

Appendix D Traffic Analysis [Revised]

DRAFT

City of Huntington Beach

**BEACH-EDINGER CORRIDOR SPECIFIC PLAN AREA
Traffic Analysis For Beach-Warner Project**

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September 27, 2011

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BEACH-EDINGER CORRIDOR SPECIFIC PLAN AREA

Traffic Analysis For Beach-Warner Project

This report presents a traffic analysis for the Beach-Warner Project located within the Beach Boulevard and Edinger Avenue Corridor Specific Plan (SP) area. It is intended to supplement the information contained in the original traffic study prepared in August 2009 and Environmental Impact Report (EIR) for the SP (certified in 2010).

BACKGROUND AND SCOPE

The SP area extends along Beach Boulevard from Edinger Avenue to just south of Atlanta Avenue, and along Edinger Avenue from Goldenwest Street to Beach Boulevard. Figure 1 illustrates the area covered by the SP. At buildout, the SP as approved in 2010 will allow for 4,500 residential units, approximately 739,000 square feet of commercial uses, 112,000 square feet of office uses and 200 hotel rooms¹.

The SP area includes the Beach-Warner Project, which is illustrated in Figure 2. It is a 9.4-acre site, which will have an additional 279 dwelling units, 6,000 square feet of restaurants and 29,600 square feet of retail uses when fully developed in addition to the selected existing uses that will remain. It is located within the Neighborhood Boulevard area of the SP.

The following analysis provides an evaluation of the trip generation characteristics for the proposed project, and a project level impact analysis is performed for the proposed project. The resulting change in ADT volumes is presented in tabular format for the impacted roadway segments, followed by a discussion of the resulting impact in the AM and PM peak hours. A discussion of the project's participation in the SP mitigation program is then provided, followed by a site access evaluation. Finally, the results of an accident survey and traffic impact on the local neighborhood roadways are discussed.

TRIP GENERATION ANALYSIS

The Beach-Warner project is located on the southwest corner of Beach Boulevard and Warner Avenue on an L-shaped parcel. It is bounded by Warner Avenue to the north, Beach Boulevard to the

¹ The traffic study and EIR analyzed a maximum of 6,400 units, but the SP was ultimately approved for 4,500 units.



Figure 1
BEACH-EDINGER SPECIFIC PLAN



Legend	
XX	TAZ number
	Beach-Warner Project Location

Figure 2
BEACH-WARNER PROJECT LOCATION

east, by Cypress Avenue and Sycamore Avenue to the south, and by Elm Street and Ash Street to the west.

Table 1 summarizes the land use and trip generation for the proposed project and provides a comparison against the existing land uses. Trip generation for the existing land uses were estimated by applying general category trip rates to the existing land uses and assuming full occupancy of the commercial center. This same procedure is then applied to the future land uses, to estimate future trip generation. Discounts are not taken for underutilized commercial space, as market conditions fluctuate over time and cannot be predicted for future years. This method ensures that a worst-case scenario (i.e., highest trip generation) is used in the traffic analysis for the future time frame. The project will add 279 dwelling units (DU), and 35,600 square feet of mixed-use commercial land uses (comprising 29,600 square feet of retail and 6,000 square feet of restaurant). The residential land uses will replace 99,270 square feet of existing commercial land uses. The project proposes to retain the existing 15-story office tower at the northeast corner of the site, the 18,000 square foot retail building along Warner Avenue, the 7,000 square foot restaurant on Beach Boulevard, and the six story parking garage at Ash Street and Sycamore Avenue.

The added land uses for the proposed project result in an eight percent decrease in trip generation for the PM peak hour and a seven percent decrease in the daily trips over existing conditions at full occupancy. The AM peak hour shows a 13 percent increase due to the outbound residential trips for the same condition.

COMPARISON WITH APPROVED SPECIFIC PLAN

The proposed project will generate 8,210 daily trips, with 700 trips occurring in the AM peak hour and 829 trips occurring in the PM peak hour. The approved SP assumed 272 residential units (versus the 279 for the proposed project) and 35,600 square feet of additional commercial land uses (the same as for the proposed project). Table 2 summarizes the trip generation differences for the proposed project and the approved SP. As shown, the proposed project represents a six percent decrease in the AM peak hour trips, a 22 percent decrease in PM peak hour trips, and a 46 percent decrease in daily trips over what was anticipated for the project site in the SP. Thus, the proposed project is not expected to result in a change to the traffic impacts identified in the EIR. For the approved SP, conservative assumptions were made regarding the level of development that could occur under the General Plan designation for this site. The land use designations were generic rather than specific, and the emphasis was on commercial (i.e.,

Table 1

TRIP GENERATION COMPARISON FOR BEACH-WARNER

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Existing Land Uses with Full Occupancy								
General Commercial ¹	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant ²	18.32 TSF	110	101	211	121	84	205	2,329
Office Tower ³	196 TSF	267	37	304	49	243	292	2,158
Single Story Office ⁴	24.2 TSF	29	6	35	7	24	31	309
Health/Fitness Club ⁵	42.34 TSF	26	32	58	85	64	149	1,394
Movie Theater ⁶	26.73 TSF	0	0	0	155	10	165	2,087
Sub-Total	321 TSF	440	181	621	442	450	892	8,853
Added by Proposed Project								
General Commercial	29.6 TSF	18	12	30	54	56	110	1,271
High-Turnover Restaurant	6 TSF	36	33	69	40	27	67	763
Mixed-Use Residential ⁷	279 DU	28	114	142	112	61	173	1,875
Sub-Total	35.6 TSF 279 DU	82	159	241	206	144	350	3,909
Retained Existing Land Uses								
Office Tower	196 TSF	267	37	304	49	243	292	2,158
General Commercial	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant	12.32 TSF	74	68	142	81	56	137	1,567
Sub-Total	221.73 TSF	349	110	459	155	324	479	4,301
Total for Proposed Project								
General Commercial	43.01 TSF	26	17	43	79	81	160	1,847
High-Turnover Restaurant	18.32 TSF	110	101	211	121	83	204	2,330
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Mixed-Use Residential ⁷	279 DU	28	114	142	112	61	173	1,875
Grand Total	279 DU 257.33 TSF	431	269	700	361	468	829	8,210
Net Change (from Existing)		-9	88	79	-81	18	-63	-643
% Difference				13%			-8%	-7%
Trip Rate (ITE Code) – 8th Edition								
¹ General Commercial (820)	TSF	0.61	0.39	1.00	1.83	1.90	3.73	42.94
² High-Turnover Restaurant (932)	TSF	5.99	5.53	11.52	6.58	4.57	11.15	127.15
³ General Office (710)	TSF	1.36	0.19	1.55	0.25	1.24	1.49	11.01
⁴ Business Park (770)	TSF	1.20	0.23	1.43	0.30	0.99	1.29	12.76
⁵ Health/Fitness Club (492)	TSF	0.62	0.76	1.38	2.01	1.52	3.53	32.93
⁶ Movie Theater without Matinee (443)	TSF	0.00	0.00	0.00	5.79	0.37	6.16	78.06
⁷ Apartments (220)	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72

Table 2

TRIP GENERATION COMPARISON
- PROPOSED PROJECT VERSUS APPROVED SPECIFIC PLAN

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Approved SP Land Use								
Mixed-Use Residential ¹	272 DU	27	112	139	109	60	169	1,828
Mixed-Use Commercial ²	15 TSF	14	13	27	19	20	40	602
General Commercial ³	242.34 TSF	308	274	582	419	434	853	12,965
Grand Total	272 DU 257.34 TSF	349	399	748	547	514	1,062	15,395
Proposed Project								
General Commercial	43.01 TSF	26	17	43	79	81	160	1,847
High-Turnover Restaurant	18.32 TSF	110	101	211	121	83	204	2,330
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Mixed-Use Residential	279 DU	28	114	142	112	61	173	1,875
Grand Total	279 DU 257.33 TSF	431	269	700	361	468	829	8,210
Net Change (from EIR)		82	-130	-48	-186	-46	-233	-7,185
% Difference				-6%			-22%	-46%
Trip Rates for Approved Specific Plan								
¹ Mixed-Use Residential	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72
² Mixed-Use Commercial*	TSF	0.95	0.85	1.80	1.28	1.34	2.64	40.13
³ General Commercial	TSF	1.27	1.13	2.40	1.73	1.79	3.52	53.50

* Derived from Shopping Center, General Office and High-Turnover Restaurant

retail) uses. The proposed project as defined here uses detailed land uses due to the refined project information that is available for this specific project. The potential impacts of these differences are discussed later in this report.

2030 ADT VOLUMES

The 2030 ADT volumes with the proposed project are summarized below for the four roadway segments close to the project site, and a comparison is provided against the approved SP volumes:

ADT VOLUME SUMMARY			
Link Location	2030 Specific Plan ADT Volume	2030 ADT Volume with Proposed Project	% Change
Beach Blvd north of Warner Ave	66,000	63,845	-3%
Beach Blvd south of Warner Ave	64,000	62,060	-3%
Warner Ave west of Beach Blvd	40,000	38,707	-3%
Warner Ave east of Beach Blvd	43,000	41,204	-4%

As shown all segments are projected to have minor decreases in daily traffic volumes as the percentage change is four percent or less. Hence, the proposed project does not have a significant change in ADT volumes. The next section discusses the corresponding impact on the peak hour volumes.

PEAK HOUR ANALYSIS

The 2030 ICU values and level of service (LOS) for the approved SP are summarized in the table below for intersections immediately adjacent to the proposed project:

2030 ICU SUMMARY				
Intersection	AM PEAK HOUR		PM PEAK HOUR	
	ICU	LOS	ICU	LOS
47. Beach Blvd & Warner Ave	.78	C	.95	E
54. Beach Blvd & Slater Ave	.86	D	.90	D

As shown, the intersection of Beach Boulevard at Warner Avenue shows a PM deficiency (LOS “E”) and Beach Boulevard at Slater Avenue operates at an acceptable LOS (LOS “D”). The PM reduction in trips due to the proposed project is too small (compared to the SP) to result in a change to the LOS. The finding is that the deficiency identified at Beach Boulevard and Warner Avenue still requires

mitigation as part of the overall SP, but the mitigation is not a project responsibility since the proposed project results in a decrease in PM peak hour trip generation. As noted previously, the AM peak hour will have an additional 82 inbound trips. However, the impact of these additional trips is not expected to change the LOS for this time period.

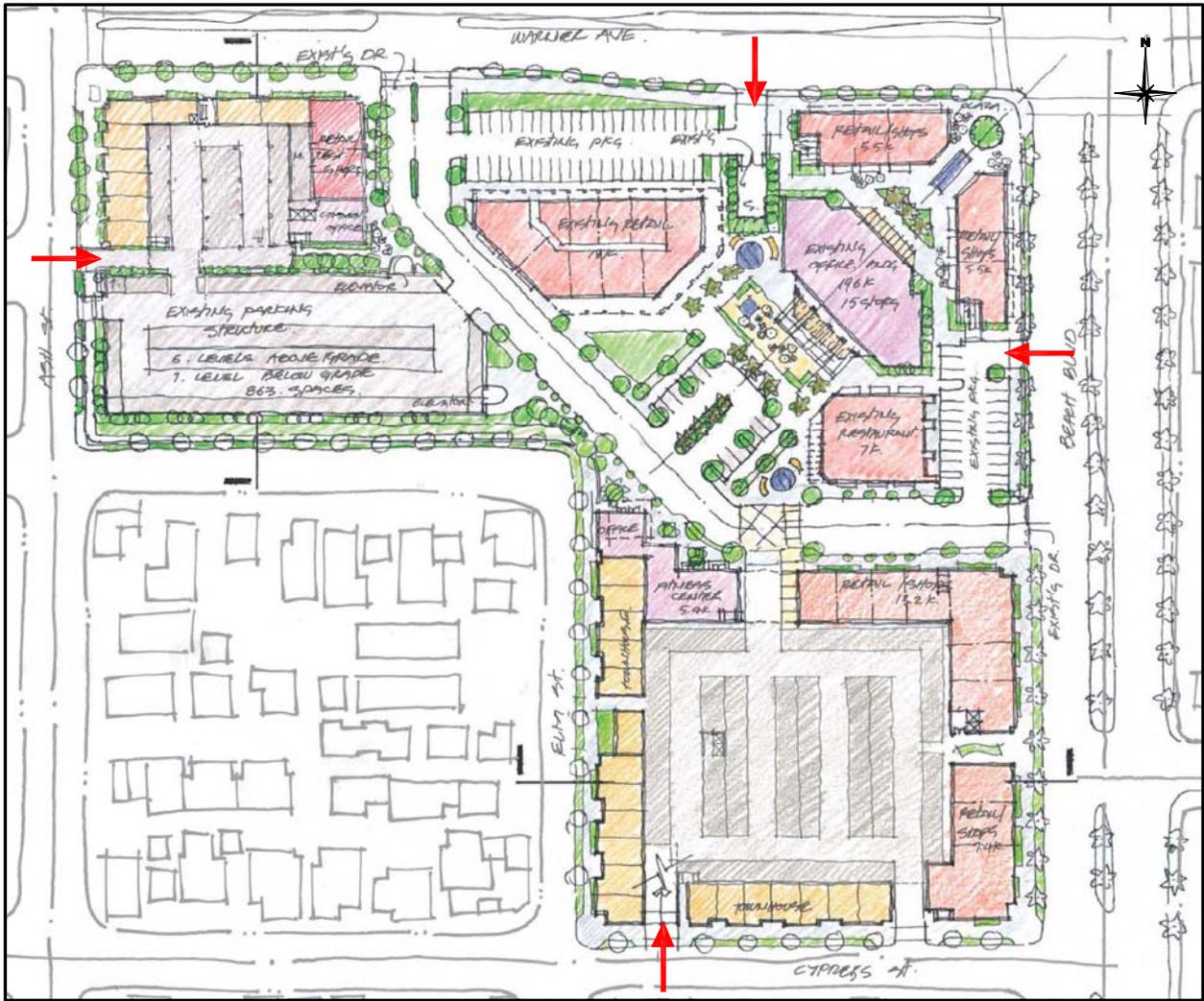
SITE ACCESS ANALYSIS

A project site plan is illustrated in Figure 3. The only changes to the existing access to the project site are to add a limited access driveway on Warner Avenue, one limited access driveway on Beach Boulevard, one access driveway on Ash Street, and one access driveway on Cypress Street. These changes are highlighted in the diagram.

As shown, access to the project site will be available from Beach Boulevard and Warner Avenue, along with an existing internal site roadway that will be realigned as part of the proposed project. Eight access points from Beach Boulevard, Warner Avenue, Cypress Street, and Ash Street would provide direct access to the project site. Three of these driveways would provide direct access to the existing and proposed parking structures. The remaining driveways, located on Beach Boulevard and Warner Avenue, provide access to the existing surface parking located along Beach Boulevard and Warner Avenue, or the proposed surface parking that would be accessed by the internal site roadway.

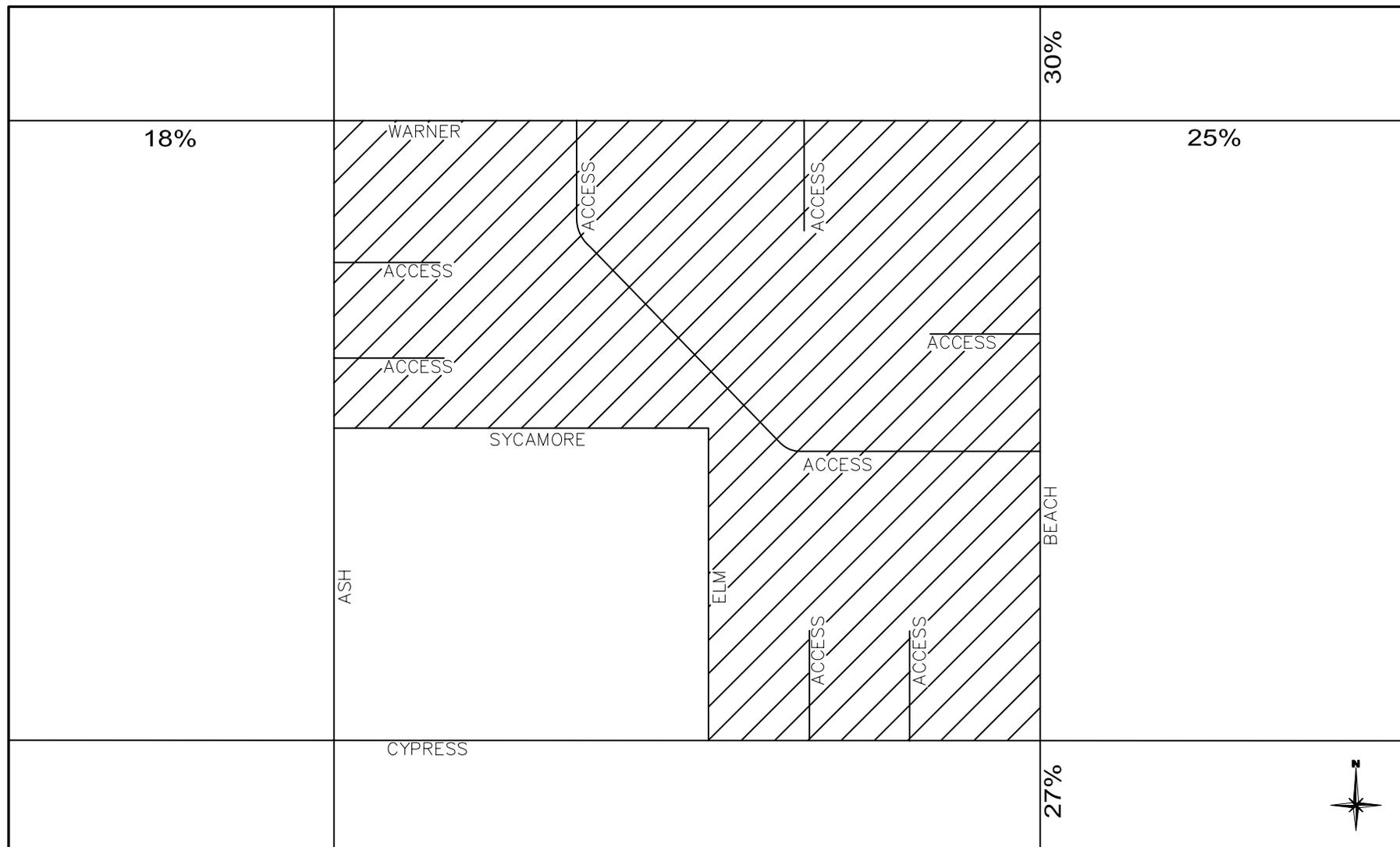
The access locations on Beach Boulevard and Warner Avenue will have limited access. The two access driveways on Beach Boulevard will be right-turn ingress and egress only. The main entrance on Warner Avenue will allow left-and right-turn ingress, and right-turn egress only. The second Warner Avenue access will have right-turn ingress and egress only. Access to the existing and proposed parking structures would not be available from Beach Boulevard or Warner Avenue. The access locations along Ash Street and Cypress Avenue would allow for full access.

Figure 4 illustrates the trip distribution for the project. Figure 5 illustrates the proposed project peak hour volumes for the site access locations using the trip distribution patterns identified earlier. For comparison purposes, Figure 6 illustrates the existing driveway volumes for the current site, which were also estimated using the same trip distribution patterns. As shown, the 2030 driveway volumes show minimal differences from the existing driveway volumes. Therefore, the eight access driveways are expected to operate at an acceptable LOS.



Source
 Studio One Eleven at Perkwitz & Ruth Architects
 → Proposed Entry/Exit

Figure 3
 BEACH-WARNER SITE PLAN



Legend

Project Site

Figure 4

PROJECT TRIP DISTRIBUTION

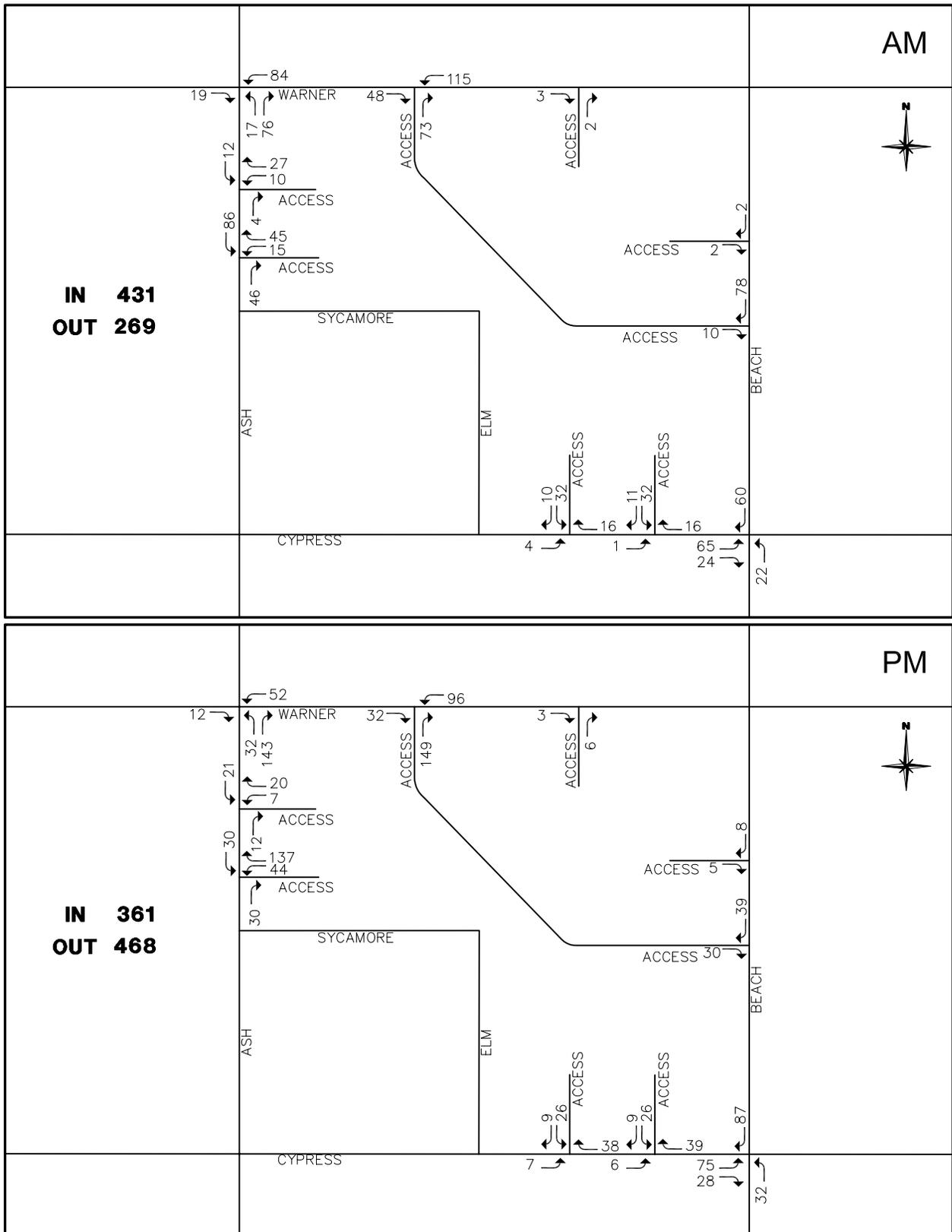


Figure 5
PROJECT PEAK HOUR VOLUMES
- PROPOSED PROJECT

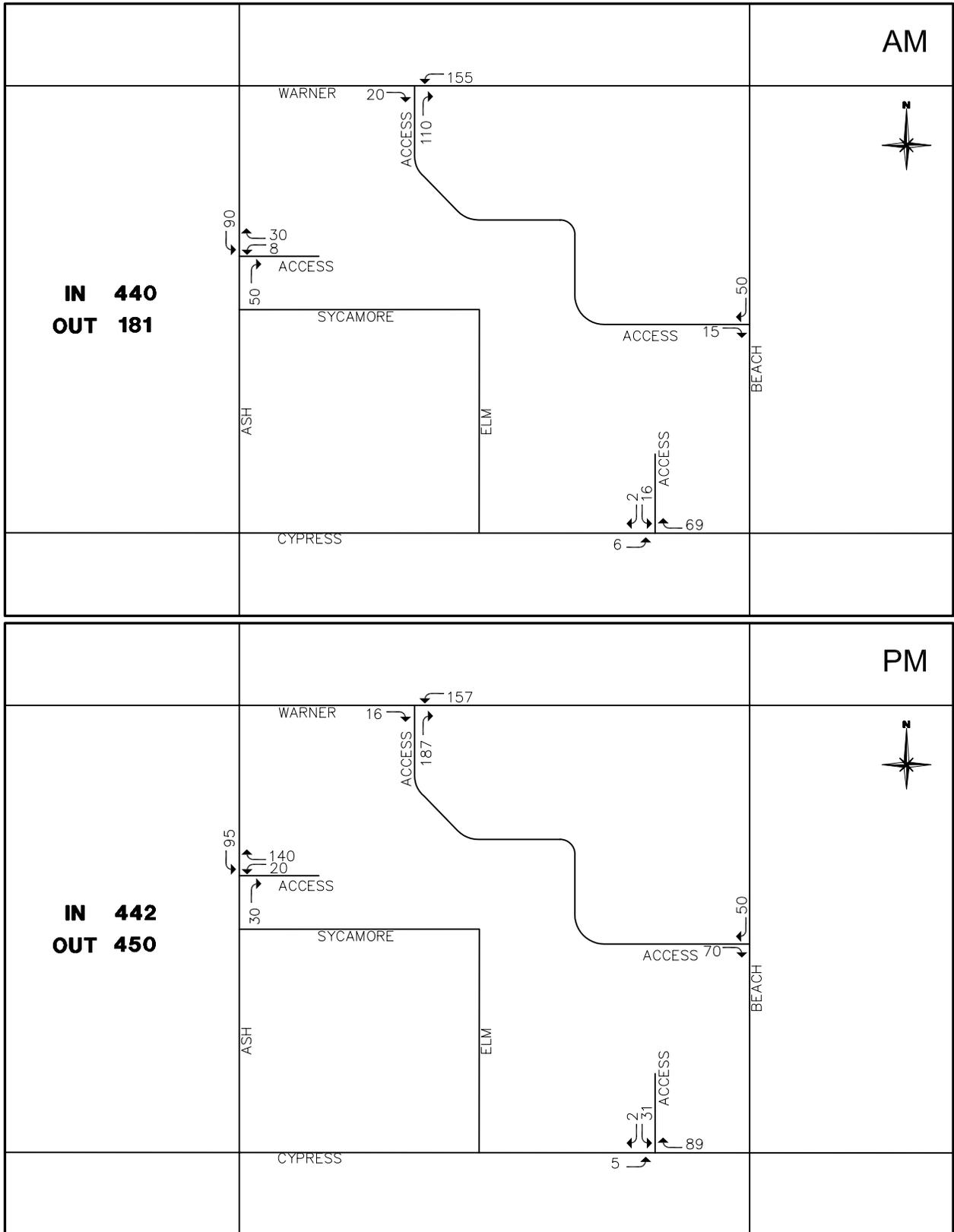


Figure 6
EXISTING PEAK HOUR VOLUMES
- EXISTING LAND USES

ACCIDENT SURVEY FOR BEACH BOULEVARD AND WARNER AVENUE

A survey of vehicle accidents was performed for segments of Beach Boulevard and Warner Avenue adjacent to the proposed project site. Appendix A summarizes the accident data and the methodology used in preparing the accident data. The result shows that midblock accident rates for both roadway segments are within the commonly accepted norm (less than 3.5 accidents per million vehicle miles). The majority of collisions on both segments consist of rear-end or sideswipe collisions approaching the Beach Boulevard/Warner Avenue intersection. These collisions may be a result of queuing caused by congestion at this intersection.

A second analysis examined the intersection accident rate for the two local intersections (Ash Street at Warner Avenue and Beach Boulevard at Cypress Avenue) that would be affected by the project as well as the left-turn access driveway on Warner Avenue. The accident rate for all three locations was determined to be well within the accepted norm (less than 1.0 accident per million vehicles) and no significant patterns to accidents were identified that might indicate a need to modify access design or controls.

At the intersection of Ash Street/Millstream Street at Warner Avenue, the majority of collisions consists of right-of-way violations and rear-end or sideswipe collisions on Warner Avenue.

For the intersection of Beach Boulevard at Cypress Avenue, which is controlled by a stop sign on Cypress Avenue, approximately one-third of the total collisions are the result of left-turns from Cypress Avenue onto Beach Boulevard and one-third are rear-end or sideswipe collisions on Beach Boulevard.

In summary, the current site is not a major cause of accidents for adjacent roadways or intersections. As noted previously, the proposed project results in an eight percent decrease in the daily trips and the PM peak hour trips when compared to the existing land uses. The concentration of accidents during the AM and PM peak hours was also reviewed, and the finding is that the vehicular accidents are spread throughout the day rather than concentrated during the peaks. The AM peak hour shows a 13 percent increase in trips, primarily due to 88 outbound trips. As a result, the minor increase in AM peak hour trips (approximately 0.1 percent of the total traffic on Beach Boulevard and 0.11 percent on Warner Avenue) is not expected to cause a significant increase in accidents.

LOCAL IMPACTS ON ASH STREET AND CYPRESS AVENUE

Two local roadways immediately adjacent to the project will be affected by the proposed project, as project trips will have direct access to the parking garages via Ash Street and Cypress Avenue. The following table summarizes the peak hour volumes for the estimated project traffic and provides a comparison against the traffic generated by the existing land uses.

Local Roadway	Existing Land Uses	With Proposed Project	Difference	% Difference
Ash Street (200' south of Edinger Ave)	AM = 120 PM = 235	AM = 196 PM = 239	76 4	63% 2%
Cypress Avenue (200' west of Beach Blvd)	AM = 85 PM = 120	AM = 171 PM = 222	86 102	102% 85%

As shown, the local roadways will not experience a significant difference from conditions that exist today. Cypress Avenue will have higher peak hour volumes due to the additional residential uses at this location; however, the magnitude of change is small. Traffic traveling through the residential areas of Ash Street and Cypress Avenue is not expected to increase as adequate access is provided to/from the site and the net change in trip generation for the project site is minimal. Therefore, the project is not anticipated to cause any measurable increases in traffic on Ash Street south of the project or along Cypress Avenue west of the project.

MITIGATION MEASURES

Two potential mitigation measures were identified in the approved Specific Plan to address the 2030 intersection deficiency at Beach Boulevard and Warner Avenue. The potential mitigation measures are summarized as follows:

Option 1	Add separate westbound right turn lane
Option 2	Add defacto westbound right turn lane Add separate northbound right turn lane

SPECIFIC PLAN MITIGATION PROGRAM

The City of Huntington Beach maintains a Traffic Impact Fee (TIF) program, which funds transportation improvements throughout the City. The TIF program satisfies the AB1600 legislative requirement that development fees are based on a demonstrated relationship between new development and future traffic impacts. Every development project contributes on a fair share basis to these improvements by means of the fee program, which manages the collection of fees and the implementation of improvements. In this way, capacity improvements occur in an orderly and systematic manner, with all future development contributing on a fair share bases.

An update to this program is currently underway including funding for improvements identified in the Beach/Edinger SP. The current TIF program is based on daily trip generation. The updated TIF may use slightly different assessment measures that could result in payment of a TIF despite a net reduction in overall daily trip generation with the proposed project. Participation in the updated TIF will ensure that the Beach Boulevard-Warner Avenue project pays its fair-share contribution to future improvements along with other development in the SP area and the remainder of the City.

EXISTING PLUS PROJECT ANALYSIS

The purpose of the existing plus project analysis is to comply with the California Environmental Quality Act (CEQA). The information presented in this section shows the traffic volumes resulting from the addition of traffic from the proposed project (i.e., residential with mixed-use commercial) to existing (2008) traffic conditions. The analysis takes into account 2008 conditions for the site since this is the year the traffic counts were performed.

The 2008 vacancy rate information was provided to the City by the site's property manager and shows a 13 percent vacancy rate for the office tower, which is consistent with the average vacancy rate (12 percent) assumed in the ITE (8th Edition) trip generation rates for this land use. The mixed-use site located at the northwest corner of Beach Boulevard and Cypress Street has a 31 percent vacancy rate. The ITE trip generation rate for commercial uses is based on a 10-to-15 percent vacancy rate. Table 3 provides a comparison of the change in trips due to the change in market conditions for the project site. The square footage for the mixed-use site has been decreased by an additional 19 percent to account for the increased vacancy that is not accounted for in the ITE trip generation rate. As shown, the resulting change in trip generation is too small to produce a significant change in volumes or the intersection

Table 3

EXISTING-PLUS-PROJECT TRIP GENERATION FOR BEACH-WARNER
- FULL OCCUPANCY VERSUS 2008 CONDITIONS

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Existing Land Uses with Full Occupancy								
General Commercial	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant	18.32 TSF	110	101	211	121	84	205	2,329
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Single Story Office	24.2 TSF	29	6	35	7	24	31	309
Health/Fitness Club	42.34 TSF	26	32	58	85	64	149	1,394
Movie Theater	26.73 TSF	0	0	0	155	10	165	2,087
Sub-Total	321 TSF	440	181	621	442	450	892	8,853
Existing Land Uses with 2008 Occupancy								
General Commercial	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant	18.32 TSF	110	101	211	121	84	205	2,329
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Single Story Office	19.6 TSF	23	5	28	6	19	25	250
Health/Fitness Club	42.34 TSF	26	32	58	85	64	149	1,394
Movie Theater	26.73 TSF	0	0	0	155	10	165	2,087
Sub-Total	316.40 TSF	434	180	614	441	445	886	8,794
Net Change (from with Existing Occupancy)		-6	-1	-7	-1	-5	-6	-59
% Difference				-1%			<-1%	<-1%
<p>Vacancy rates are based on information provided by property manager (email communiqué to City staff dated 9/19/11).</p> <p>Refer to Table 4 for full documentation on the trip rates.</p>								

ICU results. As a result, the existing-plus-project analysis assumes full occupancy of the existing land uses, consistent with the approach used in the 2030 impact analysis.

To derive the with-project volumes, the project-only peak hour intersection volumes are added to the existing (no-project) conditions volumes. The analysis is hypothetical because the actual buildout and occupancy of the project is year 2017. Table 4 summarizes the increase in trip generation due to the proposed project. The existing trip generation with full occupancy is estimated, and this amount is then subtracted from the proposed project trip generation. The result is the project's change in trip generation and these volumes are then assigned to the street system using the trip distribution presented earlier in the report (refer to Figure 4).

The reduction in ADT volumes is too small to produce a significant change in ADT volumes on the surrounding streets. The AM peak hour shows an increase of 88 outbound trips and the PM peak hour shows an increase of 18 outbound trips, when compared to the existing trip generation. Table 5 summarizes the existing-plus-project ICU values and LOS, and provides a comparison against the existing (no-project) conditions. As shown, there are no significant project impacts.

CUMULATIVE PROJECTS

The analysis assumes known cumulative projects as part of the background 2030 growth, consistent with the cumulative projects assumed in the Beach-Edinger Specific Plan EIR. Table 6 summarizes the cumulative projects and detailed information is provided in Reference 1 of this report.

ALTERNATIVE PROJECT

The Alternative Project proposes a reduced development of 60 dwelling units and 3,600 square feet of retail uses on the 1.01 acres north of Cypress Avenue, which currently contains a single-level office building on Beach Boulevard and a vacant lot at Elm Street and Cypress Avenue.

Table 4

TRIP GENERATION COMPARISON FOR BEACH-WARNER
- EXISTING PLUS PROJECT

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Existing Land Uses with Full Occupancy								
General Commercial ¹	13.41 TSF	8	5	13	25	25	50	576
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Trip Rate (ITE Code) – 8th Edition								
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² High-Turnover Restaurant (932)	TSF	5.99	5.53	11.52	6.58	4.57	11.15	127.15
³ General Office (710)	TSF	1.36	0.19	1.55	0.25	1.24	1.49	11.01
⁴ Business Park (770)	TSF	1.20	0.23	1.43	0.30	0.99	1.29	12.76
⁵ Health/Fitness Club (492)	TSF	0.62	0.76	1.38	2.01	1.52	3.53	32.93
⁶ Movie Theater without Matinee (443)	TSF	0.00	0.00	0.00	5.79	0.37	6.16	78.06
⁷ Apartments (220)	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72

Table 5
EXISTING-PLUS-PROJECT ICU COMPARISON SUMMARY

Intersection	Existing (No-Project)				Existing-plus-Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
47. Beach Blvd & Warner Ave	.69	B	.89	D	.69	B	.89	D
54. Beach Blvd & Slater Ave	.80	C	.82	D	.81	D	.82	D

Table 6

CUMULATIVE PROJECTS ASSUMED IN TRAFFIC STUDY

Zone	Land Use Type	Units	Amount	Description of Cumulative Projects
City of Huntington Beach				
20	10. Commercial General	TSF	12.2	Golden West College Master Plan
23	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	440 10	Amstar/Red Oak Project (formerly Rip Curl)
23	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	1268 60	Murdy Commons
25	5. Res. High Density	Dwelling Unit	10	Seawind Village Apartments
28	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	713 138	The Village at Bella Terra
33	8. Overnight Accommodations	Room	144	Edinger Hotel
59	4. Res. Med. High Density	Dwelling Unit	15	Bayview/Harmony GRE Residential
63	3. Res. Medium Density	Dwelling Unit	19	Plaza Buccella and Pearce St. Subdivision
70	10. Commercial General	TSF	4.63	17032 Bolsa Chica
99	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	272 257	Beach-Warner Mixed Use
111	1. Res. Low Density	Dwelling Unit	111	Parkside Estates
120	37. Senior Center	TSF	45	Senior Center
121	28. Sports Park	Acre	78.5	Edison Community Center
124	10. Commercial General	TSF	24.82	Longs Drugs, Fein Medical Office, Ocean Breeze Plaza and Master Plan
153	10. Commercial General	TSF	39.5	Toyota Dealership
154	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	120 71	Beach-Ellis Mixed Use
160	1. Res. Low Density	Dwelling Unit	61	Lamb School Site
170	10. Commercial General	TSF	139	Home Depot
223	1. Res. Low Density	Dwelling Unit	42	Wardlow School Site

Table 6 (cont)
 CUMULATIVE PROJECTS ASSUMED IN TRAFFIC STUDY

Zone	Land Use Type	Units	Amount	Description of Cumulative Projects
City of Huntington Beach (cont)				
267	3. Res. Medium Density	Dwelling Unit	201	Blue Canvas Residential
274	5. Res. High Density	Dwelling Unit	514	Pacific City Mixed Use
275	8. Overnight Accommodations 9. Commercial Visitor	Room TSF	250 207.85	Pacific City Mixed Use
276	8. Overnight Accommodations	Room	250	Waterfront 3rd Hotel
281	3. Res. Medium Density	Dwelling Unit	502	Magnolia Specific Plan
322	10. Commercial General 8. Overnight Accommodations	TSF Room	135 149	The Strand
325	20. Mixed Use Residential 21. Mixed Use Commercial	Dwelling Unit TSF	121 8.27	424 Main Street
391	1. Res. Low Density	Dwelling Unit	349	Brightwater Annexation
City of Westminster				
398	10. General Commercial 47. Self-Storage	TSF TSF	6.78 135.1	Self-Storage Project in Westminster
778	3. Res. Medium Density	Dwelling Unit	149	Moran Senior Condos

Trip Generation – Alternative Project

Table 7 summarizes the land use and trip generation for the Alternative Project and provides a comparison against the existing land uses. The land uses for the Alternative Project include new development of 17,600 square feet of retail uses, 1,000 square feet of restaurant uses, and 137 residential dwelling units, in addition to the existing uses that are retained. The residential land uses will replace 35,930 square feet of existing commercial land uses. This results in a five percent decrease in daily trips, a two percent decrease in the PM peak hour and 14 percent increase in the AM peak hour, when compared to the existing trip generation. The slight increase in the AM peak hour is minor and will not have a negative impact. The impact of the increase in AM trips is not expected to change the LOS for this time period.

Trip Generation – Comparison with Approved Specific Plan

Table 8 summarizes the land use and trip generation for the Alternative Project and provides a comparison against the approved Specific Plan (SP). The result is a 45 percent decrease in daily trips, a five percent decrease in the AM peak hour and 17 percent decrease in the PM peak hour. The conclusion from this trip generation analysis is that the Alternative Project will generate fewer daily and PM peak hour trips than the approved SP and hence will not have a significant negative impact from those addressed in the SP. The additional 111 trips in the AM peak hour is not expected to result in a significant impact for two reasons: (1) the increase is offset by a decrease of 152 outbound trips in the AM peak hour; and (2) the adjacent intersections are forecast to operate at LOS “D” or better during the AM peak hour.

2030 ADT VOLUMES – ALTERNATIVE PROJECT

The 2030 ADT volumes with the Alternative Project are summarized below for the four roadway segments close to the project, and a comparison is provided against the approved SP volumes:

Table 7

TRIP GENERATION FOR ALTERNATIVE PROJECT

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Existing Land Uses with Full Occupancy								
General Commercial ¹	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant ²	18.32 TSF	110	101	211	121	84	205	2,329
Office Tower ³	196 TSF	267	37	304	49	243	292	2,158
Single Story Office ⁴	24.2 TSF	29	6	35	7	24	31	309
Health/Fitness Club ⁵	42.34 TSF	26	32	58	85	64	149	1,394
Movie Theater ⁶	26.73 TSF	0	0	0	155	10	165	2,087
Sub-Total	321 TSF	440	181	621	442	450	892	8,853
Added by Alternative Project								
General Commercial	17.6 TSF	11	7	18	32	33	65	756
High-Turnover Restaurant	1 TSF	6	6	12	7	5	12	127
Mixed-Use Residential ⁷	137 DU	14	56	70	55	30	85	921
Sub-Total	18.6 TSF 137 DU	31	69	100	94	68	162	1,804
Retained Existing Land Uses								
General Commercial	13.41 TSF	8	5	13	25	25	50	576
High-Turnover Restaurant	18.32 TSF	110	101	211	121	84	205	2,329
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Single Story Office	15 TSF	18	3	21	5	15	20	191
Health/Fitness Club	42.34 TSF	26	32	58	85	64	149	1,394
Sub-Total	285.07 TSF	429	178	607	285	431	716	6,648
Total for Alternative Project								
Mixed-Use Residential	137 DU	14	56	70	55	30	85	921
General Commercial	31.01 TSF	19	12	31	57	58	115	1,332
High-Turnover Restaurant	19.32 TSF	116	107	223	128	89	217	2,456
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Single Story Office	15 TSF	18	3	21	5	15	20	191
Health/Fitness Club	42.34 TSF	26	32	58	85	64	149	1,394
Grand Total		460	247	707	379	499	878	8,452
Net Change (from Existing)		20	66	86	-63	49	-14	-401
% Difference				14%			-2%	-5%
Trip Rate (ITE Code) – 8th Edition								
¹ General Commercial (820)	TSF	0.61	0.39	1.00	1.83	1.90	3.73	42.94
² High-Turnover Restaurant (932)	TSF	5.99	5.53	11.52	6.58	4.57	11.15	127.15
³ General Office (710)	TSF	1.36	0.19	1.55	0.25	1.24	1.49	11.01
⁴ Business Park (770)	TSF	1.20	0.23	1.43	0.30	0.99	1.29	12.76
⁵ Health/Fitness Club (492)	TSF	0.62	0.76	1.38	2.01	1.52	3.53	32.93
⁶ Movie Theater without Matinee (443)	TSF	0.00	0.00	0.00	5.79	0.37	6.16	78.06
⁷ Apartments (220)	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72

Table 8

TRIP GENERATION COMPARISON
- ALTERNATIVE PROJECT VERSUS APPROVED SPECIFIC PLAN

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
Approved SP Land Use								
Mixed-Use Residential ¹	272 DU	27	112	139	109	60	169	1,828
Mixed-Use Commercial ²	15 TSF	14	13	27	19	20	40	602
General Commercial ³	242.34 TSF	308	274	582	419	434	853	12,965
Grand Total	272 DU 257.34 TSF	349	399	748	547	514	1,062	15,395
Alternative Project								
Mixed-Use Residential	137 DU	14	56	70	55	30	85	921
General Commercial	31.01 TSF	19	12	31	57	58	115	1,332
High-Turnover Restaurant	19.32 TSF	116	107	223	128	89	217	2,456
Office Tower	196 TSF	267	37	304	49	243	292	2,158
Single Story Office	15 TSF	18	3	21	5	15	20	191
Health/Fitness Club	42.34 TSF	26	32	58	85	64	149	1,394
Grand Total	137 DU 303.67 TSF	460	247	707	379	499	878	8,452
Net Change (from EIR)		111	-152	-41	-168	-15	-184	-6,943
% Difference				-5%			-17%	-45%
Trip Rates for Approved Specific Plan								
¹ Mixed-Use Residential	DU	0.10	0.41	0.51	0.40	0.22	0.62	6.72
² Mixed-Use Commercial*	TSF	0.95	0.85	1.80	1.28	1.34	2.64	40.13
³ General Commercial	TSF	1.27	1.13	2.40	1.73	1.79	3.52	53.50

*Derived from Shopping Center, General Office and High-Turnover Restaurant

ADT VOLUME SUMMARY			
Link Location	2030 Specific Plan ADT Volume	2030 ADT Volume with Alternative Project	% Change
Beach Blvd north of Warner Ave	66,000	63,917	-3%
Beach Blvd south of Warner Ave	64,000	62,125	-3%
Warner Ave west of Beach Blvd	40,000	38,750	-3%
Warner Ave east of Beach Blvd	43,000	41,204	-4%

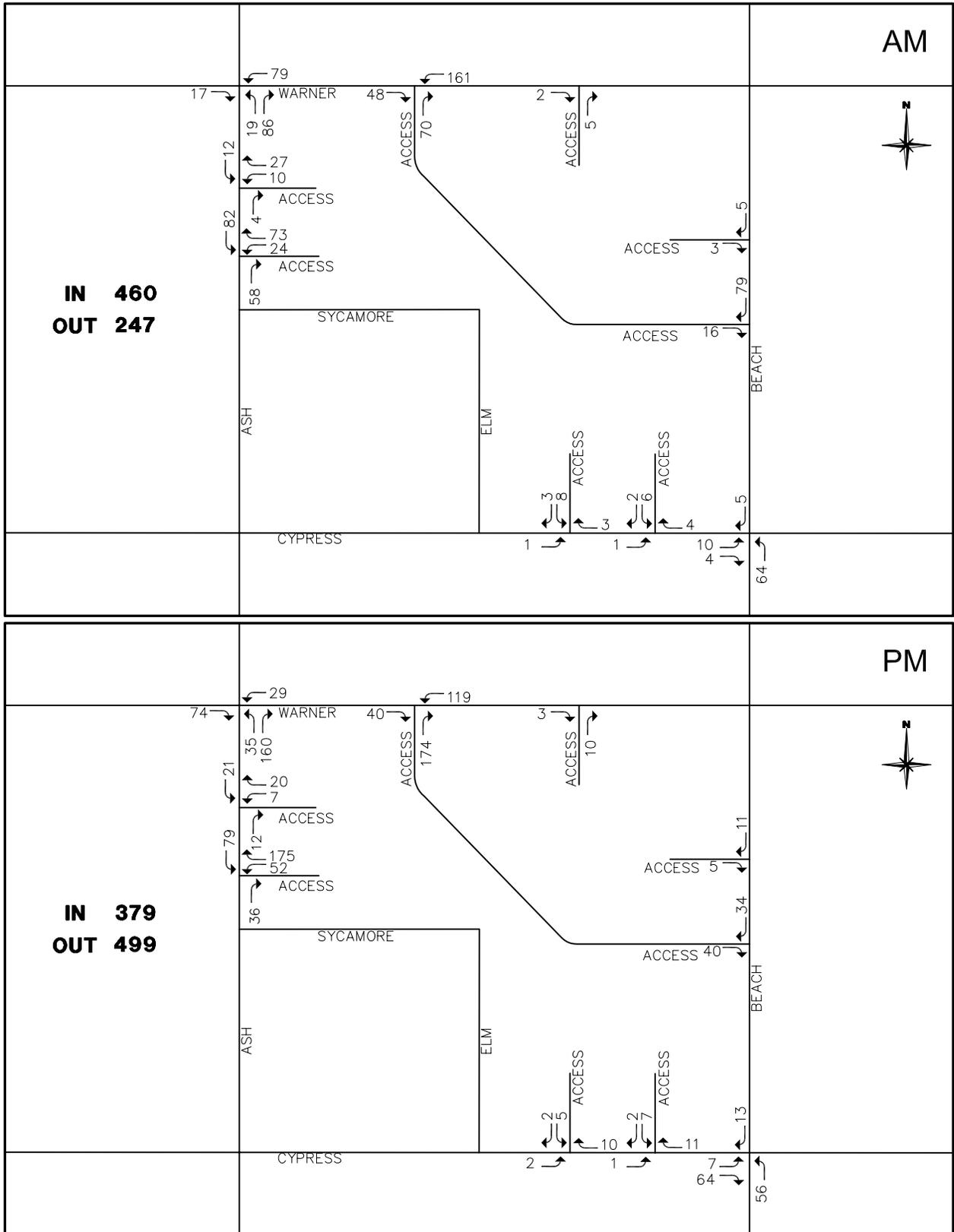
As shown, the percentage change is four percent or less. Hence, the Alternative Project does not have a significant change in ADT volumes. The peak hour LOS also shows results of a similar magnitude, with the change being less than significant.

SITE ACCESS ANALYSIS FOR ALTERNATIVE PROJECT

Figure 7 illustrates the Alternative Project peak hour volumes for the project’s driveways. As shown, the volumes are not significantly different from the existing volumes discussed previously. Therefore, the eight access driveways are expected to operate at an acceptable LOS.

REFERENCES

1. “Beach Boulevard and Edinger Avenue Corridor Specific Plan Traffic Study,” Austin-Foust Associates, August 2009.



APPENDIX A

ACCIDENT HISTORY SURVEY

A survey of vehicle accidents was performed for midblock segments and intersections adjacent to the proposed project in the City of Huntington Beach. The midblock accident analysis tabulated accident data for the roadway segments along Beach Boulevard and Warner Avenue that were adjacent to the proposed project. An intersection analysis tabulated accident data for the three local intersections that would be affected by the proposed project.

Table A-1 summarizes the accident data along with the average accident rate for the midblock segment. As shown, the result is that the midblock accident rates are within the commonly accepted norm (3.5 accidents per million vehicle miles).

Table A-2 summarizes the intersection accident data along with the average accident rate. As shown, the result is that the intersection accident rates are within the accepted norm (less than 1.0 accidents per million vehicles) for the intersection of Ash Street at Warner Avenue, Beach Boulevard at Cypress Avenue and Access driveway at Warner Avenue.

Tables A-3 through A-4 summarize the accident history for the midblock locations: Warner Avenue (from Ash Street to Beach Boulevard), and Beach Boulevard (from Warner Avenue to Cypress Avenue). Table A-5 through A-7 summarize the accident history for the three local intersections: Warner Avenue at Ash Street, Beach Boulevard at Cypress Avenue, and Access driveway at Warner Avenue, respectively.

Table A-1

ACCIDENT RATE CALCULATION FOR MIDBLOCK SEGMENTS

Midblock	# Accidents	Years	Distance (mi)	ADT – Main Roadway	Total Accident Rate*
Warner Ave (Ash to 450 ft east of Ash)	31	4.5	.17	39,800	2.79 acc/mvm
Beach Blvd (Warner Ave to Cypress Ave)	23	4.5	.16	63,800	1.37 acc/mvm

*Total Accident Rate = $\frac{\text{Number of accidents} \times 1,000,000 \text{ Vehicle Miles}}{4.5 \text{ Years} \times 365 \text{ Days} \times \text{Two-Way ADT Volume} \times \text{Segment Length}}$

Abbreviations: acc – accidents
mvm – millions of vehicle miles

Table A-2

ACCIDENT RATE CALCULATION FOR INTERSECTIONS

Midblock	# Accidents	Years	ADT – Main Roadway	ADT – Minor Roadway	Total Accident Rate*
Ash St & Warner Ave	17	4.5	39,800	1,900	0.25 acc/mv
Beach Blvd & Cypress Ave	17	4.5	63,800	1,900	0.16 acc/mv
Access Driveway & Warner Ave	6	4.5	39,800	2,000	0.09 acc/mv
<p>Total Accident Rate* = $\frac{\text{Number of Accidents} \times 1,000,000 \text{ Vehicles}}{365 \text{ Days} \times 4.5 \text{ Years} \times \text{ADT Volume (Major St + Minor St)}}$</p>					
<p>Abbreviations: acc – accidents mv – per million vehicles</p>					

Table A-3

MIDBLOCK ACCIDENT HISTORY SURVEY
 - Warner Avenue (From Ash Street to Beach Boulevard)

Date	Time	Distance from I/S	Collision Type	Vehicle 1 Direction	Vehicle 2 Direction	Injuries
Warner midblock collisions: Ash-Beach						
1. 7/15/06	9:44	480' w/o Beach	Bike	EBR	WBT	1 inj. Bike
2. 7/28/06	11:26	85' w/o Beach	RE	EBT	WBT	0 inj DUI
3. 8/29/06	12:31	463' w/o Beach	SS	EB	EBT	1 inj
4. 9/8/06	11:55	55' w/o Beach	SS	EB	EB	0 inj
5. 9/26/06	18:04	210' e/o Ash	RE	EB	EBT	0 inj
6. 10/26/06	20:56	400' w/o Beach	--	WB	WB	1 inj
7. 12/1/06	18:02	121' e/o Ash	RE	EBT	EB	0 inj
8. 1/16/07	6:05	325' w/o Beach	Object	WB	--	0 inj
9. 1/20/07	11:28	179' w/o Beach	RE	EBT	EBT	0 inj
10. 1/28/07	13:46	100' w/o Beach	RE	EBT	NB	0 inj
11. 4/11/07	16:01	130' w/o Beach	RE	WBT	WBT	1 inj
12. 5/17/07	17:34	75' e/o Ash	RE	EBT	EBT	0 inj
13. 7/18/07	10:16	120' e/o Ash	SS	WBT	WBT	0 inj
14. 9/3/07	18:11	334' w/o Beach	Object	EBT	--	0 inj
15. 10/16/07	11:47	347' w/o Beach	RE	EBT	EBT	1 inj
16. 2/1/08	9:51	94' e/o Ash	SS	EB	EBT	0 inj
17. 2/10/08	17:10	86' e/o Ash	RE	EBT	EBT	0 inj
18. 3/19/08	15:39	240' w/o Beach	RE	EBT	EBT	0 inj
19. 4/8/08	12:55	250' w/o Beach	RE	T	T	0 inj
20. 8/17/08	4:26	240' w/o Beach	Object	WB	--	0 inj DUI
21. 10/29/08	16:09	120' w/o Beach	RE	WBT	WBT	0 inj
22. 11/12/08	15:14	63' w/o Beach	BS	WBT	NBR	0 inj
23. 12/12/08	19:57	65' w/o Beach	SS	EB	EBT	0 inj
24. 2/16/09	7:40	60' w/o Beach	RE	WBT	EB	1 inj
25. 7/3/09	13:19	420' w/o Beach	RE	EBT	EBT	0 inj
26. 8/5/09	17:32	63' w/o Beach	SS	WB	WBT	0 inj
27. 11/25/09	19:24	556' w/o Beach	--	WB-Backing	EBT	0 inj
28. 2/11/10	8:50	75' w/o Beach	SS	EBT	EBT	0 inj
29. 6/12/10	15:45	287' w/o Beach	SS	WB	WBT	0 inj
30. 9/5/10	13:36	130' w/o Beach	SS	EB	EBT	0 inj
31. 7/12/08	21:27	290' w/o Beach	SS	SBT	SBT	0 inj

Accident Rate = $\frac{31,000,000}{4.5 \text{ yr} \times 365 \times 39,800 \times .17 \text{ mi}} = 2.79 \text{ acc/mvm}$

Abbreviations: w/o – west of
 e/o – east of
 RE – rear end
 SS – sideswipe
 BS – broadside

Table A-4

MIDBLOCK ACCIDENT HISTORY SURVEY
 - Beach Boulevard (From Warner Avenue to Cypress Avenue)

Date	Time	Distance from I/S	Collision Type	Vehicle 1 Direction	Vehicle 2 Direction	Injuries
Beach Boulevard midblock: Warner to Cypress						
1. 12/19/05	12:13	406' s/o Warner	RE	NB	NBT	0 inj
2. 12/3/05	16:47	152' s/o Warner	Object	SBL	--	0 inj
3. 1/14/06	7:32	303' n/o Cypress	Bike	NB	EBR	1 inj
4. 6/11/06	12:17	100' s/o Warner	SS	NB	NBT	0 inj
5. 7/4/06	13:59	181' n/o Blaylock	Bike	NB	EBR	1 inj
6. 7/29/06	22:10	100' s/o Warner	SS	NB	NB	1 inj
7. 11/7/06	17:22	530' s/o Warner	RE	NB	NB	1 inj
8. 11/17/06	13:31	407' s/o Warner	SS	SB	SBR	0 inj
9. 12/19/06	18:45	165' n/o Blaylock	RE	NBT	NB	1 inj
10. 2/15/07	13:42	460' s/o Warner	RE	NB	NB	1 inj
11. 3/1/07	10:10	214' s/o Warner	RE	NB	NBT	0 inj
12. 4/17/07	17:07	64' n/o Blaylock	RE	NBT	NB	0 inj
13. 6/12/07	11:12	110' s/o Warner	RE	SBT	SBT	1 inj
14. 9/3/07	17:17	170' s/o Warner	RE	NBT	NB	1 inj
15. 11/12/07	8:53	190' s/o Warner	RE	SBT	SB	0 inj
16. 5/12/08	15:29	105' n/o Blaylock	RE	T	T	0 inj
17. 7/9/08	19:07	150' s/o Warner	RE	EBR	EBR	0 inj
18. 7/12/08	17:51	60' n/o Blaylock	RE	NBT	NB	0 inj
19. 4/8/09	17:22	375' s/o Warner	BS	SBT	SB	0 inj
20. 4/23/09	13:47	317' s/o Warner	RE	NBT	NB	1 inj
21. 7/3/09	16:45	550' s/o Warner	SS	NB	NBT	0 inj
22. 4/1/10	19:42	78' n/o Blaylock	RE	NBT	NB	0 inj
23. 9/29/10	19:11	80' n/o Blaylock	SS	NBT	NB	0 inj
Accident Rate = $\frac{23,000,000}{4.5 \text{ yr} \times 365 \times 63,800 \times .16 \text{ mi}} = 1.37 \text{ acc/mvm}$						
Abbreviations: w/o – west of e/o – east of RE – rear end SS – sideswipe BS – broadside						

Table A-5

INTERSECTION ACCIDENT HISTORY SURVEY
- Warner Avenue at Ash Street

Date	Time	Distance from I/S	Collision Type	Vehicle 1 Direction	Vehicle 2 Direction	Injuries
Warner at Ash I/S (within 100') + Millstream						
1. 2/14/06	7:43	I/S	Bike	SBR	EBT	1 inj
2. 6/29/06	11:44	I/S	BS	EBT	NBL	3 inj
3. 5/2/07	22:14	I/S	Ped	SBT	EBT	1 inj
4. 8/27/07	10:50	I/S	BS	EBT	NBT	0 inj
5. 10/11/07	10:01	I/S	Bike	WBT	NBT	0 inj
6. 11/17/07	15:21	35' w/o Ash	RE	EBT	EBT	0 inj
7. 1/23/08	10:17	I/S	BS	WBT	WBT	2 inj
8. 3/15/08	16:01	75' w/o Ash	RE	EBT	EB	0 inj
9. 5/5/08	14:38	27' e/o Ash	RE	T	T	0 inj
10. 6/6/08	18:43	I/S	BS	SBL	EBT	2 inj
11. 10/8/08	13:21	52' e/o Ash	RE	WB	WB	1 inj
12. 11/16/08	11:24	I/S	BS	EBT	NBL	1 inj
13. 10/5/09	18:47	8' e/o Ash	Ped	WBT	NBT	0 inj
14. 10/14/09	7:48	I/S	BS	NBL	WBT	0 inj
15. 12/10/09	16:14	35' w/o Ash	RE	EBT	EB	1 inj
16. 2/11/10	12:33	80' w/o Ash	RE	EBT	EB	0 inj
17. 8/16/10	15:06	100' e/o Ash	RE	WB	WBT	0 inj
<p>Accident Rate = $\frac{17,000,000}{4.5 \text{ yr} \times 365 \times (39,800 + 1,900)} = .25 \text{ acc/mv}$</p> <p>Abbreviations: w/o – west of e/o – east of RE – rear end SS – sideswipe BS – broadside I/S - intersection</p>						

Table A-6

INTERSECTION ACCIDENT HISTORY SURVEY
- Beach Boulevard at Cypress Avenue

Date	Time	Distance from I/S	Collision Type	Vehicle 1 Direction	Vehicle 2 Direction	Injuries
Beach at Cypress I/S (within 100' of I/S)						
1. 1/2/06	12:14	42' n/o Cypress	Ped	EB	NBL	1 inj
2. 1/31/06	10:11	I/S	BS	EBL	SBT	1 inj
3. 5/1/06	17:57	I/S	RE	SBT	SBR	0 inj
4. 12/12/06	15:31	60' n/o Cypress	Bike	NB	SBR	1 inj
5. 2/7/07	16:51	60' n/o Cypress	Object	NB	--	1 inj
6. 5/21/07	8:57	I/S	BS	EBL	SBT	0 inj
7. 6/23/07	21:40	18' n/o Cypress	Object	NB	NBT	0 inj
8. 11/9/07	15:33	50' s/o Cypress	SS	SB	SB	0 inj
9. 1/9/08	21:25	I/S	BS	EBL	SBT	1 inj
10. 5/6/08	8:10	I/S	BS	T	L	0 inj
11. 6/28/08	2:02	I/S	Object	NBT	--	0 inj
12. 10/28/08	10:57	28' s/o Cypress	RE	SB	SBR	0 inj
13. 6/20/09	9:31	I/S	Bike	EBT	SBT	1 inj
14. 1/15/10	22:36	65' s/o Cypress	RE	NBT	NB	0 inj
15. 2/13/10	13:00	50' s/o Cypress	SS	SB	SBT	0 inj
16. 7/7/10	15:26	I/S	BS	EBL	SBT	2 inj
17. 3/26/10	14:57	105' s/o Blaylock	SS	EBL	NBT	0 inj
<p>Accident Rate = $\frac{17,000,000}{4.5 \text{ yr} \times 365 \times (63,800 + 1,900)} = .16 \text{ acc/mv}$</p> <p>Abbreviations: w/o – west of e/o – east of RE – rear end SS – sideswipe BS – broadside I/S - intersection</p>						

Table A-7

INTERSECTION ACCIDENT HISTORY SURVEY
 - Warner Avenue at Restaurant Driveway

Date	Time	Distance from I/S	Collision Type	Vehicle 1 Direction	Vehicle 2 Direction	Injuries
Collisions at Warner Avenue Driveway (250-300 ft east of Ash)						
1. 5/29/06	16:22	212' e/o Ash	BS	WBL	EBT	3 inj
2. 6/4/06	21:08	354' e/o Ash	BS	SBL	EBT	2 inj
3. 1/7/08	12:05	300' e/o Ash	SS	NBR	NBR	0 inj
4. 2/11/09	17:49	336' e/o Ash	--	SBL	EBT	1 inj
5. 3/12/10	14:47	284' e/o Ash	BS	SBL	EBT	0 inj bike
6. 8/18/10	8:56	280' e/o Ash	BS	SBL	EBT	2 inj
Accident Rate = $\frac{6,000,000}{4.5 \text{ yr} \times 365 \times 39,800} = .09 \text{ acc/mv}$						
Abbreviations: w/o – west of e/o – east of RE – rear end SS – sideswipe BS – broadside						

