to insure that an acceptable interior (45 dB CNEL) level can be attained. As previously noted, standard construction practice can typically achieve a 20 dB noise reduction if supplemental ventilation is provided to allow for

FIGURE 1 - NOISE/LAND USE COMPATIBILITY STANDARDS



INTERPRETATION

NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

Source: Office of Noise Control, California Dept. of Health, Feb. 1976.

window closure to shut out the noise. Substantially enhanced noise protection such as double-paned windows, baffled vents or upgraded wall treatments are generally not required until exterior noise loading exceeds 65 dB CNEL.

Existing noise levels at Marblehead derive mainly from traffic noise along the northern and southern site perimeter. Train noise may be audible along the southern site boundary, and some aircraft (especially helicopter) overflights from agencies such as the USMC, INS or utility companies may occur. Traffic noise is shielded by site terrain features and aircraft noise is infrequent. Much of the project site is therefore relatively quiet in relation to the noise/land use compatibility standards used by the City of San Clemente.

In order to document the existing project site noise environment, on-site noise measurements were conducted for 48+ hours on July 16-18, 1996, at three locations on the Marblehead project site. Measurements were made in the northern portion of the site near I-5, in the middle of the site, and near the southern boundary near PCH. The approximate distance from the nearest major roadway noise source was approximately as follows:

North ("Marble1") = 400 feet south of I-5

South ("Marble2") = 50 feet north of PCH/El Camino Real

Middle ("Marble3") = 300 feet west of Avd. Pico

All sites were above the grade of the closest roadway with partial terrain screening such that roadway proximity alone is not a complete indicator of the existing traffic noise environment. Results of the on-site measurements are shown in Table 1.

Day to day noise patterns were very repetitive. Inter-day differences at two sites in terms of the CNEL level were only 0.1 dB. Personal perception of noise differences is ±3 dB. At each measurement site, the CNEL, the loudest one hour and the quietest one-second level were all less than 3 dB different from one day to the next. Distant traffic is the pervasive noise source which is very similar from one day to the next. Aircraft or helicopter activity which can create very noticeable differences from one day to another was apparently minimal during the measurement period.

TABLE 1

ON-SITE NOISE MONITORING DATA (dB[A])

	NORTH		SOUTH		MIDDLE	
Parameter	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2
CNEL	62.3	64.0	65.5	65.6	47.1	47.2
Max 1-HR	59.9	61.9	64.4	65.2	49.2	46.5
When (?)	06-07	21-22	16-17	08-09	12-13	11-12
Max 1-SEC	74.5	77.4	86.3	90.2	68.6	67.6
When (?)	13-14	21-22	00-01	08-09	12-13	22-23
Min 1-SEC	37.2	39.2	39.2	39.2	34.3	34.3
When (?)	01-02	03-04	23-02	23-02	23-05	23-05

Source: On-Site Measurements July 16, 1996 (1300 start) to July 18, 1996 (1600 end).

The City of San Clemente noise/land use compatibility standard for noise-sensitive uses was stated to be 65 dB CNEL. Table 1 shows that the existing 65 dB contour passes exactly through the "south" monitoring location near PCH. Although I-5 traffic is far noisier, the "north" site was partially shielded by terrain and was farther from the roadway than the PCH monitor. Noise levels at the I-5 site were therefore well within acceptable standards for noise-sensitive land uses. Within the site interior, noise levels were very low such that any noise constraints to site development will be confined to the immediate vicinity of any existing perimeter, or proposed bisecting significant traffic volume roadways.

NOISE IMPACTS

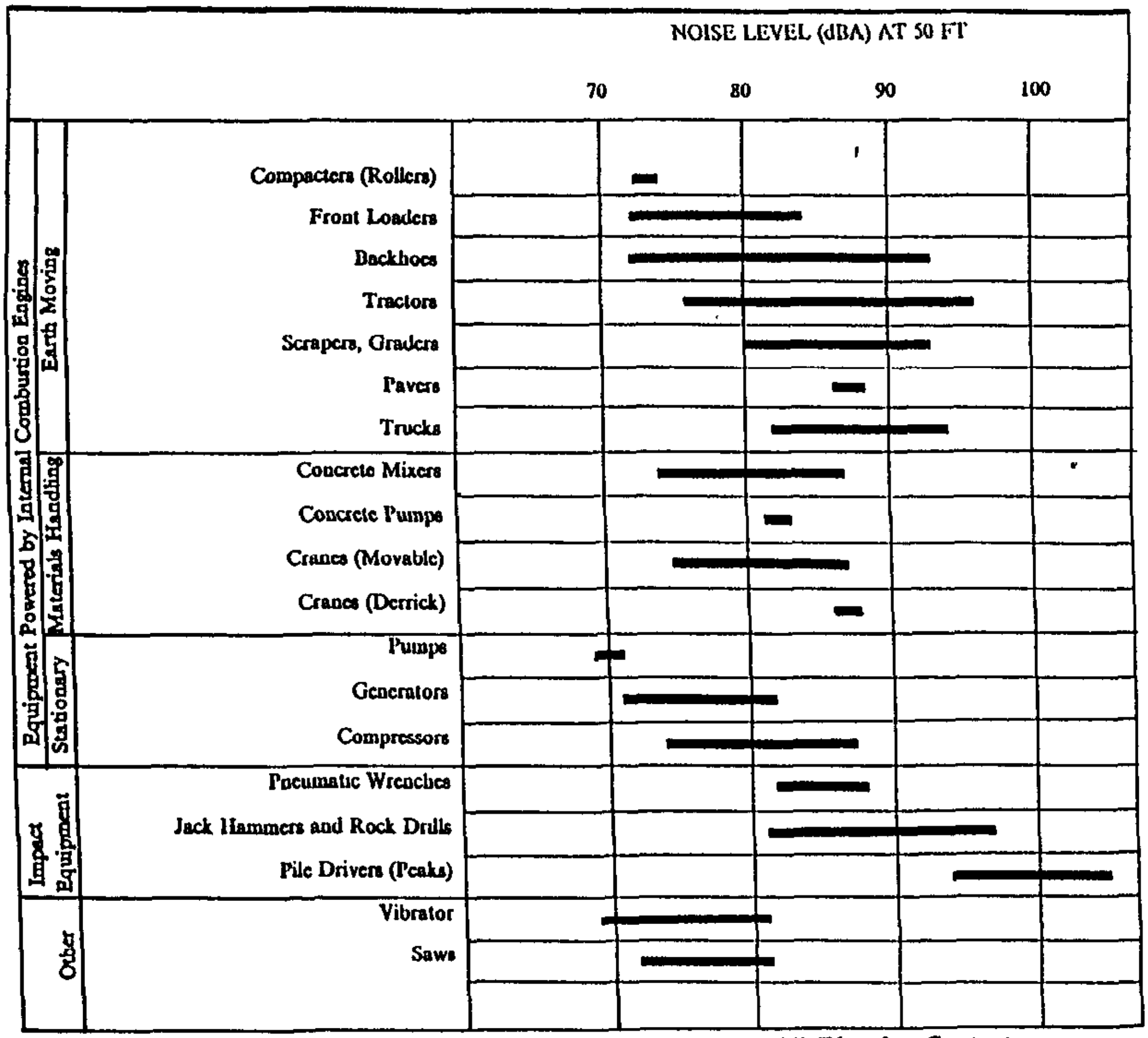
Two characteristic noise sources are typically identified with land use intensification such as that proposed for the Marblehead Coastal Project. Construction activities, especially heavy equipment, will create short-term noise increases near the project site. Such impacts may be important for nearby noise-sensitive receptors such as already completed residential uses.

Upon completion, project-related traffic will cause an incremental increase in areawide noise levels throughout the South County area. Traffic noise impacts are generally analyzed both to insure that the project not adversely impact the acoustic environment of the surrounding community, as well as to insure that the project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting on the project. In particular, the I-5 Freeway is a noise source that may require noise mitigation in the form of buffer distances or propagation barriers to minimize the impact potential if noise sensitive uses were to develop with a freeway exposure. Except in the farthest northern portion of the proposed residential uses, the source-receiver distance and the screening effects from irregular terrain will not make the freeway a noise issue. Noise concerns of the environment acting upon the project will thus derive mainly from the arterials (Vista Hermosa, Pico and PCH/El Camino Real) adjacent to planned residential uses.

Construction Noise Impacts

Temporary construction noise impacts vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by earth-moving sources, then by foundation and parking area construction, and finally for finish construction. Figure 2 shows the typical range of construction activity noise generation as a function of equipment used in various building phases. The earth-moving sources are seen to be the noisiest with equipment noise ranging up to about 90 dB(A) at 50 feet from the source.

Spherically radiating point sources of noise emissions are atmospherically attenuated by a factor of 6 dB per doubling of distance, or about 20 dB in 500′ of propagation. The loudest earth-moving noise sources will therefore sometimes be detectable above the local background beyond 1,000′ from the construction area. An impact radius of 1,000′ or more, however, pre-supposes a "clean" baseline, whereas the northern portion near I-5 and the site perimeter near El Camino Real or Pico are affected by



Source: EPA PB 206717, Environmental Protection Agency, Dec. 31, 1971, "Noise from Construction Equipment & Operations"

TYPICAL CONSTRUCTION EQUIPMENT NOISE GENERATION LEVELS

FIGURE 2

background noise that would mask project construction noise on the western portion of the site. An extensive noise impact envelope also requires a clear line of sight from source to receiver. Within the varied complex topography of the project site, sight lines are limited in several directions. Construction noise impacts are, therefore, somewhat less than that predicted under idealized input conditions. Except where new construction occurs in very close proximity to already completed development, construction noise impacts are expected to be less than significant.

Construction noise sources are not strictly relatable to a noise standard because they occur only during selected times and the source strength varies sharply with time. The penalty associated with noise disturbance during quiet hours and the nuisance factor accompanying such disturbance usually leads to time limits on grading activities imposed as conditions on grading permits. The hours from 7 AM to 7 PM on weekdays are the times normally allowed for construction activities except in an emergency. These time limits are set as conditions on the project grading permits.

Project-Related Vehicular Noise Impacts

Long term noise concerns from the increased urbanization of the project site center primarily on mobile source emissions on South County area roadways. These concerns were addressed using the California specific vehicle noise curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). The model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, speeds, or noise barriers. Table 2 summarizes the 24-hour CNEL level at 100' from the roadway centerline along a number of area roads for existing and future conditions with and without the project. Table 3 shows the corresponding distance to the 65 dB CNEL contour as the acceptable exposure (in the absence of additional mitigation) for noise-sensitive (residential) uses.

Outside the Marblehead Coastal Project area, project-related traffic noise impacts will be masked by non-project traffic. The maximum project versus no-project noise differences were +4.8 dB along Avenida Vista Hermosa and +4.0 dB along Calle Frontera adjacent to the new proposed I-5 Interchange. That change, however, is due mainly to the selection of an alternate route to access I-5 by no-project traffic and only minimally due to proposed on-site uses. Elevated freeway noise levels at this location will also mask any additional local noise contribution.

TABLE 2

NOISE LEVELS (dB CNEL) AT 100 FEET FROM ROADWAY CENTERLINE

	Exist.	2000 No Proj.	2000 w/Proj.	2005 No Proj.	2005 w/Proj.	Buildout No Proj.	Buildout w/Proj.
I-5:							
NW of V. Hermosa	81.2	81.6	81.9	82.6	82.9	83.1	83.3
V. Hermosa - Pico	81.2	81.6	81.5	82.6	82.8	83.1	83.0
SE of Pico	80.9	81.3	81.4	82.3	82.3	82.8	82.9
Calle Frontera:							
NW of V. Hermosa	59.3	61.1	65.1	61.1	64.4	61.1	64.1
SE of V. Hermosa	60.3	59.3	59.3	59.3	60.3	59.3	59.3
PCH/El Camino Real:							
NW of Camino Capistrano	64.8	64.4	64.4	66.1	65.9	66.1	66.3
Camino Capistrano Pico	65.3	66.3	66.5	67.3	67.3	67.4	67.4
N. El Camino Real:							
Pico - Los Molinos	65.9	65.6	66.3	66.5	67.6	66.5	67.6
Los Molinos - C. Puente	65.9	66.1	66.5	66.9	67.8	67.4	68.1
C. Puente - El Portal	65.9	65.9	65.9	66.3	66.9	66.7	67.1
Avd. Vista Hermosa:							
N of I-5	--	59.3	64.1	58.1	65.6	59.3	67.1
I-5 - "B" Street	--	--	67.4	--	66.9	--	66.3
"B" Street - Pico	--	--	67.1	--	67.4	--	67.3
Avd. Pico:							
N of I-5	69.2	70.6	70.2	71.4	70.5	71.5	71.3
I-5 - Los Molinos	67.1	66.9	68.1	67.3	67.9	67.9	68.6
Los Molinos - V. Hermosa	63.7	63.3	66.7	63.7	66.5	63.3	66.3
V. Hermosa - "A" Street	63.7	63.3	66.5	63.7	66.9	63.3	66.7
"A" Street - El Camino	63.7	63.3	65.9	63.7	66.9	63.3	66.5
Avd. Vaquero:							
I-5 - Camino Capistrano	62.8	59.4	57.6	61.8	59.3	61.1	59.4
Camino Capistrano:							
Vaquero - PCH	63.7	63.3	61.2	64.1	63.3	64.4	63.3
Los Molinos:							
S of Pico	58.1	57.6	57.6	60.3	59.3	61.1	60.1
"A" Street:							
W of Pico	--	--	54.6	--	54.6	--	54.6
"B" Street:							
W of V. Hermosa	--	--	54.6	--	54.6	--	54.6

TABLE 3

DISTANCE TO 65 dB CNEL CONTOUR FROM CENTERLINE (feet)

	Exist.	2000 No Proj.	2000 w/Proj.	2005 No Proj.	2005 w/Proj.	Buildout No Proj.	Buildout w/Proj.
I-5:							
NW of V. Hermosa	1205	1275	1340	1495	1565	1605	1665
V. Hermosa - Pico	1205	1275	1250	1495	1555	1605	1585
SE of Pico	1140	1220	1245	1415	1415	1545	1570
Calle Frontera:							
NW of V. Hermosa	<50	55	100	55	90	55	85
SE of V. Hermosa	<50	<50	<50	<50	<50	<50	<50
PCH/El Camino Real:							
NW of Camino Capistrano	95	90	90	120	115	120	120
Camino Capistrano Pico	105	120	125	140	140	145	145
N. El Camino Real:							
Pico - Los Molinos	105	110	120	125	150	125	150
Los Molinos - C. Puente	115	120	125	135	155	145	160
C. Puente - El Portal	115	115	115	120	135	130	140
Avd. Vista Hermosa:							
N of I-5	--	<50	85	<50	110	<50	140
I-5 - "B" Street	--	--	145	--	135	--	120
"B" Street - Pico	--	--	140	--	145	--	140
Avd. Pico:							
N of I-5	190	235	220	265	235	270	265
I-5 - Los Molinos	140	135	160	140	155	155	175
Los Molinos - V. Hermosa	80	75	130	80	125	75	120
V. Hermosa - "A" Street	80	75	125	80	135	75	130
"A" Street - El Camino	80	75	115	80	135	75	125
Avd. Vaquero:							
I-5 - Camino Capistrano	70	<50	<50	60	<50	55	<50
Camino Capistrano:							
Vaquero - PCH	80	75	55	85	75	90	75
Los Molinos:							
S of Pico	<50	<50	<50	<50	<50	55	<50
"A" Street:							
W of Pico	--	--	<50	--	<50	--	<50
"B" Street:							
W of V. Hermosa	--	--	<50	--	<50	--	<50

Other "with project" noise changes outside the immediate Marblehead project vicinity are 1 dB or less. Noise level differences of less than 1 dB are imperceptible to humans even in a laboratory situation -- much less in am ambient environment. Off-site noise impacts are therefore less than significant.

Within the proposed project site and along the site perimeter, project-related traffic will measurably alter the noise environment at several locations. Perceptible noise level increases (3 dB or more) will occur along several segments of Avenida Pico south of I-5. The 65 dB CNEL contour distance is seen in Table 3 to approximately double along those roadway segments where project implementation will create a noticeable change in noise exposure.

Along Vista Hermosa and Pico, not along or within the project site, the "with project" noise levels are generally consistent with design levels anticipated during the design of any noise mitigation for noise-sensitive uses. Project implementation will not expose any such uses to "new" excessive noise levels not already incorporated into development design.

Within the site itself, noise levels may exceed the 65 dB CNEL for the following distances from given roadway centerlines:

PCH/El Camino Real S of Site	-	145 feet
Avd. Pico E of Site	-	175 feet
Avd. Vista Hermosa through Site	-	145 feet

These are the distances that would be required, under clear line of sight conditions, to meet the City of San Clemente exterior noise standard if distance alone were the sole criterion to establish compliance. Exterior to interior noise attenuation is 20 dB with standard structural design. An exterior level exceeding 65 dB also may require acoustical upgrades to meet interior standards. Any project residences constructed closer than 145 feet of El Camino Real or Vista Hermosa, or closer than 175 feet of Pico, will require exterior noise mitigation (noise walls) for any usable exterior space, and may require structural upgrades in habitable rooms to meet the interior standard of 45 dB CNEL.

Noise reduction effectiveness of barriers depends on a number of factors such as barrier height, location, or percentage of trucks with exhaust stacks higher than the wall. As a rule of thumb, the noise reduction potential for a noise wall is around 1 dB per foot of barrier height once the barrier has broken the line of sight between source and receiver. Partial downward bending of sound waves (refraction) is more pronounced from a wall than a berm such that berms are about 3 dB more effective than a wall.

Along Avd. Vista Hermosa where residential uses are proposed within Marblehead, the "ultimate" noise level at 100 feet from the centerline is forecast to be 67.4 dB CNEL. If the closest property line to the roadway were at 60 feet, the rear yard exterior noise exposure will be 71 dB at a pool, patio or similar recreational use. A barrier that creates a 6 dB noise level reduction would be needed to meet the 65 dB exterior standard. A 6 foot wall would meet the standard. This is a standard subdivision perimeter wall. Exterior noise thus is not expected to be a significant development constraint.

Meeting the interior standard of 45 dB CNEL would require a structural noise level reduction of 20-25 dB depending upon building pad location. Reductions of 25 dB for any second-story units near residential perimeter roads (Hermosa, El Camino or Pico) would require a slightly enhanced noise protection package such as acoustically upgraded (dual-paned) windows. An acoustic study will be necessary at the tract-map approval level when specific building footprints and interior floor plans have been developed. The needed extra noise protection is limited in scope, but may slightly exceed the protection offered by standard construction practice.

Commercial uses proposed on the project site near the freeway between I-5 and Avd. Vista Hermosa have a 75 dB CNEL standard. For a clear line of sight without any source-receiver grade separation, the "ultimate" 75 dB CNEL contour distance will be 340 feet at area buildout. With terrain blocking part of the freeway because of changing freeway and project site grades, the 75 dB contour will likely be within 200 feet of the roadway. Because commercial uses have limited exterior space where noise would be an issue, and because the future distance of the 75 dB CNEL is not a very prohibitive distance from I-5 under "real-world" conditions, freeway noise is not anticipated to be a significant deterrent to development of the proposed commercial component of the project site.

One commercial use that is somewhat noise sensitive is a cineplex where enjoyment of movies could be impacted by exterior noise. Theaters can be easily designed, however, with more than adequate noise abatement to meet interior standards. Numerous theaters are now located next to freeways or under aircraft flight paths with no significant noise intrusion. Meeting noise standards for such a use is therefore a design issue, and not an environmental impact.

NOISE IMPACT MITIGATION

The project noise impact study indicated that noise levels at the first row of project residences backing up to Avd. Vista Hermosa, El Camino Real and Avd. Pico may exceed 65 dB CNEL. Freeway noise may exceed 75 dB CNEL that could affect any commercial uses that have any noise sensitive exterior activities. Noise levels exceeding City standards may be found at numerous off-site locations from the cumulative effects of project growth plus all other planned area development. Noise reduction through barriers or increased setback distances may need to be incorporated into both project uses as well as for off-site, noise-sensitive development to create acceptable levels. Recommended mitigation is as follows:

1. All construction and general maintenance activities, except in an emergency, should be limited to the hours of 7 a.m. to 7 p.m. and prohibited on Sundays and all legally proclaimed holidays.

2. All construction equipment should use properly operating mufflers, and no combustion equipment such as pumps or generators shall be allowed to operate within 500 feet of any occupied residence from 7 p.m. to 7 a.m. unless the equipment is surrounded by a noise protection barrier.

3. All construction staging should be performed as far as possible from occupied dwellings.

4. A noise mitigation analysis should be performed for all Marblehead Coastal Project residences potentially exposed to noise levels in excess of 65 dB CNEL to verify that standard 6-foot subdivision perimeter walls will be adequate to meet the City 65 dB CNEL exterior standard.

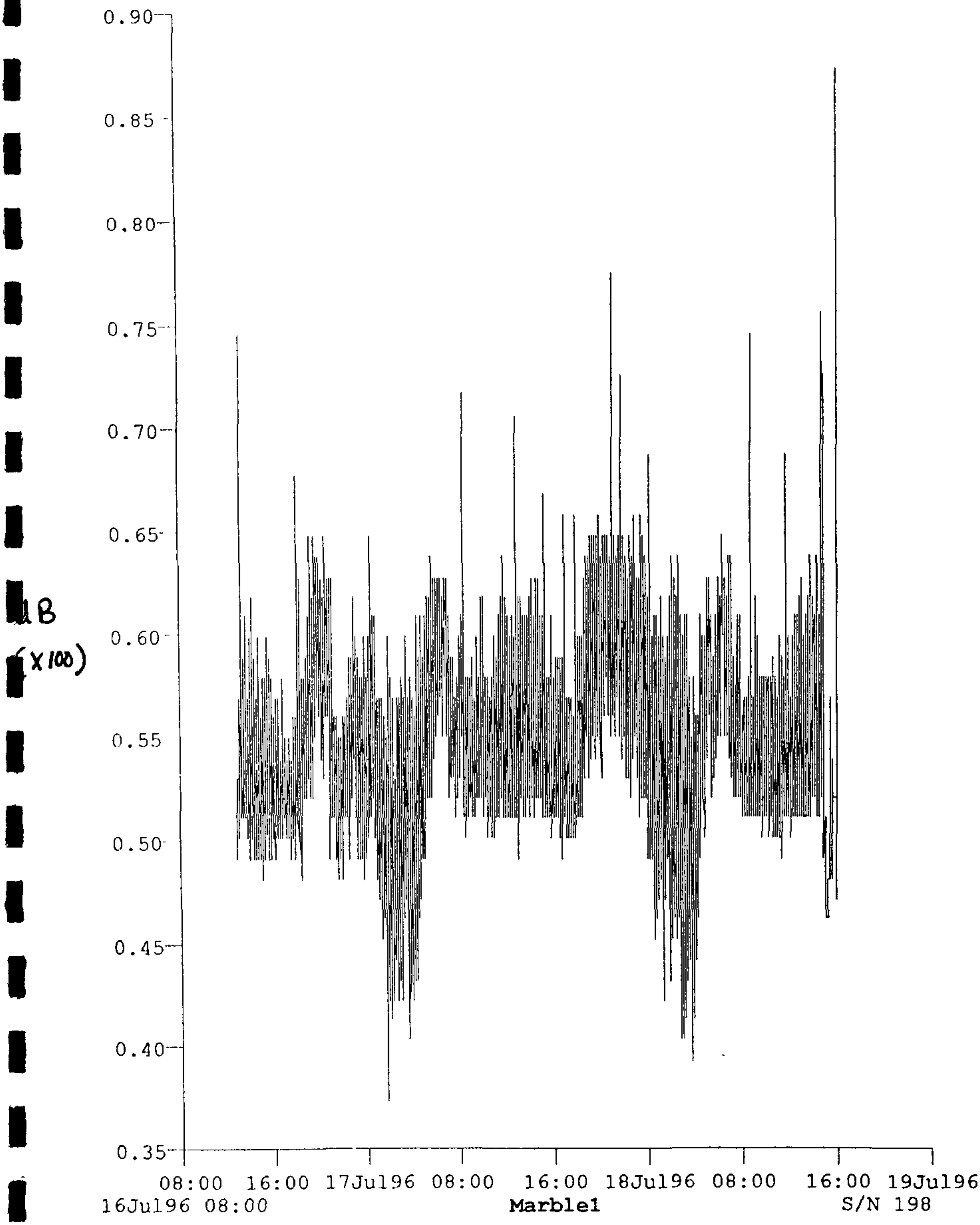
5. Any two-story developments within 145 feet of Vista Hermosa or El Camino Real, or within 175 feet of Avd. Pico should have a structural noise attenuation analysis performed to verify that structural components are adequate to meet the interior noise standard of 45 dB CNEL.

APPENDIX

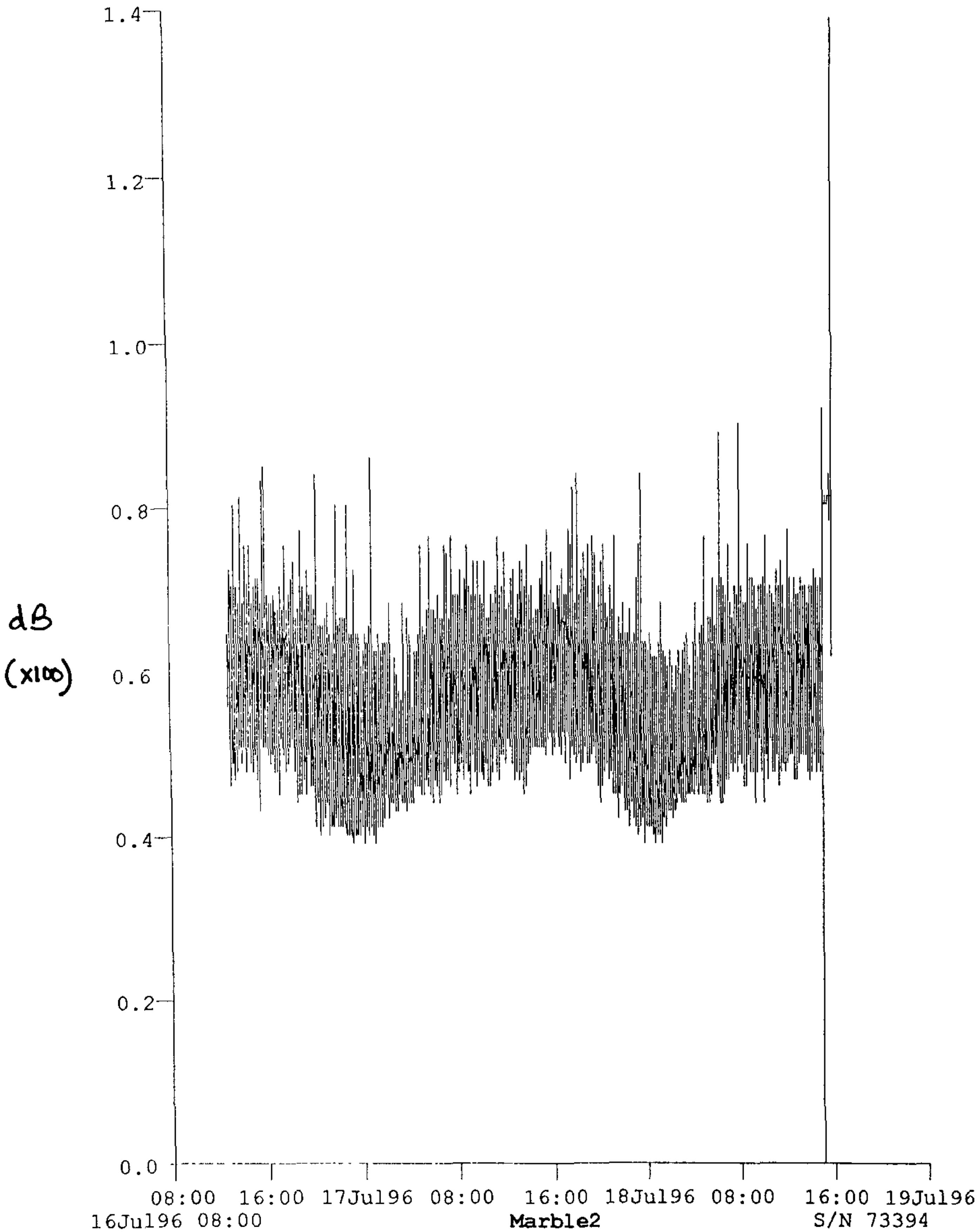
MARBLEHEAD COASTAL PROJECT

On-Site Noise Monitoring Detail
July 16-19, 1996

Marble1	=	Northern project site nearest I-5
Marble2	=	Southern project site near PCH/El Camino Real
Marble3	=	Site interior with limited adjacent roadway noise impacts



0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
dB
(x100)
08:00
16:00
17Jul96
08:00
16:00
18Jul96
08:00
16:00
19Jul96
16Jul96 08:00
Marble1
S/N 198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(x100)
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1.2
1.0
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0.6
0.4
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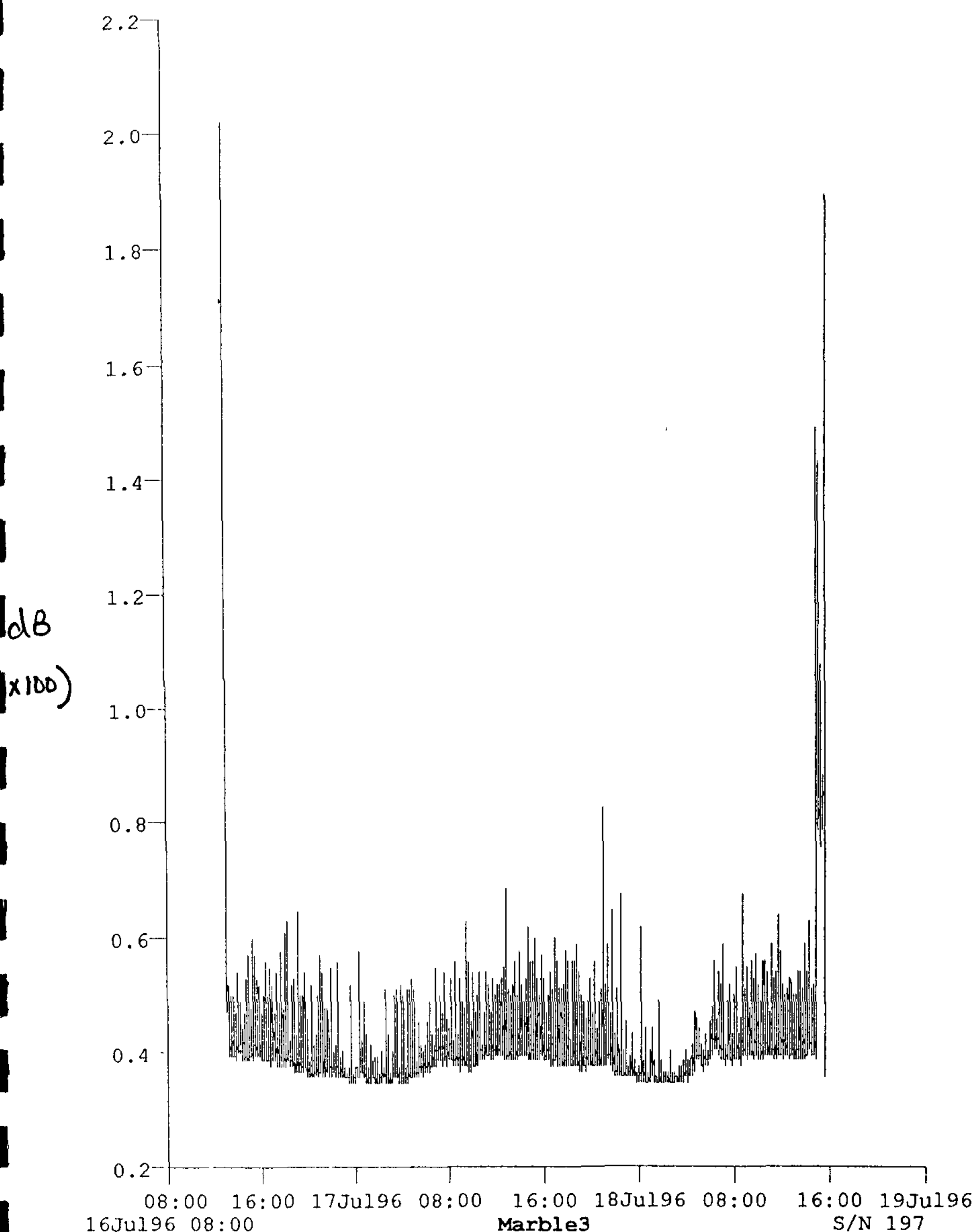
Marble2
S/N 73394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1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
dB
(x100)
08:00 16:00 17Jul96 08:00 16:00 18Jul96 08:00 16:00 19Jul96
16Jul96 08:00
Marble3
S/N 197

APPENDIX 15.6

Air Quality Analysis

Giroux & Associates
Environmental Consultants

AIR QUALITY IMPACT ANALYSIS
MARBLEHEAD COASTAL PROJECT
SAN CLEMENTE, CALIFORNIA

Prepared for:

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Date:

January 22, 1998

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METEOROLOGY/CLIMATE

San Clemente's climate, as with all of Southern California, is dominated by the strength and position of the semi-permanent high pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, infrequent rainfall, it drives the cool daytime sea breeze, and it maintains comfortable humidities and ample sunshine. Unfortunately, the same atmospheric processes that create the desirable living climate combine to restrict the ability of the atmosphere to disperse the air pollution generated by the large population attracted in part by the comfortable climate. Portions of the Los Angeles Basin therefore experience some of the worst air quality in the nation for certain pollutants.

Temperatures in San Clemente average 62°F annually. Daily and seasonal oscillations of temperature are small because of the moderating effects of the nearby oceanic heat reservoir. In contrast to the steady temperature regime, rainfall is highly variable, and confined almost exclusively to the "rainy" period from early November to mid-April. Rainfall in the project area averages around 11 inches annually with January typically the wettest month of the year.

Winds across the project site display several characteristic regimes. During the day, especially in summer, winds are from the west at 7-9 miles per hour. At night, especially in winter, the land becomes cooler than the ocean and an offshore wind of 3-5 miles per hour develops. After sunrise, the wind direction rotates through the southeast and south at 5-7 miles per hour mostly parallel to the coastline until the west wind again becomes dominant in the early afternoon. One other important wind regime occurs when a high pressure center forms over the western United States and creates strong, hot, dry, gusty, Santa Ana winds from the northeast and east across San Clemente.

The net effect of the area wind pattern is that any locally generated air pollutant emissions will be carried from east to west at night, and then reverse from west to east by day. Although the daytime windspeeds are generally stronger and therefore better ventilate the project area, the offshore flow, once well-organized late in the evening and during the night, is also strong enough to minimize any significant localized air stagnation. The least ventilated period is typically during the morning and evening directional transition when winds become near calm until the new flow component becomes fully established.

In addition to winds that govern the horizontal rate and trajectory of any air pollutants, Southern California experiences several characteristic temperature inversions that control the vertical depth through which pollutants can be mixed. The daytime onshore flow of marine air is capped by a massive dome of warm air that acts like a giant lid over the basin. As the clean ocean air moves inland, pollutants are continually added from below without any dilution from above. As this layer slows down in inland valleys of the basin and undergoes photochemical transformations under abundant sunlight, it creates very unhealthful levels of smog (mainly ozone).

A second inversion forms at night as cool air pools in low elevations while the air aloft remains warm. Shallow radiation inversions are formed (especially in winter) that trap pollutants near intensive traffic sources such as freeways, shopping centers, etc., and form localized violations of clean air standards called "hot spots." Although inversions are found during all seasons of the year, the regional capping inversion is far more prevalent in summer while the localized radiation inversions are strongest in winter. The strong seasonal split in inversion intensity thus contributes significantly to the completely different air quality climate found in summer in the project vicinity than in winter. Because traffic concentrations in the project area are low, and because individual cars are becoming progressively "cleaner," air quality concerns in the San Clemente area are more centered on the regional, summertime intrusion of photochemical smog (ozone) than on any winter microscale stagnation conditions.

AIR QUALITY SETTING

Ambient Air Quality Standards (AAQS): In order to assess the air quality impact of the proposed Marblehead development, that impact, together with baseline air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered adequate to protect the public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress or infection, such as asthmatics, the elderly, the very young, people weak from other disease or illness, and persons engaged in heavy work or exercise, called "sensitive receptors". Healthy adults can tolerate periodic exposure to air pollution levels well above these standards before adverse health effects are observed. Recent research has shown, however, that adverse health effects may occur from life-long chronic exposure to ozone concentrations that just meet the hourly standard. Barely meeting clean air standards may, therefore, not be enough to insure public health protection until some additional margin of safety is established to overcome chronic exposure health effects.

The Clean Air Act Amendments of 1970 established national AAQS with states retaining the option to adopt more stringent standards or to include other pollution species. Because California already had standards in existence before federal AAQS were established, and because of unique meteorological problems in California, there is considerable diversity between state and federal standards currently in effect in California as shown in Table 1.

The federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of all current health data. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA has subsequently developed new standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted on July 17, 1997. Implementation of these standards will be phased in over the next few years. California standards for PM-10, which includes PM-2.5, are more stringent than the federal PM-2.5 standard. New State AAQS corresponding to the recently adopted federal standards may therefore not be necessary.

Baseline Air Quality: Existing and probable future levels of air quality in the project area can be best inferred from ambient air quality measurements conducted by the South Coast Air Quality Management District (AQMD) at its El Toro monitoring station. San Clemente is separated from the El Toro monitoring station by over ten miles, but the El Toro station is the only long-term air quality data resource in South Orange County. Limited previous air

TABLE 1

Ambient Air Quality Standards

	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
AIR POLLUTANT	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	
Ozone	0 09 ppm, 1-hr avg >	0 12 ppm, 1-hr avg >	(a) Short-term exposures (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals, (b) Long-term exposures Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans, (c) Vegetation damage, (d) Property damage
Carbon Monoxide	9 0 ppm, 8-hr avg > 20 ppm, 1-hr avg >	9 ppm, 8-hr avg > 35 ppm, 1-hr avg >	(a) Aggravation of angina pectoris and other aspects of coronary heart disease, (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease, (c) Impairment of central nervous system functions, (d) Possible increased risk to fetuses
Nitrogen Dioxide	0 25 ppm, 1-hr avg >	0 053 ppm, ann avg >	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups, (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes, (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0 04 ppm, 24-hr avg > 0 25 ppm, 1-hr avg >	0 03 ppm, ann avg > 0 14 ppm, 24-hr avg >	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM_{10})	30 $\mu g/m^3$, ann geometric mean > 50 $\mu g/m^3$, 24-hr average>	50 $\mu g/m^3$, annual arithmetic mean > 150$\mu g/m^3$, 24-hr avg >	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease, (b) Excess seasonal declines in pulmonary function, especially in children
Sulfates	25 $\mu g/m^3$, 24-hr avg >=		(a) Decrease in ventilatory function, (b) Aggravation of asthmatic symptoms, (c) Aggravation of cardio-pulmonary disease, (d) Vegetation damage, (e) Degradation of visibility, (f) Property damage
Lead	1.5 $\mu g/m^3$, 30-day avg >=	1 5 $\mu g/m^3$, calendar quarter>	(a) Increased body burden, (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to reduce the visual range to less than 10 miles at relative humidity less than 70 percent, 8-hour average (10am - 6pm)		Visibility impairment on days when relative humidity is less than 70 percent

monitoring at San Juan Capistrano and at several monitoring sites for proposed South County transportation corridors had shown that air quality south of El Toro improves somewhat in correlation to the farther distance from the heaviest pollution emissions "centroid" of the Los Angeles Basin. An assumption that San Clemente is adequately characterized by air monitoring in El Toro has been used in the absence of any other data, but this assumption should be understood to be overpredictive.

Monitoring at El Toro includes both regional pollutants such as dust and smog, as well as primary vehicular pollution levels such as carbon monoxide. Table 2 summarizes the last seven years of published data from this monitoring station. Although the entire spectrum of air pollutants is not monitored at the El Toro station, the following conclusions can be drawn from this data:

a. Photochemical smog (ozone) levels continue to exceed standards by a wide margin. However, the frequency of first stage smog episodes has declined dramatically throughout the 1990s. Whereas South Orange County averaged ten first-stage alerts per year in the 1980s, they have almost completely disappeared within the last seven years. The last one-hour level exceeding 0.20 ppm of ozone was in 1991.

b. Annual maximum ozone levels rose in the early '80s to close to the second stage alert level of 0.35 ppm for 1 hour, but they since dropped sharply to the sub-0.20 ppm level. For several years, El Toro had the worst smog of any station in Orange County. In the last several years, however, El Toro, and by inference all of the South County, had some of the lowest smog readings on record.

c. Measurements of carbon monoxide have shown relatively low baseline levels for a monitoring station located near two busy arterials (El Toro Road and Jeronimo Road). With lower traffic volumes and more complex terrain reducing stagnation potential, CO levels in San Clemente are probably even lower than the SCAQMD readings at the El Toro monitoring station.

d. Respirable dust (PM-10) levels periodically exceed the state standard, but the less stringent federal PM-10 standard has never been violated since PM-10 measurements began at El Toro. Monitoring data for PM-2.5 are very limited both temporally and spatially. Compliance with the new federal PM-2.5 standard can not yet be accurately determined.

Air Quality Management Planning: The Federal Clean Air Act (1977 Amendments) stated that designated agencies in any area of the

TABLE 2

SOUTH ORANGE COUNTY
AIR QUALITY MONITORING SUMMARY (1990-96)
(Number of Days Standards Were Exceeded, and Maximum Levels During Such Violations
Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	1990	1991	1992	1993	1994	1995	1996
Ozone:							
1-Hour > 0.09 ppm (a)	32	29	31	22	16	18	20
1-Hour > 0.12 ppm (b)	11	10	9	7	5	1	2
1-Hour $\geq$ 0.20 ppm (c)	0	1	0	0	0	0	0
Max 1-Hour Conc. (ppm)	0.19	0.24	0.16	0.16	0.18	0.15	0.14
Carbon Monoxide:							
1-Hour > 20. ppm (a)	0	0	0	0	0	0	0
8-Hour > 9. ppm (a,b)	0	0	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	9	8	10	7	8	6	6
Max. 8-Hour Conc. (ppm)	5.6	4.8	7.3	4.1	5.4	4.1	4.0
Inhalable Particulates: (PM-10)							
24-Hour > 50 $\mu g/m^3$ (a)	16/55	9/59	5/60	7/61	7/59	11/60	4/61
24-Hour > 150 $\mu g/m^3$ (b)	0/55	0/59	0/60	0/61	0/59	0/60	0/61
Max. 24-Hour Conc. ($\mu g/m^3$)	88.	94.	83.	115.	91.	122.	79.

Source: South Coast Air Quality Management District, El Toro Monitoring Station, El Toro Road @ Jeronimo Road.

-- = No data, or no measurements during that year.
(a) = California ambient air quality standard
(b) = National ambient air quality standard
(c) = California first-stage smog episode alert level.
(d) = Former state and federal standards, data are shown for informational purposes only.

nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin (SCAB) could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the South Coast Air Basin, the agencies designated by the governor to develop regional air quality plans are the South Coast Air Quality Management District and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it in 1982 to project attainment of the standards in 2000.

In 1988, because of uncertainty in Federal Clean Air Act reauthorization, the California Legislature enacted the California Clean Air Act (CCAA). The CCAA requires that regional emissions be reduced by 5 percent per year, averaged over 3 year periods, until attainment can be demonstrated. Each area that did not meet a national or state ambient air quality standard was required to prepare a plan which demonstrated how the 5 percent reductions was to be achieved. In July 1991, the SCAQMD adopted a revised AQMP which was designed to meet the CCAA requirements. The 1991 AQMP projected an attainment date of 2010, consistent with the 1990 Federal Clean Air Act.

The 1990 Federal Clean Air Act Amendments required that all states with airsheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). The 1991 AQMP was modified/adapted and submitted as the South Coast Air Basin portion of the SIP. The 1991 SIP submittal estimated that an 85% basinwide reduction in reactive organic compound (ROC) emissions and a 59% reduction in oxides of nitrogen (NO_x) between 1990 to 2010 was needed to meet federal clean air standards.

In 1996, EPA approved the 1994 submittal of the SCAB portion of the SIP. The plan was approved after considerable debate on the contingency measures that should be implemented if progress is not as rapid as anticipated in the 1994 SIP. The currently approved plan will not be in effect for long because the Federal Clean Air Act required that an updated plan be submitted by February 8, 1997 which includes attainment plans for all pollutants exceeding federal standards. The CCAA requires an update of the state-mandated clean air plan every three years. The next update is due December 31, 1997.

An updated 1997 AQMP has been locally adopted. The California Air Resources Board (ARB) has forwarded this plan on to EPA for its consideration and recommended approval. The 1997 AQMP is designed to meet both federal (EPA) and state (ARB) air quality planning guidelines. Components of the 1997 plan update include:

- Demonstration of attainment for ozone, CO, and PM-10
- Updated emissions inventories (1993 base year) of VOC, NO_x, CO, SO_x and PM-10
- Emissions budgets for future years of the inventoried compounds.
- An updated pollution control strategy
- Contingency measures if the plan as presently proposed fails to meet stated timetables.

Additional research and photochemical computer modeling, as well as improved emissions estimates, now suggest that formerly predicted emissions reductions required to meet standards need not be quite as severe as thought earlier. Emissions reductions of around 68 percent for ROC, 57 percent for NO_x and 68 percent for CO are anticipated from the currently proposed AQMP update. Within the plan, some measures considered "long-term reductions" require additional technological development whose development schedule is uncertain. There is therefore no clear scientific consensus that the 1997 AQMP update will be able to achieve its mandatory clean air objectives by the end of 2010. For new projects that are developed within the next few years, the 1997 AQMP and its underlying plans for mobility, infrastructure development, population, housing, employment and land use, etc., will be the benchmark by which project consistency with air quality planning objectives will be judged.

A residential and commercial development project such as Marblehead relates to the air quality planning process through the growth forecasts that were used as inputs into the regional transportation model. If a proposed development is consistent with those growth forecasts, and if all available emissions reduction strategies are implemented as effectively as possible on a project-specific basis, then the air quality impact on a regional basis should be considered as less than significant. The AQMP also contains a number of land use and transportation control measures (TCMs). Many of these measures can not be implemented on any single development basis because they require an integration of all development and all transportation planning. The effectiveness of many TCMs is expected to increase over the next decade. AQMP consistency on a single development basis is thus more a matter of facilitating or providing the infrastructure for TCM implementation than of actually specifically being solely responsible to carry out regionally comprehensive AQMP measures.

AIR QUALITY IMPACTS

Methodology

The analysis methodology utilized procedures outlined in the SCAQMD 1993 "CEQA Air Quality Handbook" where appropriate. In areas where more site-specific information was available beyond the default values recommended in the handbook, they were used to supplement the SCAQMD-suggested input parameters.

Vehicular emissions were calculated using the SCAQMD "MAAQI" computer model. Microscale emissions impacts were calculated using one generic run of the CALINE4 computer model adjusted for site-specific traffic volumes, travel speeds and emission data for intersections near Marblehead potentially affected by project-related traffic.

Standards of Significance

Many air quality impacts which derive from dispersed mobile sources, i.e., the dominant pollution generators in the basin, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally immeasurably small. The SCAQMD has therefore developed suggested significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The 1993 SCAQMD Handbook states that any projects in the SCAB with daily emissions that exceed any of the following thresholds should be considered as having an individually and cumulatively significant air quality impact:

55 lbs per day of ROC (75 lbs/day during construction)

55 lbs per day of NO_x (100 lbs/day during construction)

550 lbs per day of CO

150 lbs per day of PM-10

150 lbs per day of SO_x

These thresholds do not take into account several important considerations, namely:

1. Emission levels from one large project may exceed thresholds while those from numerous smaller projects with identical emissions might not, even though the regional impact is the same.

2. Large developments have a greater opportunity to effectively implement transportation control measures (TCMs) because of a greater potential participant pool in trip/VMT diversion programs.

3. Project-related emissions and their regional impact may already have been incorporated into regional growth projections.

4. Emissions generated in or near San Clemente have essentially the same regional air quality impact if they were released in any other nearby community. If the anticipated demand for residential and specialty commercial growth is not met at Marblehead but in some other locality, the no-project alternative will have basically the same regional air quality impact.

These considerations can be used by the Lead Agency as a basis for supporting a finding of a less than significant impact, even if the SCAQMD advisory thresholds are exceeded. Alternately, the Lead Agency may make a finding of a significant impact for projects exceeding the SCAQMD thresholds, but use as many of the above criteria in a statement of overriding considerations as are applicable.

Additional indicators are listed in the SCAQMD Handbook that should be used as screening criteria to evaluate the need for further analysis with respect to air quality. Whenever possible, the project should be evaluated in a quantitative analysis; otherwise a qualitative analysis is appropriate. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation;

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP;

- Project could generate vehicle trips that cause a CO hot spot;

- Project might have the potential to create or be subjected to objectionable odors;

- Project could have hazardous materials on site and could result in an accidental release of air toxic emissions;
- Project could emit an air toxic contaminant regulated by District rules or that is on a federal or state air toxic list;
- Project could involve disposal of hazardous waste;
- Project could be occupied by sensitive receptors near a facility that emits air toxics or near CO hot spots;
- Project could emit carcinogenic air contaminants that could pose a cancer risk.

Project-Related Sources of Potential Impact

Intensification of land uses in Orange County potentially impacts ambient air quality on two scales of motion. As cars drive throughout Southern California, the small incremental contribution to the basin air pollution burden from any single vehicle is added to that from several million other vehicles. The impact from the Marblehead project, even if it generates a significant number of new vehicle trips, is very small on a regional scale. Basinwide air quality impacts are, therefore, addressed in terms of project compatibility with regional air quality plans. If any given project or plan has been properly incorporated into basinwide growth projections which are the basis for regional air quality/ transportation planning, then the basinwide impact of any proposed development is presumed, by definition, to be less than significant.

Locally, changes in the location of any collection of automotive sources, or changes in the number of vehicles or travel speeds may impact the microscale air quality around any given development site. Traffic increases not only contribute air pollutants in direct proportion to their cumulative percentage of traffic volume growth, but they may slow all existing traffic to slower, more inefficient travel speeds. The development traffic/air quality impact is thus potentially compounded.

Temporary construction activity emissions will occur during project buildout. Such emissions include on-site generation of dust and equipment exhaust, and off-site emissions from construction employee commuting and/or trucks delivering building materials. Because of their temporary nature, air quality impacts from construction have often been considered as individually less than significant. Also, construction activity emissions are difficult to quantify, since the exact type and amount of equipment that will be used or the acreage that may be disturbed on any given day in the future is not known with any reasonable certainty. The emphasis in environmental documents relative to construction activity emission impacts has therefore been to minimize the emissions as fully as possible through comprehensive mitigation even if the precise amount of emissions can not be precisely quantified.

Construction Activity Impacts

Dust is normally the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions". Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). Regulatory agencies use one universal factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into mid-range average values. This assumption may or may not necessarily be applicable to site-specific conditions on the Marblehead project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a high degree of imprecision.

The PM-10 fraction of fugitive dust emissions are predicted to be around 55 pounds per day per acre disturbed in the absence of any dust control measures being applied (AQMD CEQA Handbook, Table 9-2). Mandatory measures required by South Coast AQMD Rule 403 (Fugitive Dust) are generally assumed to reduce this rate by approximately 50%. Average daily PM-10 emissions during site grading and other disturbance are stated in the SCAQMD Handbook to be 26.4 pounds/acre. Enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a higher PM-10 control efficiency.

With "normal" dust control procedures, daily PM-10 emissions during construction of any individual Marblehead project would exceed the SCAQMD emissions significance threshold of 150 pounds per day if more than 5.7 acres (150 lb ÷ 26.4 lb/acre = 5.7 acres) were under simultaneous disturbance. With assumed maximum achievable dust control, disturbance areas exceeding 10 acres could be controlled to have less than significant daily PM-10 emissions. Such control programs, however, are typically not implemented in standard construction practice except in very unusual circumstances.

Phasing for the Marblehead Coastal Project has not yet been determined, and will depend upon future market demand for housing and specialty retail space in the area. The developable space at

Marblehead is approximately 200 acres (250 acres - 50 acres open space). For a ten-year site buildout, an average of 20 acres would be developed each year. Grading and other major disturbance lasts approximately 3 months. On average, 5 acres of the site would be an area of potentially significant dust generation. With mandatory (Rule 403) dust control, average daily PM-10 emissions would be 132 pounds (5 ac X 26.4 lb/ac). This level would be less than the 150 pounds/day SCAQMD significance threshold.

This average level, however, is not far from the threshold. For accelerated development or for a large single project, it is possible that more than 5 acres may be under simultaneous disturbance. An even slightly greater disturbance area could cause the PM-10 threshold to be temporarily exceeded. Under such circumstances, enhanced dust control procedures would need to be implemented. With an effective dust control program implemented during construction, PM-10 impacts can be maintained at a less than significant level.

In addition to the fine particulates that remain suspended in the air semi-indefinitely, soil disturbance during construction may release considerable amounts of larger particles that have short atmospheric residence times. These larger particulates are generally inert silicates that are readily filtered out in the upper respiratory tract. They therefore have no adverse health effects. They may, however, create a soiling nuisance as they settle out on parked cars, landscaping foliage or other horizontal surfaces. Clouds of such dust could also locally impair visibility as they blow across I-5 during daytime SW to NE winds. PM-10 control programs also reduce large particle generation. Use of efficient dust abatement will thus maintain fine particulate ambient air quality impacts at less than significant levels while also substantially reducing dust soiling nuisance potential.

Construction entails use of internal combustion engines to power on-road trucks and off-road mobile, semi-mobile and semi-stationary equipment. Such sources are mainly diesel-powered and are poorly regulated in terms of allowable emission levels. Off-road sources are sometimes not well maintained because there is no regulatory mechanism to enforce efficient combustion as there is for on-road sources. At 20 acres per year, and an equipment energy expenditure of 200,000 brake-horsepower-hours (BHP-HR) per acre, the average daily energy expenditure will be around 10,000 BHP-HR per day. The corresponding daily equipment exhaust emissions were calculated for generic diesel-powered heavy equipment (SCAQMD CEQA Handbook Table A9-3-A), as follows:

Carbon Monoxide	-	19 pounds/day
Reactive Organics	-	6 pounds/day
Nitrogen Oxides	-	86 pounds/day
Sulfur Oxides	-	6 pounds/day
Exhaust Soot	-	3 pounds/day

As with PM-10 emissions, average daily emission levels from equipment sources would not exceed significance thresholds. During peak activity days that exceed activity levels for an average day, the NO_x threshold of 100 pounds per day could be temporarily exceeded. As with particulate emissions, an enhanced construction equipment emissions control program is recommended during peak activity levels in order to maintain equipment exhaust pollutants at less than significant levels.

Construction activities are concentrated at the construction site, but they also spill over into the adjacent community. Spill-over may be physical spillage, or it may be from off-site congestion effects. Vehicles may track dirt off-site, lane closures may create congestion on public roadways and construction worker vehicles and supply trucks may compete with the general public for sometimes inadequate roadway capacity. Trucks may be left idling near off-site sensitive receptors while waiting to load or unload. Each of these small impacts nevertheless may be cumulatively significant when spread over many years of project buildout. As with the on-site impacts, a heightened level of impact mitigation will need to be utilized to maintain an overall tolerable level of impact from site activity construction. Housekeeping and construction activity management procedures are identified in the impact mitigation discussion relative to "spill-over" minimization.

Mobile Source Impacts

The bulk of the proposed project's impact will derive from the approximately 47,150 daily trips that will be generated at full site buildout. The daily project-related trip generation summary is shown in Table 3. At a typical trip length of around 10 miles per trip, project implementation would add around 500,000 vehicle miles traveled (VMT) to the basinwide mobile source emissions burden.

The emissions associated with project buildout can be readily calculated using the SCAQMD's MAAQI computer model. Emissions from

TABLE 3

MARBLEHEAD BUILDOUT TRIP GENERATION DETAIL

Land Use	Size	Rate	Trips
Low/Medium Residential	440 DU	12/DU	5,280
Strip Commercial	60 KSF	35/KSF	2,100
Neighborhood Comm.	78 KSF	70/KSF	5,460
Fast Food Restaurant	6 KSF	316/KSF	1,896
Quality Restaurant	26.5 KSF	96.5 KSF	2,534
Park	10 AC	7 AC	70
Movie Theaters	4500 Seat	1.76/Seat	7,920
Discount Store	145.8 KSF	70.1/KSF	10,225
Regional Center	96 KSF	36.3/KSF	3,489
Outlet Center	307.7 KSF	26.5/KSF	8,182
		TOTAL TRIPS/DAY	47,156

DU = dwelling units
KSF = 1,000 sq. feet
AC = acre

project-related travel were calculated for a buildout year of 2010. The results of these calculations are summarized in Table 4. The computer output from the emissions model is attached as an appendix to this report.

Project-related emissions for the three primary exhaust pollutants (ROC, CO and NO_x) exceed the SCAQMD significance threshold by a wide margin. This conclusion is generally consistent with the SCAQMD Handbook ... which, in Table 6-2, states that single family residential projects of 166 units or more or retail commercial development of 64,000 square feet for shopping centers may have a significant environmental impact. Both the residential and specialty retail components of the proposed Marblehead project individually exceed these screening thresholds by a wide margin. Combined, their level of "excess" is even greater.

In addition to mobile source pollution, project implementation will create energy consumption emissions from on-site natural gas combustion for space and water heating. Off-site electrical generation from in-basin power resources may also generate air pollutants. Table 5 summarizes the project-related stationary source emissions. For each individual land use, the stationary source component is quite small. Nitrogen oxide emissions from all stationary source contributions however, are seen to exceed the SCAQMD threshold.

Combined mobile and stationary source emissions are shown in Table 6. Addition of the stationary source component creates no additional violations of SCAQMD thresholds. Because of the dominance of the mobile source element, any measurable reduction in project-related air quality impacts should thus focus far more heavily on the vehicular contribution than on energy efficiency measures.

The regional air quality impact of the project is reduced somewhat by the fact that some development of their parcel is anticipated in the City of San Clemente General Plan. Table 7 contrasts the operational emissions that would have resulted from site development under its current general plan designation as a residential, destination resort hotel and golf course use compared to the currently proposed project. Even accounting for this offset, the "delta" shown in Table 7 as the increase engendered by implementation of the proposed development plan still far exceeds the SCAQMD threshold.

Although the SCAQMD Air Quality Handbook states strongly that such emission levels will have a significant impact on the environment, that finding is not necessarily binding. The SCAQMD is only an advisory agency on this project, such that the Lead Agency must

TABLE 4

MARBLEHEAD COASTAL PROJECT
MOBILE SOURCE EMISSIONS (pounds/day)

Land Use	CO	ROG	NOx	SOx	PM-10
Low/Medium Residential	777.1*	40.3	84.1*	7.6	13.1
Strip Commercial	160.7	12.3	31.9	3.1	5.4
Neighborhood Comm.	467.2	33.3	83.7*	8.1	14.0
Fast Food Rest.	128.0	10.7	28.5	2.8	4.9
Quality Restaurant	262.4	16.6	39.6	3.8	6.5
Park	10.4	0.5	1.1	0.1	0.2
Movie Theaters	1142.6*	60.4*	129.0*	11.7	20.3
Discount Store	1336.2*	74.4*	164.3*	15.2	26.2
Regional Center	456.1	25.4	56.1*	5.2	9.0
Outlet Center	1069.7*	59.5*	131.5*	12.1	21.0
TOTAL	5810.5*	333.4*	749.8*	69.7	120.6
SCAQMD Threshold	550.	55.	55.	150.	150.

* = exceeds SCAQMD Threshold

Source: SCAQMD MAAQI Air Quality Model, 1993; Output in Appendix 1

TABLE 5

MARBLEHEAD COASTAL PROJECT
STATIONARY SOURCE EMISSIONS (pounds/day)

Land Use	CO	ROG	NOx	SOx	PM-10
Low/Medium Residential	3.3	0.6	15.6	0.8	0.3
Strip Commercial	0.6	0.1	3.3	0.3	0.1
Neighborhood Comm.	2.4	0.2	14.0	1.4	0.5
Fast Food Rest.	0.2	<0.1	1.1	0.1	<0.1
Quality Restaurant	0.8	0.1	4.6	0.4	0.1
Park	0.0	0.0	0.0	0.0	0.0
Movie Theaters	0.4	0.1	2.5	0.2	0.1
Discount Store	1.4	0.1	7.9	0.6	0.2
Regional Center	1.0	0.1	5.9	0.4	0.2
Outlet Center	3.3	0.4	19.1	1.4	0.5
TOTAL	13.5	1.7	74.0*	5.6	1.9
SCAQMD Threshold	550.	55.	55.	150.	150.

* = exceeds SCAQMD Threshold

Source: SCAQMD MAAQI Air Quality Model, 1993; Output in Appendix 1

TABLE 6

MARBLEHEAD COASTAL PROJECT

COMBINED SOURCE EMISSIONS (pounds/day)

Land Use	CO	ROG	NOx	SOx	PM-10
Low/Medium Residential	780.4*	40.9	99.8*	8.4	13.4
Strip Commercial	161.3	12.4	35.1	3.4	5.5
Neighborhood Comm.	469.7	33.5	97.7*	9.5	14.5
Fast Food Rest.	128.2	10.7	29.6	2.9	4.9
Quality Restaurant	3.2	16.7	44.1	4.2	6.6
Park	10.4	0.5	1.1	0.1	0.2
Movie Theaters	1143.1*	60.5*	131.6*	11.9	20.4
Discount Store	1227.5*	74.5*	172.2*	15.8	26.4
Regional Center	457.2	25.5	62.0*	5.6	9.1
Outlet Center	1073.0*	59.9*	150.6*	13.5	21.5
TOTAL	5823.8*	335.1*	823.8*	75.3	122.6
SCAQMD Threshold	550.	55.	55.	150.	150.

* = exceeds SCAQMD threshold

Source: SCAQMD MAAQI Air Quality Model, 1993; Output in Appendix 1

TABLE 7

OPERATIONAL EMISSIONS COMPARISON
(pounds/day)

MARBLEHEAD COASTAL PROJECT vs. EXISTING GENERAL PLAN

Scenario	CO	ROG	NOx	SOx	PM-10
Proposed Project	5824	335	824	75	123
Exist. General Plan*	1990	133	283	23	35
Change	+3834	+202	+541	+52	+ 88
SCAQMD Threshold	550.	55.	55.	150.	150.
Exceeds Threshold (?)	Yes	Yes	Yes	No	No

* Source: MAAQI Air Quality Model; Appendix 2

evaluate whether there will actually be a measurable degradation of the regional air quality environment resulting from project implementation. While the proposed project would cause the suggested SCAQMD emissions threshold to be exceeded by a wide margin, several considerations may mitigate against considering the resulting air quality impact as individually significant as follows:

1. Similar emissions would result from development of the same project in an adjacent jurisdiction or elsewhere in Orange County.

2. The transportation infrastructure is in place to efficiently service the site with good access to multiple transportation modes.

3. The project provides goods and services to meet existing and future demands close to the source of the demand. By meeting the demand for retail, entertainment or similar uses proposed at Marblehead directly in South County, travel distances for such amenities may be reduced compared to the no-project alternative.

The above considerations could allow for the Lead Agency to find that the air quality impact is individually less than significant despite the considerable emissions magnitude. If the emissions total alone were to be judged as sufficient evidence for a finding of significance, then the above considerations should be incorporated into a statement of overriding considerations.

Relative to a finding of (in)significance for the project-related (mainly mobile source) emissions, it should also be noted that the calculations do not take into account mandatory conversion of the basin travel fleet to methanol or a similar "clean" fuel. Clean fuel market penetration is mandated to rise steadily into the early 21st Century. Zero emissions vehicle (ZEV) availability is also currently mandated under state law by the end of this decade with accelerated market penetration expected in the first decade of the next century. The assumption of 100 percent use of gasoline and diesel fuel in Table 6 thus overstates project regional air quality impacts.

However, independent of any reason to reduce the stated burden in Table 6, traffic from all future growth will contribute significantly to the sub-regional and regional air pollution burden, and, therefore, creates a cumulatively significant air quality impact, regardless of project size. This is a function of growth and the dependence upon the single occupant fossil-fueled vehicle as the primary means of transportation. All growth delays the ultimate attainment of regional clean air standards. This project, within a loose definition of "cumulative projects", would contribute to that impediment to clean air. Regardless of any finding of individual impact significance, the proposed Marblehead development should be identified as having a cumulatively significant air quality impact. That conclusion is reinforced by noting that the proposed development plan far exceeds the intensity currently envisioned in the City's general plan. The general plan is the basis for predicting regional vehicular activities as part of the air quality management plan (AQMP). Until the AQMP is next updated to include a new development plan for Marblehead, the proposed project will remain inconsistent with the basin's clean air plan.

Because vehicular sources from all combined growth will contribute so substantially to regional emissions total, it correspondingly represents a significant opportunity to reduce that contribution. A reasonable reduction percentage through the implementation of an aggressive transportation system management (TSM) will achieve a measurable reduction when applied to such a large baseline emissions level. If the air quality impact from mobile source emissions is to be maintained at an acceptable level, a viable TSM program is an imperative strategy toward achieving that end.

Orange County has been extensively involved in trip/VMT reduction programs through the trip reduction ordinances (TRO) and various geographically focused transportation management programs. Several countywide programs that monitor city and county response to AQMP TCMs have shown that the county collectively has exceeded the 1994 trip reduction target of the 1991 AQMP when the county is allocated its fair share of the basinwide reduction target. While progress toward reducing the dependence on the single occupant vehicle (SOV) is slow, continued progress toward higher average vehicle ridership (AVR) is to be expected during the Marblehead Coastal Project buildout timeframe.

While regional mobile source emissions will not have a very direct impact on local San Clemente air quality, the incremental addition of growth-related traffic over a wide area may change microscale air quality distributions. To determine whether future traffic changes will create an adverse air quality impact, a microscale air quality analysis was performed for the traffic analysis grid around the project site. A screening procedure based on the California line source roadway dispersion model CALINE4 was run for a number of traffic scenarios to evaluate any changes due to changes in patterns of growth anticipated as part of the Marblehead development.

The model combines the results of the traffic analysis with very restrictive dispersion conditions in order to generate a worst-case impact assessment. Carbon monoxide (CO) was used as an indicator of any "hot spot" potential because CO, unlike regional pollutants such as ozone, is directly related to source activity immediately adjacent to the receptor (a primary, unreacted pollutant impact). Calculations were made for an hourly exposure in the immediate vicinity of 38 roadway intersections within 2 miles of Marblehead where baseline traffic volumes were calculated in the traffic analysis.

The results of the microscale impact analysis are summarized in Table 8. The values in Table 8 must be added to any non-local background CO distribution. If one assumes that the maximum level measured near the El Toro and Jeronimo Roads intersection is the regional background, and that the worst-case, one-hour level of 6 ppm observed in 1996 occurs at the exact same hour as any worst-case project impact, then it would take a local contribution of 14 ppm to threaten the one-hour California CO standard of 20 ppm. Microscale hourly CO levels, both without and with the proposed project are forecast to be below the 14 ppm threshold. Combined CO concentrations will thus remain below the California 1-hour CO standard of 20 ppm, and far below the federal standard of 35 ppm.

The worst case 8-hour background CO level in 1996 was 4.0 ppm. It would take a local contribution of 5.0 ppm, combined with the worst case (1996 maximum) background level to equal the state and/or federal 8-hour CO standard of 9.0 ppm. All one hour CO levels in Table 8, without or with the project, are less than 5.0 ppm. The eight-hour exposure would be even less than the standard even if the one-hour maximum persisted for 8-hours. Microscale CO "hot spots" do not now exist, nor will they be created by proposed project implementation.

Project-related CO contributions are seen in Table 8 to range from less than 0.0 to 1.0 ppm. SCAQMD Rule 1303 identifies a CO increment of 5 percent or less of the hourly standard of 20 ppm, i.e., 1.0 ppm, to be a de minimis increment requiring no further impact analysis. The findings of the microscale impact assessment are therefore that CO levels under theoretical worst-case conditions do not exceed clean air standards and the Marblehead Coastal Project traffic will add an insignificant amount to the total CO exposure. Microscale impacts are clearly less than significant.

TABLE 8

MICROSCALE AIR QUALITY IMPACT ANALYSIS

(Hourly CO concentration [ppm] above non-local background at edge of each indicated intersection leg).

			---- 2000 ----		---- 2005 ----		-- BUILDOUT --	
No.	Intersection	Exist.	No Proj.	With Proj.	No Proj.	W/TH Proj.	No Proj.	With Proj.
1.	Cm. Las Ramblas & Los Mares	---	---	---	---	---	0.3	0.2
2.	Port Del Norte & Los Mares	---	---	---	---	---	0.2	0.2
3.	Cm. Del Rio & Los Mares	---	---	---	0.1	0.1	0.1	0.1
4.	Cm. Vera Cruz & Los Mares	---	0.6	0.6	0.6	0.6	0.2	0.2
5.	Port del Sur & Los Mares	---	0.6	0.6	0.5	0.5	0.2	0.2
6.	Calle Nuevo & Los Mares	---	1.2	1.2	0.9	0.9	0.2	0.2
7.	Avd. Vaquero & Los Mares	1.1	0.9	0.9	0.7	0.6	0.4	0.3
8.	Marbella & Los Mares	1.3	1.0	1.0	0.8	0.7	0.3	0.2
9.	Calle Agua & Los Mares	---	1.4	1.4	1.1	1.3	0.4	0.3
10.	Cm. El Molino & Los Mares	---	1.8	1.8	1.6	1.6	0.4	0.3
11.	I-5 NB Ramps & Estrella	---	2.0	2.0	1.7	2.0	0.4	0.4
12.	I-5 SB Ramps & Estrella	---	1.0	0.9	0.7	0.6	0.3	0.3
13.	Cm. Mira Costa & Estrella	---	0.6	0.6	0.5	0.5	0.2	0.2
14.	Cm. Del Rio & Sarmentoso	---	---	---	0.1	0.1	0.2	0.2
15.	Cm. Vera Cruz & Sarmentoso	---	0.1	0.1	0.4	0.4	0.1	0.1
16.	Avd. Vaquero & Calle Vallarta	---	---	---	---	---	0.2	0.1
17.	Avd. Vaquero & Guadalajara	0.6	0.5	0.5	0.5	0.4	0.2	0.1
18.	Avd. Vaquero & Cm. Capistrano	1.4	1.0	1.0	0.9	0.9	0.3	0.2
19.	PCH & Cm. Capistrano	1.8	1.3	1.3	1.6	1.6	1.2	1.7
20.	La Pata & Cm. Las Ramblas	---	---	---	---	---	0.6	0.6
21.	La Pata & Cm. Del Rio	---	---	---	---	---	1.0	0.8
23.	La Pata & Avd. Vista Hermosa	---	---	---	---	---	0.6	1.3
24.	Vs. Pacifica & Cm. Vera Cruz	---	---	---	0.5	0.5	0.1	0.1
25.	Vs. Pacifica & Vs. Hermosa	---	---	---	0.6	0.8	0.2	0.5
26.	Frontera & Vista Hermosa	0.3	0.5	1.5	0.4	1.0	0.1	0.6
27.	I-NB Ramps & Vista Hermosa	---	---	1.5	---	1.1	---	0.4
28.	I-SB Ramps & Vista Hermosa	---	---	1.1	---	0.8	---	0.5
31.	Frontera & Faceta	---	---	---	---	---	0.2	0.1
32.	FTC NB Ramps & Avd. Pico	---	---	---	---	---	0.3	0.3

Table 8
Page Two

			---- 2000 ----		---- 2005 ----		-- BUILDOUT --	
No.	Intersection	Exist.	No Proj.	With Proj.	No Proj.	W/TH Proj.	No Proj.	With Proj.
33.	FTC SB Ramps & Avd. Pico	---	---	---	---	---	0.2	0.2
34.	Vista Hermosa & Avd. Pico	---	---	---	---	---	0.6	0.6
35.	La Pata & Avd. Pico	---	0.3	0.3	1.1	1.1	1.0	1.0
36.	La Pata & Calle Amanecer	---	0.4	0.4	0.6	0.6	0.5	0.5
37.	La Pata & Del Cerro	---	0.5	0.5	0.6	0.6	0.4	0.4
38.	Calle Amanecer & Avd. Pico	1.9	3.2	3.8	3.3	3.0	4.1	3.4
39.	E. Vista Montana & Del Cerro	---	---	---	---	---	0.3	0.3
40.	W. Vista Montana & Del Cerro	1.5	1.2	1.2	0.8	0.8	0.3	0.3
41.	Calle del Cerro & Avd. Pico	3.3	2.7	2.7	2.5	2.3	1.6	1.0
42.	Avd. Presidio & Avd. Pico	4.5	4.1	3.9	4.2	4.0	2.6	1.5
43.	I-5 NB Ramps & Avd. Pico	3.1	3.7	3.5	3.5	3.3	2.2	1.4
44.	I-5 SB Ramps & Avd. Pico	3.0	3.5	3.3	3.1	2.1	1.2	0.5
45.	Los Molinos & Avd. Pico	1.4	0.8	0.8	0.9	0.9	0.4	0.4
46.	W. Vista Hermosa & Avd. Pico	---	---	1.1	---	0.8	---	0.4
47.	N. El Camino Real & Avd. Pico	1.6	1.2	1.2	1.1	0.9	0.4	0.7
48.	Avd. Presidio & Avd. Salvador	---	---	---	---	---	<0.1	<0.1
49.	N. El Camino Real & Los Molinos	1.2	1.0	1.0	1.0	1.1	0.5	0.5
50.	N. El Camino Real & La Grulla	---	---	---	---	---	0.5	0.5
51.	N. El Camino Real & El Portal	1.5	0.8	0.7	0.7	0.8	0.3	0.3
52.	I-5 NB Ramp & Palizada	1.0	0.8	0.8	0.5	0.6	0.3	0.3
53.	I-5 SB Ramp & Palizada	1.7	1.1	0.9	0.6	0.7	0.3	0.4
54.	Estrella & Palizada	1.8	1.0	1.0	0.7	0.7	0.4	0.4
55.	N. El Camino Real & Palizada	1.2	0.9	0.9	0.8	0.6	0.3	0.4
56.	N. Ola Vista & Palizada	0.5	0.3	0.3	0.2	0.2	0.1	0.1
57.	N. El Camino Real & Del Mar	1.2	0.6	0.6	0.5	0.6	0.3	0.3
58.	I-5 NB Ramp & Presidio	1.1	0.6	0.6	0.5	0.4	0.3	0.3
59.	Estrella & Avd. Presidio	1.1	0.6	0.6	0.4	0.4	0.2	0.2
61.	N. El Camino Real & Avd. Presidio	1.2	1.0	1.0	0.8	0.8	0.4	0.4
63.	I-5 SB Ramps & S. El Camino Real	1.2	0.7	0.7	0.5	0.5	0.3	0.3
64.	I-5 NB Ramps & S. El Camino Real	---	0.9	0.9	0.6	0.6	0.3	0.3
65.	S. El Camino Real & San Juan	---	0.8	0.8	0.6	0.6	0.3	0.3

Table 8
Page Three

			2000		2005		BUILDOUT	
No.	Intersection	Exist.	No Proj.	With Proj.	No Proj.	W/TH Proj.	No Proj.	With Proj.
66.	Avd. Salvador & Avd. San Pablo	---	---	---	---	---	0.1	0.1
67.	S. El Camino Real & San Gabriel	---	0.4	0.4	0.3	0.3	0.1	0.1
68.	S. El Camino Real & I-5 NB Ramps	---	0.9	0.9	0.6	0.6	0.2	0.2
69.	S. El Camino Real & Mendocino	---	---	---	---	---	0.1	0.1
70.	Avd. Presidente & Avd. Calafia	---	0.3	0.3	0.3	0.3	0.1	0.1
71.	S. El Camino Real & San Luis Rey	---	0.3	0.3	0.2	0.2	0.1	0.1
72.	I-5 NB Ramps & Cristianitos	---	0.1	0.1	0.1	0.1	0.1	0.1
73.	I-5 SB Ramps & Cristianitos	---	0.1	0.1	0.1	0.1	0.1	0.1
76.	Vista Pacifica & Pico	---	1.2	1.1	2.5	1.9	0.8	0.6
77.	"A" Street & Pico	---	---	<0.1	---	<0.1	---	0.1
78.	Vista Hermosa & "B" Street	---	---	0.8	---	0.6	---	0.3

Source: Screening Procedure based upon CALINE4 Model, Caltrans (1988).

MITIGATION

Depending upon the area under simultaneous development, potentially significant impacts were identified during construction from dust (PM-10) generated by surface disturbance and from construction equipment operations. Operational emissions will be in excess of thresholds of significance for regionally significant pollutants as identified by the South Coast AQMD. As a minimum, vehicular emissions from project-related traffic should be identified as having a cumulatively significant air quality impact. A number of mitigations, as related to the project, are already incorporated into rules, regulations or ordinances. They are included in the following list of mitigation measures in that compliance mitigates a potentially adverse impact. They are not discretionary measures, however, which a developer can implement or the City of San Clemente can additionally require since compliance is already assumed in the impact analysis.

In particular, dust control during construction requires compliance with SCAQMD Rule 403 (rev. 1993). Rule 403 requires the use of one or more dust control measures, requires that visible dirt track-out at construction access be promptly removed, and prohibits visible dust clouds beyond the property boundary. Any discretionary actions would be those measures that go beyond the already established Rule 403 minimum requirements.

No credit was taken for mobile source emissions reductions, either from technology improvements (reformulated gasoline, alternative fuels and/or electric cars), nor from transportation behavior modification in response to programs such as South Coast AQMD trip reduction programs. These programs will mitigate the identified significant growth-related cumulative air quality impact to some extent. Because the projected effectiveness of such programs and because the timeframe for technology development is uncertain, the degree of possible mitigation can not be quantified with certainty. Similarly, the buildout date for Marblehead will depend upon economic forces that can not be predicted. The following discussion structures the recommended mitigation as comprehensively as possible, but quantification of mitigation effectiveness is speculative at currently known levels of detail.

The SCAQMD has developed a menu of mitigation options for consideration into project planning where applicable or appropriate. Some measures are not considered feasible for the proposed project. Many transportation control measures (TCMs) are already incorporated into actions required by the local jurisdictions. Mitigation potential, beyond what is already required, is therefore somewhat limited. The following measures are recommended:

Construction Dust

- Contractors will comply with SCAQMD Rule 403. In addition to meeting minimum compliance requirements, the contractor will utilize one additional method of dust control from the measures shown in the list in the SCAQMD Rule 403 Implementation Handbook.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente
  South Coast AQMD

- Contractors will implement a high wind dust control program when wind gusts exceed 25 mph as evidenced by visible dust cloud generation on previously disturbed areas in the absence of vehicular operations. High wind dust control will entail:

  - Termination of operation of scrapers, graders or dozers on unpaved surfaces until winds subside.

  - Application of water hourly to any unpaved surface with vehicle or equipment operations.

  - Application of water or other dust control material to any previously graded surface if dust emanation is visible from such surface.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente

- Contractors will utilize measures to prevent dirt from being tracked, washed, blown or otherwise conveyed onto paved roadways, and will wash or sweep the construction access points from any public roadway on a routine basis on a frequency specified by the City of San Clemente as well as whenever dirt is visible more than 50 feet from the access point independent of the routine clean-up schedule.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente

- Trucks hauling dirt on public roads to and from the site will be covered or will maintain a six inch differential between the maximum height of any hauled material and the top of the haul trailer. Haul truck drivers will water the load prior to leaving the site to prevent soil loss during transport.

  Responsible Party: Construction Contractor

  Supervising Agency: California Highway Patrol

- Construction management procedures required by the City of San Clemente and other jurisdictions shall be implemented. Contractor personnel responsible for supervision and the appropriate actions to be taken for the following measures shall be identified:

  - Cessation of activities during a Stage-2 smog episode. Call 1-800-242-4022 for the daily forecast.

  - Truck routes and schedules for receipt of materials shall be co-ordinated with City staff.

  - Where feasible, on-road vehicles and off-road equipment shall be turned off and subsequently restarted if the anticipated duration of idling is expected to exceed five (5) minutes.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente

- Graded surfaces used for off-road parking, materials lay-down or awaiting future construction shall be stabilized for dust control as needed. Frequently accessed unpaved areas shall be paved as early as possible to minimize dirt trackout to public rights of way.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente

- Equipment will be maintained in proper tune to prevent visible soot from reducing light transmission through the exhaust stack exit by more than 20 percent for more than three (3) minutes per hour and will use low-sulfur fuel as required by SCAQMD regulation.

Responsible Party: Construction Contractor

Supervising Agency: South Coast AQMD

- Lane closures or detour will require coordination with the City and/or County of Orange staff. Flagpersons and appropriate traffic control devices will be used as needed to minimize construction activity interference with off-site traffic.

  Responsible Party: Construction Contractor

  Supervising Agency: City of San Clemente

Implementation of the above measures is expected to maintain construction activity air quality impacts at less than significant levels.

Operational Activities:

- Traffic flow at the project access will be maintained at acceptable levels of service through mitigation measures identified in the project traffic study.

  Responsible Party: Project Developer

  Supervising Agency: City of San Clemente Transportation Planning

- 220v electric power for future use to charge electric-powered vehicles will be made available in homeowner garages.

  Responsible Party: Site Developer

  Supervising Agency: City of San Clemente

Alternatives

No specific development alternatives were identified. Leaving the property undeveloped under the no-project alternative would result in no impact except for perhaps emissions associated with occasional site weed control. Air quality, however, occurs mainly within a regional context. The air quality impact from the no-project alternative may therefore not necessarily be environmentally preferred for the following reasons:

a. The same level of growth is likely to occur at some other Orange County location with similar impacts.

b. Transportation system access for goods and services may be less adequate at another location than at Marblehead.

c. Development of this site is a natural expansion of already completed developments surrounding the site.

Development of the site under the existing general plan designation was shown to generate fewer air pollutant emissions. However, a destination resort hotel and golf course as currently shown for the site will attract automotive travel from throughout Southern California while only minimally serving the needs of South County residents. The commercial component of the proposed project will more directly serve the demand for goods and services in the local area than would a resort complex. Lower emissions associated with the existing general plan alternative therefore do not translate into improved regional air quality.

The proposed project, by meeting a demand for goods and services close to the source of the demand, and without causing any local microscale impacts, is thus a preferred alternative in terms of local and regional air quality.

References:

California Air Resources Board, 1988 - 1994; California Air Quality Data, Vols. XX-XXVI.

California Dept. of Transportation (Caltrans), 1988; Air Quality Technical Analysis Notes (AQTAN), Sacramento, CA.

South Coast AQMD, 1993: CEQA Air Quality Handbook.

South Coast AQMD, 1994: Mobile Assessment for Air Quality Impacts (MAAQI Computer Program).

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APPENDIX 1

MAAQI Air Quality Model Detail

Marblehead Buildout - Year = 2010

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Project Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: RESIDENTIAL, SINGLE FAMILY, 440 DWELLING UNIT
AVERAGE DAILY TRIPS: 5280 (PER DWELLING UNIT-- 12.00)
NUMBER OF VEHICLES: 2640 TOTAL PROJECT VMT: 43669 miles

-----TRIP PURPOSE DATA:	Home-Other	Home-Shop	Home-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	6.6	5.6	10.1	miles
TRIP PERCENTAGES:	41.1	8.8	50.2	percent
VEHICLE MILES TRAVELLED:	14299.5	2570.2	26799.7	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	679/day	87.1%	4600/day
Number of Vehicles	13.5%	356	86.5%	2283
Vehicle Miles Travelled	12.5%	5458 miles	87.5%	38210 miles

TRIP COLD/HOT STARTS: 100% COLD, 0% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER DWELLING UNIT
to MEGAWATT-HR/DAY is 5626.5/365/1000
and to MILLION CU FT/DAY is 6650.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Home-Other Trip Running Emissions--					
CO	58.1	26.5	84.6	84.6	0.0%
ROC	2.4	3.6	6.0	6.0	0.0%
NOx	7.0	15.6	22.7	22.7	0.0%
SOx	1.4	1.1	2.5		
PM10-Exhaust	0.1	0.7	0.8	0.8	0.0%
PM10-Tire Wear	2.8	0.7	3.5	3.5	0.0%
LEAD	0.000	0.002	0.002		
Home-Shop Trip Running Emissions--					
CO	10.5	4.8	15.2	15.2	0.0%
ROC	0.4	0.6	1.1	1.1	0.0%
NOx	1.3	2.8	4.1	4.1	0.0%
SOx	0.2	0.2	0.4		
PM10-Exhaust	0.0	0.1	0.1	0.1	0.0%
PM10-Tire Wear	0.5	0.1	0.6	0.6	0.0%
LEAD	0.000	0.000	0.000		
Home-Work Trip Running Emissions--					
CO	109.0	49.6	158.6	158.6	0.0%
ROC	4.4	6.7	11.2	11.2	0.0%
NOx	13.1	29.3	42.5	42.5	0.0%
SOx	2.6	2.1	4.7		
PM10-Exhaust	0.3	1.3	1.5	1.5	0.0%
PM10-Tire Wear	5.2	1.4	6.5	6.5	0.0%
LEAD	0.000	0.003	0.003		
Home-Other Trip Start & Soak Emissions--					
CO Cold Start	198.0	15.0	213.0	213.0	0.0%
ROC Cold Start	5.4	0.8	6.2	6.2	0.0%

NOx Cold Start	5.0	1.2	6.1	6.1	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	1.2	0.2	1.4	1.4	0.0%
Home-Shop Trip Start & Soak Emissions--					
CO Cold Start	42.2	3.2	45.4	45.4	0.0%
ROC Cold Start	1.2	0.2	1.3	1.3	0.0%
NOx Cold Start	1.1	0.3	1.3	1.3	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.3	0.0	0.3	0.3	0.0%
Home-Work Trip Start & Soak Emissions--					
CO Cold Start	241.9	18.4	260.3	260.3	0.0%
ROC Cold Start	6.6	1.0	7.6	7.6	0.0%
NOx Cold Start	6.1	1.5	7.5	7.5	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	1.5	0.2	1.7	1.7	0.0%
Other Evaporative Emissions--					
ROC-Diurnal	2.7	0.9	3.6		

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	659.6	117.5	777.1	777.1	0.0%
ROC	26.0	14.3	40.3	40.3	0.0%
NOx	33.5	50.7	84.1	84.1	0.0%
SOx	4.2	3.4	7.6		
PM10	8.8	4.3	13.1	13.1	0.0%
LEAD	0.000	0.005	0.005		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	1.36	1.95	3.31	3.31	0.0%
ROC	0.07	0.52	0.58	0.58	0.0%
NOx	7.80	7.80	15.60	15.60	0.0%
SOx	0.81	0.00	0.81		
PM10	0.27	0.02	0.29	0.29	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	780.4	550.0	142%	780.4	142%
ROC	40.9	55.0	74%	40.9	74%
NOx	99.8	55.0	181%	99.8	181%
SOx	8.4	150.0	6%		
PM10	13.4	150.0	9%	13.4	9%
LEAD	0.005	N/A	N/A		

--------------------PROJECT DESCRIPTION-------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Strip Commercial Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, RETAIL CENTER, SPECIAL, 60 1000 SQ.FT.
AVERAGE DAILY TRIPS: 2100 (PER 1000 SQ.FT.-- 35.00)
NUMBER OF VEHICLES: 1050 TOTAL PROJECT VMT: 17943 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	9764.7	8178.4	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	270/day	87.1%	1829/day
Number of Vehicles	13.5%	141	86.5%	908
Vehicle Miles Travelled	12.5%	2242 miles	87.5%	15700 miles

TRIP COLD/HOT STARTS: 20% COLD, 80% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 13550.0/365/1000
and to MILLION CU FT/DAY is 2900.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	39.7	18.1	57.8	57.8	0.0%
ROC	1.6	2.4	4.1	4.1	0.0%
NOx	4.8	10.7	15.5	15.5	0.0%
SOx	0.9	0.8	1.7		
PM10-Exhaust	0.1	0.5	0.6	0.6	0.0%
PM10-Tire Wear	1.9	0.5	2.4	2.4	0.0%
LEAD	0.000	0.001	0.001		
Non-Work Trip Running Emissions--					
CO	33.3	15.1	48.4	48.4	0.0%
ROC	1.4	2.0	3.4	3.4	0.0%
NOx	4.0	8.9	13.0	13.0	0.0%
SOx	0.8	0.6	1.4		
PM10-Exhaust	0.1	0.4	0.5	0.5	0.0%
PM10-Tire Wear	1.6	0.4	2.0	2.0	0.0%
LEAD	0.000	0.001	0.001		
Work Trip Start & Soak Emissions--					
CO Cold Start	15.4	1.2	16.5	16.5	0.0%
ROC Cold Start	0.4	0.1	0.5	0.5	0.0%
NOx Cold Start	0.4	0.1	0.5	0.5	0.0%
CO Hot Start	4.8	0.5	5.3	5.3	0.0%
ROC Hot Start	0.3	0.1	0.3	0.3	0.0%
NOx Hot Start	0.7	0.2	0.9	0.9	0.0%
ROC Hot Soak	0.5	0.1	0.5	0.5	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	23.0	1.7	24.7	24.7	0.0%
ROC Cold Start	0.6	0.1	0.7	0.7	0.0%

NOx Cold Start	0.6	0.1	0.7	0.7	0.0%
CO Hot Start	7.2	0.8	8.0	8.0	0.0%
ROC Hot Start	0.4	0.1	0.5	0.5	0.0%
NOx Hot Start	1.1	0.3	1.4	1.4	0.0%
ROC Hot Soak	0.7	0.1	0.8	0.8	0.0%

Other Evaporative Emissions--

ROC-Diurnal	1.1	0.4	1.4

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	123.3	37.5	160.7	160.7	0.0%
ROC	7.0	5.4	12.3	12.3	0.0%
NOx	11.6	20.3	31.9	31.9	0.0%
SOx	1.7	1.4	3.1		
PM10	3.6	1.8	5.4	5.4	0.0%
LEAD	0.000	0.002	0.002		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.45	0.12	0.56	0.56	0.0%
ROC	0.02	0.03	0.05	0.05	0.0%
NOx	2.56	0.70	3.26	3.26	0.0%
SOx	0.27	0.00	0.27		
PM10	0.09	0.00	0.09	0.09	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	161.3	550.0	29%	161.3	29%
ROC	12.4	55.0	23%	12.4	23%
NOx	35.1	55.0	64%	35.1	64%
SOx	3.4	150.0	2%		
PM10	5.5	150.0	4%	5.5	4%
LEAD	0.002	N/A	N/A		

-------------------PROJECT DESCRIPTION-------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Neighborhood Commercial Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, SUPERMARKET, 78 1000 SQ.FT.
AVERAGE DAILY TRIPS: 5460 (PER 1000 SQ.FT.-- 70.00)
NUMBER OF VEHICLES: 2730 TOTAL PROJECT VMT: 46652 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	25388.2	21263.8	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	702/day	87.1%	4757/day
Number of Vehicles	13.5%	369	86.5%	2360
Vehicle Miles Travelled	12.5%	5831 miles	87.5%	40820 miles

TRIP COLD/HOT STARTS: 30% COLD, 70% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 53300.0/365/1000
and to MILLION CU FT/DAY is 2900.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	103.2	47.0	150.3	150.3	0.0%
ROC	4.2	6.4	10.6	10.6	0.0%
NOx	12.4	27.8	40.2	40.2	0.0%
SOx	2.4	2.0	4.4		
PM10-Exhaust	0.2	1.2	1.4	1.4	0.0%
PM10-Tire Wear	4.9	1.3	6.2	6.2	0.0%
LEAD	0.000	0.003	0.003		
Non-Work Trip Running Emissions--					
CO	86.5	39.4	125.9	125.9	0.0%
ROC	3.5	5.3	8.8	8.8	0.0%
NOx	10.4	23.3	33.7	33.7	0.0%
SOx	2.1	1.6	3.7		
PM10-Exhaust	0.2	1.0	1.2	1.2	0.0%
PM10-Tire Wear	4.1	1.1	5.2	5.2	0.0%
LEAD	0.000	0.002	0.002		
Work Trip Start & Soak Emissions--					
CO Cold Start	59.9	4.6	64.5	64.5	0.0%
ROC Cold Start	1.6	0.2	1.9	1.9	0.0%
NOx Cold Start	1.5	0.4	1.9	1.9	0.0%
CO Hot Start	10.9	1.2	12.1	12.1	0.0%
ROC Hot Start	0.6	0.1	0.8	0.8	0.0%
NOx Hot Start	1.7	0.4	2.1	2.1	0.0%
ROC Hot Soak	1.2	0.2	1.4	1.4	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	89.6	6.8	96.4	96.4	0.0%
ROC Cold Start	2.5	0.4	2.8	2.8	0.0%

NOx Cold Start	2.2	0.5	2.8	2.8	0.0%
CO Hot Start	16.3	1.8	18.1	18.1	0.0%
ROC Hot Start	1.0	0.2	1.2	1.2	0.0%
NOx Hot Start	2.5	0.6	3.1	3.1	0.0%
ROC Hot Soak	1.8	0.3	2.1	2.1	0.0%

Other Evaporative Emissions--

ROC-Diurnal	2.8	1.0	3.7

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	366.5	100.7	467.2	467.2	0.0%
ROC	19.2	14.1	33.3	33.3	0.0%
NOx	30.8	52.9	83.7	83.7	0.0%
SOx	4.5	3.6	8.1		
PM10	9.4	4.6	14.0	14.0	0.0%
LEAD	0.000	0.005	0.005		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	2.28	0.15	2.43	2.43	0.0%
ROC	0.11	0.04	0.15	0.15	0.0%
NOx	13.10	0.90	14.00	14.00	0.0%
SOx	1.37	0.00	1.37		
PM10	0.46	0.00	0.46	0.46	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	469.7	550.0	85%	469.7	85%
ROC	33.5	55.0	61%	33.5	61%
NOx	97.7	55.0	178%	97.7	178%
SOx	9.5	150.0	6%		
PM10	14.5	150.0	10%	14.5	10%
LEAD	0.005	N/A	N/A		

--------------------PROJECT DESCRIPTION---------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Fast Food Restaurant Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, FAST FOOD W/DRIVETHRU, 6 1000 SQ.FT.
AVERAGE DAILY TRIPS: 1896 (PER 1000 SQ.FT.-- 316.00)
NUMBER OF VEHICLES: 948 TOTAL PROJECT VMT: 16200 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	8816.1	7383.9	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	244/day	87.1%	1651/day
Number of Vehicles	13.5%	128	86.5%	819
Vehicle Miles Travelled	12.5%	2025 miles	87.5%	14175 miles

TRIP COLD/HOT STARTS: 10% COLD, 90% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 53300.0/365/1000
and to MILLION CU FT/DAY is 2900.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	35.8	16.3	52.2	52.2	0.0%
ROC	1.5	2.2	3.7	3.7	0.0%
NOx	4.3	9.6	14.0	14.0	0.0%
SOx	0.9	0.7	1.5		
PM10-Exhaust	0.1	0.4	0.5	0.5	0.0%
PM10-Tire Wear	1.7	0.4	2.2	2.2	0.0%
LEAD	0.000	0.001	0.001		
Non-Work Trip Running Emissions--					
CO	30.0	13.7	43.7	43.7	0.0%
ROC	1.2	1.8	3.1	3.1	0.0%
NOx	3.6	8.1	11.7	11.7	0.0%
SOx	0.7	0.6	1.3		
PM10-Exhaust	0.1	0.3	0.4	0.4	0.0%
PM10-Tire Wear	1.4	0.4	1.8	1.8	0.0%
LEAD	0.000	0.001	0.001		
Work Trip Start & Soak Emissions--					
CO Cold Start	6.9	0.5	7.5	7.5	0.0%
ROC Cold Start	0.2	0.0	0.2	0.2	0.0%
NOx Cold Start	0.2	0.0	0.2	0.2	0.0%
CO Hot Start	4.9	0.5	5.4	5.4	0.0%
ROC Hot Start	0.3	0.1	0.3	0.3	0.0%
NOx Hot Start	0.7	0.2	0.9	0.9	0.0%
ROC Hot Soak	0.4	0.1	0.5	0.5	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	10.4	0.8	11.2	11.2	0.0%
ROC Cold Start	0.3	0.0	0.3	0.3	0.0%

NOx Cold Start	0.3	0.1	0.3	0.3	0.0%
CO Hot Start	7.3	0.8	8.1	8.1	0.0%
ROC Hot Start	0.4	0.1	0.5	0.5	0.0%
NOx Hot Start	1.1	0.3	1.4	1.4	0.0%
ROC Hot Soak	0.6	0.1	0.7	0.7	0.0%

Other Evaporative Emissions--

ROC-Diurnal	1.0	0.3	1.3

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	95.3	32.6	128.0	128.0	0.0%
ROC	5.9	4.8	10.7	10.7	0.0%
NOx	10.2	18.3	28.5	28.5	0.0%
SOx	1.6	1.3	2.8		
PM10	3.3	1.6	4.9	4.9	0.0%
LEAD	0.000	0.002	0.002		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.18	0.01	0.19	0.19	0.0%
ROC	0.01	0.00	0.01	0.01	0.0%
NOx	1.01	0.07	1.08	1.08	0.0%
SOx	0.11	0.00	0.11		
PM10	0.04	0.00	0.04	0.04	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	128.2	550.0	23%	128.2	23%
ROC	10.7	55.0	19%	10.7	19%
NOx	29.6	55.0	54%	29.6	54%
SOx	2.9	150.0	2%		
PM10	4.9	150.0	3%	4.9	3%
LEAD	0.002	N/A	N/A		

-------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Quality Restaurant Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, RESTAURANT, QUALITY, 27 1000 SQ.FT.

AVERAGE DAILY TRIPS:	2533 (PER 1000 SQ.FT.-- 93.80)		
NUMBER OF VEHICLES:	1266 TOTAL PROJECT VMT: 21634 miles		
-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	11773.4	9860.8	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	325/day	87.1%	2206/day
Number of Vehicles	13.5%	171	86.5%	1094
Vehicle Miles Travelled	12.5%	2704 miles	87.5%	18929 miles

TRIP COLD/HOT STARTS: 50% COLD, 50% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 47450.0/365/1000
and to MILLION CU FT/DAY is 4800.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	47.9	21.8	69.7	69.7	0.0%
ROC	2.0	2.9	4.9	4.9	0.0%
NOx	5.8	12.9	18.6	18.6	0.0%
SOx	1.1	0.9	2.0		
PM10-Exhaust	0.1	0.6	0.7	0.7	0.0%
PM10-Tire Wear	2.3	0.6	2.9	2.9	0.0%
LEAD	0.000	0.001	0.001		
Non-Work Trip Running Emissions--					
CO	40.1	18.3	58.4	58.4	0.0%
ROC	1.6	2.5	4.1	4.1	0.0%
NOx	4.8	10.8	15.6	15.6	0.0%
SOx	1.0	0.8	1.7		
PM10-Exhaust	0.1	0.5	0.6	0.6	0.0%
PM10-Tire Wear	1.9	0.5	2.4	2.4	0.0%
LEAD	0.000	0.001	0.001		
Work Trip Start & Soak Emissions--					
CO Cold Start	46.3	3.5	49.9	49.9	0.0%
ROC Cold Start	1.3	0.2	1.5	1.5	0.0%
NOx Cold Start	1.2	0.3	1.4	1.4	0.0%
CO Hot Start	3.6	0.4	4.0	4.0	0.0%
ROC Hot Start	0.2	0.0	0.3	0.3	0.0%
NOx Hot Start	0.6	0.1	0.7	0.7	0.0%
ROC Hot Soak	0.6	0.1	0.7	0.7	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	69.3	5.3	74.5	74.5	0.0%
ROC Cold Start	1.9	0.3	2.2	2.2	0.0%

NOx Cold Start	1.7	0.4	2.2	2.2	0.0%
CO Hot Start	5.4	0.6	6.0	6.0	0.0%
ROC Hot Start	0.3	0.1	0.4	0.4	0.0%
NOx Hot Start	0.8	0.2	1.0	1.0	0.0%
ROC Hot Soak	0.8	0.1	1.0	1.0	0.0%

Other Evaporative Emissions--

ROC-Diurnal	1.3	0.4	1.7

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	212.6	49.8	262.4	262.4	0.0%
ROC	10.0	6.7	16.6	16.6	0.0%
NOx	14.9	24.7	39.6	39.6	0.0%
SOx	2.1	1.7	3.8		
PM10	4.4	2.1	6.5	6.5	0.0%
LEAD	0.000	0.002	0.002		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.70	0.09	0.79	0.79	0.0%
ROC	0.04	0.02	0.06	0.06	0.0%
NOx	4.04	0.52	4.55	4.55	0.0%
SOx	0.42	0.00	0.42		
PM10	0.14	0.00	0.14	0.14	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	263.2	550.0	48%	263.2	48%
ROC	16.7	55.0	30%	16.7	30%
NOx	44.1	55.0	80%	44.1	80%
SOx	4.2	150.0	3%		
PM10	6.6	150.0	4%	6.6	4%
LEAD	0.002	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Park Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, PARK, 10 Acre
AVERAGE DAILY TRIPS: 70 (PER Acre-- 7.00)
NUMBER OF VEHICLES: 35 TOTAL PROJECT VMT: 598 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	325.5	272.6	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	9/day	87.1%	60/day
Number of Vehicles	13.5%	4	86.5%	30
Vehicle Miles Travelled	12.5%	74 miles	87.5%	523 miles

TRIP COLD/HOT STARTS: 100% COLD, 0% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER Acre
to MEGAWATT-HR/DAY is 0.0/365/1000
and to MILLION CU FT/DAY is 0.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	1.3	0.6	1.9	1.9	0.0%
ROC	0.1	0.1	0.1	0.1	0.0%
NOx	0.2	0.4	0.5	0.5	0.0%
SOx	0.0	0.0	0.1		
PM10-Exhaust	0.0	0.0	0.0	0.0	0.0%
PM10-Tire Wear	0.1	0.0	0.1	0.1	0.0%
LEAD	0.000	0.000	0.000		
Non-Work Trip Running Emissions--					
CO	1.1	0.5	1.6	1.6	0.0%
ROC	0.0	0.1	0.1	0.1	0.0%
NOx	0.1	0.3	0.4	0.4	0.0%
SOx	0.0	0.0	0.0		
PM10-Exhaust	0.0	0.0	0.0	0.0	0.0%
PM10-Tire Wear	0.1	0.0	0.1	0.1	0.0%
LEAD	0.000	0.000	0.000		
Work Trip Start & Soak Emissions--					
CO Cold Start	2.6	0.2	2.8	2.8	0.0%
ROC Cold Start	0.1	0.0	0.1	0.1	0.0%
NOx Cold Start	0.1	0.0	0.1	0.1	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.0	0.0	0.0	0.0	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	3.8	0.3	4.1	4.1	0.0%
ROC Cold Start	0.1	0.0	0.1	0.1	0.0%

NOx Cold Start	0.1	0.0	0.1	0.1	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.0	0.0	0.0	0.0	0.0%

Other Evaporative Emissions--

ROC-Diurnal	0.0	0.0	0.0

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	8.8	1.6	10.4	10.4	0.0%
ROC	0.3	0.2	0.5	0.5	0.0%
NOx	0.5	0.7	1.1	1.1	0.0%
SOx	0.1	0.0	0.1		
PM10	0.1	0.1	0.2	0.2	0.0%
LEAD	0.000	0.000	0.000		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.00	0.00	0.00	0.00	0.0%
ROC	0.00	0.00	0.00	0.00	0.0%
NOx	0.00	0.00	0.00	0.00	0.0%
SOx	0.00	0.00	0.00		
PM10	0.00	0.00	0.00	0.00	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	10.4	550.0	2%	10.4	2%
ROC	0.5	55.0	1%	0.5	1%
NOx	1.1	55.0	2%	1.1	2%
SOx	0.1	150.0	0%		
PM10	0.2	150.0	0%	0.2	0%
LEAD	0.000	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Movie Theaters Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, MOVIE THEATRE W MAT., 4500 Seat
AVERAGE DAILY TRIPS: 7920 (PER Seat-- 1.76)
NUMBER OF VEHICLES: 3959 TOTAL PROJECT VMT: 67662 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	36822.2	30840.3	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	1019/day	87.1%	6899/day
Number of Vehicles	13.5%	535	86.5%	3423
Vehicle Miles Travelled	12.5%	8457 miles	87.5%	59204 miles

TRIP COLD/HOT STARTS: 95% COLD, 5% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER Seat
to MEGAWATT-HR/DAY is 131.2/365/1000
and to MILLION CU FT/DAY is 36.2/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	149.7	68.2	217.9	217.9	0.0%
ROC	6.1	9.2	15.3	15.3	0.0%
NOx	18.0	40.3	58.3	58.3	0.0%
SOx	3.6	2.8	6.4		
PM10-Exhaust	0.4	1.7	2.1	2.1	0.0%
PM10-Tire Wear	7.1	1.9	9.0	9.0	0.0%
LEAD	0.000	0.004	0.004		
Non-Work Trip Running Emissions--					
CO	125.4	57.1	182.5	182.5	0.0%
ROC	5.1	7.7	12.8	12.8	0.0%
NOx	15.1	33.7	48.9	48.9	0.0%
SOx	3.0	2.4	5.4		
PM10-Exhaust	0.3	1.4	1.7	1.7	0.0%
PM10-Tire Wear	5.9	1.6	7.5	7.5	0.0%
LEAD	0.000	0.003	0.003		
Work Trip Start & Soak Emissions--					
CO Cold Start	275.3	20.9	296.2	296.2	0.0%
ROC Cold Start	7.5	1.1	8.6	8.6	0.0%
NOx Cold Start	6.9	1.7	8.6	8.6	0.0%
CO Hot Start	1.1	0.1	1.3	1.3	0.0%
ROC Hot Start	0.1	0.0	0.1	0.1	0.0%
NOx Hot Start	0.2	0.0	0.2	0.2	0.0%
ROC Hot Soak	1.8	0.3	2.1	2.1	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	411.5	31.3	442.8	442.8	0.0%
ROC Cold Start	11.3	1.6	12.9	12.9	0.0%

NOx Cold Start	10.3	2.5	12.8	12.8	0.0%
CO Hot Start	1.7	0.2	1.9	1.9	0.0%
ROC Hot Start	0.1	0.0	0.1	0.1	0.0%
NOx Hot Start	0.3	0.1	0.3	0.3	0.0%
ROC Hot Soak	2.6	0.4	3.1	3.1	0.0%

Other Evaporative Emissions--

ROC-Diurnal	4.0	1.4	5.4

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	964.8	177.8	1142.6	1142.6	0.0%
ROC	38.6	21.8	60.4	60.4	0.0%
NOx	50.8	78.3	129.0	129.0	0.0%
SOx	6.5	5.2	11.7		
PM10	13.7	6.6	20.3	20.3	0.0%
LEAD	0.000	0.007	0.007		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.32	0.11	0.43	0.43	0.0%
ROC	0.02	0.03	0.05	0.05	0.0%
NOx	1.86	0.65	2.51	2.51	0.0%
SOx	0.19	0.00	0.19		
PM10	0.06	0.00	0.07	0.07	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	1143.1	550.0	208%	1143.1	208%
ROC	60.5	55.0	110%	60.5	110%
NOx	131.6	55.0	239%	131.6	239%
SOx	11.9	150.0	8%		
PM10	20.4	150.0	14%	20.4	14%
LEAD	0.007	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
  Discount Store Buildout
PROJECT STARTING YEAR: 2010
    CITY: SAN CLEMENTE   ZIP CODE:
  COUNTY: ORANGE   AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, STORE, DISCOUNT, 146 1000 SQ.FT.
AVERAGE DAILY TRIPS: 10220 (PER 1000 SQ.FT.-- 70.00)
NUMBER OF VEHICLES: 5110 TOTAL PROJECT VMT: 87323 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	47521.6	39801.5	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	1315/day	87.1%	8904/day
Number of Vehicles	13.5%	690	86.5%	4419
Vehicle Miles Travelled	12.5%	10915 miles	87.5%	76407 miles

TRIP COLD/HOT STARTS: 80% COLD, 20% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
    to MEGAWATT-HR/DAY is   13550.0/365/1000
 and to MILLION CU FT/DAY is 2900.0/30/1,000,000

RUN TYPE: Screening Run   DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	193.2	88.0	281.3	281.3	0.0%
ROC	7.9	11.9	19.8	19.8	0.0%
NOx	23.3	52.0	75.3	75.3	0.0%
SOx	4.6	3.7	8.3		
PM10-Exhaust	0.5	2.2	2.7	2.7	0.0%
PM10-Tire Wear	9.2	2.4	11.6	11.6	0.0%
LEAD	0.000	0.005	0.005		
Non-Work Trip Running Emissions--					
CO	161.8	73.7	235.6	235.6	0.0%
ROC	6.6	10.0	16.6	16.6	0.0%
NOx	19.5	43.5	63.0	63.0	0.0%
SOx	3.8	3.1	6.9		
PM10-Exhaust	0.4	1.9	2.2	2.2	0.0%
PM10-Tire Wear	7.7	2.0	9.7	9.7	0.0%
LEAD	0.000	0.004	0.004		
Work Trip Start & Soak Emissions--					
CO Cold Start	299.2	22.7	321.9	321.9	0.0%
ROC Cold Start	8.2	1.2	9.4	9.4	0.0%
NOx Cold Start	7.5	1.8	9.3	9.3	0.0%
CO Hot Start	5.8	0.6	6.5	6.5	0.0%
ROC Hot Start	0.3	0.1	0.4	0.4	0.0%
NOx Hot Start	0.9	0.2	1.1	1.1	0.0%
ROC Hot Soak	2.3	0.4	2.7	2.7	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	447.2	34.0	481.2	481.2	0.0%
ROC Cold Start	12.2	1.8	14.0	14.0	0.0%

NOx Cold Start	11.2	2.7	13.9	13.9	0.0%
CO Hot Start	8.7	0.9	9.7	9.7	0.0%
ROC Hot Start	0.5	0.1	0.6	0.6	0.0%
NOx Hot Start	1.3	0.3	1.7	1.7	0.0%
ROC Hot Soak	3.4	0.6	4.0	4.0	0.0%

Other Evaporative Emissions--

ROC-Diurnal	5.2	1.8	7.0

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	1116.1	220.0	1336.2	1336.2	0.0%
ROC	46.6	27.8	74.4	74.4	0.0%
NOx	63.7	100.6	164.3	164.3	0.0%
SOx	8.4	6.7	15.2		
PM10	17.7	8.5	26.2	26.2	0.0%
LEAD	0.000	0.010	0.010		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	1.08	0.28	1.37	1.37	0.0%
ROC	0.05	0.07	0.13	0.13	0.0%
NOx	6.23	1.69	7.93	7.93	0.0%
SOx	0.65	0.00	0.65		
PM10	0.22	0.00	0.22	0.22	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	1337.5	550.0	243%	1337.5	243%
ROC	74.5	55.0	135%	74.5	135%
NOx	172.2	55.0	313%	172.2	313%
SOx	15.8	150.0	11%		
PM10	26.4	150.0	18%	26.4	18%
LEAD	0.010	N/A	N/A		

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--------------------PROJECT DESCRIPTION-------------------------
PROJECT NAME AND DESCRIPTION: Marblehead
  Regional Center Buildout
PROJECT STARTING YEAR: 2010
    CITY: SAN CLEMENTE                            ZIP CODE:
  COUNTY: ORANGE                               AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, SHOPPING CTR. (10-500), 96 1000 SQ.FT.
AVERAGE DAILY TRIPS:          3489 (PER 1000 SQ.FT.-- 36.34)
NUMBER OF VEHICLES:           1744  TOTAL PROJECT VMT: 29811 miles
-----TRIP PURPOSE DATA:           Work         Non-Work
AVERAGE TRIP SPEEDS:              26.0             26.0   mph
AVERAGE TRIP LENGTHS:             11.6              6.5   miles
TRIP PERCENTAGES:                 40.1             59.9   percent
VEHICLE MILES TRAVELLED:       16223.4          13587.8   miles
VEHICLE DATA DISTRIBUTIONS:  Heavy Duty Vehicles   Passenger Vehicles
  Average Daily Trips            12.9%     449/day       87.1%   3039/day
  Number of Vehicles             13.5%    235            86.5%   1508
  Vehicle Miles Travelled        12.5%   3726 miles      87.5%  26084 miles
TRIP COLD/HOT STARTS:  80% COLD,   20% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
     to MEGAWATT-HR/DAY is   13550.0/365/1000
 and to MILLION CU FT/DAY is 4800.0/30/1,000,000

RUN TYPE: Screening Run   DATA CASE: Project Without Mitigation
                          EMISSIONS (in lbs/day)
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VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	66.0	30.1	96.0	96.0	0.0%
ROC	2.7	4.1	6.8	6.8	0.0%
NOx	7.9	17.7	25.7	25.7	0.0%
SOx	1.6	1.3	2.8		
PM10-Exhaust	0.2	0.8	0.9	0.9	0.0%
PM10-Tire Wear	3.1	0.8	4.0	4.0	0.0%
LEAD	0.000	0.002	0.002		
Non-Work Trip Running Emissions--					
CO	55.3	25.2	80.4	80.4	0.0%
ROC	2.3	3.4	5.7	5.7	0.0%
NOx	6.7	14.9	21.5	21.5	0.0%
SOx	1.3	1.0	2.4		
PM10-Exhaust	0.1	0.6	0.8	0.8	0.0%
PM10-Tire Wear	2.6	0.7	3.3	3.3	0.0%
LEAD	0.000	0.001	0.001		
Work Trip Start & Soak Emissions--					
CO Cold Start	102.1	7.8	109.9	109.9	0.0%
ROC Cold Start	2.8	0.4	3.2	3.2	0.0%
NOx Cold Start	2.6	0.6	3.2	3.2	0.0%
CO Hot Start	2.0	0.2	2.2	2.2	0.0%
ROC Hot Start	0.1	0.0	0.1	0.1	0.0%
NOx Hot Start	0.3	0.1	0.4	0.4	0.0%
ROC Hot Soak	0.8	0.1	0.9	0.9	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	152.7	11.6	164.3	164.3	0.0%
ROC Cold Start	4.2	0.6	4.8	4.8	0.0%

NOx Cold Start	3.8	0.9	4.7	4.7	0.0%
CO Hot Start	3.0	0.3	3.3	3.3	0.0%
ROC Hot Start	0.2	0.0	0.2	0.2	0.0%
NOx Hot Start	0.5	0.1	0.6	0.6	0.0%
ROC Hot Soak	1.2	0.2	1.4	1.4	0.0%

Other Evaporative Emissions--

ROC-Diurnal	1.8	0.6	2.4

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	381.0	75.1	456.1	456.1	0.0%
ROC	15.9	9.5	25.4	25.4	0.0%
NOx	21.8	34.3	56.1	56.1	0.0%
SOx	2.9	2.3	5.2		
PM10	6.0	2.9	9.0	9.0	0.0%
LEAD	0.000	0.003	0.003		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.71	0.31	1.02	1.02	0.0%
ROC	0.04	0.08	0.12	0.12	0.0%
NOx	4.10	1.84	5.94	5.94	0.0%
SOx	0.43	0.00	0.43		
PM10	0.14	0.00	0.15	0.15	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	457.2	550.0	83%	457.2	83%
ROC	25.5	55.0	46%	25.5	46%
NOx	62.0	55.0	113%	62.0	113%
SOx	5.6	150.0	4%		
PM10	9.1	150.0	6%	9.1	6%
LEAD	0.003	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION: Marblehead
Outlet Center Buildout
PROJECT STARTING YEAR: 2010
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, SHOPPING CTR.(500-1000), 308 1000 SQ.FT
AVERAGE DAILY TRIPS: 8182 (PER 1000 SQ.FT.-- 26.57)
NUMBER OF VEHICLES: 4091 TOTAL PROJECT VMT: 69909 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.0	26.0	mph
AVERAGE TRIP LENGTHS:	11.6	6.5	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	38045.2	31864.6	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	1053/day	87.1%	7128/day
Number of Vehicles	13.5%	553	86.5%	3537
Vehicle Miles Travelled	12.5%	8738 miles	87.5%	61170 miles

TRIP COLD/HOT STARTS: 80% COLD, 20% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 13550.0/365/1000
and to MILLION CU FT/DAY is 4800.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	154.7	70.5	225.2	225.2	0.0%
ROC	6.3	9.5	15.8	15.8	0.0%
NOx	18.6	41.6	60.3	60.3	0.0%
SOx	3.7	2.9	6.6		
PM10-Exhaust	0.4	1.8	2.1	2.1	0.0%
PM10-Tire Wear	7.3	1.9	9.3	9.3	0.0%
LEAD	0.000	0.004	0.004		
Non-Work Trip Running Emissions--					
CO	129.6	59.0	188.6	188.6	0.0%
ROC	5.3	8.0	13.3	13.3	0.0%
NOx	15.6	34.9	50.5	50.5	0.0%
SOx	3.1	2.5	5.5		
PM10-Exhaust	0.3	1.5	1.8	1.8	0.0%
PM10-Tire Wear	6.1	1.6	7.8	7.8	0.0%
LEAD	0.000	0.004	0.004		
Work Trip Start & Soak Emissions--					
CO Cold Start	239.6	18.2	257.7	257.7	0.0%
ROC Cold Start	6.6	1.0	7.5	7.5	0.0%
NOx Cold Start	6.0	1.4	7.4	7.4	0.0%
CO Hot Start	4.7	0.5	5.2	5.2	0.0%
ROC Hot Start	0.3	0.1	0.3	0.3	0.0%
NOx Hot Start	0.7	0.2	0.9	0.9	0.0%
ROC Hot Soak	1.8	0.3	2.1	2.1	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	358.1	27.2	385.3	385.3	0.0%
ROC Cold Start	9.8	1.4	11.2	11.2	0.0%

NOx Cold Start	9.0	2.2	11.1	11.1	0.0%
CO Hot Start	7.0	0.8	7.7	7.7	0.0%
ROC Hot Start	0.4	0.1	0.5	0.5	0.0%
NOx Hot Start	1.1	0.3	1.3	1.3	0.0%
ROC Hot Soak	2.7	0.5	3.2	3.2	0.0%

Other Evaporative Emissions--

ROC-Diurnal	4.1	1.4	5.6

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	893.5	176.2	1069.7	1069.7	0.0%
ROC	37.3	22.2	59.5	59.5	0.0%
NOx	51.0	80.5	131.5	131.5	0.0%
SOx	6.7	5.4	12.1		
PM10	14.2	6.8	21.0	21.0	0.0%
LEAD	0.000	0.008	0.008		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	2.29	0.99	3.27	3.27	0.0%
ROC	0.11	0.26	0.38	0.38	0.0%
NOx	13.15	5.91	19.06	19.06	0.0%
SOx	1.37	0.00	1.37		
PM10	0.46	0.01	0.47	0.47	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	1073.0	550.0	195%	1073.0	195%
ROC	59.9	55.0	109%	59.9	109%
NOx	150.6	55.0	274%	150.6	274%
SOx	13.5	150.0	9%		
PM10	21.5	150.0	14%	21.5	14%
LEAD	0.008	N/A	N/A		

APPENDIX 2

MAAQI Air Quality Model Detail

(Existing General Plan Buildout - 2005)

--------------------PROJECT DESCRIPTION----------------------------

PROJECT NAME AND DESCRIPTION:

PROJECT STARTING YEAR: 2005

CITY: SAN CLEMENTE — ZIP CODE:

COUNTY: ORANGE — AREA NUMBER: AREA1

L.U., DESCR. AND SIZE: RESIDENTIAL, SINGLE FAMILY, 296 DWELLING UNIT

AVERAGE DAILY TRIPS: 2880 (PER DWELLING UNIT-- 9.73)

NUMBER OF VEHICLES: 1440 TOTAL PROJECT VMT: 23277 miles

-----TRIP PURPOSE DATA:	Home-Other	Home-Shop	Home-Work	
AVERAGE TRIP SPEEDS:	26.2	26.2	26.2	mph
AVERAGE TRIP LENGTHS:	6.4	5.5	10.0	miles
TRIP PERCENTAGES:	43.1	9.0	48.0	percent
VEHICLE MILES TRAVELLED:	7991.7	1414.7	13871.5	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	370/day	87.1%	2509/day
Number of Vehicles	13.5%	194	86.5%	1245
Vehicle Miles Travelled	12.5%	2909 miles	87.5%	20367 miles

TRIP COLD/HOT STARTS: 100% COLD, 0% HOT

ELECTRICAL SUPPLIER: SCE

CONVERSION FACTOR from PER DWELLING UNIT
to MEGAWATT-HR/DAY is 5626.5/365/1000
and to MILLION CU FT/DAY is 6650.0/30/1,000,000

RUN TYPE: Screening Run — DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Home-Other Trip Running Emissions--					
CO	41.6	17.6	59.1	59.1	0.0%
ROC	2.0	2.2	4.2	4.2	0.0%
NOx	5.0	9.0	14.0	14.0	0.0%
SOx	0.8	0.7	1.4		
PM10-Exhaust	0.1	0.5	0.5	0.5	0.0%
PM10-Tire Wear	1.5	0.4	2.0	2.0	0.0%
LEAD	0.000	0.001	0.001		
Home-Shop Trip Running Emissions--					
CO	7.4	3.1	10.5	10.5	0.0%
ROC	0.4	0.4	0.8	0.8	0.0%
NOx	0.9	1.6	2.5	2.5	0.0%
SOx	0.1	0.1	0.3		
PM10-Exhaust	0.0	0.1	0.1	0.1	0.0%
PM10-Tire Wear	0.3	0.1	0.3	0.3	0.0%
LEAD	0.000	0.000	0.000		
Home-Work Trip Running Emissions--					
CO	72.1	30.5	102.7	102.7	0.0%
ROC	3.6	3.8	7.4	7.4	0.0%
NOx	8.6	15.6	24.3	24.3	0.0%
SOx	1.3	1.1	2.5		
PM10-Exhaust	0.1	0.8	0.9	0.9	0.0%
PM10-Tire Wear	2.7	0.7	3.4	3.4	0.0%
LEAD	0.000	0.002	0.002		
Home-Other Trip Start & Soak Emissions--					
CO Cold Start	126.9	9.4	136.3	136.3	0.0%
ROC Cold Start	4.7	0.6	5.3	5.3	0.0%

NOx Cold Start	3.5	0.7	4.2	4.2	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	1.0	0.1	1.1	1.1	0.0%

Home-Shop Trip Start & Soak Emissions--

CO Cold Start	26.4	2.0	28.4	28.4	0.0%
ROC Cold Start	1.0	0.1	1.1	1.1	0.0%
NOx Cold Start	0.7	0.1	0.9	0.9	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.2	0.0	0.2	0.2	0.0%

Home-Work Trip Start & Soak Emissions--

CO Cold Start	141.3	10.5	151.8	151.8	0.0%
ROC Cold Start	5.3	0.6	5.9	5.9	0.0%
NOx Cold Start	3.9	0.8	4.7	4.7	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	1.1	0.1	1.2	1.2	0.0%

Other Evaporative Emissions--

ROC-Diurnal	2.9	0.6	3.5

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	415.7	73.1	488.8	488.8	0.0%
ROC	22.0	8.6	30.7	30.7	0.0%
NOx	22.7	27.8	50.5	50.5	0.0%
SOx	2.2	1.9	4.2		
PM10	4.7	2.5	7.2	7.2	0.0%
LEAD	0.000	0.003	0.003		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.91	1.31	2.22	2.22	0.0%
ROC	0.05	0.35	0.39	0.39	0.0%
NOx	5.25	5.25	10.50	10.50	0.0%
SOx	0.55	0.00	0.55		
PM10	0.18	0.01	0.20	0.20	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	491.0	550.0	89%	491.0	89%
ROC	31.0	55.0	56%	31.0	56%
NOx	61.0	55.0	111%	61.0	111%
SOx	4.7	150.0	3%		
PM10	7.4	150.0	5%	7.4	5%
LEAD	0.003	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION:

PROJECT STARTING YEAR: 2005
CITY: SAN CLEMENTE ZIP CODE:
COUNTY: ORANGE AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, RESORT HOTEL, 818 OCCUPIED ROOMS
AVERAGE DAILY TRIPS: 9202 (PER OCCUPIED ROOMS-- 11.25)
NUMBER OF VEHICLES: 4601 TOTAL PROJECT VMT: 76974 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.2	26.2	mph
AVERAGE TRIP LENGTHS:	11.4	6.3	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	42202.7	34771.5	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	1184/day	87.1%	8017/day
Number of Vehicles	13.5%	622	86.5%	3978
Vehicle Miles Travelled	12.5%	9621 miles	87.5%	67352 miles

TRIP COLD/HOT STARTS: 75% COLD, 25% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER OCCUPIED ROOMS
to MEGAWATT-HR/DAY is 9950.0/365/1000
and to MILLION CU FT/DAY is 4800.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	219.4	92.9	312.3	312.3	0.0%
ROC	10.8	11.6	22.4	22.4	0.0%
NOx	26.3	47.5	73.8	73.8	0.0%
SOx	4.1	3.5	7.6		
PM10-Exhaust	0.4	2.4	2.8	2.8	0.0%
PM10-Tire Wear	8.1	2.2	10.4	10.4	0.0%
LEAD	0.000	0.005	0.005		
Non-Work Trip Running Emissions--					
CO	180.8	76.5	257.3	257.3	0.0%
ROC	8.9	9.5	18.4	18.4	0.0%
NOx	21.6	39.1	60.8	60.8	0.0%
SOx	3.4	2.9	6.2		
PM10-Exhaust	0.3	2.0	2.3	2.3	0.0%
PM10-Tire Wear	6.7	1.8	8.5	8.5	0.0%
LEAD	0.000	0.004	0.004		
Work Trip Start & Soak Emissions--					
CO Cold Start	282.9	21.0	303.9	303.9	0.0%
ROC Cold Start	10.6	1.3	11.8	11.8	0.0%
NOx Cold Start	7.9	1.5	9.4	9.4	0.0%
CO Hot Start	8.4	0.8	9.2	9.2	0.0%
ROC Hot Start	0.6	0.1	0.7	0.7	0.0%
NOx Hot Start	1.3	0.2	1.5	1.5	0.0%
ROC Hot Soak	2.8	0.4	3.2	3.2	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	423.3	31.4	454.7	454.7	0.0%
ROC Cold Start	15.8	1.9	17.7	17.7	0.0%

NOx Cold Start	11.8	2.3	14.1	14.1	0.0%
CO Hot Start	12.5	1.2	13.7	13.7	0.0%
ROC Hot Start	0.9	0.2	1.1	1.1	0.0%
NOx Hot Start	1.9	0.4	2.3	2.3	0.0%
ROC Hot Soak	4.2	0.6	4.8	4.8	0.0%

Other Evaporative Emissions--

ROC-Diurnal	9.1	2.0	11.1

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	1127.3	223.7	1351.0	1351.0	0.0%
ROC	63.8	27.5	91.3	91.3	0.0%
NOx	70.7	91.1	161.8	161.8	0.0%
SOx	7.4	6.4	13.8		
PM10	15.6	8.4	24.0	24.0	0.0%
LEAD	0.000	0.008	0.008		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	4.46	2.62	7.08	7.08	0.0%
ROC	0.22	0.69	0.92	0.92	0.0%
NOx	25.64	15.71	41.35	41.35	0.0%
SOx	2.68	0.00	2.68		
PM10	0.89	0.03	0.92	0.92	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	1358.1	550.0	247%	1358.1	247%
ROC	92.2	55.0	168%	92.2	168%
NOx	203.2	55.0	369%	203.2	369%
SOx	16.5	150.0	11%		
PM10	24.9	150.0	17%	24.9	17%
LEAD	0.008	N/A	N/A		

--------------------PROJECT DESCRIPTION--------------------------

PROJECT NAME AND DESCRIPTION:

PROJECT STARTING YEAR: 2005

CITY: SAN CLEMENTE ZIP CODE:

COUNTY: ORANGE AREA NUMBER: AREA1

L.U., DESCR. AND SIZE: NON_RESIDENTIAL, GOLF COURSE, 5600 1000 SQ.FT.

AVERAGE DAILY TRIPS: 1064 (PER 1000 SQ.FT.-- 0.19)

NUMBER OF VEHICLES: 531 TOTAL PROJECT VMT: 8891 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.2	26.2	mph
AVERAGE TRIP LENGTHS:	11.4	6.3	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	4875.2	4016.7	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	136/day	87.1%	926/day
Number of Vehicles	13.5%	71	86.5%	459
Vehicle Miles Travelled	12.5%	1111 miles	87.5%	7779 miles

TRIP COLD/HOT STARTS: 50% COLD, 50% HOT

ELECTRICAL SUPPLIER: SCE

CONVERSION FACTOR from PER 1000 SQ.FT.

to MEGAWATT-HR/DAY is 0.0/365/1000

and to MILLION CU FT/DAY is 0.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation

EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	25.4	10.7	36.1	36.1	0.0%
ROC	1.2	1.3	2.6	2.6	0.0%
NOx	3.0	5.5	8.5	8.5	0.0%
SOx	0.5	0.4	0.9		
PM10-Exhaust	0.0	0.3	0.3	0.3	0.0%
PM10-Tire Wear	0.9	0.3	1.2	1.2	0.0%
LEAD	0.000	0.001	0.001		
Non-Work Trip Running Emissions--					
CO	20.9	8.8	29.7	29.7	0.0%
ROC	1.0	1.1	2.1	2.1	0.0%
NOx	2.5	4.5	7.0	7.0	0.0%
SOx	0.4	0.3	0.7		
PM10-Exhaust	0.0	0.2	0.3	0.3	0.0%
PM10-Tire Wear	0.8	0.2	1.0	1.0	0.0%
LEAD	0.000	0.000	0.000		
Work Trip Start & Soak Emissions--					
CO Cold Start	21.8	1.6	23.4	23.4	0.0%
ROC Cold Start	0.8	0.1	0.9	0.9	0.0%
NOx Cold Start	0.6	0.1	0.7	0.7	0.0%
CO Hot Start	1.9	0.2	2.1	2.1	0.0%
ROC Hot Start	0.1	0.0	0.2	0.2	0.0%
NOx Hot Start	0.3	0.1	0.4	0.4	0.0%
ROC Hot Soak	0.3	0.0	0.4	0.4	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	32.6	2.4	35.0	35.0	0.0%
ROC Cold Start	1.2	0.1	1.4	1.4	0.0%

NOx Cold Start	0.9	0.2	1.1	1.1	0.0%
CO Hot Start	2.9	0.3	3.2	3.2	0.0%
ROC Hot Start	0.2	0.0	0.2	0.2	0.0%
NOx Hot Start	0.4	0.1	0.5	0.5	0.0%
ROC Hot Soak	0.5	0.1	0.6	0.6	0.0%

Other Evaporative Emissions--

ROC-Diurnal	1.1	0.2	1.3

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	105.5	24.0	129.5	129.5	0.0%
ROC	6.5	3.1	9.6	9.6	0.0%
NOx	7.8	10.4	18.2	18.2	0.0%
SOx	0.9	0.7	1.6		
PM10	1.8	1.0	2.8	2.8	0.0%
LEAD	0.000	0.001	0.001		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.00	0.00	0.00	0.00	0.0%
ROC	0.00	0.00	0.00	0.00	0.0%
NOx	0.00	0.00	0.00	0.00	0.0%
SOx	0.00	0.00	0.00		
PM10	0.00	0.00	0.00	0.00	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	129.5	550.0	24%	129.5	24%
ROC	9.6	55.0	17%	9.6	17%
NOx	18.2	55.0	33%	18.2	33%
SOx	1.6	150.0	1%		
PM10	2.8	150.0	2%	2.8	2%
LEAD	0.001	N/A	N/A		

--------------------PROJECT DESCRIPTION-------------------------

PROJECT NAME AND DESCRIPTION:

PROJECT STARTING YEAR: 2005
CITY: SAN CLEMENTE   ZIP CODE:
COUNTY: ORANGE   AREA NUMBER: AREA1
L.U., DESCR. AND SIZE: NON_RESIDENTIAL, PARK, 83 1000 SQ.FT.
AVERAGE DAILY TRIPS: 70 (PER 1000 SQ.FT.-- 0.84)
NUMBER OF VEHICLES: 34 TOTAL PROJECT VMT: 577 miles

-----TRIP PURPOSE DATA:	Work	Non-Work	
AVERAGE TRIP SPEEDS:	26.2	26.2	mph
AVERAGE TRIP LENGTHS:	11.4	6.3	miles
TRIP PERCENTAGES:	40.1	59.9	percent
VEHICLE MILES TRAVELLED:	316.5	260.7	miles

VEHICLE DATA DISTRIBUTIONS:	Heavy Duty Vehicles		Passenger Vehicles	
Average Daily Trips	12.9%	8/day	87.1%	60/day
Number of Vehicles	13.5%	4	86.5%	29
Vehicle Miles Travelled	12.5%	72 miles	87.5%	504 miles

TRIP COLD/HOT STARTS: 100% COLD, 0% HOT

ELECTRICAL SUPPLIER: SCE
CONVERSION FACTOR from PER 1000 SQ.FT.
to MEGAWATT-HR/DAY is 0.0/365/1000
and to MILLION CU FT/DAY is 0.0/30/1,000,000

RUN TYPE: Screening Run DATA CASE: Project Without Mitigation
EMISSIONS (in lbs/day)

VEHICLES--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
Work Trip Running Emissions--					
CO	1.6	0.7	2.3	2.3	0.0%
ROC	0.1	0.1	0.2	0.2	0.0%
NOx	0.2	0.4	0.6	0.6	0.0%
SOx	0.0	0.0	0.1		
PM10-Exhaust	0.0	0.0	0.0	0.0	0.0%
PM10-Tire Wear	0.1	0.0	0.1	0.1	0.0%
LEAD	0.000	0.000	0.000		
Non-Work Trip Running Emissions--					
CO	1.4	0.6	1.9	1.9	0.0%
ROC	0.1	0.1	0.1	0.1	0.0%
NOx	0.2	0.3	0.5	0.5	0.0%
SOx	0.0	0.0	0.0		
PM10-Exhaust	0.0	0.0	0.0	0.0	0.0%
PM10-Tire Wear	0.1	0.0	0.1	0.1	0.0%
LEAD	0.000	0.000	0.000		
Work Trip Start & Soak Emissions--					
CO Cold Start	2.8	0.2	3.0	3.0	0.0%
ROC Cold Start	0.1	0.0	0.1	0.1	0.0%
NOx Cold Start	0.1	0.0	0.1	0.1	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.0	0.0	0.0	0.0	0.0%
Non-Work Trip Start & Soak Emissions--					
CO Cold Start	4.2	0.3	4.5	4.5	0.0%
ROC Cold Start	0.2	0.0	0.2	0.2	0.0%

NOx Cold Start	0.1	0.0	0.1	0.1	0.0%
CO Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Start	0.0	0.0	0.0	0.0	0.0%
NOx Hot Start	0.0	0.0	0.0	0.0	0.0%
ROC Hot Soak	0.0	0.0	0.0	0.0	0.0%

Other Evaporative Emissions--

ROC-Diurnal	0.1	0.0	0.1

TOTAL EMISSIONS SUMMARY

VEHICULAR--	PASS.	TRUCK	BOTH	MITIGATED	EFFIC.
CO	10.1	1.8	11.9	11.9	0.0%
ROC	0.5	0.2	0.7	0.7	0.0%
NOx	0.6	0.7	1.2	1.2	0.0%
SOx	0.1	0.0	0.1		
PM10	0.1	0.1	0.2	0.2	0.0%
LEAD	0.000	0.000	0.000		

STATIONARY--	ELECT.	GAS	BOTH	MITIGATED	EFFIC.
CO	0.00	0.00	0.00	0.00	0.0%
ROC	0.00	0.00	0.00	0.00	0.0%
NOx	0.00	0.00	0.00	0.00	0.0%
SOx	0.00	0.00	0.00		
PM10	0.00	0.00	0.00	0.00	0.0%

TOTAL--	EMISS.	THRES.	%THRES	MITIGATED	%THRES
CO	11.9	550.0	2%	11.9	2%
ROC	0.7	55.0	1%	0.7	1%
NOx	1.2	55.0	2%	1.2	2%
SOx	0.1	150.0	0%		
PM10	0.2	150.0	0%	0.2	0%
LEAD	0.000	N/A	N/A		

ESTIMATE OF CONSTRUCTION EQUIPMENT
(Rough Grading: Worst-case day analysis)

Construction Equipment	# Equipment
Track-type Dozer[1]	6
Wheeled Tractor	0
Wheeled Dozer	4
Scraper[2]	22
Motor Grader (Blade)	2
Wheeled Loader	1
Track-type Loader	0
Off-Highway Truck	0
Roller	0
Miscellaneous*	0

Note: The above listed equipment indicates the estimated number of construction equipment pieces required during the rough grading construction phase and assumes an 11-hour construction day and up to 75,000 cubic yards of earth moved per day.

[1] As Table II-7-1 of EPA's AP-42, Supplement A, does not include an emission factor for track-type dozers, a worst-case analysis was calculated utilizing the emission factors for a wheeled dozer.

[2] Construction equipment pollutant emissions included exhaust emissions from the conversion of three scrapers for use as water pulls which would be able to haul up to 10,000 gallon tanks each (three of the 22 scrapers listed above would be used as water pulls).

PROJECT CONSTRUCTION EMISSIONS[1]
Rough Grading
(Based on 200 acres per day)
Heavy-Duty Construction
Daily Emissions (lbs/day)

	ROC	NOx	CO	PM10
Unmitigated Emissions				
Total Exhaust Emissions	92	1,424	511	130
Fugitive Dust Emissions	N/A	N/A	N/A	6,494
Total Construction Emissions	92	1,424	511	6,624
Significance Thresholds	75	100	550	150
Significant?	Yes	Yes	No	Yes
Mitigated Construction Emissions				
Grading				
Water active areas two times per day (34%)	0	0	0	(2208)
Stabilize exposed soil piles (30%)	0	0	0	(1286)
Soil stabilizers on inactive areas (30%)	0	0	0	(900)
Revegetate disturbed areas (15%)	0	0	0	(315)
Cover trucks or provide freeboard (7%)	0	0	0	(125)
Construction Equipment				
No feasible mitigation available				
Totals				
Net Construction Emissions	92	1,424	511	1790[2]
SCAQMD Significance Thresholds	75	100	550	150
Significant?	Yes	Yes	No	Yes

ROC = Reactive Compounds
NOx = Nitrogen Oxides
CO = Carbon Monoxide
PM10 = Fine Particulate Matter

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1 All projections based on CEQA Air Quality Handbook, SCAQMD, April, 1993 (as revised).

2 The net construction emission of 1790 for PM-10 is based on the mitigated construction emissions for PM-10 Fugitive Dust (from 6,494 to 1,660) plus the total exhaust emissions from PM-10 (130). It is the total of 1790 (mitigated PM-10 Fugitive Dust) plus 130 (total exhaust emissions from PM-10)

APPENDIX 15.7

Cultural/Scientific Resources Assessment

AUTHOR:	Patrick O. Maxon
DATE:	March 1996
TITLE:	Archaeological Reconnaissance and Impact Assessment of the Proposed Development of Marblehead Coastal, San Clemente, California.
SUBMITTED BY:	RMW Paleo Associates, Incorporated 23392 Madero, Suite L Mission Viejo, California 92691 (714) 770-8042 FAX (714) 458-9058
SUBMITTED TO:	Environmental Perspectives 600 N Tustin Avenue, Suite 260 Santa Ana, California 92670
CONTRACT NUMBER:	RMW Project Number 95-1109
MAP:	USGS Dana Point, California 7.5 Minute Quadrangle, 1968, Photorevised 1975 and San Clemente, California 7.5 Minute Quadrangle, 1968, Photorevised 1975.
ACREAGE:	250.6 Acres
KEYWORDS:	Orange County; Dana Point and San Clemente, California; Township 8 South, Range 7 West, San Bernardino Base and Meridian, CA-ORA-1258

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MANAGEMENT SUMMARY/ABSTRACT

Purpose and Scope: The City of San Clemente, California has produced plans to develop the Marblehead Coastal area in the City of San Clemente with the purpose of constructing a residential community and commercial center on 250.6 acres of land southwest of the Interstate 5

The project described in this report was undertaken to review the literature and records of archaeological investigations performed within one mile of and including the current study area and to perform a surface examination of the study area. Any archaeological sites discovered in the study area were to be recorded and a previously recorded site was to be relocated and re-recorded

Dates of the Investigation: The field portion of the investigation occurred on 29 February and 1, 4 and 7 March 1996.

Findings of the Investigation: A previously recorded archaeological site (CA-ORA-1258) was not relocated Subsequent disking and clearing, as well as soil removal, may have destroyed the site and prevented its rediscovery. The remnants of a historic road, located on the northwestern edge of the study area along Interstate 5 and dating to at least 1942, was discovered and recorded. An isolated denticular flake was discovered on a bluff overlooking the Pacific Ocean It was subsequently recorded as an isolate

Investigation Constraints: A majority of the project area has recently undergone disking operations and a regrowth of vegetation has obscured much of the surface area. The bluffs overlooking the ocean on the southern portion of the property were clear of vegetation and offered the greatest opportunity for locating cultural resources. However, during a personal interview with Michael Burke, an Executive Vice-President for Robert Bein, William Frost and Associates (RBF), it was learned that some 414,000 cubic yards of soil were removed in 1992 from the bluff area during a stabilization project (Burke 1996). The removal destroyed the previously recorded site (CA-ORA-1258). The soil was placed on two areas of the property and may have covered additional sites

Recommendations Summary: Although no prehistoric archaeological sites were discovered during the reconnaissance operation, the possibility exists that buried or obscured archaeological deposits will be encountered during grading It is therefore recommended that a qualified

archaeologist be present to monitor any ground disturbing activities and any archaeological resources encountered evaluated by a professional archaeologist prior to further ground disturbing activities in the area where the resources appeared

Disposition of Data: This report will be filed with the California Archaeological Inventory Regional Information Center, University of California, Los Angeles, Environmental Perspectives and RMW Paleo Associated, Incorporated. All field notes are on file at RMW Paleo Associates

UNDERTAKING INFORMATION/INTRODUCTION

Contracting Data: A cultural resources reconnaissance was undertaken by the author to determine the existence and potential impact to archaeological and historical resources located within the area proposed for development.

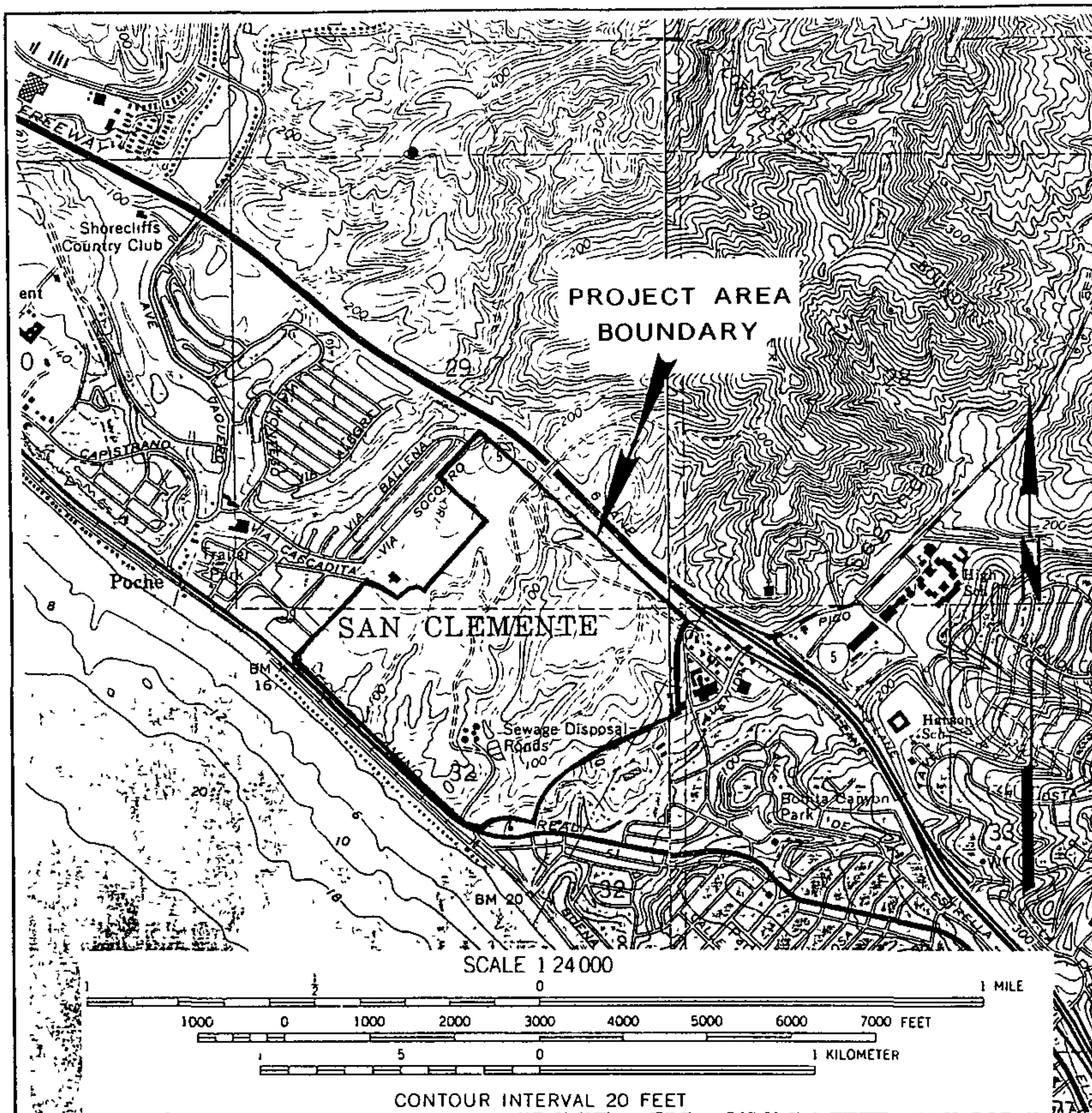
RMW Paleo Associates was contracted by Environmental Perspectives to complete the cultural resources research related to the project The cultural resources research was undertaken under RMW Paleo Associates project number 95-1109 The schedule for the completion of the planned project is unknown

The study was undertaken to determine, in accordance with appendix K of the California Environmental Quality Act (CEQA), if important (CEQA definition) or potentially important cultural resources are present within the study area. The study will provide a description of any such resources, determine the impacts the proposed construction will have on the resources and make recommendations for any required future action related to the existing cultural resources

The Project: The project entails the construction of approximately 500 single family homes and a large commercial center on 250 6 acres of Marblehead Coastal land located seaward of Interstate 5 and inland of El Camino Real. It is bordered by Avenida Pico to the southeast and the Colony Cove and Shorecliffs communities to the northwest

Map #1 is a composite of portions of the Dana Point and San Clemente, California, 1968, Photorevised 1975, USGS 7.5 minute quadrangle maps depicting the location of the Marblehead Coastal project area

Project Personnel: The literature review and report preparation was accomplished by Patrick O. Maxon. The field reconnaissance was accomplished by Maxon, with assistance from archaeologists Edward J. Knell and Anthony Mann Ronald M. Bissell, a Society of Professional Archaeology (S O P.A.) Certified Archaeologist, acted as Principal Investigator during the project Resumes for those persons involved in the project are contained in Appendix A



Paleontology Archaeology History RMW Paleo Associates 23392 Madero, Suite L Mission Viejo, CA 92691 (714) 770-8042 FAX (714) 458-9058	MAP 1. INDEX MAP Portions of USGS 7.5 Minute, Dana Point and San Clemente 1968 Quadrangles, Photorevised 1975 Scale = 1.24,000

SETTING

Natural Setting: The Marblehead Coastal project area incorporates the bluffs above the Pacific Ocean and the more hilly inland terrain to the northeast bisected by a number of drainages originating in the northeast portion of the property. The knolltops and level areas of the property currently host introduced grasses and native, as well as introduced, trees (eucalyptus, palm, pepper), but at one time were probably covered with dense native vegetation. Coastal Sage Scrub persists on the bluffs above the Pacific Ocean.

The Prima Deshecha Canada and the Secunda Deshecha Canada drainages are to the north and south of the current study area respectively Both originate in the foothills of the Santa Ana Mountains and, particularly Secunda Deshecha, running adjacent to the property's southeastern border, would have provided a reliable source of water to prehistoric populations. The Secunda Deshecha Canada is currently urbanized, but in prehistoric times probably had dense riparian growth as well as a reliable water supply.

The geological formations exposed on the project area are the Capistrano Formation The Formation consists of light brown siltstones and sandstones containing seams of gypsum and odoriferous dark, silty shale deposited in a deep marine basin during the late Miocene to middle Pliocene, eight to three million years ago (Raschke 1994 and Stadum 1996). Marine and non-marine terraces are also present (Stadum 1996)

The climate of the San Clemente area can be described as mild, uniform and semi arid Temperatures rarely exceed 33 degrees or drop below five degrees Celsius Rainfall occurs primarily between November and April, and averages between 25 and 40 centimeters per year The current climatic conditions may not have prevailed during the entire span of time man has been present in the area. Heusser (1978) suggests that pine forests may have occupied the coastal regions from roughly 10,000 to 6000 B C.E (Before Common Era) The climate then became warmer and drier, resulting in the replacement of the pine forests by Oak Woodland and Grassland communities Coastal Sage Scrub and Chaparral communities became pronounced during the few centuries preceding the Common Era

Several of the ecological communities existing in southern California were readily accessible by the local prehistoric inhabitants of the Marblehead Coastal project area, while others were reached only with some difficulty Those communities include the Saltwater Estuary Community and Bay, the Beach and Coastal Strand Community, the Marine Community, the Riparian Woodland Community, the Grassland Herbland Community, the Oak Woodland Community and the Chaparral Community The Coastal Sage Scrub Community was most prevalent on the current study area. It produced a variety of seed bearing plants and associated small game exploited by prehistoric populations (see Drover and Koerper 1983)

Cultural Setting: The current study area is inhabited by a Native American group ethnographically known as the Juaneno.

The names the Native American groups applied to themselves are largely unknown, we know them by the names the Spanish coined as they moved into Native American territories. The name "Juaneno" identifies those people who were under the control of the Spanish Mission San Juan Capistrano, located approximately 12 kilometers northwest of the study area.

The Juaneno language, as well as that of the Gabrielino to the north and the Luiseno to the south, was derived from the Takic family, part of the Uto-Aztecan linguistic stock, which can be traced to the Great Basin area (Driver 1969) This language group represents an origin quite different from that of the Chumash to the north and the Ipai and Tipai to the south. Their language is derived from the Hokan stock of the Yuman language family originating in the American southwest. Linguistic analysis suggests that at one time (probably before 500 B C E) the entire southern California coastal region was populated by Hokan speakers who were gradually separated and displaced by Takic speaking immigrants from the Great Basin area. The timing and extent of the migrations and their impact on indigenous peoples is not well understood and any data related to it represents a valuable contribution to the understanding of local prehistory.

Prehistoric Era The archaeological heritage of California is quite rich, probably more so than any other North American region north of Mexico. However, the archaeology of California is not well known The native Californians were generally quite peaceful and did not often offer warlike resistance to European settlement. Consequently, they did not gain great notoriety during the settlement period Also, the original Californians were first under the control of the Spanish and then the Mexican governments and only later, after much of their culture had been destroyed by disease and displacement, were they subsumed under the *United States government* There was only a minor Native American presence remaining in California when it became a United States possession and massive development began For this reason, very little interest in the natives and their prehistory was initially generated. It was many years later before the size, complexity, and extent of archaeological deposits in the state became apparent.

Homo sapiens have been present in the New World since perhaps 10,000 to 11,000 years B C.E. There is limited evidence that humans were present long before this date, but it is inconclusive and has not been accepted by most archaeologists. The earlier sites are all controversial in that they lack definite dateable context and material. Such sites can be interpreted in various ways, particularly in relationship to their age The few generally accepted remains indicate a very small, mobile population apparently dependant on hunting of large game animals as the primary subsistence strategy Other sources were certainly exploited, but the bulk of the traces remaining today are related to game hunting. (Chartkoff and Chartkoff 1984, Moratto 1984)

The view just presented is beginning to come into question, based on carefully excavated sites (the Meadowcroft Rockshelter in Pennsylvania and Monte Verde in Chile) that have produced reliable dates to as much as 12,500 years B C E. When the time required for diffusion from the Bering Straits area is added, the only valid conclusion is that at least some humans entered the North American continent at a time when an ice free corridor extending southward from Alaska did not exist. Perhaps water transport was used to gain access to the southern Pacific coast, with diffusion eastward (Dixon 1992)

The Chartkoffs (1984) identify the earliest portion of the archaeological sequence - to about 9,000 B C.E - as the Paleo-Indian Period *(Warren's (1968) San Dieguito Tradition).* The surviving material culture of this period consists primarily of large, extremely well made projectile points and large but crude tools, such as scrapers and choppers. Encampments were never permanent, based in part on the paucity of significant midden areas that would have degraded to undetectability given the great age They were probably sited near a major kill and occupation would have persisted only until the resources of that kill were exhausted It is probable that the

Paleo-Indians lived in groups no larger than extended families and that contact with other such groups was infrequent.

Wallace (1955) has developed a general chronology for the Southern California coastal region for the ensuing periods

The Millingstone Horizon (ca 5500-1500 B.C.E), or Encinitas Tradition, as defined by Warren (1968) people practiced a mixed hunting and gathering food procurement strategy. Game hunting still played an important role in the economy, but by this time the Native Americans had learned to exploit the hard seed resources of the coastal sage scrub and chaparral ecological communities. The rapid extinction of the large mammals that the Paleo-Indian had previously been exploiting necessitated this shift in resource exploitation The principle implements used to process the seeds, manos and metates, appear in large numbers for the first time in this horizon, and are especially numerous near the end of this tradition. Other specialized tools were developed to process the increased resources utilized by Millingstone peoples. Settlement size seems to have increased and an annual round of seasonal migrations was likely practiced as movements coincided with ripening vegetal resources Some formal burials are also evident

The Intermediate Horizon, locally known as the Campbell Tradition (ca 1500 B C.E. to C.E 1000), is characterized by a shift away from primarily vegetable food exploitation to a more maritime subsistence strategy It is during this time that the mortar and pestle were introduced, enabling acorn processing to begin

In the Late Prehistoric Horizon (Warren's (1968) Shoshonean *Tradition*), groups began to center around trade routes and there was a greater utilization of food resources with more land and sea mammal hunting to complement collecting The pattern of life in the Late Horizon was more complex. More classes of artifacts were being produced and they exhibited a more sophisticated degree of workmanship The observation that the bow and arrow were now utilized to a greater extent is based on the recovery of a greater number of small, finely chipped projectile points. Other items include steatite containers, shell fishhooks, perforated stones, bone tools, personal ornaments, asphalt adhesive and elaborate mortuary customs. In addition, the population increased and larger villages evolved (Wallace 1955.223)

It is during the Late Prehistoric that the emigrants from the Great basin appeared in the Los Angeles and Orange County area These peoples were very quick to adopt most of the local traits, because it is difficult to separate the archaeological assemblages of the emigrants from those of the indigenous peoples on the basis of artifact typology alone

The previously mentioned chronologies are not the only ones in use and, in fact, are somewhat generalized because they address the entire state of California The latest chronology to appear which has gained local acceptance is that of Koerper and Drover (1983). This chronology is based on extensive work at CA-ORA-119-A, a large multi-component site near the University of California, Irvine The site contained archaeological evidence from the Millingstone to the Historic period. The Koerper and Drover chronology is summarized in Table 1.

Historic Era: Juan Rodriguez Cabrillo sailed along the coast of California in 1542 and, according to available records, stopped only at San Diego and the Channel Islands The first Europeans to visit the Orange County area arrived in 1769 when Gaspar de Portola led an overland expedition from San Diego to Monterey. This expedition of 63 persons passed near the study area, using Arroyo Trabuco as a route to the north (Cramer 1988)

The first permanent settlement in Orange County came when San Juan Capistrano was selected as the site for a mission in the spring of 1775. Mission San Gabriel, located in Los Angeles County, was established in 1771.

The missions were charged with administering to the Indians within their areas. Mission life did give the Indians some skills needed to survive in their rapidly changing world, but the population was decimated by diseases for which they had no immunity. After 1810, mission population declined faster than it could be replenished. The Mexican Revolution, beginning in 1821, overthrew Spanish control and the new Mexican government had a very different outlook on mission activities Secularization of the missions, planned under the Spanish, was greatly accelerated by the Mexican government. Plans to provide land, training and living quarters for the Indians never developed and the mission lands were soon under the control of a relatively few influential Mexican families

The Mexican war ended on 2 February 1848 with the signing of the treaty of Guadalupe Hidalgo. The treaty established California as a United States possession

Table 1:

CHRONOLOGY, BASED ON KOERPER AND DROVER (1983)

PERIOD*	TEMPORAL SPAN	MAJOR DIAGNOSTIC TRAITS
Early Man or Paleo-Indian	? to 7,500 B.C.E. +/- ?	1. Lack of grinding implements 2. Large, well made projectile points.

Characteristics and adaptations.

1. Subsistence through hunting of large Pleistocene game animals
2 Temporary camps at large kills
3 Group no larger than extended family.
4 Widespread. Covered most of North American continent, but no sites known locally.
5. Very small total population

PERIOD*	TEMPORAL SPAN	MAJOR DIAGNOSTIC TRAITS
Milling Stone or Encinitas	7,500 B C.E. +/-? to 1,000 B.C E +/- 250	1. Predominance of manos and metates 2. Ornaments made of stone. 3. Large and often crude projectile points 4 Cogstones and discoidals 5 Charmstones 6 Some mortars and pestles near end of period

Characteristics and adaptations:

1. Heavy reliance on hunting in early part of period. Deer, rabbits and other small game associated with chaparral.
2. In middle to late part of period reliance was on hard seeds associated with chaparral
3. Coastal groups utilized shellfish and near shore resources.
4. Annual round based on ripening vegetable resources rather than animal migrations This caused increased isolation leading to noticeable differences in culture in much smaller geographic areas
5. Probably about 50 persons in average group.
6. Very little noticeable change in last two thirds of period
7 Colonization of Channel Islands near end of period

*Both the Chartkoff and Koerper and Drover names are given for the various periods, with the Koerper and Drover names appearing first

Table 1, continued.

CHRONOLOGY, BASED ON KOERPER AND DROVER (1983)

PERIOD	TEMPORAL SPAN	MAJOR DIAGNOSTIC TRAITS
Intermediate or Campbell	1,000 B C E. +/- 250 to C.E 750 +/- 250	1 Bone ornaments. 2 Wide use of mortars and pestles along with manos and metates 3 Use of steatite begins. 4 Many discoidals 5 Large projectile points trending to smaller in the last part of the period.

Characteristics and adaptations

1. Heavy reliance on acorns as food resource Hard seeds, small animals and coastal resources continue to be used
2 Many more deep water ocean resources utilized
3. First permanently occupied villages.
4 Large increases in local population.
5 Atlatl (spear thrower) in use Bow and arrow probably introduced near end of period
6. Some evidence of trade

PERIOD	TEMPORAL SPAN	MAJOR DIAGNOSTIC TRAITS
Late Prehistoric or Shoshonean	C E.. 750 +/- 250 to Spanish contact	1. Shell ornaments 2 Mortar, pestle, mano and metate use continues 3. Small, finely worked projectile points 4. Wide use of steatite 5 Some pottery vessels appear near the end of the period

Characteristics and adaptations:

1. Increased exploitation of all resources.
2 Large populations, some villages had as many as 1,500 persons
3 Great increase in art objects
4 Much evidence of trade

The Marblehead Coastal project area is at this time vacant land During the California Mission Period (1776-1834), the property served as a cattle ranch After Mexico won its independence from Spain, the Mexican government granted a large area, including the Marblehead site, to Don Felipe Carrillo The property was grazed by cattle and sheep. After the Mexican-American War, Juan Forster obtained the property. His son, Marco Forster, inherited the land and during this time grazed up to 4,000 head of sheep on the property After several ownership changes, the property was purchased in 1925 by a syndicate headed by Ole Hanson, the founder of San Clemente (Almanza 1991:4.5.3)

A tomato farm existed at a later date in the northeastern portion of the property. A sewage disposal facility operated in the southwest portion of the property until 1981 when it was removed. In 1981, Cal Trans constructed a fenced enclosure on the northeastern portion of the property alongside the San Diego Freeway. It served to secure heavy equipment and supplies during freeway widening (Burke 1996). Only portions of the enclosure and scattered modern refuse (asphalt, concrete, glass, etc.) remain

RESEARCH DESIGN

It is thought that Californians from the Millingstone into the Intermediate period practiced an annual round adaptation The major habitation camp would be moved periodically as resources ripened The habitation camp would be surrounded by specialized work stations where resources were collected and initially processed In general, it is thought that the major habitation camps were moved to progressively higher elevations as the year advanced, with a return to near-ocean locations for the winter season. The major habitations were occupied only for a few months each year, but the repeated use may have continued for many generations During Intermediate times, storage technology and a broadened resource base allowed settlements to be occupied throughout the year.

Prior Research: The literature review conducted for the current project revealed that a number of archaeological studies have taken place within the current study area

The first cultural resources reconnaissance project conducted in the current study area was performed by Constance Cameron and W. Lewis Tadlock in 1974 Cameron and Tadlock examined an area of 1000 acres, a portion of which included the entire current study area As a result, they recorded site CA-ORA-504 which lies north of the current study area They recorded no sites in the current project area, however, an isolated graver was observed in the northeastern portion The researchers also noted the presence of marine shell scatters in the northern portion of the current study area, south of Interstate 5, that they determined to be fossiliferous and non-archaeological in nature (Cameron and Tadlock 1974 6-7)

A second archaeological investigation was conducted in 1979 by Don Laylander with the report written by Roger Desautels of Scientific Resource Surveys, Inc. Laylander accomplished a reconnaissance of "a circular area surrounding the overpass at Marblehead Road, located on the San Diego Freeway (Desautels 1979.1)." This area comprised a small portion of the extreme northern portion of the current study area Desautels recorded no archaeological sites as a result of the reconnaissance accomplished He did, however, note the discovery of a single, isolated stone chopper adjacent to Via Socorro on the northern edge of the current study area He also reported the observation of three areas containing scattered marine shell in much the same area as that observed by Cameron and Tadlock (1974) No other cultural resources were discovered associated with the shell and Desautels concluded that it is fossiliferous in nature (Desautels 1979 8).

The next archaeological investigation within the current study area was conducted in 1989 by Kenneth M Becker of RMW Paleo Associates He examined 22 acres of land along both sides of Interstate 5 in anticipation of construction of a freeway interchange. The southern portion of his project area roughly comprised the northeastern portion of the current study area. Becker reported the discovery of two isolated quartzite cores in the northern corner of the current study area near the northern end of Via Socorro He also reported the existence of marine shell and similarly determined it to be fossiliferous in nature after a search for associated cultural material (Becker 1989 9)

A fourth archaeological investigation was performed in 1990 by Joan Brown of RMW Paleo Associates and involved an examination of 23 acres of land along the Marblehead Bluffs overlooking the Pacific Ocean Brown's project area comprised the southwestern portion of the current study area During the course of her examination, Brown reported the discovery of an archaeological site (CA-ORA-1258) near the southern corner of the current study area on a bluff overlooking a small drainage It consists of a metate fragment, a scraper and a hammerstone

Brown conducted a second reconnaissance in 1994. She examined a small area (920 feet by 80 feet and 200 feet by 280 feet) just north of her previous reconnaissance along the Marblehead bluffs Brown reported that no prehistoric or historic cultural material was observed within the project area (Brown 1994.8).

Additional archaeological investigations have been accomplished within a one mile radius of the Marblehead Coastal project area (Langenwalter 1977, Stickel 1978, Cameron 1985, et al) resulting in the discovery of numerous sites, mostly located along the Secunda Deshecha Canada north of the current study area, however, they are not within the current study area boundary and will not be further evaluated This does indicate that the Marblehead Coastal lands are a highly sensitive archaeological area

Research Questions: Regional research concerns such as social networking, settlement patterns and refining chronological sequences cannot be properly addressed during a project that is reconnaissance in nature The primary purpose of an archaeological reconnaissance is to locate sites and to offer an appraisal of the site(s) condition.

Hypotheses: Because the project was reconnaissance in nature, the hypotheses were kept simple.

1. Special use sites are to be expected in areas containing essential or unique resources. Specialized use sites could include sites that represent quarrying for lithic tool production, sites that would have been used for hunting birds and other animals or sites used during the collection and processing of vegetable resources
2. Sites should be recognizable due to physical changes that have occurred as a result of human use and/or habitation
3. Historic debris should be encountered where recognized historic buildings or other structures occur.

METHODS

The study area was examined on 29 February and 1, 4 and 7 March 1996. The reconnaissance was handled in two ways (1) Large, flat areas (ca 75% of project area) were examined in the traditional transect method. Transects were spaced at approximately 20 meters and the surface areas were inspected for cultural material Any time that knolls and benches were encountered, those areas were more thoroughly inspected for possible archaeological sites. Many of the flatter areas had at some time in the recent past been disked, but a regrowth of vegetation obscured much of the ground surface Ground visibility of those areas was approximately 25%. Flat areas near the bluffs in the southwestern portion of the property were generally devoid of vegetation making examination easier. The vicinity of the previously recorded archaeological site on the study area (CA-ORA-1258) was examined on three separate occasions but the site could not be relocated (2) Two large drainages and numerous smaller ones cut across the property from northeast to southwest These area were examined by walking along the floor of the drainage or walking along the slope of either side Small side drainages were examined as they were encountered Surface visibility in the drainages was also poor, because vegetation was quite thick. Approximately 15-20% of the ground surface was visible in the drainages.

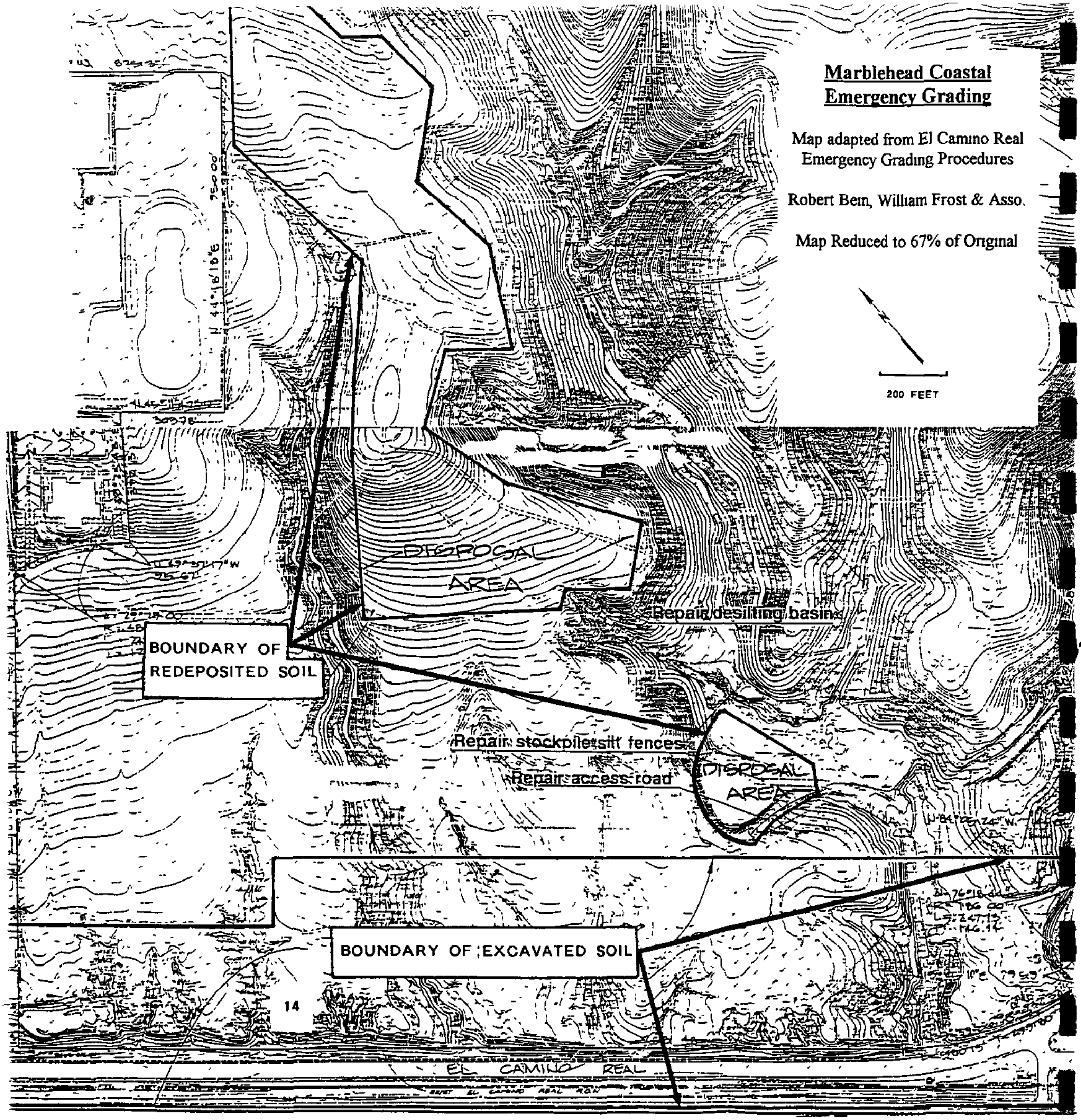
Employing these two methods, 100% of the study area was examined for cultural material Any archaeological sites discovered were to be recorded at the completion of the reconnaissance

Research Constraints: As stated above, vegetational regrowth after disking obscured much of the surface of the flat portions of the study area and vegetation was also quite thick in the drainages Approximate visibility was 20-25% of the entire study area

In 1992, a large amount (ca.414,000 cubic yards) of soil was taken from the bluffs area during a stabilization project (Burke 1996) This may have caused immeasurable damage to any existing archaeological sites The excavated soil was stockpiled in two areas of the property, possibly obscuring additional unrecorded sites. See Map #2 for location of removal and stockpiling of soil

FINDINGS

No prehistoric archaeological sites were recorded during the course of the current project. Brown (1990) recorded CA-ORA-1258 in the southwest corner of the study area This site was not relocated Disturbance in the area including disking and clearing as well as removal of the bluff may have destroyed the site This disturbance may have also destroyed other unrecorded archaeological sites that existed on the bluffs and knolls overlooking the Pacific Ocean Such areas were desirable to prehistoric populations


Marblehead Coastal
Emergency Grading
Map adapted from El Camino Real Emergency Grading Procedures
Robert Bein, William Frost & Asso.
Map Reduced to 67% of Original
200 FEET
DISPOSAL AREA
Repair desilting basin
BOUNDARY OF REDEPOSITED SOIL
Repair stockpile silt fences
Repair access road
DISPOSAL AREA
BOUNDARY OF EXCAVATED SOIL
EL CAMINO REAL
14

Approximately 500 meters northwest of CA- ORA-1258 along the bluffs, a small basalt denticular flake was observed on a disturbed knolltop The flaked edge of the tool resembles a saw and was probably used in a similar manner Two to three meters southeast was a small, oblong stone that may have been shaped or could have been a natural occurrence. The flaked tool was the only prehistoric archaeological resource discovered during the project and it will be recorded as an isolate find and reported to the South Central Archaeological Information Center at UCLA.

One historic archaeological site was discovered and recorded during the current project. On the northeastern portion of the study area adjacent to Interstate 5, an approximately 20 meter by five meter remnant of a longer asphalt road was discovered. After consulting the 1942 USGS, 1:62,500 scale San Juan Capistrano map of the area, it was determined that the road was depicted on that map and, therefore, fit the CEQA criteria for historic resources of 45 years or older, as it is at least 54 years old A site recording form was prepared for the road and sent to the South Central Archaeological Information Center at UCLA.

Further consultation of the 1942 USGS map revealed the previous existence of a grouping of four structures adjacent to the historic road just north of the main drainage on the property. Ben Villa, a resident of San Clemente, interviewed by Michael Burke of RBF, believes these structures were cattle watering troughs related to ranching activities that took place in that area of the property (Burke 1996)

Several modern structures and disturbances were also discovered during the reconnaissance that are being mentioned to note where subsurface and/or surface disturbance took place.

A sewage treatment facility existed in the southern corner of the property until 1981, when it was removed (Burke 1996) Only an approximately six to seven meter deep and 60 meter diameter depression in a hillside that once contained the facility and a small retention pond remain. A portion of the bluff soil (30,500 cubic yards) excavated during the bluff stabilization project was stockpiled in that depression

A large, chain-link fence enclosure, ca.120 meters by 75 meters in size remains in the northwestern portion of the property It was constructed by Cal Trans to house heavy equipment during widening of Interstate 5 in the early 1980s

See Map #3 in Appendix C for a depiction of the resources discovered within the study area

DISCUSSION/INTERPRETATION

The project described in this report was to examine the property for cultural resources.

The current study area would have been a highly desirable area for habitation in prehistoric times A large number of archaeological sites were discovered a short distance inland from the study area Climatic conditions were sufficiently warm and dry (at least after ca.6000 B.C.E.) to attract prehistoric populations to the area Sufficient reliable water sources existed in nearby creeks and streams and the ocean is nearby A wide range of ecological communities existed that were accessible to the local populations who were consequently able to secure an array of animal and vegetable resources

In the research design section of this report, a series of hypothesis were presented The results of these are discussed below.

Hypothesis 1: Specialized use sites are to be expected in areas containing essential or unique resources. Specialized use sites could include sites that represent quarrying for lithic tool production, sites that would have been used for hunting birds and other animals or sites used during the collection and processing of vegetable resources

It was expected that a number of specialized use sites, possibly those involved in collecting and processing vegetable resources, might have been discovered during the current study. The desirability of the area to prehistoric populations and the large number of sites recorded in the vicinity (including CA-ORA-1258 on the property) made it likely that additional sites could exist on the study area. Only an isolated basalt denticular flake was recovered from the bluffs during the current project

The removal of approximately 414,000 cubic yards of soil from the bluffs area in 1992 (Burke 1996) would have destroyed any archaeological sites that existed on the surface or nearsurface in that area and covered sites where it was stockpiled. Based on the assemblage at CA-ORA-1258, including a metate fragment, scraper and hammerstone, it can be assumed that some level of vegetable collection and processing was taking place on or near the bluffs

Hypothesis 2: Sites should be recognizable due to physical changes that have occurred as a result of human use and/or habitation

Because no sites were discovered and CA-ORA-1258 was not relocated, Hypothesis 2 was not substantiated Again, the 1992 soil removal from the bluffs and its redeposition in another area, could have destroyed or covered any intact sites.

The only physical, environmental changes resulting from human occupation are numerous trash scatters associated with homeless shelters made of modern materials that dot the study area. At least half a dozen were seen during the reconnaissance

Hypothesis 3: Historic debris should be encountered where recognized historic buildings or other structures occur.

The northeastern portion of the property, along Interstate 5, has seen the most modern/historic activity The fenced enclosure that was constructed by Cal Trans in 1981 during widening of the freeway seems to be the focal point of a dispersed area of modern refuse Piles of concrete and asphalt, as well as scatters of broken glass, fencing and other materials were observed in a wide arc around the enclosure The refuse was likely deposited during widening of the freeway when the enclosure was in use. There is no refuse evident that is related to the portion of the historic road that remains on the property

MANAGEMENT CONSIDERATIONS

The Marblehead Coastal area was attractive to prehistoric populations just as it is today to prospective homeowners Its reliable water supply, abundant animal and vegetable resources and mild weather attracted local populations who exploited its resources Agricultural activities, stock grazing, building construction, disking, soil removal and a myriad of other activities may have damaged or destroyed many of the archaeological sites that exist or formerly existed on the property

RECOMMENDATIONS

Because the area was so attractive to prehistoric populations, the likelihood that buried archaeological deposits will be encountered during grading at Marblehead is high. It is therefore recommended that a qualified archaeologist be present to monitor all initial ground disturbing activities The monitoring archaeologist must be empowered to divert grading operations from any areas where archaeological deposits have been exposed Sufficient time must be allowed for adequate evaluation and recovery operations to be completed

An additional factor is the removal of approximately 414,000 cubic yards of soil from the bluff area during a stabilization project in 1992 A strip of land some 50 meters wide from El Camino Real inland to the sewage treatment facility was graded off in a 2 1 cut slope, in some places taking off as much as 15 meters of soil A portion (ca 40,000 cubic yards) of the soil was removed and placed in what had been the sewage treatment facility The remaining 370,000 cubic yards was transported to the northeast corner of the study area and placed over a large area that had at one time been a tomato field (Burke 1996).

This large disturbance provides further justification to recommend the careful monitoring of any ground disturbing activities that take place within the study area

Patrick Maxon
Staff Archaeologist

REFERENCES CITED

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1989 Cultural Resources Reconnaissance of the Avenida Vista Hermosa Interchange San Clemente, Orange County, California On file RMW Paleo Associates, Mission Viejo, California

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1994 Cultural Resource Reconnaissance for the Colony Cove Bluff Stabilization Project in San Clemente, Orange County, California.

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1996 Personal Communication. Mr Burke is an Executive Vice-President at Robert Bein, William Frost and Associates (RBF).

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Cameron, Constance & W. Lewis Tadlock
1974 An Archaeological Survey of the Reeves Ranch, San Clemente, Orange County, California Public Antiquities Salvage Team, Department of Anthropology, California State University, Fullerton, Fullerton, California

Chartkoff J. L & Kerry Kona Chartkoff
1984 *The Archaeology of California*. Stanford University Press Stanford, California.

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1988 European Discovery In *A Hundred Years of Yesterdays*, Cramer et al., editors. pp. 19-21 Orange County Centennial, Inc , Santa Ana, California

Desautels, Roger J
1979 Archaeological Survey Report on Marblehead Road-San Diego Freeway (Interstate 5) Interchange Scientific Resource Surveys, Inc. Santa Ana, California

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1992 *Quest for the Origins of the First Americans* University of New Mexico Press, Albuquerque.

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1983 Early Holocene Human Adaptation on the Southern California Coast. A Summary Report of Investigations at the Irvine Site (CA-ORA-64), Newport Bay, Orange County, California *Pacific Coast Archaeological Society Quarterly*, Vol 19, No 2, pp 1-34

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1977 The Archaeological and Paleontological Resource Assessment of the Secunda Deshecha Canada Proposed Regional Park. On file UCLA South Central Coastal Information Center, Los Angeles

Moratto, Michael J.
1984 *California Archaeology* Academic Press, San Diego

Raschke, Rodney E.
1994 Paleontological Assessment for the Colony Cove Bluff Stabilization Project in San Clemente, Orange County, California On file RMW Paleo Associates, Mission Viejo, California

Stadum, Carol J.
1996 Paleontological Resources Evaluation, Marblehead Coastal, San Clemente, California On file RMW Paleo Associates, Mission Viejo, California.

Stickel, Gary E.
1978 A Cultural Resources Survey of Visbeek Ranch, San Clemente, Orange County, California On file UCLA South Central Coastal Information Center, Los Angeles

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology *Southwestern Journal of Anthropology* 11(3): 215-230

Warren, C N.
1968 Cultural Traditions and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory in the Western United States. *Eastern New Mexico Contributions in Anthropology* 1(3). 1-14.

APPENDIX A
Personnel Qualifications

RESUME

Ronald M. Bissell
24762 Via Del Rio
El Toro, California 92630
(714) 837-9582

EDUCATION

Master of Arts, Anthropology, Archaeological Emphasis.
California State University, Fullerton, California, 1983.

Master of Science, Library Science
California State University, Fullerton, California, 1977.

Bachelor of Arts, Geology and History,
San Diego State University, San Diego, California, 1972.

Introduction to Federal Projects and Historic Preservation Law.
Sponsored by the Advisory Council on Historic Preservation and the General Services Administration Training Center, 1989.

EMPLOYMENT HISTORY

January 1986, Present President, RMW Paleontological Associates, Incorporated, 23352 Madero, Suite J, Mission Viejo, California 92691. Duties include Principal Investigator responsibilities for all aspects of Cultural Resources Management projects.

April 1983, January 1986. Independent Consultant performing archaeological assignments for clients in California.

May 1976, April 1983. Information Specialist and Administrative Services Officer, Leighton and Associates, 1151 Duryea Avenue, Irvine, California 92714. Leighton and Associates is a geotechnical consulting firm.

March 1956, April 1976. United States Army. Rank at retirement was Major of Field Artillery.

CREDENTIALS

Certified by the Society of Professional Archaeologist as a Field Archaeologist.

Certified as an Archaeologist by the County of Orange Environmental Management Agency. Also certified by the Counties of Ventura, Los Angeles, Riverside and San Bernardino, Kern, Kings, Fresno, Tulare, Madera and San Diego as well as various municipal agencies.

California Community College credentials as Instructor in Anthropology, Library Science and Business Administration and as Chief Administrative Officer and Librarian.

Certified as Open Water Scuba Diver by the Professional Association of Diving Instructors.

MEMBERSHIPS

Society of Professional Archaeologists
Pacific Coast Archaeological Society
Society for California Archaeology
Southwestern Anthropological Association
California Mission Studies Association
American Library Association
California Library Association
South Coast Geological Society

PUBLICATIONS

Archaeological Site CA-Ora-572, a Two Component Site in Fullerton, California. Master's Thesis on file at the Library, California State University, Fullerton, California.

A Previously Unrecognized Grinding Technology from CA-Ora-572. Paper presented to the Southwestern Anthropological Association, April 1983. Expanded version published *in* the Quarterly of the Pacific Coast Archaeological Society, Volume 19, Number 3, July 1983.

Orange County's First Fairgrounds, 1890-1900. Proceedings of the Conference of Orange County History, 1989.

Archaeological Site CFA-Ven-630. A Solstice observatory in Simi Valley, Ventura County, California

Archaeological Site CA-Ora-1058. Six Cairns in Orange County, California Proceedings of the Society for California Archaeology, Volume 7, 1994.

OTHER INFORMATION

Completed graduate level classes in Land Use Planning, Computer Programming and Statistical Analysis.

Army trained land surveyor Organized and taught a two semester hour class in land survey for archaeologists at the Anthropology Department, California State University, Fullerton, California

RESUME

Patrick O. Maxon
25652 Rimgate Drive, #7-D
Lake Forest, California 92630
Home. (714) 859-4209
Office. (714) 770-8042

EDUCATION

M.A. Anthropology: 1994, California State University, Fullerton Concentration in Archaeology.
B.A. Sociology/Psychology: 1987, Towson State University, Maryland.
University of Maryland, Munich Campus, Munich, Germany (one semester)

HONORS

Dean's List, National Honor Society for Sociology, Varsity soccer (TSU), Scholar athlete.

EMPLOYMENT HISTORY

8-94 - present	Staff Archaeologist for RMW Paleo Associates Responsibilities include site records, maps, research, and field work.
7-90 - 8-94	Behavioral Specialist/Job Trainer Vantage Foundation, Costa Mesa, California Worked with a group of three developmentally disabled adults teaching daily life and employment skills and managing maladaptive behaviors
7-89 - 10-89	House Manager Pearlmark group home, Anaheim, California. Oversaw a home of 30-40 mentally disabled individuals. Planned daily activities, managed homes employees, and met with residents' social workers, case managers and health professionals
7-88 - 7-89	Instructor for United Cerebral Palsy, Santa Ana, California Taught a class of 25 developmentally disabled adults basic life skills and community integration

EXPERIENCE

RMW Paleo Associates, Incorporated

Saddleback Meadows, El Toro, California
CA-ORA-710, 711, 713, 714, 715, 1255, SBM-1
Duties: Field Director, excavation and survey
9/95-present

LaHabra, California
Duties. Project Manager, monitoring
7/95-present

Evans Point, Carlsbad, California
Duties. Project Manager, Monitoring
6/95-present

Simi Valley, California
CA-VEN-782
Duties. monitoring and excavation
2/95 through 5/95

Rose Canyon, San Diego, California
CA-SDi-12557
Duties: field crew, excavation
9/94 through 2/95

Thermal, California
Duties. surveying
11/94

Valley Center, California
CA-SDi-759
Duties: field crew, excavation
8/94

Cal State University, Fullerton Field School
CA-0ra 35, Los Pinos, California
Duties. field crew, excavation
8/92-12/92

REPORTS

Bissell, Ron and Patrick Maxon

1994 Cultural Resources Reconnaissance of Proposed Sewer Lines and Support Facilities, and Test Excavation of Three Sites in Valley Center, San Diego County, California

Maxon, Patrick

1995 Archaeological Survey and Impact Assessment of the Proposed Upgrade to the Capistrano Beach Water District Waste Water Treatment Facility.

1995 Archaeological Survey and Impact Assessment of the Capistrano Beach Water District Stonehill Road Right of Way Acquisition

Edward J. Knell

2279 Midwick Drive
Altadena, California 91001
(818) 798-5400

ducation

1/93 to 5/93 **Southern Methodist University**
Attained 6 graduate level credits

8/91 to 5/92 **University of Alaska Fairbanks**
Attained 24 graduate level credits

8/86 to 5/90 **University of Colorado, Boulder**
Bachelor of Arts in Anthropology with an archaeological emphasis

Experience

6/95-Present
6/90-8/91 **RMW Paleo Associates, Inc.**
Worked for this southern California based cultural resources management firm under the direction of Ron Bissell.
• Participated on numerous test excavations, data recovery projects, field reconnaissance, and archaeological monitoring projects in various counties around southern California These projects were located in a variety of ecological zones
• Supervised, managed and wrote the technical report for a 445 acre reconnaissance project. Seven historic sites were documented and recorded.
• Analyzed and accessioned lithic, ground stone, and historic artifacts from various archaeological projects around Southern California
• Wrote six technical reports and have additional reports in progress.

9/91-6/95 **Tetra Tech, Inc.**
Worked for this southern California based cultural resources management firm under the direction of Susan Bupp
• Participated on three test excavations and one cultural resources reconnaissance project These projects were located on Edwards Air Force Base, California, and included the evaluation of both prehistoric and historic sites. Throughout these projects, a total of 56 archaeological sites were documented and recorded.
• Contributed to five archaeological technical reports, research designs, environmental assessments, and several other reports currently in progress These reports focused on the documentation and assessment of both prehistoric and historic sites to the National Register of Historic Places.
• Gained valuable experience using a theodolite for site mapping

10/93-9/94 **Archaeological Consulting Services**
Field supervisor for this southern California based cultural resources management firm under the direction of J S Alexandrowicz.
• Supervised four test excavations and data recovery projects in urban historical settings These projects were conducted in the City of San Bernardino and Santa Ana, California, and date from the late 1880s During this time I learned how to excavate historic urban archaeological sites, recognize and evaluate historic artifacts, and supervise employees
• Monitored the controlled demolition of five historic archaeological sites
• Participated on three cultural resources reconnaissance projects in which 19 historic archaeological sites were documented and recorded
• Co-authored five technical reports as well as other reports in progress

6/93-8/93 **Environmental Systems Analysis**
Worked for this Kansas City based cultural resources management firm under the direction of L.J. Schmits.
• Participated on test excavations and field reconnaissance projects in western Missouri, southeastern Kansas, and eastern Nebraska. These sites ranged in age from Late Paleoindian to Late Prehistoric.

6/93 ***University of Missouri, Saint Louis (UMSL)***
Worked for the UMSL Archaeological Research Unit on the data recovery/controlled destruction of a Late Archaic village site located outside Saint Louis, Missouri. Duties included excavating and monitoring.

8/92-12/92 **Semester at the University of Colorado, Boulder**
Arranged to take two graduate level courses with Dr Bamforth. Plains Archaeology, and an independent study course focusing on issues of lithic analysis and lithic raw material economy. Both classes were related to my particular archaeological focus.

6/92-8/92 **University of Kansas, Lawrence**
Participated on a summer field school under the direction of Dr Jack Hofman. This field school focused on the excavation of three archaeological sites located in Kansas, Texas and Oklahoma. Two of these sites were Late Paleoindian bison bone beds, and the other was a Folsom age bison bone bed.
• Excavated, surveyed and sketched archaeological materials
• Participated on a taphonomic research project studying the dispersal patterns of bison bones by cultural and natural agencies at the Finney County Bison Range, Kansas.
• Gained valuable experience in, and knowledge of, Great Plains Archaeology.

6/91-8/91 **University of Alaska Fairbanks**
Participated on a summer field school under the direction of Ted Goebel and Dr. Roger Powers. The field school was conducted at Panguingue Creek - a Denali period archaeological site located south of Fairbanks, Alaska.
• Excavated, surveyed, sketched, accessioned, and analyzed archaeological materials.
• Discussed regional issues in Alaskan archaeology, geoarchaeology, and lithic analysis
• Created a topographic map of the site with the aid of a transit

6/89-7/89 **University of Colorado, Boulder**
Participated on a summer field school under the direction of Dr. Tzavella-Evjen This field school was conducted at Chaeroneia, Greece, and dates from the Neolithic to Hellenistic age
• Excavated, surveyed, sketched, and analyzed archaeological materials.
• Co-wrote a report on artifactual findings.
• Guest lectured at an American Institute of Archaeology meeting

6/88-7/89 **University of Liverpool, England**
Participated on a summer field school under the direction of Dr. Philip Barker. This site is a Norman period motte and baily style castle.
• Excavated, and surveyed using a laser theodolite.

6/88 **University of London, England**
Attended an archaeological photography class and field methods course at the Institute of Archaeology

7/85 **University of California, Berkeley**
Excavated under the direction of Dr Andrew Stewart at the Tel Dor archaeological site, Israel

Specialized Course Work

- Anthropological Statistics
- Archaeological Method and Theory
- Lithic Analysis and Replication
- Paleoecology / Zooarchaeology / Faunal Analysis
- Geoarchaeology
- Pleistocene Archaeology

dditional Projects

- Volunteered at the University of Colorado museum classifying southwestern potsherds
- Assisted the Federal Bureau of Investigation in the excavation of a modern plane crash

Professional ffiliations

- Member of the Plains Anthropological Society.
- Member of the Society for American Archaeology

ualifications

- Archaeological experience in the forest, plains, coast, desert, high desert, and urban environments
- Extensive knowledge of lithics, lithic interpretation, and ground stone analysis
- Experience writing archaeological technical reports
- Experience writing environmental assessments
- Knowledge of IBM and Macintosh PCs
- Completed a California Occupational Safety and Hazard Administration (OSHA) training class
- Completed a class focusing on both Section 106 and 110 of the National Historic Preservation Act

Grants, Technical eports, and ublications

Knell, E J

1995 *Cultural Resources Reconnaissance of Moorpark Specific Plan #2- EIR, Moorpark, Ventura County, California* On file at the California Historical Resources Inventory, University of California, Los Angeles

1995 *Cultural Resources Reconnaissance of a Small Parcel of Land for the AirTouch Cellular Antenna Project, Aliso Viejo, Orange County, California* On file at the California Historical Resources Inventory, University of California, Los Angeles.

1995 *Cultural Resources Monitoring of a Portion of the UNOCAL Oil Pipeline Replacement Project, Los Patos Avenue and Marina View Place, Huntington Beach, Orange County, California* On file at the California Historical Resources Inventory, University of California, Los Angeles

Tetra Tech, Inc

1995 Contributor to, *Final Research Design for Cultural Resources Investigations of 10 Desert Homesteads, Edwards Air Force Base, California* Prepared for the Army Corps of Engineers, Sacramento District, and the Air Force Flight Test Center, Environmental Management Office, Edwards Air Force Base California On file with the Base Historic Preservation Office, Edwards Air Force Base, California

1995 Contributor to, Preliminary Draft, *The Evaluation of Five Archaeological Sites Along 140th Street, Edwards Air Force Base California* Prepared for the Army Corps of Engineers, Sacramento District, and the Air Force Flight Test Center, Environmental Management Office, Edwards Air Force Base California On file with the Base Historic Preservation Office, Edwards Air Force Base, California

Tetra Tech, Inc

1995 Contributor to, *Environmental Assessment of the Combat Arms Range, Edwards Air Force Base, California.* Prepared for the Army Corps of Engineers, Sacramento District, and the Air Force Flight Test Center, Environmental Management Office, Edwards Air Force Base California. On file with the Base Historic Preservation Office, Edwards Air Force Base, California

1994 Contributor to, *Final Research Design for the Evaluation of Site CA-LAN-863, South Rogers Lake Area, Edwards Air Force Base, California* Prepared for the Army Corps of Engineers, Sacramento District, and the Air Force Flight Test Center, Environmental Management Office, Edwards Air Force Base California. On file with the Base Historic Preservation Office, Edwards Air Force Base, California.

1994 Contributor to, *Final Research Design for the Evaluation of Five Archaeological Sites Along 140th Street, Edwards Air Force Base, California.* Prepared for the Army Corps of Engineers, Sacramento District, and the Air Force Flight Test Center, Environmental Management Office, Edwards Air Force Base California On file with the Base Historic Preservation Office, Edwards Air Force Base, California

Alexandrowicz, J.S., Alexandrowicz, S R., Knell, E., Kuhner, A

1994 *Historic Preservation Investigations for the Federal Courthouse Project, City of Santa Ana, County of Orange, California* ACS Technical Series No. 18 On file at the Archaeological Survey, University of California, Los Angeles

Alexandrowicz, J.S., Knell, E., and Alexandrowicz, S R.

1994 *Historic Preservation Investigations at Lot 10, Block 22, San Antonio Heights, County of San Bernardino, California: The Identification Program* ACS Technical Series No 19. On file at the Archaeological Information Center, San Bernardino County Museum, California

Alexandrowicz, J.S., Kuhner, A , Knell, E. and Alexandrowicz, S.R

1994 *Historic Preservation Investigations for the South Norco Channel Line SB, Stage 1, City of Corona, City of Norco, County of Riverside, California.* ACS Technical Series No. 21. On file at the Archaeological Research Unit, University of California, Riverside.

Alexandrowicz, J.S and Knell, E.

1994 *Historical Archaeological Monitoring at the Northwest Corner of 4th and E Streets, City of San Bernardino, County of San Bernardino, California* On file at the Archaeological Information Center, San Bernardino County Museum, California

Alexandrowicz, J.S. and Knell, E.

1994 *Historical Archaeological Monitoring at the Southeast Corner of 5th and E Streets, City of San Bernardino, County of San Bernardino, California* On file at the Archaeological Information Center, San Bernardino County Museum, California.

1992 Received Geist Fund Grant from the University of Alaska Fairbanks Museum for blood residue analysis on lithic artifacts from northwestern Alaska.

Knell, E

1991 *Cultural Resources Reconnaissance of the Reyes Adobe Road Residential Project.* On file at the Archaeological Survey, University of California, Los Angeles.

Knell, E.
1991 *Cultural Resources Reconnaissance of Twenty One Acres near Hesperia, San Bernardino County, California.* On file at the Archaeological Information Center, San Bernardino County Museum, California.

1991 *Cultural Resources Reconnaissance of Tentative Tract 26366, Riverside County, California.* On file at the Archaeological Research Unit, University of California, Riverside.

O'Neil, A., Knell, E., Buzbee, D., Rubenstein, A. and Lappin, M.
1990 The Prehistoric Tumulus of Chaeroneia: Site and Excavations. *Ascent* 3(2):49-50.

RESUME

Anthony Mann

1816 Oak Street
South Pasadena, California 91030
(818) 441-4590 or (818) 799-5096

Education

December 1990	B A., California State University, Stanislaus. (Majors. Biology and Geography, Minors. Environmental Studies and Geology)

Work Experience

November 1995 to Present	Staff Paleontologist, RMW Paleo Associates, Incorporated.
September 1995 to November 1995	Science Teacher, San Marino Recreation Department and KidSpace Museum Duties: Independently developed and presented wildlife and physical science classes on contract. Classes were hands-on programs for students aged 5-12. Design and construct all laboratory materials including experiments, curriculum, and program guides
September 1994 to Present	Conservancy Volunteer, Rancho Mission Viejo Land Conservancy. Duties: Develop and present nature programs and guided walks for schools and public on wildlife preserve Responsible for publishing newsletters and advertising materials, and assisting in developing fund raising events.
January 1994 to March 1995	Consulting Biologist, the Nature Conservancy, U.S. Fish and Wildlife Service, Bureau of Land Management, and California Department of Fish and Game. Duties: Independently worked on various contracts by conducting surveys for and documented occurrences of endangered plant and animal species (including live-trapping of various mammals and raptors) Coordinated survey efforts with researchers from state and federal agencies. Contributed as an active member with various interagency working groups, presented interagency management plans to various government agency meetings

March 1991 to March 1993	Wildlife Biologist, U.S D A Forest Service, Big Bear Ranger Station. Duties. Responsible for designing and conducting biological surveys for various endangered species, (including live-trapping/telemetry surveys of various mammals and raptors), assisted in training and supervising temporary summer personnel in field work projects, supervised and acted as crew leader for various work crew projects
June 1990 to March 1991	Biological Technician, U.S D A Forest Service, Arizona Game & Fish Duties. Conducted stream surveys and fisheries habitat enhancement projects. Acted as project supervisor and crew leader, determined equipment needs and supervised purchasing, maintained project budget, coordinated volunteer work parties, prepared project completion reports
June 1988 to June 1990	Biological Assistant, California State University, Stanislaus, Turlock, California Duties· Assisted in field research on endangered species, including live-trapping studies of mammals and reptiles.
February 1988 to May 1990	Scientific Aide, California Department of Fish and Game, Fresno, California Duties: Field Crew leader for salmonoid escapement and spawning studies. Assisted in training personnel in sampling procedures. Piloted project boats in rough open water and class II rivers.
September 1989 to June 1990	Archaeological Assistant, Institute for Archaeological Research, Turlock, California Duties Field crew member on archaeological surveys. Conducted surface surveys and excavations in California and Nevada on U S Forest Service and BLM lands Wrote site reports and developed site maps
June 1989 to September 1989	Computer Technician, California State University, Stanislaus, Turlock, California Duties: Assisted students in computer labs, provided faculty technical support for software and hardware problems Repaired, installed, moved, and maintained school computer systems
February 1986 to January 1988	Student Supervisor, California State University, Stanislaus, Turlock, California. Duties. Supervised and trained T V. station crew (students) and operations during broadcast hours, maintained T V. and Microwave equipment, installed communication lines (computer, video, and audio)
September 1985 to June 1987	Biology Teacher, Great Valley Museum of Natural History, Modesto, California Duties: Developed and presented biology and natural history classes for public schools

July 1984 to October 1984 and October 1984 to August 1985	River Guide, Great Valley Canoe & Raft Tnps, Riverbank, California Duties: Acted as Trip Leader. Assisted in repairing and maintaining equipment. Assisted in managing trip logistics including all supply purchasing, preparations and logistics.
September 1985 to September 1986	Park Ranger, U.S Army Corps of Engineers, Stanislaus River Parks, Knight's Ferry, California. Duties Responsible for making visitor contacts as information officer and enforced park regulations to ensure resource protection, presented interpretive programs to park visitors
March 1983 to October 1983 and May 1984 to July 1984	River Guide, Environmental Traveling Companions, San Francisco, California Duties. Managed trip logistics including all preparations, logistics, and trip leader duties Planned, purchased food and trip supplies, prepared meals for customers on trips. Repaired all equipment and vehicles. Assisted in training new guides during guide school.
December 1981 to January 1984	Naturalist, Foothill Horizons Outdoor Education School, Stanislaus County Department of Education, Sonora, California Duties: Developed and presented science classes for 6th graders.
July 1981 to September 1981	Backcountry Ranger, Olympic National Park, Port Angeles, Washington Duties: Responsible for making park visitor contacts as information officer and enforced park regulations to ensure resource protection, supervised volunteer work parties.

APPENDIX B
Site Recording Forms

RMW Paleo Associates

Permanent Trinomial: CA-ORA-1258 **Supplement** [x]

ARCHAEOLOGICAL SITE RECORD

Other Designations:

Common Name: MB1

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1. **County:** Orange
2. **USGS Quad:** Dana Point, CA 7.5' (1968) 15' ( ) **Year** (Photorevised) 1975
3. **UTM Coordinates: Zone** 11 441120m **Easting** 3699500m **Northing**
4. **Township** 8S **Range** 7W, SE **1/4 of** NE **1/4 of** SE **1/4 of** NW **1/4 of Sec.** 32 **Base Mer.** San Bernardino
5. **Map Coordinates:** 301 mmS 451 mmE **(from NW map corner)** 6. **Elevation:** 100 feet
7. **Location:** Site is located on a bluff overlooking a drainage
8. **Prehistoric (x) Historic ( ) Protohistoric ( )**
9. **Site Description:** Site was described as an artifact scatter between a dirt road and bluff top
10. **Area:** (10) x (10) = 78 5 **square meters**
    Method of Determination: Pacing
11. **Depth:** Unknown **cm.** **Method of Determination:** N/A
12. **Features:** None
13. **Artifacts:** None observed One metate fragment, one large flake scraper and one hammerstone originally recorded by Brown (1992)
14. **Non-Artifactual Constituents and Faunal Remains:** None seen
15. **Date Recorded:** 29 March 1996 Originally recorded by J Brown, 19 Dec 1990 16. **Recorded By:** Patrick O Maxon
17. **Affiliation and address:** RMW Paleo Associates 23392 Madero Suite L, Mission Viejo, California 92691
18. **Human Remains:** None
19. **Site Disturbances:** The entire area was graded and soil transported elsewhere
20. **Nearest Water (Type, distance and direction):** Segunda Deshecha Creek, 400 meters east
21. **Vegetation Community (site vicinity):** Coastal Sage Scrub **(Plant List [ ])**
22. **Vegetation (on site):** None, cleared
23. **Site soil:** Sandy loam
24. **Surrounding soil:** Same
25. **Geology:** Terrace deposits
26. **Landform:** Bluff top

27. **Slope:** Level **28. Exposure:** Open

29. **Landowner(s) and Address:** Environmental Perspectives, 600 N Tustin Avenue, Suite 260, Santa Ana, California 92670 (Planning firm)

30. **Remarks:** No artifacts were seen Site was likely destroyed by soil removal and clearing of vegetation

31. **References:** Brown, Joan C
1990 Cultural Resources Reconnaissance of Approximately 23 Acres of the Marblehead Bluffs Project in San Clemente, Orange County, California On file, RMW Paleo Associates, Mission Viejo, California

32. **Name of Project:** Marblehead Coastal

33. ***Type of Investigation:*** Reconnaissance

34. **Site Accession Number:** N/A **Curated at:** N/A

35. **Photos:** None **Taken by:** N/A

RMW Paleo Associates

ARCHAEOLOGICAL SITE RECORD

Page 1 of 3

Permanent Trinomial: ______ **Supplement [ ]**

Other Designations: ______

Common Name: MH-1H

1. **County:** Orange

2. **USGS Quad:** Dana Point **7.5'** (1968) **15' ( ) Year (Photorevised)** 1975

3. **UTM Coordinates: Zone** 11, 441590 **m Easting** 3700240 **m Northing**

4. **Township** 8S **Range** 7W, NW **1/4 of** SW **1/4 of** SE **1/4 of** SE **1/4 of Sec.** 29 **Base Mer.** San Bernardino

5. **Map Coordinates:** 271 mmS 471 mmE **(from NW map corner) 6. Elevation** 160 ft AMSL

7. **Location:** Site is located 150 meters southwest of Interstate 5 and 600 meters southeast of the northern end of Via Socorro on a plateau overlooking a large drainage

8. **Prehistoric ( ) Historic (x) Protohistoric ( )**

9. **Site Description:** Site is a 5 meter by 20 meter remnant of a once longer historic asphalt road. The 1942 U S Army Corps of Engineers 1/62,500 scale map of San Juan Capistrano depicts the road running for approximately one kilometer, parallel to what is now Interstate 5

10. **Area:** (20) **x** (5) **=** 78 5 **square meters**
Method of Determination: Pacing

11. **Depth:** Surface **Method of Determination:** Visual

12. **Features:** Portion of an historic asphalt road See #9

13. **Artifacts:** None

14. **Non-Artifactual Constituents and Faunal Remains:** None

15. **Date Recorded:** 19 March 1996 **16. Recorded By:** Patrick O Maxon

17. **Affiliation and address:** RMW Paleo Associates 23392 Madero Suite L, Mission Viejo, California 92691

18. **Human Remains:** None

19. **Site Disturbances:** Most of the road has been destroyed Site vicinity is littered with modern refuse (glass, plastic, concrete, plastic, etc)

20. **Nearest Water (Type, distance and direction):** Stream, 600 meters northwest

21. **Vegetation Community (site vicinity):** Coastal Sage Scrub, Introduced grasses **(Plant List [ ])**

22. **Vegetation (on site):** Introduced grasses

23. **Site soil:** Brown, sandy loam

Permanent Trinomial: ______ Supplement [ ]

Other Designations: ______

Common Name: MH-1H

24. **Surrounding soil:** Same

25. **Geology:** Tertiary Period Capistrano Formation

26. **Landform:** Wide ridge overlooking a large drainage

27. **Slope:** Level 28. **Exposure:** Open

29. **Landowner(s) and Address:** Robert Bein, William Frost and Associates 14725 Alton Parkway, P O Box 57057, Irvine, California 92619-7057

30. **Remarks:** None

31. **References:** None

32. **Name of Project:** Marblehead Coastal

33. **Type of Investigation:** Reconnaissance

34. **Site Accession Number:** N/A **Curated at:** N/A

35. **Photos:** None **Taken by:** N/A

RMW Paleo Associates

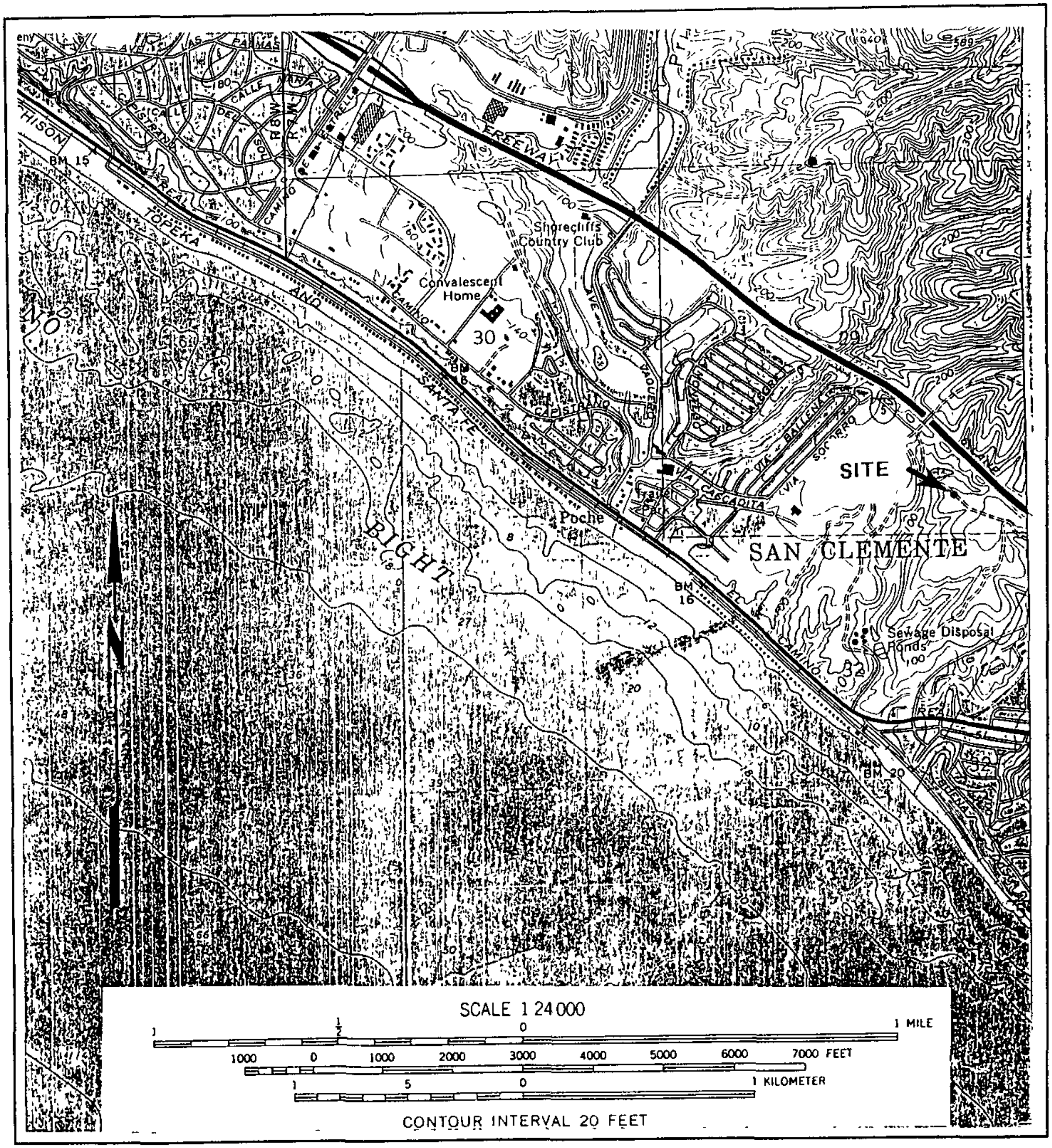
ARCHAEOLOGICAL SITE LOCATION MAP

Page 3 of 3

Permanent Trinomial: ______ **Supplement [ ]**

Other Designations: ______

Common Name: MH-1H



RMW Paleo Associates

Permanent Trinomial:__________ **Supplement [ ]**

ARCHAEOLOGICAL SITE RECORD

Other Designations:__________

Common Name: MH-I

1. **County:** Orange
2. **USGS Quad:** Dana Point **7.5'** (1968) **15'** ( ) **Year (Photorevised)** 1975
3. **UTM Coordinates: Zone** 11, 440765 **m Easting** 3699750 **m Northing**
4. **Township** 8S **Range** 7W, SW **1/4 of** SW **1/4 of** NE **1/4 of** NW **1/4 of Sec.** 32 **Base Mer.** San Bernardino
5. **Map Coordinates:** 289 mmS 437 mmE **(from NW map corner)** **6. Elevation** 100 feet AMSL
7. **Location:** On a steep sided ridgetop overlooking the Pacific Ocean, 800 meters southeast of the intersection of El Camino Real and Camino Capistrano Then directly up the ridge to the top of the mesa
8. **Artifact Description** Basalt denticular flake, five to six notches created on one side Artifact is approximately two inches by one inch in size
9. **Collected:** No
10. **Curated at:** N/A
11. **Nearest Water (Type, distance and direction):** Stream, 700 meters northwest
12. **Vegetation Community:** Coastal Sage Scrub
13. **Landform:** Ridgetop
14. **Geology:** Tertiary Capistrano Formation
15. **Exposure:** Open
16. **Slope:** Level
17. **Landowner(s) and Address:** Robert Bein, William Frost and Associates 14725 Alton Parkway, P O Box 57057, Irvine, California 92619-7057
18. **Remarks:** Artifact was observed in an area that had previously been graded Probably not in situ
19. **References:** None
20. **Name of Project:** Marblehead Coastal
21. **Photos:** None **Taken by:** N/A
22. **Date Recorded:** 19 March 1996
23. **Recorded By:** Patrick O Maxon
24. **Affiliation and address:** RMW Paleo Associates 23392 Madero Suite L, Mission Viejo, California 92691

RMW Paleo Associates

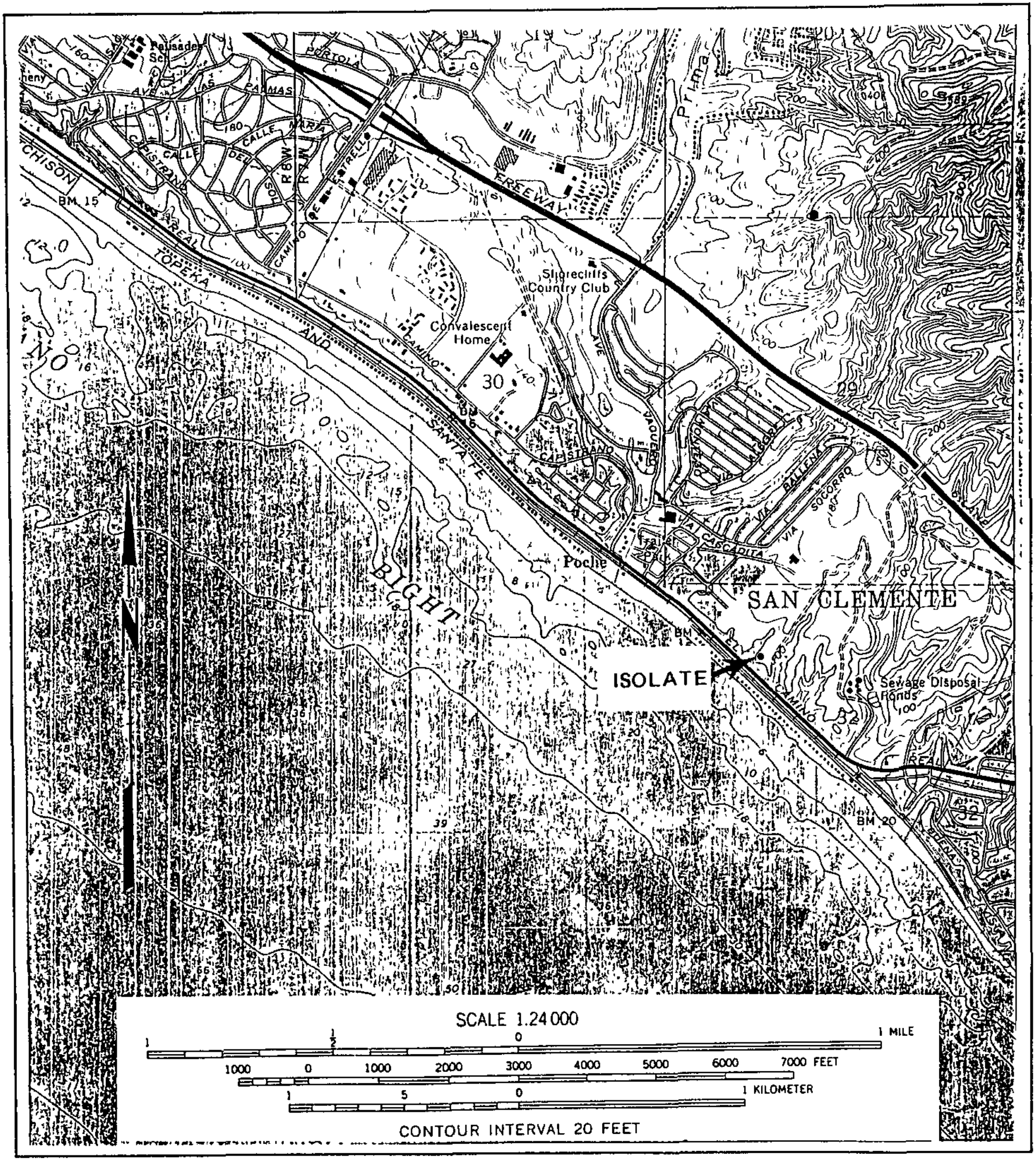
Permanent Trinomial: ______________ **Supplement [ ]**

ARCHAEOLOGICAL SITE LOCATION MAP

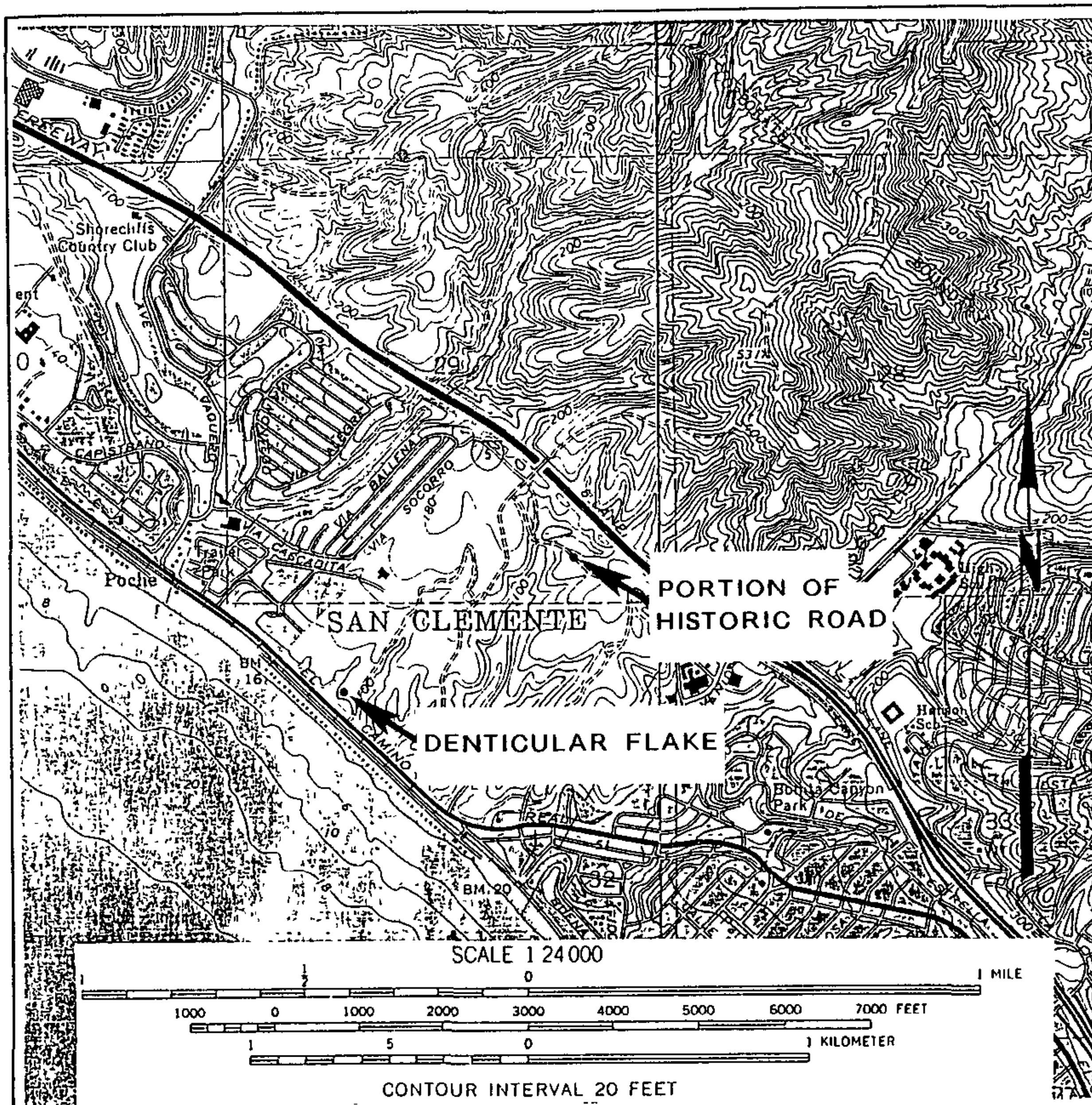
Other Designations: ______________

Page 2 **of** 2

Common Name: MH-I



APPENDIX C
Map #3



RMW
Paleo Associates

Paleontology
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History

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MAP 3. INDEX MAP

Portions of USGS 7 5 Minute, Dana Point and San Clemente 1968 Quadrangles, Photorevised 1975

Scale = 1 24,000

Paleontological Resources Evaluation
Marblehead Coastal
San Clemente, Orange County, California

PREPARED FOR

Environmental Perspectives
P.O. Box 868
Santa Ana, California 92701

PREPARED BY

RMW Paleo Associates, Inc.
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Mission Viejo, CA 92691

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Project Number
95-1109

Author
Carol J. Stadum
Orange County Certified Paleontologist

March 14, 1996

Table of Contents

Introduction

The following report is an assessment of the paleontological resources in the Marblehead Coastal project area The 250.6 acre project is located in the City of San Clemente, Orange County, California. It is bordered by the San Diego Freeway, El Camino Real, Avenida Pico, and the Colony Cove and Shorecliffs Communities (Figure 1).

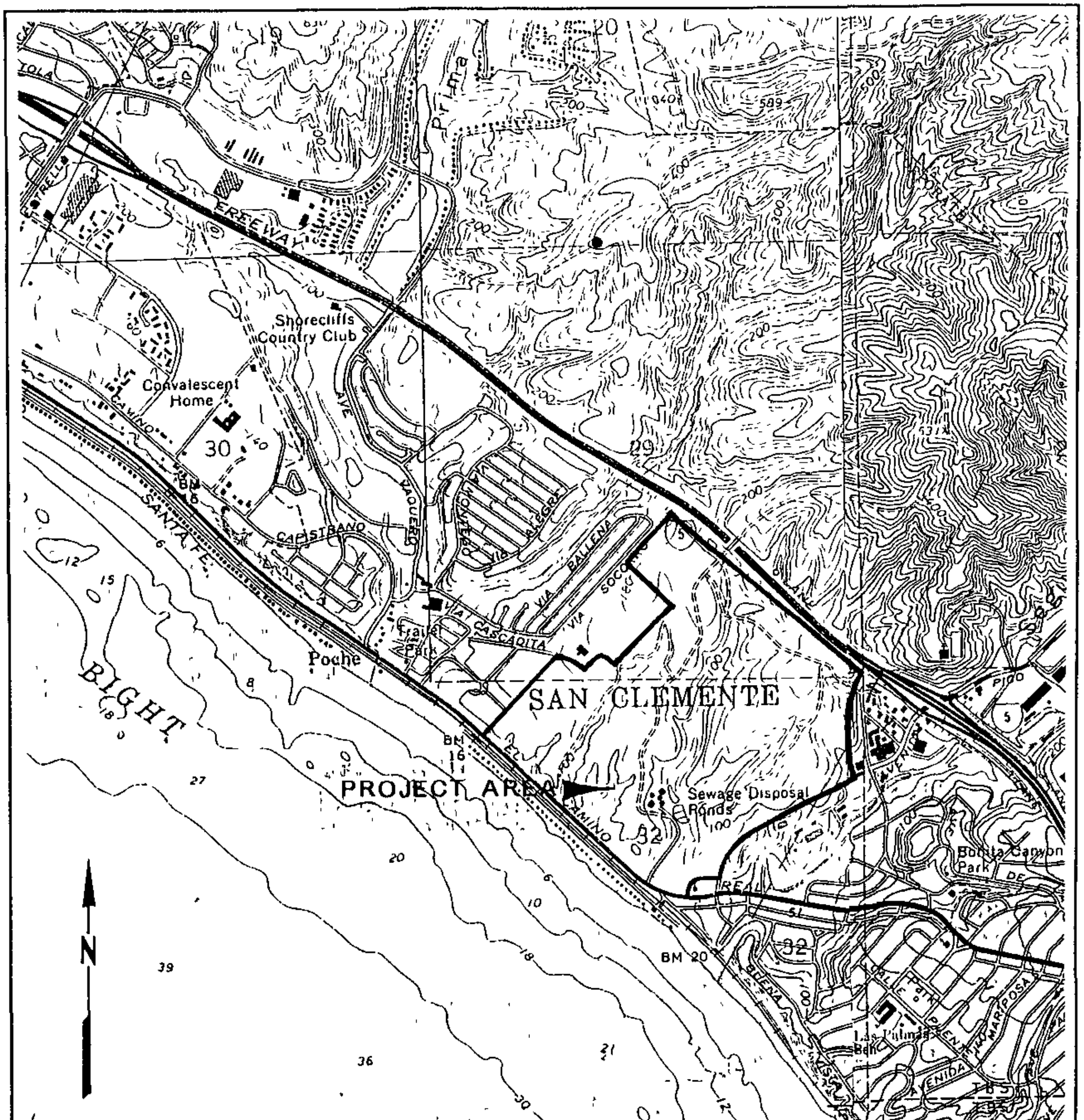
Paleontologists Carol J. Stadum and Anthony Mann from RMW Paleo Associates surveyed the Marblehead project area February 29 and March 1, 1996. Isolated fossils were scattered on terrace soils and appear to have been reworked from underlying geologic formations that include Pleistocene (10,000 - 150,000 years old) marine terrace and non-marine terrace deposits and the marine Capistrano Formation (9-4 million years old). No fossils were observed in the outcrops of non-marine terrace sediments exposed on bluff faces.

A locality search of the Natural History Museum of Los Angeles County collections includes the paleontological records of U C.L.A , U.C. Berkeley Museum of Paleontology, and California Institute of Technology. The recorded sites and sites from the field reconnaissance are noted on Figure 3.

Paleontology and Stratigraphy

Surficial Sediments

Alluvium, colluvium, and artificial fill cap the wave-cut terraces and fill the canyons in the project area. These recent sediments are described as coarse sand, silts, and soils that are too young geologically to contain fossils, although reworked bones and shells from older formations may be observed during development



Paleontology
Archaeology
History

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FIGURE 1· Location Map

Portion of USGS 7 5 Minute Series
Topography Maps
San Clemente Quadrangle 1968
Photorevised 1975, T8S, R7W, E 1/2 Sec 32
and Dana Point Quadrangle 1968
Photorevised 1975, T8S, R7W, N 1/2 Sec 32

Scale 1 24,000

Non-Marine Terrace Deposits

Cobbles and sandy sediments representing stream and outwash alluvium blanket the two terraces of the project area. These Pleistocene deposits have the potential to contain the remains of Ice Age (1.8 million to 10,000 years old) terrestrial animals Mastodon remains were collected from terrace sediments in the Capistrano Beach area in the 1930s and a poorly preserved mammoth tusk fragment was observed in similar deposits across from San Clemente High School in 1980 (Sundberg and Roeder 1983). North of the project area at Forster Ranch, a significant assemblage of Rancholabrean-age animals was collected in 1994. This included fossils of bison, horses, deer, mammoths, and numerous microvertebrates, e.g. rodents, lizards (Stadum 1995).

Marine Terrace Deposits

Marine terrace deposits unconformably overlie the Capistrano Formation in the project area The marine terrace sands and gravels represent a relatively thin veneer of marine sediments deposited on a wave-cut terrace The origin of these terraces appears to be related to tectonic uplift which has occurred from the late Miocene (7 million years ago) to the present. Stevens (1995) states that marine terrace deposits in southern California are rich in marine fossils During the work for the remediation of the La Ventana landslide and slope reconstruction along Pacific Coast Highway, Stevens found that the terrace sediments were less than 2.5 meters thick and were composed of unconsolidated, cross-bedded beach sands. Over 1000 individual specimens representing 30 genera of mollusks, fish, and marine mammals were collected from these sediments.

Capistrano Formation

The Capistrano Formation, that extends across southern Orange County, represents the primary geologic unit within the project area, and is well-known in the San Clemente area for its fossil assemblages of terrestrial leaves, whales, fish, birds, dolphins, and seals.

A marine regression, marking the end of the Miocene Epoch and the beginning of the Pliocene Epoch in the southeast Los Angeles Basin, is evidenced in this formation that appears to have been deposited 9 - 4 million years ago in a rapidly filling embayment These deposits include turbidites, sandstone, siltstone, diatomite, and unconsolidated sands (Edgington 1971). Light brown silty sandstone containing large concretions, seams of gypsum, and odoriferous dark silty shale is indicative of a fluctuating anaerobic basin and submarine fan environment. Marine vertebrates, mud pectens, and terrestrial leaves are found in concretions and as isolated specimens in the siltstone.

This formation has produced a diverse assemblage of marine and occasional non-marine vertebrate fossils. Invertebrate fossils are rare in this rock unit and occur primarily near the top of the formation Immediately east of the study area, an extensive locality has produced important fossils of eared seals, baleen whales (including a complete skeleton), walrus, dolphins, and aquatic birds. These include a new species of fossil pseudo-walrus and an aquatic bird (Sundberg and Roeder 1983)

Fossil terrestrial leaves are common within the Capistrano Formation. Avocado (*Persea coalingensis*), sycamore (*Plantanus* sp.), live oak (*Quercus* sp.) willow (*Salix* sp.), manzanita (*Arctostapylos* sp), alder (*Alnus* sp), and bay (*Umbellularia* sp.) leaves, seed pods, wood, and a fossil pine cone were collected from nearby projects immediately east of the study area (Sundberg and Roeder 1983; Stadum 1995). Carbon films of delicate algae and lignite also occur within this formation and have been collected from the current Plaza Pacific Project on Avenida Pico and from the siltstones at the terminus of Las Ramblas in San Juan Capistrano.

Reconnaissance Results

The exposed surface of the project area has been disturbed historically, with only a limited area of the canyon walls undisturbed These outcrops appear to be non-marine terrace deposits that include schist, quartzite and phosphate cobbles Phosphate cobbles commonly occur near the base of the Capistrano Formation Beds of these smooth brown clasts have been the source of numerous marine mammal bones and shark teeth in Lake Forest, Mission Viejo, and Aliso Viejo. A mineralized marine mammal bone (CS963) was found within a phosphate cobble from these terrace sediments Other marine vertebrate fossils found during the site reconnaissance are weathered and worn whale bone fragments. The best preserved specimen is a large whale vertebra observed in the project area near the school (PM961).

Two isolated shark teeth were found in the project area These represent a broken *Carcharocles carcharius* (CS965) and an *Isurus* sp (TRM041) Both appear to be from the late Miocene-early Pliocene (9 - 4 million years old) Capistrano Formation More than 190 shark teeth were collected from the Marblehead project across the freeway in 1980 (Sundberg and Roeder 1983).

Marine shells and shell fragments were observed as scattered float in plowed soil near the freeway boundary (CS965). These fossils appear to have been reworked from an underlying Pleistocene marine terrace deposit. A marine terrace has been mapped (Sundberg and Roeder 1983) across Interstate 5 from the study area and may be the shell source (Figure 2). Shells were also collected along the freeway north of this project site during the development of the Oceanview Plaza Property (Govean 1989).

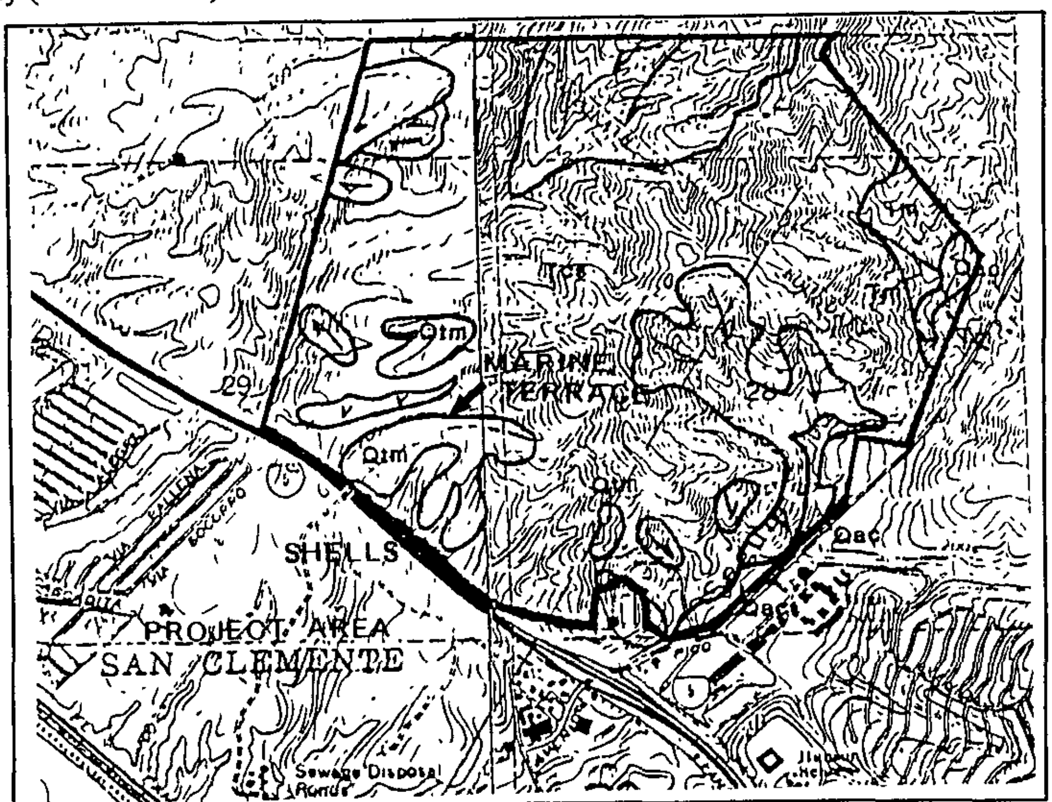

Figure 2 Marine terrace deposits (Qtm) adjacent to scattered shell site in the project area (Sundberg and Roeder 1983).

Gastropod fossils observed during the field reconnaissance include *Olivella biplicata* Sowerby, *Neverita reclusianus* (Deshayes), *Turritella cooperi* Carpenter, and *Nassarius fossatus* (Gould) Pelecypods include *Saxidomus nuttalli* Conrad, *Tellina* sp , *Protothaca* sp , and *Chione* sp. A 10.5 centimeter columella from a large gastropod was also observed It appears to be from a strombus, which would suggest that the molluscan assemblage represents a warm-water, interglacial fauna The assemblage is very similar to the Palos Verdes Sand fauna that occurs on Newport Beach, Huntington Beach, and Palos Verdes terraces and has have been dated at 150,000 to 70,000 years (Wehmiller et al 1977)

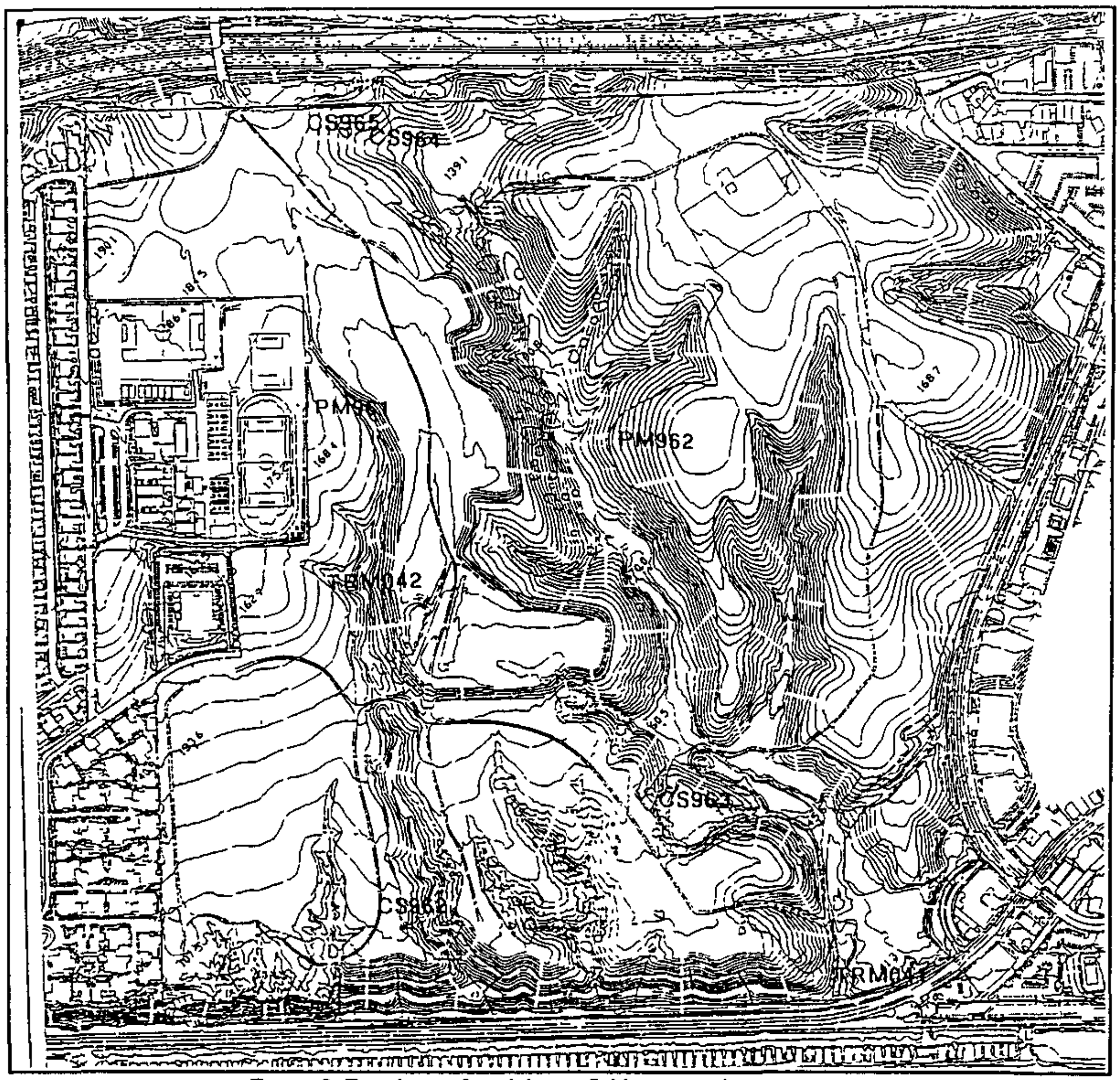

Figure 3 Fossil sites found during field reconnaissance

(Fossil Sites are confidential and not for public information)

A fragment of a Pleistocene horse tooth (CS962) was found in a drainage channel along a dirt road on the lower terrace above Colony Cove and appears to have been reworked from the non-marine terrace deposits (Figure 3)

Associated with the scattered shells and shell fragments are light brown clasts of Capistrano Formation siltstone that have been bored by pholad clams (*Pholadidae penita* Conrad) One clast was found to still contain pholad shells in the bored holes (CS965) Pholad-bored siltstone is common at the contact of the Capistrano Formation with overlying marine terrace sediments.

The hinge portion of a *Hinnites giganteus* Gray (TRM042) was found as isolated float west of the scattered shells and appears not to be part of that shell assemblage. The *H. giganteus* specimen is fresh looking with its purple hinge retaining color and luster The shell has small serpulid tubes and barnacles attached and has been pitted by burrowing sponges or bryozoans. This may represent a more recent terrace deposit which underlies the surficial sediments. Nearby, an isolated clast of gray coarse sandstone containing fragments of mollusks and small cobbles occurred as float A large drill snail (*Mitra idae*) was cemented in the sand and shell hash with *Donax gouldii* Dall, *Yoldia* sp., *Calliostoma* sp. and *Nassarius* sp. Stevens (1995) reports that *Mitra idae*, *Olivella biplicata*, *Dentalium* sp , *Fissurella volcano*, and *Calliostoma sp.* were common marine invertebrates in the terrace sediments from the La Ventana landslide project.

Paleontological Sensitivities and Impacts

To evaluate the paleontological potential of rock units, a five tier classification system of sensitivity for paleontological resources has been developed. The data used to define these sensitivities are based on a review of pertinent paleontological information and literature, both within the study site and the surrounding areas, discussion with paleontology professionals, and field experience in southern California Each sensitivity rating reflects the potential for the discovery of fossil resources during site development The five sensitivity ratings are:

- NO sensitivity - This rating applies to artificial fill and to igneous rocks whose molten origins preclude the preservation of fossils

- LOW sensitivity - Rocks that are too young geologically to contain significant fossils, are altered, or have a poor record of fossil recovery This includes the surficial sediments of the project area that have been disturbed by development, farming, and other historic activities. A potential exists of finding Pleistocene terrestrial vertebrate remains which have been reworked from underlying non-marine terrace sediments.

- MODERATE sensitivity - Units that fall within this rating contain sedimentary rocks with histories of producing only limited numbers of fossils In the project area, the Capistrano Formation and the marine and non-marine terrace deposits have the potential to yield fossil remains Terrace sediments should be routinely screened for microvertebrates and marine fossils

- HIGH sensitivity - Units that have well established histories of containing scientifically significant fossils and/or fossils located on the study site

- INDETERMINATE sensitivity - This classification applies to rock units where there is no, or a limited, history of fossil discoveries because of a lack of systematic exploration of rock exposures Grading activities may bring the number of fossil discoveries from a handful of specimens up into the hundreds of specimens

Although no outcrops contained fossils, marine and terrestrial fossils were found as reworked specimens in topsoil scattered throughout the project area. Encountering significant fossil deposits during cutting of native material is to be expected.

Mitigation Measures

The following mitigation measures are necessary to reduce adverse impacts to paleontological resources for the Marblehead Coastal Project These strategies have been used successfully throughout southern California to help protect fossil resources for future scientific study, as well as public education and enjoyment, while permitting a timely completion of the development. Mitigation measures shall include, but not be necessarily limited to, the following:

- A qualified paleontologist under the direction of an Orange County certified paleontologist shall be retained to monitor excavations in all terrace deposits and the Capistrano Formation. It is recommended that monitoring be half-time, however, if fossils are being encountered, time should be increased to full time.

- The paleontologist shall have the authority to temporarily divert or redirect grading efforts to allow evaluation and any necessary salvage of exposed fossils

- Marine and Non-marine Terrace sediments and sand lenses in the Capistrano Formation should be screened routinely for microvertebrate and invertebrate remains

- All fossils collected shall be catalogued, analyzed, and prepared to the point of identification These remains should be placed in the Orange County designated repository and/or a permanent, systematics institution with a research and/or educational interest in fossils

- The paleontologist retained for this mitigation work must be able to meet the criteria of, and be experienced in scientific methods acceptable to, the section of Vertebrate Paleontology of the Natural History Museum of Los Angeles County.

- A final report summarizing findings, including an itemized inventory and contextual stratigraphic data, shall accompany the fossils to the designated repository with additional copies sent to the Lead Agency

Summary

The proximity of recorded fossil sites and the observed fossils from the project area Pleistocene terrace and Capistrano Formation sediments makes Marblehead Coastal a significant and highly sensitive area for paleontological study. Paleontological monitoring will be necessary during all cutting in native material The marine and terrestrial fossils, salvaged from the project area, will be added to the scientific data base for southern Orange County and will help confirm the ages and depositional environments for the geologic facies exposed during excavation.

If you have any questions or if we can be of further assistance, please contact us

Respectfully,

Carol J. Stadum

Carol J Stadum
Orange County Certified Paleontologist

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References

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Govean, F.M., 1988, *Assessment of the paleontological resources within the Oceanview Plaza Project, San Clemente, Orange County, California.* (unpublished report) RMW Paleo Associates, Inc., Mission Viejo, CA.

Govean, F M. 1989, *Paleontological monitoring report on the Oceanview Plaza Property, San Clemente, Orange County, California.* (unpublished report) RMW Paleo Associates, Inc., Mission Viejo, CA.

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Appendix

Carol J. Stadum
RMW Paleo Associates, Inc
Certified Paleontologist

Professional Experience

1995 - Present	Staff Paleontologist, RMW Paleo Associates, Inc ,Mission Viejo
1976 - Present	Certified Paleontologist
1994 - 1995	Consultant, Computer Visualizations, Incorporated and Manoa Interactive Productions, Honolulu
1992 - 1994	Director of Education, Mars Observer Mission, The Planetary Society, Pasadena
1990 - 1992	Head Science Writer, CD ROM Design, Jostens Learning Corp., San Diego
1973 - 1990	Geology Instructor, HBHS, Chapman College, Whittier College, & CSUF
1971 - 1972	Research Assistant, Micropaleontology, Columbia University, Lamont Doherty Ocean Inst.
1967 - 1970	Assistant Geologist, Department of Oceanography, University of Washington, Seattle
1964 - 1965	Preparator of Geology - Mineralogy, Los Angeles County Museum of Natural History
1961 - 1964	Laboratory Technician, Micropaleontology, Scripps Institution of Oceanography

Publications

Over thirty professional publications including the following.

1969	Tripylean Radiolaria in Norwegian Deep-sea sediments *Micropaleontology*
1970	Radiolaria from Bering Sea Surface Sediments. *II Planktonic Conference, Rome*
1971	Silicoflagellate Biostratigraphic Zonation of Deep-sea Sediments. *AAPG*
1972	A Teacher's Guide to Four Local Geologic Sites *NAGT Western Section*
1972	Orange County Geology, Teacher's Guide *Orange County Department of Education*
1973	A Miocene Silicoflagellate Ooze from the East Falkland Plateau *Micropaleontology*
1973	A Student Guide to Orange County Fossils *Chapman College Press*
1976	Discovery of Pliocene Marine Strata on San Clemente Island . *GSA*
1978	Neogene Depositional Sequence, Northeast San Clemente Island, California *Contr.LACM*
1979	A Middle Miocene Vermetid and Bryozoan Biolith, Or. Co. California. *GSA*
1979	Depositional Environment and Paleontology of the Niguel Formation, Or. Co , California *GSA*
1980	Miocene Bryozoan Deposits in Or Co , Calif *International Bryozoan Symposium, London*
1984	Natural Science of Orange County *Natural History Foundation of Orange County,* Vol 1
1991	Classroom Technology - Empowering Earth Science Teachers *GSA Today.*
1994	Topography of Mars *The Planetary Society*
1994	Martian Volcanoes and Impact Craters *National Science Teachers Association*

Degrees

1982	M A., Geological Education California State University at Long Beach, California
1973	M A , *Administration* Chapman University, Orange, California
1960	B.A., Geology Whittier College, Whittier, California

Appointments and Honors

Finalist, Presidential Award for Teaching Excellence in Science & Mathematics, 1989
Member, California State Mining and Geology Board, 1981- 1983
Orange County Teacher of the Year, 1982
Commissioner, Orange County Historical Commission, 1976- 1981
Advisor, Crustal Evolution Education Project, NAGT-NSF, 1976
Counselor and 2nd Vice President, National Association of Geology Teachers, 1975
Founder and Vice President, Orange County Natural History Foundation, 1974
Outstanding Earth Science Teacher, Far Western USA, NAGT, 1976
Orange County Department of Education, National Teacher of the Year Award candidate, 1976
Award of Merit for Outstanding Achievement, Costa Mesa Historical Society, 1976

APPENDIX 15.8

Biological Resources Assessment

BIOLOGICAL RESOURCES ASSESSMENT OF THE 250-ACRE MARBLEHEAD COASTAL SITE LOCATED IN THE CITY OF SAN CLEMENTE, COUNTY OF ORANGE, CALIFORNIA

Prepared For: DAVID EVANS & ASSOCIATES
23382 Mill Creek Drive, Suite 225
Laguna Hills, CA 92563

Contact: Mr. Keeton Kreitzer

Prepared By: NATURAL RESOURCE CONSULTANTS
30 Crystal Cove
Laguna Beach, California 92651

Contact: Mr. David Levine

Date: September 26, 1996
Updated December 4, 1997

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EXECUTIVE SUMMARY

Natural Resource Consultants conducted a general biological evaluation and focused surveys for sensitive plant and wildlife species on the Marblehead Coastal project site during February and March of 1996, and November of 1997. The surveys included a focused search for the coastal California gnatcatcher and a trapping study for the Pacific pocket mouse during the appropriate survey windows for these two species. The presence or absence of a variety of State and federally listed threatened or endangered species potentially occurring on the 250-acre Marblehead site was assessed during NRC studies.

The Marblehead Coastal project supports a variety of fragmented habitat that are largely isolated from surrounding regional open space areas. Notable on site habitats include alkali marsh (2.75 acres), freshwater marsh (0.35 acres), mulefat scrub (3.35 acres), small patches of needlegrass grasslands (0.3 acres), and fragments of sage scrub communities (totalling 18.4 acres). The vast majority of the site has been disturbed by agricultural uses (167.3 acres) and the overall wildlife diversity on the site is low relative to less affected coastal sage scrub and wetland habitats. The apparent isolation and low diversity of the site is offset by the presence of at least one pair of coastal California gnatcatchers, a regionally significant population of Blochman's dudleya, and a diverse array of native and non-native habitats.

Implementation of the proposed development on the site would result in the conversion of approximately 246 acres (98 percent), of the existing undeveloped lands, including most all of the sensitive habitats listed above, to urban uses. Project development would result in a direct "take" of the two coastal California gnatcatcher pairs, and would directly affect at least 4.55 acres of wetland habitats under the jurisdiction of the U.S. Army Corps of Engineers and California Department of Fish and Game.

Mitigation for impacts to the existing sage scrub resources should be designed to be consistent with Natural Communities Conservation Plan for the Southern Subregion of Orange County. Mitigation alternatives should include on- or off site revegetation, payment of a per-acre fee, or preservation of off site sage scrub resources. Based on the isolation of the site and intensity of proposed development, off-site alternatives are biologically preferred to on-site mitigation strategies. Mitigation for indirect effects of the project and impact to wetlands should also emphasize off-site alternatives.

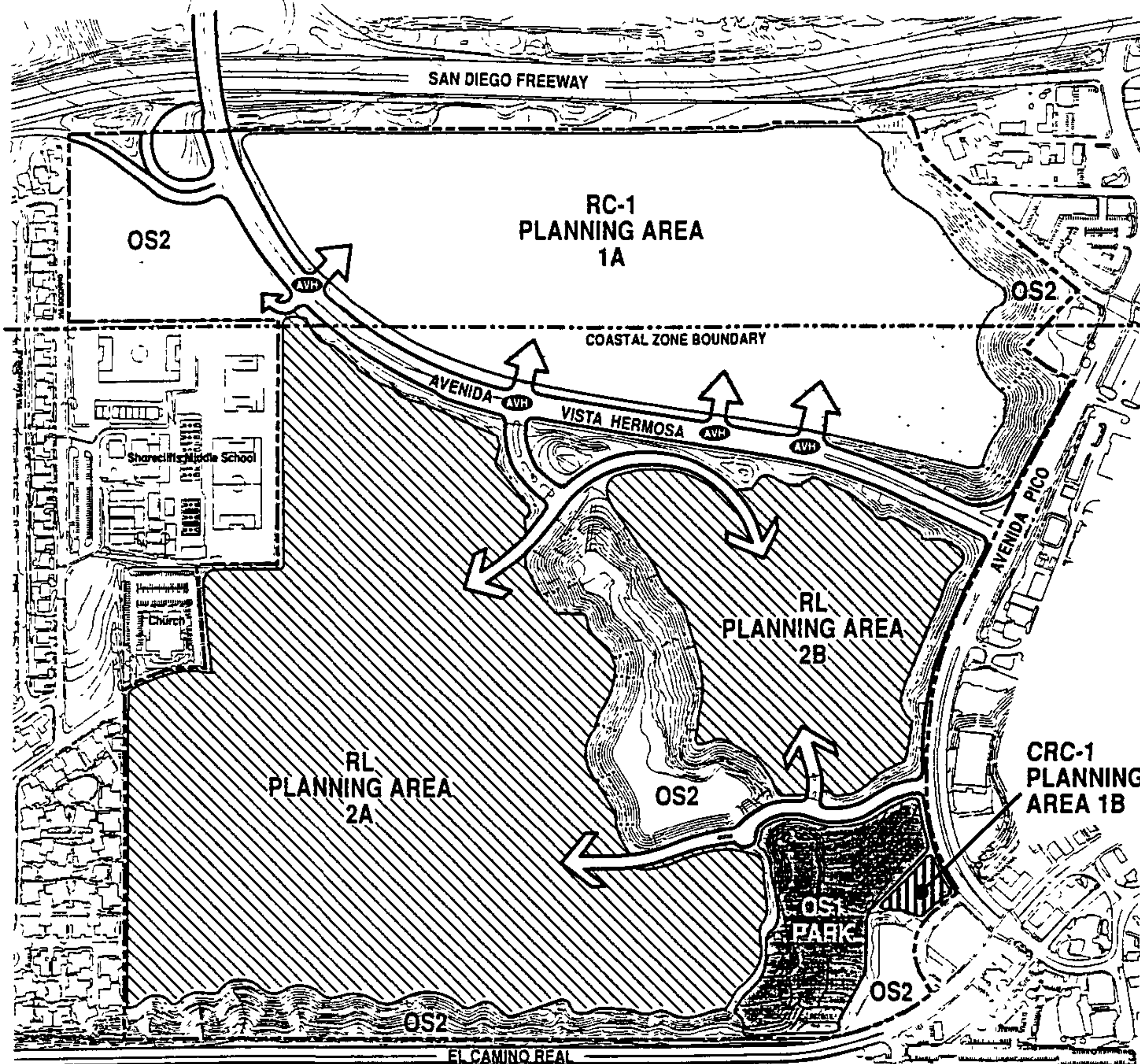
1.0 INTRODUCTION

Natural Resource Consultants (NRC) was retained by David Evans & Associates and the City of San Clemente to prepare a biological resources assessment for the approximately 250-acre Marblehead Coastal site located in the City of San Clemente, County of Orange, California. This report provides the methods, results, and conclusions of surveys for general biological resources, focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*), and a trapping study for the Pacific pocket mouse (*Perognathus longimembris*). Biological surveys for this report were conducted in February and March of 1996, and November of 1997. Information pertaining to Blochman's dudleya (*Dudleya blochmanae*) follows from surveys conducted over the past decade by various investigators. This report includes a vegetation community and sensitive species map showing the extent and location of biological resources on the site including all subcommunities of coastal sage scrub vegetation.

The applicant, MT No. 1, LLC, proposes to develop portions of the Marblehead Coastal site for residential and commercial uses. The anticipated impacts of this action on site-specific and regional biological resources are evaluated and general mitigation measures designed to offset adverse project impacts are described. Mitigations for anticipated impacts to coastal sage scrub resources and other sensitive biological resources are designed to be consistent with the Orange County Natural Communities Conservation Plan and the requirements of the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS) and City of San Clemente.

2.0 PROJECT LOCATION

The Marblehead Coastal site is located within the City of San Clemente, Orange County, California. The site lies immediately northeast of El Camino Real (formerly Pacific Coast Highway), southwest of San Diego Freeway (I-5), south of Via Socorro, and north of Avenida Pico (Exhibits 1, 2, and 3). The site is shown on U.S.G.S. Dana Point and San Clemente quadrangles. As shown in Exhibits 2 the site is largely disturbed by agricultural uses. The flat portions o the site have not supported native vegetation for at least twenty years. A sewer facility was located in the southwest corner of the site until approximately 1984. Undisturbed native habitats occur along the slopes and bottoms of on site drainages. Surrounding land uses include residential and commercial uses.



LEGEND

	ACRES
RESIDENTIAL	
4 5 UNITS/GROSS ACRE (RL- 522 MAX D.U.)	116.0
COMMERCIAL	
REGIONAL SERVING (RC-1)	61.1
COASTAL AND RECREATION SERVING (CRC-1)	1.0
OPEN SPACE	
PUBLIC OPEN SPACE (PARK) (OS1)	9.4
PRIVATELY OWNED OPEN SPACE (OS2)	49.2
CIRCULATION	
AVH AVENIDA VISTA HERMOSA / ENTRIES	13.9
	250.6

0' 600' 1 Acre

Prepared by Robert Bein William Frost & Associates for the

City of San Clemente

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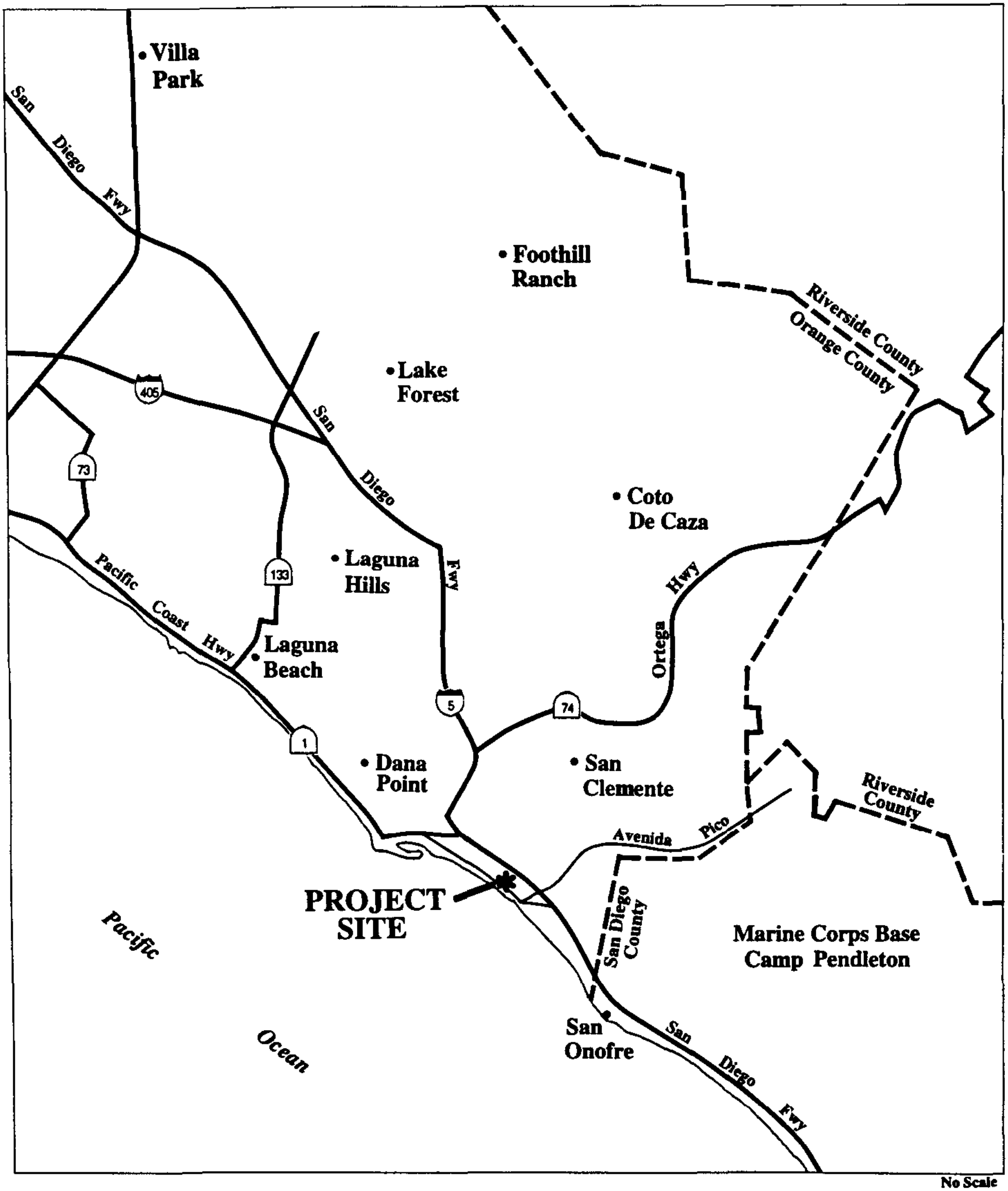
MASTER LAND USE PLAN

MARBLEHEAD COASTAL
SPECIFIC PLAN/GPA

EXHIBIT 2-1



Regional Location Map

Marblehead Coastal

Sept 1996

Natural Resource Consultants

EXHIBIT 2

Scale: 1" = 600'

Project Boundaries

Aerial Map

Marblehead Coastal

Sept 1996

NORTH

Natural Resource Consultants

3.0 SURVEY METHODS

NRC surveyed all portions of the Marblehead Coastal site during February and March of 1996, and November of 1997. Surveys included complete walkovers of the property to delineate areas of native vegetation and determine the presence or absence of sensitive plant and wildlife species. Biological information collected during site surveys was recorded on a 100-scale (1' = 100") topographic map and aerial photograph of the site. Table I lists the dates, times, weather conditions, and biologist(s) who participated in site surveys.

TABLE I
BIOLOGICAL SURVEY INFORMATION
MARBLEHEAD COASTAL

DATE	TIME	WEATHER	COMMENTS
February 9, 1996	9:30 a.m to 3:00 p.m	Overcast with light winds (5-8mph) later in day; temperatures between 60 and 75 degrees F.	Vegetation and gnatcatcher survey; Dana Kamada, Dave Levine
February 13, 1996	8:00 a.m. to 1:30 p.m.	Clear with light winds; temperatures between 55 and 65 degrees F.	Continue vegetation mapping; Dana Kamada.
February 14, 1996	8:30a.m. to 12:00 p.m.	Fog with no wind; temperatures between 55 and 65 degrees F.	Continue vegetation mapping; Dana Kamada
February 17, 1996	3:00 p.m to 5:00 p.m.	Light winds with temperatures between 55 and 60 degree F.	Finalize vegetation map; Dana Kamada.
February 29, 1996	8:15 a.m. to 3:00 p.m.	Clear with no wind temperatures between 60 and 70 degrees F.	General wildlife and gnatcatcher surveys; Dana Kamada.
March 7, 1996	8:00 a.m. to 12:00	Clear with light winds, 60 to 70 degrees F.	Gnatcatcher survey; Dave Levine.
May 4 through 8, 1996	Appendix C	Appendix C	Pacific pocket mouse trapping surveys; Phil Behrends Ph.D.

* November Surveys: See Appendix D attached.

3.1 HABITATS AND VEGETATION SURVEYS

Plant communities were mapped with the aid of a 100-scale aerial photograph and topographic map of the site. Prior to initiating field studies, the approximate boundary of each habitat polygon was delineated on the aerial photograph. During field surveys the extent and location of each habitat polygon was ground-truthed and the floral components of each area were defined. Observations of wildlife combined with documented habitat preferences of regional wildlife species were used to estimate wildlife usage of the site.

Habitat designations used in this report follow those defined by the County of Orange Habitat Classification System (Gray and Bramlet {County of Orange} May 1992). These habitat designations were defined by the County of Orange for regional mapping purposes and are consistent with habitats described by Holland (1986). Floral taxonomy used in this report follows the current Jepson Manual (Hickman 1993). Common plant names, where not available from Munz (1974), are taken from Abrams (1923) and Munzs (1983). Vertebrates identified in the field by sight, calls, songs (birds), tracks, scat (fecal droppings), burrows, or other signs are cited according to the nomenclature of Collins (1990) for amphibians and reptiles; American Ornithological Union (1983) for birds; and Jones et al. (1992) for mammals.

3.2 SENSITIVE BIOLOGICAL RESOURCES SURVEYS

Mr. David Levine and Mr. Dana Kamada, ecologists trained and experienced in recognizing appropriate habitat for sensitive plant, reptile, and bird species surveyed the entire Marblehead Coastal site to locate potential habitat for sensitive species. All appropriate habitat was thoroughly examined to determine the potential for sensitive resources.

Plant and reptile surveys included a thorough walkover of the entire site with emphasis on areas of sparse vegetation and rocky soils. Surveys for plants were not conducted at periods when sensitive annuals were likely to be in flower; however, thorough searches of all native vegetation communities have been completed in association with surveys for Blochman's dudleya over the past ten years (RECON 1996, LSA 1992, RBF 1990,Marsh 1985) with no records of sensitive plant species except Blochman's dudleya.

NRC conducted sensitive bird surveys within all habitats on the site. NRC is permitted by the USFWS to conduct surveys for the coastal California gnatcatcher (Permit # PRT-785138) allowing the limited replay of taped gnatcatcher vocalizations and recovery of this species.

To determine the presence or absence of coastal California gnatcatchers, all existing coastal sage scrub located within the project boundaries was mapped, and survey routes that provided for direct visual and auditory examination of the coastal sage scrub habitats were selected. All areas of coastal sage scrub were surveyed in February and March of 1996, on three separate occasions, seven days apart, under rain-free conditions, with wind velocities under 15 mph. Surveys included visual examination of all areas of suitable gnatcatcher habitat and replay of taped gnatcatcher vocalizations at appropriate intervals throughout the site. In areas where brown-headed cowbirds or scrub jays were observed use of tapes was curtailed.

In November of 1997 NRC conducted six one-day surveys of the Marblehead Coastal site and recorded the use-areas and behaviors of two coastal California gnatcatcher pairs. No other gnatcatcher were located on site. Based on the observations of these two pairs during November, NRC estimated the "occupied habitat" for these pairs. The estimated "occupied habitat" was based on the recorded use-area and behaviors of these birds, the distribution of vegetation communities in the vicinity of gnatcatcher activity, the topography of the site, and existing data pertaining to gnatcatcher use on this site.

4.0 HABITAT TYPES

The Marblehead Coastal site includes a variety of habitats as defined by dominant plant species. The habitats have been divided into seven major vegetation communities and fifteen subcommunities according to the habitat categories defined by the County of Orange. The major components of each subcommunity are described in the paragraphs below. In addition, Exhibit 4 shows the extent and location of these habitats on the site.

4.1 SCRUB COMMUNITIES

The site supports five habitat types classified as scrub communities by the County of Orange. These habitats include Coastal Bluff Scrub, Southern Cactus Scrub, Sagebrush Scrub, Coyote Bush Scrub, and Saltbush Scrub.

4.1.1 Coastal Bluff Scrub

Six patches of coastal bluff scrub (CBS) habitat totaling 3.7 acres are located on the site. Presence of California box thorn (*Lycium californica*) is used to define the habitat type for this site. All but one of the patches contained California box thorn. The patch without California box thorn is recovering from a recent burn and includes many lance leaf Dudleya (*Dudleya lanceolata*).

Patches known to support Blochman's Dudleya are located in the extreme west and south corners of the site. These two areas have experienced past disturbance and contain some ruderal elements such as annual grasses and fascicled tarweed (*Hemizonia fasciculata*). Other areas are dominated by varying degrees of California sagebrush (*Artemisa californica*), California bush sunflower (*Encelia califronica*), and Brewer's saltbush (*Atriplex lentiformis*).

4.1.2 Southern Cactus Scrub

Two areas totaling 0.9 acres are classified as southern cactus scrub (SCS) because of the moderate to dense stands of prickly pear (*Opuntia littoralis*). Both stands are located in the second drainage from the west side of the site. The areas contain significant amounts of annual grassland elements indicating recovery from past disturbance.

4.1.3 Sagebrush Scrub

The site includes two larger patches of sagebrush scrub (SS) and several small patches totaling 1.7 acres. The largest patch is located in the second drainage from the west side and the other patches are located along the large drainage that bisects the site. California sagebrush is the dominant species in this area and the habitat is characterized by dense stands of this shrub. Small patches of this habitat type are noted within other scrub habitat types . These small patches are within the use-area of a pair of California gnatcatchers.

4.1.4 Coyote Bush Scrub

The site includes 3.4 acres of coyote bush scrub (CS) scattered within or along the slopes of the first and second drainages from the west side and the large drainage and its tributaries. Coyote bush (*Baccharis pilularis consanguinea*) cover on these patches range from dense to open stands with mostly an annual grassland understory.

4.1.5 Saltbush Scrub

The 8.7 acres of saltbush scrub (SBS) is highly variable in density and composition. It can range from very dense stands of Brewer's saltbush (*Atriplex lentiformis lentiformis*) to isolated shrubs among an area of iceplant. This habitat type is primarily located in the low lying areas of the drainages and the graded slope above El Camino Real. The saltbush scrub near the rock pile contains a large proportion of coyote bush and is the main body of a gnatcatcher territory.

4.2 GRASSLANDS

Grasslands include two subcommunities; Annual Grasslands and Needlegrass Grasslands.

4.2.1 Annual Grasslands

Annual grassland covers 42.78 acres of the site and is located primarily on slopes of drainages that are not disced annually. In late winter and early spring these areas have a lush green cover of annual grasses such as wild oats (*Avena* sp.) and chess grass (*Brome* sp.). During late spring and early summer the areas are covered with dense stands of black mustard (*Brassica nigra*).

4.2.2 Needlegrass Grasslands

Near the mouth of the second drainage from the west side there are two patches of needlegrass grassland (NG) of 0.30 acres. Needlegrass (*Nasella* sp.) is the dominate cover with black mustard becoming seasonally dominant. Other weedy species also occur in these areas.

4.3 MARSH

Whereas an official wetland delineation was not conducted for this assessment. The marsh, riparian, and open water areas, totalling 6.45 acres, on the Marblehead Coastal site are likely to be "wetlands" as defined by the U.S. Army Corps of Engineers and may be under the jurisdiction of this agency according to Section 404 of the Clean Water Act. The wildlife habitat provided by these area may also be under the jurisdiction of the CDFG according to Section 1600 of the California Fish and Game Code. These two regulatory agencies should be contacted prior to any disturbance to these areas.

4.3.1 Alkali Marsh

Alkali marsh, which includes alkali marsh/disturbed (0.14 acres), describes the plant cover located at the bottom of the lower two-thirds of the second drainage from the west and lower two-thirds of the large drainage. This habitat covers 2.78 acres. Plant cover is nearly equally divide among alkali heath (*Frankenia salina*), coastal salt grass (*Distichilis spicata spicata*) and common woody pickleweed (*Salicornia virginica*) with slightly lesser amounts of coastal bulrush (*Scirpus robustus*) and slender cat-tail (*Typha domingensis*). Alkali heath and salt grass prefer slightly drier soils relative to pickleweed, bulrush, and the cat-tails which tolerate more saturated soils. Since these locations do not get a tidal inundation, these salt tolerant plants indicate alkali soil conditions in the drainages.

4.3.2 Freshwater Marsh

Freshwater marsh (FM) is located in the upper portion of the large drainage and covers only 0.35 acres. It describes an area dominated by broad-leaved cat-tail (*Typha latifolia*). A small portion of this community is mixed in with a small group of arroyo willows (*Salix lasiolepis*) located just below the dam breach.

4.3.3 Open Water

The open water areas on the site include four small man-made areas (two of which are desiltation basins) totaling approximately 0.40 acres of standing water that may be used by a variety of bird and other wildlife species.

4.4 RIPARIAN SCRUB

Mulefat scrub (MS) is a riparian habitat covering 3.35 acres of the site. A patch is located at the mouth of the small drainage at the west end of the site and larger areas are located at the upper and lower ends of the large drainage. The upper portion is more diverse and supports arroyo willow (*Salix lasiolepis*) within the mulefat (*Baccharis salicifolia*). The lower portion is a dense stand of mulefat and may be considered part of the gnatcatcher territory.

4.5 DEVELOPED

In the east corner of the site there is an area of ornamental landscaping (OL) which covers 2.0 acres of the site. This area includes a mix of ornamental trees and ground cover. About half of the area is covered by croceum iceplant (*Malephora crocea*).

4.6 DISTURBED/RUDERAL

Disturbed/Ruderal (D/R) areas include bare ground such as dirt roads, cleared areas, graded areas and slope stabilization. Disturbed areas may have some ruderal elements and therefore the ruderal and disturbed categories have been combined into one category on the map. Disturbed and ruderal areas include 168.3 acres.

4.7 OTHER

Allepo Pine woodland (PW) covers 11.0 acres of the site. Areas of this planted ornamental are located in the extreme eastern corner and along the slopes of the large drainage and its tributaries. It is composed of an open canopy of allepo pines (*Pinus halepensis*) with an annual grassland understory. This is not a category in the Orange county habitat classification system.

Naturalized exotics describes a bluff area in the extreme west corner of the site which covers _0.8 acres. It includes ornamentals and annual grasslands which have become invasive with respects to the coastal bluff habitat. These areas support disturbed grasslands. This habitat type contains a low diversity of native plant species and is of low value to wildlife.

5.0 WILDLIFE

5.1 Wildlife Within Scrub Habitats

The scrub communities on site provides ample foraging and cover habitat for a variety of vertebrate and invertebrate species. Few amphibian species are expected to occur in this habitat because of its aridity and none were recorded during the current survey. During periods of rainfall, the Pacific slender salamander (*Batrachoseps pacificus*), western toad (*Bufo boreas*), and possibly Pacific treefrog (*Hyla regilla*) may be active in drainages supporting coastal sage scrub.

Some reptiles are expected to occur on the site, including the side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), and gopher snake (*Pituophis melanoleucus*).

The sage scrub habitat supports a variety of bird species such as the California towhee (*Pipilo crissalis*), Bewick's wren (*Thrymmanes bewickii*), western kingbird (*Trannus verticalis*) rufous-sided towhee (*P. erythrophthalmus*), scrub jay (*Aphelocoma coerulescens*), bushtits (*Psaltriparus minimus*), coastal California gnatcatcher (*Polioptila californica*), and house finch (*Carpodacus mexicanus*). The relatively open shrub cover offers foraging by raptors, and the red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*) and American kestrel (*Falco sparverius*) were observed foraging within sage scrub and ruderal grassland habitats on site.

The coastal sage scrub habitat on site provides ample cover and foraging opportunities for numerous small mammals such as deer mouse (*Peromyscus maniculatus*), and house mouse (*Mus *musculus*). Larger mammals that may use this habitat for cover and forage include the California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), long-tailed weasel (*Mustela frenata*), striped and spotted skunks (*Mephitis mephitis* and *Spilogale gracilis*), and coyote (*Canis latrans*). Woodrats (*Neotoma* spp.) are expected to occur in the sage scrub habitat on the site, although no evidence of these species was observed during the current surveys.

5.2 Wildlife Expected Within Grassland Habitats

The heavy seed production of annual grassland plant communities attracts relatively large numbers of a variety of granivorous (seed-eating) birds and mammals. This includes the towhees, sparrows, quail, and finch already mentioned in the coastal sage scrub section. In addition, lesser and American goldfinches (*Carduelis psaltria* and *C. tristis*) are common in this habitat.

Raptors such as the turkey vulture, red-tailed hawk, black-shouldered kite (*Elanus caeruleus*), American kestrel, barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*) are expected to forage over the grassland habitat onsite because of the visibility afforded by the lack of shrub cover and the relatively high density of prey species available.

Like granivorous birds, rodents are attracted to grassland communities because of the abundant seed production. Due to the reduced shrub cover, the species composition and ratios will vary. Species such as the deer mouse, house mouse, California ground squirrel, cottontail skunks, and coyote are expected to occur here. Several species, such as the California vole (*Microtus californicus*) and Botta's pocket gopher (*Thomomys bottae*) that tend to prefer less shrubby habitats, are also expected to occur.

5.3 Wildlife Within Marsh and Riparian Habitats

The marsh and riparian habitats may support amphibian species; however, only one species, the Pacific tree frog (*Hyla regilla*) was recorded in the freshwater marsh on the site. The marsh and riparian areas provide a source of water during most months of the year and are expected to be used on occasion by the variety of birds and mammals listed above. Bird species observed in the marsh area include snowy egret (*Egretta thula*), American coot (*Fulica americana*), common yellow throat (*Geothlypis trichas*), and red-winged blackbird (*Agelaius phoeniceus*).

6.0 SENSITIVE BIOLOGICAL RESOURCES

Discussed within this section are species present on site that have been afforded special recognition by federal, state, or local resource conservation agencies and organizations. Sources used for the determination of sensitive biological resources include: plants-U.S. Fish and Wildlife Service (USFWS 1995), California Department of Fish and Game (CDFG 1994), California Natural Diversity Data Base (CNDDB 1995), and Smith and Berg (1988); wildlife-USFWS (1989 through 1995), CDFG (1980, 1986, 1995), CNDDB (1995), and Remsen (1978).

Of the sensitive species potentially occurring on the site, the Blochman's dudleya and coastal California gnatcatcher were recorded. The status of these two species is described below. Species potentially occurring on site and not detected are described in Table II and Appendix B.

6.1 SENSITIVE PLANTS OCCURRING ON SITE

One sensitive plant, Blochman's Dudleya, occurs on the Marblehead Coastal site. The site also provides potential but unoccupied habitat for at least two sensitive plants: Orange County turkish rugging (*Chorizanthe staticoides chrysacntha*) and many-stemmed dudleya (*Dudleya multicaulis*). The latter two species are described in Appendix B.

Blochman's dudleya is a perennial succulent plant which occurs in disjunct populations from San Luis Obispo County south into northwestern Baja. There are six known populations of this species in California. This species is listed by the California Native Plant Society as a 1B species. This designation applies to plants of limited range and population number and have not been listed by the State of California or U.S. Fish and Wildlife as threatened or endangered.

The extent and location of the Blochman's dudleya population on the Marblehead Coastal site has been documented by previous investigators (RECON 1996. LSA 1992, Marsh 1985). In 1985 the population covered approximately five acres and supported over ten thousand individual plants. Slope stabilization on the Marblehead Coastal site in 1992 affected 3.5 acres of this population and approximately 6,500 plants. The impacts associated with that project and expected impacts of the Marblehead Coastal project have been offset by a transplant program initiated in 1996. The current location of Blochman's dudleya within and outside of the transplant area is shown in Exhibit 4. The Blochman's Dudleya Transplant Plan for this site is provided as a separate appendix (Appendix E) of the Resource Management Plan.

6.2 SENSITIVE WILDLIFE OCCURRING ON SITE

One sensitive wildlife species, the coastal California gnatcatcher was recorded on site. The coastal California gnatcatcher is listed as federally threatened by the USFWS. This species is an obligate, year-round resident of coastal sage scrub vegetation communities. The primary diet of coastal California gnatcatchers consists of insects which are gleened directly from the coastal sage scrub vegetation. The gnatcatcher builds a open cup-shaped nest of plant material, animal hair, and spider webs and is a frequent host to cowbird parasitism. A single pair of gnatcatchers may forage over two to fifteen acres during its breeding season and may extend its range during the winter months. The present distribution range of the gnatcatcher includes patchy populations in Los Angeles County and fairly even distribution through sage scrub habitats of Orange, San Diego, and western Riverside counties, into northern Baja California, Mexico. The majority of gnatcatchers are found at elevations below 900 feet in San Diego, Orange, and Los Angeles County, and below 1,600 feet in Riverside County (Atwood 1990). The current estimates of the total population size of gnatcatchers within California are approximately 2,562 pairs with approximately 1000 pairs in Orange County (USFWS 1996).

The Marblehead Coastal site supported two pair of gnatcatchers in November of 1997. The observed locations of these pairs during NRC's surveys (November of 1997) is shown in Exhibit 4). These birds included a pair in the southwestern corner of the site (Pair #1) in the same location as a pair recorded by LSA in 1990, and a pair in the south central portion of the site (Pair #2) in the same location as the pair located by NRC in 1996. Both gnatcatcher pairs on the site were pair-bonded. No territorial disputes were observed during the survey period and, as expected, no sign of mating behavior or nest building was observed during NRC's November surveys. No juvenile gnatcatchers or unpaired birds were observed on site. The primary behaviors observed during the current survey were foraging, eating, preening, flying, and calling.

Occupied Habitat

For the purposes of this report, the "occupied habitat" used by a gnatcatcher pair observed on the Marblehead Coastal site is defined as an estimate of the area used by a specific gnatcatcher pair throughout the breeding and non-breeding months. NRC's estimate is based upon 1) the observed locations and behaviors of the gnatcatcher pair during six one-day surveys conducted in November of 1997, 2) the expected variation in gnatcatcher use-areas during non-breeding and breeding months, 3) the vegetation communities and level of habitat disturbance in the vicinity of the observed gnatcatcher locations, 4) previously collected records of gnatcatchers on this site (NRC

1996 and LSA 1990), and 5) the topography in the vicinity of the recorded gnatcatcher locations. It is assumed that additional field studies and statistical analysis may refine the estimated "occupied habitat" area provided herein; however, additional surveys are not likely to substantially change the extent and location of this area.

A detailed description of NRC's survey results are provided in the paragraphs that follow.

Pair #1

Habitat Description — This pair was located in the southwestern corner of the site and was observed to use two small drainages separated by the coastal bluff along the southern edge of the site The eastern of the two drainages supports sagebrush scrub with scattered coyote bush scrub The western drainage is more shallow and supports mulefat scrub with small patches of coyote bush scrub Vegetation communities in this area include sagebrush scrub, coyote bush scrub, coastal bluff scrub, disturbed/ruderal, mulefat scrub, and needlegrass grasslands. Dominant plant species within the observed use-area of this pair is California sagebrush (*Artemisia californica*) saltbush (*Atriplex* sp.), coyote bush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), iceplant (*Mesembranthemum* sp.), box thorn (*Lycium californicum*), and brome grasses (*Bromus sp.*)

Observed Behaviors — Based on the observed locations and activity pattern of this pair, the primary use-area for this pair in November of 1997 is the eastern, sagebrush scrub-filled drainage. The mouth of this drainage and the graded bluff to the west supports disturbed or ruderal habitat covered by introduced iceplant The bluff (to the west) supports scattered saltbushes used by this pair as they forage westward to the western drainage The gnatcatchers are not simply using the bluff as a fly-over link but are actively foraging there, at times taking 30 minutes to cross the approximately 500 feet separating the two drainages. During NRC's November surveys the same isolated saltbushes were used each day as the birds traveled across the bluff between the east and west drainage

Occupied Habitat — The estimated "occupied habitat for Pair #1 is 6.6 acres. This area includes the entire observed use-area of this pair. The "occupied habitat" includes the majority of the east and west drainages, a swath of the existing bluff connecting the two drainages, and a portion of the coastal bluff scrub located west of the western drainage.

Pair #2

Habitat Description. This pair was observed immediately west and southwest of the "rock pile" along the western side of the saltbush and coyote bush-filled basin. Habitats used by this pair include sagebrush scrub, saltbush scrub, alkaline marsh, and coyote bush scrub Dominant plant species included California sagebrush, saltbush, mustard, tree tobacco, and pickleweed

Observed Behavior: Based on the observed locations and activity pattern of this pair, the primary use-area for this pair in November of 1997 is the sagebrush scrub on the west side of the basin These birds forage in saltbush scrub-covered slopes immediately west of the "rock pile" in the basin bottom. The birds also foraged in the coyote bush and saltbush scrub in the bottom of the basin The male from this pair was observed foraging along a fringe of saltbushes north and west of this area This pair forages across a relatively diverse assortment of plant communities including pickleweed in the alkali marsh

Occupied Habitat: The estimated "occupied habitat" for Pair #2 is 6.3 acres. This area includes the entire use-area observed in November of 1997. This "occupied habitat" includes the majority of the basin surrounding the rock pile. In addition, the "occupied habitat" area includes a strip of habitat located south and north of this area in the drainage bottom. Portions of the long strip of saltbush scrub habitat located further north of the rock pile where these gnatcatchers were observed were also included in the occupied habitat acreage

The estimated "occupied habitats" presented above include easily accessible habitats adjacent to these clusters that are likely to be used for roosting, foraging, feeding, breeding, mating, and nesting. Other portions of the site may be temporarily used as dispersal habitat for juvenile coastal California gnatcatchers and infrequent foraging for resident birds; however, based on the lack of mature coastal sage scrub, the level of on site disturbance, and the lack of recorded gnatcatchers in the vicinity, the site is unlikely to provide additional nesting or breeding habitat for this species

A focused survey for the Pacific pocket mouse was completed in May of 1996. This five-day trapping program was conducted by Phil Berhends Ph.D of Dudek & Associates. The results of this survey indicate that no Pacific pocket mouse occur on site, and the project will not result in adverse effects to this species (see Appendix C).

7.0 IMPACTS OF THE PROPOSED PROJECT

The following section summarizes the expected impacts of the proposed project on biological resources and interprets these impacts within the regional context of southern Orange County.

7.1 IMPACTS TO VEGETATION COMMUNITIES

Construction of the proposed project would result in the development of approximately 245.6 acres, or approximately 98 percent of the site. As shown in Exhibit 5, only small portions (approximately 4.0 acres) of the existing habitats on the Marblehead Coastal site would remain after project construction. The remnant fragments would be isolated islands of low value habitat.

As listed in Table III, implementation of the proposed project would result in the direct removal of scrub habitats (16.9 acres), freshwater marsh (0.35 acres), alkali marsh (1.4 acres), mulefat scrub (2.8 acres), and needlegrass grasslands (0.3 acres). These direct impacts are significant under CEQA, and appropriate mitigation measures should be implemented to offset these adverse effects. In addition, isolation of 1.5 acres of sage scrub habitats and 1.9 acres of alkali marsh and mulefat scrub is a significant indirect impact of the project.

7.2 IMPACTS TO SENSITIVE SPECIES

Implementation of the project would result in impacts to a portion of an existing population of Blochman's dudleya on the site. The transplantation area for this species would not be affected.

Implementation of the proposed project would directly remove habitat currently used by at least two pairs of coastal California gnatcatchers. This habitat loss would directly affect an occupied use-area and would be considered a "take" of a federally threatened species as defined by the federal Endangered Species Act.

Typically, when a use-area is removed by project grading, the gnatcatchers are not directly harmed by grading actions. However, on the Marblehead coastal site there is no available habitat for the displaced birds to relocate. This pair of birds is likely to perish as a result of project

LEGEND

SCRUB
- CBS COASTAL BLUFF
- SCS SOUTHERN CACTUS
- SS SAGEBRUSH
- CS COYOTE BUSH
- SBS SALTBRUSH SCRUB

GRASSLAND
- AG ANNUAL
- NG NEEDLEGRASS

MARSH
- AM–AM/D ALKALI–ALKALI/DISTURBED
- FM FRESHWATER
- WATER STANDING WATER

RIPARIAN
- MF MULEFAT SCRUB

DEVELOPED
- OL ORNAMENTAL LANDSCAPING

DISTURBED/RUDERAL
- D/R DISTURBED OR BARREN
- B BURNED

OTHER
- PW PINE WOODLANDS
- NE NATURALIZED EXOTICS
- ROCK PILE ROCK PILE

- GNATCATCHER LOCATIONS (NOVEMBER 1997)
- GNATCATCHER ESTIMATED "OCCUPIED HABITAT" (1997)
- BLOCHMAN'S DUDLEYA PRESERVED WITHIN RESTORATION AREA
- BLOCHMAN'S DUDLEYA – OUTSIDE RESTORATION AREA

NOVEMBER 21,1997

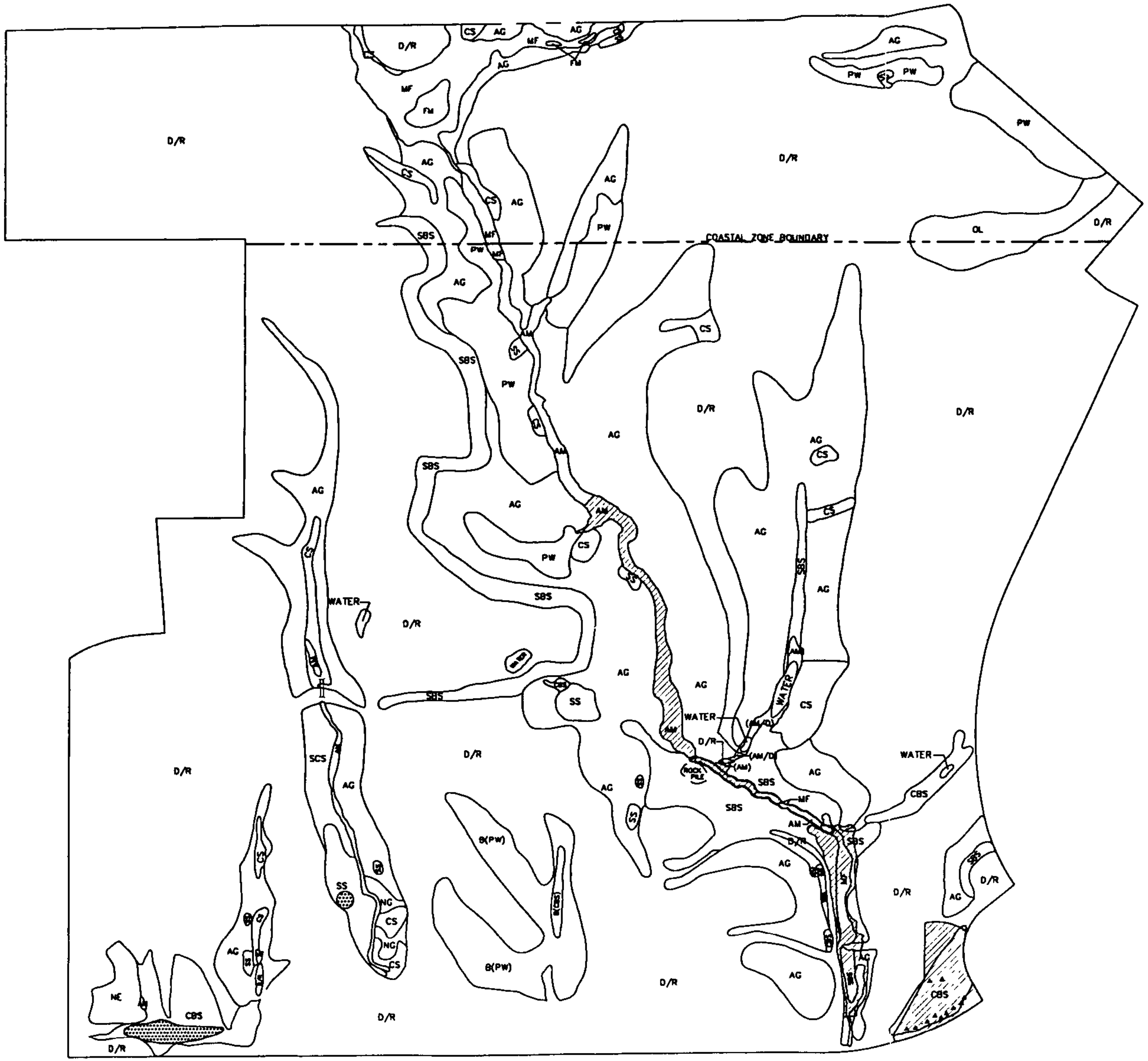
0' 400' 1 ACRE

Vegetation Communities & Sensitive Species

Marblehead Coastal

Natural Resource Consultants

EXHIBIT 5



LEGEND

	HABITAT TYPES	MAP CODE	ORANGE COUNTY GIS CODE	TOTAL ACREAGE	DIRECT IMPACTS (AFFECTED) ACREAGE
SCRUB	COASTAL BLUFF	CBS	2 1	3.70	2 80
	SOUTHERN CACTUS	SCS	2 4	0 90	0 90
	SAGEBRUSH	SS	2 3.8	1 70	1 70
	COYOTE BUSH	CS	2 3.9	3.40	3.40
	SALTBRUSH SCRUB	SBS	2 7	8.70	8.10
GRASSLAND	ANNUAL	AG	4 1	42 78	42 68
	NEEDLEGRASS	NG	4 3	0.30	0 30
MARSH	ALKALI-ALKALI/DISTURBED	AM-AM/D	6 3	2 75	1-41
	FRESHWATER	FM	6 4	0.35	0.35
	STANDING WATER	WATER	–	0.40	0.40
RIPARIAN	MULEFAT SCRUB	MF	7 3	3.35	2 79
DEVELOPED	ORNAMENTAL LANDSCAPING	OL	15.5	2 00	2 00
DISTURBED/ RUDERAL	DISTURBED OR BARREN	D/R	18 1	168.32	167 82
	BURNED	B	18 3	–	–
OTHER	PINE WOODLANDS	PW	–	11 10	11 10
	NATURALIZED EXOTICS	NE	–	0 80	0 80
	ROCK PILE	ROCK PILE	–	–	–
TOTAL				250.55	248 55

IMPACTED AREAS

PRESERVED AREAS

BLOCHMAN'S DUDLEYA PRESERVED WITHIN RESTORATION AREA

BLOCHMAN'S DUDLEYA – OUTSIDE RESTORATION AREA

NOVEMBER 21,1997

0' 400' 1 ACRE

Vegetation Community Impact Map

Marblehead Coastal

Natural Resource Consultants

implementation. This adverse impact to a federally threatened bird species is a significant impact. As described in Section 6.2 of this report, an estimated 12.9 acres of "occupied habitat" would be affected by implementation of the project.

TABLE III*
IMPACTS TO VEGETATION COMMUNITIES

HABITAT TYPE	EXISTING ACRES	IMPACTS ACRES	RETAINED ACRES
Coastal Bluff Scrub	3.7	2.8	0.9
Southern Cactus Scrub	0.9	0.9	0
Sagebrush Scrub	1.7	1.7	0
Coyote Bush Scrub	3.4	3.4	0
Saltbush Scrub	8.7	8.1	0.6
Annual Grasslands	42.8	42.7	0.1
Needlegrass Grasslands	0.3	0.3	0
Alkali Marsh	2.75	1.41	1.34
Freshwater Marsh/Open Water	0.35/0.40	0.35/0.40	0
Mulefat Scrub	3.35	2.79	0.56
Ornamental	2.0	2.0	0
Disturbed/Ruderal	168.3	167.1	0.50
Pine Woodlands	11.1	11.1	0
Natural Exotics	0.8	0.8	0
TOTAL	**250.6**	**246.6**	**4.0**

*Updated 11/97

7.3 REGIONAL CONTEXT OF SITE-SPECIFIC IMPACTS

As defined in CEQA "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts " An example of a cumulative impact would be the incremental loss of small amounts of a sensitive habitat occurring as an impact of several adjacent or locally occurring projects. The individual loss of small amounts of this sensitive habitat may be considered adverse, but not significant, but the cumulative loss among all of the projects would be considered a cumulatively significant impact Direct impacts to the two sensitive habitats (sage scrub and mulefat scrub) occurring within the property boundaries will result in cumulative impacts that are considered adverse, but not significant The small patches of sage scrub, marsh and riparian, and needlegrass habitats on the Marblehead Coastal site are currently isolated from regionally important open space areas by I-5 to the north, the Pacific Ocean to the south, and urban development to the east and west. The low regional value of this area is offset by the presence of a single gnatcatcher pair, a regionally important population of Blochman's dudleya, and a diverse set of native habitat fragments (such as needlegrass grasslands, alkali marsh, scrub habitats). Cumulative effects to these resources would be mitigated by measures designed to offset impacts to the sage scrub habitats, marsh and riparian vegetation, needlegrass grasslands, and the coastal California gnatcatcher.

8.0 MITIGATION MEASURES

Mitigation alternatives for site-specific impacts to sage scrub resources (16.9 acres), needlegrass grasslands (0.3 acres), marsh habitats (1.4 acres), and riparian scrub vegetation (2.8 acres) are described below. Mitigation measures for impacts to sage scrub habitats should focus on compensation for removal of the patches of sage scrub and expected "take" of "occupied habitat" the coastal California gnatcatcher (approximately 12.9 acres). Although a regional coastal sage scrub conservation plan has not been completed for this area, the mitigation plan should be consistent with the anticipated regional conservation plan as described below. Unavoidable impacts to marsh and riparian scrub vegetation should be mitigated through habitat revegetation at an appropriate location on site or in the vicinity of the site. Mitigation for impacts to needlegrass grasslands should be incorporated into the sage scrub mitigation program.

Mitigation measures for expected impacts to Blochman's dudleya would be offset by continued implementation of the transplantation plan for this species (RECON 1996). Transplant and salvage of approximately 10,000 plants was initiated in 1996. The plants within the relocation area will be maintained and monitored for at least three years.

8.1 NATURAL COMMUNITIES CONSERVATION PLAN

The County of Orange has assumed a lead role in preparation of a regional conservation plan to protect a variety of sensitive plant and animal species associated with the coastal sage scrub habitats of this area. This program is entitled the Natural Communities Conservation Plan

(NCCP) for the Coastal Sage Scrub Vegetation Community. Initiation, implementation, and management of the NCCP was approved by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) in association with listing of the coastal California gnatcatcher as a federally threatened species. The NCCP is a joint federal and State effort designed to create a coastal sage scrub preserve system in Orange County while allowing compatible development outside of designated preserve areas.

Separate NCCP documents have been prepared for two subregions of Orange County with the Environmental Management Agency (EMA) acting as the central administrator of all plans. The Marblehead Coastal project site occurs in the southern portion of the Southern Subregion of Orange County. The NCCP document describing the guidelines for potential preserve designs and development policies in the Southern Subregion will be completed in the coming months. At this time actions potentially affecting coastal sage scrub vegetation and the coastal California gnatcatcher are handled under an "interim take period" and are administered by the local jurisdictions (i.e. City of San Clemente), the EMA, CDFG, and USFWS. During the "interim take period" (time after listing of the gnatcatcher and prior to approval of an NCCP), a total of five percent of existing coastal sage scrub habitats can be removed within each NCCP subregion. During the interim period removal of high quality coastal sage vegetation and development that would preclude a regional preserve system are discouraged by resource protection agencies.

At this time processing of development projects potentially removing coastal sage scrub follows a two-step review process. Initially, a biological resources assessment should be prepared and submitted to the City of San Clemente and County of Orange EMA for review. The EMA will review the consistency of the proposed action with their regional conservation plan and, if it is acceptable, the County and project applicant will together approach the USFWS for approval. The approval will include preparation and submittal of a Statement of Findings to the USFWS evaluating the consistency of the plan with the NCCP for this region.

The Statement of Findings evaluates the proposed project and associated mitigation measures according to the criteria for interim take established by the NCCP Processing Guidelines (CDFG 1993). To approve an interim "take" the following findings must be made;

1) The habitat loss does not cumulatively exceed the five percent guideline.
2) The habitat loss will not preclude connectivity between areas of high habitat value.
3) The habitat loss will not preclude or prevent the preparation of a subregional NCCP.
4) The habitat loss has been minimized and mitigated to the maximum extent practicable.

5) The habitat loss will not appreciably reduce the likelihood of the survival of and recovery of listed species in the wild.

6) The habitat loss is incidental to otherwise lawful activities.

These criteria allow biologists, planners, and land owners to evaluate the consequences of a project to coastal sage scrub resources and Target Species (coastal California gnatcatcher, cactus wren, and orange-throated whiptail) on a regional basis and implement land use policies accordingly. This analysis combined with information on anticipated impacts to site-specific resources forms the basis for approval of an "interim take" decision by the City of San Clemente, EMA, CDFG, and USFWS. The mitigation program for the Marblehead Coastal project should be formulated to satisfy the above-described criteria and fulfill the project goals.

8.2 MITIGATION ALTERNATIVES FOR THE MARBLEHEAD COASTAL PROJECT

The following three mitigation alternatives for impacts to sage scrub resources are consistent with the NCCP for this region. The mitigation program for the Marblehead Coastal project can include a combination of these measures to result in an project that is consistent with regional conservation goals and the NCCP criteria. Impacts to 0.3 acres of existing needlegrass grasslands should be mitigated in the same manner as the sage scrub resources.

Payment of Per Acre Fee -- According to the EMA, a likely means of mitigation for project affecting small, low and intermediate quality, patches of coastal sage scrub used by the coastal California gnatcatcher will be payment of a per acre fee for project impacts. The fee for impacts to "occupied habitat" has not yet been determined, nor has a specific agency been defined to administer and manage fees paid. The quantity of this fee may be between $40,000 and $50,000 per acre of impact. The actual mitigation fee will represent the real costs associated with implementation of the NCCP and will be adjusted to reflect current costs/conditions. On the Marblehead Coastal site this fee is likely to apply specifically to the 12.9 acres of "occupied gnatcatcher habitat" as estimated in Section 6.2.

Purchase and Dedication of Natural Open Space - There is high conservation value of removing lands from the jeopardy of development. As opposed to paying a set fee, an applicant can propose purchase and permanent preservation of high quality coastal sage scrub. Areas of purchase should be located adjacent to large preserve areas and support California gnatcatchers. Typically the ratio of off site purchase is one acre of preservation for each acre removed.

On and Off Site Revegetation -- Revegetation of coastal sage scrub is a viable mitigation alternative. Revegetaion areas should be located close to the area of impact and should be adjacent to larger areas of coastal sage scrub. Typically, the ratio of revegetation is two acres of created habitat for each acre removed.

8.3 RECOMMENDED MITIGATIONS FOR MARBLEHEAD COASTAL PROJECT

The unavoidable impacts to sage scrub communities (16.9 acres direct and 1.5 acres indirect), marsh and riparian scrub vegetation (4.55 direct and 1.9 indirect), needlegrass grasslands (0.30 direct), and the coastal California gnatcatcher (approximately 12.9 acres of occupied habitat) require project mitigation or a Statement of Overriding Consideration. Based on the current and anticipated isolation of the site from regional biological resources, it would be biologically preferred if unavoidable project impacts to the above-listed resources were mitigated by off site alternatives. These alternatives include 1) Payment of Fee, 2) Purchase of Off Site Natural Open Space, or 3) Off site Revegetation.

On site mitigation alternatives, such as revegetation on graded slopes, are feasible and may be designed to adequately replace the affected habitats "in kind". However, the intensity of development combined with expected intrusions from increased urban exposure would result in biologically impoverished habitats following project construction. In addition, the intent of the NCCP is to establish a preserve system that supports the diversity of species and habitats of this region. On site mitigations are not consistent with this goal and would not contribute to regional biological values.

An official wetland delineation should be conducted for the Marblehead Coastal site. Based on NRC's current studies, at least 4.55 acres of marsh and riparian habitats would be directly removed by the proposed project. Indirect impacts of development may increase this acreage. Unavoidable impacts to wetland habitats should be mitigated at a ratio acceptable to the U.S. Army Corps of Engineers and CDFG. These two agencies should be contacted prior to disturbances to these areas. Ideally, the project will result in a net gain of wetland habitat (acreage) and habitat value in an off site location.

If off site revegetation is selected as a mitigation strategy, the revegetation areas for both sage scrub and wetland impacts should be designed to be contiguous with existing regional resources. All affected habitat types should be incorporated into the plan including sagebrush scrub, coyote bush scrub, saltbush scrub, alkali marsh, freshwater marsh, and mulefat scrub. To the extent feasible, the revegetation area should be "clumped" as opposed to "fragmented". These attributes will increase the habitat value and replacement value of the revegetation areas. The mitigation program should include a detailed mitigation monitoring plan to ensure successful replacement of affected resources. The monitoring plan should have clear definition of performance criteria and responsible parties to ensure these criteria are met.

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APPENDIX A

FLORAL AND FAUNAL COMPENDIA

FLORAL AND FAUNAL

VASCULAR PLANTS

CONIFERAE

PINACEAE - PINE FAMILY

Pinus halepensis
allepo pine

ANGIOSPERMAE (DICOTYLEDONES)

AIZOACEAE - CARPET-WEED FAMILY

* *Carpobrotus chilensis*
sea-fig
* *Carpobrotus edulis*
hottentot-fig
* *Malephora crocea*
croceum ice plant
* *Mesembryanthemum crystallinum*
crystal ice plant
* *Mesembryanthemum nodiflorum*
small-flowered ice plant

ANACARDIACEAE - SUMAC FAMILY

Malosma laurina
laurel sumac
Rhus integrifolia
lemonadeberry
* *Schinus molle*
Peruvian pepper-tree
* *Schinus terebinthifolius*
Brazilian pepper-tree

APIACEAE - CARROT FAMILY

* *Conium maculatum*
poison-hemlock
Daucus pusillus
rattlesnake weed
* *Foeniculum vulgare*
sweet fennel

ASTERACEAE - SUNFLOWER FAMILY

* Argyranthemum foeniculaceum
marguerite
Artemisia californica
coastal sagebrush
Baccharis salicifolia
mulefat
Baccharis pilularis
coyote brush
* *Centaurea melitensis*
tocalote

* *Cotula coronopifolia*
African brass-buttons
* *Cynara cardunculus*
cardoon
Encelia californica
California bush sunflower
Gnaphalium californicum
California everlasting
Grindelia stricta
gum-plant
Hemizonia fasciculata
fascicled tarweed
Isocoma menziesii
coastal goldenbush
* *Sonchus asper*
prickly sow-thistle
* *Sonchus oleraceus*
common sow-thistle
* *Xanthium strumarium*
cocklebur

BRASSICACEAE - MUSTARD FAMILY

* *Brassica nigra*
black mustard

CACTACEAE - CACTUS FAMILY

Opuntia littoralis
coastal prickly pear
Opuntia oricola
pancake prickly pear

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Sambucus mexicana
Mexican elderberry

CARYOPHYLLACEAE - PINK FAMILY

* *Stellaria media*
common chickweed

CHENOPODIACEAE - GOOSEFOOT FAMILY

Atriplex lentiformis
quail brush
* *Atriplex semibaccata*
Australian saltbush
Salicornia virginica
common pickleweed

CONVOLVULACEAE - MORNING-GLORY FAMILY

* *Cotula coronopifolia*
African brass-buttons
* *Cynara cardunculus*
cardoon
Encelia californica
California bush sunflower
Gnaphalium californicum
California everlasting
Grindelia stricta
gum-plant
Hemizonia fasciculata
fascicled tarweed
Isocoma menziesii
coastal goldenbush
* *Sonchus asper*
prickly sow-thistle
* *Sonchus oleraceus*
common sow-thistle
* *Xanthium strumarium*
cocklebur

BRASSICACEAE - MUSTARD FAMILY

* *Brassica nigra*
black mustard

CACTACEAE - CACTUS FAMILY

Opuntia littoralis
coastal prickly pear
Opuntia oricola
pancake prickly pear

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Sambucus mexicana
Mexican elderberry

CARYOPHYLLACEAE - PINK FAMILY

* *Stellaria media*
common chickweed

CHENOPODIACEAE - GOOSEFOOT FAMILY

Atriplex lentiformis
quail brush
* *Atriplex semibaccata*
Australian saltbush
Salicornia virginica
common pickleweed

CONVOLVULACEAE - MORNING-GLORY FAMILY

Calystegia macrostegia
western bindweed

CRASSULACEAE - STONECROP FAMILY

Crassula argentea
jade plant
Crassula conata
dwarf stonecrop
Dudleya blochmanae
Blochman's
Dudleya lanceolata
lance-leaved dudleya

CUCURBITACEAE - GOURD FAMILY

Marah macrocarpus
wild cucumber

EUPHORBIACEAE - SPURGE FAMILY

* *Ricinus communis*
castor-bean

FABACEAE - PEA FAMILY

* *Acacia decurrens*
green wattle
* *Ceratonia siliqua*
Carob
Lupinus sp.
lupine

FRANKENIACEAE - FRANKENIA FAMILY

Frankenia grandifolia
alkali heath

GERANIACEAE - GERANIUM FAMILY

* *Erodium botrys*
broad-lobed filaree
* *Erodium cicutarium*
red-stemmed filaree
* *Erodium moschatum*
white-stemmed filaree

LAMIACEAE - MINT FAMILY

* *Marrubium vulgare*
horehound
Stachys ajugoides

hedge-nettle
Stachys bullata
California hedge-nettle

MALVACEAE - MALLOW FAMILY

* *Malva parviflora*
cheeseweed

MYOPORACEAE - MYOPORUM FAMILY

* *Myoporum laetum*
myoporum

MYRTACEAE - MYRTLE FAMILY

* *Eucalyptus* sp.
gumtree
* *Melaleuca styohelioides*
melaleuca

NYCTAGINACEAE - FOUR-O'CLOCK FAMILY

Mirabilis californica
California wishbone-bush

ONAGRACEAE - EVENING-PRIMROSE FAMILY

Camissonia bistorta
southern sun-cup

OXALIDACEAE - WOOD-SORREL FAMILY

* *Oxalis pes-caprae*
Bermuda-buttercup

POLYGONACEAE - BUCKWHEAT FAMILY

Eriogonum fasciculatum
California buckwheat
Pterostegia drymarioides
California thread-stem
* *Rumex crispus*
curly dock

PORTULACACEAE - PURSLANE FAMILY

Calandrinia ciliata
redmaids
Claytonia perfoliata
miner's-lettuce

PRIMULACEAE - PRIMROSE FAMILY

* *Anagallis arvensis*
scarlet pimpernel

RUBIACEAE - MADDER FAMILY

* *Galium aparine*
goose grass

SALICACEAE - WILLOW FAMILY

Salix lasiolepis
arroyo willow

SOLANACEAE - NIGHTSHADE FAMILY

Lycium californicum
California box-thorn
* *Nicotiana glauca*
tree tobacco

TAMARICACEAE - TAMARISK FAMILY

* *Tamarix* sp.
tamarisk

ANGIOSPERMAE (MONOCOTYLEDONES)

ALLIACEAE - ONION FAMILY

Dichelostemma capitatum
blue dicks

ARECACEAE - PALM FAMILY

* *Phoenix canariensis*
Canary Island date palm

CYPERACEAE - SEDGE FAMILY

Scirpus americanus
winged three-square
Scirpus californicus
California bulrush
Scirpus robustus
Pacific coast bulrush

IRIDACEAE - IRIS FAMILY

Sisyrinchium bellum
blue-eyed grass

POACEAE - GRASS FAMILY

* *Arundo donax*
giant reed
* *Avena barbata*
slender oat
* *Avena fatua*
wild oat
* *Bromus diandrus*
ripgut grass
* *Bromus hordeaceus*
soft chess
* *Bromus madritensis*
Spanish brome
* *Bromus rubens*
foxtail chess
Distichlis spicata
salt grass
Leymus condensatus
giant wild rye
Nassela spp.
needlegrass

TYPHACEAE - CATTAIL FAMILY

Typha domingensis
slender cattail
Typha latifolia
broad-leaved cattail

TERRESTRIAL VERTEBRATES

AMPHIBIANS

HYLIDAE - TREEFROGS

Hyla regilla
Pacific treefrog

BIRDS

ARDEIDAE - HERONS

Egretta thula
snowy egret

CATHARTIDAE - NEW WORLD VULTURES

Cathartes aura
turkey vulture

ACCIPITRIDAE - HAWKS

Circus cyaneus
northern harrier
Accipiter cooperii
Cooper's hawk
Buteo jamaicensis pair
red-tailed hawk

FALCONIDAE - FALCONS

Falco sparverius mating pair
American kestrel

PHASIANIDAE - PHEASANTS & QUAILS

Callipepla californica
California quail

RALLIDAE - RAILS & GALLINULES

Fulica americana
American coot

CHARADRIIDAE - PLOVERS

Charadrius vociferus
killdeer

LARIDAE - GULLS & TERNS

Larus californicus
California gull

COLUMBIDAE - PIGEONS & DOVES

Zenaida macroura
mourning dove

TROCHILIDAE - HUMMINGBIRDS

Calypte anna
Anna's hummingbird

TYRANNIDAE - TYRANT FLYCATCHERS

Sayornis nigricans
black phoebe
Sayornis saya
Say's phoebe

CORVIDAE - JAYS & CROWS

Corvus corax
common raven

AEGITHALIDAE - BUSHTITS

Psaltriparus minimus
bushtit

TROGLODYTIDAE - WRENS

Troglodytes aedon
house wren

MUSCICAPIDAE - KINGLETS, GNATCATCHERS, THRUSHES & BABBLERS

Polioptila californica
California gnatcatcher
Chamaea fasciata
wrentit

MIMIDAE - THRASHERS

Mimus polyglottos
northern mockingbird

STURNIDAE - STARLINGS

* *Sturnus vulgaris*
European starling

EMBERIZIDAE - WOOD WARBLERS, TANAGERS, BUNTINGS & BLACKBIRDS

Dendroica coronata
yellow-rumped warbler
Geothlypis trichas
common yellowthroat
Pipilo crissalis
California towhee
Melospiza melodia
song sparrow
Melospiza lincolnii
Lincoln's sparrow
Zonotrichia leucophrys
white-crowned sparrow
Agelaius phoeniceus
red-winged blackbird
Sturnella neglecta
western meadowlark
Euphagus cyanocephalus
Brewer's blackbird

FRINGILLIDAE - FINCHES

Carpodacus mexicanus
house finch
Carduelis psaltria
lesser goldfinch

MAMMALS

DIDELPHIDAE - NEW WORLD OPOSSUMS

* *Didelphis virginiana*
Virginia opossum

LEPORIDAE - HARES & RABBITS

Sylvilagus audubonii
desert cottontail

SCIURIDAE - SQUIRRELS

Spermophilus beecheyi
California ground squirrel

PROCYONIDAE - RACCOONS

Procyon lotor
raccoon

APPENDIX C

PACIFIC POCKET MOUSE ASSESSMENT FOR THE MARBLEHEAD COASTAL PROJECT

APPENDIX B

SENSITIVE PLANT AND WILDLIFE SPECIES POTENTIALLY OCCURRING ON THE MARBLEHEAD COASTAL SITE

NRC recognizes that the "Candidate system" for classification of federally recognized sensitive species is no longer officially used. This system remains useful for describing the relative sensitivity of species and will be used in this report.

SENSITIVE PLANTS

Potential habitat for the **Orange County Turkish rugging** (*Chorizanthe staticoides chrysacantha*), a Category 2 federal Candidate for listing as threatened or endangered, occurs on the site in open sandy areas, rock outcrops, and ridgetops within the coastal sage scrub. Category 2 Candidate status refers to those taxa (species and subspecies) that are under consideration for listing by the USFWS as endangered or threatened, but for which insufficient data are available to support a listing at this time. No legal protection is afforded these species, but potential impacts must be disclosed in accordance with the California Environmental Quality Act. No Turkish rugging plants were located by the survey. The likelihood of this species occurring on the site in the future is difficult to determine; however, this species is rare in the region and the potential for its occurrence on the site is low.

The **many-stemmed dudleya** (*Dudleya multicaulis*), is a Category 2 federal candidate species for listing as threatened or endangered. This species occurs in gravelly soil or rock outcrops on or near ridges, generally in coastal sage scrub. NRC's surveys occured during the flowering season for this species and no specimens were observed on the site. This species is not expected to occur on site even though there is appropriate habitat.

SENSITIVE WILDLIFE

Amphibians

The **western spadefoot toad** (*Scaphiopus hammondi*) is a Species of Special Concern. This status include species that have exhibited population declines in the region and are, therefore, being monitored by the CDFG. The spadefoot toad occurs throughout California in grasslands, sage scrub, and washes where ephemeral ponds or vernal pools provide breeding and tadpole development habitat. This species is active only during the cool, wet season. It spends most of the year dormant, buried beneath several inches to a few feet of soil in upland habitat, and appears on the surface at night after rains. After emerging on the surface, individuals of this species congregate in pools formed by rain or rainfed stream flows to breed and lay eggs. However, the toad may not appear each year in areas that it occurs. This species is typically most active in February and March. This species has become scarce in Southern California, primarily because of extensive habitat conversion for development. The western spadefoot toad has been recorded in the vicinity of the site and may occur within the wilow scrub areas; however is not expected within on site habitats.

No potential habitat for the **southwestern arroyo toad** (*Bufo microscaphus californicus*), a federally endangered amphibian species, occurs on the project site. The arroyo toad burrows in sandy soils in oak woodlands and other habitats during early winter, and becomes active in late winter to forage. Breeding occurs in the spring in slow-moving streams.

Reptiles

The **coastal western whiptail** (*Cnemidophorus tigris multiscalatus*) is a Category 2 federal candidate species is expected to occur within the study area. The western whiptail is a large, active lizard that inhabits a variety of habitats, including coastal sage scrub, grasslands, washes, oak woodlands, and pine forests, from sea level to about 7,000 feet elevation (Stebbins 1985). It is not expected to occur on the site.

The **orange-throated whiptail** (*Cnemidophorus hyperythrus beldingi*) also is a Category 2 federal candidate species for listing as endangered or threatened. The decline of the orange-throated whiptail is closely associated with the loss of coastal sage scrub habitat. An active forager, the orange-throated whiptail frequents dry, often rocky, hillsides, ridges, and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species. It often occurs in the same habitat as coastal western whiptail. The orange-throated whiptail feeds largely on subterranean termites (*Reticulitermes hesperus*) which are usually common in coastal sage scrub and mulefat scrub habitats (Stebbins 1985). It is not expected to occur on site.

The **coastal rosy boa** (*Lichanura trivirgata rosafusca*) is a Category 2 federal candidate species for listing as endangered or threatened and one of three subspecies of the rosy boa. This is a medium-sized, secretive snake that prefers rocky habitats. It has been found in coastal sage scrub and chaparral, but is rarely active during the day. The rosy boa ranges from Los Angeles County, south into northern Baja (Stebbins 1985). It occurs from sea level to about 4,500 feet in elevation. The rosy boa is not expected to occur on the site.

The **northern red rattlesnake** (*Crotalus ruber ruber*)is a Category 2 federal candidate species for listing as endangered or threatened and is one of two subspecies of the red-diamond rattlesnake. This subspecies is most commonly encountered in open scrub habitats, such as coastal sage scrub, but it also inhabits grasslands, dry washes, coastal sage scrub, and woodlands. The northern red-rattlesnake ranges from southern San Bernardino County, south into Baja California, and from sea level to about 5,000 feet elevation (Stebbins 1985). The northern red rattlesnake is expected to occur within the coastal sage scrub and disturbed grassland on the site.

The **coast patch-nosed snake** (*Salvdora hexalepis virgultea*) is a Category 2 federal candidate species for listing as endangered or threatened and is one of five subspecies of the patch-nosed snake. This species is a moderate-sized, active snake that inhabits open grasslands, open coastal sage scrub, coastal sage scrub, and woodlands. The coast patch-nosed snake ranges along the coast of California from San Luis Obispo County south into Baja California. It occurs from sea level to about 7,000 feet in elevation (Stebbins 1985). It is not expected to occur on site.

The **San Diego horned lizard** (*Phrynosoma coronatum blainvillei*) is a USFWS Category 2 federal candidate species for listing as threatened or endangered. This uncommon lizard occurs sporadically in Southern California, ranging from sea level to approximately 6,500 feet (Stebbins 1985). In lowland areas, it is found primarily in open, sandy areas within sage scrub, grassland, and sandy wash habitats. This species occurs in a variety of habitats, including coastal sage scrub, grassland, woodlands, and montane coniferous forests. It prefers sandy soils and relies heavily on harvester ants (*Pogonomyrmex spp.* and *Messor spp.*) as an important part of its diet. This species is not expected to occur on site.

The **two-striped garter snake** (*Thamnophis hammondii*) is a Category 2 federal candidate species for listing as endangered or threatened that prefers riparian and freshwater marsh habitats with perennial water. The two-striped garter snake feeds on small fishes, frogs, and tadpoles, and was once common in California. The willow scrub provides potential habitat for this species; however, it is not expected to occur on site.

The **San Diego ringneck snake** (*Dianophis punctatus similis*) is a Category 2 federal candidate species for listing as endangered or threatened and one of eight subspecies of the ringneck snake. This small, very secretive snake occurs in a variety of moist habitats, including oak, walnut, and riparian woodlands, grasslands, and coastal sage scrub. It spends most of the time under surface litter. The San Diego ringneck snake ranges from Orange County, south into northern Baja, and as high as 5,000 feet in elevation (Stebbins 1985). The San Diego ringneck snake is not expected to occur on site.

The **loggerhead shrike** (*Lanius ludovicianus*) is a Category 2 federal candidate species for listing as endangered or threatened that has suffered dramatic declines in many parts of its range over the past decade. This species prefers open habitats with scattered shrubs, trees, posts, fences, or other perches. It typically nests in densely-foliaged shrubs or trees. The grassland and coastal sage scrub habitat on the site area support suitable foraging and nesting habitat for this species.

The **cactus wren** (*Campylorhynchus brunneicappilus*) is under consideration by the USFWS for listing as an endangered population because of recent information indicating its populations are smaller and may be limited to a more restricted range than previously believed. This subspecies occurs from extreme northern Baja California in the vicinity of Tijuana, north to coastal Orange County. The cactus wren requires large arborescent stands of cholla or prickly pear cactus within the coastal sage scrub. There is no potential habitat for the cactus wren on the site.

The **southern California rufous-crowned sparrow** (*Aimophila ruficeps canescens*) is a Category 2 federal candidate species for listing as endangered or threatened that is associated with relatively steep, rocky coastal sage scrub habitat. This species has been observed in the immediate vicinity of the site; suitable habitat is available within the site for rufous-crowned sparrows.

Raptors

No raptors were observed on the site; however several species may forage within on site grasslands. These species include the following CDFG Bird Species of Special Concern; **long-eared owl** (*Asio otus*), **burrowing owl** (*Athene cunicularia*), **Cooper's hawk** (*Accipiter cooperii*), **sharp-shinned hawk** (*Accipiter striatus*), **merlin** (*Falco columbarius*), and **northern harrier**. These birds are winter visitors and were not observed using the site during the current survey.

Mammals

Townsend's big-eared bat (*Plecotus townsendii*) is a Category 2 federal candidate species for listing as endangered or threatened. Potential permanent roosting (steep rocky slopes) and foraging habitat (linear riparian areas with perennial water) are present in the vicinity of the site. This bat is relatively specialized for feeding on moths. The Townsend's big-eared bat may use willow scrub adjacent to the site for foraging activities.

The **pallid bat** (*Antrozous pallidus*) is a Category 2 federal candidate species for listing as endangered or threatened that prefers dry rocky habitats for roosting and open habitats for foraging. The bat feeds on a variety of insects and spiders. The pallid bat is not expected to occur on site.

The Southern California coastal plains subspecies of the **little pocket mouse** (*Perognathus longimembris pacificus*) is a CDFG Species of Special Concern because of severe and continuing loss of habitat. This species inhabits sandy soil and gravel washes and eats a variety of grassland and forb seeds. Suitable burrowing and foraging habitat for this species does not occur within the site.

The **badger** (*Taxidea taxus*) is CDFG Species of Special Concern, indicating that, populations of this species are seriously declining (Williams 1986). Badgers occupy a wide diversity of habitats, including grasslands and savannahs, and prey on a variety of small rodents, reptiles, birds, and their eggs, and insects. Potential habitat for this species occurs on site.

The **ringtail** (*Bassariscus astutus*) is a California Fully Protected Species that prefers rocky habitats, such as canyons, rocks, and boulder piles. Portions of Aliso Creek provide suitable habitat for this species; however the species is not likely to occur on the site.

PACIFIC POCKET MOUSE ASSESSMENT
MARBLEHEAD COASTAL PROJECT
SAN CLEMENTE, CALIFORNIA

Prepared for:

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May 17, 1996

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EXECUTIVE SUMMARY

A live-trapping program for the federally-listed endangered Pacific pocket mouse (*Perognathus longimembris pacificus*) was conducted on five consecutive nights on the Marblehead Coastal project site located in the City of San Clemente. While much of the site is highly disturbed and poorly suited for the Pacific pocket mouse, it contains some canyons that support coastal sage scrub underlain by sandy soils; a habitat potentially supporting this species. The remainder of the site supports heavy clay soils which would be unlikely to support the pocket mouse. Two general locations that provide the highest potential for supporting the Pacific pocket mouse were trapped. The 500-trap night program resulted in the capture of three common rodent species: the deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotis*). The Pacific pocket mouse was not found on the site. Based on the results of the trapping study, it is concluded that the Pacific pocket mouse is not present on the site and will not be a constraint to the project.

1.0 INTRODUCTION

This report describes the findings of a trapping program for the federally-listed endangered and California "species of special concern" Pacific pocket mouse (*Perognathus longimembris pacificus*) conducted by Dudek & Associates, Inc. (DUDEK) on the Marblehead Coastal Project site located in San Clemente, California. This species and its habitat are protected under the federal Endangered Species Act (1973, as amended). This program was conducted to determine the presence, and if present, the distribution of the Pacific pocket mouse on the project site.

The trapping study reported here was conducted solely for the Pacific pocket mouse and other small mammals, and was not intended as a general assessment of the biological resources of the site.

1.1 PACIFIC POCKET MOUSE BACKGROUND INFORMATION

The Pacific pocket mouse, at 7-9 g, is one of the smallest members of the genus *Perognathus*. The species *P. longimembris*, as a whole, occupies a variety of habitats throughout the southwest, including desert, shrub-steppe, arid woodland, sage scrub, grassland, and ruderal habitats. The Pacific pocket mouse, which is one of 19 subspecies of *P. longimembris* (Hall 1981), is restricted to the coastal plain and historically was found between El Segundo in Los Angeles County and the Tijuana River Valley in the U.S., and northern Baja California, Mexico. It typically occurs within two miles of the coast and below 600 feet. The Pacific pocket mouse is thought to occupy loose sandy soils supporting sparse coastal sage scrub, non-native grassland, and ruderal habitats (U.S. Fish and Wildlife Service [USFWS] 1994). However, Grinnell (1933) reports in field notes that Frank Stephens collected Pacific pocket mouse in gravelly soils 10-12 miles north of Oceanside in 1903.

On February 3, 1994 the USFWS emergency-listed the Pacific pocket mouse as endangered, citing "imminent danger of extinction due to habitat loss and fragmentation, and predation by feral and domestic cats (USFWS 1994)." The Pacific pocket mouse had not been confirmed in over 20 years until a small population was found on the Dana Point Headlands in July 1993 (USFWS 1994). This site is approximately 4.5 miles northwest of the Marblehead Coastal site. Trapping programs for the Pacific pocket mouse on MCB Camp Pendleton in northern San Diego County and in association with the Foothill Transportation Corridor (FTC) project in southern Orange County in 1995 subsequently documented at least three previously unknown local populations (P. Behrends, pers. obs. 1995; L. Dawes USFWS, pers. comm. 1995; Michael Brandman Associates 1995). The northernmost of the Camp Pendleton populations is approximately 3 miles southeast of the Marblehead Coastal site.

Recent studies documenting the presence of the pocket mouse appear to confirm the habitat associations noted by earlier biologists such as Stephens and Grinnell. The Dana Point Headlands site supports coastal sage scrub dominated by buckwheat (*Eriogonum* sp.) and coastal sagebrush (*Artemisia californica*) on sandy, friable soils (P. Brylski, pers. comm. 1994). Interestingly, the vegetation on the Dana Point site appears open, but vegetation transects revealed a coverage of approximately 85 percent. Habitat on a site north of Basilone Road and the San Onofre Nuclear Generating Station supports sparse coastal sage scrub and Gaviota fine sandy loam (Behrends, pers. obs.; Bowman 1973). Similarly, occupied sites along the proposed FTC corridor support sparse sage scrub and sandy loams and gravelly loamy sand soils on 9 to 30 percent slopes (Michael Brandman Associates 1995). These two sites collectively are known as San Mateo Creek South and San Mateo Creek North, respectively (D. Boyer, MCB Camp Pendleton, pers. comm. 1996). Finally, a population on "Oscar 1" of Camp Pendleton north of the Santa Margarita River occurs in sandy soils (Dawes, pers. comm. 1995). It is important to note that traplines set in relatively dense sage scrub and chaparral or on clay soils on the San Mateo Creek sites yielded high numbers of the California "species of special concern" Dulzura California pocket mouse (*Chaetodipus californicus femoralis*) and woodrats (*Neotoma* spp.), but no Pacific pocket mice (Behrends pers. obs. 1995; Michael Brandman Associates 1995).

2.0 PROJECT LOCATION

The Marblehead Coastal Project site is located in the City of San Clemente, California (*Figure 1*). It is bounded on the southwest by El Camino Real, on the southeast by Avenida Pico, on the northeast by Interstate 5, and on the northwest by Via Cascadita and Via Socorro (*Figure 2*). The site is in the U.S. Geological Survey (USGS) Dana Point quadrangle; SE1/4 of Section 29 and NE1/4 and W1/2NW1/4 of Section 32; T8S, R7W (SBBM).

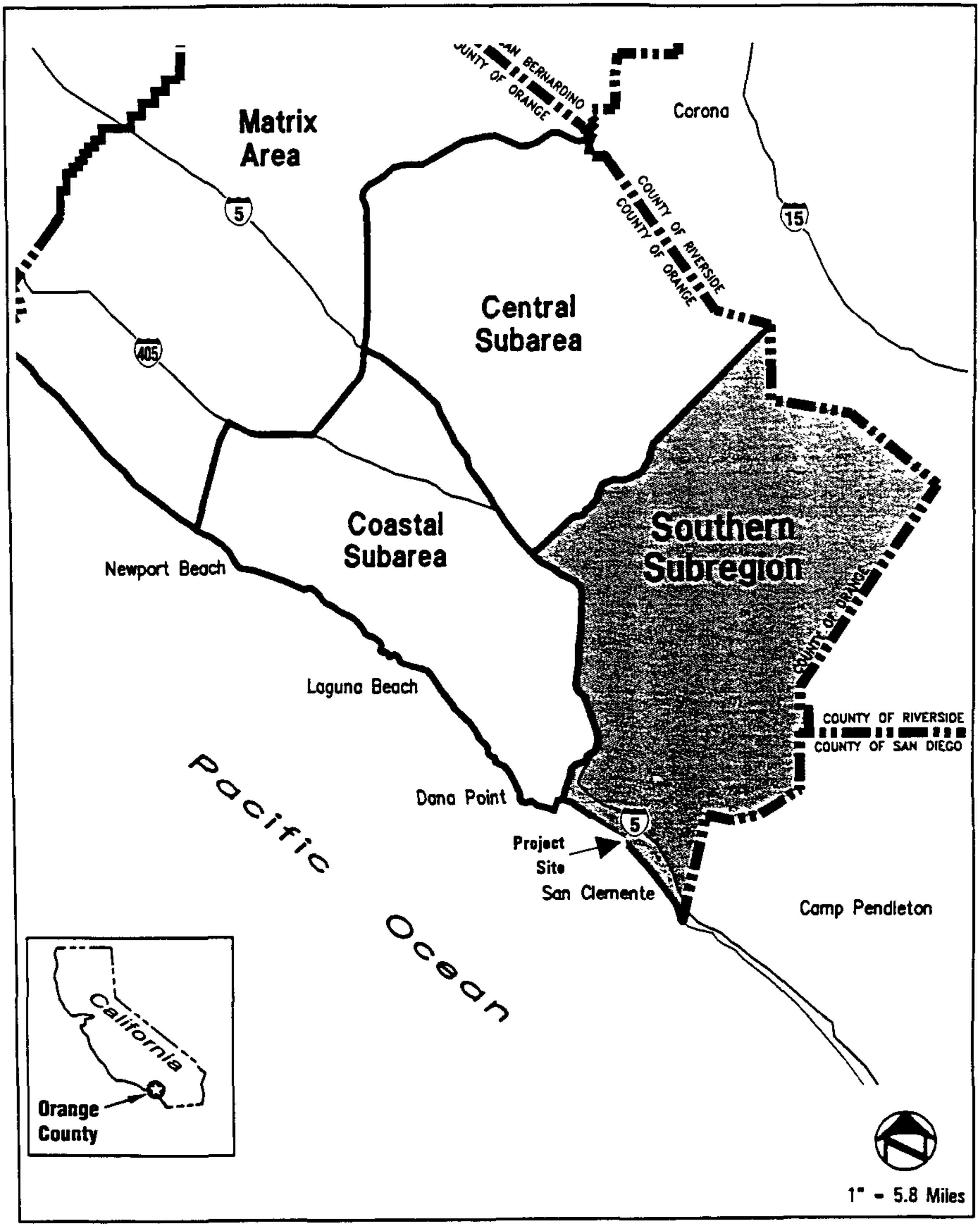
3.0 EXISTING CONDITIONS

The site consists of vacant land dissected by several relatively steep northeast-southwest trending canyons. Much of the flat terrain has been disced, but formerly was mapped as non-native grassland for the Southern Subregion Natural Communities Conservation Planning (NCCP) effort. The canyons contain natural vegetation, as described below. Elevation of the site, which is within 500 feet of the Pacific Ocean, ranges from close to sea level to approximately 100 feet above mean sea level.

3.1 BOTANY/VEGETATION

The disced portions of the site supported little or no vegetation at the time of the trapping study. It formerly was mapped as non-native grassland for the NCCP. Level areas immediately adjacent to the disced areas support black mustard (*Brassica nigra*), ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* spp. *rubens*), and slender wild oat (*Avena barbata*).

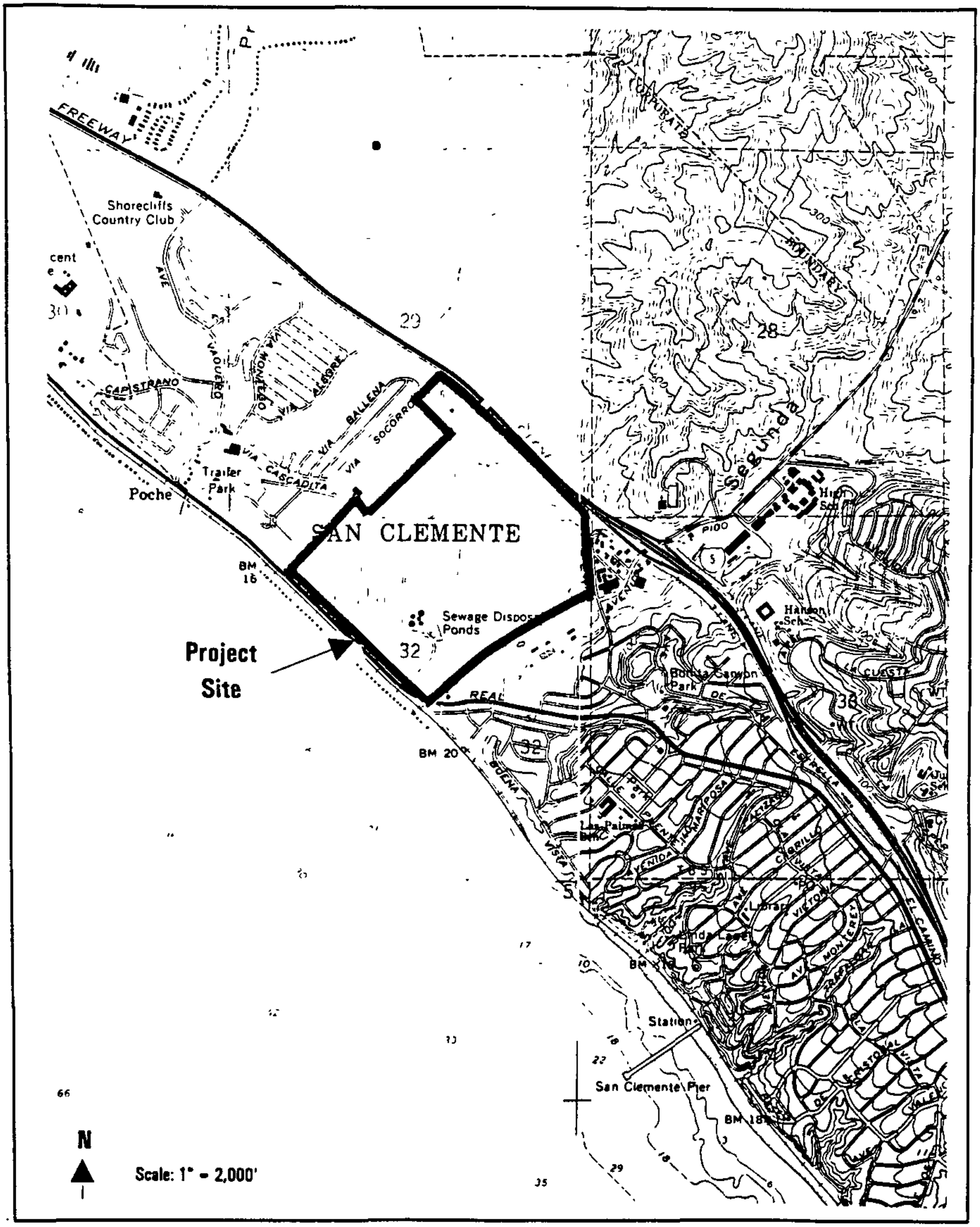
The canyons on the site support coastal sage scrub and riparian habitats. The coastal sage scrub habitat on the steeper canyon slopes is dominated by coastal sagebrush. The more



Marblehead Coastal Project Site
Pacific Pocket Mouse Assessment

Regional Map

FIGURE 1



Source: USGS 7.5 Minute Map, Dana Point Quadrangle

Marblehead Coastal Project Site
Pacific Pocket Mouse Assessment

Vicinity Map FIGURE 2

disturbed canyon bottoms support broom baccharis (*Baccharis sarothroides*), quail brush (*Atriplex lentiformis*), California everlasting (*Gnaphalium californicum*), sweet fennel (*Foeniculum vulgare*), yellow sweet-clover (*Melilotus indica*), coastal goldenbush (*Isocoma menziesii*), tree tobacco (*Nicotiana glauca*), telegraph weed (*Heterotheca grandiflora*), black mustard, horseweed (*Conzya canadensis*), tamarisk (*Tamarix* sp.), and mule fat (*Baccharis salicifolia*). The understory is dominated by brome grasses, including foxtail chess, ripgut grass, and soft chess (*B. hordeaceus*).

3.2 SOILS

Soils on the terraces consist of clays, including the Alo and Cropley series (Wachtell 1978). Soils in the canyons that were trapped for the Pacific pocket mouse consist of Myford sandy loams.

The Alo clays formed in material weathered from calcareous sandstone and shale. They typically support a dark grayish brown clay approximately 25 inches thick. The Cropley clays formed in alluvium from sedimentary rocks and typically have a surface layer of very dark clay approximately 29 inches thick. Clay soils are not known to support the Pacific pocket mouse and its potential to occur in these soils on the site is considered extremely low. For this reason, traplines were not set in areas with clay soils.

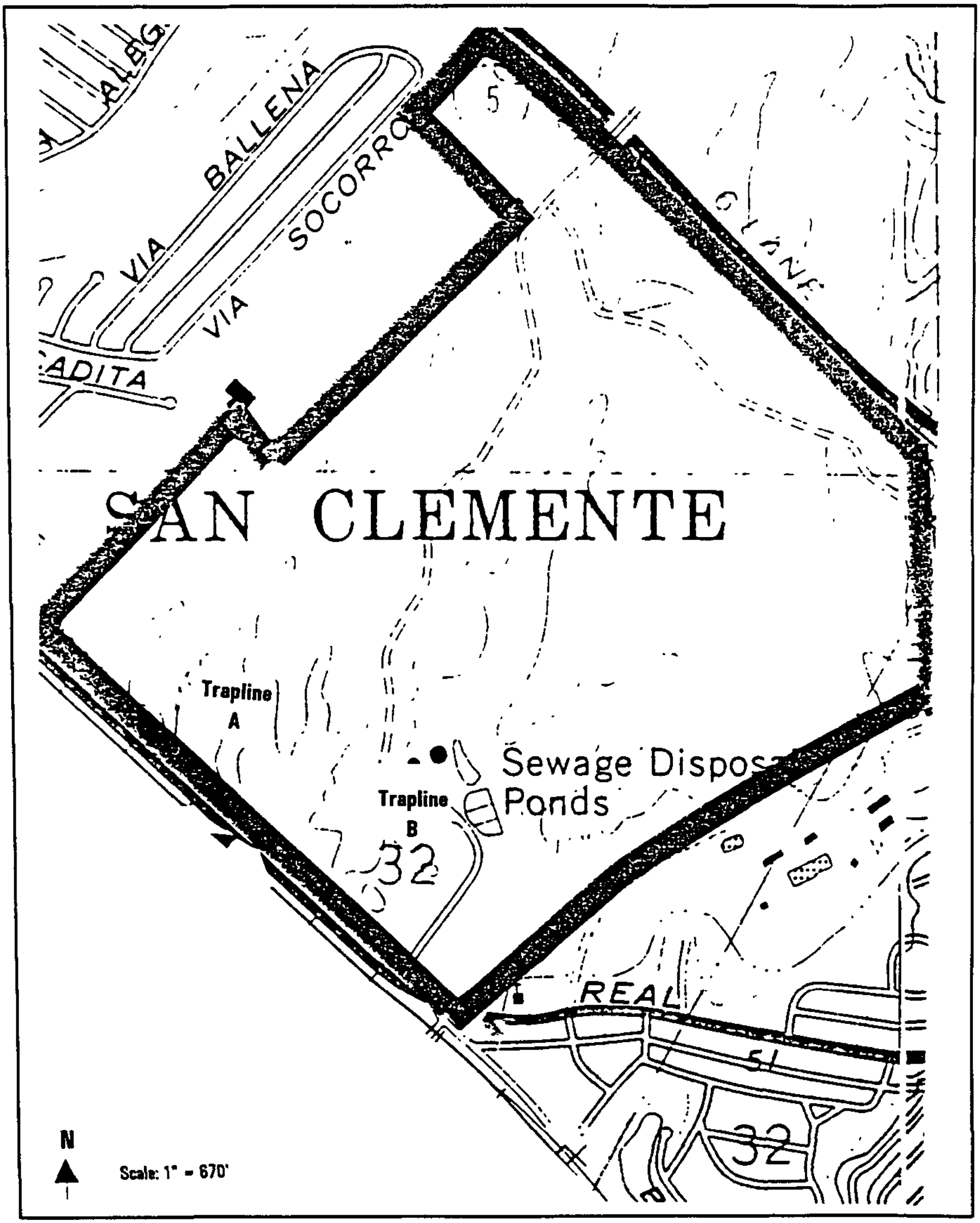
Myford sandy loams formed in sandy sediments and are found on marine terraces. They typically consist of surface and subsurface layers of pale brown and/or pinkish gray, medium acid sandy loam approximately 12 inches thick. These soils were considered to have the highest potential to support the Pacific pocket mouse on the site and, thus, the trapping effort was focused in these areas.

4.0 SURVEY METHODOLOGY

A trapping program was conducted in two separate areas on the project site. Traplines A and B were set in disturbed coastal sage scrub and disturbed habitat underlain by sandy loam soils on the northwestern and southwestern portions of the site (*Figure 3*). These traplines were established in the two areas of the site that appeared to have the greatest potential to support the Pacific pocket mouse. Much of the remainder of the site is disced, supports clay soils, or is overgrown by dense grasses and black mustard, all characteristics incompatible with Pacific pocket mouse occupation.

The trapping program was conducted under the authority of a State Memorandum of Understanding (MOU) and USFWS permit (PRT-756268) issued to Dr. Behrends. Both the MOU and the federal permit allow Dr. Behrends to trap and handle individuals of the Pacific pocket mouse for the purpose of identifying them.

Conditions were favorable for the trapping study. Air temperature at the ground surface ranged



Source: USGS 7.5 Minute Map, Dana Point Quadrangle

Marblehead Coastal Project Site
Pacific Pocket Mouse Assessment

Trapline Locations A and B

FIGURE 3

from 55 to 65 degrees Fahrenheit during the trapping program. The moon was in the waning phase and trapping began 2 days past full moon (moonrise at 2130) and ended 6 days past full moon (moonrise past 0100). Standard small mammal trapping techniques, using Sherman live traps (9" x 3" x 3") modified to prevent tail lacerations and baited with a mixture of bird seed and rolled oats, were used. Trapline A consisted of 20 traps spaced at approximately 5 meter intervals. Trapline B consisted of 80 traps spaced at 5-10 meter intervals.

Traps were set at dusk and checked before midnight and again at dawn. Traps were closed during the dawn check. All captured animals were identified to species, and immediately released at the trap site. All captured animals were examined in detail by Dr. Behrends. Weight, sex, and reproductive condition were recorded for each specimen caught. A small amount of fur was clipped from the rump area to identify recaptured individuals.

5.0 RESULTS AND DISCUSSION

A total of 500 traps was set over five consecutive nights on May 4-8, 1996. On all nights, 100 traps were set at the same trap stations. Table 1 presents the results of the trapping program. No individuals of the Pacific pocket mouse were trapped. A total of 56 individual rodents representing three species was captured over the five nights. The most common species on the site was the deer mouse (*Peromyscus maniculatus*), with 155 captures of 51 individuals, followed by the western harvest mouse (*Reithrodontomys megalotis*), with four captures of three individuals, and the house mouse (*Mus musculus*), with two captures of two individuals.

In conclusion, the trapping study indicates that the Pacific pocket mouse is not present on the Marblehead Coastal project site and it will not be a constraint to development of the site.

TABLE 1

MARBLEHEAD COASTAL
NIGHTLY TRAPPING RESULTS

Night of	Deer Mouse						Harvest Mouse					House Mouse					Nightly Total
	AM	AF	JM	JF	?	R	AM	AF	JM	JF	R	AM	AF	JM	JF	R	
5/4/96	16	5				1											22
5/5/96	2	5		1		24											32
5/6/96	3	2	1		1	19							1				27
5/7/96	2	3			1	26	1						1				34
5/8/96	2	4	2		1	34	1	1			1						46
Total	25	19	3	1	3	104	2	1	0	0	1	0	2	0	0	0	161

AM - New Adult Male
AF - New Adult Female
JM - New Juvenile Male
JF - New Juvenile Female
R - Recapture
? - Sex/age class not determined

6.0 LITERATURE CITED

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November 24, 1997

Mr. Keeton Kreitzer
David Evans & Associates
23382 Mill Creek, Suite 225
Laguna Hills, California 92653

Subject: Methods, Results, and Conclusions of Focused Gnatcatcher Surveys Conducted on the 250-acre Marblehead Coastal Site Located in the City of San Clemente, Orange County. California

Dear Mr. Kreitzer:

Natural Resource Consultants (NRC) was retained by David Evans, Inc. to conduct focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*) on the 250-acre Marblehead Coastal site located in the City of San Clemente, County of Orange, California. In November of 1997 NRC conducted six one-day surveys of the Marblehead Coastal site and recorded the use-areas and behaviors of two coastal California gnatcatcher pairs. No other gnatcatcher were located on site. Based on the observations of these two pairs, NRC estimated the "occupied habitat" for these pairs. The estimated "occupied habitat" was based on the recorded use-area and behaviors of these birds, the distribution of vegetation communities in the vicinity of gnatcatcher activity, the topography of the site, and existing data pertaining to gnatcatcher use on this site. This letter provides the methods, results, and conclusions of NRC's surveys.

Project Location

The Marblehead Coastal site is located within the City of San Clemente, Orange County, California. The site lies immediately northeast of El Camino Real (formerly Pacific Coast Highway), southwest of San Diego Freeway (I-5), south of Via Socorro, and north of Avenida Pico. The site is shown on U.S.G.S. Dana Point and San Clemente quadrangles. The site is largely disturbed by agricultural uses. The flat portions of the site have not supported native vegetation for at least twenty years. A sewer facility was located in the southwest corner of the site until approximately 1984. Native habitats, including several scrub communities, occur along the slopes and bottoms of on site drainages. Surrounding land uses include residential and commercial uses.

Project History

The Marblehead Coastal site supported at least one pair of gnatcatchers in February and March of 1996 (NRC 1996). NRC's 1996 survey did not determine the breeding success of this pair, nor was NRC able to locate a second pair of gnatcatchers previously documented by LSA in 1990. In addition to gnatcatcher studies, NRC conducted a full biological analysis of the Marblehead site in 1996 (NRC 1996a).

Definition of "Occupied Habitat"

For the purposes of this report, the "occupied habitat" used by a gnatcatcher pair observed on the Marblehead Coastal site is defined as an estimate of the area used by a specific gnatcatcher pair throughout the breeding and non-breeding months. NRC's estimate is based upon 1) the observed locations and behaviors of the gnatcatcher pair during six one-day surveys conducted in November of 1997, 2) the expected variation in gnatcatcher use-areas during non-breeding and breeding months, 3) the vegetation communities and level of habitat disturbance in the vicinity of the observed gnatcatcher locations, 4) previously collected records of gnatcatchers on this site (NRC 1996 and LSA 1990), and 5) the topography in the vicinity of the recorded gnatcatcher locations. It is assumed that additional field studies and statistical analysis may refine the estimated "occupied habitat" area provided herein; however, additional surveys are not likely to substantially change the extent and location of this area.

Gnatcatcher Survey Methods

Each gnatcatcher territory was visited at least six times between November 1 and November 21, 1997. A minimum of one hour and a maximum of two hours was spent in each territory tracking each resident adult gnatcatcher, sufficient to gather approximately 10 sighting locations spaced approximately five minutes apart each visit (minimum total sample size of 60 points). The maximum effort per visit to a territory was limited to three hours for birds that were difficult to locate. The dates and times of these surveys are shown in Table I.

TABLE I
SURVEYS DATES, TIME, AND WEATHER FOR THE MARBLEHEAD COASTAL SITE

Date	Time	Weather
November 15, 1997	6:30 a.m. to 10:50 a.m.	Clear, no wind, 63 -69 degrees f.
November 16, 1997	6:30 a.m. to 10:30 a.m.	Clear, no wind, 60-67 degrees f.
November 18, 1997	6:30 a.m. to 10:30 a.m.	Clear, no wind, 63-71 degrees f.
November 19, 1997	6:25 a.m. to 10:30 a.m.	Clear, no wind, 65- 69 degrees f.
November 20, 1997	6:30 a.m. to 10:30 a.m.	50% cloud cover, wind 0-2 mph, 65-67f.
November 21, 1997	6:30 a.m. to 10:30 a.m.	Clear, no wind, 60 to 67 degrees f.

Survey Data Collection

Data collected during each site visit included the observer's name, start and stop times in the territory, time of first encounter of each adult individual, the number, age and sex of all gnatcatchers observed, and a determination of the breeding stage (nest building, incubating, etc) of each pair monitored.

Gnatcatchers were located with a minimum use of vocalization tapes. Where feasible, data on both members of the pair was collected. Once the adult bird(s) was located, the location of one (both) gnatcatcher(s) was recorded approximately every five minutes using a watch with a countdown timer (e.g., Timex Triathlon) to signal when data should be gathered. The time was noted next to the location. If the birds do not move after more than one minute then the number of minutes at the location was recorded. Observers avoided influencing bird behavior by being as quiet and unobtrusive as possible.

At each point location, the plant species were tallied for the last plant that the gnatcatcher(s) was (were) observed foraging in during the previous minute. Only in the case when no foraging activity occurred during the previous minute would no plant species be recorded. The initiation and ending of all intraspecific territorial disputes was mapped. Detailed information regarding territorial behavior was recorded in field notes as to the number, age, and sex of all participants in the territorial encounter. Descriptive information on the duration, type and sequence of behaviors observed was also recorded.

Survey Results

Two gnatcatcher pairs were located on the site. These birds included a pair in the southwestern corner of the site (Pair #1) in the same location as a pair recorded by LSA in 1990, and a pair in the south central portion of the site (Pair #2) in the same location as the pair located by NRC in 1996. These locations are shown on Exhibits 1 and 2. Both gnatcatcher pairs on the site are pair-bonded. No territorial disputes were observed during the survey period and, as expected, no sign of mating behavior or nest building was observed during NRC's November surveys. No juvenile gnatcatchers or unpaired birds were observed on site. The primary behaviors observed during the current survey were foraging, eating, preening, flying, and calling.

A detailed description of NRC's survey results are provided in the paragraphs that follow.

Pair #1 (as shown on Exhibit 1)

Habitat Description: This pair was located in the southwestern corner of the site and was observed to use two small drainages separated by the coastal bluff along the southern edge of the site The eastern of the two drainages supports sagebrush scrub with scattered coyote bush scrub. The western drainage is more shallow and supports mulefat scrub with small patches of coyote bush scrub. Vegetation communities in this area include sagebrush scrub, coyote bush scrub, coastal bluff scrub, disturbed/ruderal, mulefat scrub, and needlegrass grasslands. Dominant plant species within the observed use-area of this pair is California sagebrush (*Artemisia californica*) saltbush (*Atriplex* sp.), coyote bush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), iceplant (*Mesembranthemum* sp.), box thorn (*Lycium californicum*), and brome grasses (*Bromus sp.*).

Observed Behaviors: Based on the observed locations and activity pattern of this pair, the primary use-area for this pair in November of 1997 is the eastern, sagebrush scrub-filled drainage. The mouth of this drainage and the graded bluff to the west supports disturbed or ruderal habitat covered by introduced iceplant The bluff (to the west) supports scattered saltbushes used by this pair as they forage westward to the western drainage. The gnatcatchers are not simply using the bluff as a fly-over link but are actively foraging there, at times taking 30 minutes to cross the approximately 500 feet separating the two drainages. During NRC's November surveys the same isolated saltbushes were used each day as the birds traveled across the bluff between the east and west drainage

Occupied Habitat: The estimated "occupied habitat for Pair #1 is 6.6 acres. This area includes the entire observed use-area of this pair. The "occupied habitat" includes the majority of the east and west drainages, a swath of the existing bluff connecting the two drainages, and a portion of the coastal bluff scrub located west of the western drainage.

Pair #2 (as shown on Exhibit 2)

Habitat Description This pair was observed immediately west and southwest of the "rock pile" along the western side of the saltbush and coyote bush-filled basin. Habitats used by this pair include sagebrush scrub, saltbush scrub, alkaline marsh, and coyote bush scrub. Dominant plant species included California sagebrush, saltbush, mustard, tree tobacco, and pickleweed

Observed Behavior: Based on the observed locations and activity pattern of this pair, the primary use-area for this pair in November of 1997 is the sagebrush scrub on the west side of the basin. These birds forage in saltbush scrub-covered slopes immediately west of the "rock pile" in the basin bottom. The birds also foraged in the coyote bush and saltbush scrub in the bottom of the basin. The male from this pair was observed foraging along a fringe of saltbushes north and west of this area. This pair forages across a relatively diverse assortment of plant communities including pickleweed in the alkali marsh.

Occupied Habitat: The estimated "occupied habitat" for Pair #2 is 6.3 acres. This area includes the entire use-area observed in November of 1997. This "occupied habitat" includes the majority of the basin surrounding the rock pile. In addition, the "occupied habitat" area includes a strip of habitat located south and north of this area in the drainage bottom. Portions of the long strip of saltbush scrub habitat located further north of the rock pile where these gnatcatchers were observed were also included in the occupied habitat acreage.

Conclusions

NRC collected approximately sixty data points on each pair as shown in Exhibits 1 and 2. These data sets, when mapped, show a cluster of location records that represent a portion of the "occupied habitat" for these pairs. The estimated "occupied habitats" presented in this letter include easily accessible habitats adjacent to these clusters that are likely to be used for roosting, foraging, feeding, breeding, mating, and nesting. Other portions of the site may be temporarily used as dispersal habitat for juvenile coastal California gnatcatchers and infrequent foraging for resident birds, however, based on the lack of mature coastal sage scrub, the level of on site disturbance, and the lack of recorded gnatcatchers in the vicinity, the site is unlikely to provide additional nesting or breeding habitat for this species

If you have questions or comments on this material please contact me directly at 714.497.0931.

Sincerely,

NATURAL RESOURCE CONSULTANTS

Dave Levine

BLOCHMAN'S DUDLEYA TRANSLOCATION PLAN
FOR
MARBLEHEAD BLUFFS

Prepared for

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Introduction

A. Project Description and History

This translocation/restoration and management plan is being prepared to address the impacts to Blochman's dudleya (*Dudleya blochmaniae* subsp. *blochmaniae*: Crassulaceae) which result from the implementation of the past and future bluff stabilization efforts associated with the development of Lusk Company's Marblehead Bluffs property in San Clemente, Orange County, California (Figures 1 and 2).

Emergency grading and a concurrent unsuccessful salvage program was conducted in 1990 and resulted in the loss of approximately 3.5 acres of Blochman's dudleya habitat and between 6,500 and 8,000 individuals (Phase I). The salvaged plants were taken to Tree of Life nursery in San Juan Capistrano, California for care and propagation. Because the Blochman's dudleya were not kept in isolation at the nursery, the genetic integrity of the plants grown from seed produced at the nursery was in question. Jim Dice, California Department of Fish and Game's (CDFG) Region 5 Plant Ecologist, considered the plants to be unsuitable for use in relocation efforts. Portions of remaining bluffs at the Marblehead Bluffs site (Phase II) have been identified as a hazard to public safety, and their stabilization is anticipated to result in the loss of approximately 3,600 Blochman's dudleya and one acre of its habitat (LSA Associates 1992). It has been estimated that between 10,000 and 12,000 individuals of Blochman's dudleya originally existed on-site and that approximately 3,600 individuals remain on ungraded bluffs near the north end of the site (Figure 3).

B. Project Location and Description

The 250-acre Marblehead Bluffs site is located in the city of San Clemente, along North El Camino Real beginning just north of Avenida Pico (see Figure 2). It consists predominantly of fallow agricultural fields; however, native habitat is still extant in several arroyos which dissect the property and on the southwest-facing coastal bluffs. The bluffs are part of the Capistrano geologic formation and the soils consist of unconsolidated, weakly cemented sandstones. The maximum elevation on-site is approximately 100 feet above mean sea level.

The natural population of Blochman's dudleya is found in remnant coastal bluff scrub on southwest-facing slopes and adjacent arroyo margins at the Marblehead Bluffs site where no agricultural activities have occurred (see Figure 3). Associated plant species include California boxthorn (*Lycium californicum*), California sagebrush (*Artemisia californica*), coastal goldenbush (*Isocoma menzeisii*), golden tarplant (*Hemizonia fasciculata*), mariposa lily (*Calochortus* sp.), lance-leaf dudleya (*Dudleya lanceolata*), pineapple weed

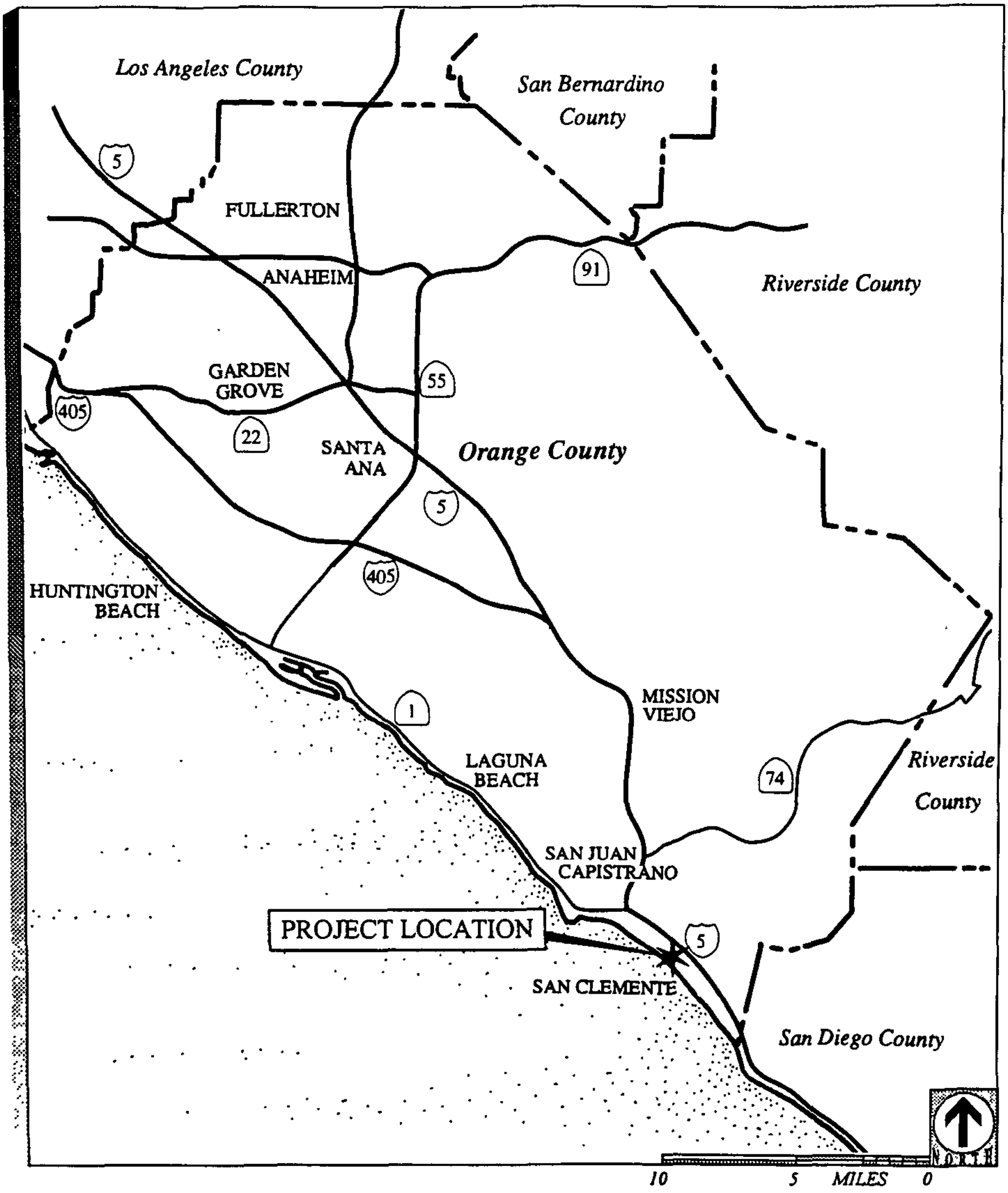

FIGURE 1

Regional Location of the Project in Orange County

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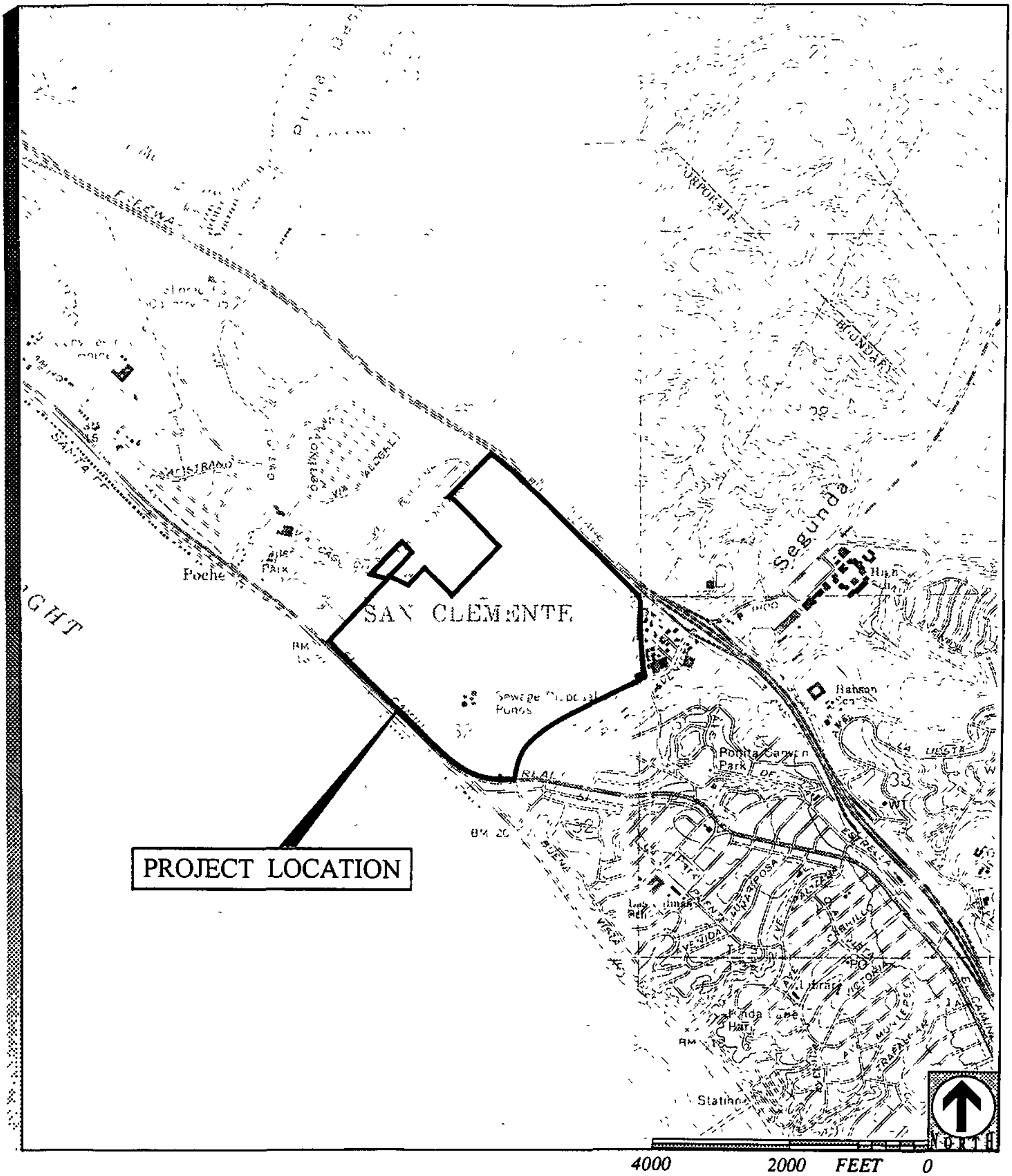

FIGURE 2

Project Location on U.S.G.S. 7.5 Minute Topographic Maps, Dana Point and San Clemente Quadrangles

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Existing natural populations area

Translocation/restoration site

FIGURE 3

Locations of Blochman's Dudleya Populations

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(*Amblyopappus pusillus*), and gumplant (*Grindelia robusta*). Blochman's dudleya is often observed as an understory species to the boxthorn and coast goldenbush. These species seem to serve as nurse plants for Blochman's dudleya by providing some protection from herbivores and sheltering them from the desiccating effects of direct sunlight and wind.

The proposed translocation/restoration site is on the southwest-facing bluffs above El Camino Real at Avenida Pico (see Figure 3). The area provides approximately 1.3 acres for the establishment of Blochman's dudleya and a 50-foot-wide buffer zone to the north and east of the planting locations (Figure 4). This natural bluff will <u>not</u> be subject to remedial grading and has intact bluff soils currently vegetated with a combination of native and non-native plant species. The translocation/restoration site already has many of the same native species that are associated with Blochman's dudleya in the natural population including: California boxthorn, California sagebrush, coastal goldenbush, golden tarplant, lance-leaf dudleya, pineapple weed, and gumplant. A significant portion of the translocation/restoration site is inhabited by non-native weedy species including *Malephora crocea* which is a perennial ice plant, black mustard (*Brassica nigra*), yellow star-thistle (*Centaurea solstitialis*), and wild oat (*Avena* sp.). Exotic species often negatively affect native species by competing for space and water. All of these species will be controlled and replaced by native species over the three-year program (see Site Rehabilitation and Maintenance).

C. Blochman's Dudleya Biology and Conservation Status

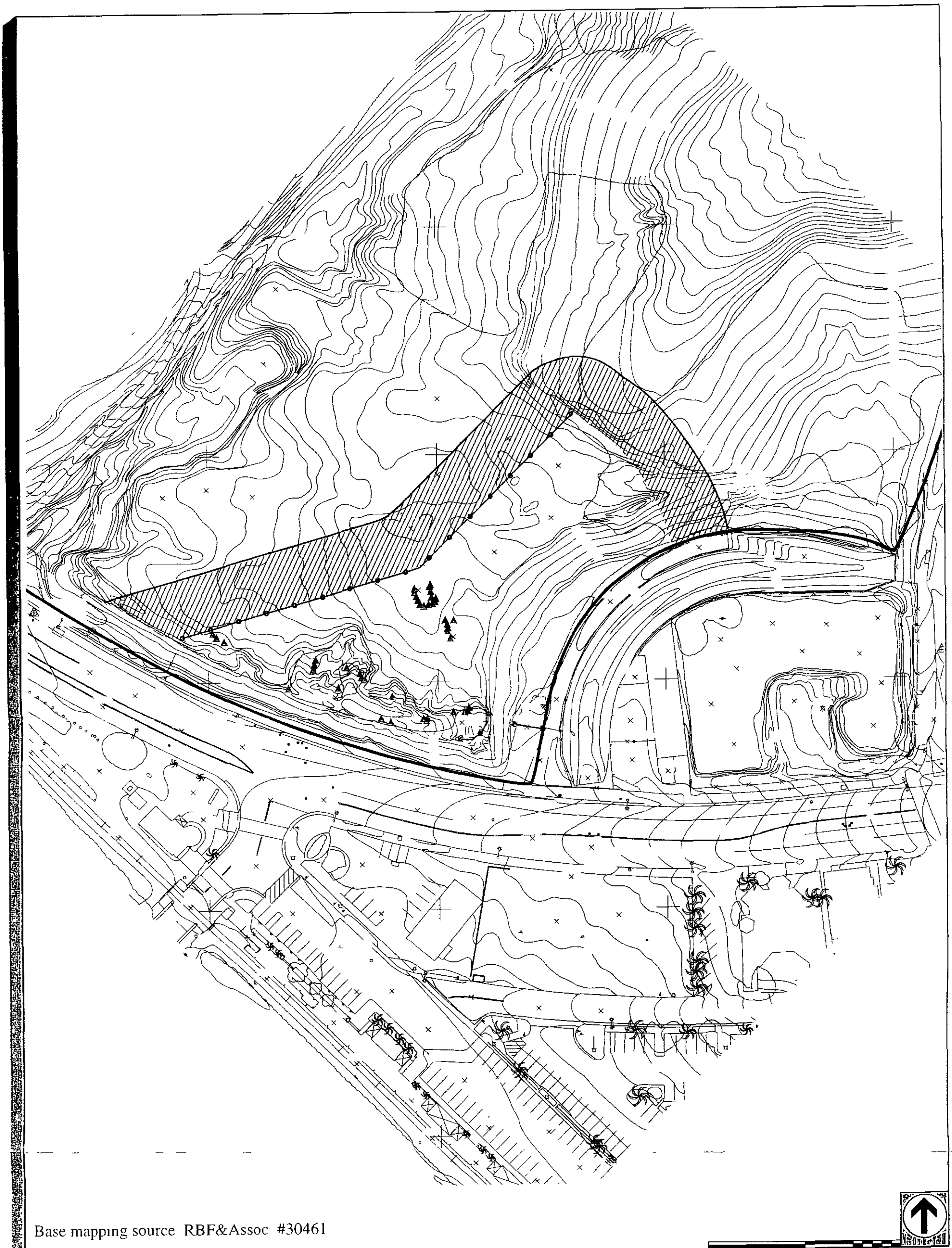
Blochman's dudleya is a perennial succulent plant species (Photographs 1 and 2) which is found in small disjunct populations from San Luis Obispo County southward into northwestern Baja California, Mexico (Figure 5) (Moran 1951; Munz 1974; Hickman 1993). It occurs on coastal bluffs, often in clay soils, and around rock outcrops. Like other members of the subgenus *Hasseanthus*, Blochman's dudleya is drought-deciduous in summer, surviving on starch reserves stored in a subterranean tuberous caudex (stem). Annual growth is initiated after the first significant fall rains and the plants grow actively through early April. Flowering occurs during late April and early May, with seed set generally occurring in June. The seeds of the Blochman's dudleya are very small, approximately 0.8 millimeter in length and are generally dispersed by wind and water. Potential pollinators of Blochman's dudleya which have been seen visiting flowers at other locations in southern California and northwestern Baja California include bee flies (Bombyliidae), hover flies (Syrphidae), soft-winged flower beetles (*Dasytes* sp.; family Melyridae), honey bees (*Apis mellifera*), bumble bees (genus *Bombus*), and digger bees (family Anthophoridae).

PHOTOGRAPH 1

Blochman's Dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*) in Native Habitat

PHOTOGRAPH 2

Blochman's Dudleya Flowering in Native Habitat



Buffer fence

Dudleya locality

50' Buffer zone

Marblehead Bluffs property boundary

Note Information is for the winter of 1995-1996

FIGURE 4

Locations of Blochman's Dudleya at the Translocation/Restoration Site

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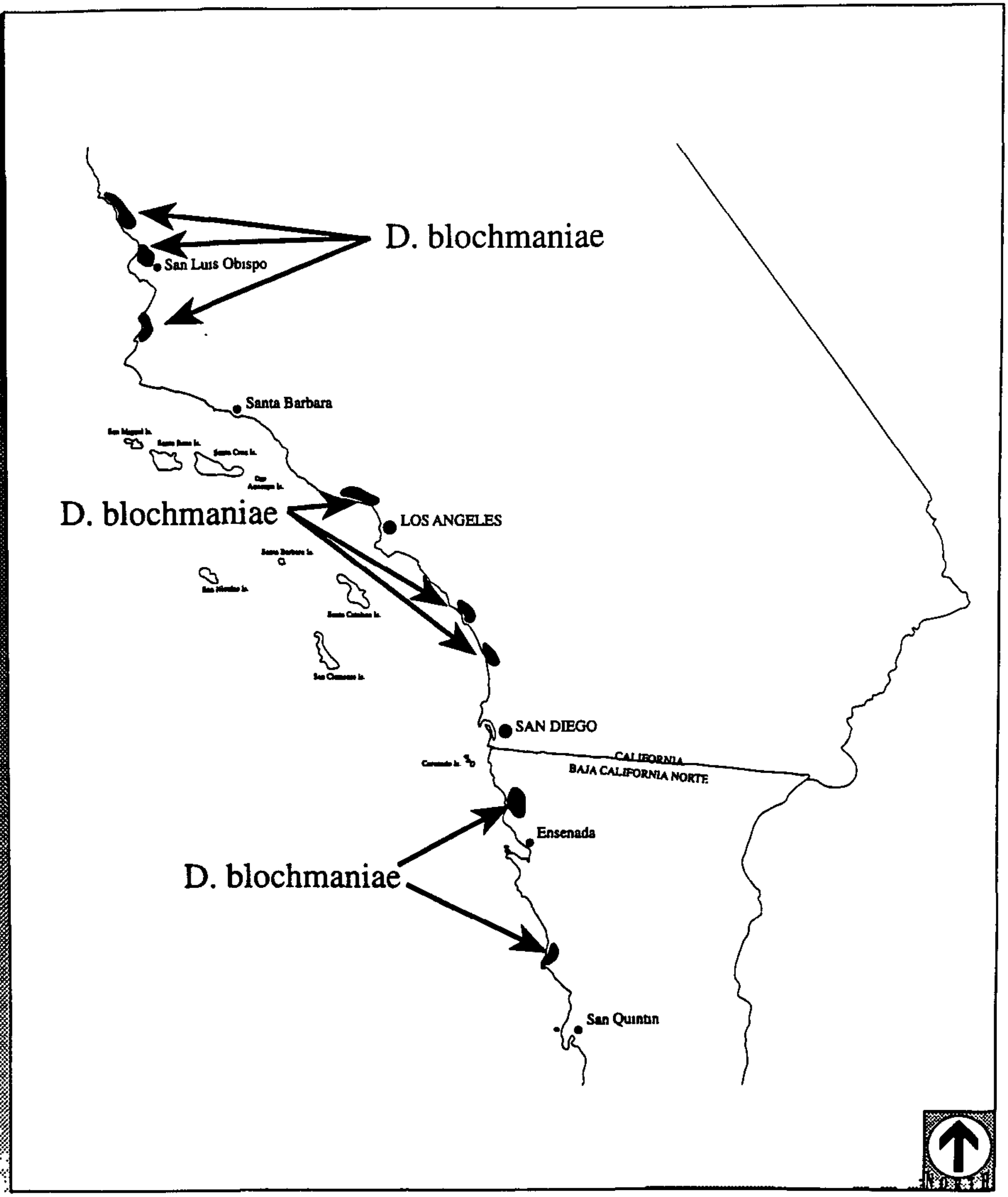

FIGURE 5

Distribution of *Dudleya blochmaniae*

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Reproduction is primarily by seed; however, Blochman's dudleya is also capable of vegetative reproduction via detached leaves (Dodero 1996a). Within one to three weeks after they are removed from the plant, the leaves develop roots at their base and are ready for planting.

At this time Blochman's dudleya is not state listed or a federal candidate species for listing as endangered or threatened, but this species is considered to be rare and endangered by the California Native Plant Society (Skinner and Pavlik 1994) and is on the California Department of Fish and Game's Natural Diversity Data Base (NDDB) List of Special Plants (1996), which meet the criteria for state listing under Section 15380 of the California Environmental Quality Act (CEQA) (State of California 1996).

D. Previous Translocation Plan

A previous translocation and management plan for Blochman's dudleya was prepared by LSA Associates in 1992. However, this plan has not been implemented. A major assumption of the LSA Associates plan was that the translocation of Blochman's dudleya would be done on the graded slopes adjacent to El Camino Real. However, the graded slopes are unsuitable for the translocation of Blochman's dudleya. In this revised plan, the graded slopes were not chosen as the translocation/restoration site because the soils are very saline, a condition which generally inhibits the growth of native plants. These graded slopes are currently infested with annual non-native slender-leaved iceplant (*Mesembryanthemum nodiflorum*) and crystalline ice plant (*M. crystallinum*). Crystalline ice plant is known to accumulate salts. When the plant dies the salt is released through leaching by fog and rain, increasing the salinity of the surrounding soil (Vivrette and Muller 1977). Before these slopes would be suitable for the translocation of Blochman's dudleya, the ice plant would need to be removed, the topsoil would need to be completely replaced, and the entire plant community associated with the dudleya would need to be recreated. We believe that the probability of successful translocation and maintenance of Blochman's dudleya would be greatly reduced if these slopes were used as the translocation site. Jim Dice, the CDFG Region 5 Plant Ecologist conducted a site review on July 11, 1996 and concurs with the determination that these slopes are unsuitable as a translocation site (Jim Dice, pers. com. 1996). This new plan proposes to establish a population of Blochman's dudleya within suitable, unoccupied coastal bluff scrub habitat on adjacent bluffs that do not require stabilization. Changes included in this revised plan are intended to provide a greater assurance that translocation efforts will be successful.

E. Goals of Revised Translocation and Monitoring Plan

The goals of this revised translocation and monitoring plan are:

1. The establishment of a self-sustaining population of Blochman's dudleya with a minimum population of 10,000 individuals (5,000 of which will be mature flowering plants) at the Marblehead Bluffs translocation site.

2. The restoration and enhancement of the native coastal bluff scrub community at the translocation site through the control of exotics, broadcasting of native seed, and limited plantings of appropriate container stock.

Methods

A. Introduction

This translocation/restoration effort will include the use of several propagation techniques, including hand broadcasting of seed collected from the natural population of Blochman's dudleya on-site, collection and placement of leaf cuttings at the translocation site, the translocation of salvaged adult plants from the natural population present at Marblehead Bluffs, and the translocation of nursery grown plants to the site. In addition, exotic species shall be controlled and replaced with native species by hand broadcasting seed and planting of a limited number of container plants. The details of the rationale and methods used for translocation site selection, site rehabilitation and maintenance, Blochman's dudleya propagation, and monitoring are discussed below.

B. Site Selection

There are a number of characteristics to consider when selecting a translocation site. Fiedler and Laven (1996) suggest these selection criteria fall into four general categories: physical, biological, logistical, and historical. Physical characteristics for site selection can be straightforward and typically focus on soils and landscape characteristics. Biological criteria are considered to be the ecological characteristics of a species. Translocation sites should be selected based on the presence of appropriate habitat parameters including similar plant community structure and successional stage. In addition, potential competitors of the plant species being translocated, including weeds, should be identified and a plan developed and implemented for the control of these other species. Logistical criteria to consider when choosing the translocation site should include how well the site can be protected from unauthorized human access, as well as the level of difficulty in accessing the site for monitoring and remediation efforts. Historical selection criteria include two issues: (1) the use of currently occupied versus potential habitat and (2) consideration of a species evolutionary history, including its specific habitat requirements. Knowledge of how the habitat, occupied by the species, changes over time and how new habitat arises and becomes occupied by the plant is important to the success of restoration efforts.

One site has been selected to serve as the establishment area for Blochman's dudleya (see Figure 3). This area has been set aside for the translocation of Blochman's dudleya and the restoration of the natural bluff vegetation associated with it. The site selection criteria outlined by Fiedler and Laven (1996) are reflected in the choice of the translocation site for Blochman's dudleya.

The natural population of Blochman's dudleya at Marblehead Bluff is found on ocean bluffs with a mixture of sandstones and clay. The translocation/restoration site has similar bluff edges with appropriate soils. Many of the same native species associated with Blochman's dudleya at the natural population are found here. Non-native weedy species include *Malephora crocea*, a perennial iceplant which does not accumulate salts; black mustard; yellow star-thistle; and wild oat. The dudleya translocation/restoration site has been fenced to reduce the likelihood of unauthorized human access. The site is immediately adjacent to Pacific Coast Highway which allows easy access for monitoring and remediation efforts. The area is within the known historic range of Blochman's dudleya and the habitat characteristics of the translocation site are similar to those where the existing population occurs.

Dodero (1996a) notes that the range of this and other closely related species have probably expanded and contracted throughout the evolutionary history of the group, as areas of appropriate habitat such as ocean bluffs and clay lenses have been exposed and subsequently eroded. The mosaic of occupied and potential dudleya habitat changes over time and probably causes populations to come into contact or become isolated as habitat areas shrink and then expand. There is sufficient unoccupied habitat present at the translocation site to support 10,000 Blochman's dudleya plants, which is the goal of this translocation/restoration program.

C. Site Rehabilitation and Maintenance

Because Blochman's dudleya will be established in existing (albeit somewhat disturbed) coastal bluff scrub habitat occurring on intact soils, no soil testing will be necessary. The site has a number of non-native weedy species which will be controlled and replaced by native species over the three-year program. No native species will be displaced by this translocation/restoration project which is designed to enhance the site. The use of an area with intact, native substrate also removes the need to salvage soil, use soil amendments, or scarify the soil surface. Salvaged topsoil will only be used to provide substrate for germination of seed and leaf cuts associated with greenhouse propagation. No grading will occur in the establishment area, so erosion-control blankets will not be used. Bluff degradation at the corner of El Camino Real at Avenida Pico is being accelerated by ground squirrel activity (Dodero, personal observation). Squirrel control methods will be employed as necessary during the transplantation and enhancement effort. In addition, fencing (see Figure 4) has been placed in appropriate locations to discourage foot and bicycle traffic along the well traveled path at the east end of the translocation site. The 50-foot-wide buffer zone north and east of the Blochman's dudleya translocation area (see Figure 4) will be planted with native species such as California sagebrush, boxthorn, coast prickly pear (*Opuntia littoralis*), and coast cholla (*O. prolifera*) to discourage foot traffic. Revegetation of the buffer zone will be performed in accordance with the Marblehead Coastal Resource Management Plan.

Selection of existing coastal bluff with extant coastal bluff scrub habitat greatly reduces the need for container stock which would have been necessary to reestablish habitat for Blochman's dudleya on the graded slopes. The intact site most likely contains the mycorrhizal associations important to the successful establishment of native plant species. Two species, coast goldenbush and California boxthorn, appear to serve as nurse plants for Blochman's dudleya in the natural population at Marblehead Bluffs. Nurse plants are species which provide safe sites for germination and establishment of other species such as Blochman's dudleya (Primack 1996). California sagebrush does not appear to be a good nurse plant for Blochman's dudleya, because the foliage canopy of the sagebrush is too dense and seems to crowd out the dudleya.

Approximately 75 one-gallon boxthorn plants will be grown from seed collected on-site over the three-year period and will be planted to serve as nurse plants for the dudleya. In addition, seeds of coast goldenbush collected on-site will be broadcast throughout the restoration site each year. Coast goldenbush will not be grown as container stock because the seeds appear to germinate readily on-site, as evidenced by the large number of seedlings of this species present at the restoration site.

Exotic plants will be controlled throughout the length of the program. Non-native species will be removed primarily using hand tools, although some ice plant control may be done using Roundup® (or another appropriate herbicide) sprayed by a licensed pesticide applicator under the supervision of the project biologist. As exotics are removed, these areas will receive hand-broadcast native seed collected from on-site coastal bluff scrub in order to enhance the quality of the habitat at the restoration site. Native seeds will not be placed directly in the dudleya planting sites (except coast goldenbush) in order to avoid competition. Also, seeds will not be raked into the soil, as this action enhances weed germination and creates competition. The use of supplemental water is not anticipated because native seeds will be broadcast during the winter rainy season.

The translocation/restoration site will be maintained for three years. Maintenance will commence following placement and establishment of dudleya seed, leaf cuts, and transplanted adults. Maintenance activities will include continued control of exotics and visual inspections to identify incipient problems such as herbivore predation or vandalism. It is anticipated that maintenance inspections and/or weed removal activities will occur monthly during the first year and quarterly during years 2 and 3.

D. Blochman's Dudleya Propagation, Translocation, and Establishment

Seeds from individuals of Blochman's dudleya found in the natural population at Marblehead Bluffs were collected in the summer of 1995 and will be collected again during the summer of 1996, 1997, and 1998, if available. Prior to seed collection, the location of each colony was marked. Whole dried inflorescences were collected and placed in paper envelopes, which allow for the evaporation of residual moisture to prevent molding. Seeds are then stored in a cool, dark location to prevent desiccation and maintain viability. *Dudleya* seeds remain viable for many years under these conditions (Dodero 1996a) and germination tests using seeds from *Dudleya multicaulis*, a closely related species, indicate no significant reduction in viability over a two-year storage period.

Due to the very small size of the seeds the exact number collected to date is unknown, but a conservative estimate ranges between 5,000 and 10,000. To ensure the maintenance of genetic diversity in the translocated population, seed was collected from individuals in each subpopulation throughout the entire range of the species on-site. Approximately 25 percent of the 1995 collected seed was hand-broadcast into selected locations within the translocation/relocation site in early January 1996. Another 25 percent of the collected seed will be used in greenhouse propagation efforts. Seed germination was begun in early January 1996 and will continue each winter season over the next two years. Of the remaining 50 percent, approximately 25 percent will be sent to the seed bank housed at the Rancho Santa Ana (RSA) Botanic Garden in Claremont, CA. for storage over a five-year period. This seed will be stored for possible future use in the establishment efforts at Marblehead Bluffs. RSA is a member of the Center for Plant Conservation (CPC), a national nonprofit organization which facilitates and coordinates off-site plant conservation within the United States botanic gardens and arboreta (Mark Elvin, pers. com.). The goal of the CPC is to prevent the extinction of rare plants native to the United States. Approximately 25 percent of the seed collected in 1996 will also be sent to this seed bank.

The goal of any translocation plan is the establishment of a self-sustaining population with a minimum population size which enables the species to retain the genetic resources necessary to adapt to changing environmental conditions (Guerrant 1996). To achieve the goal of creating a self-sustaining population, four establishment methods will be used at the translocation site: hand broadcasting of seed, planting of whole leaves which will develop into new plants after they develop roots, planting individuals germinated from seed collected on-site, and transplanting a subsample (approximately 10 percent) of adult individuals salvaged from the natural populations. Each method of establishment, whether by seed, cuttings, or transplants, may have drawbacks, depending on site-specific conditions (Guerrant 1996). Previous restoration experience with *Dudleya variegata* (Dodero 1996b), a closely related species, indicates that the use of a combination of these methods will likely give the best results. The location of seedlings, cuttings, and transplants placed in the translocation site during the winter of 1995-96 are depicted in Figure 5. The intent is to establish plants wherever the habitat is appropriate within the translocation site. The growth of the plants will be monitored throughout the area. This site will form the core of reestablished colonies of Blochman's dudleya. Two 0.5-meter-by-1.0-meter plots will be established at the translocation site for detailed growth-monitoring purposes as discussed below.

Leaf cuts will be taken in late January from plants throughout the natural population at Marblehead Bluffs. The leaf cuts will be stored at an off-site nursery location until they have callused and formed roots. Fifty percent of the detached leaves will be placed directly into the translocation site after they form roots, with the remainder used for greenhouse propagation and later planting. Approximately 10 percent of remaining individual adult plants in the natural population will be salvaged for immediate placement at the translocation site during winter 1995-96 and 1996-97. Plants propagated from seed will be placed into the plots two years after they are germinated, beginning in winter 1997-98. A timeline of propagation activities is presented in Table 1.

Guerrant (1996) performed modeling experiments on a number of rare plant species for which reintroduction programs were implemented. He found the risk of population extinction is greatly reduced if plants of even slightly larger than seedling size are used in a translocation program. Guerrant also found that the size of the created populations after 10 years is strongly correlated with the size of the plants used. The use of the largest individuals of a species resulted in the largest population size. These size factors have been taken into account in the design of this dudleya translocation plan. In addition, Guerrant (1996) points out that one of the most serious problems associated with reintroduction is a loss of genetic diversity. Research has shown that reduced population size can rapidly result in the loss of genetic variability. One way to avoid the loss of genetic diversity is to rapidly expand the size of the newly established population (Guerrant 1996). By increasing the number of individuals soon after the population is established, much of the genetic variability present in a population can be maintained. The goal of this translocation project is to reach the population goal of 10,000 individuals as quickly as possible. Genetic tests are not proposed as part of this translocation program. Upon determining the success of the translocation effort (see discussion of

TABLE 1
TIMELINE OF BLOCHMAN'S DUDLEYA PROPAGATION

Activity	Dates
Seed collection	July 1995, 1996, 1997 and 1998 (if available)
Direct seeding on-site	January 1996, 1997, and 1998
Collection of leaf cuttings	January 1996, 1997, and 1998
Translocation of salvaged adult plants (10% of the natural population)	January-February 1996 and 1997
Translocation of nursery grown plants	January 1997, 1998

Success Criteria below), the remaining plants from the natural population at the Marblehead Bluffs site will be salvaged and planted within the translocation site.

E. Monitoring

With careful monitoring, researchers can detect changes in managed and unmanaged populations and communities over time (Primack 1996; Sutter 1996). Monitoring can be used to obtain basic biological information regarding life-history traits of species including seed production, pollination, herbivory, dispersal, and seed and plant dormancy (Sutter 1996). With these goals in mind, the translocation site will be monitored for a minimum three years. Monitoring activities will include:

- Photographing plots from permanent locations during the active growing period of Blochman's dudleya (February);

- Collection of quantitative data on total counts of Blochman's dudleya individuals in early February;

- Collection and identification of insect pollinators from the existing population of Blochman's dudleya at Marblehead Bluffs and the translocation site in April-May to assess on-site pollinator diversity and to ensure sufficient preservation of habitat for pollinators.

- Collection of quantitative data on total counts of flowering individuals at the translocation site (and recording a subsample of inflorescences per individual) in late April and early May; and

- Collection of detailed qualitative information regarding the success of exotic species eradication efforts at the translocation site each year in August. The areal extent of exotic and native species will be quantified using Global Positioning System Technology and the resulting changes in the distribution of these plants, including the dudleya will be monitored throughout the duration of the project. A timeline of monitoring activities is presented in Table 2.

In addition, two 0.5-meter-by-1.0-meter plots will be will be established at the translocation site during the 1996-1997 growing season for the collection of detailed data on dudleya growth rates. A minimum of 20 individual plants in each plot will be marked and followed through their development from germination through the three consecutive growing seasons. Data to be recorded includes number of rosette leaves, maximum length of rosette leaf, number and height of inflorescences, and presence of seed. Leaf measurement data will be recorded annually during late February-early March when the plants have reached their maximum leaf size for the season. The number and height of

TABLE 2
TIMELINE OF MONITORING ACTIVITIES:
BLOCHMAN'S DUDLEYA TRANSLOCATION SITE

Activities	Dates
Photograph translocation site from permanent stations	February 1996, 1997, 1998
Count the total number of individuals of Blochman's dudleya at the translocation site	Early February 1996, 1997, 1998
Collect and identify insect pollinators at the Marblehead Bluffs natural population and translocation site	April 1996, 1997, 1998
Count the total number of flowering individuals of Blochman's dudleya at the translocation site	Late April-early May 1996, 1997, 1998
Quantify exotic species eradication efforts using global positioning system (GPS)	August 1996, 1997, 1998

the inflorescences will be recorded annually in late April-early May during the flowering period. A timeline of study plot monitoring is presented in Table 3. Two 0.5-meter-by-1.0-meter plots will also be established at the natural population of Blochman's dudleya at Marblehead Bluffs during the 1996-1997 growing season. These plots will be monitored for two years in order to assess the response of the natural population to changes in seasonal rainfall. In addition, the California Department of Parks and Recreation will be contacted to try to arrange an agreement so that Blochman's dudleya monitoring plots may be established at San Clemente State Beach and monitored for three growing seasons.

Comparison of natural populations of Blochman's dudleya with those created through transplant and enhancement efforts would not be a valid scientific comparison. Even though a valid scientific comparison cannot be made, monitoring of the natural populations over the next two seasons, as outlined above, will provide valuable information regarding the size class distribution in a relatively natural population and allow researchers to determine how the natural population is responding to variable environmental conditions, including seasonal rainfall. Based on growth data recorded for *Dudleya variegata,* a closely related species which occurs in San Diego County, seedling plants are not expected to reach flowering maturity until at least the third season of growth (Dodero 1996b). These types of data have never been recorded for Blochman's dudleya and will provide valuable management information for the species.

Success Criteria

The success of plant translocation programs should be evaluated in light of four goals which include abundance, extent, resilience, and persistence (Pavlik 1996). The goal of maintaining abundance can be fulfilled by introducing large numbers of plants and propagules into the translocation site. Extent refers to the number and distribution of populations of a particular species. Resilience is maximized by maintenance of genetic variation, resistance to environmental perturbation, and ability of the plant to become dormant during unfavorable conditions. Persistence of populations is more likely when there is microhabitat variation within the translocation site and the natural community which the species occurs in is maintained. The goal of this translocation/restoration project is to create a viable reproducing population of Blochman's dudleya which is large enough to survive environmental perturbations and persist for the foreseeable future. This revised plan addresses the goals identified above. This plan proposes to establish a large population of approximately 10,000 individuals and maintain the population on-site so that the overall distribution and extent of this species is not reduced. This plan also attempts to maintain the genetic variation present within the Marblehead Bluffs population and the species by collecting seeds and propagules from the entire population still present on-site and by improving and enhancing the associated plant community of which Blochman's dudleya is a part.

TABLE 3
TIMELINE OF MONITORING ACTIVITIES:
0.5-METER-BY-1.0-METER BLOCHMAN'S DUDLEYA STUDY PLOTS

Monitoring Activities	Dates
Leaf measurements - maximum number of rosette leaves	Late February-early March 1997, 1998
Leaf measurements - maximum length of the longest rosette leaf	Late February-early March 1997, 1998
Measurement - inflorescence height	Late April-early May 1997, 1998
Counts of inflorescence number	Late April-early May 1997, 1998
Check for seed production	July 1997, 1998

The following specific success criteria were developed by the project biologist in coordination with Jim Dice, CDFG's Region 5 Plant Ecologist:

1. If, at end of the three-year period, the population of Blochman's dudleya at the designated translocation/restoration site equals or exceeds 10,000 individuals (all age classes), with a minimum of 5,000 flowering plants (in any of the three years), and the methods detailed in this plan have been adhered to, then the translocation effort shall be deemed successful. No further monitoring, transplanting, or seeding of Blochman's dudleya or other native plant species shall be required. Monitoring and control efforts for exotic pest plants shall continue for a period not to exceed six years. The project biologist in coordination with the CDFG Region 5 plant ecologist will conduct an annual review in years 4, 5, and 6 to assess the effectiveness of weeding efforts and determine the need to continue. The long-term management of the translocation/restoration area will be performed in accordance with the Marblehead Coastal Resource Management Plan.

2. If, at the end of the three-year period, the population of Blochman's dudleya at the designated translocation/restoration site consists of 4,000 to 9,999 individuals (all age classes), has shown an increasing trend in population numbers for at least two of the three years, or has a minimum of 2,000 flowering plants (in any of the three years), and the methods detailed in this plan have been adhered to, then the translocation effort shall be deemed partially successful. The translocation, restoration, monitoring, and maintenance efforts shall continue with annual review by the CDFG Region 5 plant ecologist not to exceed a total of 7 years. At any point during years 4 through 7 that the target population numbers (10,000 individuals with 5,000 flowering plants) are achieved, the translocation effort shall be deemed a success and no further transplanting, seeding, or monitoring of Blochman's dudleya shall be required. Exotic pest plant control efforts and monitoring shall continue with annual review by the project biologist and the CDFG plant ecologist to determine necessity of continuing for years 4 through 7.

3. If, at the end of the three-year period, the population of Blochman's dudleya at the designated translocation/restoration site consists of less than 4,000 individuals, or has never reached a total of 2,000 flowering individuals, or has shown a decreasing trend in population numbers for two of the three years, then the translocation effort shall be considered unsuccessful. If the effort is considered unsuccessful at that time, the Lusk Company will continue the translocation, restoration, monitoring, and maintenance with annual review by the project biologist and the CDFG Region 5 plant ecologist not to exceed a total of 7 years.

Annual and Final Reports

Annual reports will be submitted on September 30, 1996, and September 30, 1997. It is expected that grading for bluff reconstruction (for public safety purposes) and overall site grading may commence in the spring of 1998. A detailed final report will be submitted on September 30, 1998. Reports will include the results of control efforts for exotic plants, the native seed collection and seeding program, photodocumentation of the restoration site from permanent locations taken annually, total counts of Blochman's dudleya actively growing each year, total counts of the number of flowering individuals, and annual assessments of the general health and condition of translocated Blochman's dudleya. Annual and final reports will be submitted to the client, the California Coastal Commission, the CDFG Natural Heritage Division-Plant Conservation Program, the CDFG Region 5 Plant Ecologist, and the U.S. Fish and Wildlife Service.

Restorationist Qualifications

RECON is a multidisciplinary environmental consulting firm established in 1972 serving California as well as Arizona, Nevada, and Texas. We are located in the Mission Bay area of coastal San Diego County and have a staff of 30 permanent, full-time employees. Our technical staff provides specialized expertise in the fields of habitat conservation planning, biological resource inventories, endangered species studies, geographic information system (GIS), state and federal environmental documentation, environmental permitting assistance, and planning and land use.

The biological resources group at RECON includes eight full-time, permanent biologists with specialties in plant ecology, botany, zoology, revegetation, conservation planning, endangered species, permit processing, restoration planning, construction and long-term monitoring, and wetland delineations. Our biologists are known for their ability to identify, characterize, and map sensitive habitats and individual species; their excellent working relationship with staff from the U.S. Fish and Wildlife Service, CDFG, and California Native Plant Society; and their expertise in developing strategies that balance resource conservation requirements with project purpose and need. Our biology staff has a comprehensive knowledge of the federal and state Endangered Species Acts, the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and the methodologies necessary to conduct surveys and prepare technical documents that meet the satisfaction of regulatory agencies.

RECON biologists are certified as ecologists by the Ecological Society of America and the Counties of San Diego and Riverside. In addition, all biology staff members hold one or more individual federal or State of California permits or authorizations for scientific data collection and/or "take" of endangered species. Specifically, RECON holds a U.S. Fish and Wildlife Service permit to survey for the least Bell's vireo, coastal California gnatcatcher, Pacific pocket mouse, desert tortoise, Stephens' kangaroo rat, and various species of fairy shrimp, as well as several endangered plant species. Several of our biologists attended the Southwestern Willow Flycatcher Workshop sponsored by the San Diego Natural History Museum, which is required to be eligible to receive a U.S. Fish and Wildlife Service survey permit for the species. We have a demonstrated ability to successfully amend our U.S. Fish and Wildlife Service permit to add species on a project-specific basis.

RECON utilizes ARC/INFO GIS on a networked IBM-compatible personal computer. The current version of PC ARC/INFO used at RECON is 3.4.2.B. A second PC workstation is available for data manipulation, and there is a third digitizing workstation for data entry. RECON also uses ArcView Version 2.1 for interactive data view and query.

Sensitive botanical and zoological species databases, provided electronically through the NDDB, the CDFG's Wildlife Habitat Relations database, and the California Native Plant Society inventory of rare and endangered plants, are maintained on the RECON local area network, allowing for efficient identification of point data and information about potentially occurring sensitive species in a given area.

RECON's fleet of five vehicles includes three 4-wheel-drive vehicles to facilitate fieldwork in rugged terrain and otherwise inaccessible areas. We have a licensed pilot on staff and maintain access to rental aircraft for aerial reconnaissance and travel purposes. Our biological field equipment includes a full range of sampling and measurement devices, live traps, insect nets, radio telemetry equipment, survey transits, and GPS equipment for accurate mapping of positional data. RECON also maintains a small herbarium and an extensive natural history library. Additionally, RECON maintains a sensitive botanical and zoological species database on its computer system, which allows a preliminary screening of potentially sensitive species in an area with detailed information about the species.

Mark Dodero is the principal investigator for the Blochman's dudleya translocation/restoration project and will be directly involved in all aspects of the translocation, habitat restoration, and enhancement of Blochman's dudleya at Marblehead Bluffs. He has extensive experience in the design and implementation of *Dudleya* translocation, reintroduction, and long-term monitoring plans including the sticky-leaved dudleya (*Dudleya viscida*, Highway 76 bypass Caltrans), variegated dudleya (*Dudleya variegata*, Highway 52 Caltrans), many-stemmed dudleya (*Dudleya multicaulis*, Crystal Cove State Park-California Department of Parks and Recreation), and the short-leaved dudleya (*Dudleya brevifolia*, Torrey Pines State Reserve-California Department of Parks and Recreation) which is state listed as endangered and proposed for federal listing as endangered. Mr. Dodero completed his master's degree (May 1996) in systematic botany at San Diego State University. The focus of his master's research is the systematics, evolution, and ecology of *Dudleya* subgenus *Hasseanthus* (Crassulaceae) which includes Blochman's dudleya. A complete resume of Mark Dodero's biological experience is included in Attachment 1.

Personal Contacts

Jim Dice, California Department of Fish and Game's Region 5 Plant Ecologist and the project biologist.

Mark Elvin, Seed Program Coordinator-Rancho Santa Ana Botanic Garden, Claremont, California.

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ATTACHMENT 1

MARK W. DODERO
Biologist

As an experienced field biologist, Mr. Dodero is responsible for conducting botanical and zoological surveys, including directed surveys for rare and endangered species such as desert tortoise, coastal California gnatcatcher, and least Bell's vireo. He analyzes potential impacts to species and habitat which may result from proposed development and prepares technical reports which provide recommendations to alleviate these impacts. Mr. Dodero also prepares mitigation and monitoring plans for sensitive species. Mr. Dodero is knowledgeable of both CEQA and NEPA and is skilled in vegetation mapping, mitigation monitoring, the design of habitat restoration plans, and consultation with resource agencies including the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS). He has extensive experience in the design and implementation of *Dudleya* restoration and long-term monitoring plans including the sticky-leaved dudleya (*Dudleya viscida*, Highway 76 bypass-Caltrans), variegated dudleya (*Dudleya variegata*, Highway 52-Caltrans), many-stemmed dudleya (*Dudleya multicaulis*, Crystal Cove State Park-California Department of Parks and Recreation), and the state endangered/federal proposed endangered short-leaved dudleya (*Dudleya brevifolia*, Torrey Pines State Reserve-California Department of Parks and Recreation). Mr. Dodero has completed his master's degree (May 1996) in systematic botany at San Diego State University. The focus of his research is the systematics, evolution, and ecology of *Dudleya* subgenus *Hasseanthus* (Crassulaceae) which includes *D. blochmaniae*.

PERMITS

U.S. Fish and Wildlife Service 10(a)(1)(A) Permit #PRT-797665 for Least Bell's Vireo and California Gnatcatcher.

U.S. Fish and Wildlife Service 10(a)(1)(A) Permit #PRT-797665 for Stephens' Kangaroo Rat.

Memorandum of Understanding with the California Department of Fish and Game for Stephens' Kangaroo Rat (pending).

Memorandum of Understanding with CDFG for California Gnatcatcher, Least Bell's Vireo, Willow Flycatcher, and San Diego Cactus Wren.

California Department of Fish and Game Scientific Collector's Permit (#9359).

EDUCATION/CERTIFICATION

Master's Program, Systematic Botany, San Diego State University, 1988 to present.

Teaching Credential, Secondary Education, San Diego State University, 1985.

Bachelor of Science, Zoology, San Diego State University, 1983.

Associate of Arts, Life Science, San Diego City College, 1980.

Certified by Bureau of Land Management for flat-tailed horned lizard surveys, 1994.

EXPERIENCE

1994-present Biologist, RECON

Responsible for biological field surveys, impact assessments, and mitigation development for botanical and zoological species in the southwestern region of the United States. Prepares impact reports in conformance with CEQA and NEPA guidelines and develops mitigation measures to avoid impacts to sensitive biological resources. Other duties include mitigation monitoring, vegetation mapping including assessments of sensitive habitats, and directed searches for rare and endangered species including the least Bell's vireo, California gnatcatcher, and flat-tailed horned lizard.

1991-1995 Research Specialist, San Diego State University Foundation, Contract Work for Caltrans.

Responsible for development and implementation of mitigation plans for sensitive plant species, including *Dudleya viscida*, *Dudleya variegata*, and *Muilla clevelandii*. In addition, supervised field workers, wrote status reports, and developed a four-year monitoring program to be implemented after restoration work is completed.

1991-1994 Research Assistant, San Diego State University Foundation, Contract Work for U.S. Air Force

Small-mammal monitoring, Luke Air Force Base, Gila Bend, Arizona. This project assessed the effects of low-altitude-jet noise on predator-prey (kit foxes/rodents) relationships in a desert scrub community. Duties included live trapping of small mammals, recording life history data, tagging, and noting trap locations for home range determination.

1989-1991; 1993-1994 Environmental Services Intern, California Department of Parks and Recreation, Southern Service Center

Assisted in the development, implementation, and monitoring of survival and recruitment of sensitive plant and state endangered plants including *Dudleya multicaulis* and *D. brevifolia* in Crystal Cove State Park and Torrey Pines State Reserve. Performed rodent (included species identification and recording life history data), reptile, bird, and vegetation sampling for incorporation into geographic information system (GIS) database, Anza Borrego Desert State Park General Plan. Prepared resource management plans for desert scrub and riparian restoration projects. Developed sampling protocols for sensitive plant and animal species. Wrote contract specifications for revegetation contracts. Assisted in native plant restoration projects in valley oak/grassland, coastal sage scrub, and desert scrub habitats. Assisted in native plant restoration projects in valley oak/grassland (Malibu Creek State Park), coastal sage scrub (Crystal Cove State Park), and desert scrub habitats (Red Rock Canyon State Park). Assisted with banding and behavioral observations of California gnatcatcher. Supervised a desert tortoise survey for a CEQA clearance at a desert scrub restoration site in Red Rock Canyon State Park. Performed least Bell's vireo surveys in Anza Borrego Desert State Park.

1993; 1988-1991; 1982-1984 Biological Consultant, National Audubon Society, Elgin, Arizona

Conducted behavioral observations on a captive population of the endangered Bolson tortoise (*Gopherus flavomarginatus)* at Appleton-Whitell Research Ranch. In addition, Mr. Dodero radio tracked individuals using microtransmitters to determine home range and foraging patterns. He also weighed, measured, and sexed individuals as well as monitored egg-laying status of tortoises.

1990	Biological Consultant, Contract Work for Pardee Company, Las Vegas, Nevada, Desert Tortoise Survey
	Conducted surveys for tortoises. Trained and supervised other field workers to follow approved survey guidelines. Wrote final report to client and USFWS representatives.
1989-90; 1982-83	Biological Consultant, RECON
	Performed surveys for desert tortoise and assisted in the development and implementation of a mark and recapture study of Mojave fringe-toed lizards. Also under the direction of BLM employees Mr. Dodero was trained in radio tracking and performed field X-ray techniques to determine egg-laying status of female desert tortoises. Assisted with report preparation.
1988-1991	Graduate Teaching Assistant, San Diego State University
	Developed lecture material and wrote and graded exams for a general biology course.
1985-88	Biology and General Science Teacher, Secondary Level, San Diego Unified School District
	Developed lab experiments and demonstrations. Participated in curriculum development for under achieving students. Led nature walks for students in coastal, mountain, and desert habitats.
1991; 1982-84	Biological Consultant, San Diego State University Foundation
	Set up and inventoried plant transects, studying the effects of fire on closed-cone conifer (Torrey pine and Tecate cypress) reproduction. Determined soil salinity and water oxygen concentrations in Tijuana estuary. Assisted with a population census of light-footed clapper rails in Tijuana estuary.
1977-1981	Department Head and Collections Manager, Herpetology Department, San Diego Natural History Museum
	Managed and expanded a museum collection of 65,000 specimens. supervised assistants and volunteers. Processed loans and exchanges with other institutions. Represented the museum at national herpetological meetings.

1978 Biological Consultant, Contract Work, Bureau of Land Management

Performed inventories of reptile, amphibian, and fish populations at San Sebastian marsh, Imperial County, California.

SELECTED PROJECTS

1995 Emergency Wetland Revegetation Project, Chula Vista, CA
1995 Navy Southwest Division, Small Mammal Trapping Studies, San Diego, CA
1995 State Route 125, Small Mammal Trapping Studies, San Diego, CA
1995 Palm Springs Ground Squirrel Surveys, Coachella Valley Association of Governments, Palm Springs, CA
1995 Ground Penetrating Radar Testing, Desert Tortoise Survey, Twenty-nine Palms Air-Ground Combat Center, Twenty-nine Palms, CA
1995 Rancho del Rey SPA III Mitigation Monitoring, Chula Vista, CA
1995 Rancho del Rey, Spring California Gnatcatcher Surveys, Chula Vista, CA
1995 California Gnatcatcher and Other Sensitive Species Survey, ASD Property, Riverside County, CA
1995 MALS Landfill Sensitive Species Survey, Imperial County, CA
1995 Sensitive Species Survey and Vegetation Mapping, Navy-Southwest Division, San Diego, CA
1995 Santa Clara River Vegetation Mapping and Habitat Quality Assessment, Ventura and Los Angeles Counties, CA
1995 Sensitive Species Survey, Oceanside II Development, Oceanside, CA
1994 State Route 125 small-mammal trapping studies, San Diego County, CA.
1994 Pacific Plaza California gnatcatcher surveys, Oceanside, CA.
1994 Sensitive botanical resource survey, Idyllwild, Riverside County, CA.
1994 Flat-tailed horned lizard survey, Whitewater levee, Riverside Flood Control and Water Conservation District, Riverside County, CA.
1994 Sensitive zoological and botanical resource survey of the Mojave River at Apple Valley/Victorville, CA.
1994 Cactus salvage plan preparation, SPA III development plan, Chula Vista, CA.