MOBILE CARB PHASE 3 - REFORMULATED GASOLINE AND MTBE PHASEOUT

TRAFFIC IMPACT ANALYSIS

July 2014

AUSTIN-FOUST ASSOCIATES, INC.

Mobil CARB Phase 3 Reformulated Gasoline and MTBE Phaseout Project
Traffic Impact Analysis

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INTRODUCTION

1.1 INTRODUCTION

This report presents the results of a traffic analysis performed for the proposed Mobil project to modify their Torrance Refinery to satisfy the California mandated phase out of methyl tertiary butyl ether (MTBE) from gasoline by December 31, 2002 and provide reformulated gasoline that complies with California Air Resources Board (CARB) Phase 3 fuel specifications. This report has been prepared for the Environmental Impact Report on the proposed project.

1.2 PROJECT DESCRIPTION

To comply with the CARB Phase 3 fuel specifications and MTBE phase-out requirement, Mobil proposes to modify existing process operating units and install new equipment at its Torrance Refinery. To meet the new CARBoxygenate requirements , ethanol will be blended into the gasoline. The ethanol will not be blended at the refinery, as has been the case with MTBE. Rather ethanol will blended with base gasoline stocks at Mobil's distribution facilities. Therefore, modifications to several existing terminals in Southern California will be required, as well as at the refinery itself.The terminals are located in the cities of Vernon, Anaheim (Atwood Terminal), and on Terminal Island in the Port of Los Angeles (Southwestern Terminal), as illustrated in Figures 1-1 through 1-3. Modifications also will be required at Mobil's Torrance Loading Rack, a distribution terminal located on the property of the Torrance Refinery.

The Torrance Refinery is located at 3700 West 190th Street in the City of Torrance. The Torrance Refinery occupies an irregularly shaped parcel between 190th Street on the north, Van Ness Avenue on the east, Railroad tracks and Del Amo Boulevard to the south, and Prairie Avenue to the west. A small portion of the refinery property is located to the west of Prairie Avenue. The refinery comprises approximately 660 acres of land, as illustrated in Figure 1-4. The Torrance Loading Rack is located in the central southwestern portion of the Torrance refinery property.

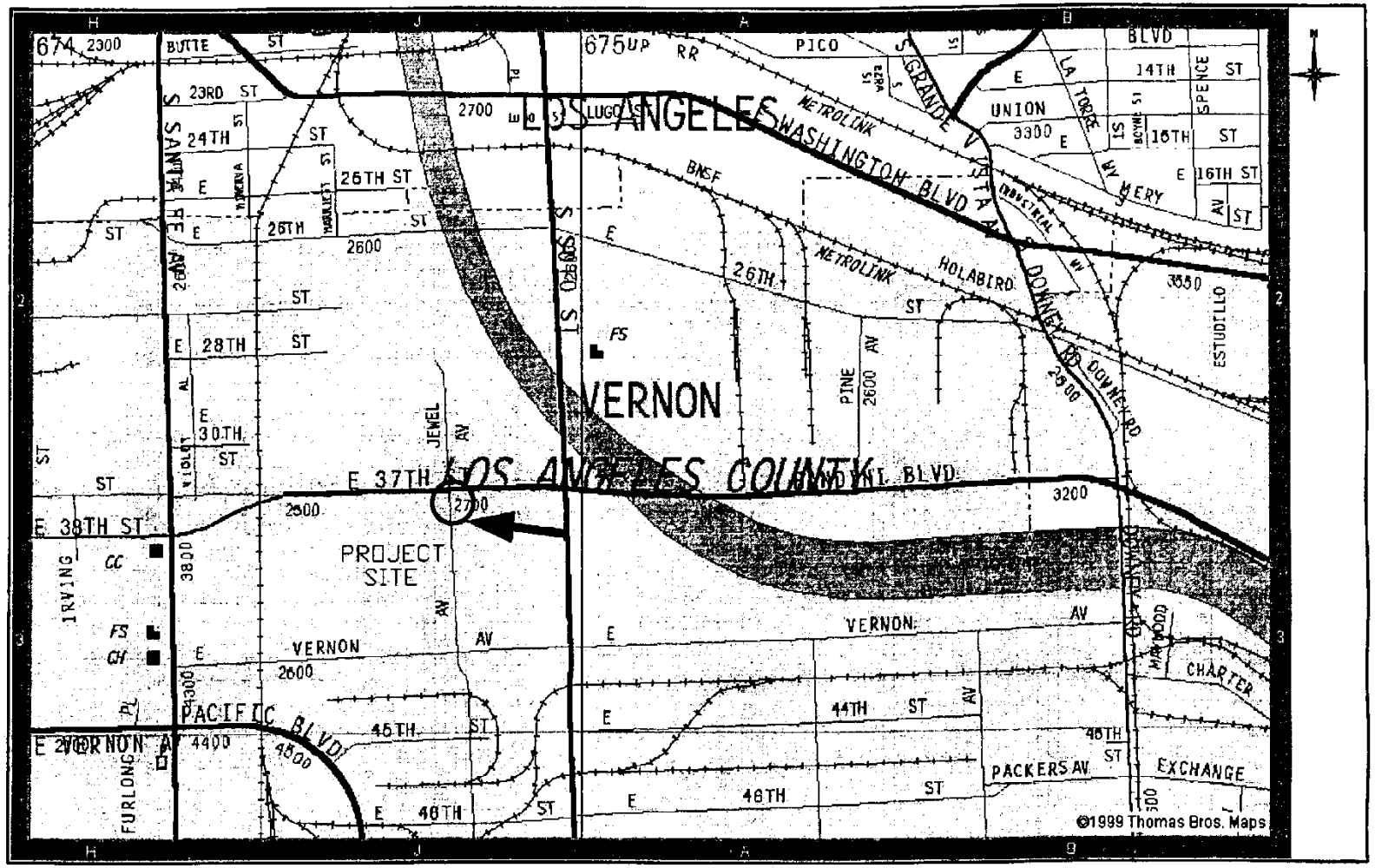

Figure 1-1

PROJECT VICINITY MAP
(Vernon Terminal)

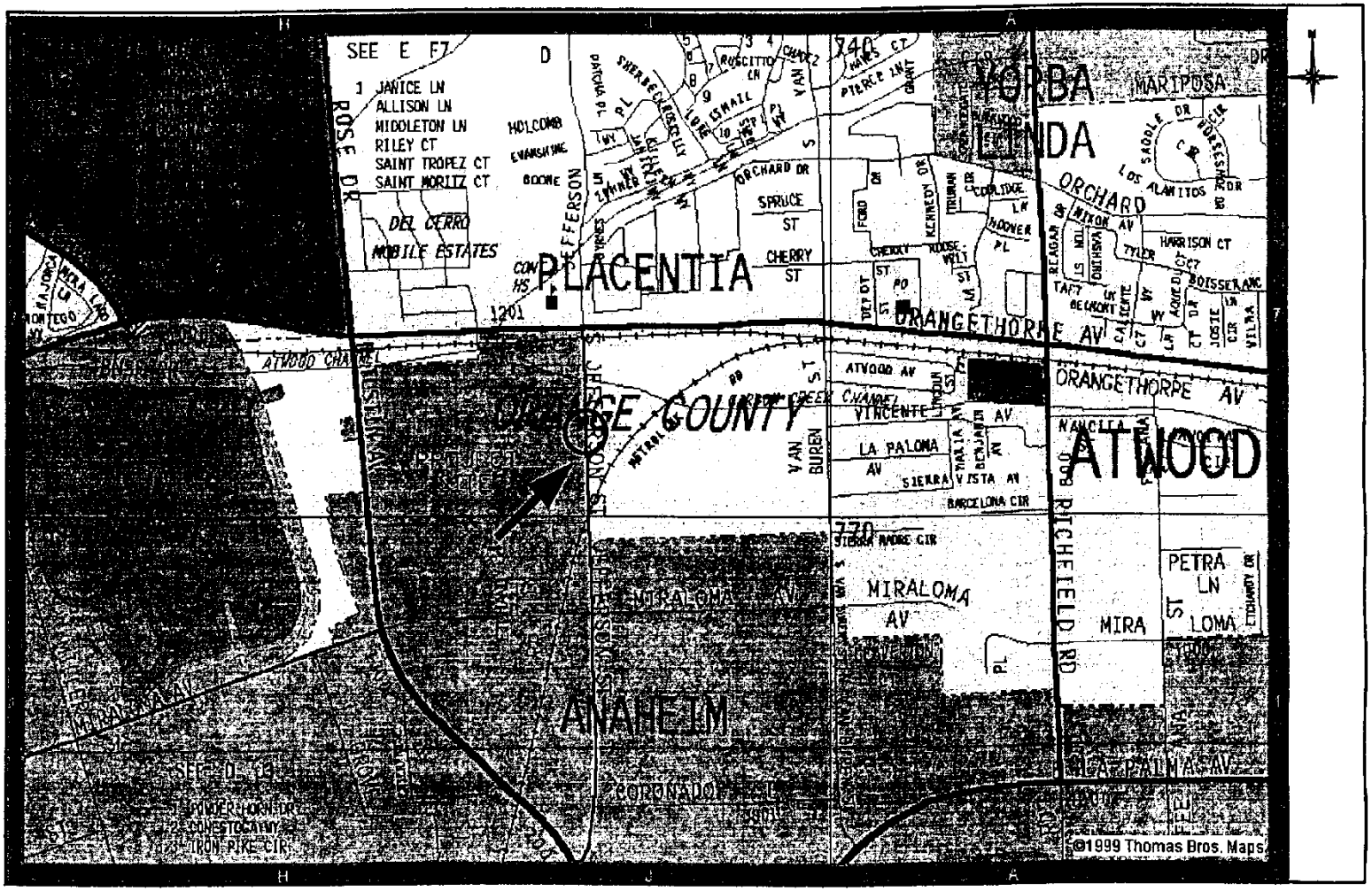

Figure 1-2

PROJECT VICINITY MAP
(Atwood Terminal)

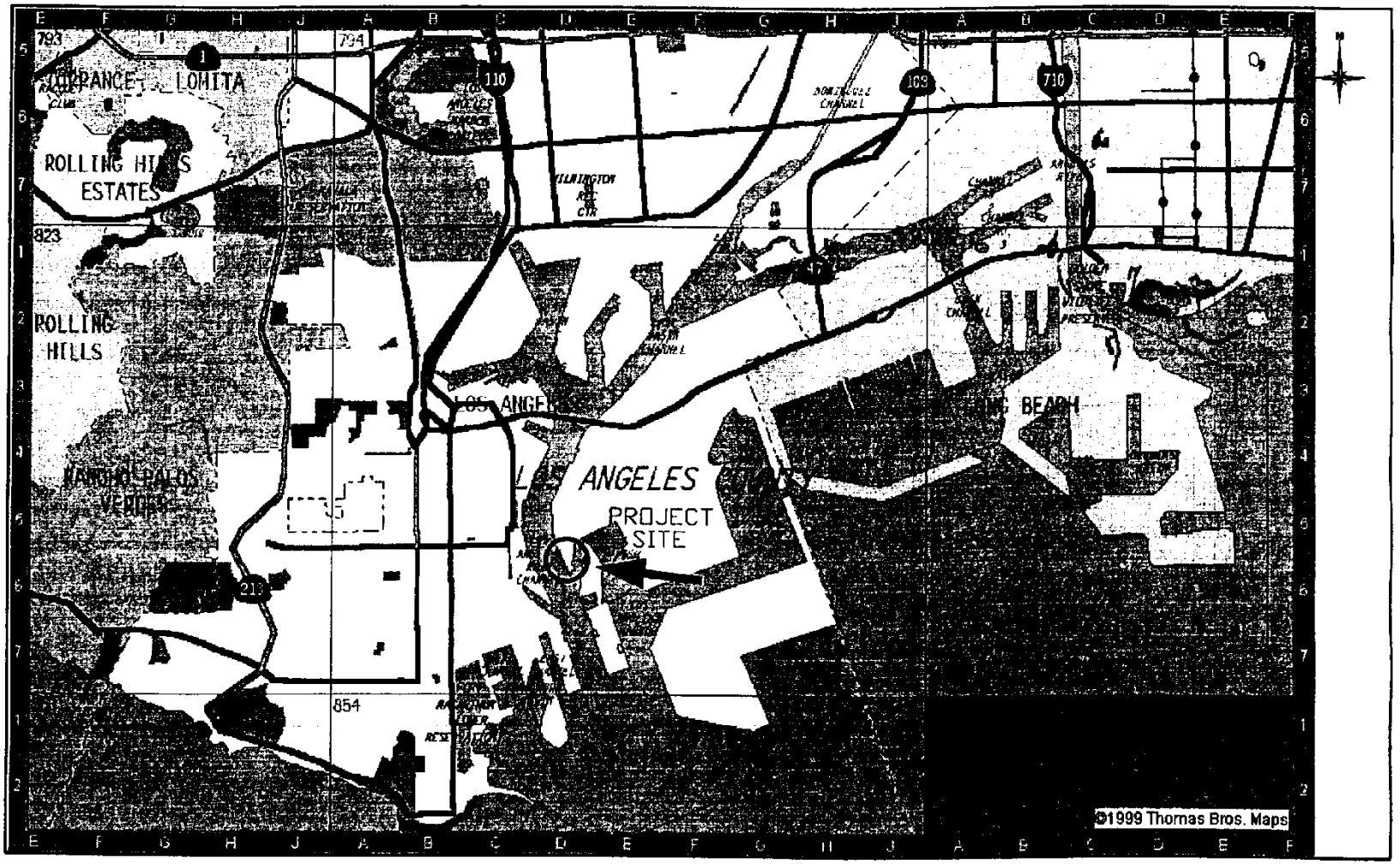

Figure 1-3

PROJECT VICINITY MAP
(Marine Terminal, Terminal Island)

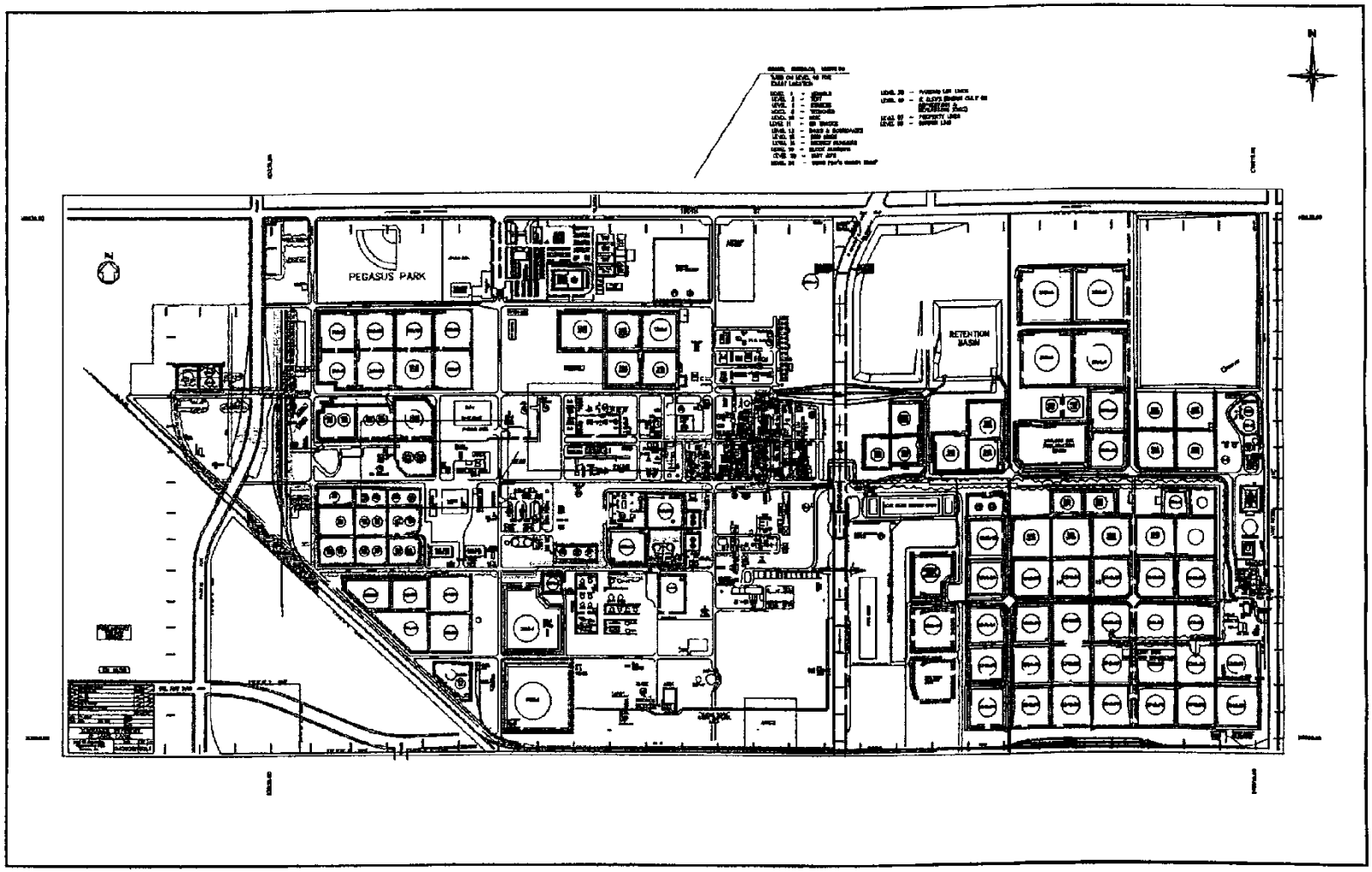

Figure 1-4

PROJECT SITE PLAN
(Torrance Refinery)

The Vernon Terminal is located at 2709 East 37th Street in the City of Vernon. It is a distribution terminal and is located in an area zoned "General Industry" and comprises approximately 32 acres of land.

The Atwood Terminal is located at 1477 Jefferson Street in the City of Anaheim. This facility is located in an area zoned "Development Area 1- Northeast Area Specific Plan - Industrial Area" and includes approximately eight acres of land.

The Southwestern Terminal is located at 799 South Seaside Avenue on Terminal Island in the POLA. This marine terminal consists of approximately 14 acres of land, including four berths, and is located in an area zoned "Qualified Manufacturing".

The additions and modifications proposed as part of the CARB Phase 3 project are summarized in the following section.

1.2.1 Changes at the Torrance Refinery Site

- Installation of new rail spur and rail car unloading facilities, and new/upgraded storage tankage for fuel ethanol
- Modification of two FCC compressors
- Installation of new C4/C5 splitter and modification of Debutanizer and Deisobutanizer
- Installation of new Merichem unit and modifications to exiting Merox unit, both to reduce the amount of sulfur in gasoline. New piping, pumps, containment dikes, for the new tankage and loading/unloading facilities.
- New unsaturaged gas plan sidstriper equipment
- New rail spur, storage tanks, and loading/unloading facilities for export and return of pentane (C5)
- New truck unloading lane at existing rack, new truck unloading rack, and vapor destruction unit, and modifications to two existing truck loading racks for fuel ethanol blending (all at Torrance Loading Rack, located on the refinery property)

1.2.2 Improvements at the Mobil Terminals

The improvements at the various terminals other than the Torrance Loading Rack (discussed above with the refinery changes because the Loading Rack is on the refinery property), include construction of new storage tanks and conversion of existing tanks for ethanol and gasoline storage, as well as construction of new and modified truck loading and unloading facilities and equipment for storing fuel ethanol and loading CARB Phase 3 gasoline. The proposed construction also includes new piping, pumps, containment, etc.

1.3 ANALYSIS SCOPE

The traffic analysis examines the impacts of adding construction project generated traffic to existing traffic on the surrounding arterial network. This project is subject to a Congestion Management Program (CMP) analysis if the project is not determined to be exempt under the guidelines for the County of Los Angeles. This methodology requires a project to mitigate the project's traffic impact to level of service (LOS) "E", the acceptable level of service, or better whenever the traffic generated by the proposed development causes the level of service (LOS) of identified CMP intersections to change by .02, causing or worsening to LOS "F".

The project is also subject to the following significance criteria from the South Coast Air Quality Management District (SCAQMD) (the lead agency for this project).

Impacts to transportation and circulation will be considered significant if the following criteria are met:

- A major roadway or railroad is closed to all through traffic and no alternate route is available.

- Peak period levels on major arterials within the vicinity of LAR and terminals are disrupted to a point where intersections with a LOS of "C" or worse are reduced one full level as a result of the project for more than four weeks.

- The project will increase traffic to and/or from any one facility or site by more than 350 truck trips per day.

- The project will increase customer traffic to a facility by more than 700 trips per day.

- The volume to capacity ratio increases by two percent for intersections with a LOS rating of “E” or “F” for more than two months.

The traffic analysis material presented here is set out as follows:

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

1.4 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 travelling 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.

Chapter 2.0
PROJECT SETTING

This chapter describes the project site in relation to the transportation setting. The existing circulation system is discussed, and existing traffic volumes and levels of service are summarized.

2.1 SURROUNDING HIGHWAY NETWORK

Regional transportation facilities in the vicinity of the Mobil's Torrance site are illustrated in Figure 2-1, and provide excellent accessibility to the entire southern California region. The San Diego Freeway (Interstate 405) lies immediately north of the Torrance Refinery and Torrance Loading Rack, and provides full ramp connections at Crenshaw Boulevard and Western Avenue.

Construction traffic generated by the proposed project at the refinery location will access a 375 space parking area located near the southwest corner of Crenshaw Boulevard and 190th Street via a construction gate located on 190th Street.

The anticipated construction traffic at the various terminal locations (Vernon, Southwestern, and Atwood) is forecast to be small because of the small construction work force, and will have impacts only during a short (8-10 months) period. Access to these terminal sites is available via direct access routes to regional roadway and freeway facilities. Impacts for the refinery site will be of a longer duration (28 months), and also will include the impacts of the modest construction traffic associated with the modifications to the Torrance Loading Rack, which will overlap with the Torrance Refinery additions and modifications. Therefore, this study focuses on the impacts from construction traffic at the Torrance Refinery location.

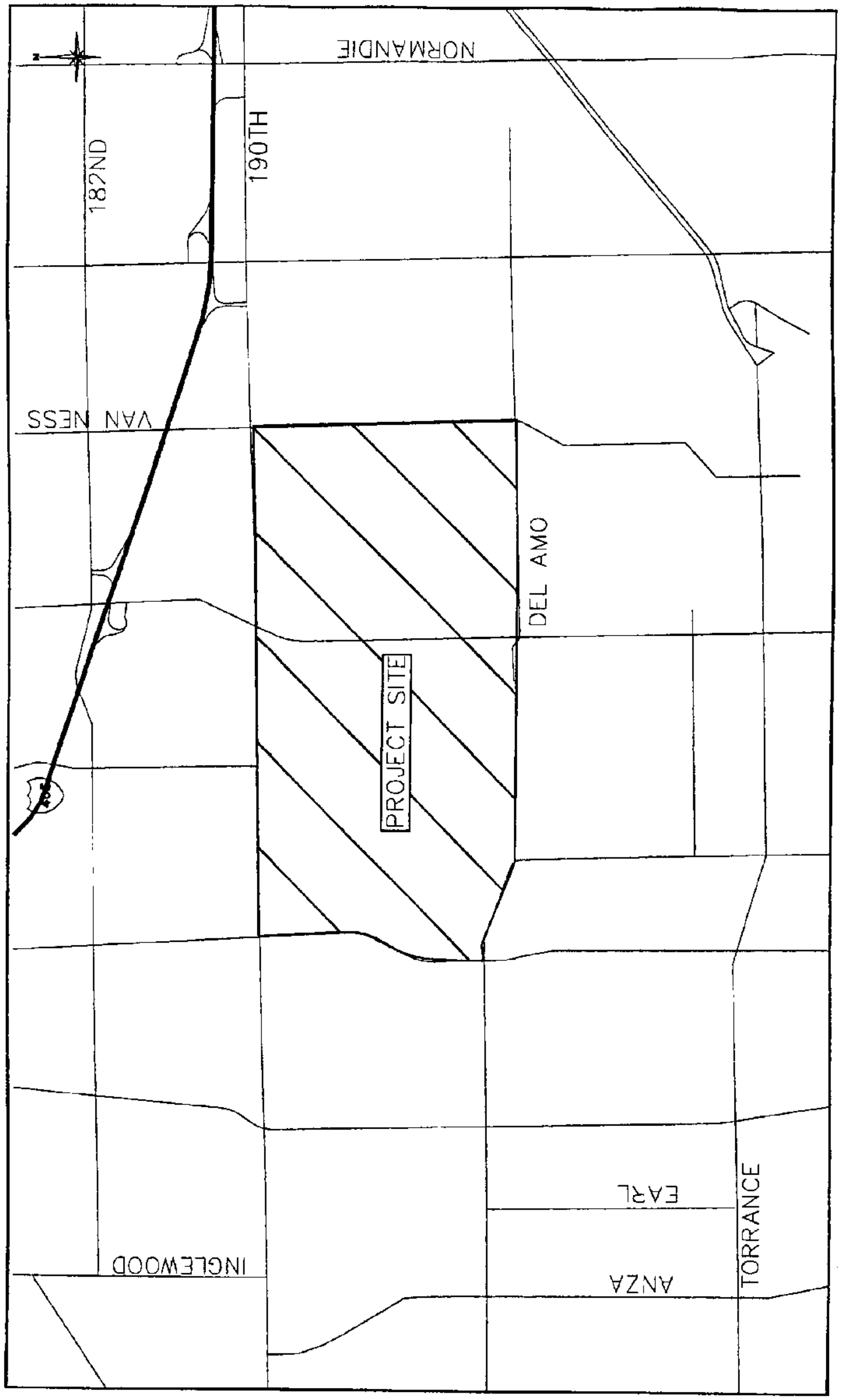

Figure 2-1
REGIONAL ACCES VICINITY MAP
(Torrance Refinery)

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Mobile CARB Phase 3 Reformulated Gasoline and MTBE Phaseout
Traffic Impact Anlaysis

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Because the proposed project is expected to require no or negligible additional workers at either the refinery or the various terminals during the operational phase, there would be negligible traffic impact potential. Therefore, this study does not address operational phase impacts.

2.2 EXISTING TRAFFIC CONDITIONS

As stated earlier, the Torrance Refinery is located at 3700 West 190th Street in the City of Torrance. The Torrance Refinery occupies an irregularly shaped parcel between 190th Street on the north, Van Ness Avenue on the east, Railroad tracks and Del Amo Boulevard to the south, and Prairie Avenue to the west. A small portion of the refinery property is located to the west of Prairie Avenue. The Torrance Loading Rack is located in the west central portion of the refinery property.

The following 15 intersections have been included in the traffic analysis:

1. Prairie Ave & 182nd St
2. Crenshaw Blvd & 182nd Street
3. I-405 NB on/off & 182nd St Ave
4. Prairie Ave & 190th Street
5. Crenshaw Blvd & 190th St
6. Van Ness Avenue & 190th Street
7. Western Avenue & 190th Street
8. Prairie & Del Amo Boulevard
9. Crenshaw Blvd & I-405 SN on/off
10. Van Ness Ave & Del Amo
11. Western Ave & Del Amo Blvd
12. IB405 SB on/off & 190th Street
13. Western Ave & I-405 NB on/off
14. Prairie/Madrona & Torrance Boulevard
15. Crenshaw Blvd & Torrance Boulevard

Existing AM and PM peak hour turning movement volumes at these intersections were counted by Traffic Data Services, Inc. In December 2000 and 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. As shown I the following Table 2-1, seven intersections (Crenshaw Boulevard and 182nd Street, I-405 NB on/off and 182nd Street, Prairie Avenue and 190th Street, Crenshaw Boulevard and 190th Street, Van Ness Avenue and 190th Street, Crenshaw

Boulevard and I-405 SB on/off, and I-405 SB on/off and 190th Street), are presently operating at an unacceptable level of service during the AM or PM peak hour under existing conditions, based the intersection capacity utilization criteria used by the City of Torrance.

TABLE 2-1
ICU SUMMARY - EXISTING CONDITIONS

INTERSECTION	EXISTING AM	EXISTING PM
1. Prairie & 182nd	0.94	0.94
2. Crenshaw & 182nd	0.89	1.11 *
3. I-405 & 182nd	0.70	1.18 *
4. Prairie & 190th	1.09 *	1.04 *
5. Crenshaw & 190th	0.94	1.10 *
6. Van Ness & 190th	1.04 *	1.03 *
7. Western & 190th	0.88	0.88
8. Prairie & Del Amo	0.80	0.77
9. Crenshaw & I-405 SB on/off	1.11 *	0.98
10. Van Ness & Del Amo	0.74	0.76
11. Western & Del Amo	0.82	0.86
12. I-405 SB on/off & 190th	1.05 *	0.98
13. Western & I-405 NB on/off	0.93	0.82
14. Prairie/Madrona & Torrance	0.84	0.83
15. Crenshaw & Torrance	0.95	1.00

* Exceeds acceptable LOS 'E'

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

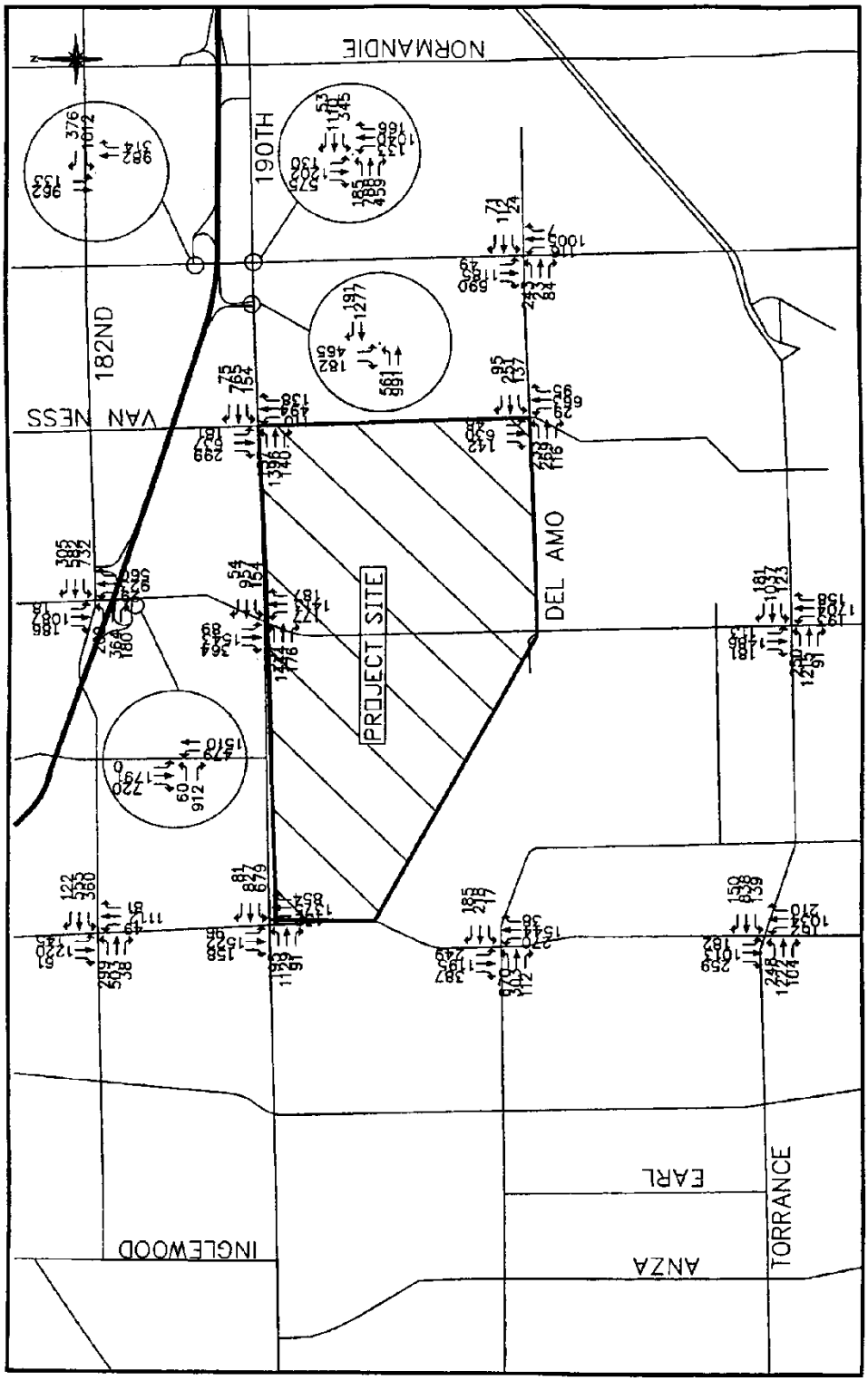

Figure 2-2

EXISTING AM PEAK HOUR TURN VOLUMES
(TORRANCE REFINERY)

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Traffic Impact Analysis

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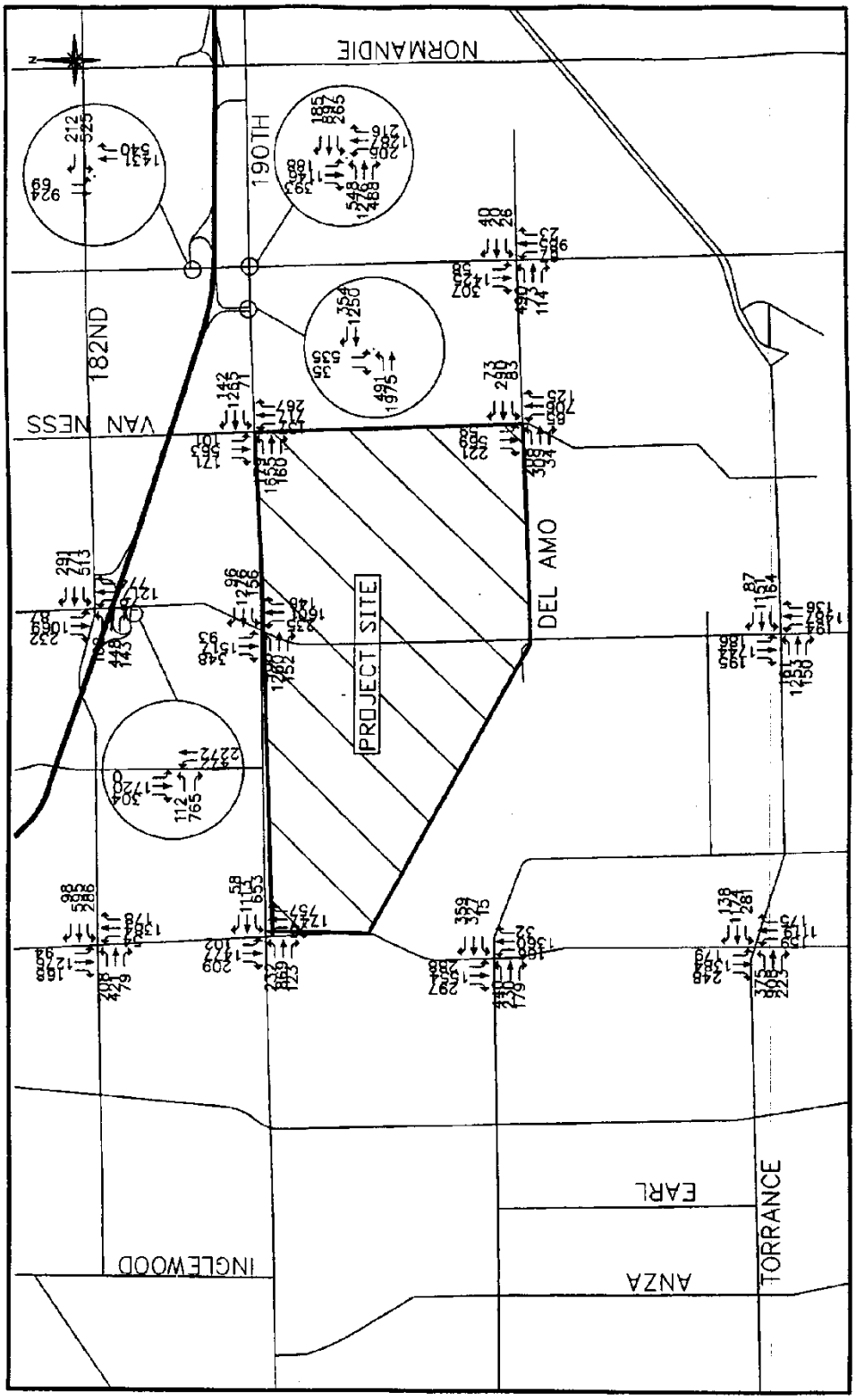

Figure 2-3

EXISTING PM PEAK HOUR TURN VOLUMES
(TORRANCE REFINERY)

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Chapter 3.0
TRAFFIC IMPACT ANALYSIS

This chapter describes the potential impacts of the proposed project upon the surrounding arterial network in the vicinity of the Torrance Refinery and Torrance Loading Rack. As stated in Chapter 2, impacts are discussed for the project construction phase only, because there will be no or negligible additional employment and associated traffic volumes during project operations. As also stated in Chapter 2, the traffic analysis only briefly addresses construction impacts at the Southwestern, Vernon, and Southwestern Terminals, because construction phase traffic will be small and short-term. Because there will be no or negligible increases in employment and traffic at the terminals during operations, no analysis is provided of traffic impacts during operations at the terminals.

In the following section, traffic generated by development of the proposed project is added to the existing conditions presented in the previous chapter and the resulting capacity impacts are assessed.

3.1 TRIP GENERATION

As discussed in Chapter 1, the Mobil's Torrance Refinery is proposing to construct or modify a number of process operating units, and to construct some new equipment and facilities. To meet the oxygenate requirements of the CARB Phase 3 fuel specifications, , ethanol will be blended into the gasoline. The ethanol will not be blended at the refinery, as has been the case with MTBE, but rather, ethanol blending will be performed at distribution facilities. Therefore, modifications will be required at the Torrance Refinery, the Torrance Loading Rack (located on the refinery property, and terminals in the cities of Vernon (Vernon Terminal) and Anaheim (Atwood Terminal), and onTerminal Island in the Port of Los Angeles (Southwestern Terminal).

The construction activities at the various terminals will occur between December 2001 and be the end of October 2002. Actual construction start dates will vary at the terminal sites, but construction is anticipated to take place five days per week in a single 8-hour shift, from 7:15 a.m. to 3:45 p.m. The maximum duration for construction at an individual terminal will be ten months.

Construction of the proposed project at the refinery is scheduled to begin September 2001 and be completed by December 2003. Construction is anticipated to take place five days per week in a single 8-hour shift, from 7:15 AM to 3:45 PM.

The following table summarizes the anticipated construction vehicles at the refinery and each terminal site for both the peak and average construction periods.

Location	# Workers	# Vehicles	Est. Construction Time
Torrance Refinery and Torrance Loading Rack (combined)	126 (peak)	97 (peak)	2 months (Refinery) and 2 months (Loading Rack)
Torrance Refinery and Torrance Loading Rack (combined)	65 (average)	52 (average)	26 months (Refinery) and 8 months (Loading Rack)
Southwestern Terminal	20 (peak)	10-15 (peak)	8 months
Vernon Terminal	50+ (peak)	35-40 (peak)	10 months
Atwood Terminal	30+ (peak)	15-20 (peak)	9 months

An examination of this table indicates that the addition of construction workers will be relatively small at the various terminal locations.

At the Torrance Refinery location, the construction effort is anticipated to require a peak of 97 daily vehicles for a two month period during the project's peak construction time. It is anticipated that 126 construction workers will be needed during peak construction, with this peak occurring during the period when construction is ongoing at both the refinery facilities/equipment and Loading Rack. Using an average of 1.3 persons per vehicle for vehicle occupancy (which was observed at the ARCO Refinery in Carson), results in a forecast of 97 inbound and 97 outbound vehicle trips or 194 vehicle trips per day during the peak construction period for the construction workers.

Construction activities at the refinery will occur during a five-day work week beginning at 7:15 AM until 3:45 PM Monday through Friday. This results in an average construction project AM peak hour (6:00 AM to 7:00 AM) of 97 vehicle trips and no trips occurring during the PM peak hour (4:00 PM to 6:00 PM). The AM and PM peak hour of the adjacent street system occurs during the AM peak period of 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM as indicated in the Congestion Management Program (CMP) Guidelines. Traffic attributable to the construction of the project will leave the site before the PM peak period would begin and will not affect the PM peak hour ICU values. Traffic attributable to the construction of the project will arrive at the site during the AM peak period. Therefore, the analysis examines impacts from traffic attributable to the proposed project only during the AM peak hour.

Materials required to support the construction effort would be delivered to the refinery by truck. Peak truck usage would correspond to the peak manpower periods. Construction materials, heavy construction equipment, piping, and new equipment would be delivered throughout the construction period. Material deliveries would be spread throughout the work day with few deliveries occurring during the peak hour. Therefore, their contribution to the overall traffic impacts would be neglibable.

3.2 TRIP DISTRIBUTION

Distribution of project generated traffic was derived from observation of existing travel patterns in the vicinity of the project sites and is illustrated in Figure 3-1. An increase in vehicular movements will occur at the various project sites during the construction period. The anticipated construction traffic at the terminal locations is considered less than significant, ranging from a low of 10 vehicles to a high of 40 vehicles per peak hour over an eight to ten month period. However, construction traffic at the Torrance Refinery is forecast to peak at approximately 97 vehicles. Hence, this analysis is focused on impacts at locations surrounding the Torrance Refinery during the peak construction activity period.

The average daily truck traffic at the refinery during construction is forecast to be approximately 25-30 trucks per day Since these would mainly consist of material deliveries, they would be spread throughout the work day, with few deliveries occurring during the peak hour. Therefore, their contribution to overall traffic impacts would be negligible. As a conservative or "worst case" analysis, the peak number of construction employees at the construction site was assumed to occur daily.

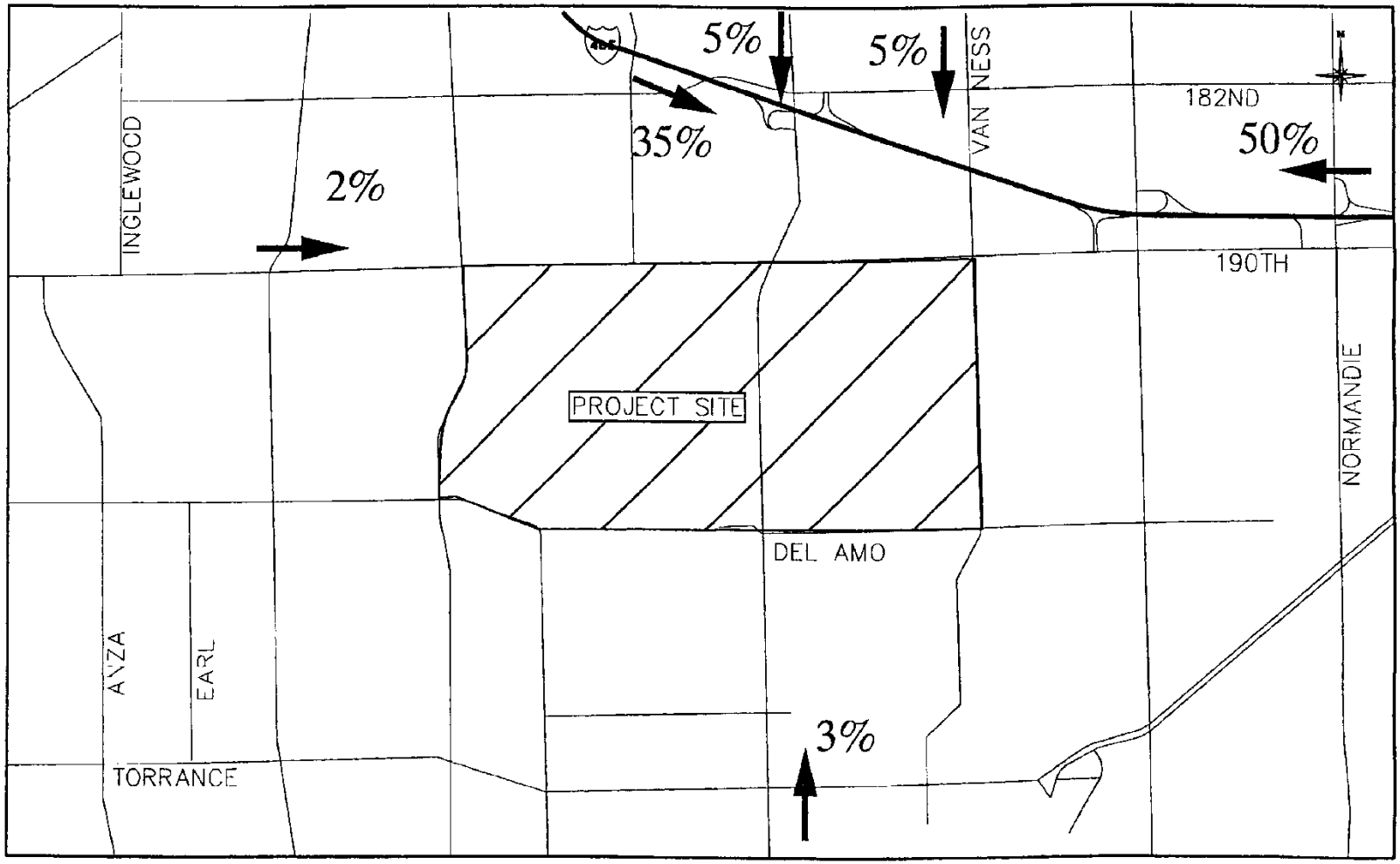

Figure 3-1

PROJECT TRIP DISTRIBUTION
(Torrance Refinery)

3.3 2000/EXISTING PLUS PROJECT TRAFFIC IMPACTS

For analysis purposes, a change of two percent at an intersection caused by the addition of project traffic is considered a significant impact. A typical four-legged intersection, operating at an acceptable level of service, will have approximately 3,000 to 6,000 vehicles using the intersection during a peak hour. To 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 addition of 15-40 vehicle trips at intersections surrounding the terminals is below the minimum of 60 vehicles identified above and will not cause a two percent (.02) change in the ICU value at these intersections. Therefore project traffic at intersections surrounding the terminal locations will not have significant impacts. Additionally, the estimated 10-40 vehicle trips is below the threshold (50 peak hour trips) required by the CMP guidelines. Hence, no additional traffic analysis is required for these locations.

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 three-step process was utilized. First, the amount of traffic which would be generated during construction was determined. Second, the construction traffic was geographically distributed to appropriate residential, commercial, and industrial areas. Finally, the trips were assigned to specific roadways and the traffic increases were evaluated on a route-by-route basis.

The proposed project would generate short-term impacts on traffic and circulation in the project vicinity during the construction period. The project would temporarily affect the present pattern of circulation of the labor force as well as rail and truck traffic associated with the construction and operation phases of the project.

Construction traffic related to the project will utilize an existing 375 space parking area located at the refinery near the southwest corner of Crenshaw Boulevard and 190th Street during construction. It would not affect the existing refinery facilities or the shipping and receiving facilities at the project site

Roadways in the vicinity of the project would be impacted by the project's construction-related traffic. Project related construction traffic would contribute less than two percent of the daily traffic volume on these roadways.

To more carefully assess the impacts on the surrounding roadways, an intersection capacity utilization (ICU) analysis was conducted for the 15 intersections which would be most directly impacted by project construction traffic.

Analysis year-plus-project intersection volumes for the project were generated by adding the project intersection volumes to the existing Year 2000 background intersection volumes. PM peak hour 2000-plus-project turn volumes are illustrated in Figure 3-2, and corresponding ICUs based on existing lane configurations are summarized in Table 3-1 (actual ICU calculations are included in Appendix A). An examination of Table 3-1 reveals that project construction traffic does cause a significant change (i.e., < .02 change in LOS) on the forecast AM peak hour level of service at two study area locations (Crenshaw Boulevard and 190th Street and Western Avenue and I-405 NB on/off ramp). However, project construction traffic is not forecast to cause a significant impact under the CMP guidelines at any of the study area locations (i.e., causing them to become LOS "F") and therefore no off-site mitigation is proposed for these locations.

3.4 ON-SITE CIRCULATION AND PARKING

Sufficient on-site parking is available to accommodate the increased parking demand from construction workers at the various terminals. The physical site of the refinery provides a 375 space parking area near the southwest corner of Crenshaw Boulevard and 190th Street. The capacity of this lot is well beyond the current operational requirements, which should accommodate both refinery and Torrance Loading Rack construction workers. It is forecast that the total number of parking spaces (375 spaces) will exceed the maximum number of vehicles from construction workers (97 vehicles) and allow for fluctuations in manpower and provide ample maneuvering space for heavy trucks.

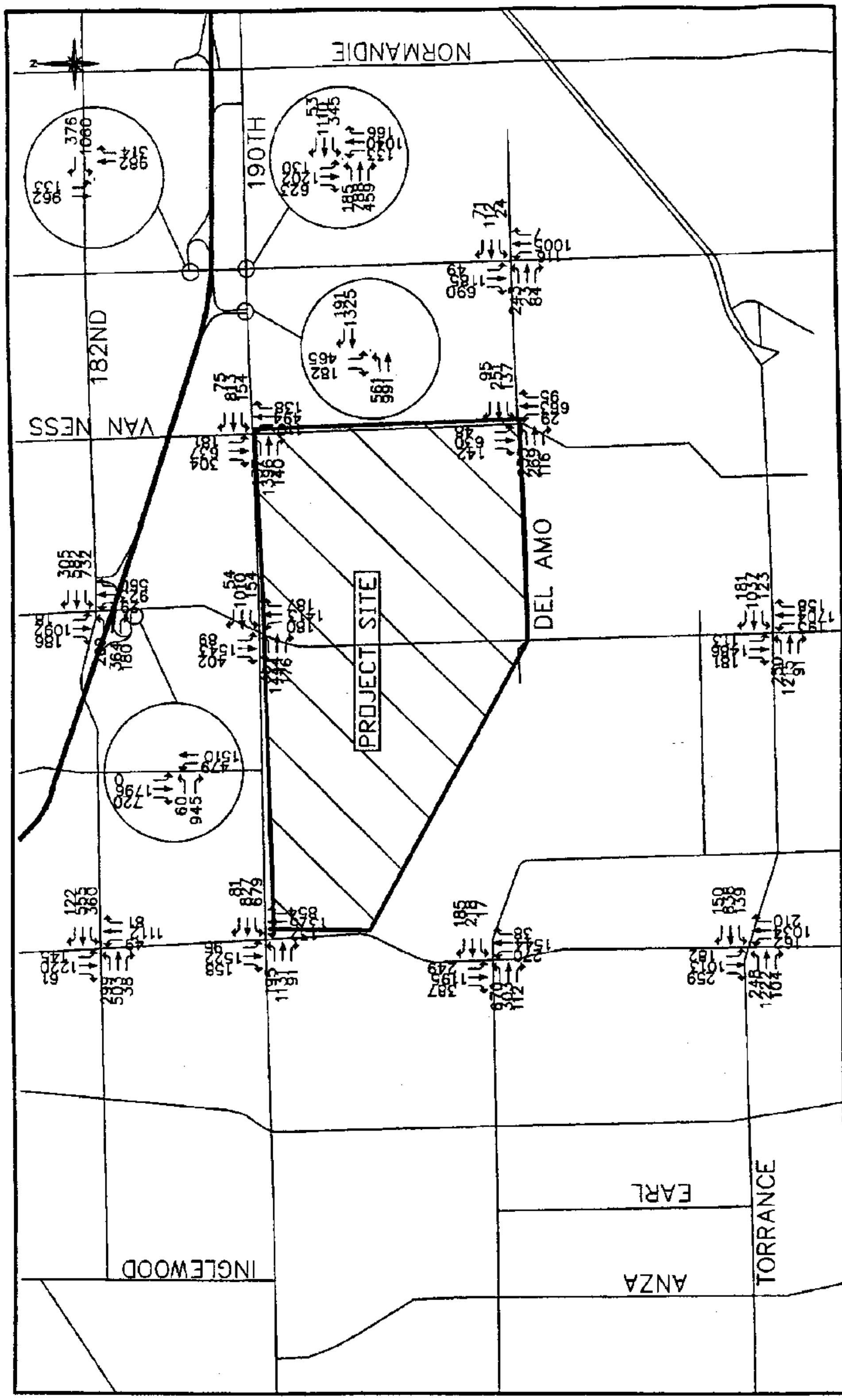

Figure 3-2
EXISTING+PROJECT AM
PEAKHOUR TURN VOLUMES
(TORRANCE REFINERY)

Mobile CARB Phase 3 Reformulated Gasoline and MTBE Phaseout
Traffic Impact Analysis

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TABLE 3-1
ICU SUMMARY - EXISTING PLUS PROJECT CONDITIONS
(USING NUMBER OF PEAK WORKERS)

INTERSECTION	EXISTING AM		EXISTING+ PROJECT AM		% CHG
1. Prairie & 182nd	0.94		0.94		-NC-
2. Crenshaw & 182nd	0.89		0.89		-NC-
3. I-405 & 182nd	0.70		0.70		-NC-
4. Prairie & 190th	1.09	*	1.09	*	-NC-
5. Crenshaw & 190th	0.94		0.96		.02
6. Van Ness & 190th	1.04	*	1.04	*	-NC-
7. Western & 190th	0.88		0.89		.01
8. Prairie & Del Amo	0.80		0.80		-NC-
9. Crenshaw & I-405 SB on/off	1.11	*	1.12	*	.01
10. Van Ness & Del Amo	0.74		0.74		-NC-
11. Western & Del Amo	0.82		0.82		-NC-
12. I-405 SB on/off & 190th	1.05	*	1.06	*	.01
13. Western & I-405 NB on/off	0.93		0.95		.02
14. Prairie/Madrona & Torrance	0.84		0.84		-NC-
15. Crenshaw & Torrance	0.95		0.95		-NC-

* Exceeds acceptable LOS 'E'

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

Defnition of Significant Impact = % change > 2%

Chapter 4.0
MITIGATION MEASURES

This chapter addresses the capacity deficiencies identified in the project impact analysis presented in the previous chapter.

Project construction traffic does not significantly impact the ICU values at the study locations under the CMP guidelines or the guidelines from SCAQMD, therefore no mitigation is required because of project impacts.

No mitigation measures are proposed for the small increase in truck traffic to and from the refinery related to the transportation of ethanol required for blending with the base gasoline stock.

Adequate off-street parking inside the refinery and at the terminals will be provided to accommodate the peak construction labor force.

The entry point to the refinery for construction, commuter and delivery vehicles minimizes impacts on traffic and circulation patterns on the street system near the refinery, and maintains access for pedestrians, bicyclists, and motor vehicle traffic.

Scheduling of truck operations will disperse deliveries throughout the off-peak hours to minimize peak hour traffic impacts.

If required, truck operations for the delivery of over-size equipment and materials will be conducted to the maximum extent possible during off-peak hours to minimize traffic impacts.

APPENDIX A

INTERSECTION CAPACITY UTILIZATION

1. Prairie & 182nd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	49	.03	54	.03
NBT	2	3200	1112	.35*	1384	.43*
NBR	1	1600	81	.05	178	.11
SBL	1	1600	145	.09*	94	.06*
SBT	2	3200	1220	.38	1276	.40
SBR	1	1600	61	.04	168	.11
EBL	1	1600	299	.19	208	.13*
EBT	2	3200	503	.17*	421	.16
EBR	0	0	38		79	
WBL	1	1600	360	.23*	286	.18
WBT	2	3200	555	.21	595	.22*
WBR	0	0	122		98	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		.94

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	49	.03	54	.03
NBT	2	3200	1112	.35*	1384	.43*
NBR	1	1600	81	.05	178	.11
SBL	1	1600	145	.09*	94	.06*
SBT	2	3200	1220	.38	1276	.40
SBR	1	1600	61	.04	168	.11
EBL	1	1600	299	.19	208	.13*
EBT	2	3200	503	.17*	421	.16
EBR	0	0	38		79	
WBL	1	1600	360	.23*	286	.18
WBT	2	3200	555	.21	595	.22*
WBR	0	0	122		98	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		.94

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	49	.03	54	.03
NBT	2	3200	1112	.35*	1384	.43*
NBR	1	1600	81	.05	178	.11
SBL	1	1600	145	.09*	94	.06*
SBT	2	3200	1220	.38	1276	.40
SBR	1	1600	61	.04	168	.11
EBL	1	1600	299	.19	208	.13*
EBT	2	3200	503	.17*	421	.16
EBR	0	0	38		79	
WBL	1	1600	360	.23*	286	.18
WBT	2	3200	555	.21	595	.22*
WBR	0	0	122		98	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		.94

2. Crenshaw & 182nd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	78	.05
NBT	2	3200	923	.29*	1217	.38*
NBR	1	1600	560	.35	774	.48
SBL	1	1600	18	.01*	87	.05*
SBT	3	4800	1087	.27	1069	.27
SBR	0	0	186		232	
EBL	1	1600	209	.13*	162	.10*
EBT	2	3200	364	.17	448	.18
EBR	0	0	180		143	
WBL	2	3200	732	.23	513	.16
WBT	1	1600	582	.36*	771	.48*
WBR	1	1600	305	.19	291	.18
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.89		1.11

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	78	.05
NBT	2	3200	923	.29*	1222	.38*
NBR	1	1600	560	.35	807	.50
SBL	1	1600	18	.01*	87	.05*
SBT	3	4800	1092	.27	1069	.27
SBR	0	0	186		232	
EBL	1	1600	209	.13*	162	.10*
EBT	2	3200	364	.17	448	.18
EBR	0	0	180		143	
WBL	2	3200	732	.23	513	.16
WBT	1	1600	582	.36*	771	.48*
WBR	1	1600	305	.19	291	.18
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.89		1.11

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	78	.05
NBT	2	3200	923	.29*	1220	.38*
NBR	1	1600	560	.35	792	.50
SBL	1	1600	18	.01*	87	.05*
SBT	3	4800	1090	.27	1069	.27
SBR	0	0	186		232	
EBL	1	1600	209	.13*	162	.10*
EBT	2	3200	364	.17	448	.18
EBR	0	0	180		143	
WBL	2	3200	732	.23	513	.16
WBT	1	1600	582	.36*	771	.48*
WBR	1	1600	305	.19	291	.18
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.89		1.11

3. I-405 & 182nd

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		810	(.25)*	1235	(.39)*
NBT	0	3200	0	.25	0	.39
NBR	0.5		5		11	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	440	.28*	686	.43*
EBR	0	0	443	.28	956	.60
WBL	1	1600	115	.07*	419	.26*
WBT	2	3200	710	.22	1024	.32
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.70		1.18

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		810	(.25)*	1235	(.39)*
NBT	0	3200	0	.25	0	.39
NBR	0.5		5		11	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	440	.28*	686	.43*
EBR	0	0	443	.28	989	.62
WBL	1	1600	115	.07*	419	.26*
WBT	2	3200	710	.22	1024	.32
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.70		1.18

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1.5		810	(.25)*	1235	(.39)*
NBT	0	3200	0	.25	0	.39
NBR	0.5		5		11	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3200	440	.28*	686	.43*
EBR	0	0	443	.28	974	.61
WBL	1	1600	115	.07*	419	.26*
WBT	2	3200	710	.22	1024	.32
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.70		1.18

4. Prairie & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	132	.08*	93	.06
NBT	3	4800	1375	.29	1747	.36*
NBR	1	1600	854	.53	757	.47
SBL	1	1600	96	.06	102	.06*
SBT	3	4800	1522	.35*	1477	.35
SBR	0	0	158		209	
EBL	1	1600	195	.12	232	.15*
EBT	2	3200	1129	.35*	869	.27
EBR	1	1600	91	.06	123	.08
WBL	2	3200	679	.21*	653	.20
WBT	2	3200	827	.28	1113	.37*
WBR	0	0	81		58	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.09		1.04

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	132	.08*	93	.06
NBT	3	4800	1375	.29	1747	.36*
NBR	1	1600	854	.53	757	.47
SBL	1	1600	96	.06	102	.06*
SBT	3	4800	1522	.35*	1477	.35
SBR	0	0	158		209	
EBL	1	1600	195	.12	232	.15*
EBT	2	3200	1131	.35*	869	.27
EBR	1	1600	91	.06	123	.08
WBL	2	3200	679	.21*	653	.20
WBT	2	3200	827	.28	1115	.37*
WBR	0	0	81		58	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.09		1.04

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	132	.08*	93	.06
NBT	3	4800	1375	.29	1747	.36*
NBR	1	1600	854	.53	757	.47
SBL	1	1600	96	.06	102	.06*
SBT	3	4800	1522	.35*	1477	.35
SBR	0	0	158		209	
EBL	1	1600	195	.12	232	.15*
EBT	2	3200	1130	.35*	869	.27
EBR	1	1600	91	.06	123	.08
WBL	2	3200	679	.21*	653	.20
WBT	2	3200	827	.28	1114	.37*
WBR	0	0	81		58	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.09		1.04

5. Crensbaw & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	177	.11*	235	.15*
NBT	3	4800	1413	.29	1601	.33
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1543	.32*	1517	.32*
SBR	1	1600	364	.23	348	.22
EBL	2	3200	357	.11*	405	.13*
EBT	3	4800	1444	.34	1260	.29
EBR	0	0	176		152	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	957	.30*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		1.10

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	177	.11*	237	.15*
NBT	3	4800	1413	.29	1639	.34
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1581	.33*	1517	.32*
SBR	1	1600	364	.23	348	.22
EBL	2	3200	357	.11*	405	.13*
EBT	3	4800	1444	.34	1260	.29
EBR	0	0	178		152	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	957	.30*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.10

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	177	.11*	236	.15*
NBT	3	4800	1413	.29	1621	.34
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1563	.33*	1517	.32*
SBR	1	1600	364	.23	348	.22
EBL	2	3200	357	.11*	405	.13*
EBT	3	4800	1444	.34	1260	.29
EBR	0	0	177		152	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	957	.30*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.10

5. Crenshaw & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	177	.11*	235	.15*
NBT	3	4800	1413	.29	1601	.33
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1543	.32*	1517	.32*
SBR	1	1600	364	.23	348	.22
EBL	2	3200	357	.11*	405	.13*
EBT	3	4800	1444	.34	1260	.29
EBR	0	0	176		152	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	957	.30*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		1.10

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	180	.11*	235	.15*
NBT	3	4800	1413	.29	1601	.33
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1543	.32*	1517	.32*
SBR	1	1600	402	.25	348	.22
EBL	2	3200	357	.11*	443	.14*
EBT	3	4800	1444	.34	1313	.31
EBR	0	0	176		155	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	1010	.32*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.96		1.11

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	179	.11*	235	.15*
NBT	3	4800	1413	.29	1601	.33
NBR	1	1600	187	.12	146	.09
SBL	1	1600	89	.06	93	.06
SBT	3	4800	1543	.32*	1517	.32*
SBR	1	1600	384	.24	348	.22
EBL	2	3200	357	.11*	425	.13*
EBT	3	4800	1444	.34	1288	.30
EBR	0	0	176		154	
WBL	2	3200	154	.05	156	.05
WBT	2	3200	985	.31*	1276	.40*
WBR	1	1600	54	.03	96	.06
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.10

6. Van Ness & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	110	.07*	137	.09*
NBT	2	3200	494	.15	717	.22
NBR	1	1600	138	.09	267	.17
SBL	1	1600	181	.11	101	.06
SBT	2	3200	637	.29*	563	.23*
SBR	0	0	299		171	
EBL	1	1600	137	.09	179	.11
EBT	2	3200	1396	.48*	1655	.57*
EBR	0	0	140		160	
WBL	1	1600	154	.10*	71	.04*
WBT	2	3200	765	.26	1265	.44
WBR	0	0	75		142	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.04		1.03

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	110	.07*	137	.09*
NBT	2	3200	494	.15	717	.22
NBR	1	1600	138	.09	267	.17
SBL	1	1600	181	.11	101	.06
SBT	2	3200	637	.29*	563	.23*
SBR	0	0	304		171	
EBL	1	1600	137	.09	184	.12
EBT	2	3200	1395	.48*	1703	.58*
EBR	0	0	140		160	
WBL	1	1600	154	.10*	71	.04*
WBT	2	3200	813	.28	1265	.44
WBR	0	0	75		142	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.04		1.04

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	110	.07*	137	.09*
NBT	2	3200	494	.15	717	.22
NBR	1	1600	138	.09	267	.17
SBL	1	1600	181	.11	101	.06
SBT	2	3200	637	.29*	563	.23*
SBR	0	0	302		171	
EBL	1	1600	137	.09	182	.11
EBT	2	3200	1396	.48*	1681	.58*
EBR	0	0	140		160	
WBL	1	1600	154	.10*	71	.04*
WBT	2	3200	791	.27	1265	.44
WBR	0	0	75		142	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.04		1.04

7. Western & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	133	.04*	206	.06*
NBT	3	4800	1040	.22	1287	.27
NBR	1	1600	166	.10	216	.14
SBL	2	3200	130	.04	188	.06
SBT	3	4800	1202	.37*	1146	.32*
SBR	0	0	575		393	
EBL	2	3200	185	.06*	548	.17*
EBT	3	4800	788	.16	1276	.27
EBR	1	1600	459	.29	488	.31
WBL	2	3200	345	.11	265	.08
WBT	3	4800	1110	.24*	897	.23*
WBR	0	0	53		185	
Right Turn Adjustment			EBR	.07*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.88		.88

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	133	.04*	206	.06*
NBT	3	4800	1040	.22	1287	.27
NBR	1	1600	166	.10	216	.14
SBL	2	3200	130	.04	188	.06
SBT	3	4800	1202	.38*	1146	.32*
SBR	0	0	623	.39	393	
EBL	2	3200	185	.06*	548	.17*
EBT	3	4800	788	.16	1276	.27
EBR	1	1600	459	.29	488	.31
WBL	2	3200	345	.11	265	.08
WBT	3	4800	1110	.24*	897	.23*
WBR	0	0	53		185	
Right Turn Adjustment			EBR	.07*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.89		.88

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	133	.04*	206	.06*
NBT	3	4800	1040	.22	1287	.27
NBR	1	1600	166	.10	216	.14
SBL	2	3200	130	.04	188	.06
SBT	3	4800	1202	.38*	1146	.32*
SBR	0	0	601		393	
EBL	2	3200	185	.06*	548	.17*
EBT	3	4800	788	.16	1276	.27
EBR	1	1600	459	.29	488	.31
WBL	2	3200	345	.11	265	.08
WBT	3	4800	1110	.24*	897	.23*
WBR	0	0	53		185	
Right Turn Adjustment			EBR	.07*		
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.89		.88

8. Prairie & Del Amo

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	270	.17*	166	.10*
NBT	3	4800	1544	.32	1360	.28
NBR	1	1600	38	.02	32	.02
SBL	2	3200	249	.08	288	.09
SBT	3	4800	1195	.25*	1554	.32*
SBR	1	1600	387	.24	297	.19
EBL	2	3200	670	.21*	440	.14*
EBT	2	3200	303	.13	230	.13
EBR	0	0	112		179	
WBL	2	3200	17	.01	15	.00
WBT	2	3200	218	.07*	327	.10*
WBR	1	1600	185	.12	359	.22
Right Turn Adjustment					WBR	.01*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.80		.77

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	270	.17*	166	.10*
NBT	3	4800	1544	.32	1360	.28
NBR	1	1600	38	.02	32	.02
SBL	2	3200	249	.08	288	.09
SBT	3	4800	1195	.25*	1554	.32*
SBR	1	1600	387	.24	297	.19
EBL	2	3200	670	.21*	440	.14*
EBT	2	3200	303	.13	230	.13
EBR	0	0	112		179	
WBL	2	3200	17	.01	15	.00
WBT	2	3200	218	.07*	327	.10*
WBR	1	1600	185	.12	359	.22
Right Turn Adjustment					WBR	.01*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.80		.77

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	270	.17*	166	.10*
NBT	3	4800	1544	.32	1360	.28
NBR	1	1600	38	.02	32	.02
SBL	2	3200	249	.08	288	.09
SBT	3	4800	1195	.25*	1554	.32*
SBR	1	1600	387	.24	297	.19
EBL	2	3200	670	.21*	440	.14*
EBT	2	3200	303	.13	230	.13
EBR	0	0	112		179	
WBL	2	3200	17	.01	15	.00
WBT	2	3200	218	.07*	327	.10*
WBR	1	1600	185	.12	359	.22
Right Turn Adjustment					WBR	.01*
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.80		.77

9. Crenshaw & I-405 SB on/off

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	479	.30*	472	.29*
NBT	3	4800	1510	.31	2272	.47
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	1791	.52*	1720	.42*
SBR	0	0	720		304	
EBL	0.5		60		112	
EBT	0	3200	0	(.19)*	0	(.17)*
EBR	1.5		912		765	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.11		.98

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	479	.30*	472	.29*
NBT	3	4800	1510	.31	2310	.48
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	1791	.52*	1720	.42*
SBR	0	0	720		304	
EBL	0.5		60		112	
EBT	0	3200	0	(.20)*	0	(.17)*
EBR	1.5		945		765	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.12		.98

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	479	.30*	472	.29*
NBT	3	4800	1510	.31	2292	.48
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	3	4800	1791	.52*	1720	.42*
SBR	0	0	720		304	
EBL	0.5		60		112	
EBT	0	3200	0	(.20)*	0	(.17)*
EBR	1.5		930		765	
WBL	0	0	0		0	
WBT	0	0	0		0	
WBR	0	0	0		0	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.12		.98

10. Van Ness & Del Amo

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	85	.05*
NBT	2	3200	663	.24*	706	.26
NBR	0	0	95		125	
SBL	1	1600	48	.03*	59	.04
SBT	2	3200	630	.24	569	.25*
SBR	0	0	142		221	
EBL	1	1600	233	.15*	208	.13*
EBT	1	1600	269	.17	309	.19
EBR	1	1600	116	.07	34	.02
WBL	1	1600	137	.09	83	.05
WBT	1	1600	251	.22*	290	.23*
WBR	0	0	95		73	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.74		.76

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	85	.05*
NBT	2	3200	663	.24*	706	.26
NBR	0	0	95		125	
SBL	1	1600	48	.03*	59	.04
SBT	2	3200	630	.24	569	.25*
SBR	0	0	142		221	
EBL	1	1600	233	.15*	208	.13*
EBT	1	1600	269	.17	309	.19
EBR	1	1600	116	.07	34	.02
WBL	1	1600	137	.09	83	.05
WBT	1	1600	251	.22*	290	.23*
WBR	0	0	95		73	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.74		.76

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	29	.02	85	.05*
NBT	2	3200	663	.24*	706	.26
NBR	0	0	95		125	
SBL	1	1600	48	.03*	59	.04
SBT	2	3200	630	.24	569	.25*
SBR	0	0	142		221	
EBL	1	1600	233	.15*	208	.13*
EBT	1	1600	269	.17	309	.19
EBR	1	1600	116	.07	34	.02
WBL	1	1600	137	.09	83	.05
WBT	1	1600	251	.22*	290	.23*
WBR	0	0	95		73	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.74		.76

11. Western & Del Amo

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	116	.07*	67	.04*
NBT	3	4800	1005	.21	985	.21
NBR	0	0	7		23	
SBL	1	1600	49	.03	58	.04
SBT	3	4800	1185	.37*	1425	.36*
SBR	0	0	690	.43	307	
EBL	1	1600	243	.15*	490	.31*
EBT	1	1600	23	.01	73	.05
EBR	1	1600	84	.05	114	.07
WBL	0	0	24		26	
WBT	1	1600	112	.13*	20	.05*
WBR	0	0	71		40	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.82		.86

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	116	.07*	67	.04*
NBT	3	4800	1005	.21	985	.21
NBR	0	0	7		23	
SBL	1	1600	49	.03	58	.04
SBT	3	4800	1185	.37*	1425	.36*
SBR	0	0	690	.43	307	
EBL	1	1600	243	.15*	490	.31*
EBT	1	1600	23	.01	73	.05
EBR	1	1600	84	.05	114	.07
WBL	0	0	24		26	
WBT	1	1600	112	.13*	20	.05*
WBR	0	0	71		40	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.82		.86

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1600	116	.07*	67	.04*
NBT	3	4800	1005	.21	985	.21
NBR	0	0	7		23	
SBL	1	1600	49	.03	58	.04
SBT	3	4800	1185	.37*	1425	.36*
SBR	0	0	690	.43	307	
EBL	1	1600	243	.15*	490	.31*
EBT	1	1600	23	.01	73	.05
EBR	1	1600	84	.05	114	.07
WBL	0	0	24		26	
WBT	1	1600	112	.13*	20	.05*
WBR	0	0	71		40	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.82		.86

12. I-405 SB on/off & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	1277	.40*	1250	.39*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.05		.98

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		48	
WBT	2	3200	1325	.41*	1250	.41*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.06		1.00

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		26	
WBT	2	3200	1303	.41*	1250	.40*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.06		.99

12. I-405 SB on/off & 190th

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	2	3200	1277	.40*	1250	.39*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.05		.98

Existing+Project (Peak)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		48	
WBT	2	3200	1325	.41*	1250	.41*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.06		1.00

Existing+Project (Average)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		465		535	
SBT	0	3200	0	.20*	0	.18*
SBR	0.5		182		35	
EBL	1	1600	561	.35*	491	.31*
EBT	3	4800	991	.21	1975	.41
EBR	0	0	0		0	
WBL	0	0	0		26	
WBT	2	3200	1303	.41*	1250	.40*
WBR	1	1600	191	.12	354	.22
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				1.06		.99

13. Western & I-405 NB on/off

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12		2	
NBT	2	3200	982	.31*	1431	.45*
NBR	1	1600	314	.20	540	.34
SBL	1	1600	133	.08*	69	.04*
SBT	2	3200	962	.30	924	.29
SBR	0	0	8		1	
EBL	0	0	9	(.01)*	0	
EBT	1	1600	0	.01	0	.00
EBR	0	0	7		0	
WBL	1.5		1012		525	
WBT	0	3200	0	.43*	0	.23*
WBR	0.5		376		212	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.93		.82

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12		2	
NBT	2	3200	982	.31*	1431	.45*
NBR	1	1600	314	.20	540	.34
SBL	1	1600	133	.08*	69	.04*
SBT	2	3200	962	.30	924	.29
SBR	0	0	8		1	
EBL	0	0	9	(.01)*	0	
EBT	1	1600	0	.01	0	.00
EBR	0	0	7		0	
WBL	1.5		1060		525	
WBT	0	3200	0	.45*	0	.23*
WBR	0.5		376		212	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		.82

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	12		2	
NBT	2	3200	982	.31*	1431	.45*
NBR	1	1600	314	.20	540	.34
SBL	1	1600	133	.08*	69	.04*
SBT	2	3200	962	.30	924	.29
SBR	0	0	8		1	
EBL	0	0	9	(.01)*	0	
EBT	1	1600	0	.01	0	.00
EBR	0	0	7		0	
WBL	1.5		1038		525	
WBT	0	3200	0	.44*	0	.23*
WBR	0.5		376		212	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.94		.82

14. Prairie/Madrona & Torrance

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	162	.05	159	.05*
NBT	3	4800	1034	.26*	1119	.27
NBR	0	0	210		175	
SBL	2	3200	182	.06*	179	.06
SBT	3	4800	1013	.21	1384	.29*
SBR	1	1600	259	.16	248	.16
EBL	2	3200	248	.08	375	.12*
EBT	2	3200	1222	.38*	908	.28
EBR	1	1600	104	.07	223	.14
WBL	2	3200	139	.04*	281	.09
WBT	3	4800	838	.21	1174	.27*
WBR	0	0	150		138	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.84		.83

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	162	.05	159	.05*
NBT	3	4800	1034	.26*	1119	.27
NBR	0	0	210		175	
SBL	2	3200	182	.06*	179	.06
SBT	3	4800	1013	.21	1384	.29*
SBR	1	1600	259	.16	248	.16
EBL	2	3200	248	.08	375	.12*
EBT	2	3200	1222	.38*	908	.28
EBR	1	1600	104	.07	223	.14
WBL	2	3200	139	.04*	281	.09
WBT	3	4800	838	.21	1174	.27*
WBR	0	0	150		138	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.84		.83

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	162	.05	159	.05*
NBT	3	4800	1034	.26*	1119	.27
NBR	0	0	210		175	
SBL	2	3200	182	.06*	179	.06
SBT	3	4800	1013	.21	1384	.29*
SBR	1	1600	259	.16	248	.16
EBL	2	3200	248	.08	375	.12*
EBT	2	3200	1222	.38*	908	.28
EBR	1	1600	104	.07	223	.14
WBL	2	3200	139	.04*	281	.09
WBT	3	4800	838	.21	1174	.27*
WBR	0	0	150		138	
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.84		.83

15. Crenshaw & Torrance

Existing

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	193	.06	194	.06*
NBT	3	4800	1704	.39*	1487	.34
NBR	0	0	158		136	
SBL	2	3200	113	.04*	186	.06
SBT	3	4800	1486	.35	1744	.40*
SBR	0	0	181		195	
EBL	2	3200	250	.08	161	.05
EBT	2	3200	1215	.38*	1253	.39*
EBR	1	1600	91	.06	150	.09
WBL	2	3200	123	.04*	164	.05*
WBT	2	3200	1037	.32	1151	.36
WBR	1	1600	181	.11	87	.05
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.00

Existing+Project (Peak #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	193	.06	194	.06*
NBT	3	4800	1707	.39*	1487	.34
NBR	0	0	158		136	
SBL	2	3200	113	.04*	186	.06
SBT	3	4800	1486	.35	1747	.40*
SBR	0	0	181		195	
EBL	2	3200	250	.08	161	.05
EBT	2	3200	1215	.38*	1253	.39*
EBR	1	1600	91	.06	150	.09
WBL	2	3200	123	.04*	164	.05*
WBT	2	3200	1037	.32	1151	.36
WBR	1	1600	181	.11	87	.05
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.00

Exisitng+Project (Ave #Workers)

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3200	193	.06	194	.06*
NBT	3	4800	1706	.39*	1487	.34
NBR	0	0	158		136	
SBL	2	3200	113	.04*	186	.06
SBT	3	4800	1486	.35	1746	.40*
SBR	0	0	181		195	
EBL	2	3200	250	.08	161	.05
EBT	2	3200	1215	.38*	1253	.39*
EBR	1	1600	91	.06	150	.09
WBL	2	3200	123	.04*	164	.05*
WBT	2	3200	1037	.32	1151	.36
WBR	1	1600	181	.11	87	.05
Clearance Interval				.10*		.10*
TOTAL CAPACITY UTILIZATION				.95		1.00