CHEVRON EL SEGUNDO REFINERY
HEAVY CRUDE PROJECT

Traffic Impact Analysis

April 2006

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CHEVRON EL SEGUNDO REFINERY HEAVY CRUDE PROJECT
TRAFFIC IMPACT ANALYSIS

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1.0 INTRODUCTION

This report presents the results of a traffic analysis performed for the proposed Chevron Project to modify their El Segundo Refinery to process more heavy crude oil and less light crude oil than it currently processes. This report has been prepared for submittal in support of the Environmental Impact Report (EIR) for the proposed project.

1.1 PROJECT DESCRIPTION

Chevron Products Company (Chevron) is proposing modifications to the El Segundo Refinery to maintain or slightly increase its current production levels of saleable products while processing more heavy crude oil and less light crude oil than it currently processes. The changes required include modifications to the No. 4 Crude Unit and the Delayed Coker (Coker). Chevron is also proposing modifications at the refinery's No.6 H2S Plant to improve the removal of sulfur compounds from refinery fuel gas.

Modifications to the No. 4 Crude Unit include modifying the atmospheric and vacuum distillation columns, modifying and replacing a number of existing heat exchangers, adding new heat exchangers, modifying a number of pumps, replacing existing piping, replacing components of the desalter, and installing additional automated controls.

Proposed modifications to the Coker include installing new heat exchangers to increase heat transfer, upgrades to the gas compression equipment at the Coker to increase capacity, and replacing distillation columns to increase their capacities. Chevron is also proposing to modify portions of the petroleum coke conveying system.

Proposed modifications to the No. 6 H2S Plant include installing a new Diethanolamine (DEA) Regenerator, a new Emergency Caustic Scrubber, and a new Jet Wash Column.

The refinery is located at 324 West El Segundo Boulevard in the City of El Segundo. The irregularly shaped parcel that comprises the refinery is generally located between Vista Del Mar Avenue on the west, El Segundo Boulevard on the north, Sepulveda Boulevard on the east, and Rosecrans Avenue

on the south. A vicinity map showing the refinery's general location within southern California and a map that shows the refinery and immediate surrounding area are provided as Figures 1-1 and 1-2, respectively.

1.2 ANALYSIS SCOPE

The traffic analysis examines the impacts of adding project construction-generated traffic to existing traffic on the surrounding arterial network.

The project is subject to the following significance criteria from the South Coast Air Quality Management District (SCAQMD) (the Lead Agency for this project under the California Environmental Quality Act [CEQA]):

Construction traffic impacts to transportation and circulation will be considered significant if the following criteria are met:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- There is an increase in traffic (e.g., 350 heavy-duty truck round-trips per day) that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

This project is also subject to a Congestion Management Program (CMP) analysis if the project is not determined to be exempt under the CMP guidelines for the County of Los Angeles (and City of El Segundo). For the purpose of CMP Transportation Impact Analysis (TIA), a project impact is considered to be significant if the proposed project increases traffic demand on a CMP facility by two percent of capacity (V/C change greater than or equal to 0.02) and causes or worsens to a level of service (LOS) F (V/C > 1.00) condition at a location. Note: a change of two percent at an intersection caused by the addition of project traffic is considered a significant change but may or may not result in a significant impact. This methodology requires a project to mitigate the project's traffic impact to level of service (LOS) "E" or better whenever the traffic generated by the proposed development causes the level of

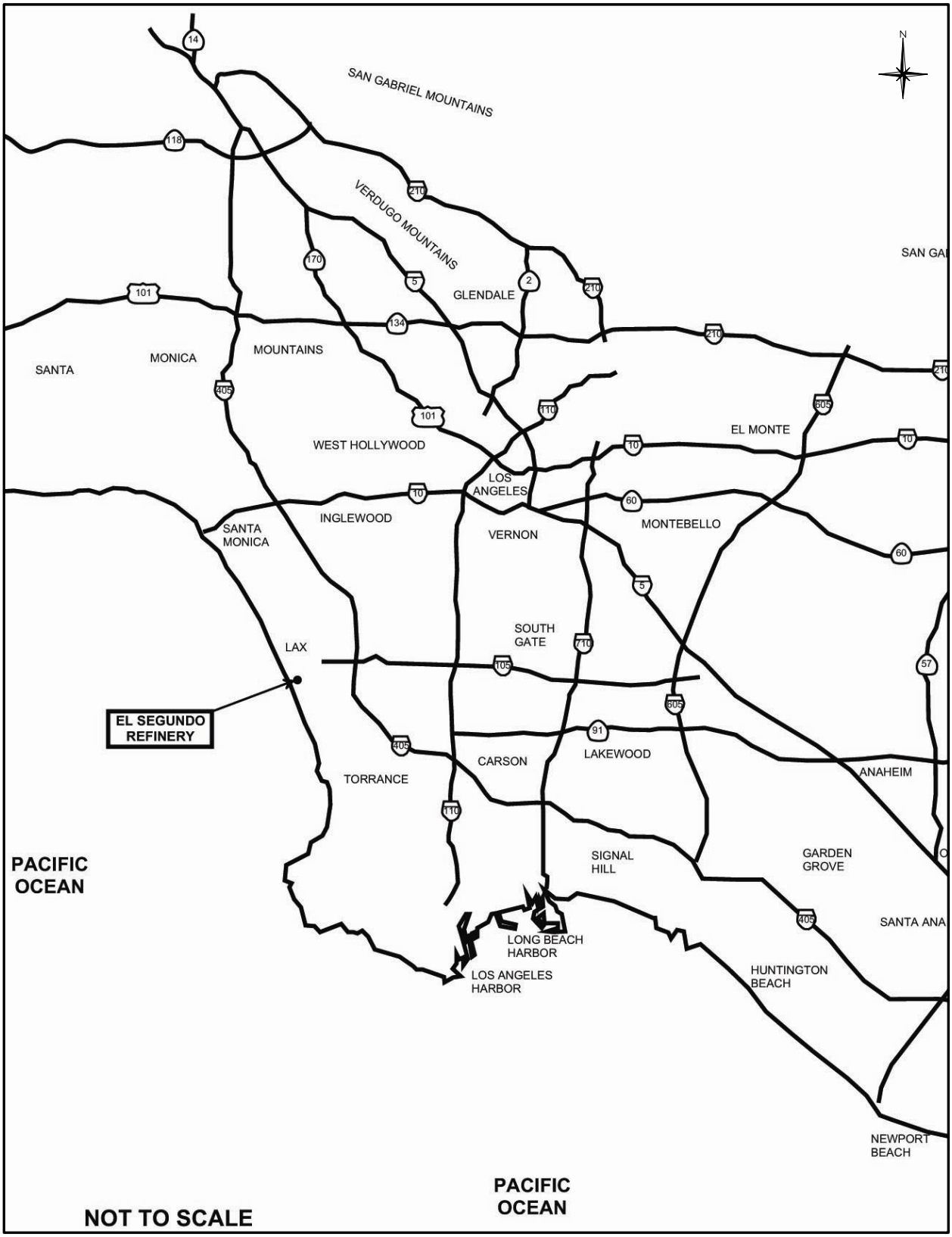

Figure 1-1

PROJECT VICINITY MAP

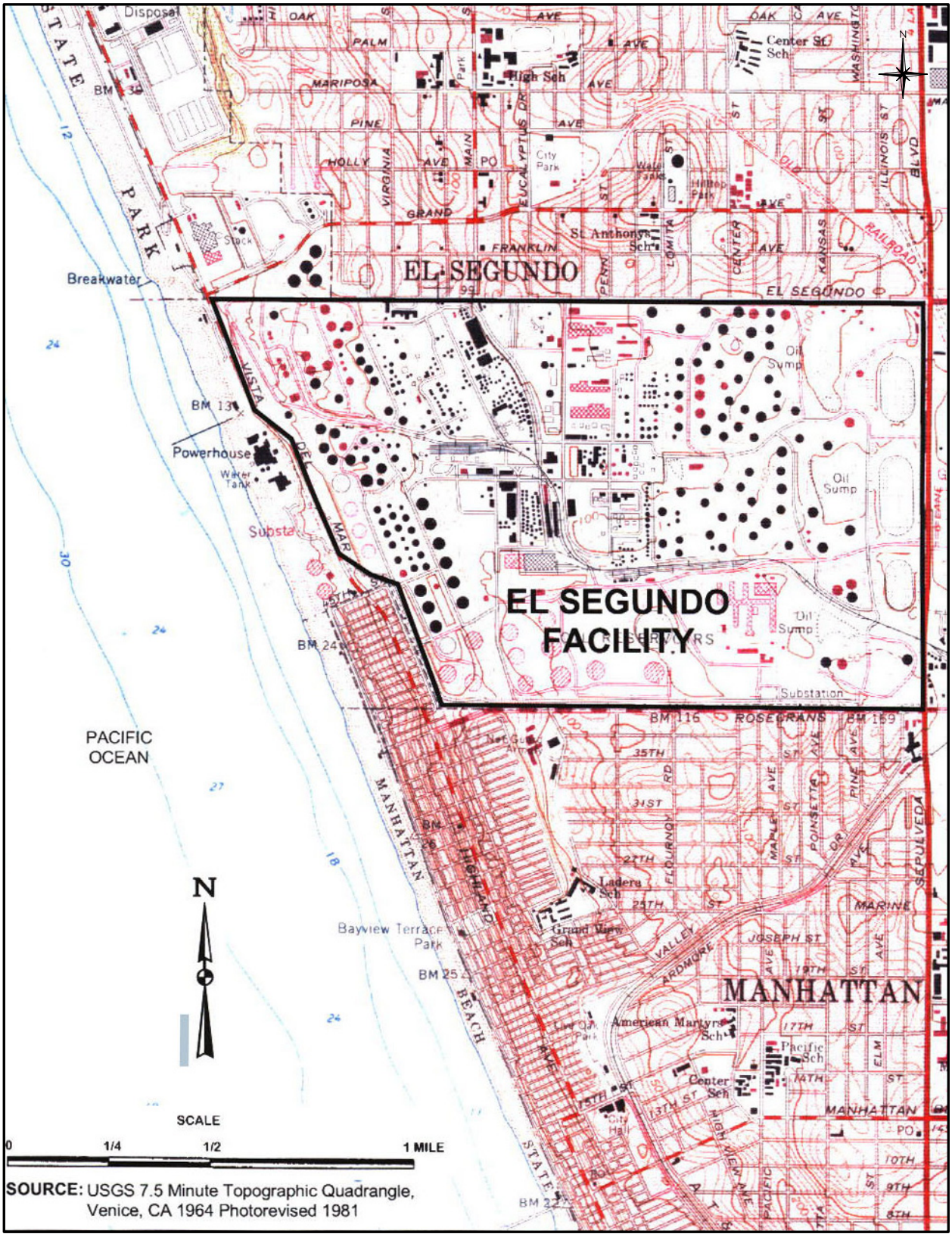

Figure 1-2

PROJECT SITE PLAN

service (LOS) of identified CMP intersections to change by .02 that causes or worsens to LOS “F”. CMP locations within the study area include major intersections along state roadways (SR-1/Sepulveda) and freeway ramp locations where the project will add 150 or more trips in either direction during the AM or PM weekday peak hours.

The City of El Segundo, in accordance with the *City of El Segundo General Plan Circulation Element (2004)*, identifies a project-related traffic impact at area intersections as “significant” if the project’s traffic results in an intersection level of service change from LOS D or better to LOS E or F or if there is an increase in ICU value of 0.020 or more, when the “With Project” intersection level of service is at LOS E or F (ICU = 0.901 or more).

It should be noted that the SCAQMD criteria are used in this EIR because the SCAQMD is the CEQA Lead Agency. However, the nature of the various criteria are such that if the project would have a significant adverse impact under SCAQMD criteria, the impact also would be considered significant in terms of the CMP and El Segundo criteria, and, similarly, if the project would not have significant adverse impacts under the SCAQMD criteria, it also would not have significant adverse impacts under the other criteria.

The traffic analysis materials in this report are organized as follows:

Chapter 2.0 - Transportation Setting
Chapter 3.0 - Traffic Impact Analysis
Chapter 4.0 - Mitigation Measures

1.3 DEFINITIONS

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT - Average Daily Traffic.

ICU - Intersection Capacity Utilization. A factor used to measure the volume to capacity ratio for an intersection and determine the level of service.

LOS - Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments. The levels range from "A" to "F", with LOS "A" representing free flow traffic and LOS "F" representing severe traffic congestion.

Peak Hour - This typically refers to the hour during the AM peak period (typically 7 AM 9 AM) or the PM peak period (typically 3 PM - 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.

VPD - Vehicles per Day. This has the same meaning as ADT but is generally used in a trip generation context rather than in reference to the highway volume of an arterial segment.

VPH - Vehicles per Hour.

V/C - Volume to Capacity Ratio. This is typically described as a percentage of capacity utilized by existing or projected traffic on a segment of arterial or an intersection turn movement.

2.0 TRANSPORTATION SETTING

This chapter describes the transportation setting for the traffic analysis. The existing circulation roadway network is discussed and existing traffic volumes and levels of service are summarized**.**

2.1 SURROUNDING HIGHWAY NETWORK

Regional facilities in the vicinity of the project are illustrated in Figure 2-1, and provide excellent accessibility to the entire southern California region. The San Diego Freeway (I-405) lies approximately 1¼ miles east of the El Segundo Refinery and provides full ramp connections at El Segundo Boulevard and Rosecrans Avenue. In addition, the Glenn M. Anderson Freeway (I-105) and its related rail transit are approximately one mile north of the refinery site. Freeway interchanges to the regional arterial highway network provide access at regular intervals.

2.2 EXISTING TRAFFIC CONDITIONS

The refinery is located at 324 West El Segundo Boulevard in the City of El Segundo. The irregularly shaped parcel that comprises the refinery is generally located between Vista Del Mar Avenue on the west, El Segundo Boulevard on the north, Sepulveda Boulevard on the east, and Rosecrans Avenue on the south.

The following 14 intersections have been included in the traffic analysis:

1. Sepulveda Blvd./State Route 1 (SR-1) & El Segundo Blvd
2. Sepulveda/Blvd./SR-1 & Rosecrans Ave.
3. Sepulveda Blvd./SR-1 & Imperial Hwy.
4. Aviation Blvd. & El Segundo Blvd.
5. Aviation Blvd. & Rosecrans Ave.
6. La Cienega Blvd. & I-405 SB on/off
7. La Cienega Blvd. & El Segundo Blvd.
8. I-405 SB on & El Segundo Blvd.
9. I-405 NB on/off & El Segundo Blvd.
10. I-405 SB off & Rosecrans Ave.
11. I-405 NB on/off & Rosecrans Ave.
12. I-405 NB on/off & Rosecrans Ave.
13. California St. & Imperial Hwy.
14. Main St. & Imperial Hwy.

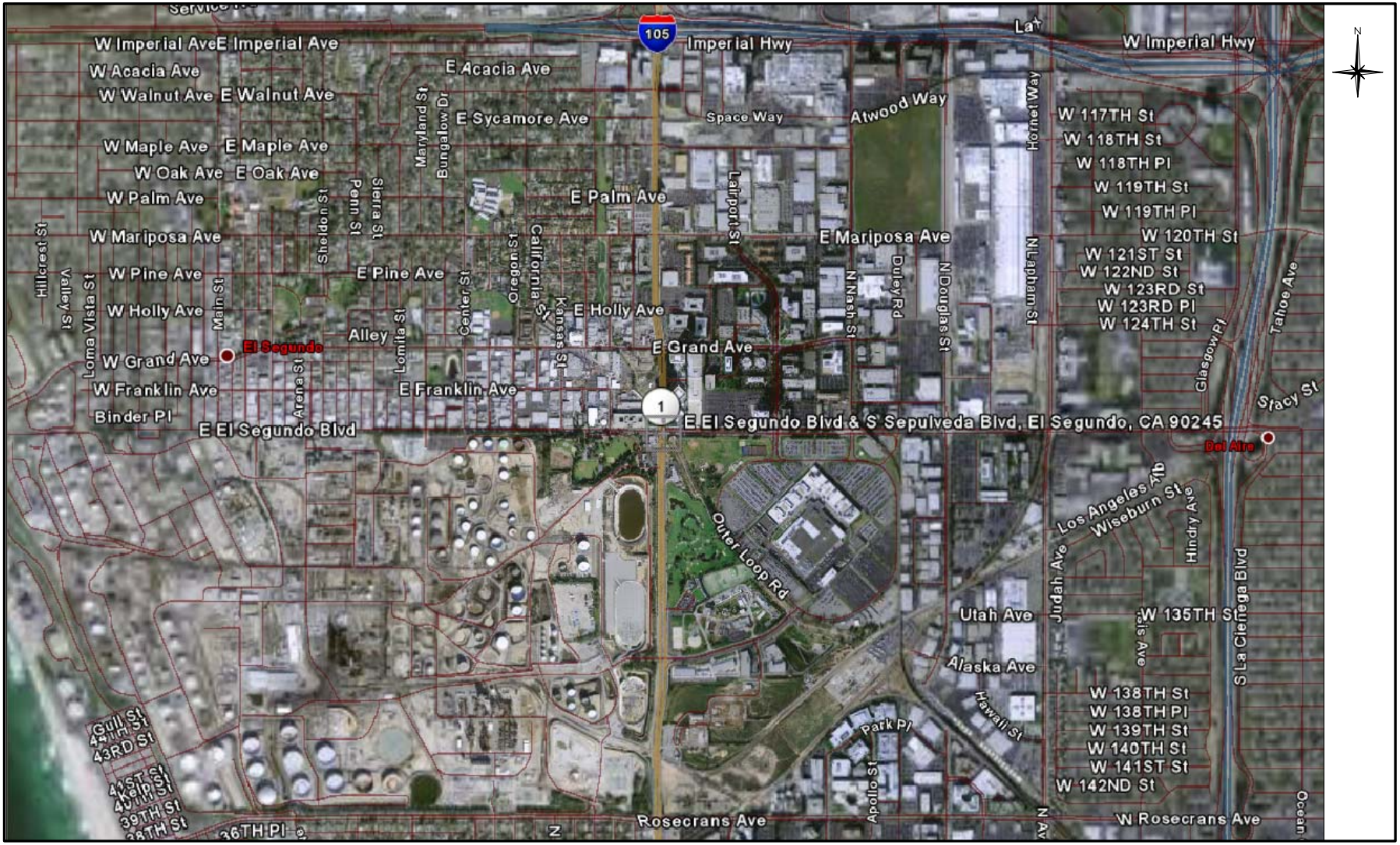

Figure 2-1

REGIONAL ACCESS VICINITY MAP

Traffic count information to establish existing conditions at the thirteen study area intersections was obtained from several sources. To maintain consistency between the various traffic studies in the area, the AM and PM peak hour volume data were based on manual traffic counts at the study intersections conducted by Traffic Data Services, Inc. in late 2005 and early 2006, as well as traffic data included in the *Final EIR Sepulveda/Rosecrans Site Rezoning and Plaza El Segundo Development, February 2005*. This 2005 Final EIR was indicated by City of El Segundo Planning staff as the most recent available relevant traffic study in the City.

Traffic count data from the Plaza El Segundo EIR mentioned above were compared with the more recent (2005 and 2006) count data to verify consistency in baseline data. Traffic count information in the Plaza El Segundo EIR from the year 2004 was then increased with an ambient growth rate of one-half percent per year to account for increases in traffic volume from 2004 to the proposed Chevron project's existing conditions analysis year (2006).

The resulting intersection turn movement volumes are illustrated in Figures 2-2 and 2-3. Intersection capacity utilization (ICU) values are presented in Table 2-1 (actual ICU calculations are included in Appendix A) and are a means of representing peak hour volume/capacity ratios. The ICU is the proportion of an hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. If an intersection is operating at 80 percent of capacity, then 20 percent of the signal cycle is not used. The signal could show red on all indications 20 percent of the time and the signal would just accommodate approaching traffic.

The traffic count data showed that five of the 14 study area intersections are presently operating at an unacceptable level of service (LOS E or F) during the AM or PM peak hour under existing conditions. This is consistent with characterization of traffic conditions included in the *City of El Segundo General Plan Circulation Element (2004)*. These intersections are:

1. Sepulveda Blvd./SR-1 & Rosecrans Ave. (LOS F during PM peak hour)
2. Sepulveda Blvd./SR-1 & Imperial Hwy. (LOS E during AM peak and LOS F during PM peak)
3. Aviation Blvd. & El Segundo Blvd. (LOS E during PM peak)
4. Aviation Blvd. & Rosecrans Ave. (LOS F during PM peak hour)
5. Sepulveda Blvd./SR-1 & El Segundo Blvd. (LOS E in PM peak hour)

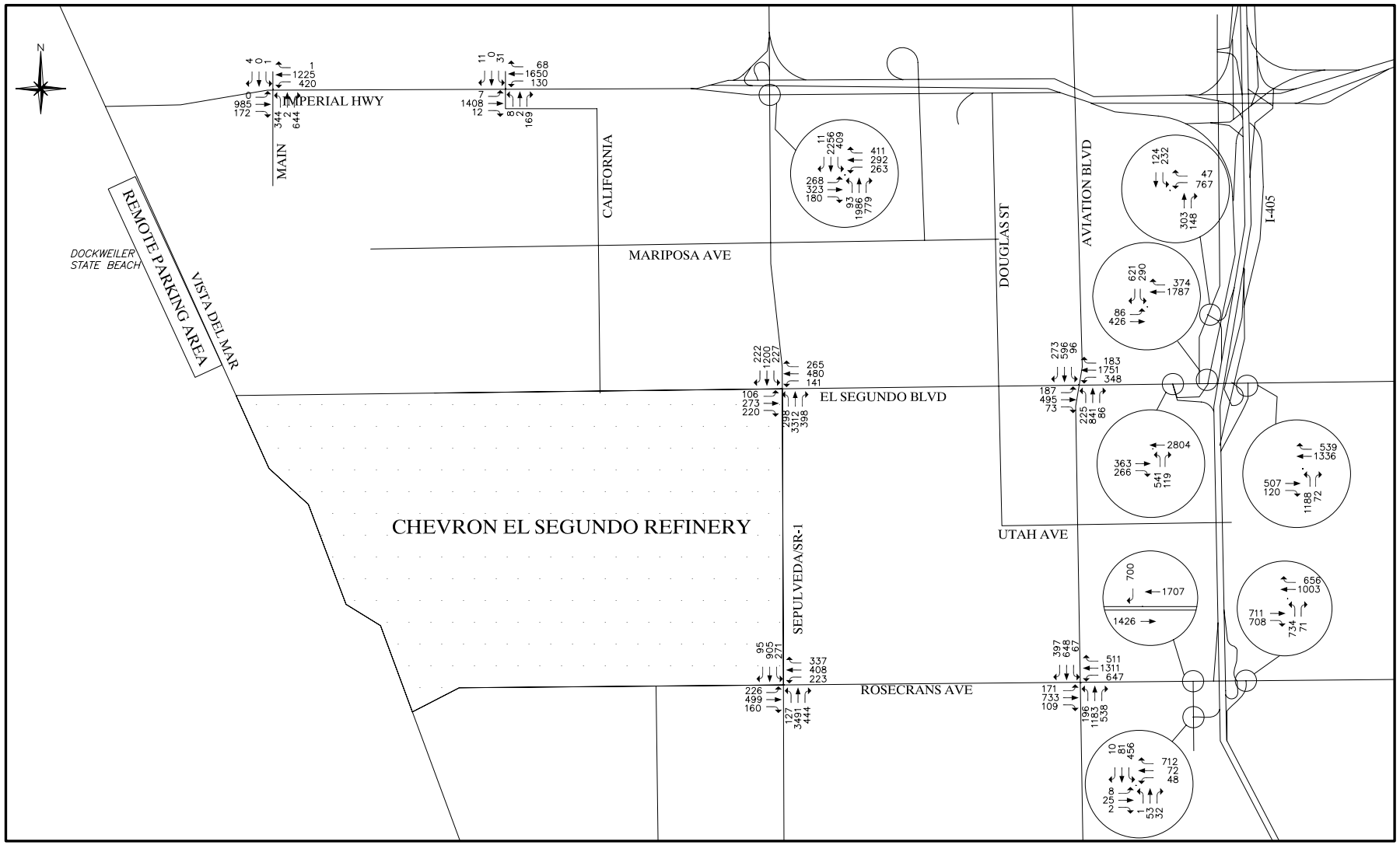

Figure 2-2

EXISTING AM PEAK HOUR TURN VOLUMES

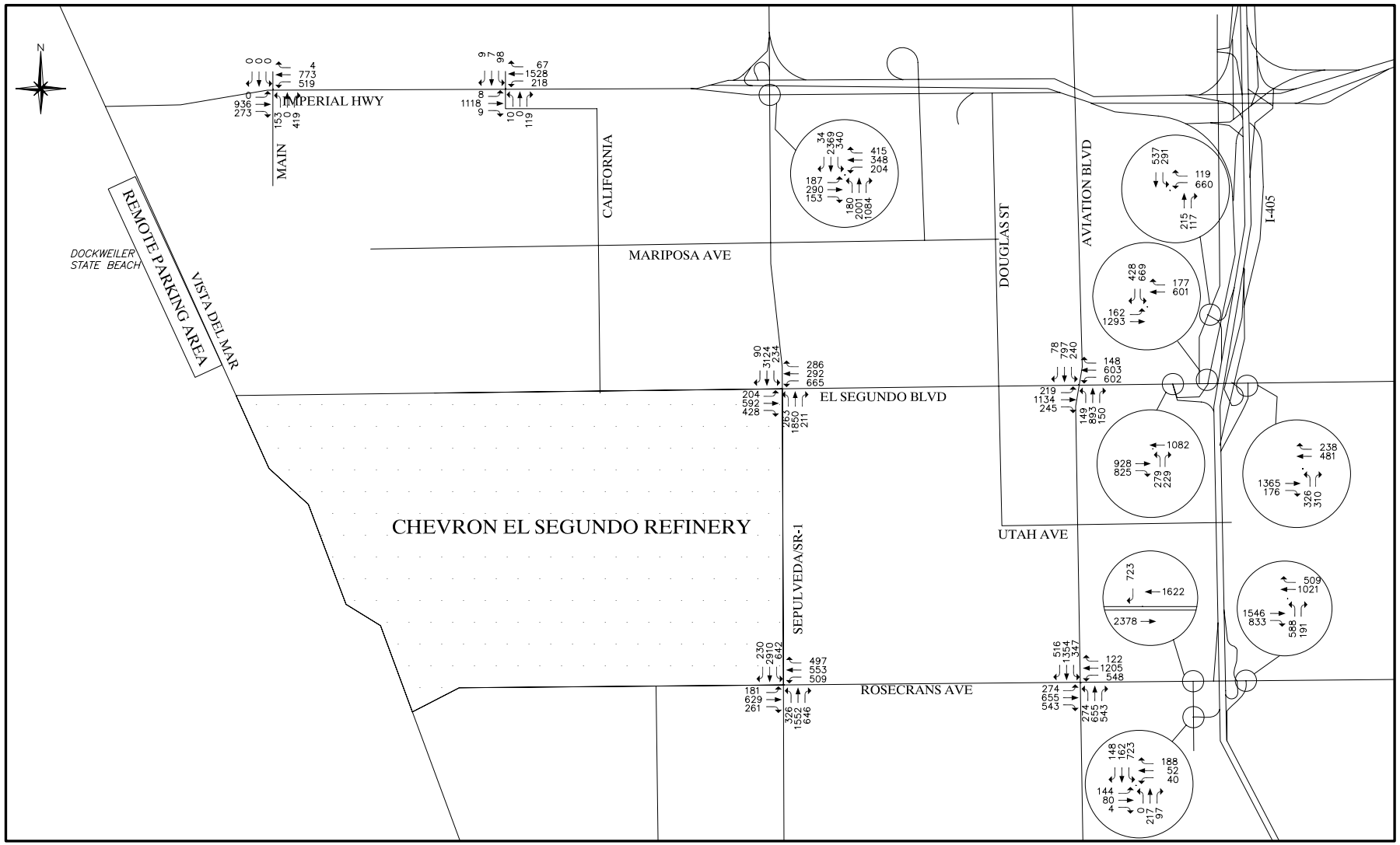

Figure 2-3

EXISTING PM PEAK HOUR TURN VOLUMES

Table 2-1

ICU SUMMARY – EXISTING CONDITIONS

Location	**AM**	**PM**
Sepulveda/SR-1 & El Segundo Blvd	.944*	1.037*
Sepulveda/SR-1 & Rosecrans Ave	.907*	1.077*
Sepulveda/SR-1 & Imperial Hwy	.855*	1.023*
Aviation Blvd & El Segundo	.868	.971*
Aviation Blvd & Rosecrans	.938*	1.058*
La Cienega & I-405 SB on/off	.544	.542
La Cienega & El Segundo	.708	.686
I-405 SB on & El Segundo	.840	.606
I-405 NB On/off & El Segundo	.741	.528
I-405 SB off & Rosecrans	.625	.622
I-405 NB on/off & Rosecrans	.618	.622
Hindry Ave & I-405 SB on/off	.344	.547
California St & Imperial Hwy	.491	.482
Main St & Imperial Hwy	.725	.617

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

2.3 ANALYSIS OF EXISTING FREEWAY CONDITIONS

An examination was also made of freeway conditions on the two regional facilities within the project vicinity, the Glenn M. Anderson Freeway (I-105) and the San Diego Freeway (I-405). Four freeway segments were selected for this analysis. These segments are:

1. Glenn M. Anderson Freeway (I-105) between Sepulveda Boulevard and Douglas Street.
2. Glenn M. Anderson Freeway (I-105) between Douglas Street and I-405 interchange.
3. San Diego Freeway (I-405) between Rosecrans Avenue and El Segundo Boulevard.
4. San Diego Freeway (I-405) between El Segundo Boulevard and I-105 interchange.

Current traffic volumes on these freeway segments were obtained from the most recent published Caltrans data. The freeway traffic volumes from 2002 were growth-factored by one percent per year to the existing analysis year (2006), consistent with the procedures outlined in the Los Angeles County Congestion Management Program (CMP) Transportation Impact Analysis. Existing freeway geometrics (e.g., number of mainline travel lanes) for each of the segments analyzed were determined from CMP data, aerial photographs, and field surveys. Segment peak hour traffic capacities were computed for each direction using established Highway Capacity Manual (HCM) methodology. As detailed in the procedures discussed in the HCM Chapter 3, each mainline travel lane was assumed to have a capacity of 2,000 vph. High-Occupancy Vehicle lanes were assumed to add 1,600 vph to the mainline capacity. The total directional capabilities were then computed and used in conjunction with the peak hour directional freeway segment volumes to calculate the existing (2006) freeway levels of services in the project vicinity.

Table 2-2 summarizes the existing (2006) study freeway segment volumes, with the corresponding levels of service. As shown in Table 2-2, the San Diego Freeway, between Rosecrans Avenue and El Segundo Boulevard, performs at adverse conditions, LOS F, in the northbound and southbound directions during both peak hours. The San Diego Freeway, between El Segundo Boulevard and the I-105 Interchange performs at LOS E in the southbound direction during the PM peak hour. The remaining freeway study segments are operating at acceptable levels of service during both peak hours.

Table 2-2

EXISTING (2006) FREEWAY CONDITIONS

No.	Freeway Segment	Direction	Peak Hour	Freeway Capacity	Daily Volume	Peak Hour Volume	D/C Ratio**	LOS
1	I-105 between Sepulveda Boulevard & Douglas Street	E/B	AM PM	8,000 8,000	85,300	3,540 3,400	0.44 0.43	B B
		W/B	AM PM	8,000 8,000		3,360 4,080	0.42 0.51	B B
2	I-105 between Douglas Street & I-405 interchange	E/B	AM PM	8,000 8,000	127,000	5,050 4,880	0.63 0.61	C C
		W/B	AM PM	8,000 8,000		4,790 5,830	0.60 0.73	C C
3	I-405 between Rosecrans Avenue & El Segundo Boulevard	N/B	AM PM	9,600* 9,600*	305,900	10,460 10,090	1.08 1.05	F(0) F(0)
		S/B	AM PM	9,600* 9,600*		9,920 12,080	1.03 1.26	F(0) F(1)
4	I-405 between El Segundo Boulevard & I-105 interchange	N/B	AM PM	9,600* 9,600*	242,500	8,200 7,900	0.85 0.82	D D
		S/B	AM PM	9,600* 9,600*		7,780 9,470	0.81 0.99	D E

D/C Ratio	LOS	D/C Ratio	LOS
.00 - .35	A	1.01 – 1.25	F (0)
.36 - .54	B	1.26 – 1.35	F (1)
.55 - .77	C	1.36 – 1.45	F (2)
.78 - .93	D	Above 1.45	F (3)
.94 – 1.00	E		

* Includes High Occupancy Vehicle (HOV) Lane
** Demand to Capacity Ratio

Note: LOS F(1) through F(3) represent severe congestion (travel speeds less than 25 mph for more than one hour.

Source: Los Angeles County Metropolitan Transportation Authority, Congestion Management Program, 2002.

3.0 TRAFFIC IMPACT ANALYSIS

This chapter describes the potential impacts of the proposed project upon the surrounding arterial network. Traffic generated by development of the proposed project is added to the existing volumes presented in the previous chapter and the resulting capacity impacts are assessed.

3.1 TRIP GENERATION

The proposed project is not expected to cause any change in the current operational employment at the refinery, and thus would not affect vehicular trip activity to/from the refinery during project operation. However, on some roadways near the Refinery, traffic volumes will increase during the project construction period.

Table A-2 in the appendix shows anticipated peak construction manpower levels and vehicles per day for the proposed project. As shown in this table, the overall project construction period is expected to last a total of 19 months, beginning in June 2006 and ending in December 2007. Construction is anticipated to take place 10 hours per day, from 6:30 AM to 5:00 PM, five days per week, Monday through Friday, during most of the 19-month construction period. During the turnaround for the No. 4 Crude Unit, from late-March 2007 through early-May 2007, construction for the proposed No. 4 Crude Unit modifications is anticipated to take place in two 10-hour shifts per day, from 6:30 AM to 5:00 PM and from 6:30 PM to 5:00 AM, six days per week, Monday through Saturday. During the turnaround for the Coker, from mid-September 2007 through November 2007, construction for the proposed Coker modifications is anticipated to take place in two 10-hour shifts per day, from 6:30 AM to 5:00 PM and from 6:30 PM to 5:00 AM, six days per week, Monday through Saturday.

As indicated in the CMP guidelines, The AM peak period of the adjacent street system surrounding the refinery is from 7:00 AM to 9:00 AM. Because the daytime construction shift starts at 6:30 AM, and the nighttime shift (when two shifts occur) ends at 5:00 AM, worker commuting traffic attributable to project construction will not affect the AM peak hour conditions.

The PM peak period is from 4:00 PM to 6:00 PM. The nighttime construction shift will not affect the PM peak period, because the nighttime shift will begin at 6:30 PM, after the end of the PM peak period. However, because the daytime construction shift ends at 5:00 PM, construction workers for the

proposed project will leave during the PM peak period. Therefore, the analysis examines impacts from construction worker commuting only during the PM peak hour, when traffic congestion is highest.

The peak number of construction workers during a shift is anticipated to be 446, during the daytime shift in November 2006 (see Table A-2). Construction personnel would commute to work in private automobiles, although carpooling would be encouraged. For purposes of a worst-case analysis, a vehicle occupancy rate of 1.0 persons per vehicle was used in the analysis, which means that there would be a peak of 446 worker vehicle trips generated at the beginning and end of a daytime construction shift by project construction activities.

The peak daily truck traffic at the refinery during construction would be approximately 82 trucks per day. Since these truck trips would mainly consist of material deliveries, they would be spread throughout the 10-hour workday. To minimize potential peak hour impacts, Chevron will arrange for deliveries of construction equipment and materials to avoid the AM and PM peak hours to the maximum extent possible. For analysis purposes, a change of two percent at an intersection caused by the addition of project traffic is considered a significant change but may or may not result in a significant impact. A typical four-legged intersection, operation at an acceptable level of service, will have approximately 3,000 to 6,000 vehicles using the intersection during a peak hour. NTo effect a two percent change in the intersection capacity utilization (ICU), a minimum of 60 vehicles during the peak hour would be required (3,000 vehicles X .02= 60 vehicles). The maximum number of truck trips occurring during the AM or PM peak hours would be eight (one-tenth of the peak daily total of 82 truck trips). Therefore, project truck traffic during construction will have no or negligible effects on overall project traffic impacts.

3.2 TRIP DISTRIBUTION

As discussed in Chapter 2, several of the intersections surrounding the Refinery presently operate at an unacceptable level of service during the AM peak hour, PM peak hour, or both. To avoid impacts by project construction traffic on congested intersections in the vicinity of the refinery, Chevron plans to use a remote off-site parking area north of the Refinery located at Dockweiler State Beach on Vista del Mar Avenue. The forecast trip distribution for the proposed project is illustrated in Figure 3-1.

Construction workers will be shuttled by Chevron between the Dockweiler State Beach parking lot and the Refinery via Vista Del Mar using 40-passenger shuttle buses. To access this remote parking area, project construction employees would use the Glenn M. Anderson Freeway (I-105), then Imperial

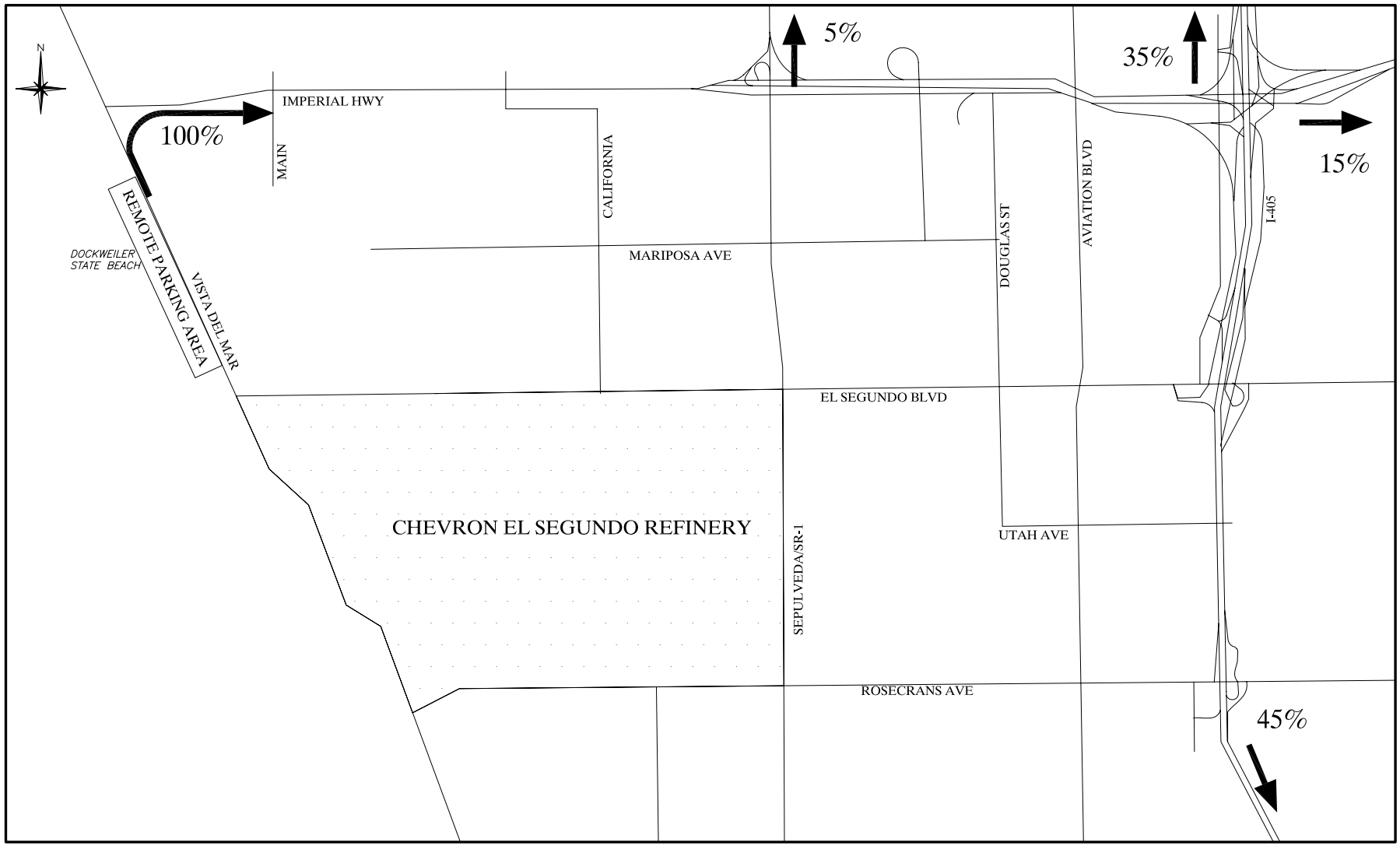

Figure 3-1

PROJECT TRIP DISTRIBUTION

Highway (upon reaching the end of I-105), and finally turning left on Vista del Mar in order to enter the parking lot. At the conclusion of the work shift, project construction workers will be returned via shuttle buses to the remote off-site parking area via Vista Del Mar. As a contractual requirement of the contract between Chevron and its project construction contractors, project construction workers will be directed to exit the remote off-site parking area by traveling north on Vista Del Mar and then east on Imperial Highway to the on-ramp to the Glenn M. Anderson Freeway (I-105). The I-105 has an interchange with the San Diego Freeway (I-405) allowing connections to other freeways and locales north and south of the refinery. Utilizing the remote parking area and the specified routes identified above to leave the refinery vicinity (Vista del Mar to Imperial Highway and onto I-105) and to shuttle workers between the remote lot and the refinery (using Vista del Mar), will allow project construction traffic to avoid the various intersections currently operating at an unacceptable level of service.

To ensure that project construction employees comply with the direction from Chevron regarding the travel routes leaving the remote parking lot, Chevron will implement measures such as:

1. Posting signs in the parking lot reminding project construction workers of the travel route requirement,
2. Providing reminders to the construction workers in other forms such as flyers, having the issue mentioned at tailgate safety meetings, and/or having shuttle bus drivers remind the workers during the shuttle trip, and
3. Conducting occasional visual audits of worker compliance.

Trucks delivering equipment, piping etc. would enter the site at Gate 2 on El Segundo Boulevard or at Gate 10A on Sepulveda Boulevard. Construction personnel would commute to the remote off-site parking area in private automobiles, although carpooling would be encouraged. For purposes of a worst case analysis, a vehicle occupancy rate of 1.0 persons per vehicle was used in the analysis. Railroad cars carrying heavy equipment would enter the project site from the rail line that crosses Sepulveda Boulevard/SR-1.

3.3 2006/EXISTING PLUS PROJECT TRAFFIC IMPACTS

To estimate the project-related traffic volumes at various points on the transportation system adjacent to the Refinery and thereby establish the magnitude and extent of traffic impacts, a two-step process was utilized. First, the amount of traffic that would be generated during project construction, was determined. Second, the trips were assigned to specific roadways and the traffic increases were evaluated on a route-by-route basis.

As described above, Chevron's project plan includes use of a remote parking lot to the north of the Refinery and shuttle buses to/from the work site for all project construction employees. Chevron also will make it a contractual requirement for its construction contractors that workers be directed to exit the remote lot by traveling north on Vista del Mar Avenue and then east on Imperial Highway to the on-ramp of the I-105 Freeway east of the Imperial Highway/California Avenue intersection. This distribution of project traffic that directs all construction traffic through the intersections of Main Street and Imperial Highway and California Avenue and Imperial Highway toward the I-105 Freeway means that of the 14 intersections in the Refinery vicinity that were included in this study, only the Main Street/Imperial Highway and California Street/Imperial Highway intersections are potentially affected by the proposed project.

During the PM peak hour, project construction traffic will use the northbound free right turn lane at the intersection of Vista del Mar and Imperial Highway. Free movements at intersections are not included in the level of service or delay calculations for intersections. Hence, project traffic will not impact the level of service at this location. Therefore, construction worker traffic for the proposed project will only affect the level-of-service at the intersections of California Avenue and Imperial Highway and Main Street and Imperial Highway. The other twelve intersections will not be impacted by project construction traffic.

For the purpose of CMP Transportation Impact Analysis (TIA), a project impact is considered to be significant if the proposed project increases traffic demand on a CMP facility by two percent of capacity (V/C change greater than or equal to 0.02) and causes or worsens to a level of service (LOS) F (V/C > 1.00) condition at a location. Note: a change of two percent at an intersection caused by the addition of project traffic is considered a significant change but may or may not result in a significant impact. As mentioned above, because there would be no increases in operational employment as a result of the project, no increased traffic volumes and associated potential adverse impacts would be expected during project operation.

The existing and projected PM peak period volume to capacity (V/C) ratios at the intersections of California Avenue and Imperial Highway and Main Street and Imperial Highway are shown in Table 3-1. Table 3-1 shows that the V/C ratio for California Avenue and Imperial Highway would increase from 0.482 (LOS A) to 0.575 (LOS A), and the V/C ratio for Main Street and Imperial Highway would increase from 0.617 (LOS B) to 0.710 (LOS C). Thus, construction worker commuter traffic for the proposed project will not cause the LOS at either of these intersections to decrease to D or worse.

Table 3-1

ICU SUMMARY – EXISTING PLUS CONSTRUCTION PROJECT CONDITIONS

INTERSECTION	EXISTING PM	EXISTING + PROJECT PM	% CHANGE
13. California Ave. & Imperial Hwy	.482	.575	.093
14. Main St & Imperial Hwy	.617	.710	.093

* Exceeds acceptable LOS

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

Therefore, construction worker commuter traffic for the proposed project will not cause significant adverse impacts on intersections in the vicinity of the refinery, under the SCAQMD CEQA significance criteria, the Los Angeles County Congestion Management Program guidelines or the City of El Segundo criteria.

Four segments along the Glenn M. Anderson (I-105) and San Diego Freeway (I-405) in the project study area were examined as the regional facility segments most likely to be impacted. These are the nearest CMP freeway monitoring locations and the same ones identified in the discussion of existing freeway conditions. Traffic volumes attributable to the proposed Chevron Refinery project were analyzed as an incremental increase to the existing freeway conditions. The LOS values used for freeway segment analyses are estimated by calculating the demand-to-capacity (D/C) ratio and identified by the corresponding LOS definitions. The LOS values at the freeway segments were computed and are summarized in Table 3-2.

Table 3-2 shows that the LOS values on the two freeway segments of the I-105 between Sepulveda Boulevard and the I-405 freeway will remain at LOS B and C with the addition of project traffic, which is below the SCAQMD significance threshold (change of one full level at locations currently at LOS C or worse). The two south-bound segments of the I-405 between Rosecrans Avenue and El Segundo Boulevard and between El Segundo Boulevard and I-105 currently operate at LOS E and F(1), respectively. Table 3-2 shows that construction worker commuter traffic for the proposed project will increase the LOS on these freeway segments by 0.01, which does not exceed the SCAQMD significance threshold of an increase of 0.01 for segments operating at LOS D or worse. Therefore, construction worker commuter traffic for the proposed project is not expected to cause significant adverse impacts to the freeways in the vicinity of the refinery under the SCAQMD significance criteria, the Los Angeles County Congestion Management Program guidelines or the City of El Segundo criteria.

The project is not expected to have significant traffic impacts in terms of the other SCAQMD significance criteria. Neither construction nor operation of the proposed project will require closing major roadways or railroads to all through traffic; project-related construction will not increase traffic to and/or from the Refinery substantially in relation to existing traffic loads and capacities; and Chevron has confirmed with the operator of the remote parking lot that will be used for construction employees that parking places will be provided for the entire construction workforce and thus, no on-street parking will be required and no substantial increases in parking facilities demand will occur.

Table 3-2

EXISTING AND EXISTING PLUS CONSTRUCTION PROJECT FREEWAY CONDITIONS

No.	Freeway Segment	Dir.	Peak Hour	Freeway Capacity	Existing Conditions				Existing + Project Conditions				
					Daily Volume	Pk Hr Volume	D/C Ratio	LOS	Daily Volume	Pk Hr Volume	D/C Ratio	LOS	Project Impact
1	I-105 btwn Sepulveda Blvd & Douglas St	EB	AM	8,000	85,300	3,540	0.44	B	86,190	3,540	0.44	B	0.00
			PM	8,000		3,400	0.43	B		3,846	0.48	B	0.05
		WB	AM	8,000		3,360	0.42	B		3,806	0.47	B	0.05
			PM	8,000		4,080	0.51	B		4,080	0.51	B	0.00
2	I-105 btwn Douglas St & I-405 Interchange	EB	AM	8,000	127,000	5,050	0.63	C	127,900	5,050	0.63	C	0.00
			PM	8,000		4,880	0.61	C		5,326	0.66	C	0.05
		WB	AM	8,000		4,790	0.60	C		5,236	0.65	C	0.05
			PM	8,000		5,830	0.73	C		5,830	0.73	C	0.00
3	I-405 btwn Rosecrans Ave & El Segundo Blvd	NB	AM	9,600**	305,900	10,460	1.08	F (0)	305,900	10,460	1.08	F (0)	0.00
			PM	9,600**		10,090	1.05	F (0)		10,090	1.05	F (0)	0.00
		SB	AM	9,600**		9,920	1.03	F (0)		9,920	1.03	F (0)	0.00
			PM	9,600**		12,080	1.26	F (1)		12,280	1.27	F (1)	0.01
4	I-405 btwn El Segundo Blvd & I-105 Interchange	NB	AM	9,600**	242,500	8,200	0.85	D	242,500	8,200	0.85	D	0.00
			PM	9,600**		7,910	0.83	D		7,910	0.83	D	0.00
		SB	AM	9,600**		7,780	0.81	D		7,780	0.81	D	0.00
			PM	9,600**		9,470	0.99	E		9,670	1.00	E	0.01

D/C Ratio	LOS
.00 - .35	A
.36 - .54	B
.55 - .77	C
.78 - .93	D
.94 – 1.00	E

D/C Ratio	LOS
1.01 – 1.25	F (0)
1.26 – 1.35	F (1)
1.36 – 1.45	F (2)
Above 1.45	F (3)

* Includes High Occupancy Vehicle (HOV) lane
** Demand to Capacity Ratio

Note: LOS F (1) through F (3) represent severe congestion (travel speeds less than 25 mph) for more than one hour

Source: Los Angeles County Metropolitan Transportation Authority, Congestion Management Program, 2002.

The proposed Refinery modifications do not involve construction of tall structures that would conflict with Federal Aviation Administration (FAA) height limitations in proximity to airport runways. No substantial increase in rail use is expected as a result of the proposed project. While there would up to 15 additional marine tanker visits annually to the El Segundo Marine Terminal as a result of the proposed project, there are only two berths available at the EMST and thus only two tankers can be accommodated at the same time. Thus, no substantial alteration in water borne traffic would occur. Therefore, water borne, rail car, or air traffic will not be substantially altered.

Because no changes in roadway design or other modifications to the roadway system will occur, there will be no substantial increases in traffic hazards to motor vehicles, bicyclists, or pedestrians.

3.4 PROJECT ALTERNATIVES

Two project alternatives have also been analyzed for traffic impacts. Alternative 1 has a lower peak employment level and resulting vehicular trip generation (386) than the proposed project, and Alternative 2 has a slightly higher peak employment level and trip generation (452) than the proposed project, as summarized in Tables A-3 and A-4 in the appendix. As summarized in Table 3-3, the intersection of California Street and Imperial Highway would operate at LOS A and the intersection of Main Street and Imperial Highway would operate at LOS C with the addition of project construction traffic for both alternatives, which is below the SCAQMD significance threshold (change of one full level at intersections currently at LOS C or worse).

As is the case with the proposed project, the alternatives would not be expected to have significant traffic impacts in terms of the other SCAQMD significance criteria. No major roadway or railroad will be closed to all through traffic with no alternate route available; project-related construction will not increase traffic to and/or from the Refinery substantially in relation to existing conditions; because the same remote parking area would be used as part of either alternative as for the proposed project, no substantial increase in parking facilities demand would occur; there would be no conflict with FAA height limitations or substantial alteration in rail or water borne traffic; and, because no changes in roadway design or other modifications to the roadway system would occur, there will be no substantial increases in traffic hazards to motor vehicles, bicyclists, or pedestrians.

Table 3-3

ICU SUMMARY – EXISTING PLUS CONSTRUCTION PROJECT ALTERNATIVES

	Existing	Existing+Alt 1		Existing+Alt 2	
Intersection	**PM**	**PM**	**% Change**	**PM**	**% Change**
13. California St & Imperial Hwy	.482	.562	.080	.576	.094
14. Main St & Imperial Hwy	.617	.697	.080	.711	.094

* Exceeds acceptable LOS

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

4.0 MITIGATION MEASURES

Under CEQA Guidelines (§ 15126.4(a)(1)), "an EIR shall describe feasible measures which could minimize significant adverse impacts . . ." Section 15364 of the CEQA Guidelines, when determining the feasibility of a mitigation measure, it is acceptable to take into account economic, environmental, legal, social, and technological factors.

Based on the traffic analysis performed for this project, none of the 14 intersections or four freeway segments analyzed will be significantly impacted as a result of project-related construction or operation. Hence, no mitigation is required for the proposed project.

APPENDIX A

Level of Service Descriptions

Project Manpower Tables

Volume-to-Capacity Worksheets

Traffic Count Data

Table A-1

LEVELS OF SERVICE FOR URBAN AND SUBURBAN ARTERIAL STREETS

LEVEL OF SERVICE (V/C)	DESCRIPTION
A 0.00-0.60	At level of service **A** there are no cycles which are fully loaded, and few are even close to loaded. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B > 0.60-0.70	Level of service **B** represents a stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles.
C > 0.70-0.80	In level of service **C** stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasionally drivers may have to wait through more than one red signal indication, and back-ups may develop behind turning vehicles.
D > 0.80-0.90	Level of service **D** encompasses a zone of increasing restriction approaching instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups.
E > 0.90-1.00	Level of service **E** represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00) there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several cycles).
F > 1.00	Level of service **F** represents jammed conditions. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable, because full utilization of the approach may be prevented by outside conditions

Source"1999 Congestion Management Program for Los Angeles County," Los Angeles County Metropolitan Transportation Authority, November 1999.

Table A-2

MANPOWER LEVELS

Project Component	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07
No. 4 Crude Unit	0	3	5	9	20	14	16	18	10	84	223	70	0	0	0	0	0	0	0
Coker	0	148	226	233	277	320	286	293	253	264	250	201	174	94	20	234	694	252	53
No. 6 H2S Plant	4	28	52	74	109	112	69	20	5	0	0	0	0	0	0	0	0	0	0
Total per Day	**4**	**179**	**283**	**316**	**406**	**446**	**371**	**331**	**268**	**348**	**473**	**271**	**174**	**94**	**20**	**234**	**694**	**252**	**53**
Total per Shift[a]	**4**	**179**	**283**	**316**	**406**	**446**	**371**	**331**	**268**	**306**	**362**	**236**	**174**	**94**	**20**	**117**	**347**	**126**	**53**

[a] Construction for the proposed No. 4 Crude Unit modifications will occur two shifts per day from late-March 2007 through early-May 2007, and construction for the proposed Coker modifications will occur two shifts per day from mid-September 2007 through November 2007. Construction will occur one shift per day for the rest of the construction period. Shaded entries indicate periods with two daily construction shifts.

Table A-3

ALTERNATIVE 1 MANPOWER LEVELS

Project Component	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07
No. 4 Crude Unit	0	3	5	9	20	14	16	18	10	84	223	70	0	0	0	0	0	0	0
Coker	0	133	186	173	217	260	241	248	208	244	240	201	174	94	20	214	649	212	43
No. 6 H2S Plant	4	28	52	74	109	112	69	20	5	0	0	0	0	0	0	0	0	0	0
Total per Day	**4**	**164**	**243**	**256**	**346**	**386**	**326**	**286**	**223**	**328**	**463**	**271**	**174**	**94**	**20**	**214**	**649**	**212**	**43**
Total per Shift[a]	**4**	**164**	**243**	**256**	**346**	**386**	**326**	**286**	**223**	**286**	**352**	**236**	**174**	**94**	**20**	**107**	**325**	**106**	**43**

[a] Construction for the proposed No. 4 Crude Unit modifications will occur two shifts per day from late-March 2007 through early-May 2007, and construction for the proposed Coker modifications will occur two shifts per day from mid-September 2007 through November 2007. Construction will occur one shift per day for the rest of the construction period. Shaded entries indicate periods with two daily construction shifts.

Table A-4

ALTERNATIVE 2 MANPOWER LEVELS

Project Component	Jun 06	Jul 06	Aug 06	Sep 06	Oct 06	Nov 06	Dec 06	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07
No. 4 Crude Unit	0	3	5	9	20	14	16	18	10	84	223	70	0	0	0	0	0	0	0
Coker	0	148	226	233	277	320	286	293	253	264	250	201	174	94	20	234	694	252	53
No. 6 H2S Plant	4	28	52	74	109	112	69	20	5	0	0	0	0	0	0	0	0	0	0
Crude Tanks	0	0	11	19	25	6	0	0	0	0	0	0	0	0	0	0	0	0	0
Total per Day	**4**	**179**	**294**	**335**	**431**	**452**	**371**	**331**	**268**	**348**	**473**	**271**	**174**	**94**	**20**	**234**	**694**	**252**	**53**
Total per Shift[a]	**4**	**179**	**294**	**335**	**431**	**452**	**371**	**331**	**268**	**306**	**362**	**236**	**174**	**94**	**20**	**117**	**347**	**126**	**53**

[a] Construction for the proposed No. 4 Crude Unit modifications will occur two shifts per day from late-March 2007 through early-May 2007, and construction for the proposed Coker modifications will occur two shifts per day from mid-September 2007 through November 2007. Construction will occur one shift per day for the rest of the construction period. Shaded entries indicate periods with two daily construction shifts.

INTERSECTION CAPACITY UTILIZATON

For this analysis, the ICU procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1600 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both thru 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. A Right-Turn-On-Red (RTOR) value of zero was assumed for intersections within the City of El Segundo and freeway ramps. Figure A-1 illustrates the locations of the study intersections.

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 are 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

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:

RTOG = V/C (NBT)

Otherwise,

RTOG = V/C (NBL) + V/C (SBT) - V/C (SBL)

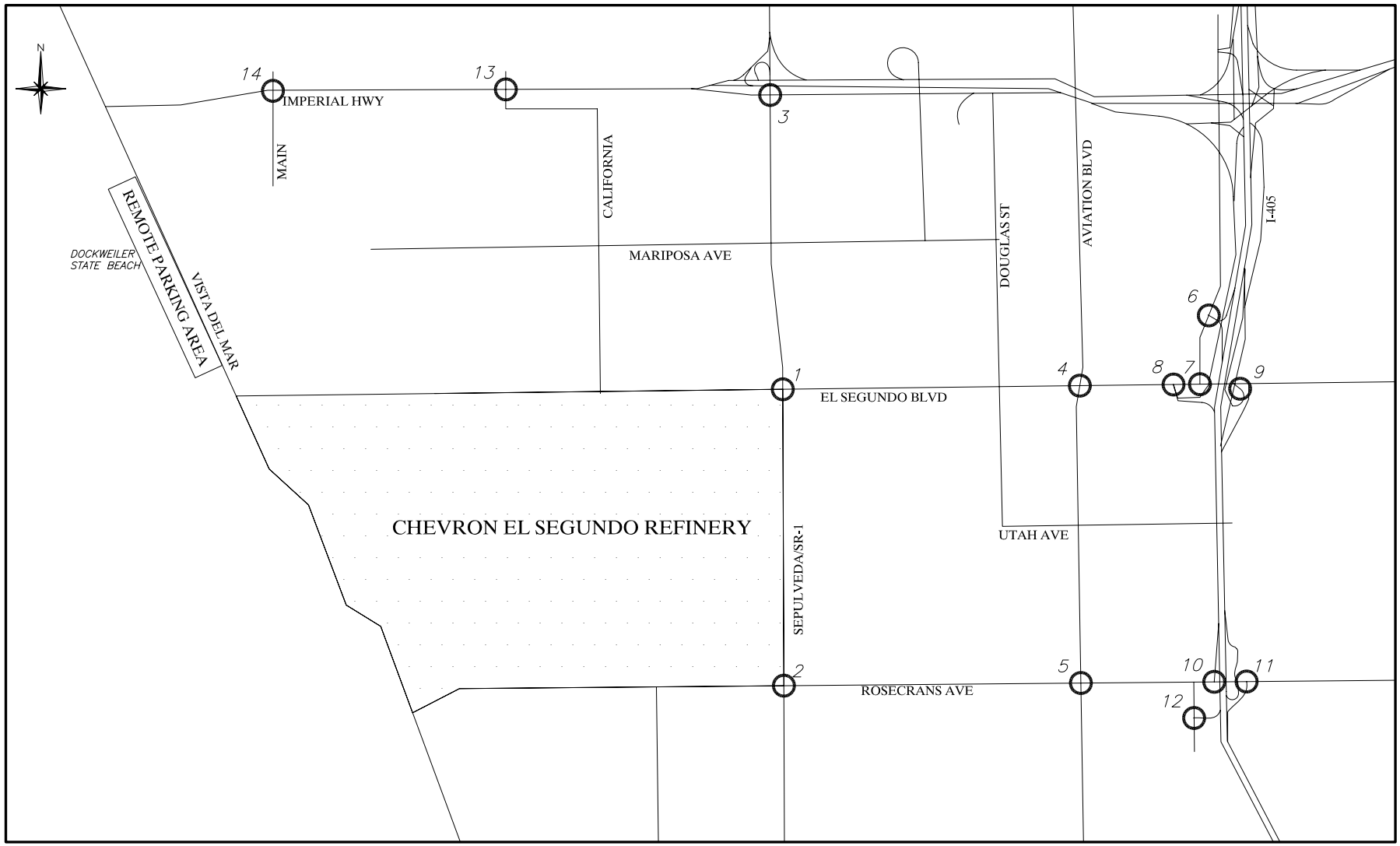

Figure A-1

STUDY AREA INTERSECTIONS

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. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

RTOG = RTOG + V/C (WBL)

RTOR = RTOR - V/C (WBL)

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

RTC = RTOG + factor x RTOR

Where factor = RTOR saturation flow factor (75%)

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)

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

2. ALV for Each Approach

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

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

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:

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

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

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:

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

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

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:

$$\text{V/C (Left)} = \text{V/C (Thru)}$$

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

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

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.

Existing
Existing Plus Project
Existing Plus Project Alternatives 1 and 2

INTERSECTION CAPACITY UTILIZATION

Intersection: Sepulveda & El Segundo Blvd

AM Count Date: 11/08/05
PM Count Date: 11/09/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	2	2880	298	.103	263	.091*
NB Thru	4	6400	3312	.580*	1850	.322
NB Right	0	0	398		211	
SB Left	2	2880	227	.079*	234	.081
SB Thru	4	6400	1200	.188	3124	.488*
SB Right	1	1600	222	.139	90	.056
EB Left	1	1600	106	.066	204	.128
EB Thru	2	3200	273	.085*	592	.185*
EB Right	1	1600	220	.138	428	.268
WB Left	1.5		141	.088	665	.208*
WB Thru	1.5	4800	480	.150*	292	.183
WB Right	1	1600	265	.166	286	.179
Right Turn Adjustment					EBR	.015*
Note: Assumes E/W Split Phasing						

Sum of Critical V/C Ratios (*)	.894	.987
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.944**	**1.037**
Level of Service	E	F

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Sepulveda & Rosecrans Ave
AM Count Date: 11/15/05
PM Count Date: 11/08/05
AM Peak Hour: 7:45A-8:45A PM Peak Hour: 4:30P-5:30P

Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	2	2880	127	.044	326	.113*
NB Thru	4	6400	3491	.545*	1552	.243
NB Right	1	1600	444	.278	646	.404
SB Left	2	2880	271	.094*	642	.223
SB Thru	3	4800	905	.189	2910	.606*
SB Right	1	1600	95	.059	230	.144
EB Left	2	2880	226	.078*	181	.063
EB Thru	3	4800	499	.104	629	.131*
EB Right	1	1600	160	.100	261	.163
WB Left	2	2880	223	.077	509	.177*
WB Thru	2	3200	408	.128*	553	.173
WB Right	1	1600	337	.211	497	.311
Right Turn Adjustment			WBR	.012*		

Sum of Critical V/C Ratios (*)	.857	1.027
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.907**	**1.077**
Level of Service	E	F

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Sepulveda & Imperial Hwy

AM Count Date: 11/09/05
PM Count Date: 11/08/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	93	.058	180	.113
NB Thru	3	4800	1986	.414*	2001	.417*
NB Right	1	1600	779	.487	1084	.678
SB Left	2	2880	409	.142*	340	.118*
SB Thru	4	6400	2256	.354	2369	.375
SB Right	0	0	11		34	
EB Left	2	2880	268	.093	187	.065*
EB Thru	3	4800	323	.067*	290	.060
EB Right	1	1600	180	.113	153	.096
WB Left	2	2880	263	.091*	204	.071
WB Thru	3	4800	292	.061	348	.073*
WB Right	1	1600	411	.257	415	.259
Right Turn Adjustment			Multi	.091*	Multi	.300*

Sum of Critical V/C Ratios (*)	.805	.973
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.855**	**1.023**
Level of Service	D	F

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Aviation Blvd & El Segundo

AM Count Date: 11/15/05
PM Count Date: 11/15/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: WILTEC Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	225	.141	149	.093
NB Thru	2	3200	841	.290*	893	.326*
NB Right	0	0	86		150	
SB Left	1	1600	96	.060*	240	.150*
SB Thru	2	3200	596	.186	797	.249
SB Right	1	1600	273	.171	78	.049
EB Left	2	2880	187	.065*	219	.076
EB Thru	3	4800	495	.103	1134	.236*
EB Right	1	1600	73	.046	245	.153
WB Left	2	2880	348	.121	602	.209*
WB Thru	3	4800	1751	.403*	603	.156
WB Right	0	0	183		148	

Sum of Critical V/C Ratios (*)	.818	.921
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.868**	**.971**
Level of Service	D	E

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Aviation Bvld & Rosecrans

AM Count Date: 11/08/05
PM Count Date: 11/09/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:00P-5:00P
Analyst: WILTEC Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	196	.123	274	.171*
NB Thru	3	4800	1183	.359*	655	.205
NB Right	0	0	538		543	.339
SB Left	1	1600	67	.042*	347	.217
SB Thru	3	4800	648	.203	1354	.390*
SB Right	0	0	397	.248	516	
EB Left	1	1600	171	.107*	274	.171*
EB Thru	3	4800	733	.175	655	.205
EB Right	0	0	109		543	.339
WB Left	2	2880	647	.225	548	.190
WB Thru	3	4800	1311	.380*	1205	.276*
WB Right	0	0	511		122	

Sum of Critical V/C Ratios (*)	.888	1.008
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.938**	**1.058**
Level of Service	E	F

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: La Cienega & I-405 SB on/off

AM Count Date: 11/08/05
PM Count Date: 11/07/05
AM Peak Hour: 7:15A-8:15A PM Peak Hour: 5:00P-6:00P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	0	0	0		0	
NB Thru	1.5	4800	303	.095*	215	{.067}*
NB Right	1.5		148		117	
SB Left	1	1600	232	.145*	291	.182*
SB Thru	3	4800	124	.026	537	.112
SB Right	0	0	0		0	
EB Left	0	0	0		0	
EB Thru	0	0	0		0	
EB Right	0	0	0		0	
WB Left	1.5		767		660	
WB Thru	0	3200	0	.254*	0	.243*
WB Right	0.5		47		119	

Note: Assumes N/S Split Phasing

Sum of Critical V/C Ratios (*)	.494	.492
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.544**	**.542**
Level of Service	A	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: La Cienega & El Segundo

AM Count Date: 11/08/05
PM Count Date: 11/07/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:15P-5:15P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	0	0	0		0	
NB Thru	0	0	0		0	
NB Right	0	0	0		0	
SB Left	2	2880	290	.101*	669	.232*
SB Thru	0	0	0		0	
SB Right	2	3200	621	.194	428	.134
EB Left	1	1600	86	.054*	162	.101
EB Thru	2	3200	426	.133	1293	.404*
EB Right	0	0	0		0	
WB Left	0	0	0		0	
WB Thru	3	4800	1787	.450*	601	.162
WB Right	0	0	374		177	
Right Turn Adjustment			SBR	.053*		

Sum of Critical V/C Ratios (*)	.658	.636
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.708**	**.686**
Level of Service	C	B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: I-405 SB on & El Segundo

AM Count Date: 11/15/05
PM Count Date: 11/09/05
AM Peak Hour: 7:15A-8:15A PM Peak Hour: 4:30P-5:30P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1.5		541	{.206}*	279	{.159}*
NB Thru	0	3200	0	.206	0	.159
NB Right	0.5		119		229	
SB Left	0	0	0		0	
SB Thru	0	0	0		0	
SB Right	0	0	0		0	
EB Left	0	0	0		0	
EB Thru	2	3200	363	.113	928	.290*
EB Right	1	1600	266	.166	825	.516
WB Left	0	0	0		0	
WB Thru	3	4800	2804	.584*	1082	.225
WB Right	0	0	0		0	
Right Turn Adjustment					EBR	.107*

Sum of Critical V/C Ratios (*)	.790	.556
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.840**	**.606**
Level of Service	D	B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: I-405 NB On/off & El Segundo

AM Count Date: 11/16/05
PM Count Date: 11/09/05
AM Peak Hour: 7:00A-8:00A PM Peak Hour: 4:30P-5:30P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	2	2880	1188	.413*	326	.113*
NB Thru	0	0	0		0	
NB Right	1	1600	72	.045	310	.194
SB Left	0	0	0		0	
SB Thru	0	0	0		0	
SB Right	0	0	0		0	
EB Left	0	0	0		0	
EB Thru	3	4800	507	.106	1365	.284*
EB Right	f		120		176	
WB Left	0	0	0		0	
WB Thru	2.5	6400	1336	{.278}*	481	{.100}
WB Right	1.5		539	{.027}	238	{.064}
Right Turn Adjustment					NBR	.081*

Sum of Critical V/C Ratios (*)	.691	.478
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.741**	**.528**
Level of Service	C	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: I-405 SB off & Rosecrans

AM Count Date: 11/15/05
PM Count Date: 11/15/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:15P-5:15P
Analyst: WILLTEC Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	0	0	0		0	
NB Thru	0	0	0		0	
NB Right	0	0	0		0	
SB Left	0	0	0		0	
SB Thru	0	0	0		0	
SB Right	2	3200	700	.219	723	.226
EB Left	0	0	0		0	
EB Thru	4	6400	1426	.223	2378	.372*
EB Right	0	0	0		0	
WB Left	0	0	0		0	
WB Thru	3	4800	1707	.356*	1622	.338
WB Right	0	0	0		0	
Right Turn Adjustment			SBR	.219*	SBR	.200*
Sum of Critical V/C Ratios (*)				.575		.572
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.625**		**.622**
Level of Service				B		B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: I-405 NB on/off & Rosecrans

AM Count Date: 11/15/05
PM Count Date: 11/09/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:30P-5:30P
Analyst: WILTEC Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	2	2880	734	.255*	588	.204*
NB Thru	0	0	0		0	
NB Right	1	1600	71	.044	191	.119
SB Left	0	0	0		0	
SB Thru	0	0	0		0	
SB Right	0	0	0		0	
EB Left	0	0	0		0	
EB Thru	4	6400	711	.148	1546	.322*
EB Right	0	0	708	.443	833	.521
WB Left	0	0	0		0	
WB Thru	3	4800	1003	.313*	1021	.319
WB Right	0	0	656	.410	509	
Right Turn Adjustment					EBR	.046*

Sum of Critical V/C Ratios (*)	.568	.572
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.618**	**.622**
Level of Service	B	B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Hindry Ave & I-405 SB on/off

AM Count Date: 11/15/05
PM Count Date: 11/15/05
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:00P05:00P
Analyst: WILTEC Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	1	.001	0	.000
NB Thru	2	3200	53	.027*	217	.098*
NB Right	0	0	32		97	
SB Left	2	2880	456	.158*	723	.251*
SB Thru	1	1600	81	.057	162	.194
SB Right	0	0	10		148	
EB Left	1	1600	8	.005*	144	.090*
EB Thru	1	1600	25	.017	80	.053
EB Right	0	0	2		4	
WB Left	0.5		48		40	
WB Thru	0.5	1600	72	.075*	52	.058*
WB Right	2	3200	712	.223	188	.059
Right Turn Adjustment			WBR	.029*		

Sum of Critical V/C Ratios (*)	.294	.497
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.344**	**.547**
Level of Service	A	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: California & Imperial

AM Count Date: 02/15/06
PM Count Date: 02/10/06
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	8	.005	10	.006
NB Thru	1	1600	2	.001*	0	.000*
NB Right	1	1600	169	.106	119	.074
SB Left	1	1600	31	.019*	98	.061*
SB Thru	1	1600	0	.007	7	.010
SB Right	0	0	11		9	
EB Left	1	1600	7	.004	8	.005
EB Thru	3	4800	1408	.296*	1118	.235*
EB Right	0	0	12		9	
WB Left	1	1600	130	.081*	218	.136*
WB Thru	3	4800	1650	.358	1528	.332
WB Right	0	0	68		67	
Right Turn Adjustment			NBR	.044*		
Sum of Critical V/C Ratios (*)				.441		.432
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.491**		**.482**
Level of Service				A		A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: California & Imperial

AM Count Date: Existing+Project
PM Count Date: Existing+Project
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	8	.005	10	.006
NB Thru	1	1600	2	.001*	0	.000*
NB Right	1	1600	169	.106	119	.074
SB Left	1	1600	31	.019*	98	.061*
SB Thru	1	1600	0	.007	7	.010
SB Right	0	0	11		9	
EB Left	1	1600	7	.004	8	.005
EB Thru	3	4800	1408	.296*	1564	.328*
EB Right	0	0	12		9	
WB Left	1	1600	130	.081*	218	.136*
WB Thru	3	4800	1650	.358	1528	.332
WB Right	0	0	68		67	
Right Turn Adjustment			NBR	.044*		

Sum of Critical V/C Ratios (*)	.441	.525
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.491**	**.575**
Level of Service	A	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: California & Imperial

AM Count Date: Existing+Alt 1
PM Count Date: Existing+Alt 1
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	8	.005	10	.006
NB Thru	1	1600	2	.001*	0	.000*
NB Right	1	1600	169	.106	119	.074
SB Left	1	1600	31	.019*	98	.061*
SB Thru	1	1600	0	.007	7	.010
SB Right	0	0	11		9	
EB Left	1	1600	7	.004	8	.005
EB Thru	3	4800	1408	.296*	1504	.315*
EB Right	0	0	12		9	
WB Left	1	1600	130	.081*	218	.136*
WB Thru	3	4800	1650	.358	1528	.332
WB Right	0	0	68		67	
Right Turn Adjustment			NBR	.044*		

Sum of Critical V/C Ratios (*)	.441	.512
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.491**	**.562**
Level of Service	A	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: California & Imperial

AM Count Date: Existing+Alt 2
PM Count Date: Existing+Alt 2
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1	1600	8	.005	10	.006
NB Thru	1	1600	2	.001*	0	.000*
NB Right	1	1600	169	.106	119	.074
SB Left	1	1600	31	.019*	98	.061*
SB Thru	1	1600	0	.007	7	.010
SB Right	0	0	11		9	
EB Left	1	1600	7	.004	8	.005
EB Thru	3	4800	1408	.296*	1570	.329*
EB Right	0	0	12		9	
WB Left	1	1600	130	.081*	218	.136*
WB Thru	3	4800	1650	.358	1528	.332
WB Right	0	0	68		67	
Right Turn Adjustment			NBR	.044*		

Sum of Critical V/C Ratios (*)	.441	.526
Adjustment for Lost Time	.050	.050
INTERSECTION CAPACITY UTILIZATION	**.491**	**.576**
Level of Service	A	A

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Main & Imperial

AM Count Date: 03/22/06
PM Count Date: 03/22/06
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1.5		344	{.108}*	153	{.048}*
NB Thru	0.5	3200	2	.108	0	.048
NB Right	1	1600	644	.403	419	.262
SB Left	0	0	1		0	
SB Thru	1	1600	0	.003*	0	.000*
SB Right	0	0	4		0	
EB Left	0	0	0		0	
EB Thru	3	4800	985	.205*	936	.195*
EB Right	f		172		273	
WB Left	1	1600	420	.263*	519	.324*
WB Thru	3	4800	1225	.255	773	.162
WB Right	0	0	1		4	
Right Turn Adjustment			NBR	.096*		
Sum of Critical V/C Ratios (*)				.675		.567
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.725**		**.617**
Level of Service				C		B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Main & Imperial

AM Count Date: Existing+Project
PM Count Date: Existing+Project
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1.5		344	{.108}*	153	{.048}*
NB Thru	0.5	3200	2	.108	0	.048
NB Right	1	1600	644	.403	419	.262
SB Left	0	0	1		0	
SB Thru	1	1600	0	.003*	0	.000*
SB Right	0	0	4		0	
EB Left	0	0	0		0	
EB Thru	3	4800	985	.205*	1382	.288*
EB Right	f		172		273	
WB Left	1	1600	420	.263*	519	.324*
WB Thru	3	4800	1225	.255	773	.162
WB Right	0	0	1		4	
Right Turn Adjustment			NBR	.096*		
Sum of Critical V/C Ratios (*)				.675		.660
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.725**		**.710**
Level of Service				C		C

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Main & Imperial

AM Count Date: Existing+Alt 1
PM Count Date: Existing+Alt 1
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1.5		344	{.108}*	153	{.048}*
NB Thru	0.5	3200	2	.108	0	.048
NB Right	1	1600	644	.403	419	.262
SB Left	0	0	1		0	
SB Thru	1	1600	0	.003*	0	.000*
SB Right	0	0	4		0	
EB Left	0	0	0		0	
EB Thru	3	4800	985	.205*	1322	.275*
EB Right	f		172		273	
WB Left	1	1600	420	.263*	519	.324*
WB Thru	3	4800	1225	.255	773	.162
WB Right	0	0	1		4	
Right Turn Adjustment			NBR	.096*		
Sum of Critical V/C Ratios (*)				.675		.647
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.725**		**.697**
Level of Service				C		B

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

INTERSECTION CAPACITY UTILIZATION

Intersection: Main & Imperial

AM Count Date: Existing+Alt 2
PM Count Date: Existing+Alt 2
AM Peak Hour: 7:30A-8:30A PM Peak Hour: 4:45P-5:45P
Analyst: TDS Agency: El Segundo

Movement	No. of Lanes	Capacity	AM Peak Hour Volume	AM Peak Hour V/C	PM Peak Hour Volume	PM Peak Hour V/C
NB Left	1.5		344	{.108}*	153	{.048}*
NB Thru	0.5	3200	2	.108	0	.048
NB Right	1	1600	644	.403	419	.262
SB Left	0	0	1		0	
SB Thru	1	1600	0	.003*	0	.000*
SB Right	0	0	4		0	
EB Left	0	0	0		0	
EB Thru	3	4800	985	.205*	1388	.289*
EB Right	f		172		273	
WB Left	1	1600	420	.263*	519	.324*
WB Thru	3	4800	1225	.255	773	.162
WB Right	0	0	1		4	
Right Turn Adjustment			NBR	.096*		
Sum of Critical V/C Ratios (*)				.675		.661
Adjustment for Lost Time				.050		.050
INTERSECTION CAPACITY UTILIZATION				**.725**		**.711**
Level of Service				C		C

LOS	Maximum ICU
A	.60
B	.70
C	.80
D	.90
E	1.00
F	n/a

Traffic Count Data

Traffic count information for existing conditions at the thirteen study area intersections was obtained from several sources. To maintain consistency between the various traffic studies in the area, the AM and PM peak hour volume data were based on manual traffic counts at the study intersections conducted by Traffic Data Services, Inc. in late 2005 and early 2006, as well as traffic data included in the *Final EIR Sepulveda/Rosecrans Site Rezoning and Plaza El Segundo Development, February 2005*. This 2005 Final EIR was indicated by City of El Segundo planning staff as the most recent available relevant traffic study in the City.

Traffic count data from the traffic studies mentioned above were compared with the more recent count data (2005 and 2006) to verify consistency in baseline data. Traffic count information from the year 2004 was then increased with an ambient growth rate of one-half percent per year to account for increases in volume from 2004 to the proposed Chevron project's existing conditions analysis year (2006).

TRAFFIC DATA SERVICES, INC

SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : SEPULVEDA BLVD
E/W ST: IMPERIAL HWY
CITY: EL SEGUNDO

FILENAME: 1052101
DATE: 10/19/05
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	1	3	1	2	4	0	2	3	1	2	3	1	
7:00 AM	12	549	183	89	452	3	47	64	30	27	53	81	1590
15 AM	20	497	153	107	494	2	53	53	21	58	59	105	1622
30 AM	21	576	215	98	502	2	55	74	41	66	75	135	1860
45 AM	25	428	191	118	599	5	55	92	50	68	78	108	1817
8:00 AM	19	493	208	86	568	2	66	89	50	66	75	101	1823
15 AM	27	469	157	103	570	2	89	65	37	60	61	63	1703
30 AM	24	503	211	96	541	3	51	83	34	60	62	78	1746
45 AM	29	521	179	91	580	7	51	76	30	48	44	85	1741
PEAK HOUR BEGINS AT: 730 AM													PHF: 0.97
VOLUMES =	92	1966	771	405	2239	11	265	320	178	260	289	407	7203

FILENAME: 1052101P
DATE: 10/20/05
DAY: THURSDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	32	441	232	67	553	9	50	54	33	54	63	106	1694
15 PM	35	397	239	72	538	7	48	56	42	41	61	93	1629
30 PM	50	494	339	61	525	8	42	70	35	71	83	94	1872
45 PM	37	403	232	78	577	5	37	82	41	36	68	80	1676
5:00 PM	43	476	262	79	600	11	33	73	37	43	114	98	1869
15 PM	43	524	250	78	560	4	47	77	37	48	69	105	1842
30 PM	60	522	297	97	574	13	47	68	39	63	80	105	1965
45 PM	32	459	264	83	612	6	58	69	38	48	82	103	1854
PEAK HOUR BEGINS AT: 1700 PM													PHF: 0.96
VOLUMES =	178	1981	1073	337	2346	34	185	287	151	202	345	411	7530

COMMENTS:

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : SEPULVEDA BLVD
E/W ST: EL SEGUNDO BLVD
CITY: EL SEGUNDO

FILENAME: 1052102
DATE: 10/20/05
DAY: THURSDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	2	4	0	2	4	1	1	2	1	1.5	1.5	1	
7:00 AM	49	712	67	54	238	32	15	52	18	33	51	30	1351
15 AM	55	730	81	80	229	29	21	48	36	42	92	37	1480
30 AM	65	770	99	86	245	24	25	59	42	51	120	48	1634
45 AM	77	750	102	94	328	36	23	75	73	44	106	67	1775
8:00 AM	84	727	111	78	385	42	35	73	64	40	103	59	1801
15 AM	79	786	98	59	302	30	29	86	77	62	89	55	1752
30 AM	81	852	96	67	310	35	22	67	82	40	71	39	1762
45 AM	53	743	85	62	337	33	32	71	74	35	80	42	1647

PEAK HOUR BEGINS AT: 745 AM — PHF: 0.98

VOLUMES =	321	3115	407	298	1325	143	109	301	296	186	369	220	7090

FILENAME: 1052102P
DATE: 10/20/05
DAY: THURSDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	113	446	67	44	421	14	33	109	89	124	67	70	1597
15 PM	79	361	62	59	562	15	19	74	68	155	112	88	1654
30 PM	97	399	116	63	585	16	50	107	110	141	137	125	1946
45 PM	74	328	112	65	631	15	37	106	103	171	190	89	1921
5:00 PM	87	414	142	46	611	14	37	107	73	139	179	126	1975
15 PM	109	429	180	41	739	16	40	139	118	164	198	119	2292
30 PM	97	408	173	39	767	14	38	125	98	187	223	132	2301
45 PM	88	424	162	53	751	11	39	111	96	176	234	130	2275

PEAK HOUR BEGINS AT: 1700 PM — PHF: 0.96

VOLUMES =	381	1675	657	179	2868	55	154	482	385	666	834	507	8843

COMMENTS:

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : SEPULVEDA BLVD
E/W ST: ROSECRANS AVE
CITY: EL SEGUNDO

FILENAME: 1052103
DATE: 10/19/05
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	2	4	1	2	3	1	2	3	1	2	2	1	
7:00 AM	31	757	44	56	218	21	47	107	31	30	64	65	1471
15 AM	70	917	83	50	247	15	60	81	16	40	87	55	1721
30 AM	50	780	93	57	292	25	57	114	47	44	61	80	1700
45 AM	64	804	101	105	357	21	68	154	59	33	66	51	1883
8:00 AM	76	832	104	102	286	17	51	145	31	44	60	55	1803
15 AM	70	883	98	81	309	22	43	141	33	48	71	74	1873
30 AM	51	729	103	94	337	20	51	153	36	42	55	60	1731
45 AM	63	802	123	76	312	16	54	165	34	60	79	78	1862

PEAK HOUR BEGINS AT: PHF: 0.97
745 AM

VOLUMES =	261	3248	406	382	1289	80	213	593	159	167	252	240	7290

FILENAME: 1052103P
DATE: 10/20/05
DAY: THURSDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	74	369	90	35	591	19	26	49	9	118	128	107	1615
15 PM	79	402	68	46	604	19	31	57	21	92	102	53	1574
30 PM	67	375	64	48	714	18	20	46	10	114	102	74	1652
45 PM	50	433	67	51	720	27	22	39	10	111	127	47	1704
5:00 PM	105	374	91	48	701	10	42	79	16	129	130	87	1812
15 PM	84	437	72	40	671	12	40	56	11	121	152	61	1757
30 PM	78	421	61	59	660	10	36	111	29	116	150	70	1801
45 PM	76	435	69	50	723	19	34	91	26	120	162	74	1879

PEAK HOUR BEGINS AT: PHF: 0.96
1700 PM

VOLUMES =	343	1667	293	197	2755	51	152	337	82	486	594	292	7249

COMMENTS:

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : SEPULVEDA BLVD
E/W ST: EL SEGUNDO BLVD
CITY: EL SEGUNDO

FILENAME: 1052102A
DATE: 10/26/05
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	2	4	0	2	4	1	1	2	1	1.5	1.5	1	
7:00 AM	63	818	89	53	157	21	18	52	33	21	63	52	1440
15 AM	74	828	102	72	242	25	30	72	52	22	91	59	1669
30 AM	76	699	96	54	195	17	23	75	50	42	119	39	1485
45 AM	93	646	115	62	292	43	31	90	64	40	104	37	1617
8:00 AM	86	809	101	70	270	38	28	86	62	31	95	61	1736
15 AM	61	733	104	62	273	32	26	50	67	43	67	36	1554
30 AM	92	883	98	57	244	30	40	55	68	54	102	58	1781
45 AM	81	702	87	66	266	46	28	53	64	39	82	62	1576
PEAK HOUR BEGINS AT: 745 AM													PHF: 0.94
VOLUMES =	331	3071	418	251	1079	143	125	281	261	168	368	192	6688

FILENAME: 1052102Q
DATE: 10/26/05
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	73	311	22	48	487	8	32	122	88	90	80	74	1435
15 PM	75	363	40	56	589	8	21	56	77	119	65	70	1539
30 PM	73	390	56	63	625	16	33	99	96	176	86	73	1786
45 PM	58	395	35	75	735	22	33	118	103	199	83	88	1944
5:00 PM	74	328	41	37	549	14	39	124	86	146	82	84	1604
15 PM	76	437	52	68	724	17	20	202	84	185	76	91	2032
30 PM	77	408	45	50	721	12	45	133	101	192	72	107	1963
45 PM	72	422	46	52	676	16	30	117	101	181	79	86	1878
PEAK HOUR BEGINS AT: 1645 PM													PHF: 0.93
VOLUMES =	285	1568	173	230	2729	65	137	577	374	722	313	370	7543

COMMENTS:

TRAFFIC DATA SERVICES, INC

SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : CALIFORNIA ST
E/W ST: IMPERIAL HWY
CITY: EL SEGUNDO

FILENAME: 0261301
DATE: 2/15/06
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	1	1	1	0	1	1	1	3	0	1	3	0	
7:00 AM	0	1	31	6	0	0	0	313	1	17	387	10	766
15 AM	5	0	41	6	0	1	1	333	1	22	476	12	898
30 AM	2	1	42	8	0	3	2	326	3	32	412	17	848
45 AM	0	0	37	12	0	2	3	331	3	31	356	18	793
8:00 AM	1	1	49	5	0	5	1	418	5	45	406	21	957
15 AM	2	0	57	10	1	3	1	400	6	21	349	23	873
30 AM	0	0	30	12	0	5	2	346	2	35	352	18	802
45 AM	1	0	32	11	0	7	2	351	1	39	359	21	824
PEAK HOUR BEGINS AT: 715 AM													PHF: 0.91
VOLUMES =	8	2	169	31	0	11	7	1408	12	130	1650	68	3496

FILENAME: 0261301P
DATE: 2/10/06
DAY: FRIDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	1	0	28	26	0	3	3	284	5	55	315	17	737
15 PM	2	0	19	17	0	1	4	305	1	51	335	16	751
30 PM	2	0	19	21	0	4	5	257	2	36	309	12	667
45 PM	0	0	32	22	1	0	4	323	1	65	392	20	860
5:00 PM	4	0	28	28	1	5	3	266	1	55	345	11	747
15 PM	1	0	21	12	2	1	0	237	4	41	369	11	699
30 PM	5	0	38	36	3	3	1	292	3	57	422	25	885
45 PM	1	0	15	15	0	0	1	174	3	55	276	15	555
PEAK HOUR BEGINS AT: 1645 PM													PHF: 0.9
VOLUMES =	10	0	119	98	7	9	8	1118	9	218	1528	67	3191

COMMENTS:

TRAFFIC DATA SERVICES, INC

SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST : MAIN ST
E/W ST: IMPERIAL HWY
CITY: EL SEGUNDO

FILENAME: 0362501
DATE: 3/22/06
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
LANES:	2	0	1	0	1	0		2	1	1	2	0	
7:00 AM	96	1	117	0	0	0		202	29	76	287	1	809
15 AM	74	2	162	0	0	0		206	36	122	332	1	935
30 AM	69	0	170	0	0	1		227	53	117	334	0	971
45 AM	103	0	167	1	0	3		275	39	87	286	0	961
8:00 AM	98	0	145	0	0	0		277	44	94	273	0	931
15 AM	97	0	127	0	0	0		227	38	88	220	0	797
30 AM	71	0	125	0	0	0		260	46	65	200	0	767
45 AM	67	1	80	0	0	0		172	37	92	205	0	654
PEAK HOUR BEGINS AT: 715 AM													PHF: 0.98
VOLUMES =	344	2	644	1	0	4	0	985	172	420	1225	1	3798

FILENAME: 0362501P
DATE: 3/22/06
DAY: WEDNESDAY

PERIOD	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
BEGINS	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	Total
4:00 PM	52	0	102	0	0	0		314	76	121	176	0	841
15 PM	36	0	93	0	0	0		257	59	123	239	0	807
30 PM	25	0	102	0	0	0		221	73	110	164	3	698
45 PM	40	0	122	0	0	0		144	65	165	194	1	731
5:00 PM	56	0	141	1	0	0		170	60	134	221	0	783
15 PM	49	0	97	0	0	0		185	62	151	202	2	748
30 PM	53	0	106	0	0	0		140	80	148	201	0	728
45 PM	50	1	84	0	0	0		147	69	122	204	0	677
PEAK HOUR BEGINS AT: 1600 PM													PHF: 0.91
VOLUMES =	153	0	419	0	0	0	0	936	273	519	773	4	3077

COMMENTS: NBR ONLY, YIELDS TO EBT TRAFFIC

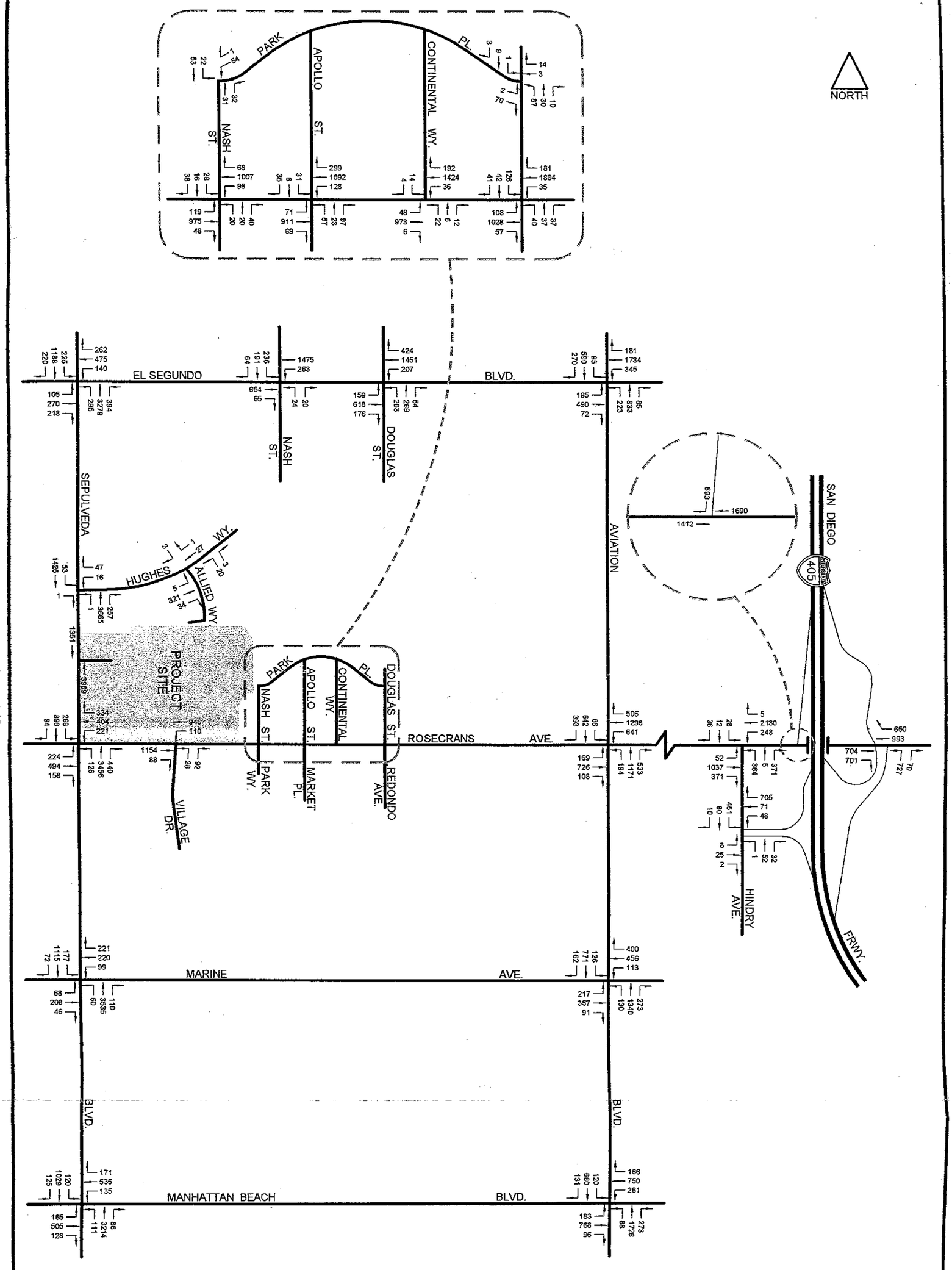

FIGURE 4(a)

1/5/2004

Plaza Del Segundo\BASELINE\AM2004EX

STICK-EXIST

EXISTING (2004) TRAFFIC VOLUMES
AM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering

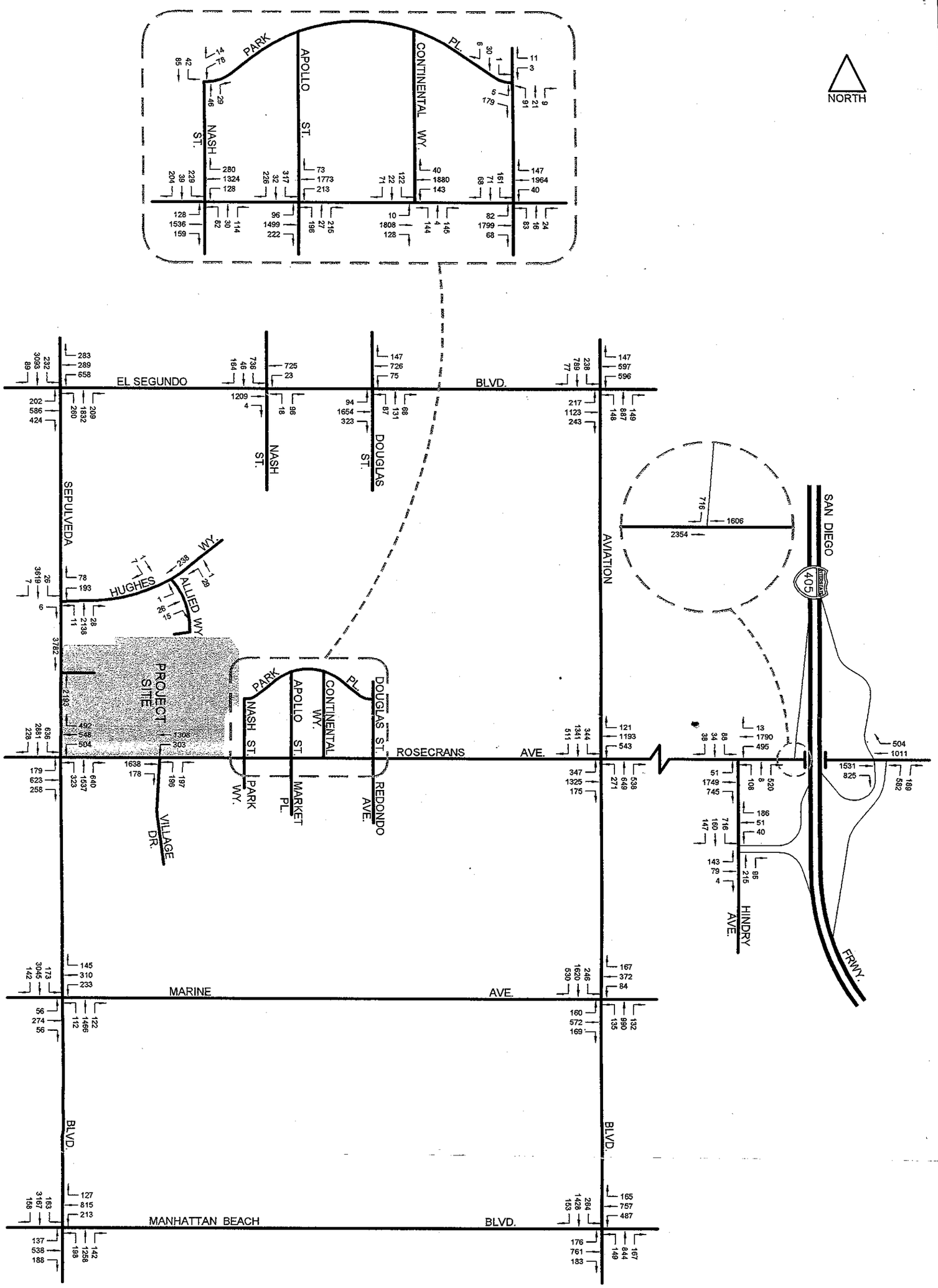

FIGURE 4(b)

1/5/2004

I:\Crain Projects\Active Projects\Plaza Del Segundo\Graphics\PM2004EX

STICK-EXIST

EXISTING (2004) TRAFFIC VOLUMES
PM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning - Traffic Engineering