

**Appendix E**

**Traffic Analysis**



**City of Huntington Beach**  
**BEACH-EDINGER CORRIDOR SPECIFIC PLAN AREA**  
**Traffic Analysis For Murdy-Commons Project**

Prepared by:

**Austin-Foust Associates, Inc.**  
2223 Wellington Avenue, Suite 300  
Santa Ana, California 92701-3161  
(714) 667-0496

October 25, 2010

---

# **BEACH-EDINGER CORRIDOR SPECIFIC PLAN AREA**

## **Traffic Analysis For Murdy-Commons Project**

This report presents a traffic analysis for the Murdy-Commons 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 and EIR for the SP.

### **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 350 hotel rooms.

The SP area includes the Murdy-Commons Project, which is illustrated in Figure 2. It is a 12.5-acre site, with 984 dwelling units and 60,000 square feet of retail use proposed for development.

The following analysis provides an evaluation of the trip generation characteristics for the proposed project, and a finding of consistency with the SP is then made based on that trip generation analysis. The resulting change in ADT volumes is presented in tabular format for the impacted roadway segments, followed by a discussion of the peak hour and freeway impacts. A discussion of the project's fair share contribution to the SP mitigation program is then provided, followed by a site access evaluation and an analysis of the project alternative.

### **TRIP GENERATION ANALYSIS**

The project site is located at 7441 Edinger Avenue on the northeast corner of Edinger Avenue and Gothard Street in the northern portion of the City of Huntington Beach. It is bounded by Edinger Avenue to the south, Gothard Street to the west, the future site of The Red Oak Mixed-Use Development (approved) to the north, and the Village at Bella Terra/Costco (approved) to the east. The Union Pacific Railroad right-of-way forms the actual eastern boundary of the site. The project is located within the Town Center District of the SP area.

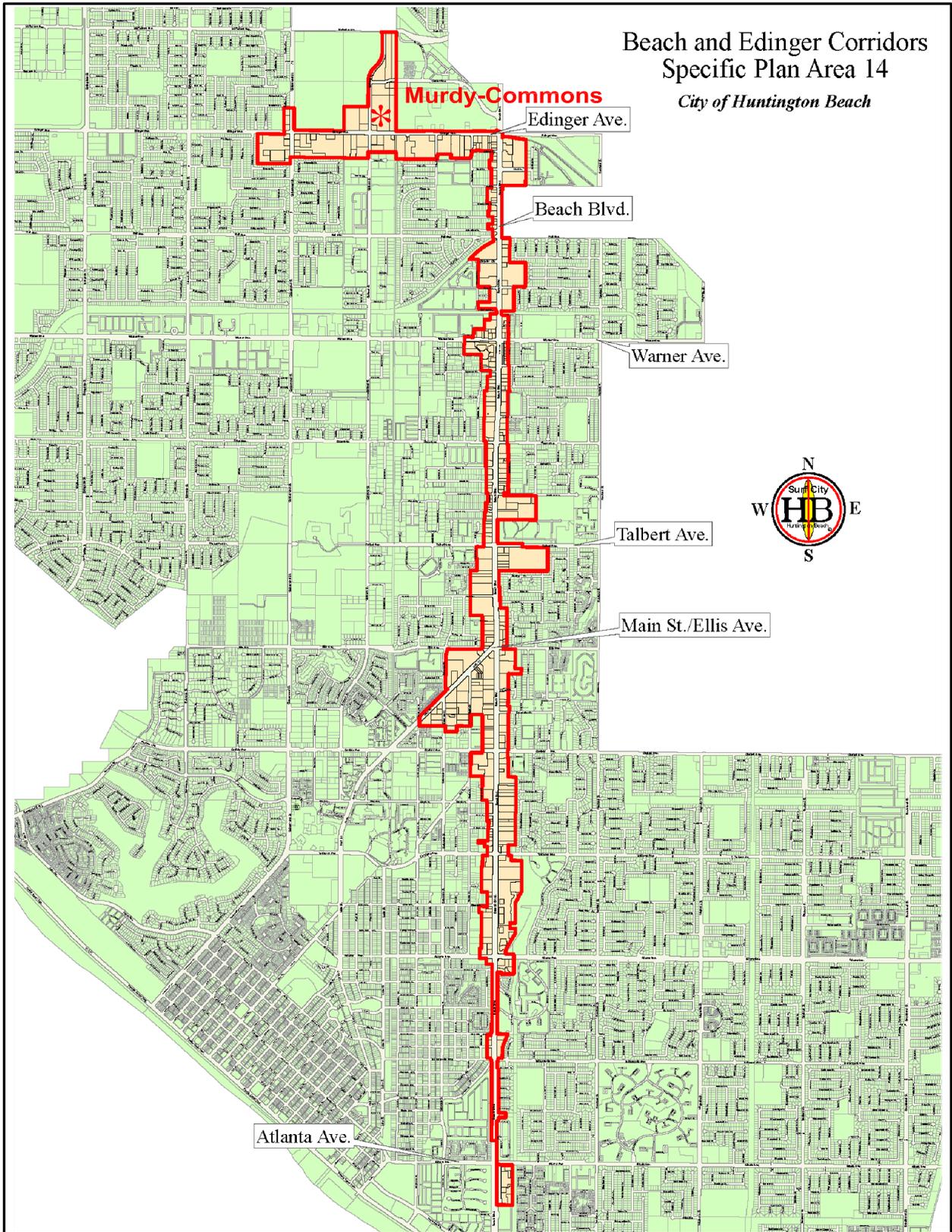
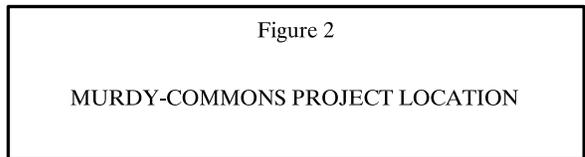
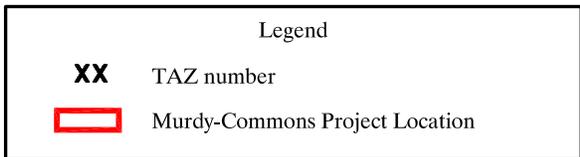
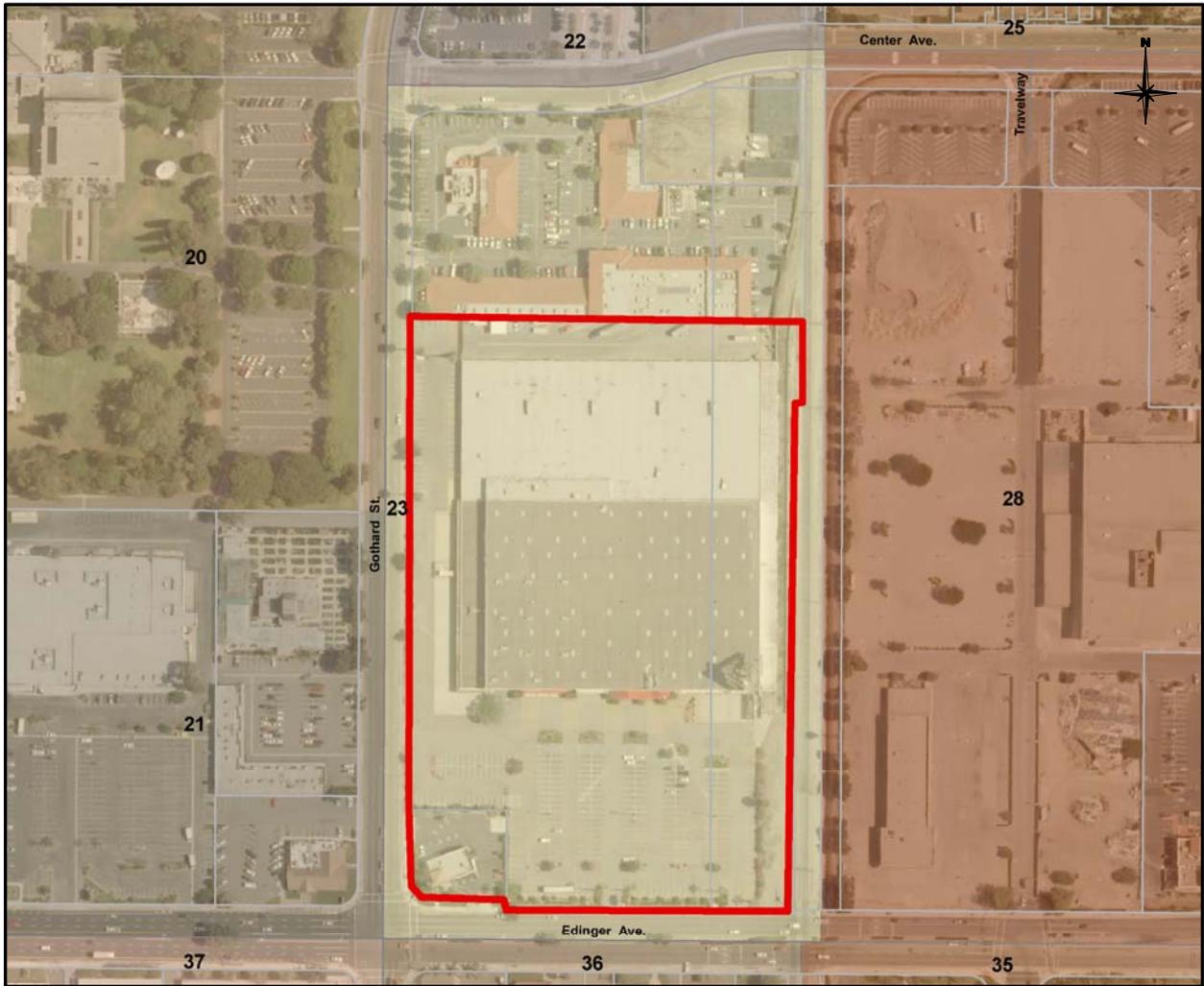


Figure 1  
BEACH-EDINGER SPECIFIC PLAN



The project proposes the development of 984 dwelling units (DU), comprising 65 live-work units and 919 apartment units. Commercial uses include 60,000 square feet of ground floor retail located along Edinger Avenue and along a portion of Gothard Street. The commercial uses are intended to provide neighborhood retail and service uses, with a focus on specialty goods stores, banking, restaurants, and café spaces.

Table 1 summarizes the land use and trip generation for the proposed project and provides a comparison against the land uses assumed in the SP EIR. The land uses proposed for the project represent a net reduction of 284 dwelling units when compared to the approved SP EIR. This reduction in residential units results in a 17 percent decrease in daily trips and a 19 percent decrease in the AM and PM peak hours. The conclusion from this trip generation analysis is that the project will generate fewer trips than assumed in the SP traffic study and will not result in any additional impacts from trip generation. Appendix A discusses the project land uses within the context of the assumptions used in the 2030 SP traffic study.

## 2030 ADT VOLUMES

The 2030 ADT volumes with the proposed project are summarized below for the roadway segments close to the project, 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
Edinger Ave west of Gothard Ave	31,000	30,695	-1%
Edinger Ave east of Gothard Ave	46,000	45,217	-2%
Gothard Ave north of Edinger Ave	13,000	12,523	-4%
Gothard Ave south of Edinger Ave	17,000	16,656	-2%

As shown, the percentage change is four percent or less. Hence there is no significant change in 2030 volumes as a result of the project. The next section discusses the corresponding effect on the peak hour volumes.

Table 1

## TRIP GENERATION COMPARISON FOR MURDY COMMONS

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
<b>Proposed Project</b>								
Mixed-Use Residential <sup>1</sup>	984 DU	98	403	501	394	216	610	6,612
Mixed-Use Commercial <sup>2</sup>	60 TSF	57	51	108	77	80	157	2,408
Total		155	454	609	471	296	767	9,020
<b>Specific Plan EIR</b>								
Mixed-Use Residential <sup>1</sup>	1,268 DU	127	520	647	507	279	786	8,521
Mixed-Use Commercial <sup>2</sup>	60 TSF	57	51	108	77	80	157	2,408
Total		184	571	755	584	359	943	10,929
<b>Net Change (from EIR)</b>	<b>-284 DU</b>	<b>-29</b>	<b>-117</b>	<b>-146</b>	<b>-113</b>	<b>-63</b>	<b>-176</b>	<b>-1,909</b>
<i>% Difference</i>				<b>-19%</b>			<b>-19%</b>	<b>-17%</b>

Abbreviations: ADT – average daily traffic  
DU – dwelling unit  
TSF – thousand square feet

Note: Does not include discount for existing 2,648 square feet of commercial uses (EZ Lube).

<sup>1</sup> Trip based on ITE (7<sup>th</sup> Ed.) Apartment (220) rates.

<sup>2</sup> Trip based on ITE (7<sup>th</sup> Ed.) Shopping Center (820) rates

**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
17. Gothard St & Center Ave	.37	A	.58	A
27. Gothard St & Edinger Ave	.57	A	.65	B

As shown, the two intersections adjacent to the site would operate at LOS “B” or better. The reduction in trips due to the proposed project would not result in a change to the LOS. The finding is that the proposed project would produce results that are consistent with the approved SP.

**FREEWAY RAMP VOLUMES**

A significant impact to the northbound I-405 loop ramp from Beach Boulevard in 2016 and 2035 was identified in the EIR. The proposed project would contribute to this deficiency for both time frames. There are no significance criteria other than any increase in traffic on a deficient facility represents a project impact. Hence, it can only be noted that the project contributes traffic to deficiencies on the State Highway system thereby causing a potential significant and unavoidable impact.

**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 and will ensure that the Murdy-Commons project pays its fair-share contribution to future improvements along with other development in the SP area and the remainder of the City.

## SITE ANALYSIS

A project site plan is illustrated in Figure 3. It shows that access to the project site would be provided from Gothard Street (three ingress/egress) and Edinger Avenue (two ingress and three egress). The site plan and internal roadways will be evaluated during the formal site plan review process.

Figure 4 illustrates the trip distribution for the project, along with the peak hour volumes for the project access locations. The north access on Gothard Street is a shared access roadway with the (approved) Red Oak Mixed-Use Development. The peak hour volumes shown here represent the total access volumes for the two projects.

The main access into the project (Access #1) allows for an eastbound left-turn ingress into the site, but does not allow for outbound left-turns. The median break to allow for the left-turn in would affect access to the commercial site located opposite the proposed project, as it would eliminate the westbound left-turn ingress into that property. The combination of these two left-turn restrictions has the potential to increase the westbound left-turn volumes at Gothard Street and Edinger Avenue due to the increase in U-turn demand at this location. The U-turn volumes are estimated to be 30 U-turns in the AM peak hour and 26 U-turns in the PM peak hour. The ICU values with the increased westbound left turn volume (due to the U-turn demand) are summarized below:

<b>Intersection</b>	<b>2030 AM Peak Hour</b>		<b>2030 PM Peak Hour</b>	
	<b>ICU</b>	<b>LOS</b>	<b>ICU</b>	<b>LOS</b>
Gothard St & Edinger Ave	.57	A	.65	B

As can be seen, the intersection will operate at a satisfactory level of service, and hence the finding is that the proposed access plan does not have the potential to result in significant adverse impacts.

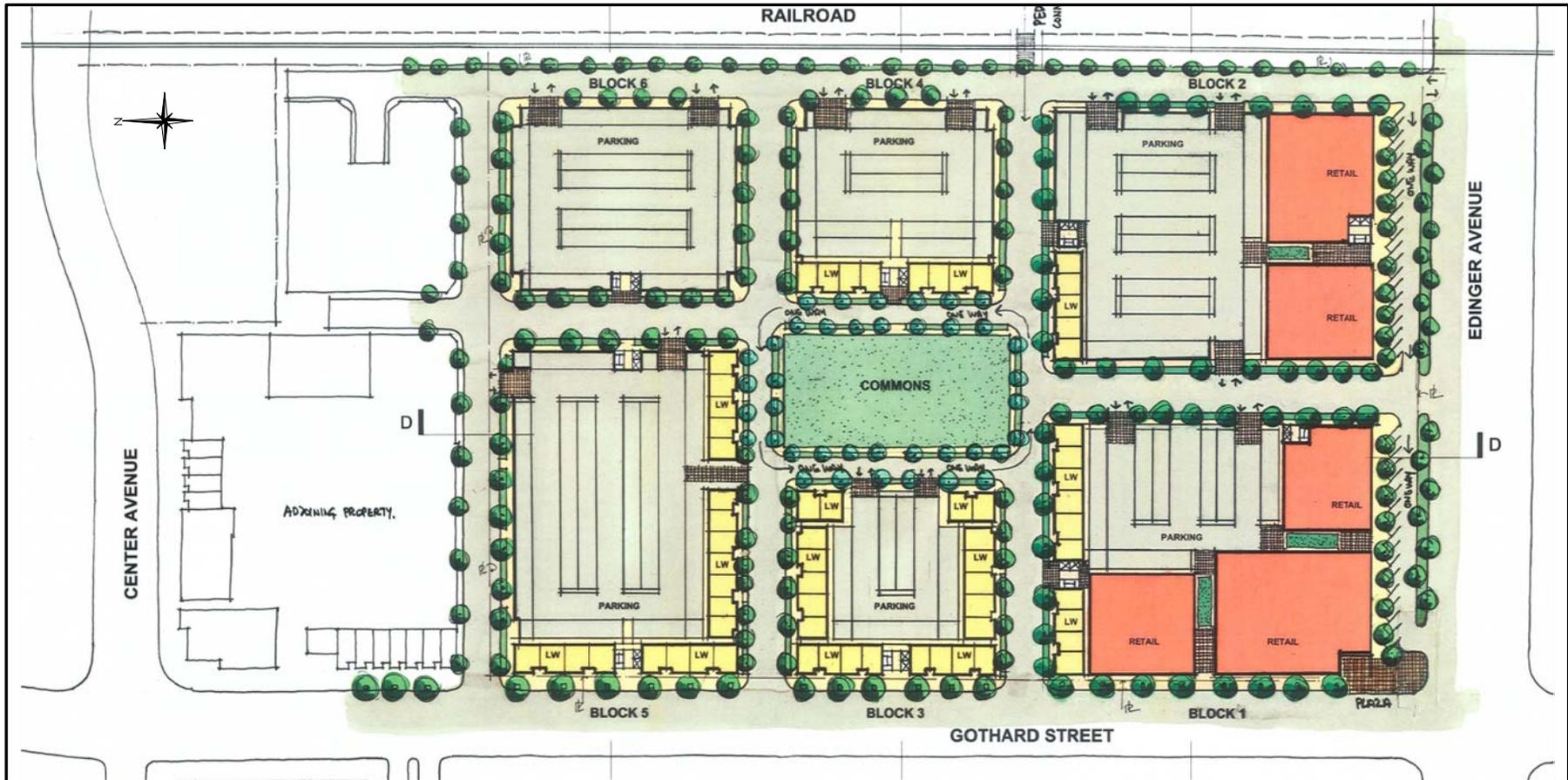
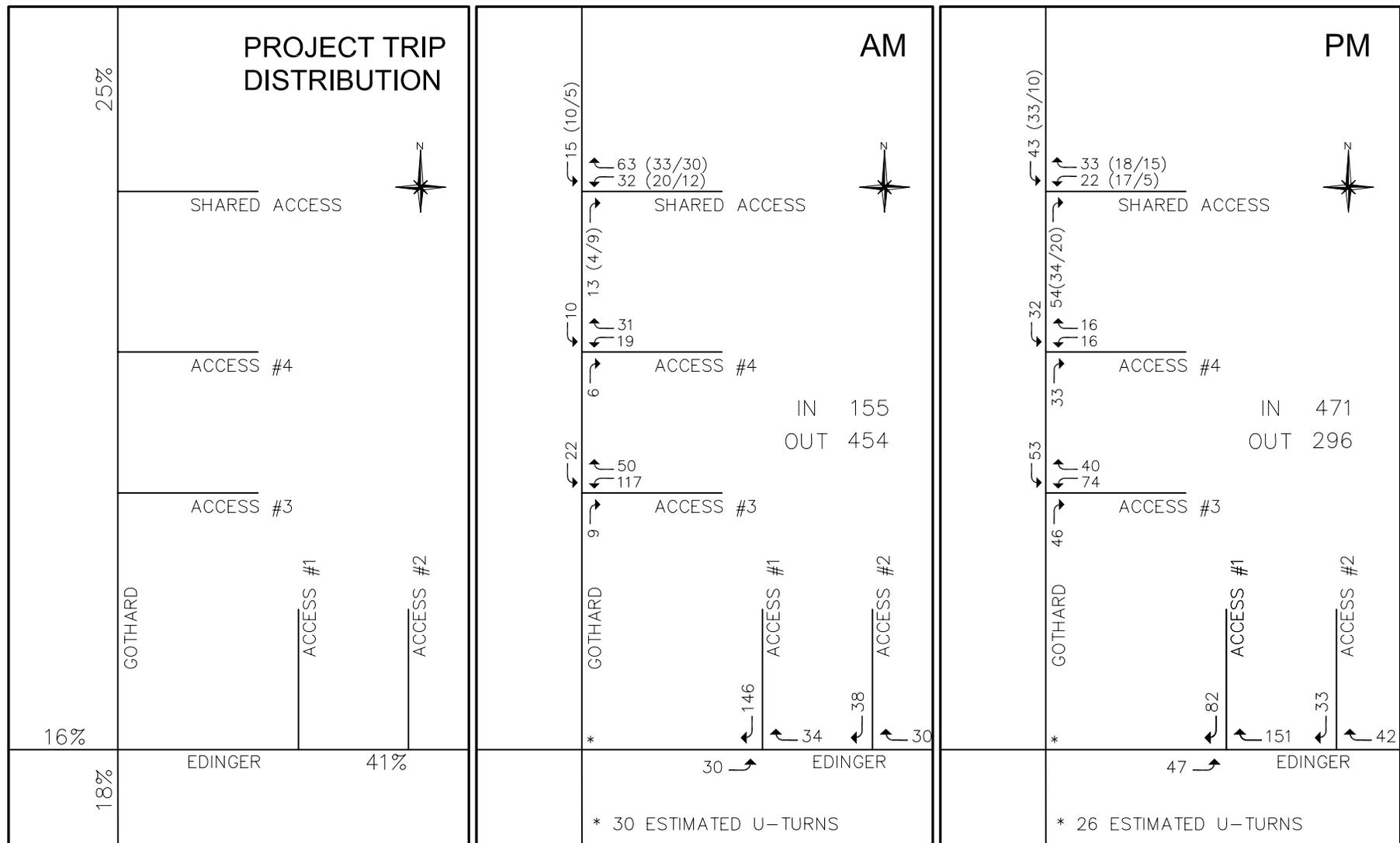


Figure 3  
 SITE ACCESS  
 - PROPOSED PROJECT



**LEGEND**

XX (YY/ZZ) Shared Access Volumes  
Total (Project/Ripcurl)

\* WB U-turns at Gothard St

**Figure 4**

**TRIP DISTRIBUTION AND PROJECT ACCESS VOLUMES - PROPOSED PROJECT**

## ON-STREET PARKING – GOTHARD STREET

The project proposes on-street parking on Gothard Street, from north of Edinger Avenue to the northern extents of the property boundary. Two potential issues arising from locating parallel parking along a four-lane secondary arterial (the Circulation Element designation for Gothard Street) are capacity and safety.

With respect to capacity, the 2030 peak hour volume in the northbound direction is 770 vehicles per hour (VPH) in the AM peak hour and 810 VPH in the PM peak hour. A typical saturation flow rate used in intersection analysis is 1700 vehicles per hour per lane. Since the forecast volumes are substantially lower than this, the use of a single lane while vehicles are parking and unparking (i.e., blocking the curb lane) should not create a midblock capacity deficiency. Also, there are two lanes of northbound traffic through the Edinger Avenue intersection and one of these may be underutilized when blockage occurs due to parking/unparking maneuvers. Reference to the ICU for this location shows that this would not create an intersection deficiency (LOS “C” for both AM and PM peak hours with only one fully operational northbound lane).

With respect to safety, a survey of vehicle accidents was performed for selected roadways in the City of Huntington Beach. The accident analysis identified roadways that had similar physical characteristics to Gothard Street, and tabulated accident data for locations where on-street parking is allowed and for similar locations with no parking. Appendix B summarizes the accident data and the methodology used in preparing the accident data. The result shows that midblock accident rates where parking is allowed are around double the rates where parking is not allowed (primarily due to increases in rear-end, side-swipe and broadside accidents). Hence the proposed on-street parking would be expected to result in a significant increase in accident potential approaching and adjacent to the on-street parking area. Introducing on-street parking adjacent to a bike lane will increase the potential for accidents involving cyclists in the bike lane (primarily cyclist collisions with open car doors).

Mitigation measures to reduce the potential increase in accidents would be:

- Ensure adequate sight distance from the two driveways on Gothard Street per standard engineering requirements. At the time of the project site-plan submittal, a formal review of the sight distances will be performed. This may include a reduction in potential on-street parking spaces.

- Provide adequate width for parking maneuvers to occur without blocking the curb lane.

In order to provide the additional maneuvering space for vehicle parking, a 10 foot buffer lane in addition to the eight foot parking lane would be needed. If this is striped with a bike lane and the remainder serves as a clearance space (e.g., six feet for bikes plus four feet clearance) it would also address the bike safety issue.

A further safety concern is the use of the curbside parking by Goldenwest College students and the potential for jaywalking across Gothard Street. Deployment of “No-Pedestrian Crossing” signs could assist in reducing the incidence of jaywalking.

The formal site plan review will need to ensure that suitable mitigation measures such as those presented here are taken to reduce the potential safety impacts that could occur with the proposed on-street parking.

## **ALTERNATIVE PROJECT**

The Alternative Project proposes the development of 498 multi-family residential units, categorized as rental housing. Commercial uses include 11,000 square feet of ground floor retail located along Edinger Avenue and along a portion of Gothard Street. The project site currently has an existing 2,648 square feet of commercial uses (EZ Lube) on the northeast corner of Gothard Street and Edinger Avenue. This site will be integrated into the Alternative Project, but the existing use will not necessarily be retained. This is accounted for in the 11,000 square feet of commercial uses assumed in the Alternative Project.

### **Trip Generation – Alternative Project**

Table 2 summarizes the land use and trip generation for the alternative project and provides a comparison against the land uses assumed in the SP EIR. The land uses proposed for the alternative project represent a net reduction of 770 dwelling units and 49,000 square feet of retail when compared to the approved SP EIR. This reduction results in a 65 percent decrease in daily trips and a similar amount in the AM and PM peak hours. The conclusion from this trip generation analysis is that the Alternative Project will generate fewer trips than assumed in the SP traffic study and hence will not result in any additional impacts from trip generation..

Table 2

## TRIP GENERATION COMPARISON FOR ALTERNATIVE PROJECT

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
<b>Alternative Project</b>								
Mixed-Use Residential <sup>1</sup>	498 DU	50	204	254	199	110	309	3,347
Mixed-Use Commercial <sup>2</sup>	11 TSF	10	9	19	14	15	29	441
Total		60	213	273	213	125	338	3,788
<b>Specific Plan EIR</b>								
Mixed-Use Residential <sup>1</sup>	1,268 DU	127	520	647	507	279	786	8,521
Mixed-Use Commercial <sup>2</sup>	60 TSF	57	51	108	77	80	157	2,408
Total		184	571	755	584	359	943	10,929
<b>Net Change (from EIR)</b>	<b>-770 DU -49 TSF</b>	<b>-124</b>	<b>-358</b>	<b>-482</b>	<b>-371</b>	<b>-234</b>	<b>-605</b>	<b>-7,141</b>
<b>% Difference</b>				<b>-64%</b>			<b>-64%</b>	<b>-65%</b>

Abbreviations: ADT – average daily traffic  
DU – dwelling unit  
TSF – thousand square feet

<sup>1</sup> Trip based on ITE (7<sup>th</sup> Ed.) Apartment (220) rates.

<sup>2</sup> Trip based on ITE (7<sup>th</sup> Ed.) Shopping Center (820) rates.

## 2030 ADT Volumes for Alternative Project

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

ADT VOLUME SUMMARY - ALTERNATIVE PROJECT			
Link Location	2030 Specific Plan ADT Volume	2030 ADT Volume with Alternative Project	% Change
Edinger Ave west of Gothard Ave	31,000	29,875	-4%
Edinger Ave east of Gothard Ave	46,000	44,805	-3%
Gothard Ave north of Edinger Ave	13,000	11,242	-13%
Gothard Ave south of Edinger Ave	17,000	15,735	-7%

As shown, the percentage change is 13 percent or less.

## Site Analysis – Alternative Project

A site plan for the Alternative Project is illustrated in Figure 5. It shows access to the project site would be provided from Gothard Street (two ingress/egress locations) and Edinger Avenue (one full access to Edinger Avenue and one right-in-right-out access to the Edinger Avenue frontage road). The main access points (one on Gothard Street and one on Edinger Avenue) will be accessible to the general public. The secondary access point on Gothard Street will have gate-controlled access for the residential units.

Figure 6 illustrates the trip distribution for the project, along with the peak hour volumes for the project access locations.

As discussed in a previous section, the restricted left-turn outbound access from the site and the restricted left-turn inbound access into the commercial property opposite the project have the potential to increase the westbound left turns at Gothard Street and Edinger Avenue (due to the U-turn demand at this location). The U-turn volumes are estimated to be 25 U-turns in the AM peak hour and 23 U-turns in the PM peak hour. The ICU value with the increased westbound left turn volume (due to the U-turn demand) is summarized below:

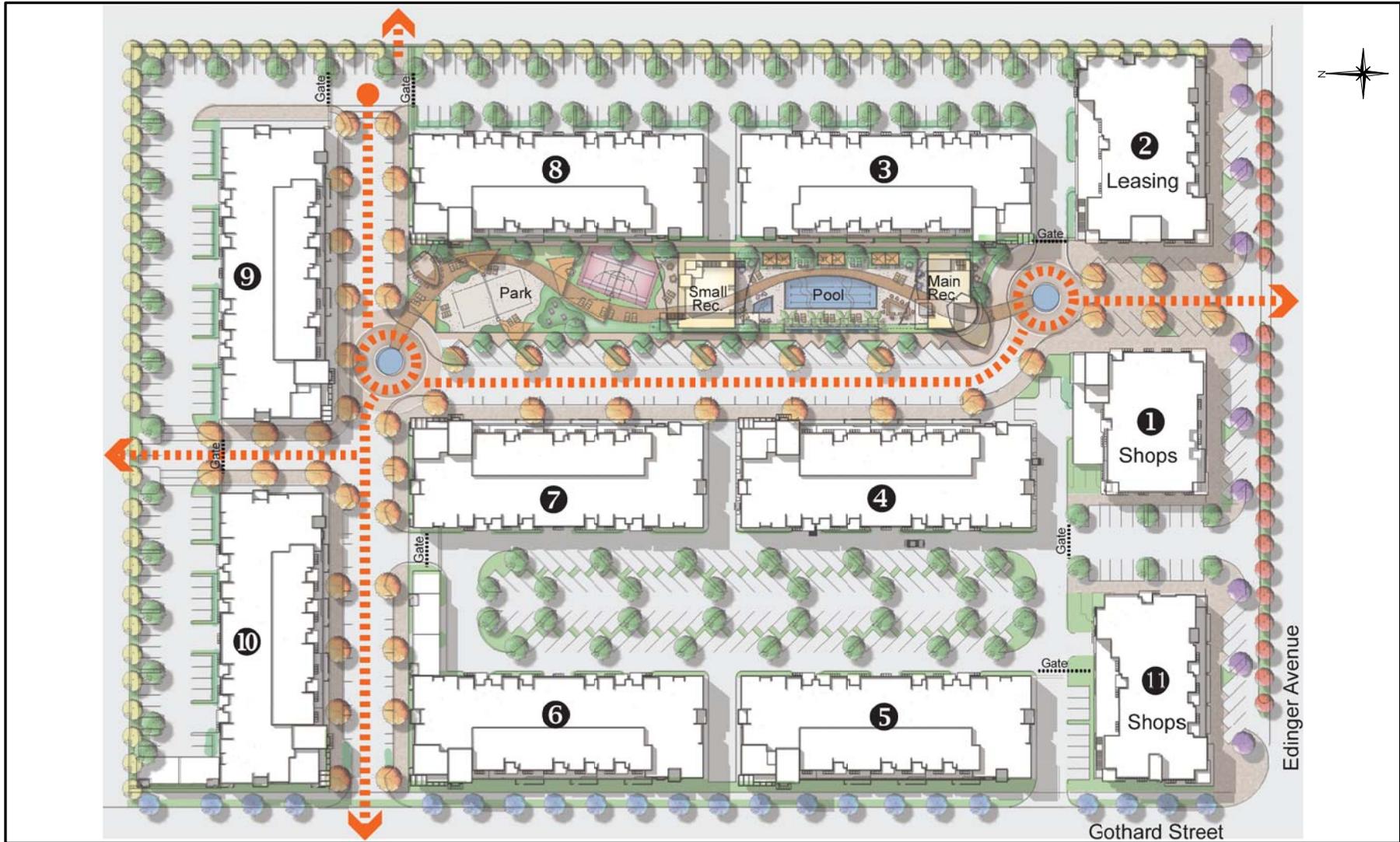
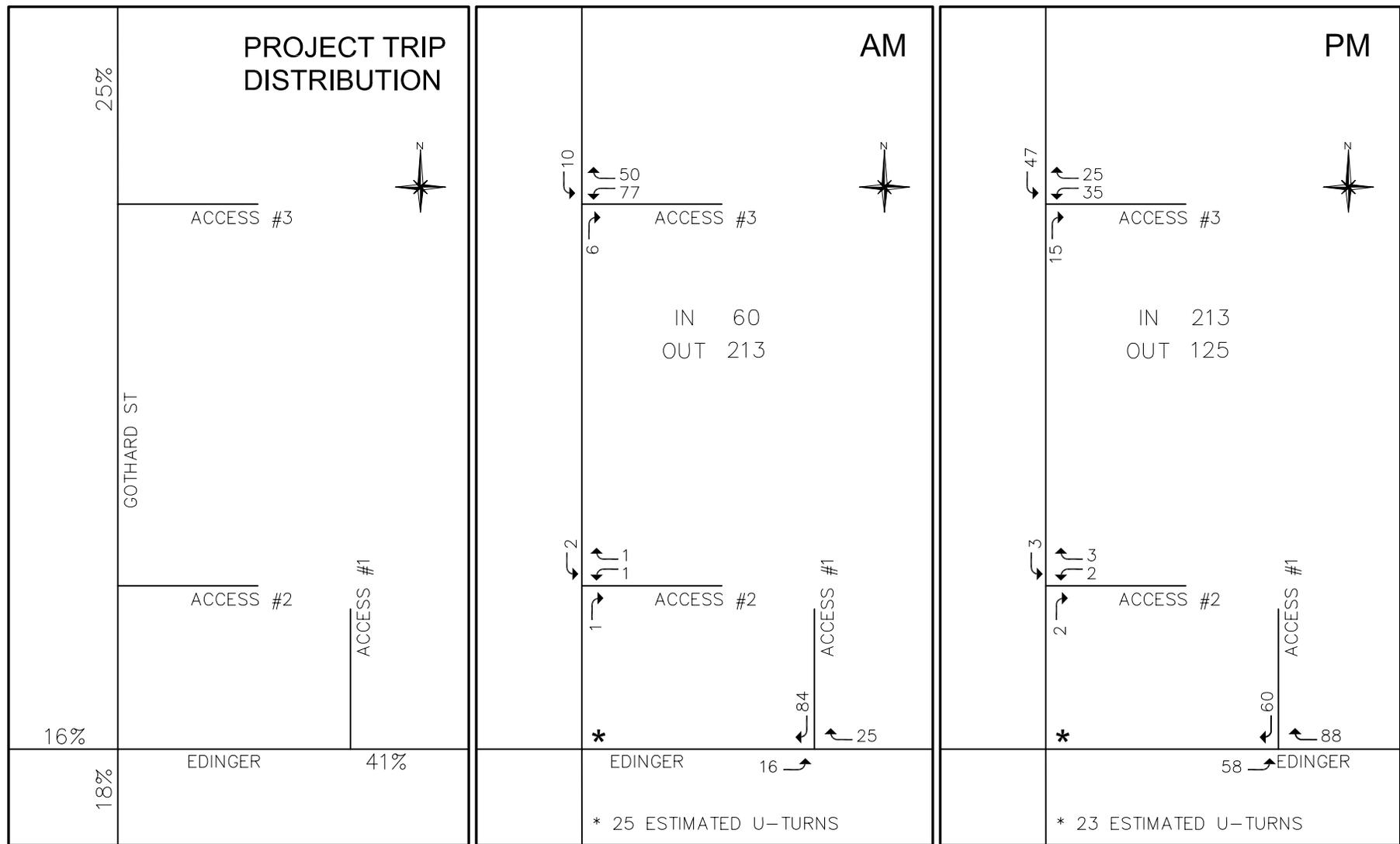


Figure 5  
 SITE ACCESS  
 - ALTERNATIVE PROJECT



**LEGEND**

(XX) Shared Access Volumes

\* Westbound U-turns at Gothard St

**Figure 6**

**TRIP DISTRIBUTION AND PROJECT ACCESS VOLUMES - ALTERNATIVE PROJECT**

<b>Intersection</b>	<b>2030 AM Peak Hour</b>		<b>2030 PM Peak Hour</b>	
	<b>ICU</b>	<b>LOS</b>	<b>ICU</b>	<b>LOS</b>
Gothard St & Edinger Ave	.57	A	.65	B

As can be seen, the intersection will operate at a satisfactory level of service and hence the finding is that the proposed access plan for the Alternative Project does not have the potential to result in significant adverse impacts.

## **APPENDIX A**

### **TRAFFIC MODEL LAND USE**

This appendix summarizes the land uses and trip generation for traffic analysis zone (TAZ 23), which comprises both the Murdy-Commons project and the Red Oak Mixed-Use development project in the City of Huntington Beach. Table A-1 summarizes the land use and trip generation assumptions for this TAZ from the traffic study referenced in the approved EIR. Also summarized here is the resulting change in the overall trip generation due to the Proposed Project and the Alternative Project analyzed in the supplemental traffic study.

Table A-1

TRIP GENERATIONSUMMARY FOR TAZ 23

Land Use	Units	AM Peak Hour			PM Peak Hour			ADT
		In	Out	Total	In	Out	Total	
<b>Specific Plan EIR Traffic Study</b>								
Mixed-Use Residential	1,708 DU	171	700	871	683	376	1,059	11,478
Mixed-Use Commercial	70 TSF	67	60	127	90	94	184	2,809
Total		238	760	998	773	470	1,243	14,287
<b>Proposed Project</b>								
Mixed-Use Residential	1,424 DU	142	584	726	570	313	883	9,569
Mixed-Use Commercial	70 TSF	67	60	127	90	94	184	2,809
Total		209	644	853	660	407	1,067	12,378
<b>Alternative Project</b>								
Mixed-Use Residential	938 DU	94	385	479	375	206	581	6,303
Mixed-Use Commercial	21 TSF	20	18	38	27	28	55	843
Total		114	403	517	402	234	636	7,146

Abbreviations: ADT – average daily traffic  
 DU – dwelling unit  
 TSF – thousand square feet

## **APPENDIX B**

### **ANALYSIS OF MIDBLOCK ACCIDENTS**

A survey of vehicle accidents was performed for selected roadways in the City of Huntington Beach. The accident analysis identified roadways that had similar physical characteristics to Gothard Street, and tabulated accident data for selected locations where on-street parking is allowed and for similar locations without on-street parking. Accidents were separated by direction where applicable (i.e., accidents occurring on same side as the on-street parking). The accidents were categorized by type: sideswipe, hit object, broadside, rear-end, and other.

Table B-1 summarizes the accident data along with the average accident rate for with on-street parking versus without on-street parking. As shown, the result is that midblock accident rates where parking is allowed (average = 1.17) are around double the rates where parking is not allowed (average = 0.60).

Table B-1

SURVEY OF ACCIDENT DATA

Street	Segment	Length (feet)	Direction(s)	ADT Volume by Direction		Number of Accidents by Selected Type				Subtotal*	Other Accident Type	Total Accidents	Total Accident Rate*
				EB/NB	WB/SB	Rear end	Sideswipe	Hit Object	Broadside				
<b>WITH PARKING</b>													
Newland St	Slater to Warner	2,640	SB	0	8,500	1	3	0	1	5	3	8	1.03
Newland St	Arnett to Heil	1,766	SB	0	8,000	2	3	0	0	5	0	5	1.02
Hamilton Ave	Bushard to Brookhurst	2,640	EB/WB	8,500	8,500	2	5	0	1	8	6	14	0.90
Main St	Yorktown to Adams	2,640	NB/SB	8,000	8,000	8	9	3	2	22	5	27	1.85
Heil Ave	Graham to Springdale	2,640	WB	0	6,000	2	0	0	0	2	2	4	0.73
Heil Ave	Regina to Graham	2,080	WB	0	6,500	1	0	1	0	2	1	3	0.64
Springdale	Meadowlark to Edinger	1,454	NB	10,500	0	0	6	0	1	7	6	13	2.46
Newland St	Adams to Indianapolis	2,640	SB	0	6,000	0	1	0	0	1	3	4	0.73
<b>AVERAGE</b>													<b>1.17</b>
<b>WITHOUT PARKING</b>													
Gothard St	McFadden to Edinger	2,640	NB/SB	7,000	7,000	0	6	0	1	7	12	19	1.49
Gothard St	Heil to Edinger	2,640	NB/SB	8,500	8,500	1	2	0	0	3	3	6	0.39
Gothard St	Warner to Heil	2,640	NB/SB	9,000	9,000	2	1	1	0	4	5	9	0.55
Newland St	Adams to Indianapolis	2,640	NB	6,000		0	0	0	0	0	0	0	0.00
Newland St	Atlanta to Indianapolis	2,640	NB/SB	5,500	5,500	0	1	0	0	1	5	6	0.60
<b>AVERAGE</b>													<b>0.60</b>

Note: Data compiled from accident data for years 2005 through 2010.

\* Includes only those accidents that were evaluated to be parking-related type accidents. The same criteria were applied to locations without parking for comparative purposes.

$$*Total\ Accident\ Rate = \frac{Total\ Accidents \times 5,280\ Feet \times 1,000,000\ vehicle\ miles}{5\ Years \times 365\ Days \times Two-Way\ (or\ One-Way)\ ADT\ Volume \times Segment\ Length}$$

