I-5 North Coast
HOV/Managed Lanes Project

Technical Report No. 4
Existing Conditions Traffic Analysis

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Table of Contents

1.0 Introduction 1
1.1 Study Area 1
1.2 Report Organization 2
2.0 Methodology and Standards of Analysis 5
2.1 Intersection Operations 5
2.2 Ramp Intersection Capacity Analysis 6
2.3 Ramp Metering Analysis 6
2.4 Arterial Capacity Analysis 7
3.0 Existing Network Characteristics and Traffic Data 9
3.1 Data Collection 9
3.2 Existing Intersection Lane Configurations and Traffic Counts 9
3.3 Metered On-Ramp Characteristics and Lane Configurations 9
4.0 Existing Network Performance 11
4.1 DAR Area of Influence Intersections 11
4.2 Other Interchanges and Adjacent Intersections within the North Coast Corridor . 14
4.3 Ramp Intersection Capacity Analysis 16
4.4 Ramp Metering 18
4.5 Arterial Capacity Analysis 21

Appendix 1: Existing Conditions Data Collection

Appendix 2: Existing DAR Area of Influence Intersection Lane Configurations and Peak Hour Traffic Volumes

Appendix 3: Existing Intersection Lane Configurations and Peak Hour Traffic Volumes for Other Interchanges within the I-5 North Coast Corridor

Appendix 4: Existing Intersecting Lane Volume (ILV) Work Sheets

1.0 Introduction

The Existing Conditions Traffic Analysis is part of the I-5 North Coast Traffic Forecasting and Analysis Study, and the Direct Access Ramp Local Circulation System Impact Study. This report presents the Existing Conditions scenario for the I-5 North Coast Traffic Forecasting and Analysis Study. The report also includes the Existing Conditions analysis for potential direct access ramps (DARs) to proposed managed lanes on I-5 between the City of Oceanside and the City of San Diego.

The Existing Conditions analysis provides a current baseline of data and information for understanding the future effect of an improved freeway and direct access ramps on the arterials and intersections within the I-5 corridor. The purpose of the Local Circulation System Impact Study is to identify how the DARs will affect local arterials and intersections in areas immediately adjacent to the proposed DAR freeway access points, as well as establish future year conditions with the improved I-5 North Coast Corridor. This report documents Existing Conditions including data collection and analysis for the roadway segments and key intersections within the study area adjacent to DARs, along with all freeway interchanges along I-5 corridor from the I-805 merge to Camp Pendleton.

1.1 Study Area

The study area consists of all interchanges along I-5 corridor between the I-805 merge and Camp Pendleton, with special attention to the intersections potentially influenced by each of the five proposed Direct Access Ramps (DARs). Proposed DAR locations include the following:

- Oceanside Boulevard (City of Oceanside)
- Cannon Road (City of Carlsbad)
- Manchester Avenue (City of Encinitas)
- Lusk Boulevard (City of San Diego)
- Voigt Drive (City of San Diego)

Direct Access Ramp Areas of Influence

For each DAR location, consideration was given to determining the area of influence on the local circulation system. The DAR area of influence analysis established the extent of potentially affected roadway segments and intersections in the vicinity of each of the proposed locations. These roadway segments and intersections became the focus of the subsequent local area traffic impact assessment.

Application of the SANDAG Series 10 Transportation Model provided the basis for identifying the area of influence. Forecast year 2030 scenarios were modeled both with and without the proposed DAR locations. The area of influence was based upon an average change of 500 vehicles per day or greater on individual segments with the local arterial circulation system with the implementation of the DARs. The area of influence was then used along with local jurisdiction and Caltrans staff recommendations to define the project study area for the Local Circulation System Impact Study. The methodology utilized to identify the areas of influence is discussed in more detail in Technical Report #1 – Area of Influence Analysis (Wilson & Company, August 2004).

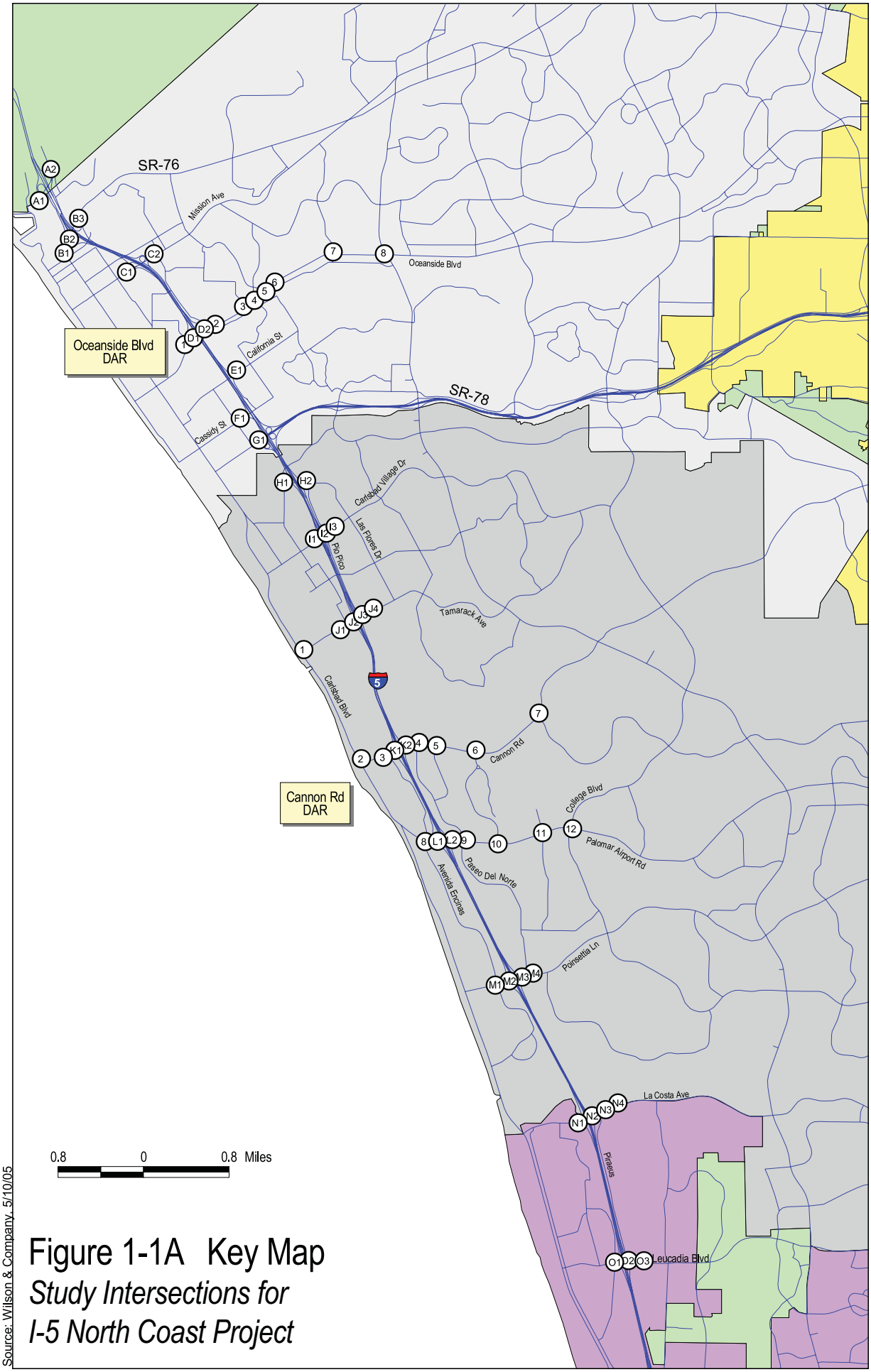
The DAR areas of influence are shown in **Figures 1-1A and 1-1B.**

Other Interchanges within the I-5 North Coast Corridor

In addition to the DAR areas of influence, the Existing Conditions Report includes all existing I-5 interchange ramp intersections within the study area. The analysis of these locations includes the ramp intersections with the cross streets and where appropriate, the adjacent upstream intersections (either direction) from the interchange. These Other interchanges within the I-5 North Coast corridor are also shown in Figures 1-1A and 1-1B.

1.2 Report Organization

Following this introduction section, **Section 2.0** describes the methodologies and standards that were used to analyze existing traffic conditions. **Section 3.0** summarizes existing traffic data and roadway characteristics, and **Section 4.0** documents the performance of the various study area interchange ramps and intersections under existing conditions. The Appendices includes specification of traffic data collection activities, existing intersection lane configurations and peak hours traffic counts for both DAR areas of influence as well as the other interchanges within the I-5 North Coast corridor, and the Existing Intersecting Lane Volume (ILV) Analysis worksheets.



Source: Wilson & Company, 5/10/05

Figure 1-1A Key Map

Study Intersections for I-5 North Coast Project

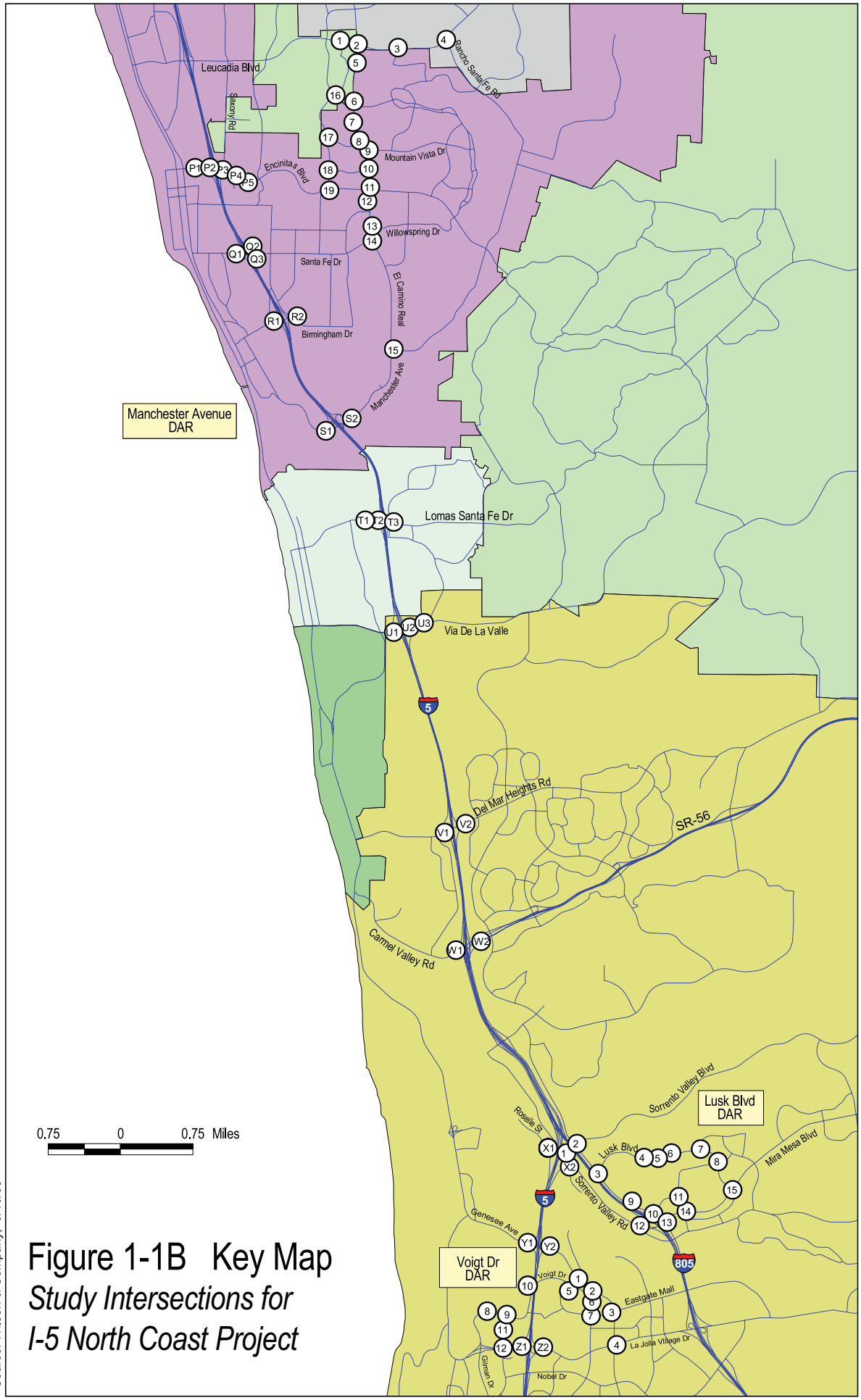


Figure 1-1B Key Map

Study Intersections for I-5 North Coast Project

Source: Wilson & Company, 5/10/05

2.0 Methodology and Standards of Analysis

A key objective of the I-5 North Coast Traffic Analysis and the Local Circulation System Impact Study is to develop a uniform set of methodologies and standards to be utilized in the project's traffic impact assessment. To achieve this goal, an approach consistent with the procedures detailed in *Appendix D (Traffic Impact Studies Guidelines) of the 2002 Congestion Management Program Update* (CMP), dated January, 2003 were applied. The guidelines were prepared under the direction of the San Diego Traffic Engineers' Council (SANTEC) and the Institute of Transportation Engineers (ITE – California Border Section).

As stated in the guidelines, the purpose of a traffic impact study is to forecast, describe and analyze the traffic effects a development would have on the existing and future circulation infrastructure. In this particular application the subject of the study is not a traditional development project but rather the potential implementation of multiple DARs along the I-5 corridor. The construction of DAR facilities will have the effect of altering future traffic patterns in the immediate vicinity of the proposed interchange locations, thus creating the potential for localized traffic impacts.

The following sections summarize key aspects of the traffic analysis methodologies and threshold standards that will be utilized in this study, and specifically applied in the existing conditions analysis.

2.1 Intersection Operations

The existing conditions assessment of the DAR areas of influence and other interchanges within the I-5 North Coast corridor was conducted using SYNCHRO[1] and its associated simulation tool SimTraffic. These tools are widely recognized as reliable operations and simulation analysis procedures for signalized and unsignalized intersections, interchange areas, and arterials. SYNCHRO uses the Highway Capacity Manual (HCM) 2000[2] signalized intersection methodology to generate a measure of effectiveness called level of service (LOS).

SYNCHRO/SimTraffic is particularly useful in modeling the flow of traffic through a network of intersections, while accounting for the impacts of adjacent intersection operations. This is beneficial in analyzing closely spaced signalized intersections where traffic flow is significantly affected by signal coordination and/or vehicle spillback from the adjacent intersections. Since these characteristics are prevalent at the I-5 interchange intersections as well as the adjacent nearby surface street intersections, the SYNCHRO/SimTraffic software was determined to be appropriate for this study.

A SYNCHRO network model was developed for each of the DAR areas of influence and other locations. Network inputs included specification and dimension of the roadway links comprising the network, intersection geometrics, peak hour traffic volumes and flow characteristics, and signal control parameters.

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[1] SYNCHRO/SimTrafffic v6 (Build 612) (Windows 95/98/NT/2000), Copyright 1993-2003 by Trafficware.

[2] Highway Capacity Manual 2000, Transportation Research Board, National Research Council, National Academy of Sciences, 2000

The measure of effectiveness for the analyses is the overall intersection control delay. The LOS standards are different for signalized intersections versus unsignalized intersections. **Table 2.1** shows the intersection standards for both signalized intersections and unsignalized intersections. The threshold value for intersections in this analysis is LOS D. Consistent with 2002 SANDAG CMP standards[3], any intersection at or above LOS D is considered acceptable, while intersections operating at or over capacity (LOS E or F) are unacceptable and called out in the analysis.

Table 2.1
Level of Service Standards for Signalized and Unsignalized Intersections

LOS*	Signalized Intersection Control Delay (s/veh)	Unsignalized Intersection Control Delay (s/veh)
A	≤ 10	≤ 10
B	10-20	10-15
C	20-35	15-25
D	35-55	25-35
E	55-80	35-50
F	≥80	≥50

Source: Highway Capacity Manual 2000
**LOS Threshold Value for the analysis is LOS D*

2.2 Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized intersections at I-5 freeway ramps were analyzed using the Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the *Caltrans Highway Design Manual* (HDM), 5th Edition. The ILV analysis estimates the capacity of signalized intersections by categorizing the intersections as being under capacity, at capacity, or over capacity. The ILV analysis also provides a comparison of the signalized intersections capacity results as generated by the HCM methodology. **Table 2.2** identifies the three capacity thresholds (under, at, or over capacity) in terms of intersecting lane volumes per hour (ILV/hr) and provides a description of each of the three thresholds.

2.3 Ramp Metering Analysis

Under current year 2005 conditions, there are 46 ramp metering locations within the project study area. These locations require a special methodology to determine the effect of ramp metering queuing and delay impacts on the adjacent ramp intersections and the associated approach lanes.

[3] Some jurisdictions may have different threshold standards other than the one used for this analysis.

TABLE 2.2
ILV Intersection Capacity Thresholds

ILV/hr	Description
<1200: (Under Capacity)	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1200-1500: (At Capacity)	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
>1500: (Over Capacity)	Stop-and-go operation with severe delay and heavy congestion. Traffic volume is limited by maximum discharges rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual 5th Edition, Topic 406

Each ramp meter has a minimum and maximum discharge flow rate determined by Caltrans depending upon the freeway mainline operations throughout the peak hour. After consultation with Caltrans staff, an average ramp meter flow rate (for each peak hour) was used in the analysis of existing conditions. Section 3.3 contains more detailed information on the ramp metering rate assumptions.

In addition to general purpose lanes, HOV lanes exist at 29 of the 46 interchange ramp meter locations under analysis, with HOV lanes metered at the same rate as the general purpose lanes. In the analysis, the HOV lane and general purpose lanes were considered separately for determining the effects of the queuing on the adjacent intersections and arterial system.

The ramp metering analysis described in *Appendix D (Traffic Impact Studies Guidelines) of the 2002 Congestion Management Program Update* was used for this analysis. The analysis calculates the excess demand at a ramp meter (given an assumed ramp metering rate) and yields a value for delay (minutes) and queue length (feet). The queue length is a single lane of vehicles extending from the ramp meter signal to the back of the queue. Queues over 5000 feet (2500 feet in both directions) are not likely to occur, given that traffic will begin to divert from the area as a result of the heavily congested conditions. For this analysis, excessive delay values over 15 minutes are shown in two groups. The first group is "15-25 minutes" indicating a queue that is building beyond acceptable Caltrans limits. The second group is "> 25 minutes" indicating a delay value that is likely to result in diverted traffic away from the interchange area.

This analysis assumed that the resulting queues consist of vehicles accessing the ramp and does not assume any additional delays or queues developing as a result of signal delays, platooning, or as a result of peaking characteristics during the peak hour itself.

2.4 Arterial Capacity Analysis

The capacity of major roadways in the study area was evaluated using the methodology described in *Appendix D (Traffic Impact Studies Guidelines) of the 2002 Congestion Management Program Update*, dated January, 2003. **Table 2.3** reproduces the capacity thresholds identified in the CMP.

Table 2.3
All-Day Capacity Thresholds in CMP

Street Classification	Number of Lanes	Vehicles per Day*
Expressway	6	70,000
Prime Arterial	6	55,000
Major Arterial	6	45,000
Major Arterial	4	35,000
Secondary Arterial/Collector	4	25,000
Collector – no center turn lane	4	13,000
Collector – continuous left turn lane	2	13,000
Collector – no fronting property	2	9,000

Source: Table D-2, Appendix D (Traffic Impact Studies Guidelines) of the 2002 Congestion Management Program Update

A review of the local jurisdictions' general plans and existing classifications indicated that all existing roadway cross-sections were not adequately covered by the thresholds shown in Table 2.3. Therefore, a modified set of thresholds were developed based upon the CMP values, as displayed in **Table 2.4**.

The existing average daily traffic volume for each roadway segment in the project area was collected and compared to the thresholds in Table 2.4. Average daily traffic volumes exceeding the thresholds were identified as over capacity (see Section 4.0 Existing Network Performance).

Table 2.4
All-Day Capacity Thresholds for Major Roadways in Analysis

Street Classification	Number of Lanes	Vehicles per Day
Prime Arterial	2	18,000
Prime Arterial	4	36,000
Prime Arterial	6	55,000
Major Arterial	2	16,000
Major Arterial	4	35,000
Major Arterial	6	45,000
Secondary Arterial	2	12,000
Secondary Arterial	4	25,000

Source: Table D-2, Appendix D (Traffic Impact Studies Guidelines) of the 2002 Congestion Management Program Update; Wilson & Company June 2005

3.0 Existing Network Characteristics and Traffic Data

This chapter presents existing network characteristics and traffic data for the five DAR areas of influence, as well as the other interchanges along the North Coast corridor and adjacent intersections. The information collected for this effort includes the existing intersection lane configurations, AM/PM peak hour traffic volumes, and current signal timing plans.

3.1 Data Collection

Existing lane configuration data was obtained through field reviews conducted in July 2004. Daily roadway segment and AM/PM peak hour intersection turn movements were solicited from local jurisdiction traffic engineers and consultants. Peak hour (AM and PM) turn movements for 35 of the 74 intersections within the area of influence were provided by agencies, local jurisdictions or their consultants. In the remaining cases where current existing traffic counts were not available, data was collected by Southland Car Counters, Inc. during May/June 2004. More detailed information regarding the existing conditions data collection effort can be found in **Appendix 1.**

New freeway ramp volume counts were conducted by Caltrans in August 2005 for a majority of the ramp facilities within the I-5 North Coast corridor. Previously collected existing conditions turning movement volumes and the resulting ramp volumes were compared to the new Caltrans ramp counts and resulting ramp volume differences were identified. Based on these observations, Wilson & Company was directed to adjust the existing AM/PM peak hour intersection turn movements, where necessary, to match the updated ramp volumes provided by Caltrans. AM/PM peak hour turning movement volumes at the adjacent intersections were also refined/adjusted to maintain a balance with the adjusted interchange ramp volumes.

3.2 Existing Intersection Lane Configurations and Traffic Counts

Appendix 2 documents the existing lane configurations and the existing AM/PM peak hour volumes for the study intersections within the five DAR areas of influence. **Appendix 3** provides similar information for the other interchanges within the I-5 North Coast corridor and adjacent intersections ramp location.

3.3 Metered On-Ramp Characteristics and Lane Configurations

Ramp meter rates and lane configurations for all study area interchanges were provided by Caltrans. **Table 3.1** displays the average ramp meter cycle lengths, as well as the ramp meter flow rate in both the AM and PM peak hours for the study interchanges that are currently metered. Table 3.1 also displays the lane configurations and number of vehicles released per cycle at each interchange.

Table 3.1
Existing Metered Ramp Lane Configurations and Metering Rates

Location	Caltrans ID	# Lanes	Car Pool Lane	Cars Per Green	AM Average Cycle Length (sec.)	AM Average Meter Rate (Veh/hr)	PM Average Cycle Length (sec.)	PM Average Meter Rate (Veh/hr)
Cannon Rd. to NB 5	212	3	left	2			17.4	1239
Palomar Airport Rd. to NB 5	228	3	left	2			10.8	2009
Poinsettia Ln. to NB 5	225	2	left	2			9.2	1572
La Costa Ave. to NB 5	214	2	left	2			9.7	1488
Leucadia Blvd. to NB 5	207	2	left	1			8.0	905
Manchester Ave. to NB 5	133	1	no	1			9.1	397
Lomas Santa Fe Dr. to NB 5	132	2	left	2			8.8	1639
Via de la Valle WB to NB 5	131	2	left	1			7.9	913
Via de la Valle EB to NB 5	130	2	no	1			8.1	888
Del Mar Heights Rd. to NB 5	129	2	no	2			9.1	1589
Carmel Valley Rd. to NB 5	85	2	left	2			8.6	1673
La Jolla Village Dr. EB to NB 5	246	2	left	2			8.8	1639
La Jolla Village Dr. WB to NB 5	218	1	no	1			7.7	465
Mission Ave. WB to SB 5	220	2	left	2	8.8	1639		
Mission Ave. EB to SB 5	221	1	no	2	8.8	820		
Oceanside Blvd. To SB 5	98	2	left	2	8.6	1673		
Cassidy Ave. to SB 5	99	1	no	2	9.7	744		
Las Flores Dr. to SB 5	100	1	no	1	8.1	444		
Carlsbad Village Dr. to SB 5	211	1	no	2	8.9	811		
Tamarack Ave. to SB 5	158	2	left	2	9.5	1522		
Cannon Rd. to SB 5	213	3	left	2	13.2	1631	13.2	1631
Palomar Airport Rd. WB to SB 5	227	2	left	2	9.4	1539	9.6	1505
Palomar Airport Rd. EB to SB 5	226	2	left	1	7.9	913		
Poinsettia Ln. to SB 5	224	3	left	2	15.5	1397	14.4	1498
La Costa Ave. to SB 5	249	3	left	2	15.8	1365	15.8	1365
Leucadia Blvd. to SB 5	248	3	left	1	18.2	594	18.2	594
Encinitas Blvd. to SB 5	111	2	left	2	9.7	1488	9.7	1488
Santa Fe Rd. to SB 5	110	2	left	1	8.0	897	8.1	888
Birmingham Dr. to SB 5	109	2	no	2	9.7	1488	9.7	1488
Manchester Ave. to SB 5	108	2	no	2	9.7	1488	9.7	1488
Lomas Santa Fe Dr. to SB 5	107	2	left	2	9.7	1488	9.7	1488
Via de la Valle EB to SB 5	106	2	left	2	9.4	1539	9.7	1488
Via de la Valle WB to SB 5	105	2	no	1	7.9	913	7.9	913
Del Mar Heights Rd. WB to SB 5	82	2	no	1	7.7	939	7.7	939
Del Mar Heights Rd. EB to SB 5	83	2	left	2	9.7	1488	9.7	1488
Carmel Valley Rd. to SB 5	84	2	no	2	8.4	1707		
56 WB connector to 5 SB	189	2	no	2	8.7	1656		
La Jolla Village Dr. WB to SB 5	123	2	no	2			8.8	1639
La Jolla Village Dr. EB to SB 5	122	2	left	1			7.9	913
Vista Sorrento Pkwy. to NB 805	208	3	left	1			13.2	817
La Jolla Village Dr. to NB 805	170	2	right	1	7.2	997		
Miramar Rd. to NB 805	171	2	left	1	7.4	972		
Mira Mesa Blvd. to SB 805	153	3	no	2			7.9	2736
Sorrento Valley Rd. to SB 805	154	2	left	2			9.6	1505
Miramar Rd. WB to SB 805	73	2	no	2			9.6	1505
La Jolla Village Dr. EB to SB 805	72	2	left	2			9.1	1589

Source: Caltrans 2005, Average rates estimated by Wilson & Company, April 2005

4.0 Existing Network Performance

This section documents the performance of intersection and arterial roadway segments within the five DAR areas of influence, along with the other interchanges within the I-5 North Coast corridor and their adjacent interchanges under existing conditions.

4.1 DAR Area of Influence Intersections

Table 4.1 displays the overall intersection delay[1] and Level of Service[2] in both the AM and PM peak hours for all of the intersections within the five DARs areas of influence.

Table 4.1
Existing Intersection Level of Service
DAR Influence Area Intersections

Interchange	Intersection ID	Key Intersection	AM		PM	
			Delay (sec.)	LOS	Delay (sec.)	LOS
Oceanside Blvd	1	Vine St / Oceanside Blvd	16.3	B	36.5	D
	D1	I-5 SB Ramps / Oceanside Blvd	40.4	D	41.8	D
	D2	I-5 NB Ramps/ Oceanside Blvd	22.3	C	36.1	D
	2	State Tree / Oceanside Blvd	8.3	A	16.7	B
	3	Greenbrier Dr / Oceanside Blvd	5.3	A	8.7	A
	4	Crouch St / Oceanside Blvd	24.2	C	35.0	C
	5	N. Canyon Dr / Oceanside Blvd **	2.4	A	52.4	E
	6	Industry St / Oceanside Blvd **	2.1	A	3.5	A
	7	Foussat St / Oceanside Blvd	8.5	A	16.2	B
	8	El Camino Real / Oceanside Blvd	35.4	D	104.3	F
Cannon Rd	1	Tamarack Ave / Carlsbad Blvd	12.3	B	9.0	A
	2	Carlsbad Blvd / Cannon Rd	12.4	B	74.5	E
	3	Avenida Encinas / Cannon Rd	35.7	D	112.2	F
	K1	I-5 SB Ramps / Cannon Rd	27.1	C	17.0	B
	K2	I-5 NB Ramps / Cannon Rd	25.2	C	34.2	C
	4	Paseo Del Norte / Cannon Rd	13.5	B	15.2	B
	5	Cannon Rd / Car Country Dr	7.7	A	15.0	B
	6	Lego Dr / Cannon Rd	7.0	A	14.7	B
	7	Faraday Ave / Cannon Rd.	34.0	C	34.6	C
	8	Avenida Encinas / Palomar Airport Rd	52.5	D	88.7	F
	L1	I-5 SB Ramps / Palomar Airport Rd	27.3	C	10.9	B
	L2	I-5 NB Ramps / Palomar Airport Rd	68.2	E	50.3	D
	9	Paseo del Norte / Palomar Airport Rd	58.4	E	116.8	F
	10	Armada Dr / Palomar Airport Rd	83.4	F	70.2	E

[1] Some jurisdictions may use different LOS calculation methods (e.g. Traffix, ICU vs HCM) which may produce results different from those presented here.

[2] Overall intersection delay and Level of Service does not include the effect of queuing from a downstream ramp meter.

Interchange	Intersection ID	Key Intersection	AM		PM	
			Delay (sec.)	LOS	Delay (sec.)	LOS
Cannon Rd	11	Hidden Valley Rd / Palomar Airport Rd	26.1	C	37.4	D
	12	College Blvd / Palomar Airport Rd.	54.8	D	51.2	D
Manchester Ave	1	Leucadia Blvd / Town Center Dr	18.8	B	28.8	C
	2	El Camino Real / Olivenhain Rd	39.3	D	86.5	F
	3	Amargosa Drive / Olivenhain Rd	33.3	C	16.0	B
	4	Rancho Santa Fe Rd / Olivenhain Rd	5.7	A	6.0	A
	5	El Camino Real / Town Center Dr	16.4	B	26.1	C
	6	El Camino Real / Garden View Rd	23.0	C	30.3	C
	7	El Camino Real / Shopping Center Drwy	7.0	A	12.5	B
	8	El Camino Real / Via Montoro	14.7	B	14.2	B
	9	El Camino Real / Mountain Vista Dr	19.7	B	35.1	D
	10	El Camino Real / Via Moleno	14.5	B	32.9	C
	11	El Camino Real / Encinitas Blvd	49.3	D	144.1	F
	12	El Camino Real / De La Plaza Drwy	15.2	B	12.4	B
	13	El Camino Real / Willowspring Dr **	24.8	C	16.8	B
	14	El Camino Real / Santa Fe Dr	19.2	B	13.0	B
	15	El Camino Real / Manchester Ave	19.3	B	14.4	B
	S1	I-5 SB Ramps / Manchester Ave *	23.0	C	20.5	C
	S2	I-5 NB Ramps / Manchester Ave	24.2	C	30.2	C
	16	Garden View Road / Via Cantabria	15.7	B	23.0	C
	17	Via Cantebria / Via Montoro	5.8	A	11.1	B
	18	Via Cantebria / Via Molena	5.9	A	7.0	A
	19	Via Cantebria / Encinitas Blvd	34.3	C	21.7	C
Lusk Blvd	X1	Roselle St / I-5 SB On Ramp **	-	B	-	D
	X2	Roselle St / I-5 NB Off Ramp*	162.2	F	111.2	F
	1	Rosslle St / Sorrento Valley Blvd	100.9	F	63.8	E
	2	Sorrento Valley Rd / Sorrento Valley Blvd	285.0	F	298.4	F
	3	Vista Sorrento Pkwy / Sorrento Valley Blvd	47.0	D	119.0	F
	4	Vista Sorrento Parkway / Lusk Blvd	10.5	B	33.8	C
	5	Wateridge Circle (west) / Lusk Blvd	8.2	A	13.0	B
	6	Telesis Court / Lusk Blvd	6.0	A	6.6	A
	7	Wateridge Circle (east) / Lusk Blvd	4.4	A	2.8	A
	8	Pacific Center Blvd / Lusk Blvd	11.0	B	17.9	B
	9	Lusk Blvd / Barnes Canyon Rd	17.3	B	15.8	B
	10	Vista Sorrento Pkwy / Director's Pl	6.0	A	9.0	A
	11	Vista Sorrento Pkwy / I-805 NB Ramps	33.9	C	45.9	D
	12	Mira Sorrento Pl / Scranton Rd **	1.2	A	2.1	A
	13	Sorrento Valley Rd / I-805 SB Off Ramp	21.9	C	12.2	B
	14	Vista Sorrento Pkwy /I-805/ Mira Mesa Blvd	247.9	F	85.1	F
	15	Scranton Rd / Mira Mesa Blvd	110.2	F	603.9	F
	16	Lusk Blvd / Mira Mesa Blvd	20.3	C	58.6	E

Interchange	Intersection ID	Key Intersection	AM		PM	
			Delay (sec.)	LOS	Delay (sec.)	LOS
Voigt Rd	Y1	I-5 SB Ramps / Genesee Ave	81.9	F	58.4	E
	Y2	I-5 NB Ramps / Genesee Ave	135.5	F	65.0	E
	1	Genesee Ave / Campus Point	37.5	D	91.8	F
	2	Genesee Ave / Regents Rd	21.7	C	6.5	A
	3	Genesee Ave / Eastgate Mall	47.7	D	42.4	D
	4	Genesee Ave / La Jolla Village Dr	47.1	D	63.1	E
	5	Campus Point Dr / Voigt Dr	18.7	B	20.8	C
	6	Regents Rd / Health Science Dr	16.7	B	21.2	C
	7	Regents Rd / Eastgate Mall	26.8	C	21.7	C
	8	Regents Rd / La Jolla Village Dr	35.7	D	46.7	D
	9	Gilman Dr / Meyers Dr *	-	A	-	A
	10	Villa La Jolla / Gilman Dr	19.9	B	33.4	C
	11	Gilman Dr / Voight *	-	C	-	D
	12	Villa La Jolla / Veterans Affairs Medical Ctr	18.8	B	11.8	B
	13	Villa La Jolla / La Jolla Village Dr	69.9	E	58.3	E
	Z1	I-5 SB Ramps / La Jolla Village Dr	17.5	B	13.9	B
	Z2	I-5 NB Ramps / La Jolla Village Dr	26.9	C	14.8	B

Source: Wilson & Company, January 2006
* *Four-way Stop Control*
** *Two-way Stop Control*
\- *Intersections in which a delay could not be computed due to HCM constraints*

As shown above, the following DAR area of influence intersections are at or over capacity (LOS E or F) in either the AM or PM peak hour under existing conditions:

Oceanside Boulevard DAR

1. N. Canyon Dr / Oceanside Blvd ..... PM
2. El Camino Real / Oceanside Blvd ..... PM

Cannon Road DAR

3. Carlsbad Blvd / Cannon Rd ..... PM
4. Avenida Encinas / Cannon Rd ..... PM
5. Avenida Encinas / Palomar Airport Rd ..... PM
6. I-5 NB Ramps / Palomar Airport Rd .....AM
7. Paseo del Norte / Palomar Airport Rd. .....AM/PM
8. Armada Dr / Palomar Airport Rd.....AM/PM

Manchester Avenue DAR

9. El Camino Real / Olivenhain Rd ..... PM
10. El Camino Real / Encinitas Blvd ..... PM

Lusk Boulevard DAR
11. Roselle St / I-5 NB Off Ramp.....AM/PM
12. Roselle St / Sorrento Valley Blvd.....AM/PM
13. Sorrento Valley Rd / Sorrento Valley Blvd.....AM/PM
14. Vista Sorrento Pkwy / Sorrento Valley Blvd..... PM
15. Vista Sorrento Pkwy /I-805/ Mira Mesa Blvd.....AM/PM
16. Scranton Rd / Mira Mesa Blvd .....AM/PM
17. Lusk Blvd / Mira Mesa Blvd. ..... PM

Voigt Drive DAR
18. I-5 SB Ramps / Genesee Ave.....AM/PM
19. I-5 NB Ramps / Genesee Ave.....AM/PM
20. Genesee Ave / Campus Point..... PM
21. Genesee Ave / La Jolla Village Dr ..... PM
22. Villa La Jolla / La Jolla Village Dr.....AM/PM

4.2 Other Interchanges and Adjacent Intersections within the North Coast Corridor

Table 4.2 displays the overall intersection delay and Level of Service[3] in both the AM and PM peak for all of the other interchanges within the I-5 North Coast corridor and adjacent intersections.

Table 4.2
Existing Intersection Level of Service
Other Interchanges and Adjacent Intersections

Interchange	Intersection ID	Key Intersection	AM		PM	
			Delay (sec.)	LOS	Delay (sec.)	LOS
Harbor Dr	A1	I-5 SB Ramps / Harbor Dr	17.8	B	49.2	D
	A2	I-5 NB On-Ramps/ Harbor Dr	12.6	B	7.5	A
SR-76	B1	North Coast Highway / Hill St	13.0	B	22.6	C
	B2	I-5 SB Ramps / SR-76	6.2	A	5.1	A
	B3	I-5 NB Ramps / SR-76	10.2	B	8.3	A
Mission Ave	C1	I-5 SB Ramps / Mission Ave	16.4	B	29.7	C
	C2	I-5 NB Ramps/ Mission Ave**	-	A	-	A
California	E1	I-5 NB Ramps / California St *	8.3	A	8.3	A
Cassidy St	F1	I-5 SB Ramps / Cassidy St **	-	A	-	A
SR-78	G1	I-5 SB On-Ramps / SR-78	24.4	C	48.9	D

[3] Overall intersection delay and level of service does not include the effect of queuing from a downstream ramp meter.

Interchange	Intersection ID	Key Intersection	AM Delay (sec.)	AM LOS	PM Delay (sec.)	PM LOS
Las Flores Dr	H1	I-5 SB Ramps / Las Flores Dr **	4.3	A	12.5	B
	H2	I-5 NB Ramps/ Las Flores Dr **	23.9	C	-	F
Carlsbad Village Dr	I1	I-5 SB Ramps / Carlsbad Village Dr	16.8	B	20.6	C
	I2	I-5 NB Ramps/ Carlsbad Village Dr	46.0	D	49.2	D
	I3	Carlsbad Village / Pio Pico	47.8	D	30.7	C
Tamarack Ave	J1	Tamarack Ave / Jefferson	30.9	C	31.7	C
	J2	I-5 SB Ramps / Tamarack Ave	14.0	B	14.2	B
	J3	I-5 NB Ramps/ Tamarack Ave	10.5	B	15.8	B
	J4	Tamarack Ave / Pio Pico	9.2	A	9.6	A
Poinsettia Ave	M1	Avenida Encinas / Poinsettia Ln	43.1	D	37.0	D
	M2	I-5 SB Ramps / Poinsettia Ln	13.4	B	15.7	B
	M3	I-5 NB Ramps / Poinsettia Ln	10.3	B	14.7	B
	M4	Paseo Del Norte / Poinsettia Ln	33.4	C	51.9	D
La Costa Ave	N1	I-5 SB Ramps / La Costa Ave	26.4	C	27.2	C
	N2	I-5 NB Ramps/ La Costa Ave	14.3	B	16.3	B
	N3	La Costa Ave / Park and Ride	2.8	A	2.8	A
	N4	La Costa Ave / Piraeus	8.4	A	9.1	A
Leucadia Blvd	O1	Leucadia Blvd / Orpheus Ave	14.4	B	15.2	B
	O2	I-5 SB Ramps / Leucadia Blvd	24.4	C	21.1	C
	O3	I-5 NB Ramps/ Leucadia Blvd/Piraeus St	17.7	B	20.7	C
Encinitas Blvd	P1	Encinitas Blvd / Driveway	43.2	D	49.2	D
	P2	I-5 SB Ramps / Encinitas Blvd	64.3	E	143.3	F
	P3	I-5 NB Ramps/ Encinitas Blvd	32.1	C	43.4	D
	P4	Encinitas Blvd / Saxony	15.3	B	23.3	C
	P5	Encinitas Blvd / Magdallena	10.1	B	17.1	B
Santa Fe Dr	Q1	I-5 SB Ramps / Santa Fe Dr **	-	F	-	F
	Q2	I-5 NB On Ramp/ Santa Fe Dr	8.1	A	10.5	B
	Q3	I-5 NB Ramps/ Santa Fe Dr	47.6	D	23.0	C
Birmingham Dr	R1	I-5 SB Ramps / Birmingham Dr **	-	F	103.6	F
	R2	I-5 NB Ramps/ Birmingham Dr *	-	F	97.4	F
Lomas Santa Fe Dr	T1	Lomas Santa Fe Dr / Solana Hills	16.4	B	17.3	B
	T2	I-5 SB Ramps / Lomas Santa Fe Dr	35.4	D	46.3	D
	T3	I-5 NB Ramps/ Lomas Santa Fe Dr	29.4	C	35.6	D
Via De La Valle	U1	I-5 SB Ramps / Via De La Valle	14.8	B	31.0	C
	U2	I-5 NB Ramps/ Via De La Valle	21.3	C	11.1	B
	U3	Jimmy Durante Blvd / Via De La Valle	72.3	E	32.6	C
Del Mar Heights Rd	V1	I-5 SB Ramps / Del Mar Heights Rd	10.9	B	15.4	B
	V2	I-5 NB Ramps/ Del Mar Heights Rd	31.3	C	41.8	D
Carmel Valley Rd	W1	I-5 SB Ramps / Carmel Valley Rd	34.9	C	30.3	C
	W2	I-5 NB Ramps/ Carmel Valley Rd	23.5	C	20.6	C

Source: Wilson & Company, January 2006
* *Four-way Stop Control*
** *Two-way Stop Control*
\- *Intersections in which a delay could not be computed due to HCM constraints*

As shown above, the following other interchanges within the I-5 North Coast corridor and adjacent intersections are at or over capacity (LOS E or F) in either the AM or PM peak hour under existing conditions:

1. I-5 NB Ramps/ Las Flores Dr ..... PM
2. I-5 SB Ramps / Encinitas Blvd .....AM/PM
3. I-5 SB Ramps / Santa Fe Dr.....AM/PM
4. I-5 SB Ramps/ Birmingham Dr. .....AM/PM
5. I-5 NB Ramps/ Birmingham Dr.....AM/PM
6. Jimmy Durante Blvd / Via de la Valle.....AM

4.3 Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized ramp intersections along I-5 were analyzed using the ILV procedures as described in Section 2.2. ILV analysis results are displayed in **Table 4.3 and 4.4** for DAR interchange intersections and other interchange intersections within the I-5 North Coast corridor, respectively. ILV analysis worksheets for existing conditions are provided in **Appendix 4**.

TABLE 4.3
Existing Conditions Ramp Intersection Capacity Analysis
DAR Interchanges

			AM Peak		PM Peak	
Interchange	**ID**	**Key Intersection**	**ILV / Hour**	**Description**	**ILV / Hour**	**Description**
Oceanside DAR	**D1**	I-5 SB Ramps / Oceanside Blvd	1,349	*1200-1500: (At Capacity)*	1,150	*<1200: (Under Capacity)*
	D2	I-5 NB Ramps/ Oceanside Blvd	911	*<1200: (Under Capacity)*	1,171	*<1200: (Under Capacity)*
Cannon DAR	**K1**	I-5 SB Ramps / Cannon Rd	837	*<1200: (Under Capacity)*	223	*<1200: (Under Capacity)*
	K2	I-5 NB Ramps / Cannon Rd	838	*<1200: (Under Capacity)*	1,002	*<1200: (Under Capacity)*
	L1	I-5 SB Ramps / Palomar Airport Rd	1,181	*<1200: (Under Capacity)*	857	*<1200: (Under Capacity)*
	L2	I-5 NB Ramps / Palomar Airport Rd	1,568	*>1500: (Over Capacity)*	1,780	*>1500: (Over Capacity)*
Manchester DAR	**S2**	I-5 NB Ramps / Manchester Ave	991	*<1200: (Under Capacity)*	1,232	*1200-1500: (At Capacity)*
Lusk DAR	**11**	Vista Sorrento Pkwy / I-805 NB Ramps	1,134	*<1200: (Under Capacity)*	1,298	*1200-1500: (At Capacity)*
	13	Sorrento Valley Rd / I-805 SB Off Ramp	1,199	*<1200: (Under Capacity)*	950	*<1200: (Under Capacity)*
	14	Vista Sorrento Pkwy /I-805/ Mira Mesa Blvd	1,712	*>1500: (Over Capacity)*	1,391	*1200-1500: (At Capacity)*
Voigt DAR	**Y1**	I-5 SB Ramps / Genesee Ave	1,469	*1200-1500: (At Capacity)*	1,416	*1200-1500: (At Capacity)*
	Y2	I-5 NB Ramps / Genesee Ave	1,782	*>1500: (Over Capacity)*	1,603	*>1500: (Over Capacity)*
	Z1	I-5 SB Ramps / La Jolla Village Dr	1,063	*<1200: (Under Capacity)*	808	*<1200: (Under Capacity)*
	Z2	I-5 NB Ramps / La Jolla Village Dr	1,843	*>1500: (Over Capacity)*	1,293	*1200-1500: (At Capacity)*

Source: Wilson & Company; February 2006

As shown in Table 4.3, based upon the ILV methodology, the following DAR interchanges and adjacent intersections are at or over capacity in either the AM or PM peak hour under existing conditions:

Cannon Road DAR

1. I-5 NB Ramps / Palomar Airport Rd .....AM/PM

Lusk Boulevard DAR

2. Vista Sorrento Pkwy /I-805/ Mira Mesa Blvd .....AM

Voigt Drive DAR

3. I-5 NB Ramps / Genesee Ave. .....AM/PM
4. I-5 NB Ramps / La Jolla Village Dr. .....AM

TABLE 4.4
Existing Conditions Ramp Intersection Capacity Analysis
Other Interchanges within the I-5 North Coast Corridor

			AM Peak		PM Peak	
Interchange	ID	Key Intersection	ILV / Hour	Description	ILV / Hour	Description
Harbor Dr	A1	I-5 SB Ramps / Harbor Dr	1,186	*<1200: (Under Capacity)*	1,935	*>1500: (Over Capacity)*
	A2	I-5 NB On-Ramps/ Harbor Dr	907	*<1200: (Under Capacity)*	620	*<1200: (Under Capacity)*
SR-76	B2	I-5 SB Ramps / SR-76	842	*<1200: (Under Capacity)*	667	*<1200: (Under Capacity)*
	B3	I-5 NB Ramps / SR-76	930	*<1200: (Under Capacity)*	860	*<1200: (Under Capacity)*
Mission Ave	C1	I-5 SB Ramps / Mission Ave	653	*<1200: (Under Capacity)*	818	*<1200: (Under Capacity)*
	C2	I-5 NB Ramps/ Mission Ave	1,356	*1200-1500: (At Capacity)*	1,419	*1200-1500: (At Capacity)*
SR-78	G1	I-5 SB On-Ramps / SR-78	1,235	*1200-1500: (At Capacity)*	1,538	*>1500: (Over Capacity)*
Carlsbad Village Dr	I1	I-5 SB Ramps / Carlsbad Village Dr	909	*<1200: (Under Capacity)*	1,185	*<1200: (Under Capacity)*
	I2	I-5 NB Ramps/ Carlsbad Village Dr	1,136	*<1200: (Under Capacity)*	1,178	*<1200: (Under Capacity)*
Tamarack Ave	J2	I-5 SB Ramps / Tamarack Ave	1,052	*<1200: (Under Capacity)*	903	*<1200: (Under Capacity)*
	J3	I-5 NB Ramps/ Tamarack Ave	1,137	*<1200: (Under Capacity)*	1,044	*<1200: (Under Capacity)*
Poinsettia Ln	M2	I-5 SB Ramps / Poinsettia Ln	675	*<1200: (Under Capacity)*	868	*<1200: (Under Capacity)*
	M3	I-5 NB Ramps / Poinsettia Ln	764	*<1200: (Under Capacity)*	823	*<1200: (Under Capacity)*
La Costa Ave	N1	I-5 SB Ramps / La Costa Ave	1,030	*<1200: (Under Capacity)*	814	*<1200: (Under Capacity)*
	N2	I-5 NB Ramps/ La Costa Ave	939	*<1200: (Under Capacity)*	1,018	*<1200: (Under Capacity)*
Leucadia Blvd	O2	I-5 SB Ramps / Leucadia Blvd	809	*<1200: (Under Capacity)*	825	*<1200: (Under Capacity)*
	O3	I-5 NB Ramps/ Leucadia Blvd/Piraeus St	770	*<1200: (Under Capacity)*	1,066	*<1200: (Under Capacity)*
Encinitas Blvd	P2	I-5 SB Ramps / Encinitas Blvd	1,409	*1200-1500: (At Capacity)*	1,565	*>1500: (Over Capacity)*
	P3	I-5 NB Ramps/ Encinitas Blvd	1,174	*<1200: (Under Capacity)*	1,413	*1200-1500: (At Capacity)*
Santa Fe Dr	Q2	I-5 NB On Ramp/ Santa Fe Dr	746	*<1200: (Under Capacity)*	744	*<1200: (Under Capacity)*
	Q3	I-5 NB Ramps/ Santa Fe Dr	1,017	*<1200: (Under Capacity)*	617	*<1200: (Under Capacity)*
Lomas Santa Fe Dr	T2	I-5 SB Ramps / Lomas Santa Fe Dr	1,402	*1200-1500: (At Capacity)*	1,515	*>1500: (Over Capacity)*
	T3	I-5 NB Ramps / Lomas Santa Fe Dr	1,236	*1200-1500: (At Capacity)*	1,343	*1200-1500: (At Capacity)*
Via De La Valle	U1	I-5 SB Ramps / Via De La Valle	896	*<1200: (Under Capacity)*	882	*<1200: (Under Capacity)*
	U2	I-5 NB Ramps/ Via De La Valle	1,058	*<1200: (Under Capacity)*	968	*<1200: (Under Capacity)*

			AM Peak		PM Peak	
Interchange	ID	Key Intersection	ILV / Hour	Description	ILV / Hour	Description
Del Mar Heights Rd	V1	I-5 SB Ramps / Del Mar Heights Rd	883	*<1200: (Under Capacity)*	947	*<1200: (Under Capacity)*
	V2	I-5 NB Ramps/ Del Mar Heights Rd	1,111	*<1200: (Under Capacity)*	1,371	*1200-1500: (At Capacity)*
Carmel Valley Rd	W1	I-5 SB Ramps / Carmel Valley Rd	1,142	*<1200: (Under Capacity)*	1,123	*<1200: (Under Capacity)*
	W2	I-5 NB Ramps/ Carmel Valley Rd	1,413	*1200-1500: (At Capacity)*	1,388	*1200-1500: (At Capacity)*

Source: Wilson & Company; February 2006

As shown in Table 4.4, based upon the ILV methodology the following interchanges and adjacent intersections are at or over capacity in either the AM or PM peak hour under existing conditions:

1. I-5 SB Ramps / Harbor Dr ..... PM
2. I-5 SB On-Ramps / SR-78 ..... PM
3. I-5 SB Ramps / Encinitas Blvd ..... PM
4. I-5 SB Ramps / Lomas Santa Fe Dr ..... PM

4.4 Ramp Metering

Table 4.5 displays the interchanges that are currently metered during the AM peak hour. The table shows the existing general purpose and HOV demand along with the assumed meter rate (based upon the meter rates in Table 3.1, excluding the extra ramp metering capacity provided by the HOV lane(s)). Table 3.1 also shows the calculated delay and queue lengths for each intersection. For those ramps with excess demand, the last three columns in the table indicate the available storage on the ramp and the street approaches for comparison with the length of queue. The ramp storage is the approximate length of the ramp times the number of lanes for storage. The street storage is the sum of the storage capacity available in the right turn and left turn lanes on the adjacent intersection approach lanes.

Four (4) ramps develop excess queues during the AM peak hour under existing conditions. The analysis indicates that the queue on Leucadia Boulevard from the southbound I-5 ramp exceeds available storage space by about 1,000 feet. Ramps at Oceanside Boulevard/ I-5 SB and Manchester Boulevard/I-5 SB have queues that extend onto the street system over 3,000 feet beyond the storage of the turn lanes. These queues affect the ramp intersections and adjacent intersections on either side of the respective interchanges.

As shown, the queue that develops from the ramp meter on EB Via de la Valle/I-5 SB is contained on the ramp and does not affect other interchanges within the I-5 North Coast corridor.

Table 4.5
Intersection Ramp Meter Operations
AM Peak Hour

Location	General Demand (veh/hr)	HOV Demand (veh/hr)	Meter Rate** (veh/hr)	Excess Demand (veh/hr)	Delay*** (min)	Queue (feet)	Ramp Storage (feet)	Street Storage (feet)	Total Storage (feet)
Mission Ave. WB to SB 5	465	82	820	0	0	0			
Mission Ave. EB to SB 5	372	0	820	0	0.0	0			
Oceanside Blvd. To SB 5	1018	132	837	181	13.0	>5,000	600	450	1050
Cassidy Ave. to SB 5	370	0	744	0	0.0	0			
Las Flores Dr. to SB 5	225	0	444	0	0.0	0			
Carlsbad Village Dr. to SB 5	570	0	811	0	0.0	0			
Tamarack Ave. to SB 5	747	103	761	0	0.0	0			
Cannon Rd. to SB 5	300	20	1,087	0	0.0	0			
Palomar Airport Rd. WB to SB 5	702	48	769	0	0	0			
Palomar Airport Rd. EB to SB 5	263	17	457	0	0.0	0			
Poinsettia Ln. to SB 5	534	86	931	0	0.0	0			
La Costa Ave. to SB 5	820	70	910	0	0.0	0			
Leucadia Blvd. to SB 5	493	87	396	97	14.7	2,813	1,000	700	1,700
Encinitas Blvd. to SB 5	608	72	744	0	0.0	0			
Santa Fe Rd. to SB 5	384	76	448	0	0.0	0			
Birmingham Dr. to SB 5	1400	0	1,488	0	0.0	0			
Manchester Ave. to SB 5	1,200	0	984*	216	13.2	> 5,000	1,010	1,200	2,210
Lomas Santa Fe Dr. to SB 5	610	90	744	0	0.0	0			
Via de la Valle EB to SB 5	775	137	769	6	0.5	174	740	300	1,040
Via de la Valle WB to SB 5	668	0	913	0	0.0	0			
Del Mar Heights Rd. WB to SB 5	714	0	939	0	0.0	0			
Del Mar Heights Rd. EB to SB 5	264	79	744	0	0.0	0			
Carmel Valley Rd. to SB 5	1,320	0	1,707	0	0.0	0			

Source: Wilson & Company, January 2006
** Lower ramp meter rate was utilized based upon field observations.*
*** Average meter rate for general lanes without carpool lane*
**** Delay values over 15 minutes are identified as "15-25 minutes" and "> 25 minutes".*

Table 4.6 displays similar ramp meter and storage information for the PM peak hour. Several ramps develop queues in the PM peak hour that reach beyond the capacity of the respective ramp storage.

Four (4) of these ramps (Palomar Airport Road/ I-5 NB, WB La Jolla Village Drive/I-5 NB, WB Palomar Airport Road/I-5 SB, Vista Sorrento Parkway/I-805 NB) have queues that extend onto the street system over 3,000 feet beyond the storage of the turn lanes.

The queues that develop on the Leucadia Boulevard/I-5 NB, Lomas Santa Fe Drive/I-5 NB, WB Via de la Valle/I-5 NB and EB La Jolla Village Drive/I-5 SB ramps also reach beyond the capacity of the ramp storage and street storage capacity. These queues as a result likely affect adjacent intersections surrounding the interchanges.

Table 4.6
Intersection Ramp Meter Operations
PM Peak Hour

Location	General Demand (veh/hr)	HOV Demand (veh/hr)	Meter Rate** (veh/hr)	Excess Demand (veh/hr)	Delay* (min)	Queue (feet)	Ramp Storage (feet)	Street Storage (feet)	Total Storage (feet)
Cannon Rd. to NB 5	884	166	826	58	4.2	1,682	1,230	1,465	2,695
Palomar Airport Rd. to NB 5	1,589	211	1,339	250	11.2	> 5,000	700	735	1435
Poinsettia Ln. to NB 5	424	56	786	0	0.0	0			
La Costa Ave. to NB 5	569	91	744	0	0.0	0			
Leucadia Blvd. to NB 5	519	131	453	66	8.7	1,914	700	250	950
Manchester Ave. to NB 5	170	0	397	0	0.0	0			
Lomas Santa Fe Dr. to NB 5	859	91	820	39	2.9	1,131	670	225	895
Via de la Valle WB to NB 5	553	63	457	96	12.6	2,784	910	0	910
Via de la Valle EB to NB 5	891	0	888	3	0.2	87	910	0	910
Del Mar Heights Rd. to NB 5	1,250	0	1,589	0	0.0	0			
Carmel Valley Rd. to NB 5	883	197	837	46	3.3	1,334	990	800	1,790
La Jolla Village Dr. EB to NB 5	259	109	820	0	0.0	0			
La Jolla Village Dr. WB to NB 5	1389	0	465	924	> 25	> 5,000	430	75	505
Cannon Rd. to SB 5	522	78	1,087	0	0.0	0			
Palomar Airport Rd. WB to SB 5	1007	143	753	254	15-25	> 5,000	690	985	1,675
Poinsettia Ln. to SB 5	229	111	998	0	0.0	0			
La Costa Ave. to SB 5	627	93	910	0	0.0	0			
Leucadia Blvd. to SB 5	439	81	396	43	6.5	1,247	1,000	700	1,700
Encinitas Blvd. to SB 5	637	83	744	0	0.0	0			
Santa Fe Rd. to SB 5	369	51	444	0	0.0	0			
Birmingham Dr. to SB 5	440	0	1,488	0	0.0	0			
Manchester Ave. to SB 5	1050	0	1,488	0	0.0	0			
Lomas Santa Fe Dr. to SB 5	603	87	744	0	0.0	0			
Via de la Valle EB to SB 5	673	85	744	0	0.0	0			
Via de la Valle WB to SB 5	522	0	913	0	0.0	0			
Del Mar Heights Rd. WB to SB 5	965	0	939	26	1.7	754	1,780	0	1,780
Del Mar Heights Rd. EB to SB 5	337	81	744	0	0.0	0			
La Jolla Village Dr. WB to SB 5	1,007	0	1,639	0	0.0	0			
La Jolla Village Dr. EB to SB 5	518	95	457	61	8.0	1,769	300	75	375
Vista Sorrento Pkwy. to NB 805	1038	122	545	493	> 25	> 5,000	1,350	1,400	2,750

Source: Wilson & Company, January 2006
**Delay values over 15 minutes are identified as "15-25 minutes" and "> 25 minutes".*
*** Average meter rate without carpool lane*

It is worth noting again, that this analysis assumed that the identified traffic queues consist only of vehicles that access the ramp and does not assume any additional delays or queues developing as a result of signal delays, platooning, or as a result of peaking characteristics during the peak hour itself.

4.5 Arterial Capacity Analysis

Table 4.7 displays the results of the arterial capacity analysis. Roadway segments are identified as being over or under their respective capacity threshold. The arterial roadway data was compiled from numerous sources, including Oceanside, Carlsbad, Encinitas, Southland Traffic Counters, SANDAG and estimates from the calibrated 2005 SANDAG Base Model.

Table 4.7
Arterial Capacity Analysis

Street	Arterial Class	Segment		No. of Lanes	Max Desirable Threshold	Existing Daily Traffic Volume	Year	Source	Under / Over Threshold
		From	To						
East/West Facilities									
Mission Ave	Major	N Coast HWY	I-5	4	35,000	21,000	2002	Oceanside	Under
	Major	I-5	N Canyon Dr	4	35,000	47,000	2002	Oceanside	Over
	Major	N Canyon Dr	Mesa Drive	4	35,000	43,000	2002	Oceanside	Over
	Major	Messa Drive	Foussat St	4	35,000	43,000	2002	Oceanside	Over
	Major	Foussat St	El Camino Real	4	35,000	43,000	2002	Oceanside	Over
	Major	El Camino Real	Douglas Dr	4	35,000	38,000	2002	Oceanside	Over
	Major	Douglas Dr	Rancho Del Oro Dr	4	35,000	27,000	2002	Oceanside	Under
	Major	Rancho Del Oro	Craven Rd	4	35,000	27,500	2002	Oceanside	Under
Oceanside Blvd	Second	N Coast HWY	I-5	4	18,000	12,600	2002	Oceanside	Under
	Major	I-5	N Canyon Dr	4	35,000	34,800	2002	Oceanside	Under
	Major	N Canyon Dr	S El Camino Real	4	35,000	29,000	2002	Oceanside	Under
	Prime	S El Camino Real	Rancho Del Oro	6	55,000	22,600	2002	Oceanside	Under
	Prime	Rancho Del Oro	College Blvd	6	55,000	27,300	2002	Oceanside	Under
	Major	College Blvd	Melrose Dr	4	35,000	26,500	2002	Oceanside	Under
	Major	Melrose Dr	Santa Fe Ave	4	35,000	17,000	2002	Oceanside	Under
California St	Second	Alvarado	Stewart St	2	12,000	2,200	2005	Base Model	Under
	Second	Stewart St	I-5	2	12,000	3,100	2005	Base Model	Under
	Second	I-5	Avocado Rd	2	12,000	4,000	2005	Base Model	Under
Las Flores	Second	Jefferson ST	I-5	2	12,000	9,800	2004	Carlsbad	Under
	Second	I-5	Village Dr	2	12,000	5,700	2004	Carlsbad	Under
	Second	Village Dr	Tamarack Dr	2	12,000	4,000	2005	Base Model	Under
Calsbad Village Dr	Major	N Coast HWY	I-5	4	35,000	32,900	2004	Carlsbad	Under
	Major	I-5	Las Flores	4	35,000	26,500	2004	Carlsbad	Under
	Major	Las Flores	S El Camino Real	4	35,000	19,100	2004	Carlsbad	Under
	Major	S El Camino Real	Tamarack Ave	4	35,000	13,900	2004	Carlsbad	Under
Tamarack Ave	Second	N Coast HWY	I-5	2	12,000	18,000	2004	Carlsbad	Over
	Second	I-5	Las Flores	2	12,000	22,500	2004	Carlsbad	Over
	Second	Las Flores	S El Camino Real	2	12,000	9,500	2004	Carlsbad	Under

Street	Arterial Class	Segment		No. of Lanes	Max Desirable Threshold	Existing Daily Traffic Volume	Year	Source	Under / Over Threshold
		From	To						
Cannon Rd	Major	N Coast HWY	I-5	4	35,000	12,900	2004	Carlsbad	Under
	Major	I-5	Paseo Del Norte	4	35,000	27,000	2004	Carlsbad	Under
	Major	Paseo Del Norte	El Camino Real	4	35,000	27,700	2004	Southland	Under
	Major	El Camino Real	College Blvd	4	35,000	14,700	2004	Southland	Under
Palomar Airport Rd	Prime	N Coast HWY	I-5	2	18,000	26,200	2004	Carlsbad	Over
	Prime	I-5	Paseo Del Norte	6	55,000	57,200	2004	Carlsbad	Over
	Prime	Paseo Del Norte	College Blvd	6	55,000	53,200	2004	Carlsbad	Under
	Prime	College Blvd	S El Camino Real	6	55,000	40,000	2004	Carlsbad	Under
Poinsettia Ln	Major	N Coast HWY	I-5	2	16,000	21,000	2004	Carlsbad	Over
	Major	I-5	Paseo Del Norte	4	35,000	30,000	2004	Carlsbad	Under
	Major	Paseo Del Norte	College Blvd	4	35,000	24,300	2004	Carlsbad	Under
	Major	College Blvd	Black Rail Rd	2	16,000	13,000	2005	Base Model	Under
	Major	Black Rail Rd	El Camino Real	2	16,000	9,000	2005	Base Model	Under
La Costa Ave	Second	S Coast HWY	I-5	2	12,000	13,000	2005	Base Model	Over
	Major	I-5	Saxony Rd	4	35,000	33,100	2004	Carlsbad	Under
	Major	Saxony Rd	El Camino Real	4	35,000	28,000	2005	Base Model	Under
Leucadia Blvd	Second	S Coast HWY	I-5	2	12,000	17,000	2005	Base Model	Over
	Major	I-5	Saxony Rd	4	35,000	29,541	2003	Encinitas	Under
	Major	Saxony Rd	Garden View Rd	4	35,000	34,000	2005	Base Model	Under
	Major	Garden View Rd	El Camino Real	4	35,000	23,000	2005	Base Model	Under
	Major	El Camino Real	Rancho Santa Fe	4	35,000	33,000	2005	Base Model	Under
Encinitas Blvd	Major	S Coast HWY	I-5	4	35,000	23,774	2003	Encinitas	Under
	Prime	I-5	Quail Gardens Dr	6	55,000	34,145	2000	Encinitas	Under
	Prime	Quail Gardens Dr	Balour Dr	6	55,000	34,000	2005	Base Model	Under
	Prime	Balour Dr	El Camino Real	6	55,000	29,000	2005	Base Model	Under
	Prime	El Camino Real	Santa Fe Dr.	6	55,000	29,678	2003	Encinitas	Under
Santa Fe Dr.	Second	San Elijo	I-5	2	12,000	20,662	2003	Encinitas	Over
	Second	I-5	Lake Dr.	2	12,000	18,024	2003	Encinitas	Over
	Second	Lake Dr.	S El Camino Real	2	12,000	14,000	2001	SANDAG	Over
Birmingham Dr	Second	San Elijo	I-5	2	12,000	15,000	2005	Base Model	Over
	Second	I-5	Lake Dr.	2	12,000	6,500	2005	Base Model	Under
Manchester Ave	Second	Birmingham	I-5	2	12,000	7,712	2003	Encinitas	Under
	Second	I-5	El Camino Real	2	12,000	26,096	2003	Encinitas	Over
	Second	El Camino Real	Rancho Santa Fe	2	12,000	9,030	2004	Southland	Under
Lomas Santa Fe	Second	N Coast HWY	I-5	4	18,000	18,000	2005	Base Model	Over
	Second	I-5	Highland Dr	4	18,000	15,000	2005	Base Model	Under
	Second	Highland DR	El Camino Real	2	12,000	8,000	2005	Base Model	Under
Via De La Valle	Second	Camino Del Mar	Jimmy Durante Blvd	2	12,000	17,900	2004	SANDAG	Over
	Second	Jimmy Durante Blvd	I-5	2	12,000	41,900	2004	SANDAG	Over
	Second	I-5	San Andres Dr	4	18,000	31,700	03, 04	Southland	Over
	Second	San Andres Dr	El Camino Real	2	12,000	18,000	2005	Base Model	Over
Del Mar Heights	Major	N Coast HWY	I-5	4	35,000	30,000	2005	Base Model	Under
	Major	I-5	El Camino Real	6	45,000	48,200	2004	F&P	Over
	Major	El Camino Real	Carmel Country Rd	6	45,000	22,000	2005	Base Model	Under
Carmel Valley Rd (SR 56)	Second	N Coast HWY	I-5	2	12,000	11,100	2004	Southland	Under
	Major	I-5	El Carmel Real	6	45,000	35,000	2005	Base Model	Under

Street	Arterial Class	Segment		No. of Lanes	Max Desirable Threshold	Existing Daily Traffic Volume	Year	Source	Under / Over Threshold
		From	To						
Carmel Mountain Rd	Major	Sorrento Valley Rd	I-5	4	35,000	9,300	2004	Southland	Under
	Major	I-5	El Camino Real	6	45,000	20,600	2004	Southland	Under
Sorrento Valley Blvd	Major	Sorrento Valley Rd	I-805	4	35,000	40,000	2005	Base Model	Over
	Major	I-805	Camino Santa Fe	4	35,000	15,000	2005	Base Model	Under
	Major	Camino Santa Fe	Camino Ruiz	4	35,000	25,000	2005	Base Model	Under
Lusk Blvd	Second	Vista Sorrento Pk	Mira Mesa Blvd.	2	12,000	13,000	2005	Base Model	Over
Genesee Ave	Major	N. Torrey Pines Rd.	I-5	4	35,000	37,000	2005	Base Model	Over
	Major	I-5	Campus Point	4	35,000	37,000	2005	Base Model	Over
	Major	Campus Point	Eastgate Mall	6	45,000	30,000	2005	Base Model	Under
	Major	Eastgate Mall	La Jolla Village	6	45,000	23,000	2005	Base Model	Under
Mira Mesa Blvd	Prime	I-805	Camino Santa Fe	6	55,000	46,000	2005	Base Model	Under
	Prime	Camino Santa Fe	Camino Ruiz	6	55,000	50,000	2005	Base Model	Under
La Jolla Village Dr	Major	Torrey Pines Rd.	La Jolla Scenic Dr.	4	35,000	30,000	2005	Base Model	Under
	Major	La Jolla Scenic Dr.	Gilman Dr.	4	35,000	20,000	2005	Base Model	Under
	Major	Gilman Dr.	Villa La Jolla Dr.	4	35,000	40,000	2005	Base Model	Over
	Prime	Villa La Jolla Dr.	I-5	6	55,000	57,000	2005	Base Model	Over
	Prime	I-5	Genesee Ave	6	55,000	42,000	2005	Base Model	Under
Nobel Dr	Major	Villa Jolla Dr.	I-5	4	35,000	18,000	2005	Base Model	Under
	Major	I-5	Regents Rd.	6	45,000	23,000	2005	Base Model	Under
	Major	Regents Rd.	Genesee Ave	6	45,000	21,000	2005	Base Model	Under
North/South Facilities									
Coast Highway	Major	Mission EXWY	Mission Ave	4	35,000	19,100	2002	Oceanside	Under
	Major	Mission Ave	Oceanside Blvd	4	35,000	25,000	2002	Oceanside	Under
	Major	Oceanside Blvd	Ronald Packard PKWY	4	35,000	23,500	2002	Oceanside	Under
	Major	Ronald Parkard PKWY	Carlsbad Village Dr	4	35,000	20,000	2004	Carlsbad	Under
	Major	Carlsbad Village Dr	Tamarack Ave	4	35,000	21,600	2004	Carlsbad	Under
	Major	Tamarack Ave	Cannon Rd	2	16,000	22,700	2004	Carlsbad	Over
	Major	Cannon Rd	Airport Rd	4	35,000	20,300	2004	Carlsbad	Under
	Major	Airport Rd	Poinsettia Ln	4	35,000	18,700	2004	Carlsbad	Under
	Major	Poinsettia Ln	La Costa Ave	4	35,000	20,000	2004	Carlsbad	Under
	Major	La Costa Ave	Leucadia Blvd	4	35,000	27,000	2005	Base Model	Under
	Major	Leucadia Blvd	Encinitas Blvd	4	35,000	24,000	2005	Base Model	Under
	Major	Encinitas Blvd	Santa Fe Dr	2/4	35,000	22,000	2005	Base Model	Under
	Major	Santa Fe Dr	Lomas Santa Fe Dr	4	35,000	26,000	2005	Base Model	Under
	Major	Lomas Santa Fe Dr	Via De La Valle	2	16,000	21,000	2005	Base Model	Over
	Major	Via De La Valle	Jimmy Durante Blvd	4	35,000	22,000	2005	Base Model	Under
	Major	Jimmy Durante Blvd	Del Mar Heights Rd	4	35,000	29,000	2005	Base Model	Under
	Major	Del Mar Heights Rd	Callan Rd	2/4	35,000	24,000	2005	Base Model	Under
	Major	Callan Rd	Genesee Ave	4	35,000	40,000	2005	Base Model	Over
N. Canyon Dr.	Second	San Luis Rey Mission EXWY	Mission Ave.	4	18,000	8,600	2002	Oceanside	Under
	Second	Mission Ave.	Oceanside Blvd.	4	18,000	8,600	2002	Oceanside	Under

Street	Arterial Class	Segment		No. of Lanes	Max Desirable Threshold	Existing Daily Traffic Volume	Year	Source	Under / Over Threshold
		From	To						
El Camino Real	Major	Mission Ave	Mesa Dr	4	35,000	32,000	2005	Base Model	Under
	Major	Mesa Dr	Oceanside Blvd	4	35,000	36,500	2002	Oceanside	Over
	Major	Oceanside Blvd	Ronald Packard Pk	6	45,000	32,000	2002	Oceanside	Under
	Prime	Ronald Parkard Pk	Carlsbad Village Dr	6	55,000	56,100	2004	Carlsbad	Over
	Prime	Carlbad Village Dr	Chestnut Ave	6	55,000	29,100	2004	Carlsbad	Under
	Prime	Chestnut Ave	Tamarack Ave	4	36,000	30,000	2005	Base Model	Under
	Prime	Tamarack Ave	Cannon Rd	4	36,000	33,200	2004	Carlsbad	Under
	Prime	Cannon Rd	College Blvd	4	36,000	32,500	2004	Carlsbad	Under
	Prime	College Blvd	Faraday Ave	4	36,000	35,700	2004	Carlsbad	Under
	Prime	Faraday Ave	Palomar Airport Rd	6	55,000	31,000	2005	Base Model	Under
	Prime	Palomar Airport Rd	Alga Rd	4/6	55,000	32,500	2004	Carlsbad	Under
	Prime	Alga Rd	La Costa Ave	6	55,000	48,400	2004	Carlsbad	Under
	Prime	La Costa Ave	Olivenhain Rd	6	55,000	37,900	2004	Carlsbad	Under
	Prime	Olivenhain Rd	Mountain Vista Rd	6	55,000	42,865	2003	Encinitas	Under
	Prime	Mountain Vista Rd	Encinitas Blvd	6	55,000	39,644	2003	Encinitas	Under
	Prime	Encinitas Blvd	Santa Fe Rd	6	55,000	29,996	2003	Encinitas	Under
	Prime	Santa Fe Rd	Manchester ave	6	55,000	21,216	2003	Encinitas	Under

Source: Wilson & Company, June 2005

In summary of the data displayed in Table 4.7, approximately 25 percent of the arterial roadway segments are currently operating over the respective roadway capacity threshold.

Appendix 1

Existing Conditions Data Collection Summary

I-5 Direct Access Ramps
Data Collection Summary Table
City of Oceanside

Direct Access Ramp	Intersection ID	Key Intersection	Most Recent Count	Source of Count	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Oceanside Blvd DAR	1	Vine St / Oceanside Blvd	10/15/2003	Southland	collected	Oceanside	\	Wilson & Co
	D1	I-5 SB Ramps / Oceanside Blvd *	11/3/2004	Southland	collected	Oceanside	collected	Wilson & Co
	D2	I-5 NB Ramps/ Oceanside Blvd *	6/9/2004	Southland	collected	Oceanside	collected	Wilson & Co
	2	State Tree / Oceanside Blvd	6/9/2004	Southland	collected	Oceanside	collected	Wilson & Co
	3	Greenbrier Dr / Oceanside Blvd	6/9/2004	Southland	collected	Oceanside	collected	Wilson & Co
	4	Crouch St / Oceanside Blvd	6/8/2004	Southland	collected	Oceanside	collected	Wilson & Co
	5	N. Canyon Dr / Oceanside Blvd	6/10/2004	Southland	collected	Oceanside	collected	Wilson & Co
	6	Industry St / Oceanside Blvd	11/4/2004	Southland	collected	Oceanside	collected	Wilson & Co
	7	Foussat St / Oceanside Blvd	11/4/2004	Southland	collected	Oceanside	collected	Wilson & Co
	8	El Camino Real / Oceanside Blvd	11/10/2004	Southland	collected	Oceanside	collected	Wilson & Co

Notes:

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USA: Urban Systems Associates, Inc.
Carlsbad: Rick Engineering

* Ramp turn movements at Caltrans Interchanges were adjusted to match updated Caltrans ramp volumes (August 2005). Turn movements at intersections adjacent to the Caltrans ramps were adjusted as necessary to balance the volumes between intersections.

I-5 Direct Access Ramps
Data Collection Summary Table
City of Carlsbad

Direct Access Ramp	Intersection ID	Key Intersection	Most Recent Count	Source of Count	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Cannon Rd DAR	1	Tamarack Ave / Carlsbad Blvd	7/14/2004	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	2	Carlsbad Blvd / Cannon Rd	7/15/2004	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	3	Avenida Encinas / Cannon Rd	6/10/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	K1	I-5 SB Ramps / Cannon Rd *	7/24/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	K2	I-5 NB Ramps / Cannon Rd *	7/24/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	4	Paseo Del Norte / Cannon Rd	6/9/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	5	Cannon Rd / Car Country Dr	6/8/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	6	Lego Dr / Cannon Rd	11/3/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	7	Faraday Ave / Cannon Rd.	11/3/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	8	Avenida Encinas / Palomar Airport Rd	8/3/2004	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	L1	I-5 SB Ramps / Palomar Airport Rd *	7/15/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	L2	I-5 NB Ramps / Palomar Airport Rd *	7/15/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	9	Paseo del Norte / Palomar Airport Rd	7/15/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	10	Armada Dr / Palomar Airport Rd	7/16/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	11	Hidden Valley Rd / Palomar Airport Rd	6/10/2004	Southland	collected	City of Carlsbad	collected	Wilson & Co
	12	College Blvd / Palomar Airport Rd.	8/4/2004	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co

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I-5 Direct Access Ramps
Data Collection Summary Table
City of Encinitas

Direct Access Ramp	Intersection ID	Key Intersection	Most Recent Count	Source of Count	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Manchester Ave	1	Leucadia Blvd / Town Center Dr	11/6/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	2	El Camino Real / Olivenhain Rd	9/22/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	3	Amargosa Drive / Olivenhain Rd	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	4	Rancho Santa Fe Rd / Olivenhain Rd	11/24/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	5	El Camino Real / Town Center Dr	4/3/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	6	El Camino Real / Garden View Rd	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	7	El Camino Real / Shopping Center Drwy	6/8/2004	Southland	collected	City of Encinitas	collected	Wilson & Co
	8	El Camino Real / Via Montoro	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	9	El Camino Real / Mountain Vista Dr	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	10	El Camino Real / Via Moleno	10/6/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	11	El Camino Real / Encinitas Bolvd	10/6/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	12	El Camino Real / De La Plaza Drwy	6/8/2004	Southland	collected	City of Encinitas	collected	Wilson & Co
	13	El Camino Real / Willowspring Dr	11/6/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	14	El Camino Real / Santa Fe Dr	3/2/2005	Southland	collected	City of Encinitas	collected	Wilson & Co
	15	El Camino Real / Manchester Ave	10/20/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	S1	I-5 SB Ramps / Manchester Ave *	10/20/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	S2	I-5 NB Ramps / Manchester Ave *	10/20/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	16	Garden View Road / Via Cantabria	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	17	Via Cantebria / Via Montoro	10/1/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	18	Via Cantebria / Via Molena	10/2/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co
	19	Via Cantebria / Encinitas Blvd	10/6/2003	City of Encinitas	collected	City of Encinitas	collected	Wilson & Co

Notes:

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* Ramp turn movements at Caltrans Interchanges were adjusted to match updated Caltrans ramp volumes (August 2005). Turn movements at intersections adjacent to the Caltrans ramps were adjusted as necessary to balance the volumes between intersections.

I-5 Direct Access Ramps
Data Collection Summary Table
City of San Diego

Direct Access Ramp	Intersection ID	Key Intersection	Most Recent Count	Source of Count	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Lusk Blvd DAR	X1	Roselle St / I-5 SB On Ramp *	6/6/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	X2	Roselle St / I-5 NB Off Ramp *	6/6/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	1	Sorrento Valley Rd / Sorrento Valley Blvd	6/6/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	2	Vista Sorrento Pkwy / Sorrento Valley Blvd	6/8/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	3	Vista Sorrento Parkway / Lusk Blvd	6/8/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	4	Wateridge Circle (west) / Lusk Blvd	4/17/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	5	Telesis Court / Lusk Blvd	6/8/2002	Southland	collected	City of San Diego	collected	Wilson & Co
	6	Wateridge Circle (east) / Lusk Blvd	4/17/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	7	Pacific Center Blvd / Lusk Blvd	4/18/2002	USA - TSI	collected	City of San Diego	collected	Wilson & Co
	8	Lusk Blvd / Barnes Canyon Rd	4/23/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	9	Vista Sorrento Pkwy / Director's Pl	6/6/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	10	Vista Sorrento Pkwy / I-805 NB Ramps *	6/8/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	11	Mira Sorrento Pl / Scranton Rd	6/18/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	12	Sorrento Valley Rd / I-805 SB Off Ramp *	4/24/2002	USA – TSI	collected	City of San Diego	collected	Wilson & Co
	13	Vista Sorrento Pkwy /I-805/ Mira Mesa Blvd *	6/8/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	14	Scranton Rd / Mira Mesa Blvd	11/3/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	15	Lusk Blvd / Mira Mesa Blvd	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co

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I-5 Direct Access Ramps
Data Collection Summary Table
City of San Diego

Direct Access Ramp	Intersection ID	Key Intersection	Most Recent Count	Source of Count	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Voigt Rd DAR	Y1	I-5 SB Ramps / Genesee Avenue *	11/4/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	Y2	I-5 NB Ramps / Genesee Avenue *	11/3/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	1	Genesee Ave / Campus Point	4/7/2005	Southland	collected	City of San Diego	collected	Wilson & Co
	2	Genesee Avenue / Regents Road	11/10/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	3	Genesee Ave / Eastgate Mall	4/7/2005	Southland	collected	City of San Diego	collected	Wilson & Co
	4	Genesee Avenue / La Jolla Village Drive	11/4/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	5	Campus Point Drive / Voigt Drive	11/3/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	6	Regents Road / Health Scince Dr	11/3/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	7	Regents Rd / Eastgate Mall	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	8	Gilman Drive / Meyers Drive	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	9	Villa La Jolla / Gilman Drive	11/4/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	10	Gilman Dr / Voigt Drive	4/7/2005	Southland	collected	City of San Diego	collected	Wilson & Co
	11	Villa La Jolla / Veterans Affairs Medical Ctr	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	12	Villa La Jolla / La Jolla Village Drive	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	Z1	I-5 SB Ramps / La Jolla Village Drive *	11/9/2004	Southland	collected	City of San Diego	collected	Wilson & Co
	Z2	I-5 NB Ramps / La Jolla Village Drive *	11/3/2004	Southland	collected	City of San Diego	collected	Wilson & Co

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North Coast I-5 Interchange Ramps
Data Collection Summary Table
Caltrans

Interchange Name	ID	Intersection Name	Most Recent Count	Source of Count *	Phasing Plan	Source of Plan	Intersection Lane Configuration	Source of Geometry
Harbor Dr	**A1**	I-5 SB Ramps / Harbor Dr	6/10/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	A2	I-5 NB On-Ramps/ Harbor Dr	6/10/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
SR-76	**B1**	North Coast Highway / Hill St	10/28/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	B2	I-5 SB Ramps / SR-76	6/10/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	B3	I-5 NB Ramps / SR-76	6/9/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Mission Ave	**C1**	I-5 SB Ramps / Mission Ave	5/20/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	C2	I-5 NB Ramps/ Mission Ave	5/20/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
California	**E1**	I-5 NB Ramps / California St	5/27/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Cassidy St	**F1**	I-5 SB Ramps / Cassidy St	5/27/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
SR-78	**G1**	I-5 SB On-Ramps / SR-78	5/20/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Las Flores Dr	**H1**	I-5 SB Ramps / Las Flores Dr	5/27/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	H2	I-5 NB Ramps/ Las Flores Dr	11/9/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Carlsbad Village Dr	**I1**	I-5 SB Ramps / Carlsbad Village Dr	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	I2	I-5 NB Ramps/ Carlsbad Village Dr	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	I3	Carlsbad Village / Pio Pico	3/22/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
Tamarack Ave	**J1**	Tamarack Ave / Jefferson	3/17/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
	J2	I-5 SB Ramps / Tamarack Ave	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	J3	I-5 NB Ramps/ Tamarack Ave	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	J4	Tamarack Ave / Pio Pico	3/17/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
Poinsettia Ln	**M1**	Avenida Encinas / Poinsettia Ln	7/15/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	M2	I-5 SB Ramps / Poinsettia Ln	7/30/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	M3	I-5 NB Ramps / Poinsettia Ln	7/30/2003	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
	M4	Paseo Del Norte / Poinsettia Ln	8/3/2004	City of Carlsbad	collected	City of Carlsbad	collected	Wilson & Co
La Costa Ave	**N1**	I-5 SB Ramps / La Costa Ave	9/30/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	N2	I-5 NB Ramps/ La Costa Ave	9/30/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	N3	La Costa Ave / Park and Ride	3/23/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
	N4	La Costa Ave / Piraeus	9/29/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
Leucadia Blvd	**O1**	Leucadia Blvd / Orpheus Ave	9/30/2003	Southland	Collected	Caltrans	Collected	Wilson & Co
	O2	I-5 SB Ramps / Leucadia Blvd	10/1/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	O3	I-5 NB Ramps/ Leucadia Blvd	10/1/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
Encinitas Blvd	**P1**	Encinitas Blvd / Driveway	3/22/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
	P2	I-5 SB Ramps / Encinitas Blvd	10/1/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	P3	I-5 NB Ramps/ Encinitas Blvd	10/2/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	P4	Encinitas Blvd / Saxony	10/6/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	P5	Encinitas Blvd / Magdallena	10/6/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
Santa Fe Dr	**Q1**	I-5 SB Ramps / Santa Fe Dr	10/20/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	Q2	I-5 NB On Ramp/ Santa Fe Dr	10/20/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	Q3	I-5 NB Ramps/ Santa Fe Dr	10/20/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co

Birmingham Dr	**R1**	I-5 SB Ramps / Birmingham Dr	10/28/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
	R2	I-5 NB Ramps/ Birmingham Dr	10/28/2003	City of Encinitas	Collected	Caltrans	Collected	Wilson & Co
Lomas Santa Fe Dr	**T1**	Lomas Santa Fe Dr / Solana Hills	5/1/2002	Southland	Collected	Caltrans	Collected	Wilson & Co
	T2	I-5 SB Ramps / Lomas Santa Fe Dr	11/4/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	T3	I-5 NB Ramps/ Lomas Santa Fe Dr	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Via De La Valle	**U1**	Jimmy Durante Blvd / Via De La Valle	5/26/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	U2	I-5 SB Ramps / Via De La Valle	11/3/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	U3	I-5 NB Ramps/ Via De La Valle	11/4/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Del Mar Heights Rd	**V1**	I-5 SB Ramps / Del Mar Heights Rd	3/10/2005	Southland	Collected	Caltrans	Collected	Wilson & Co
	V2	I-5 NB Ramps/ Del Mar Heights Rd	11/17/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
Carmel Valley Rd	**W1**	I-5 SB Ramps / Carmel Valley Rd	11/4/2004	Southland	Collected	Caltrans	Collected	Wilson & Co
	W2	I-5 NB Ramps/ Carmel Valley Rd	11/9/2004	Southland	Collected	Caltrans	Collected	Wilson & Co

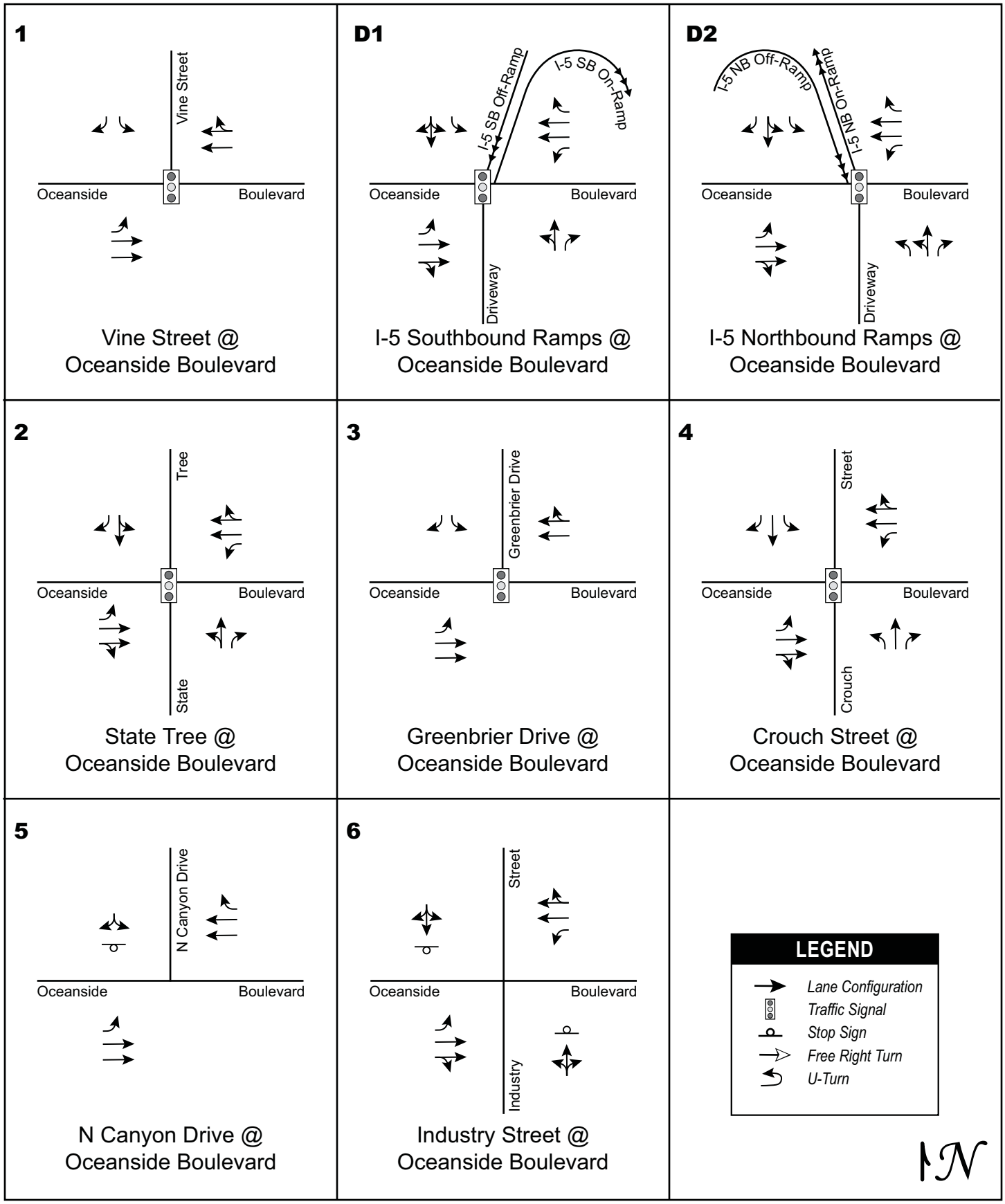
Notes:

KH:	Kimley-Horn & Associates
Southland:	Southland Car Counters, Inc.
TSI:	Transportation Studies, Inc.
USA:	Urban Systems Associates, Inc.
Carlsbad:	Rick Engineering
SL/URS:	Southland Car Counters, Inc. (From URS I-5 North Coast porject)

* Ramp turn movements at Caltrans Interchanges were adjusted to match updated Caltrans ramp volumes (August 2005). Turn movements at intersections adjacent to the Caltrans ramps were adjusted as necessary to balance the volumes between intersections.

Appendix 2

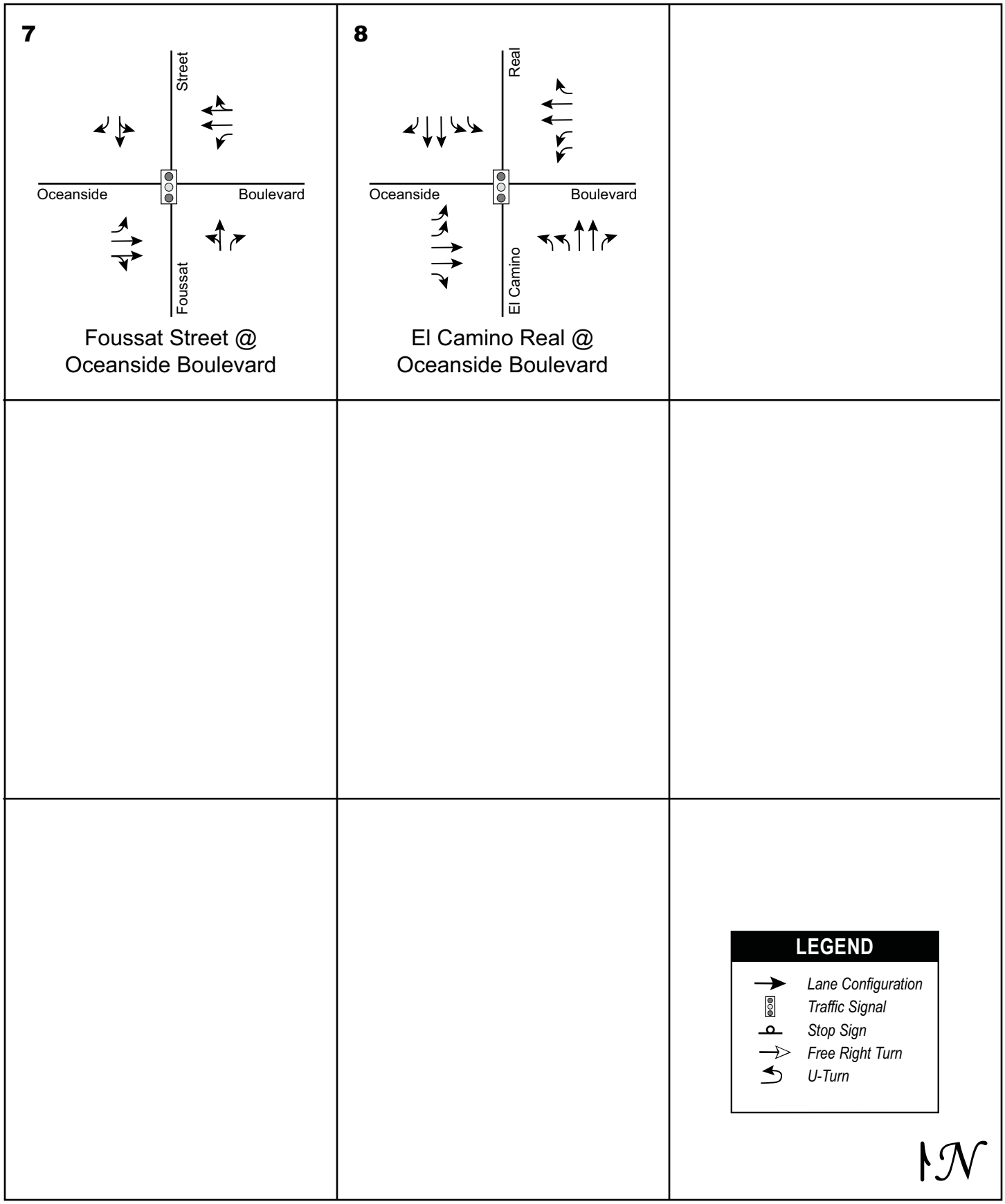
DAR Area of Influence
Existing Intersection Lane Configurations and Peak Hour Traffic Volumes



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

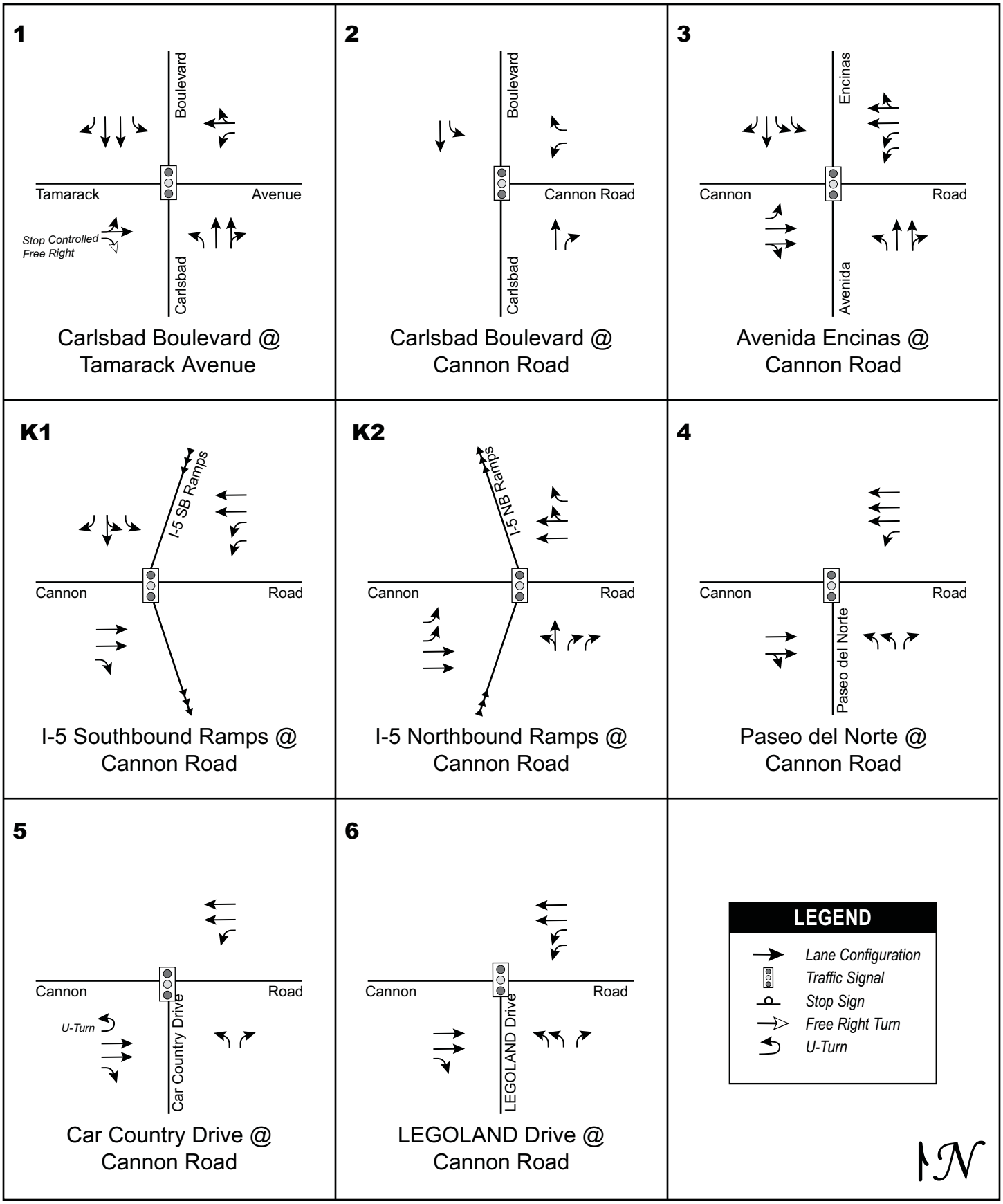
Figure 2-1a
Oceanside Boulevard Area of Influence
Intersections Lane Configuration
(1 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

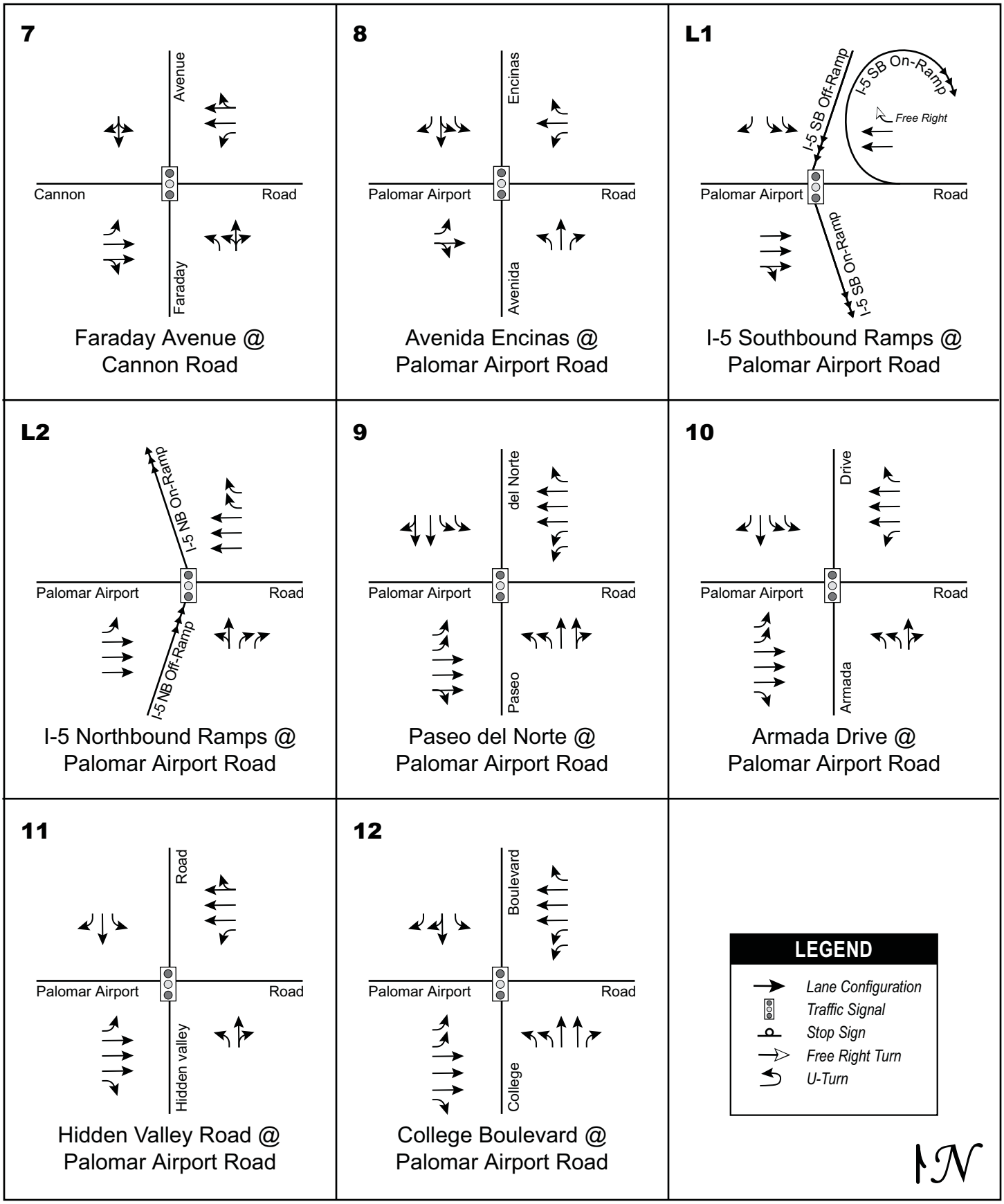
Figure 2-1a
Oceanside Boulevard Area of Influence
Intersections Lane Configuration
(2 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

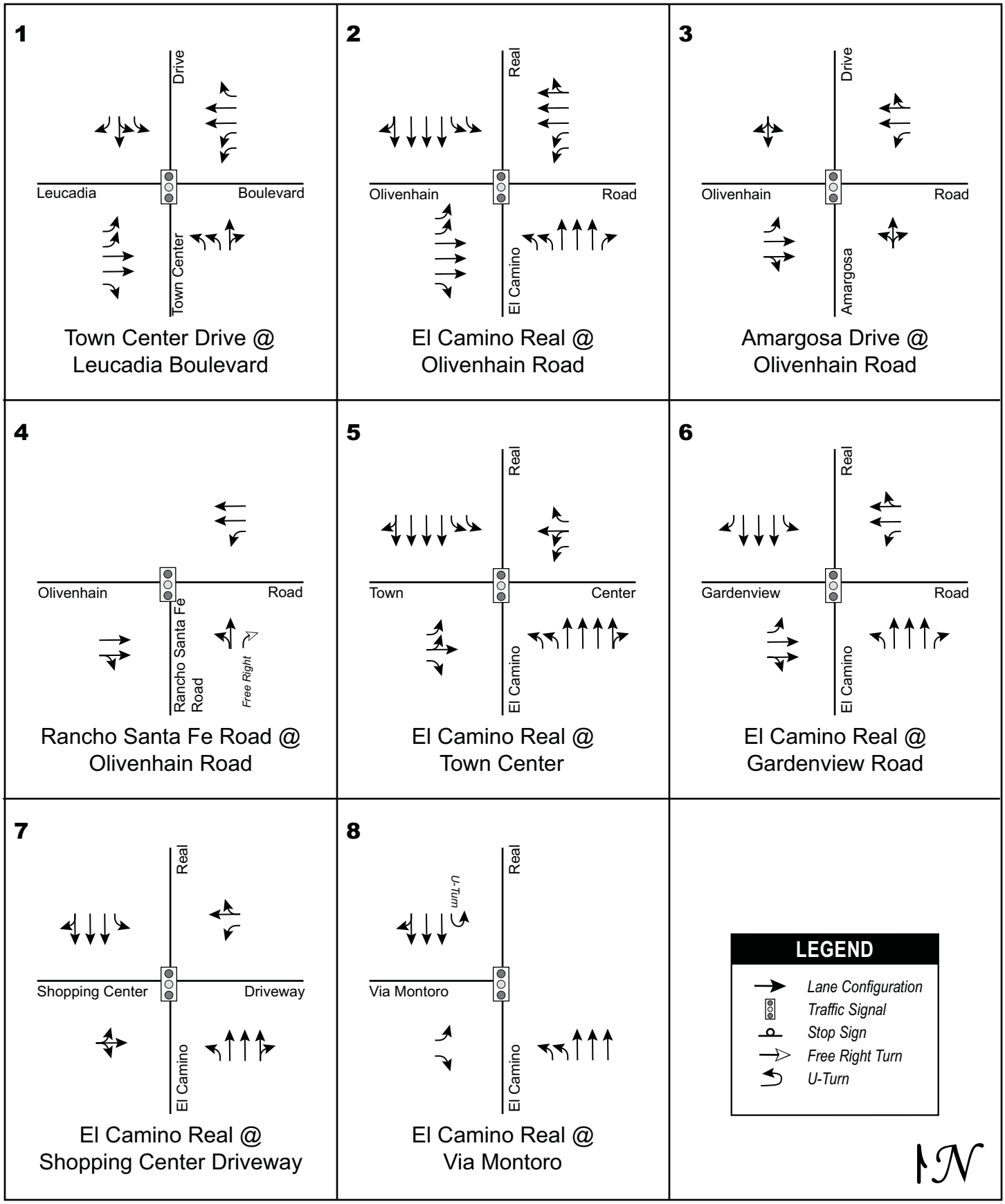
Figure 2-1b
Cannon Road Area of Influence
Intersections Lane Configuration
(1 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

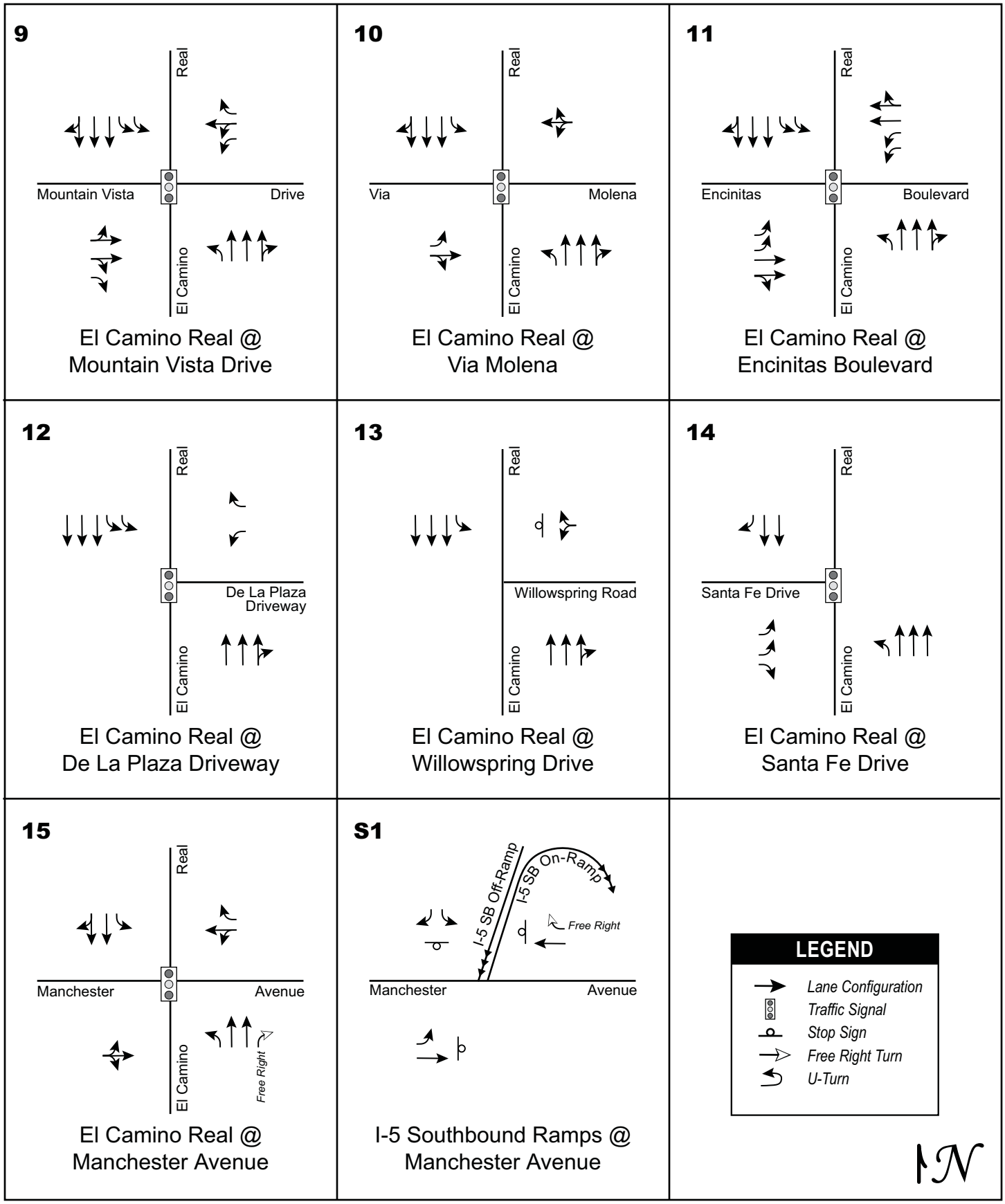
Figure 2-1b
Cannon Road Area of Influence
Intersections Lane Configuration
(2 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

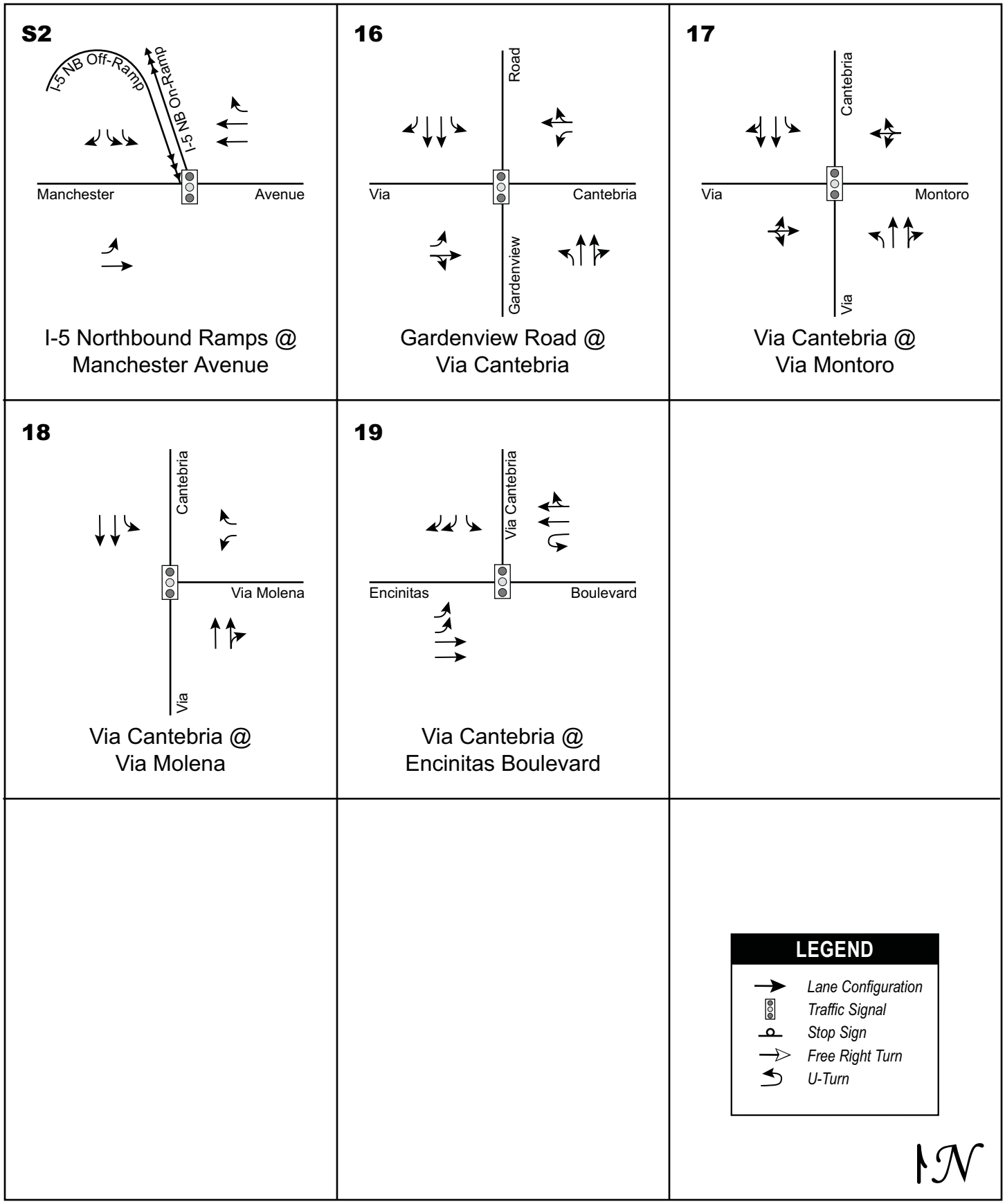
Figure 2-1c
Manchester Avenue Area of Influence
Intersections Lane Configuration
(1 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

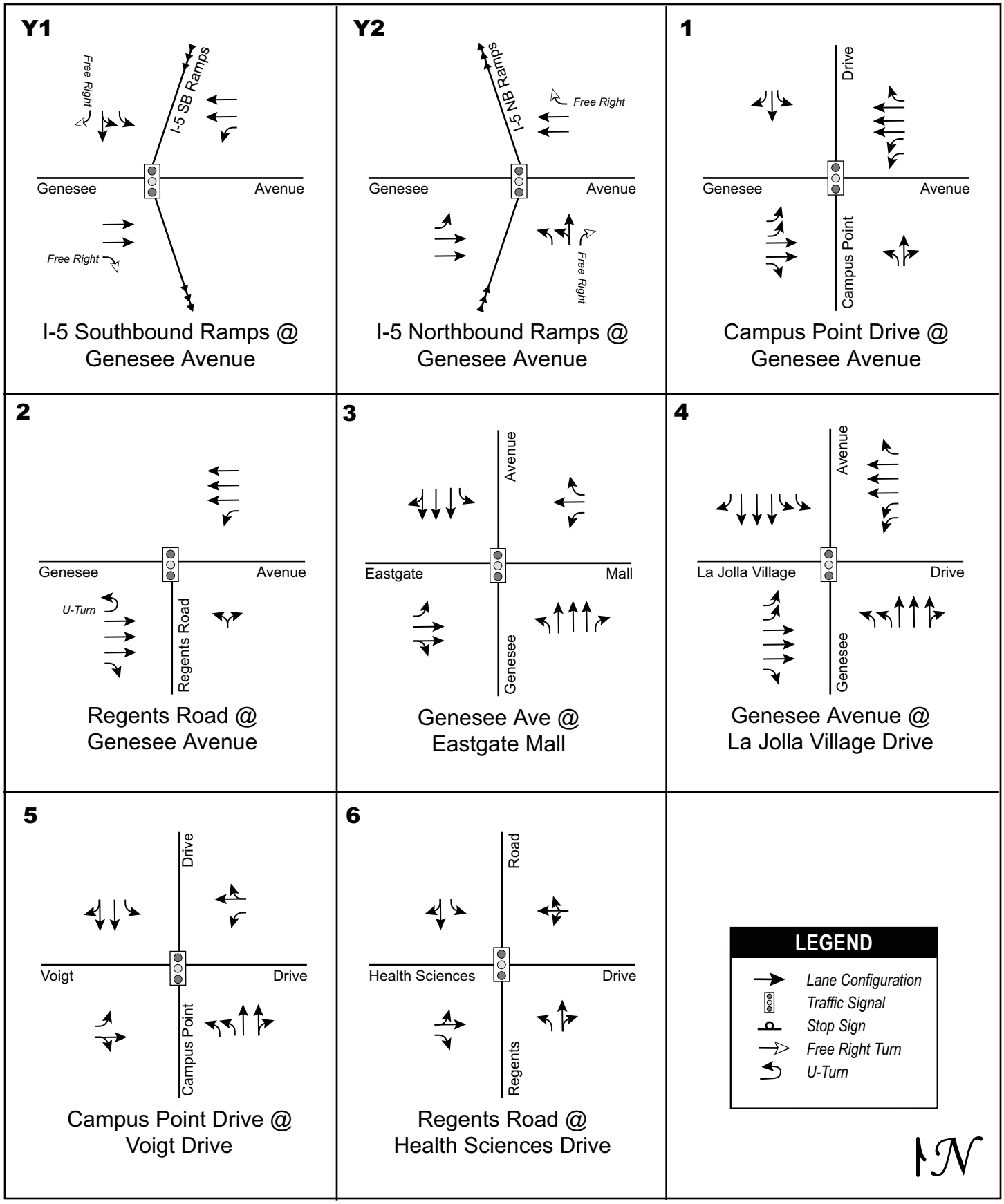
Figure 2-1c
Manchester Avenue Area of Influence
Intersections Lane Configuration
(2 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

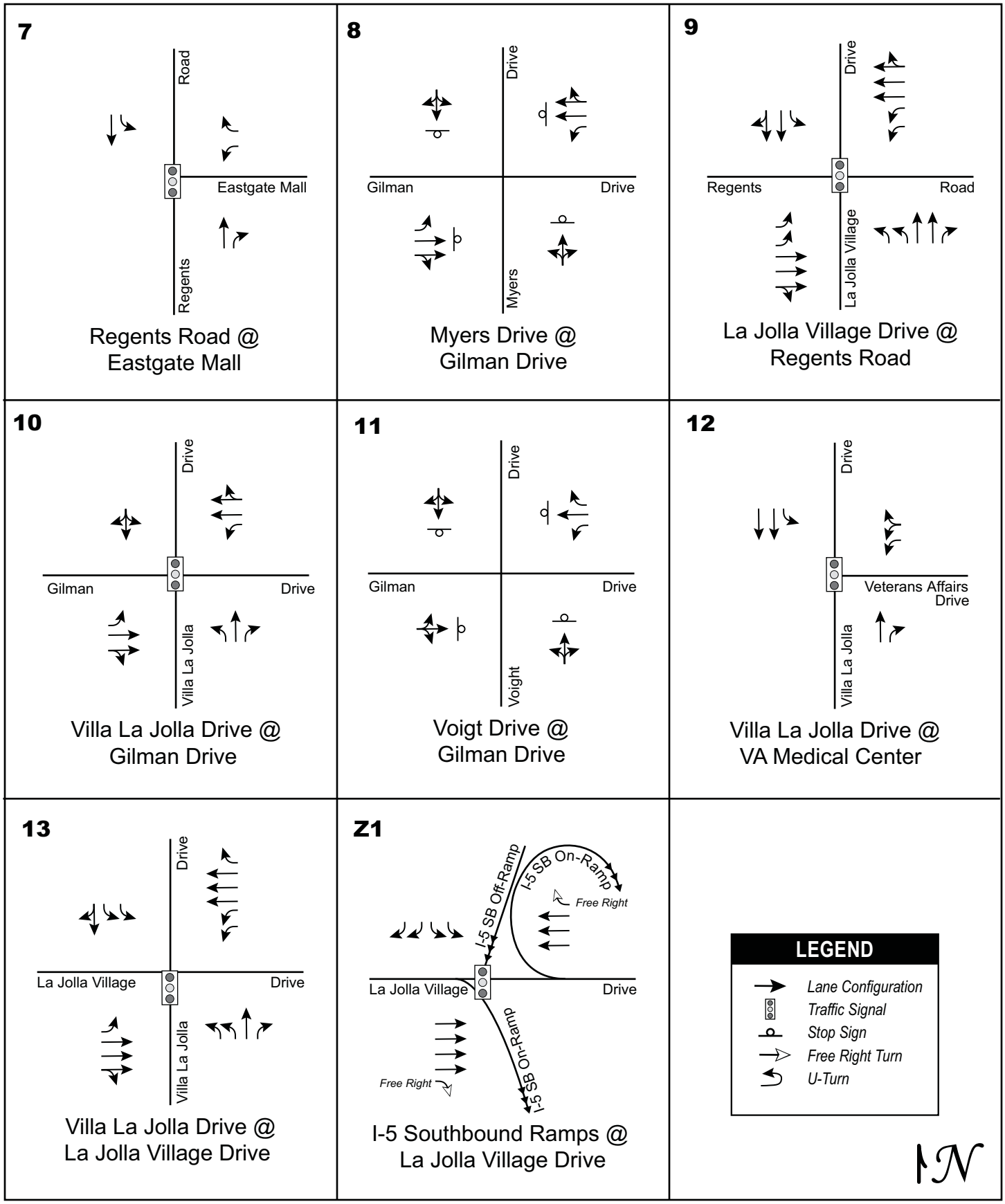
Figure 2-1c
Manchester Avenue Area of Influence
Intersections Lane Configuration
(3 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

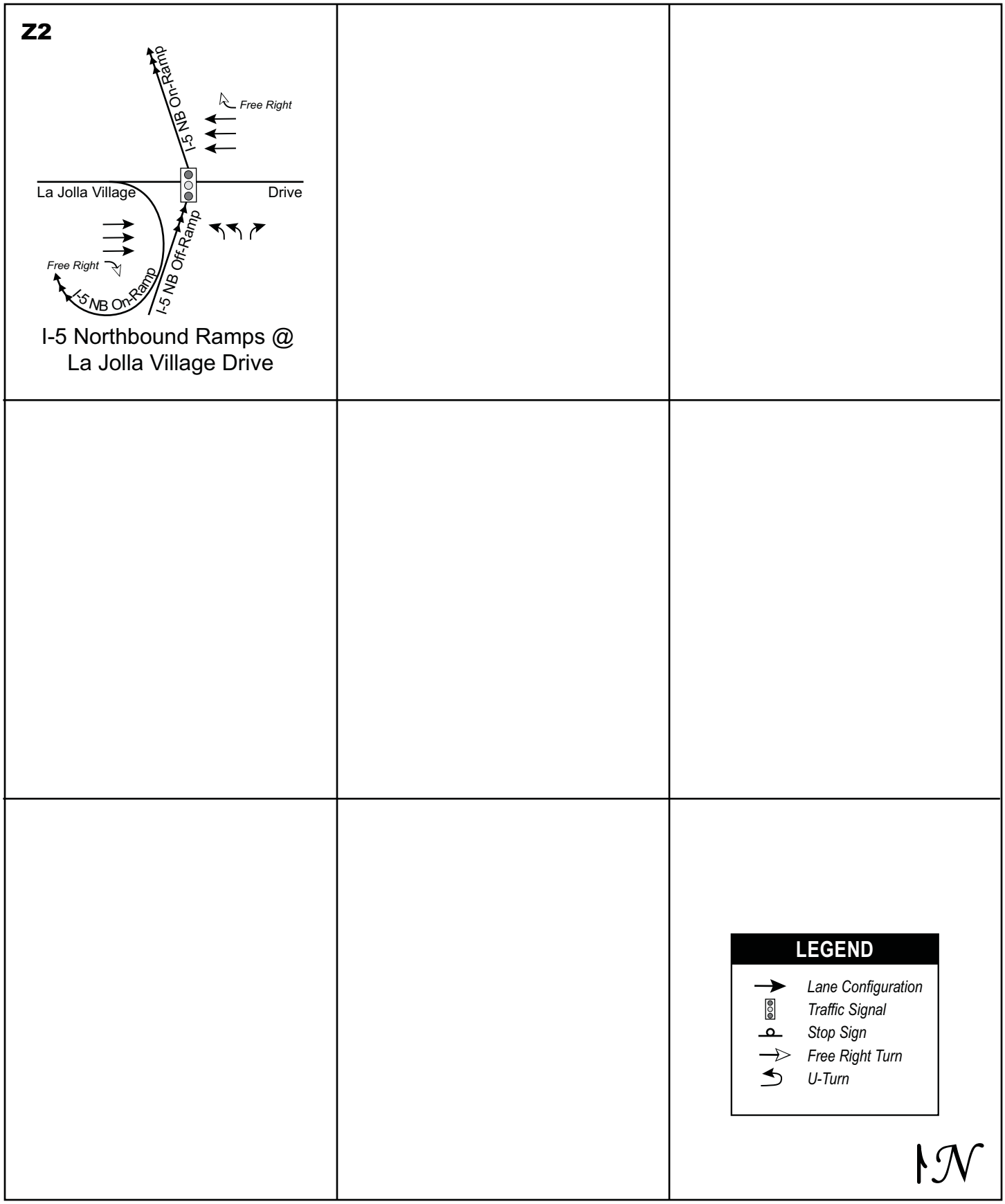
Figure 2-1d
Voigt Drive Area of Influence
Intersections Lane Configuration
(1 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

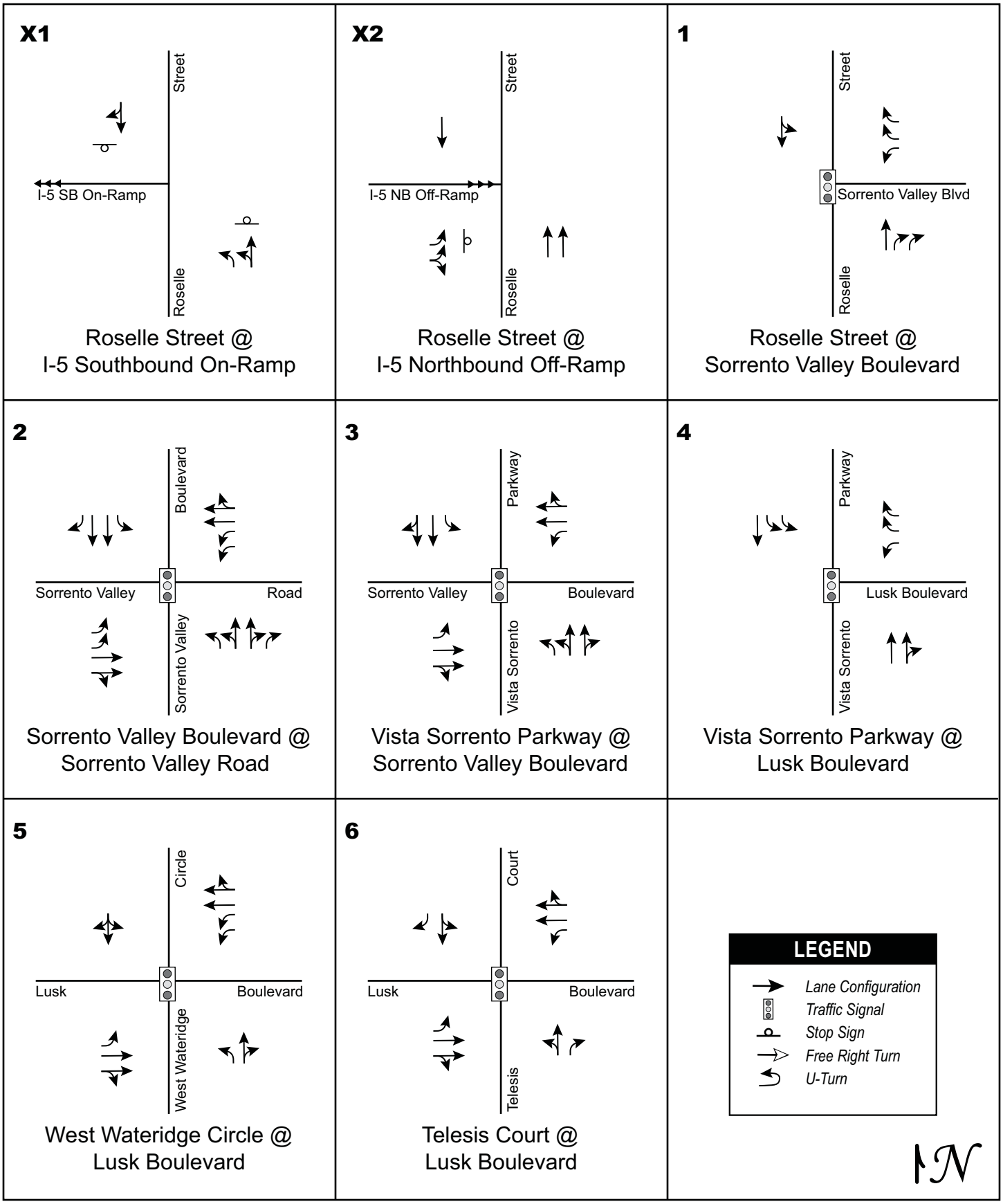
Figure 2-1d
Voigt Drive Area of Influence
Intersections Lane Configuration
(2 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

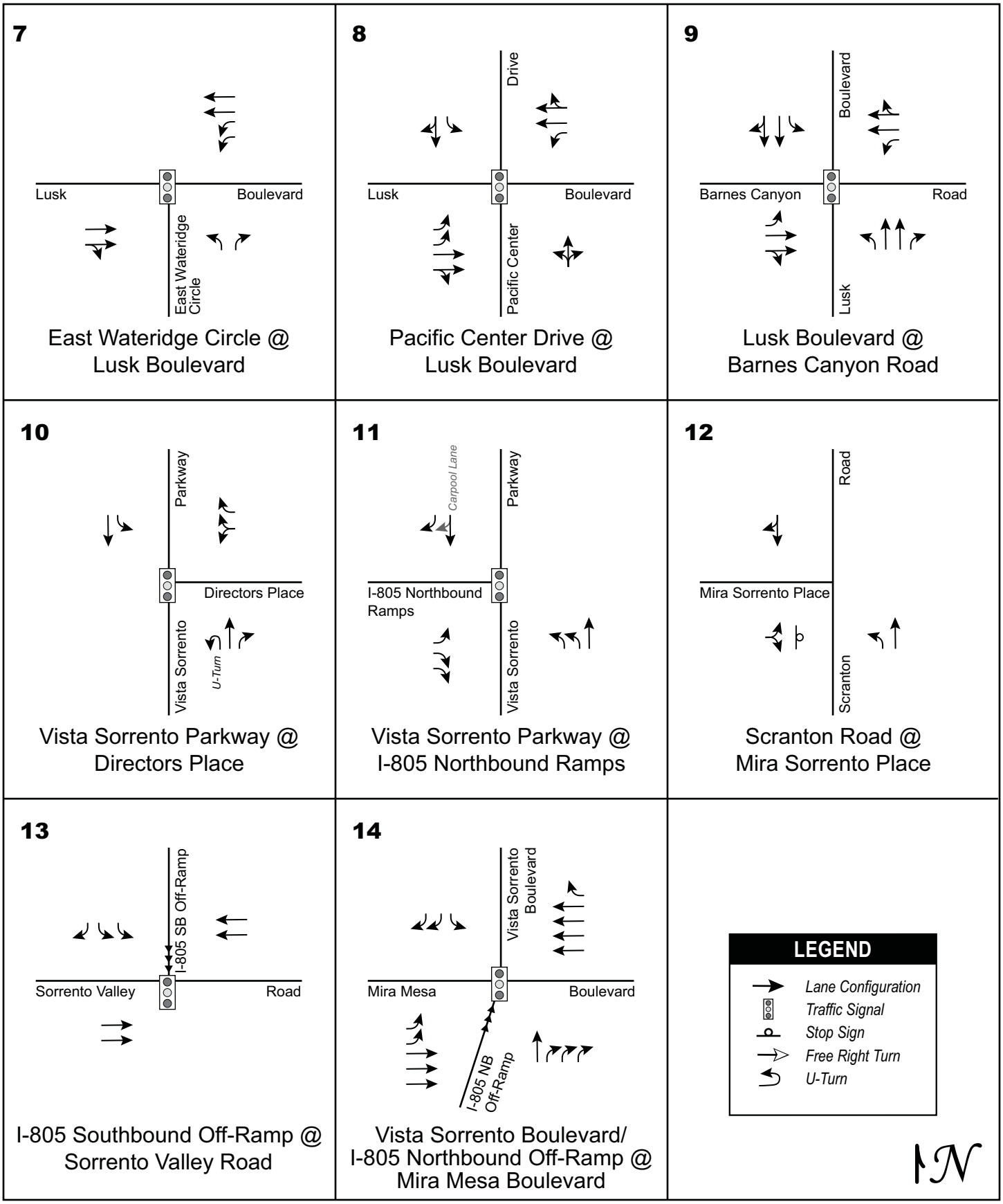
Figure 2-1d
Voigt Drive Area of Influence
Intersections Lane Configuration
(3 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

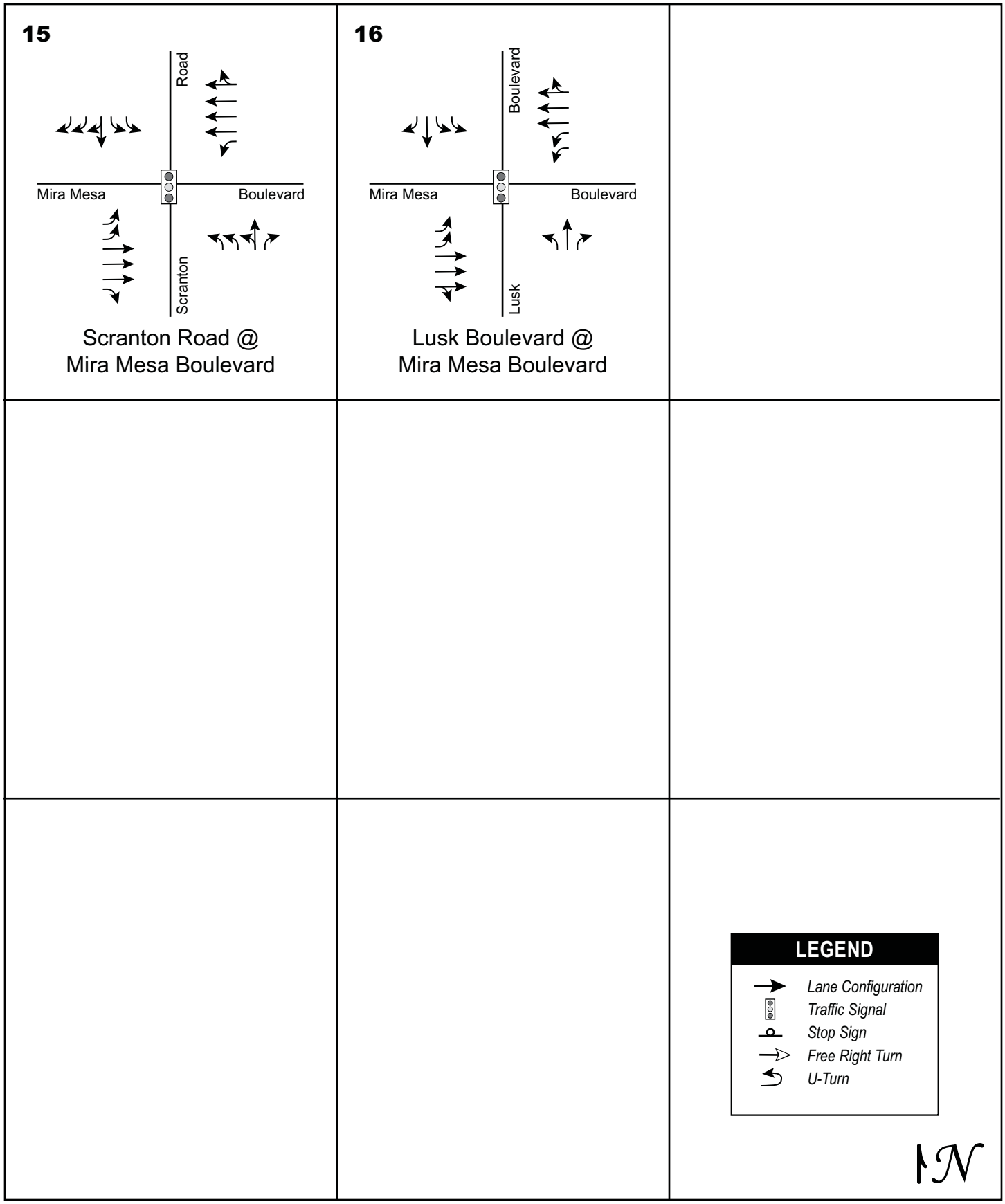
Figure 2-1e
Lusk Boulevard Area of Influence
Intersections Lane Configuration
(1 of 3)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

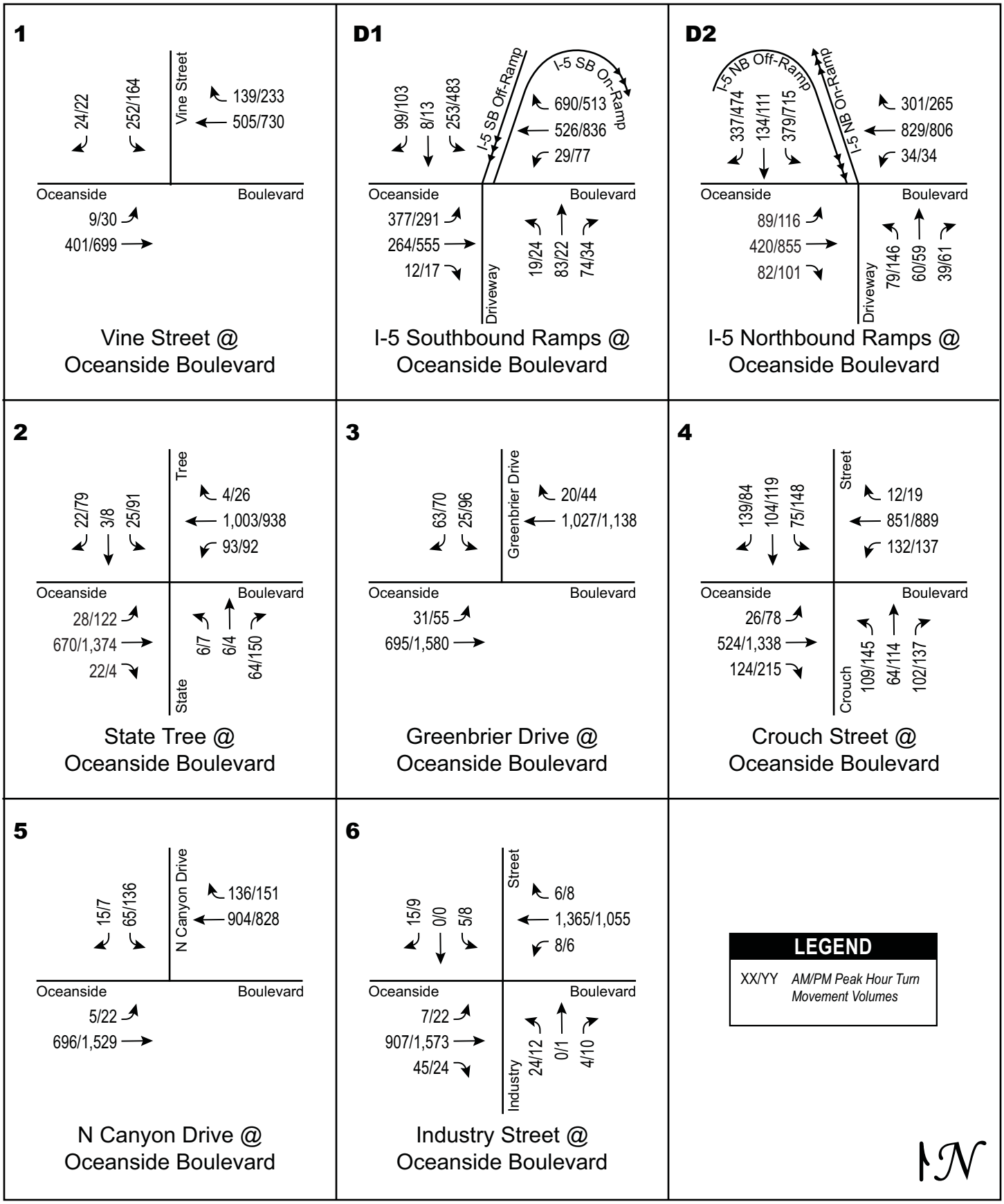
Figure 2-1e
Lusk Boulevard Area of Influence
Intersections Lane Configuration
(2 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

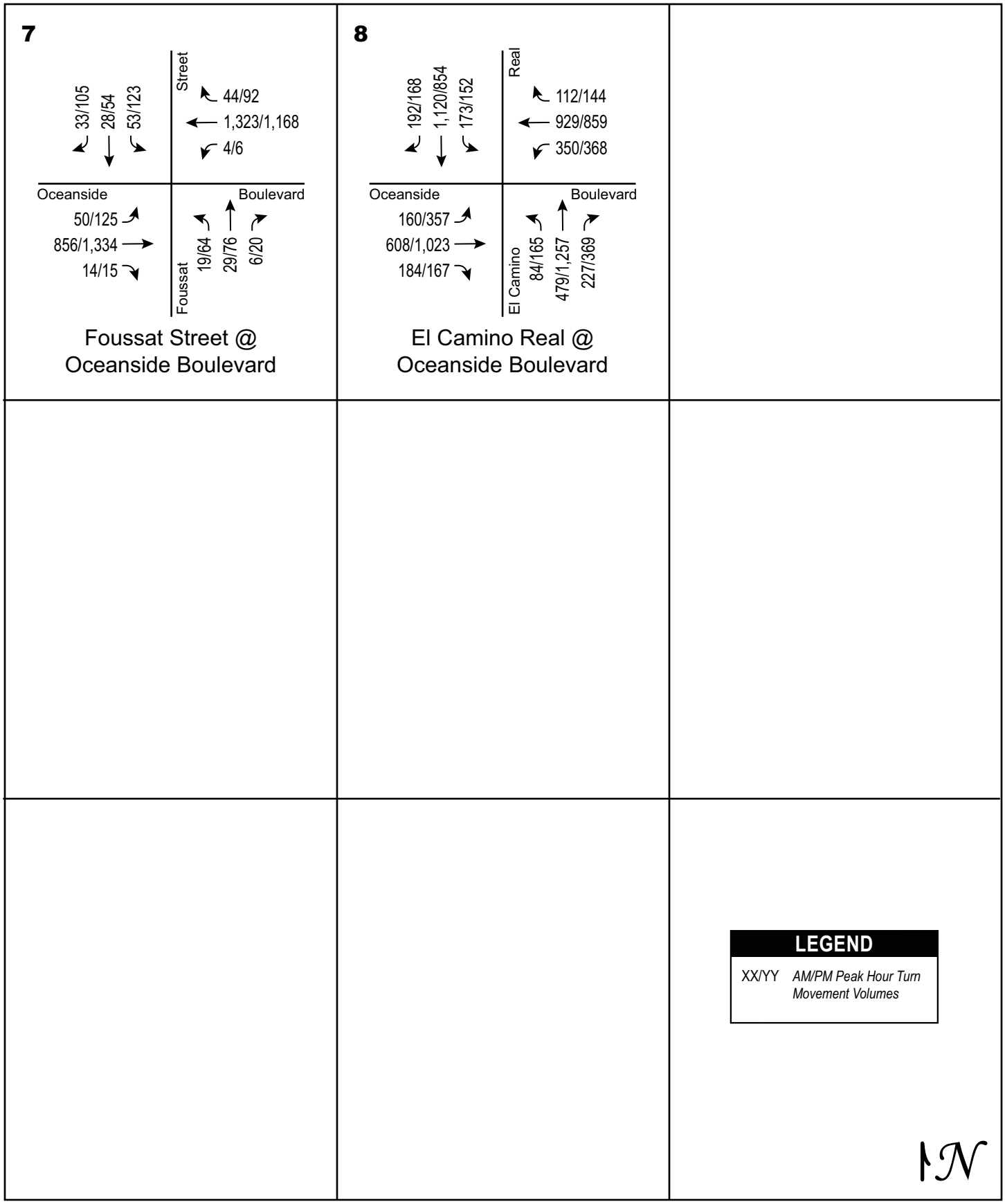
Figure 2-1e
Lusk Boulevard Area of Influence
Intersections Lane Configuration
(3 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

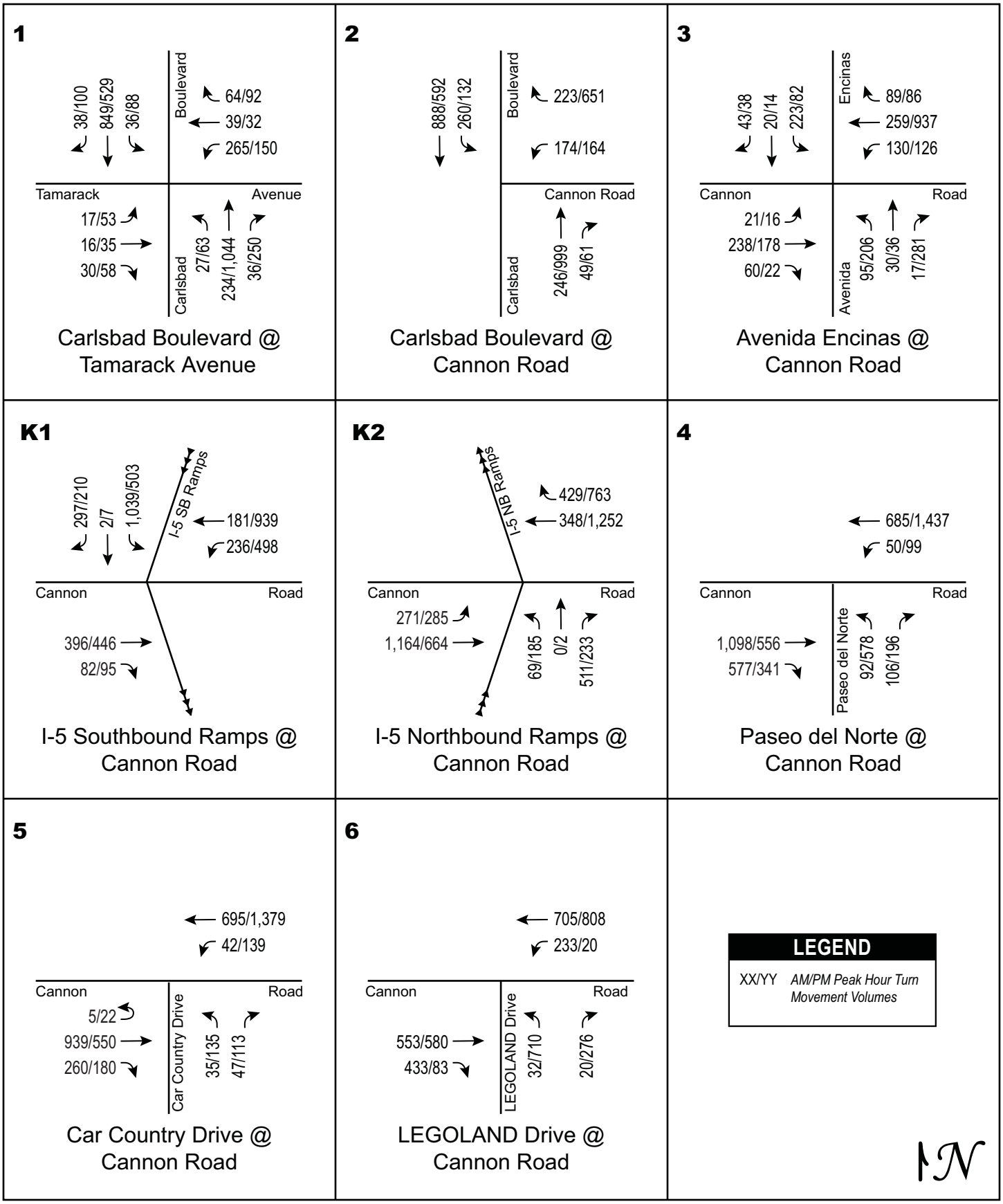
Figure 2-2a
Oceanside Boulevard Area of Influence
Existing Peak Hour Traffic Volumes
(1 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

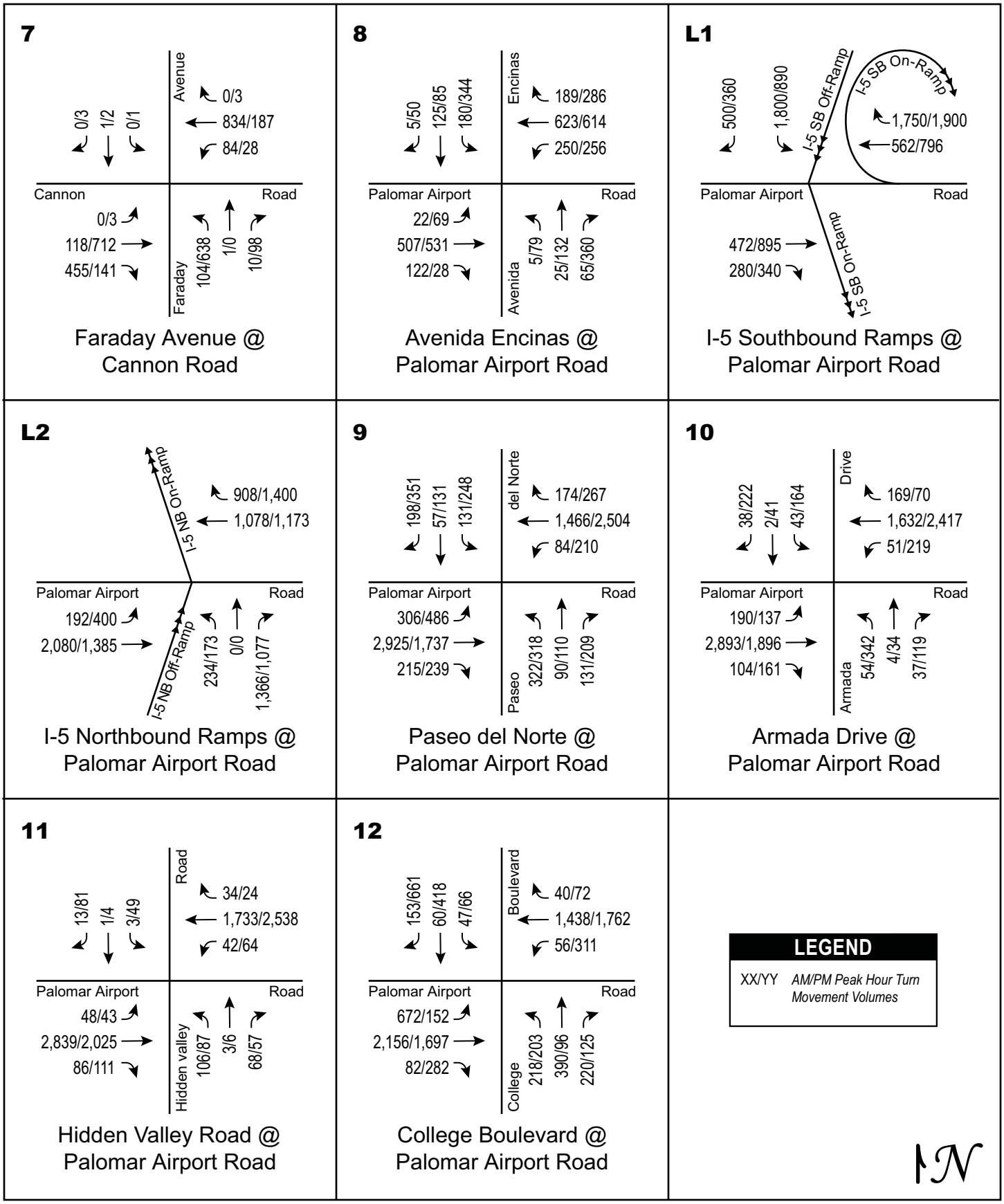
Figure 2-2a
Oceanside Boulevard Area of Influence
Existing Peak Hour Traffic Volumes
(2 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

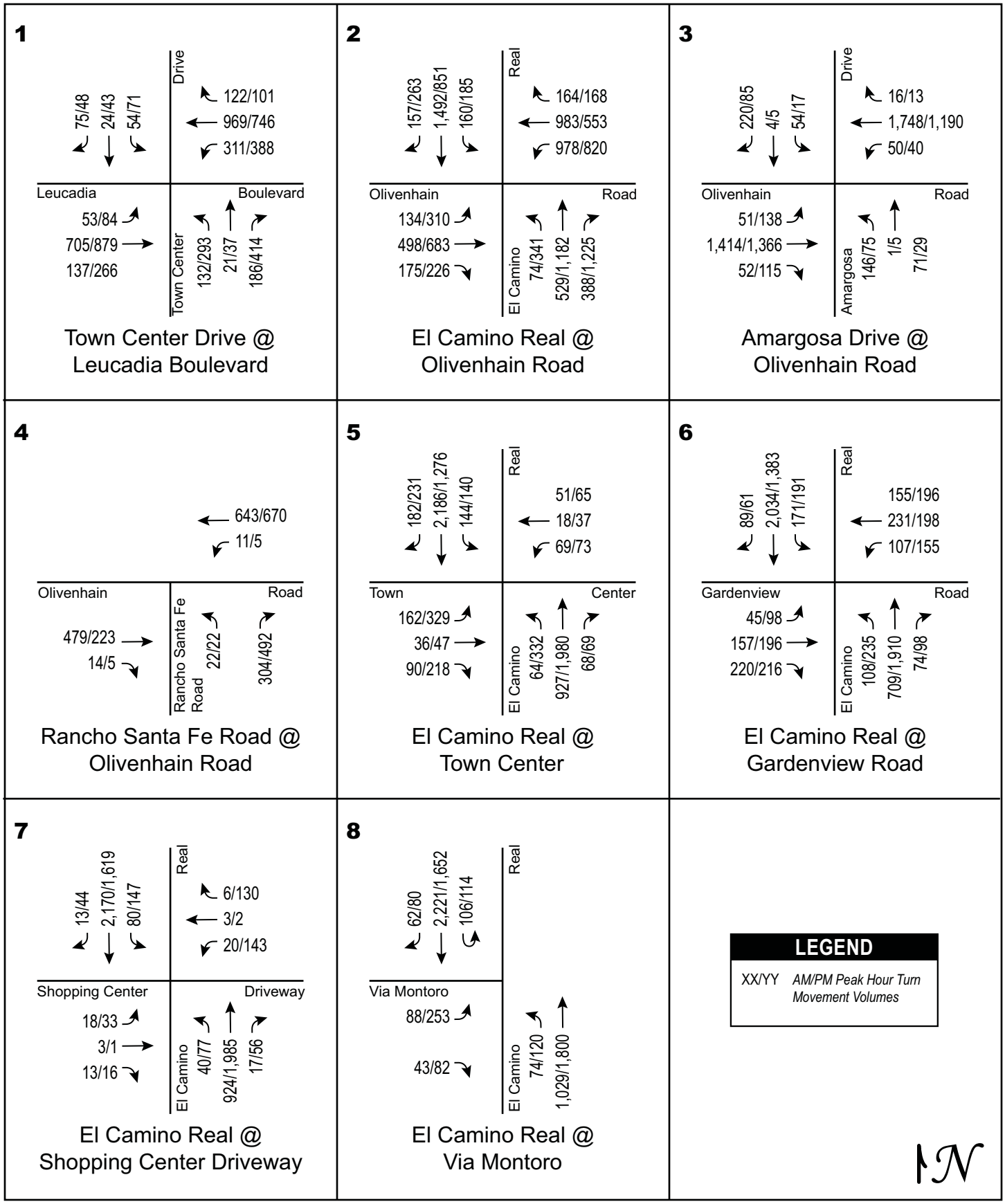
Figure 2-2b
Cannon Road Area of Influence
Existing Peak Hour Traffic Volumes
(1 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

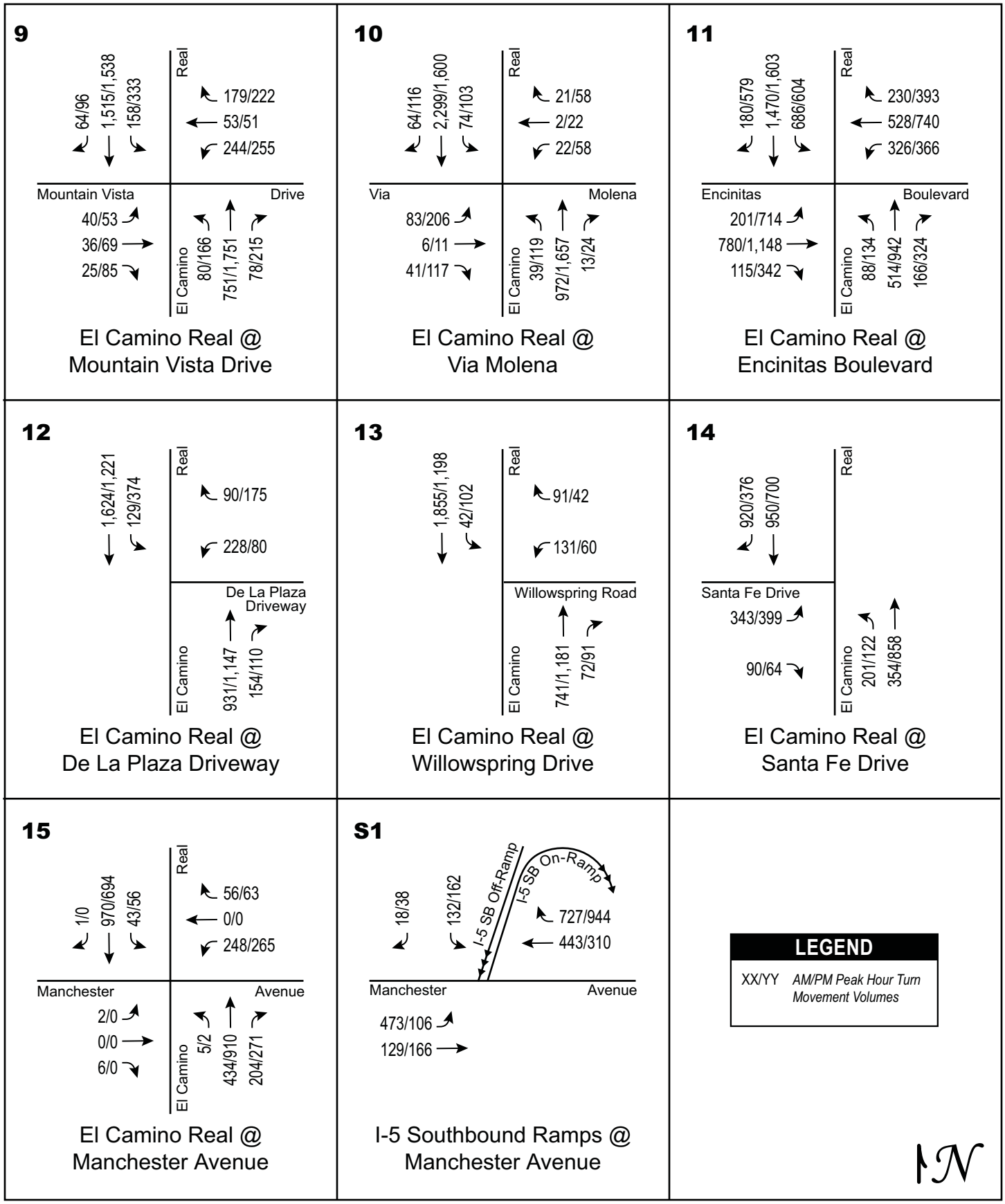
Figure 2-2b
Cannon Road Area of Influence
Existing Peak Hour Traffic Volumes
(2 of 2)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

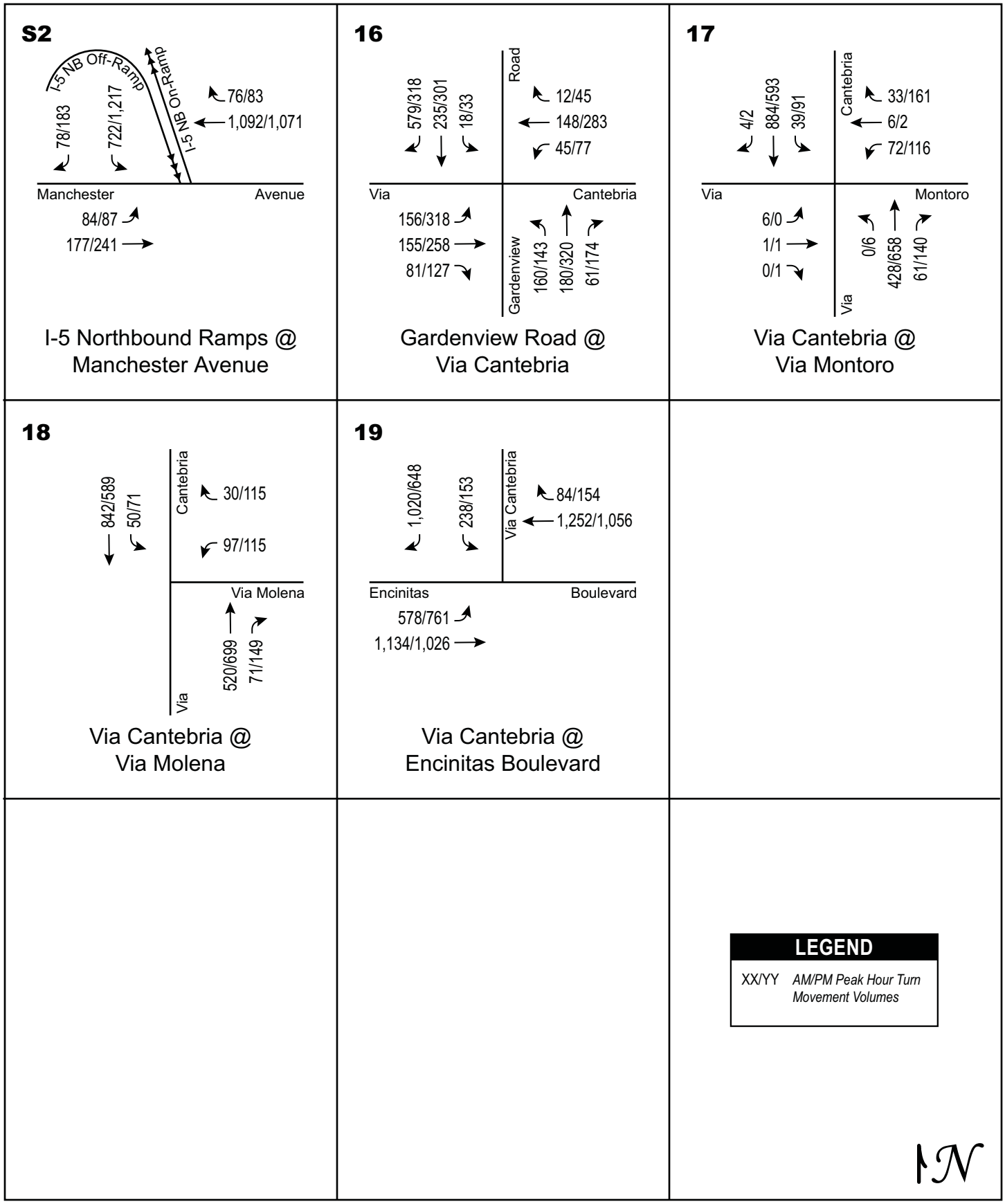
Figure 2-2c
Manchester Avenue Area of Influence
Existing Peak Hour Traffic Volumes
(1 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

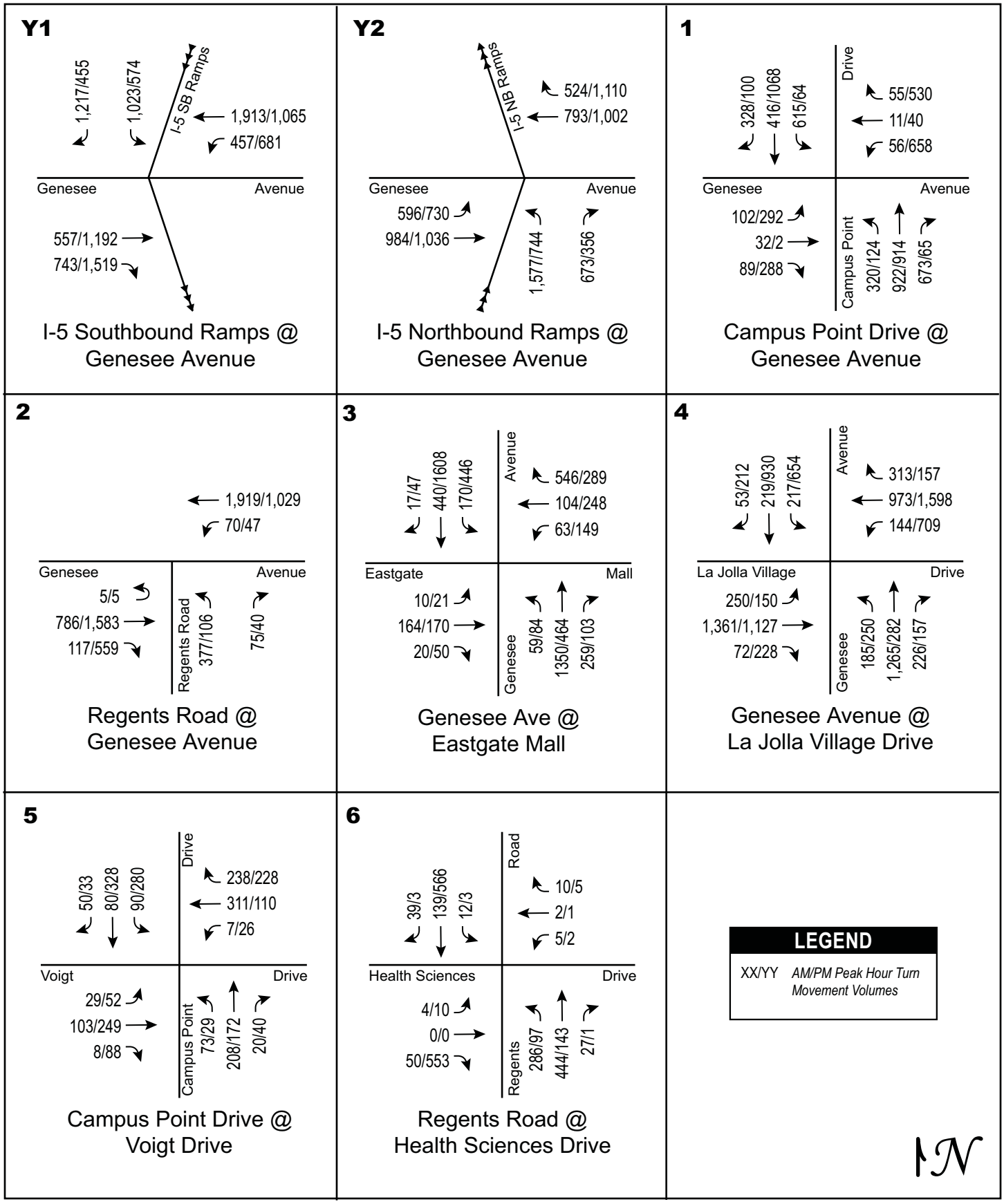
Figure 2-2c
Manchester Avenue Area of Influence
Existing Peak Hour Traffic Volumes
(2 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

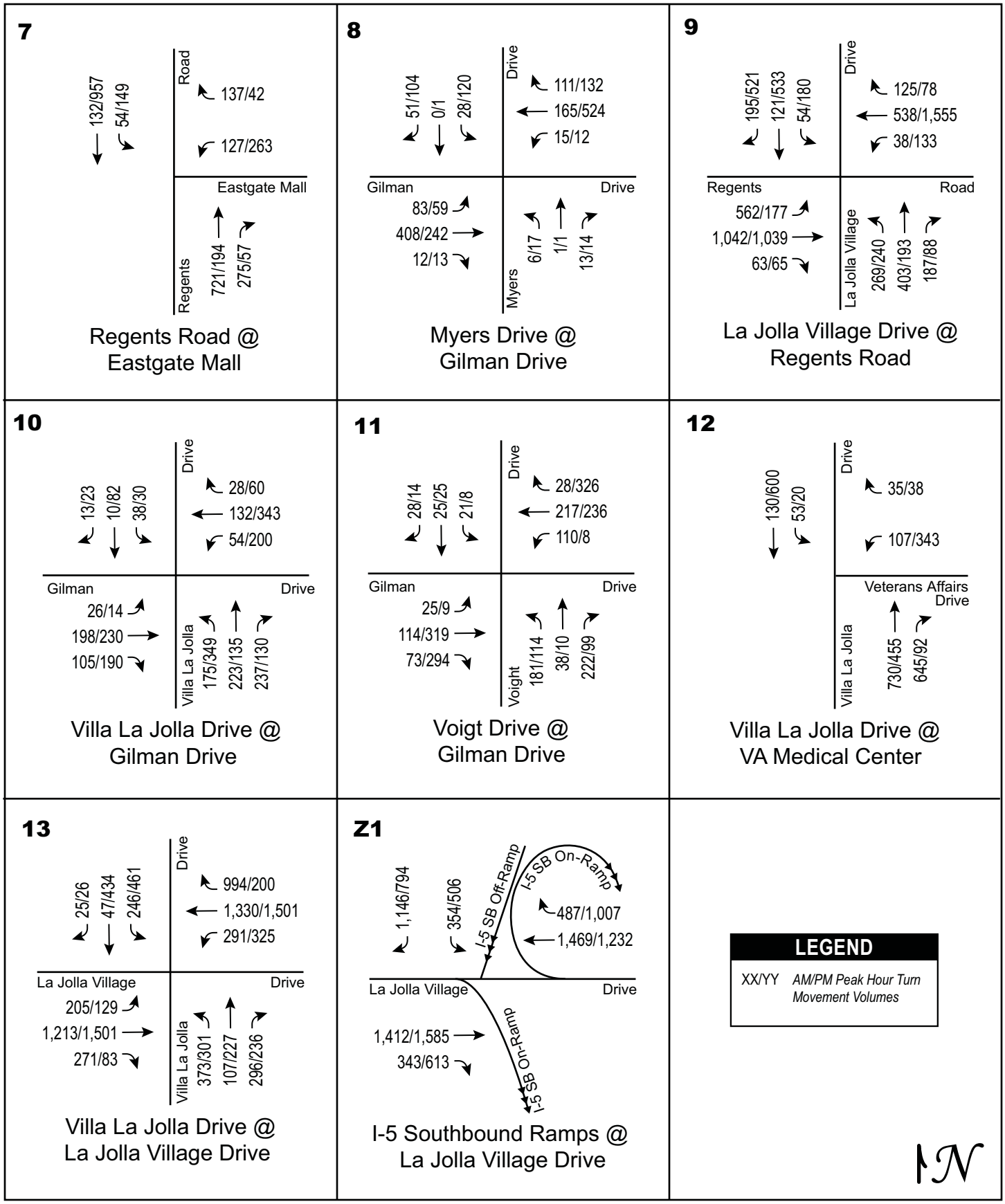
Figure 2-2c
Manchester Avenue Area of Influence
Existing Peak Hour Traffic Volumes
(3 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

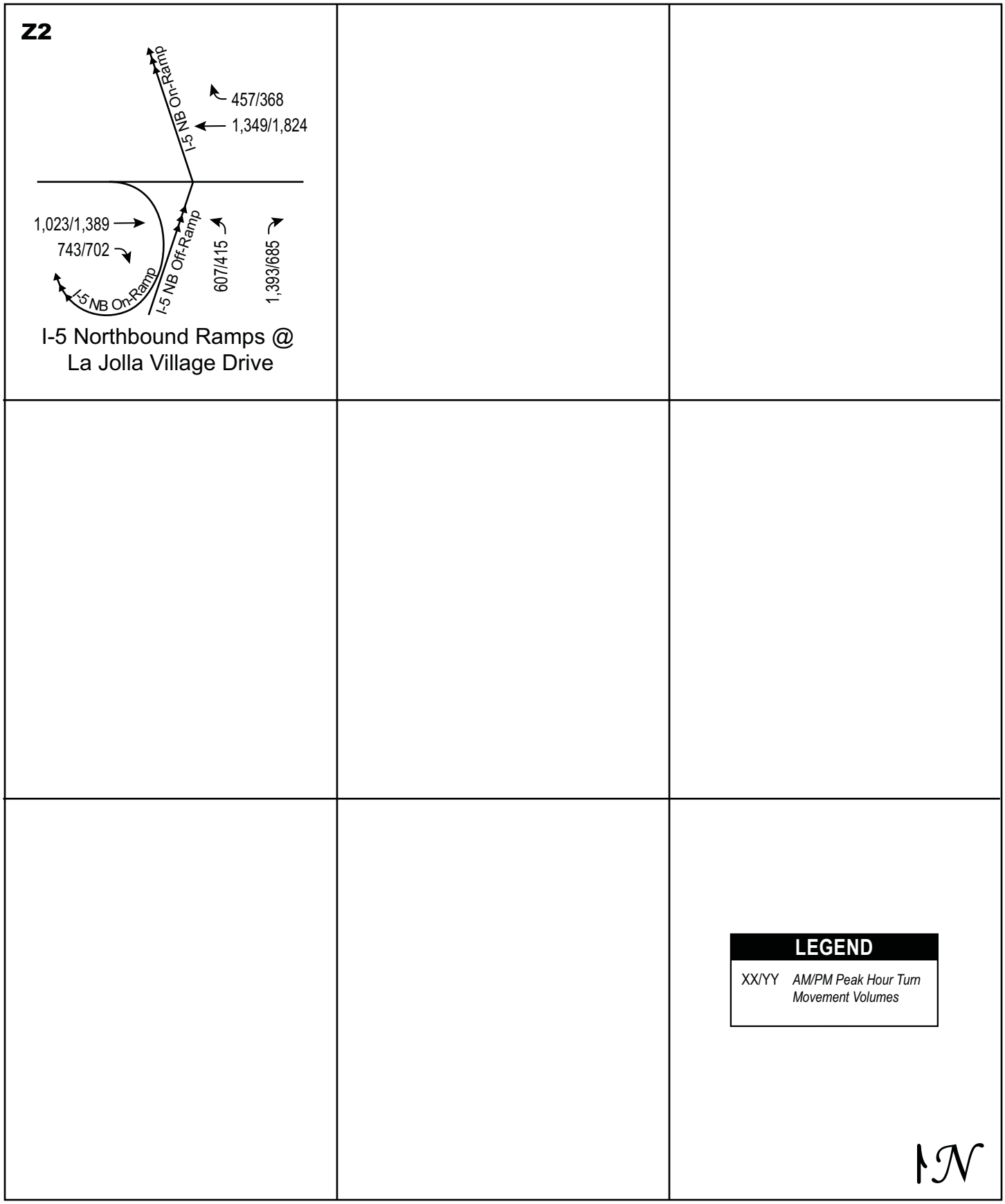
Figure 2-2d
Voigt Drive Area of Influence
Existing Peak Hour Traffic Volumes
(1 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

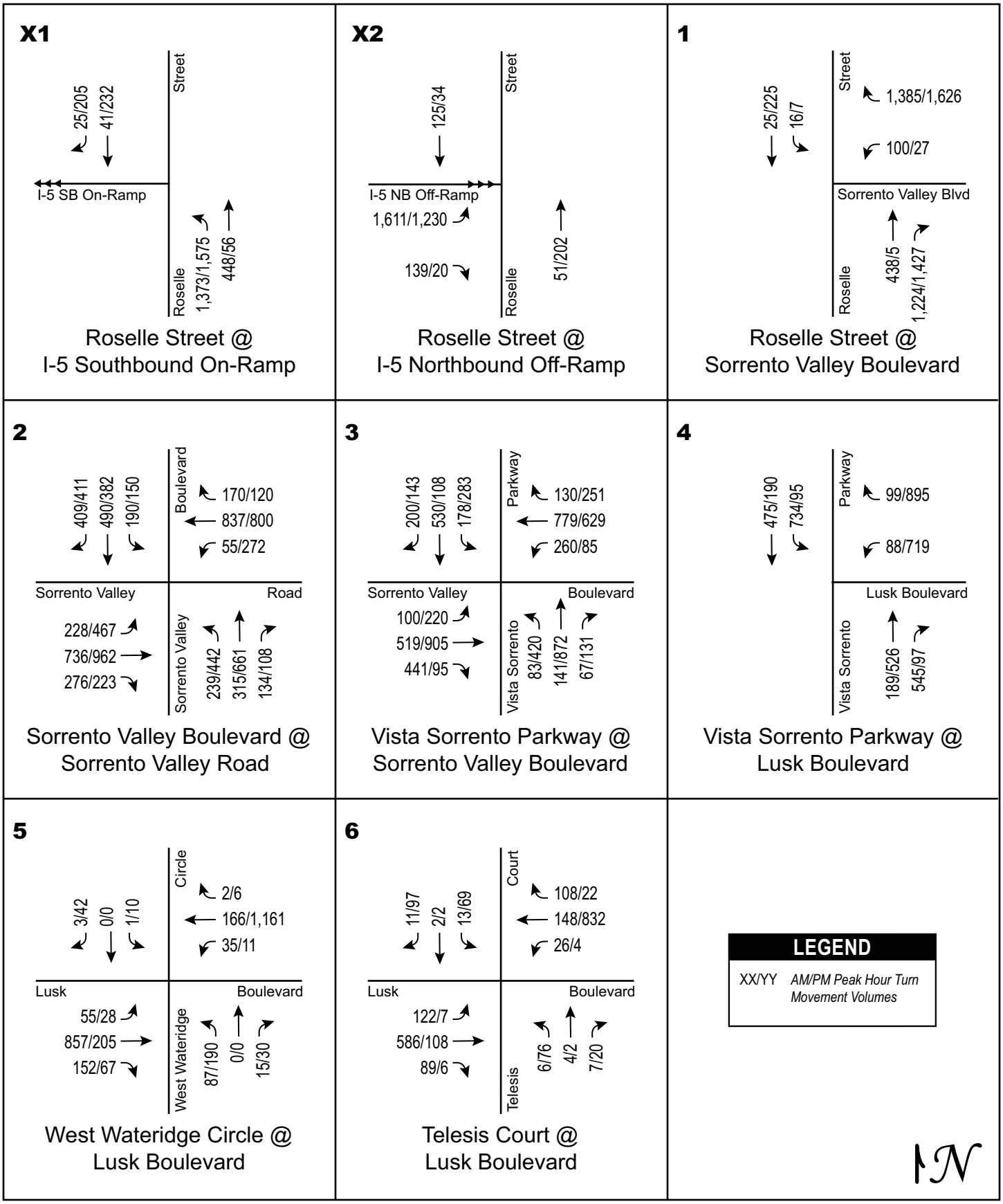
Figure 2-2d
Voigt Drive Area of Influence
Existing Peak Hour Traffic Volumes
(2 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

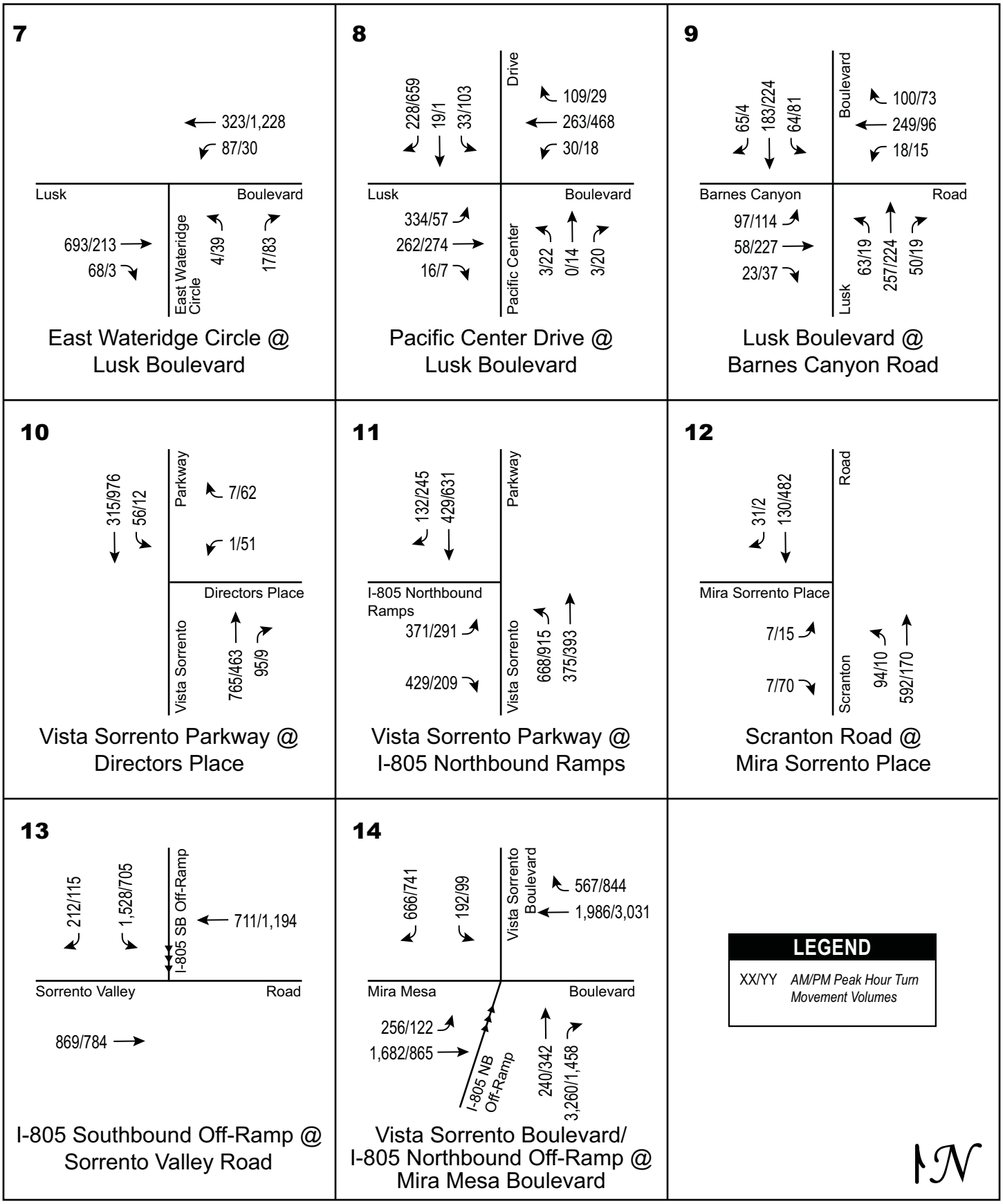
Figure 2-2d
Voigt Drive Area of Influence
Existing Peak Hour Traffic Volumes
(3 of 3)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

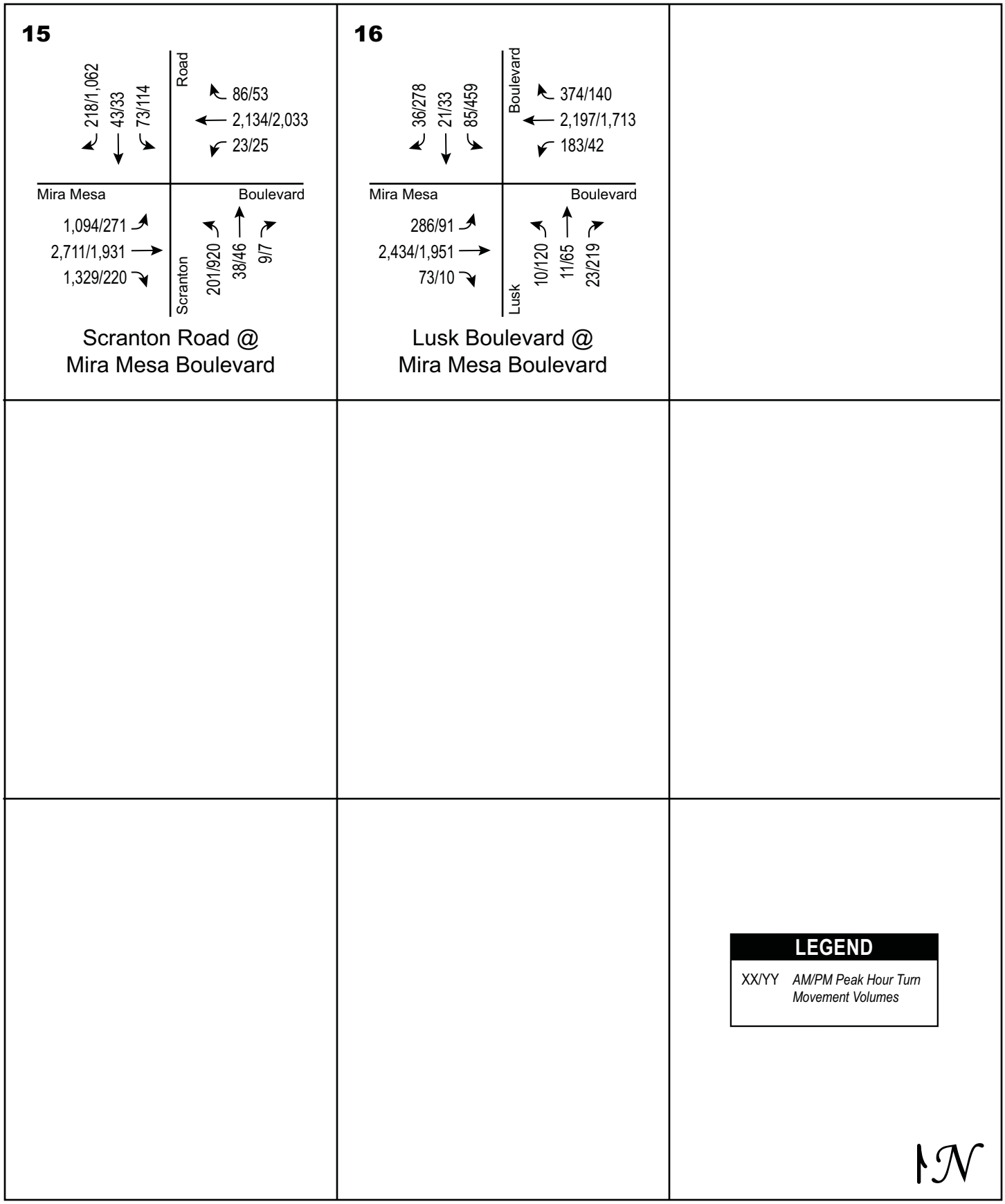
Figure 2-2e
Lusk Boulevard Area of Influence
Existing Peak Hour Traffic Volumes
(1 of 3)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

Figure 2-2e
Lusk Boulevard Area of Influence
Existing Peak Hour Traffic Volumes
(2 of 3)

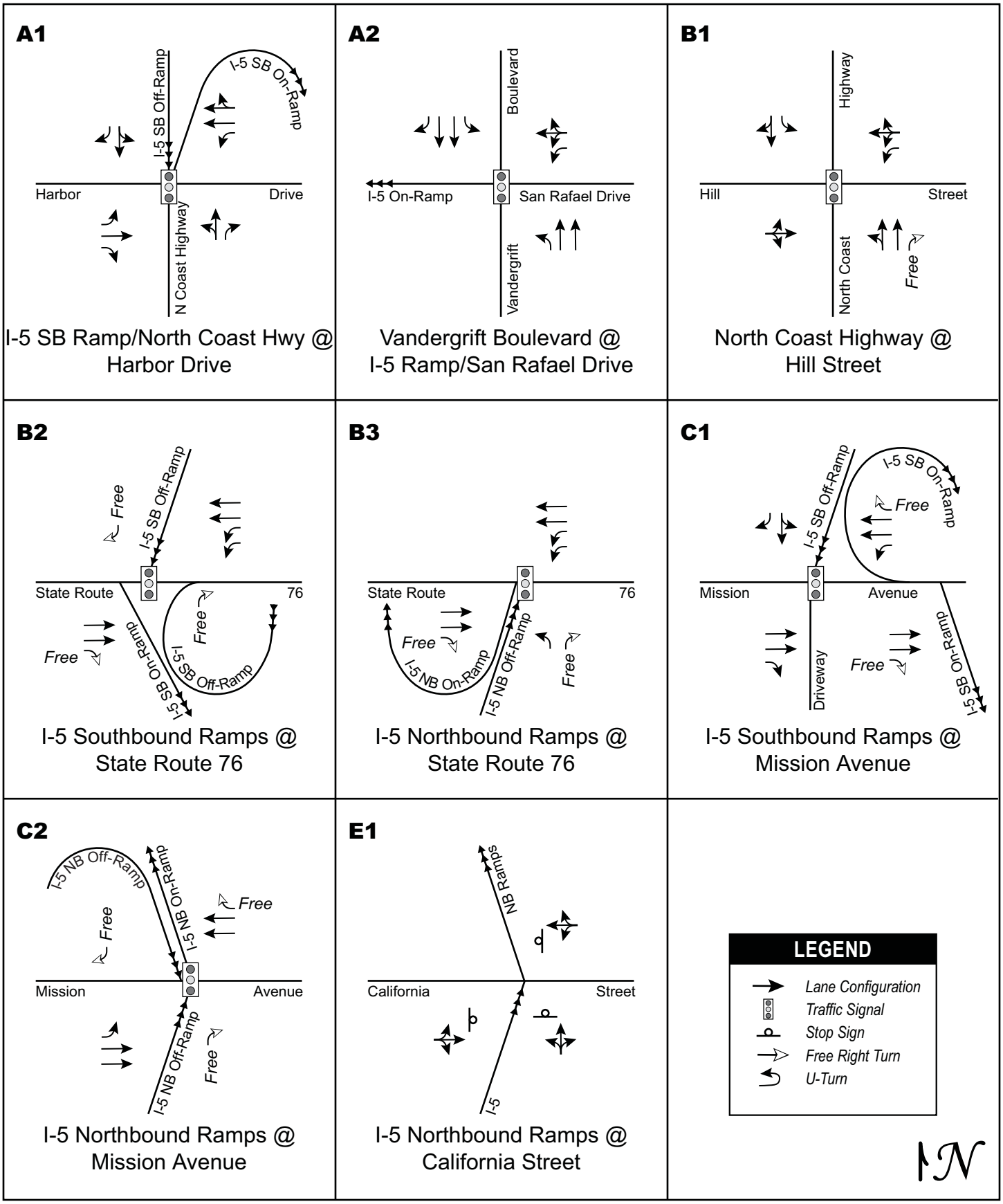


Source: Wilson and Company, August 2004

Figure 2-2e
Lusk Boulevard Area of Influence
Existing Peak Hour Traffic Volumes
(3 of 3)

Appendix 3

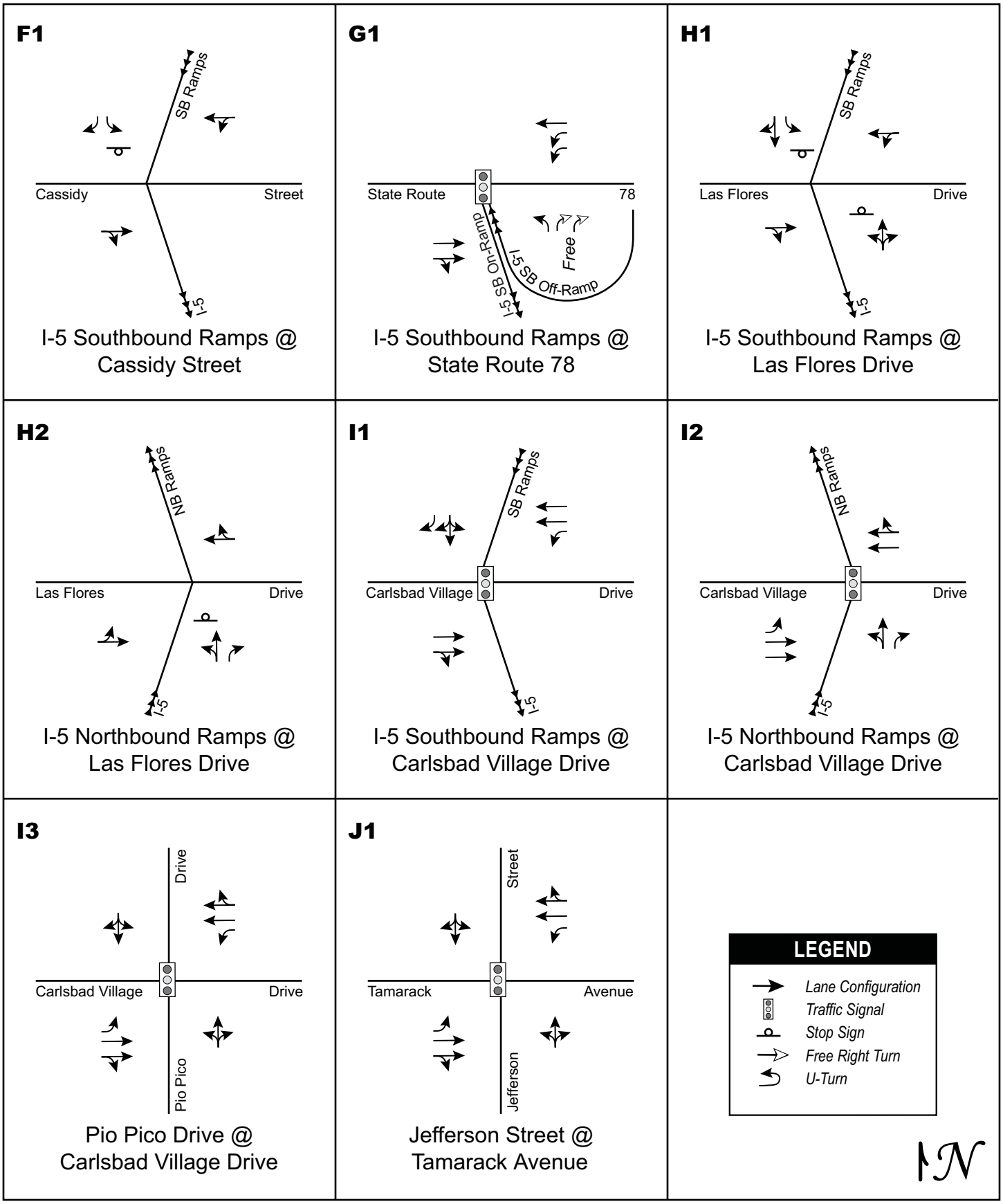
Existing Intersection Lane Configurations and Peak Hour Traffic Volumes for Other Interchanges within the I-5 North Coast Corridor



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

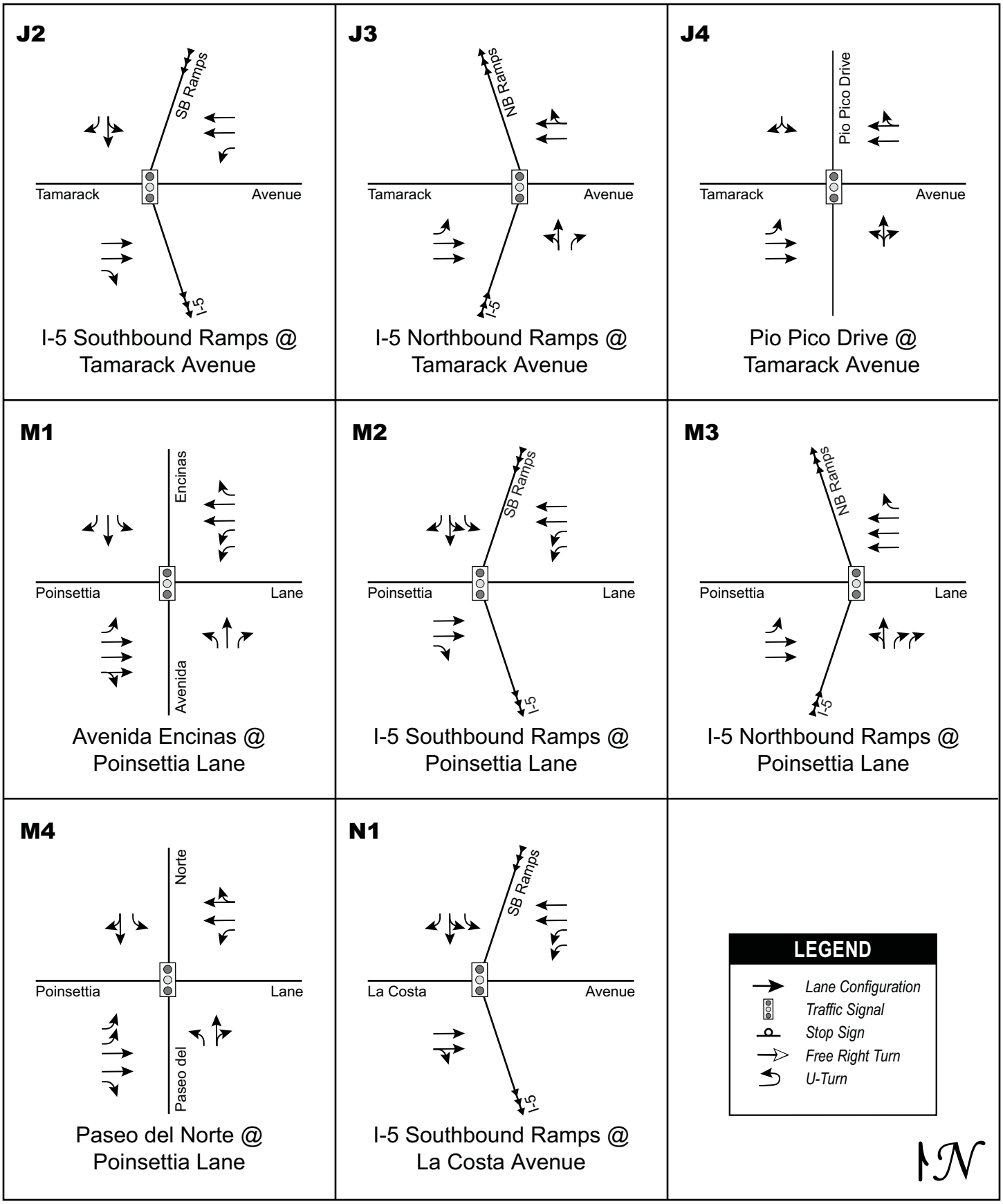
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(1 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

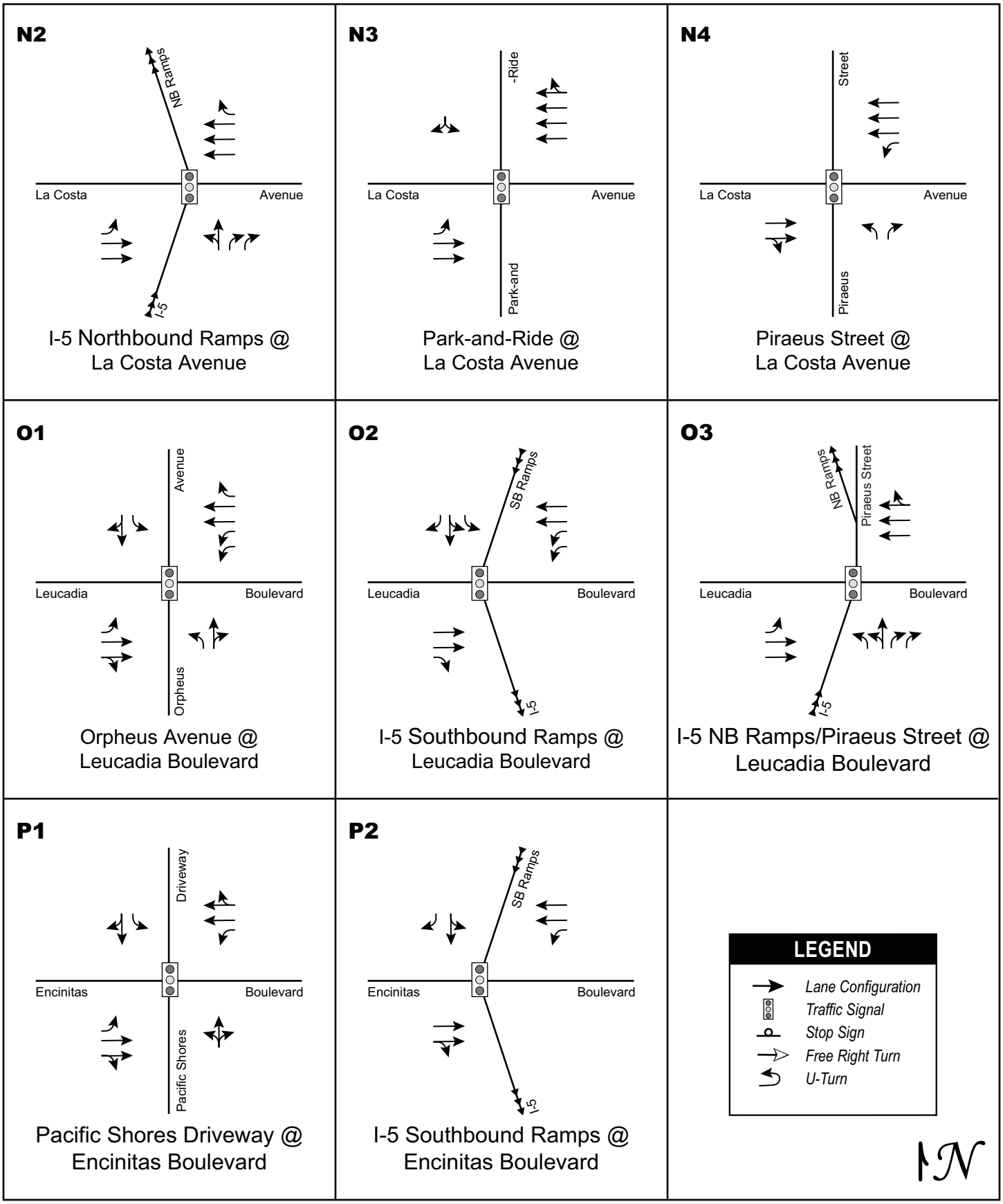
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(2 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

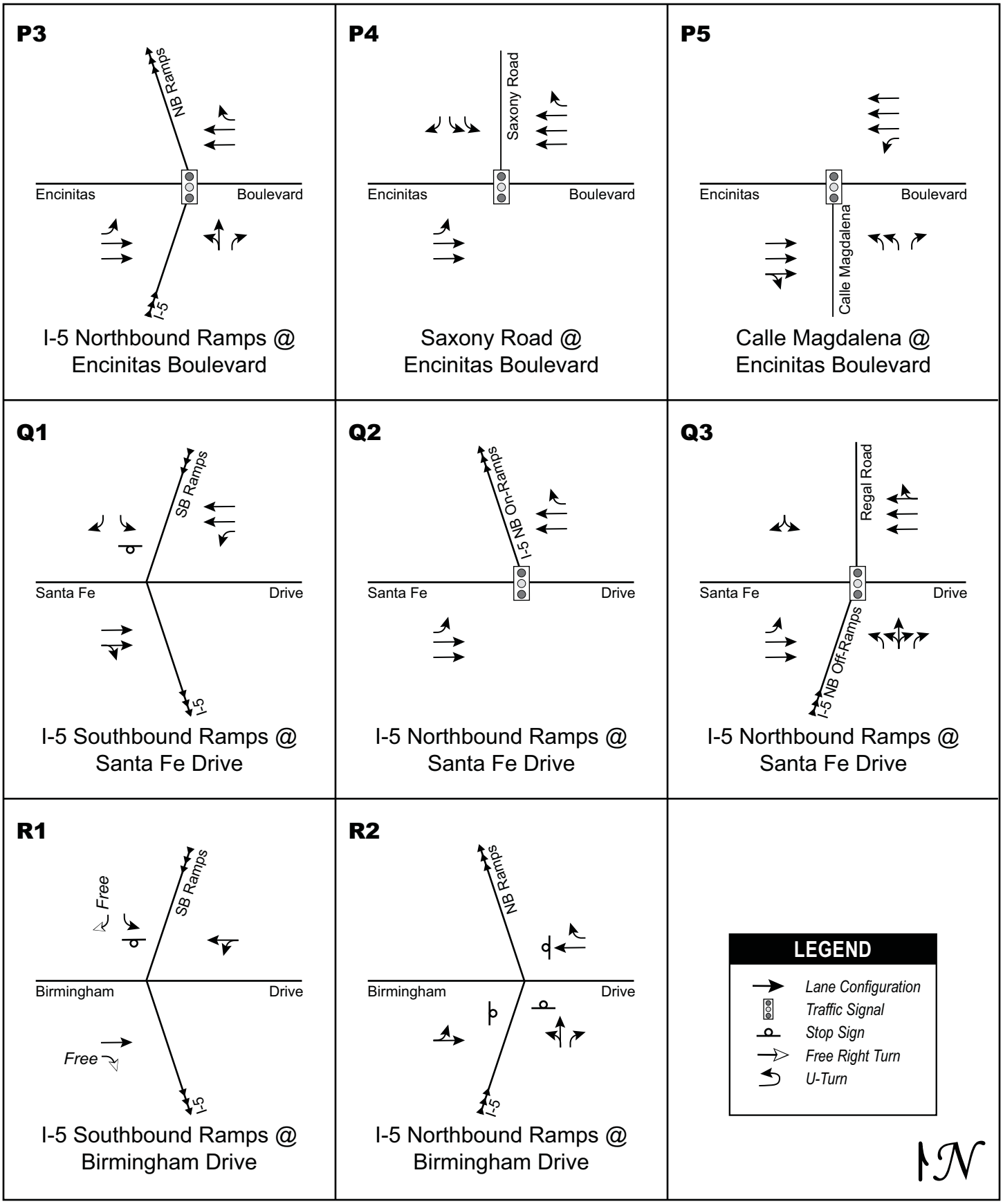
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(3 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

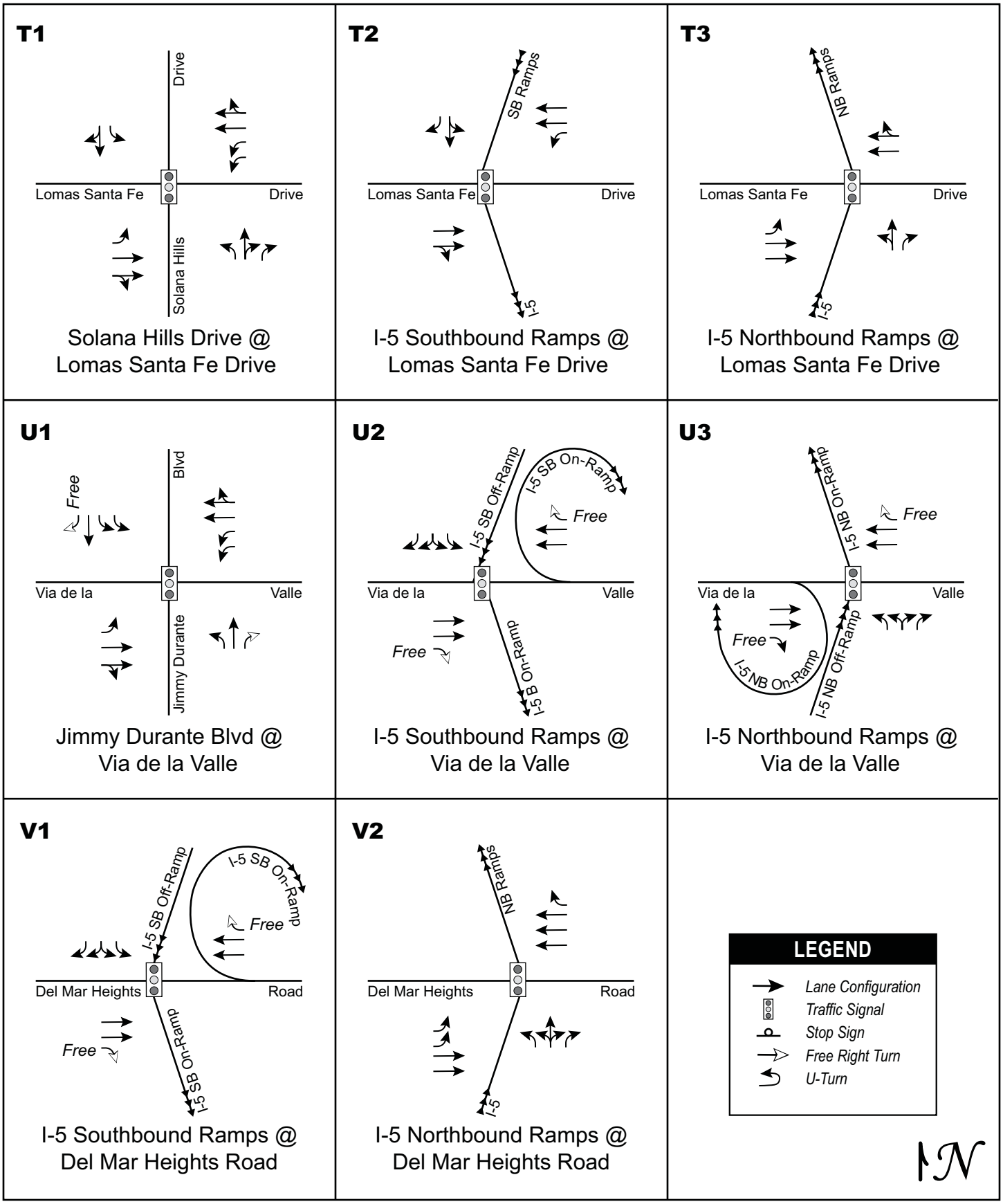
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(4 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

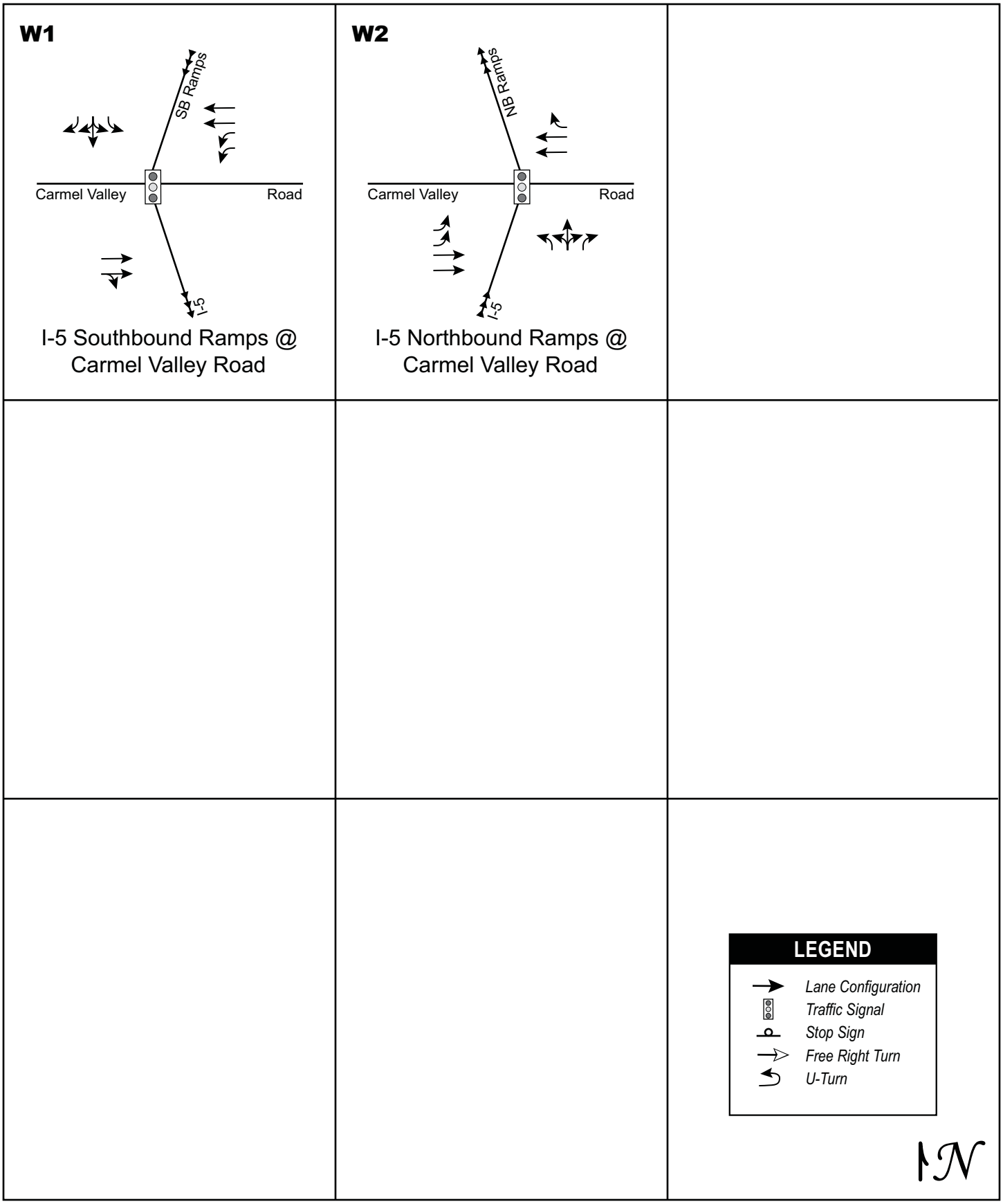
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(5 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

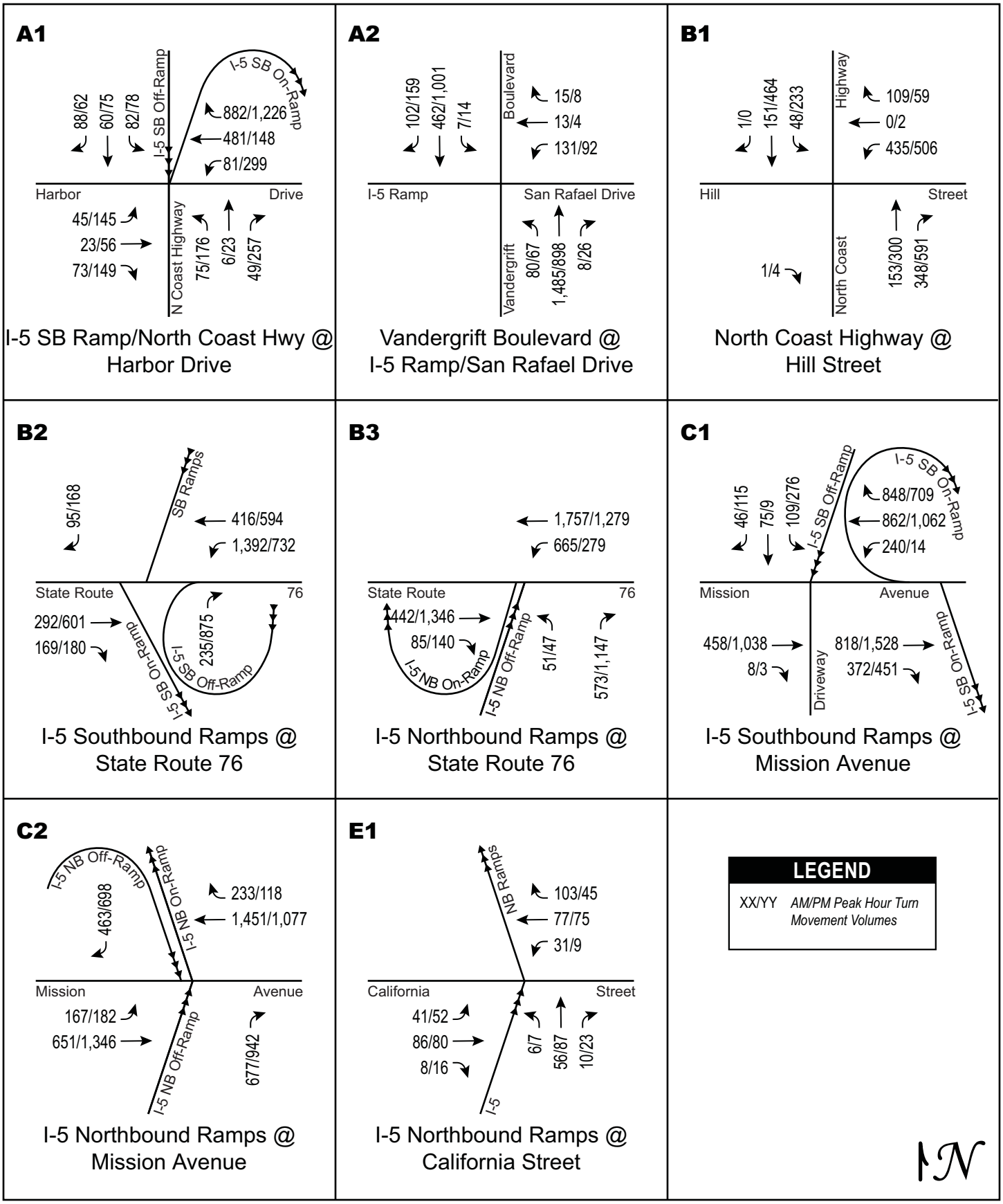
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(6 of 7)



Source: Wilson and Company, August 2004

I-5 North Coast
Existing Traffic Conditions

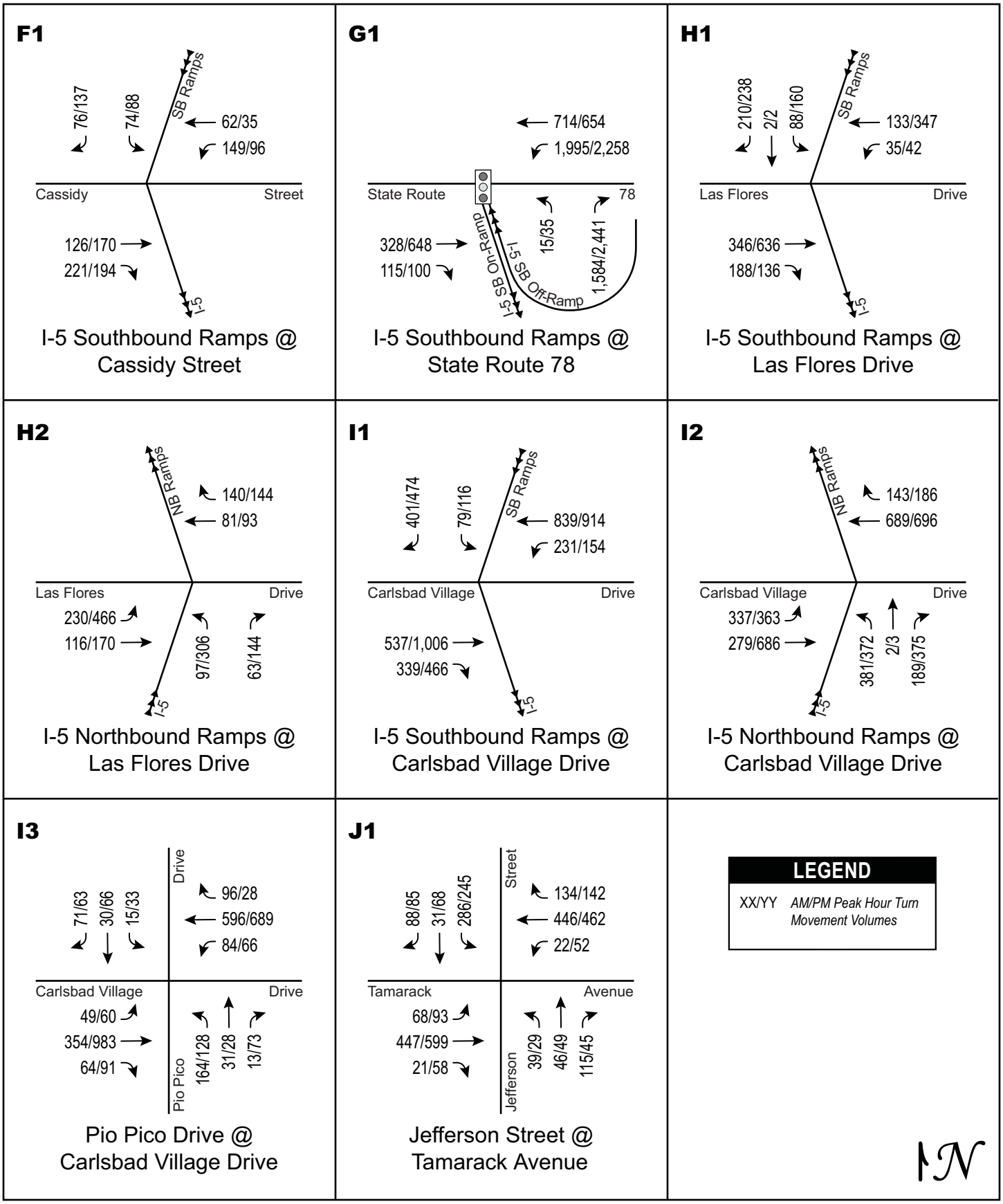
Figure 3-1
Other North Coast Corridor Interchange
Intersection Lane Configuration
(7 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

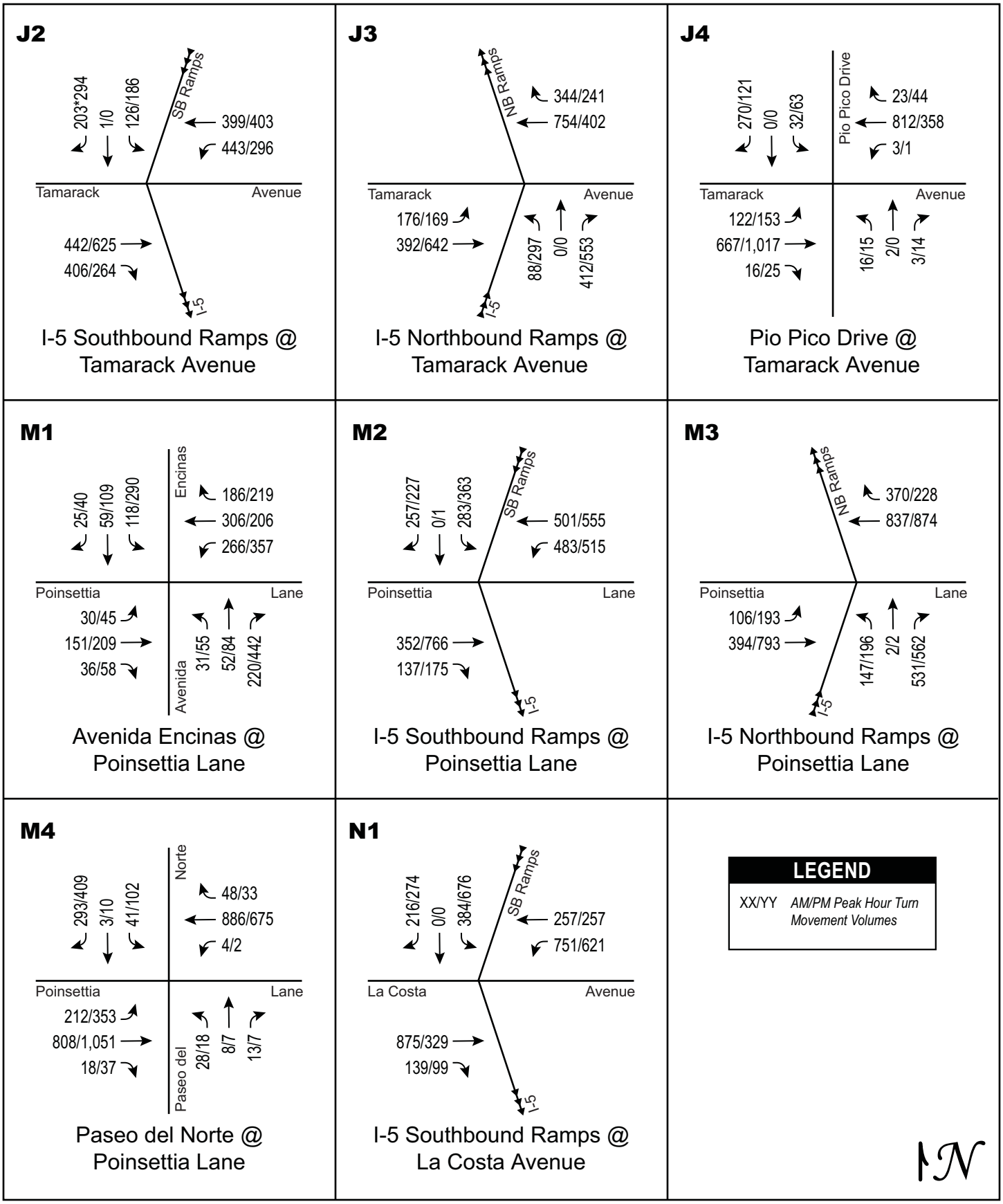
Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(1 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

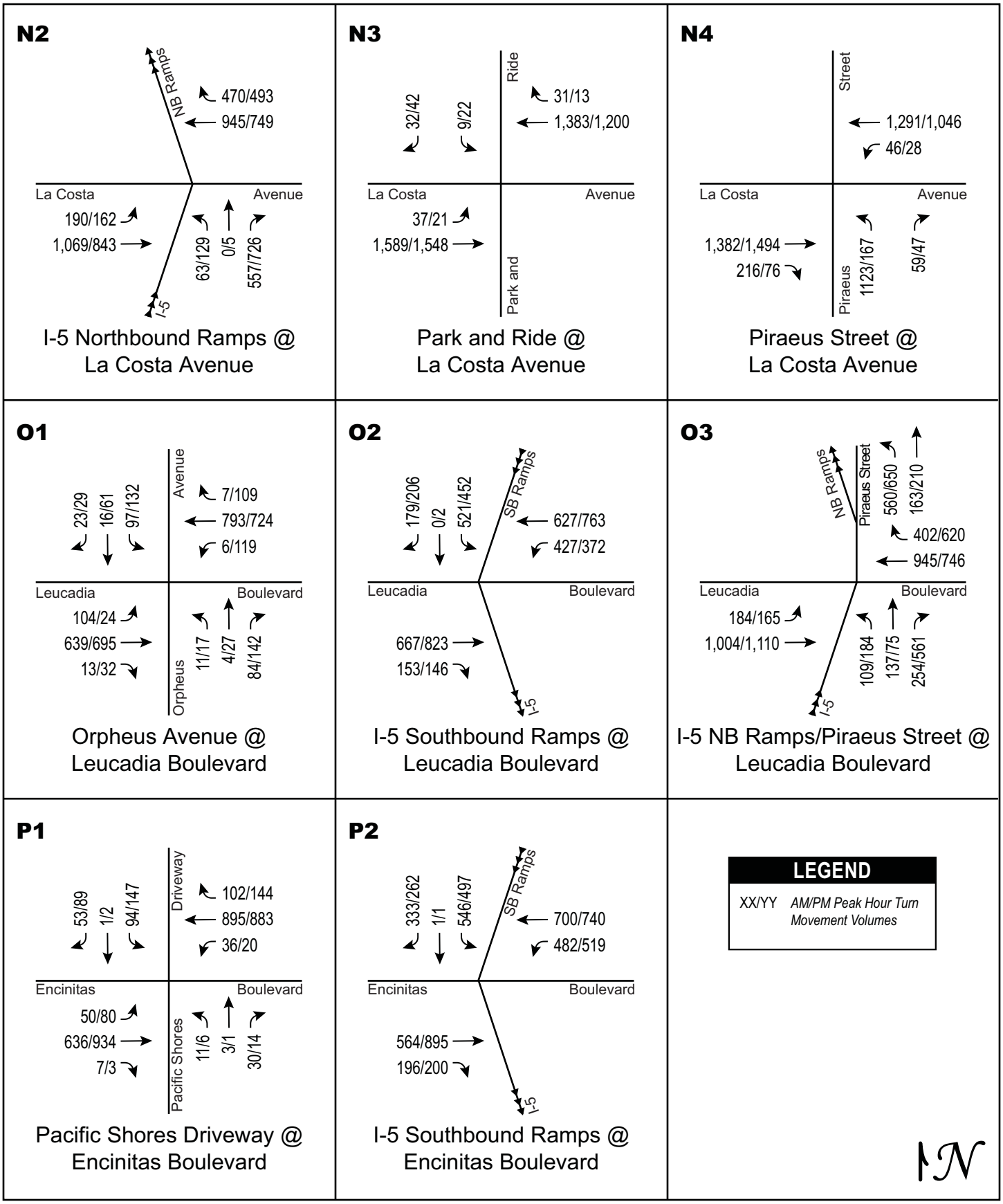
Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(2 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

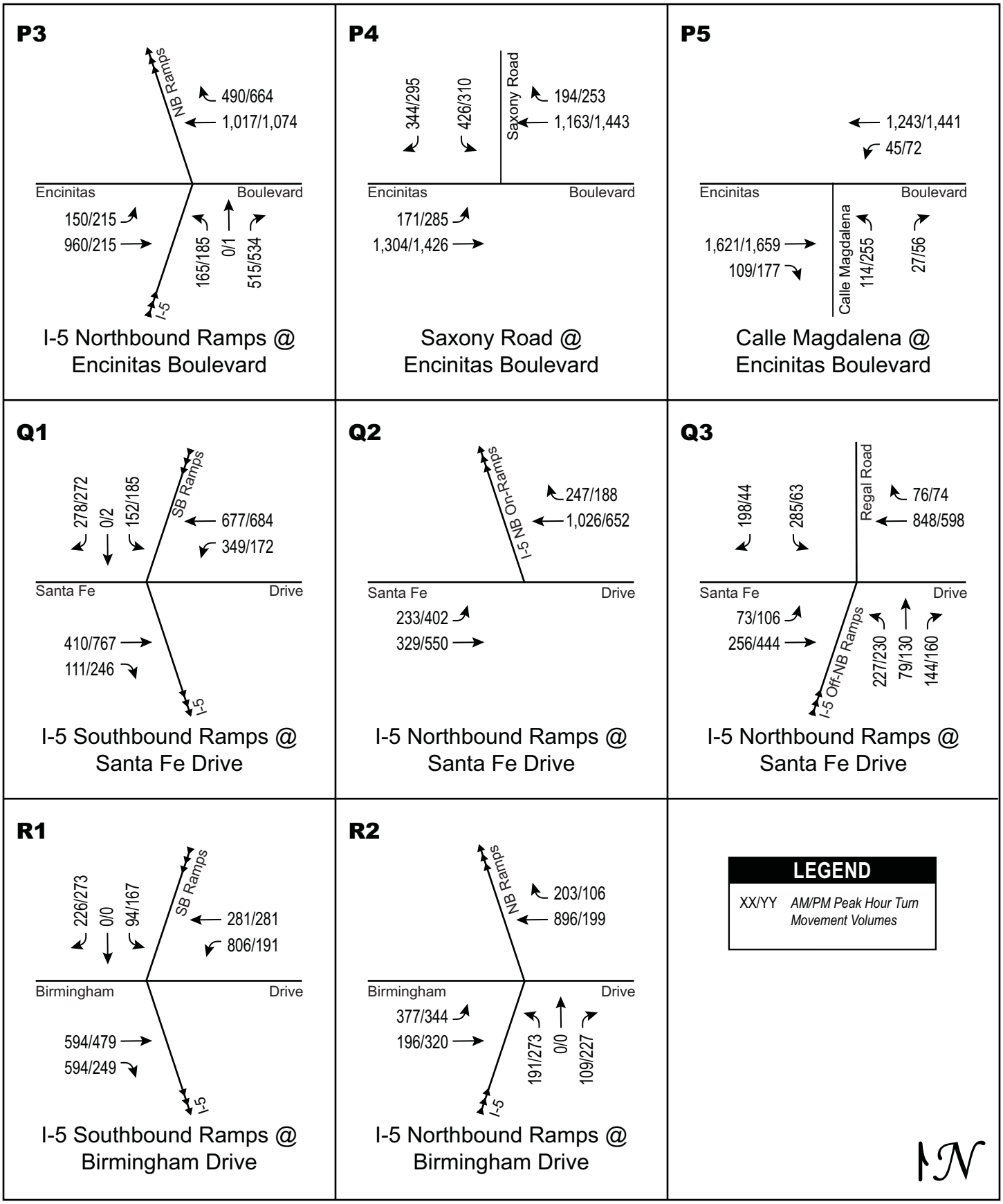
Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(3 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

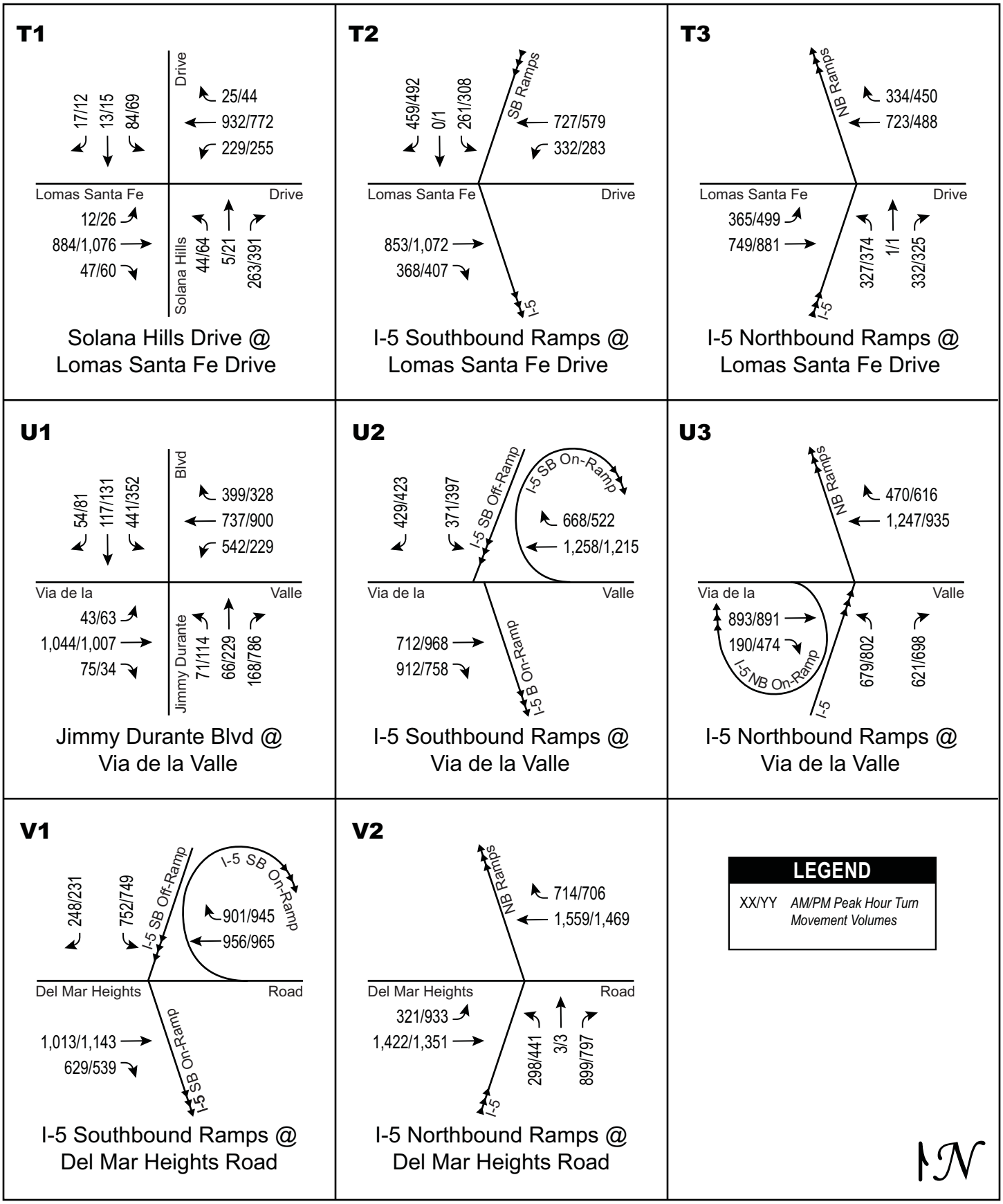
Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(4 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

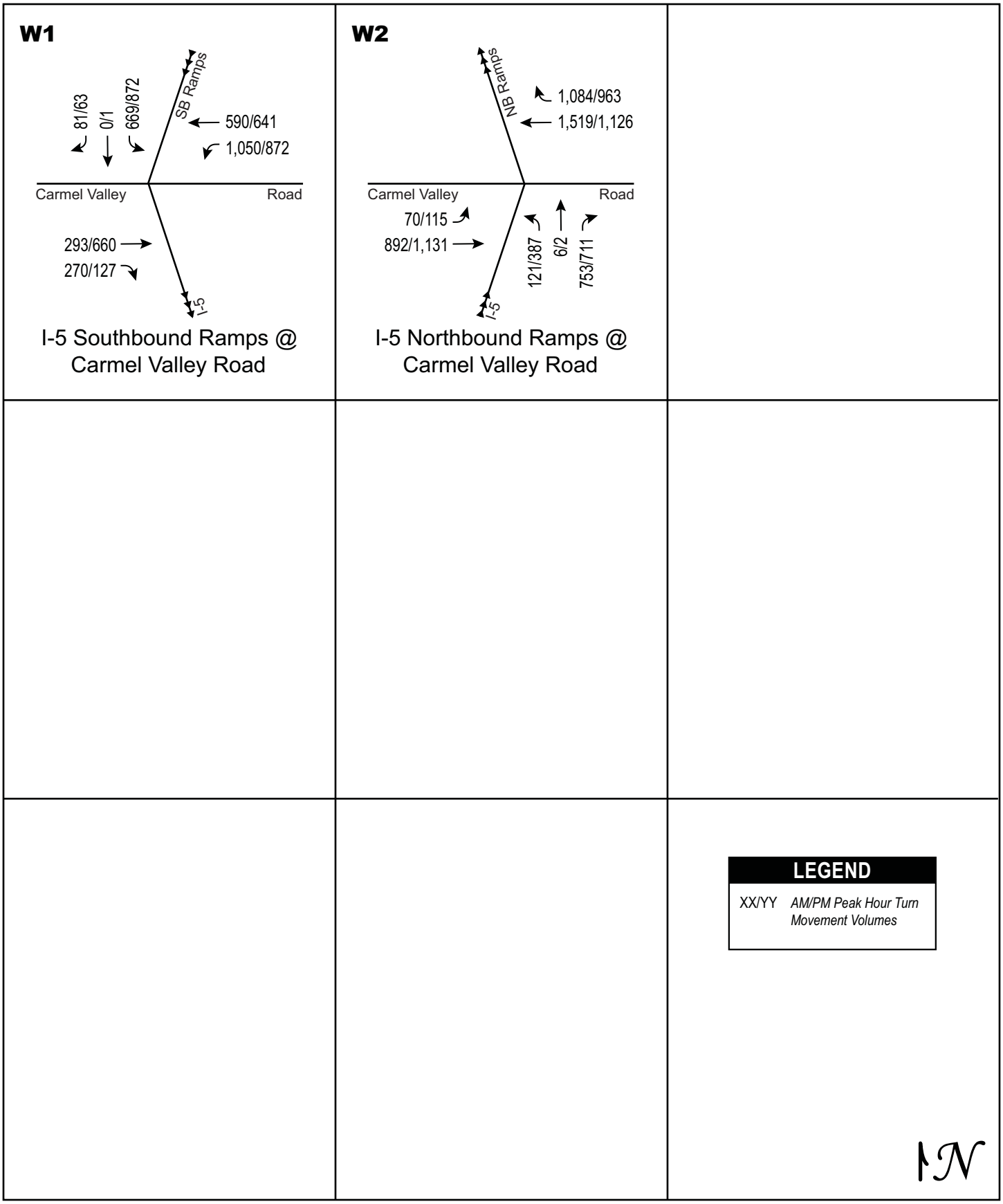
Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(5 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(6 of 7)



Source: Wilson and Company, February 2006

I-5 North Coast
Existing Traffic Conditions

Figure 3-2
Other North Coast Corridor Interchange and Impacted Intersection Traffic Volumes
(7 of 7)

Appendix 4

Existing Intersecting Lane Volume (ILV) Work Sheets

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

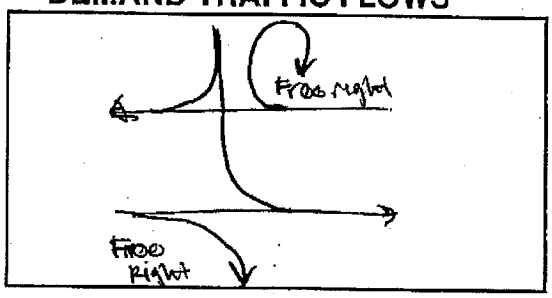
INTERSECTION: I-5 SB Ramps / La Jolla Village Drive DIST. CO. RTE.

ALTERNATIVE: Existing Conditions P.M.

DATE: 17 February 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

396 →
396 →
397 →
396 →
Free right ↓

↑ Free right
← 410
← 411
← 411

PHASE II

397 ↲ 397 ↲ 253 ↳ 253 ↳

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
411	397

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 808

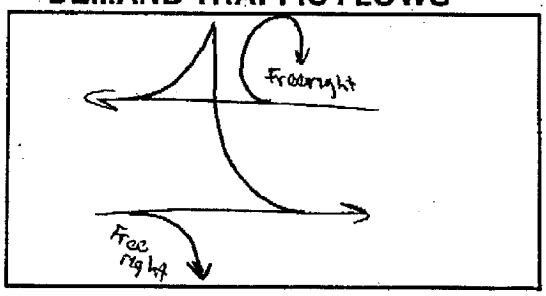
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / La Jolla Village Drive
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

353 →
353 →
353 →
353 →
Free right ↓

↑ Free right
← 489
← 490
← 490

PHASE II

573 573 177 177

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
490	573
PHASE III	**PHASE IV**

TOTAL OPERATING LEVEL (ILV/HR): IS... 1063

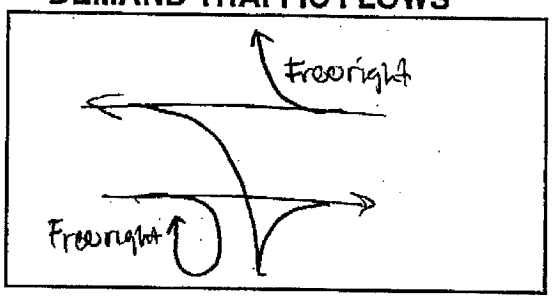
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

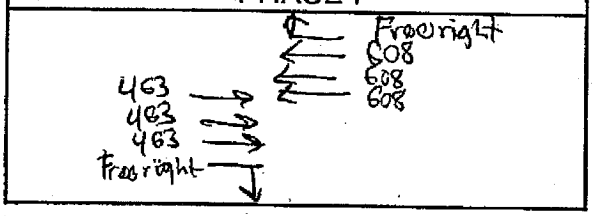
INTERSECTION: I-5 NB Ramps / La Jolla Village Drive
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS

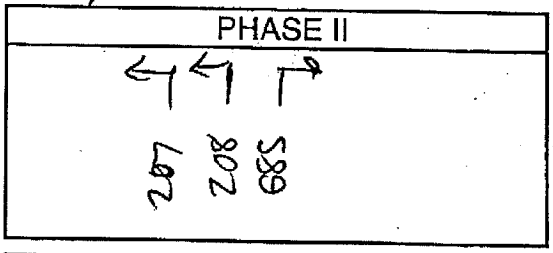


LANE VOLUMES (ILV/HR)

PHASE I



PHASE II



PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
608	685

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

IS...	
1,293	< 1200 ILV/HR
	> 1200 BUT < 1500 ILV/HR
	> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

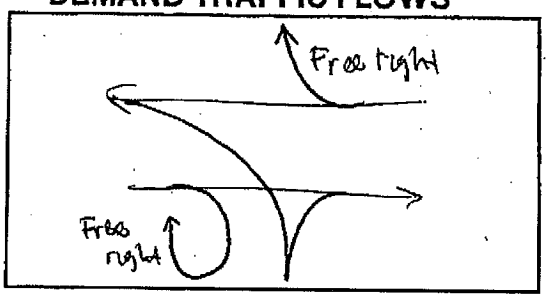
INTERSECTION: I-5 NB Ramps / La Jolla Village Drive DIST. CO. RTE.

ALTERNATIVE: Existing Conditions P.M.

DATE: 17 Feb 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

Free right
449
450
450
341
341
341
Free right

PHASE II

304
303
1393

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
450	1393

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

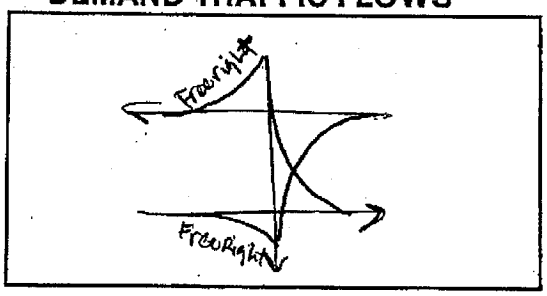
	< 1200 ILV/HR
	> 1200 BUT < 1500 ILV/HR
1,843	> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Genesee Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 457
← 457
↓ 457

PHASE II

← 500
← 499
279 →
278 →
Free right ↓

PHASE III

← Free right
↓ S12
↓ S11

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
457	500

PHASE III	PHASE IV
S12	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1,469

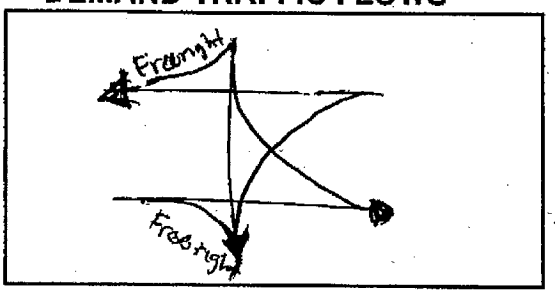
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Genesee Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 533
← 532
↓ 681

PHASE II

← 0
← 0
596 →
596 →
Freeright ↓

PHASE III

Freeright ↓
287 ↓
287 ↓

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
533	596

PHASE III	PHASE IV
287	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

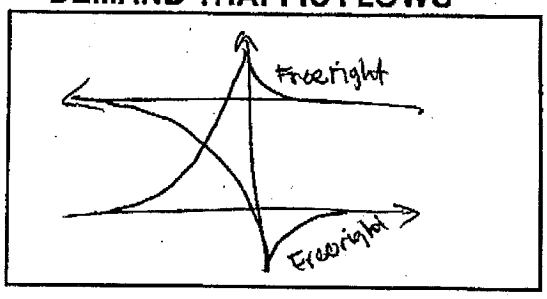
1,416

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Genesee Avenue
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

596 ↑
492 →
492 →

PHASE II

↑ Free right
← 397
← 396
0 →
0 →

PHASE III

← 788
↑ 789
→ Free right

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
596	397
PHASE III	**PHASE IV**
789	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

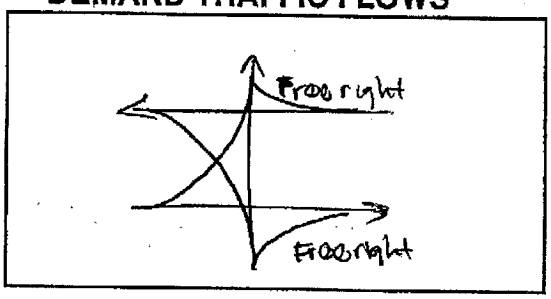
	< 1200 ILV/HR
	> 1200 BUT < 1500 ILV/HR
1,782	> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Genesee Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M. (P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

730 ↑
518 →
518 →

PHASE II

↑ Free right
← 501
← 501
0 →
0 →

PHASE III

↰ ↰ ↱
372 372 Free right

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
730	501

PHASE III	PHASE IV
372	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1,603

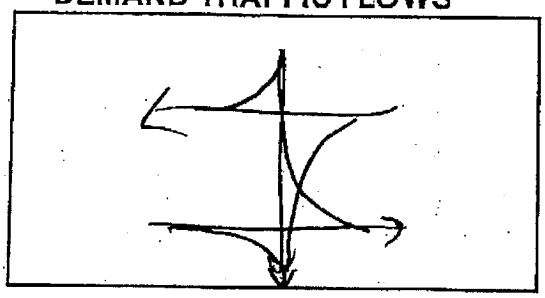
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Carmel Valley Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 295 ← 295 ↓ 525 ↓ 525	← 0 ← 0 282 → 281 →

PHASE III	PHASE IV
↳ 81 ↔ 335 ↳ 334	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
525	282

PHASE III	PHASE IV
335	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1142

TRAFFIC CONDITIONS:

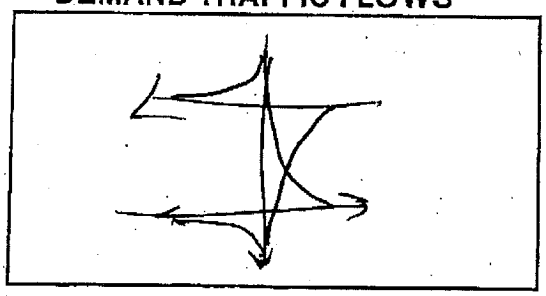
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Carmel Valley Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 321
← 320
↓ 436
↓ 436

PHASE II

↔ 0
↔ 0
394 ↔
393 ↱

PHASE III

↰ 63
↔ 293
↳ 293

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
436	394

PHASE III	PHASE IV
293	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1123

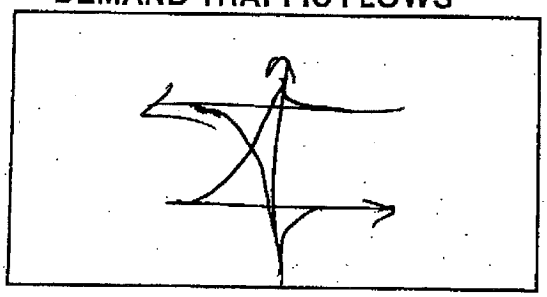
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Carmel Valley Road DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

35 ↰
35 ↰
35 →
35 →

PHASE II

↑ 1,084
← 760
← 759
411 →
411 →

PHASE III

↰ ↑ ↱
293 294 293

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
35	1,084

PHASE III	PHASE IV
294	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1,413

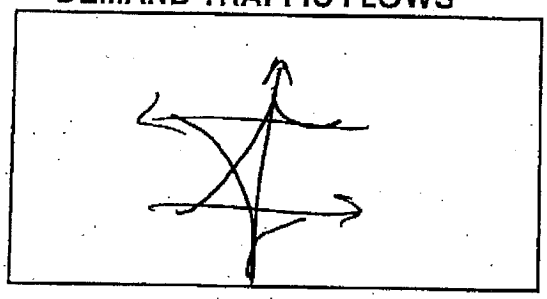
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Carmel Valley Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2008
TIME: Peak A.M. / P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

58 ↱
57 ↱
58 →
58 →

PHASE II

963 ↑
563 ←
563 ←
508 →
507 →

PHASE III

↰ ↑ ↱
367 366 366

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
58	963

PHASE III	PHASE IV
367	

TOTAL OPERATING LEVEL (ILV/HR): IS...

1,388

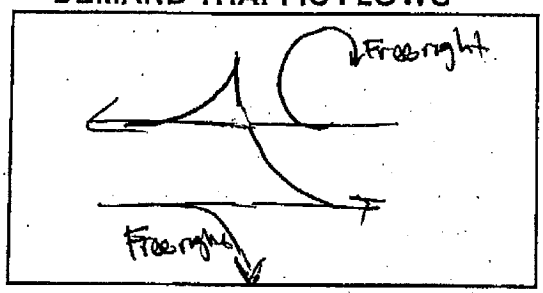
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Del Mar Heights Road DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Bak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
Free right 478 478 807 506 Free right	248 376 376

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
507	376

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 883

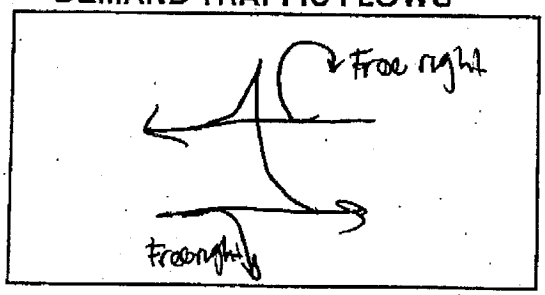
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Del Mar Heights Road DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
free right 483 482 572 571 free right	231 375 374

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
572	375

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 947

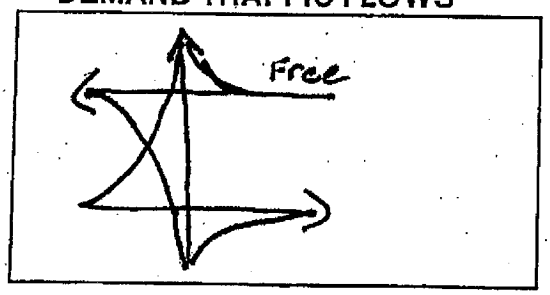
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Del Mar Heights Rd
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

161 ↑
160 ↑
161 →
161 →

PHASE II

↑ Free
← 520
← 519
← 520
550 →
550 →

PHASE III

↰ ↑ ↱

400 400 400

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
161	550

PHASE III	PHASE IV
400	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1111

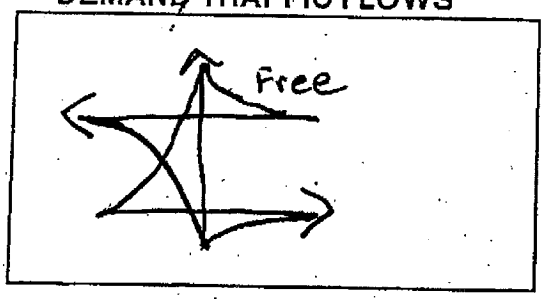
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps/ Del Mar Heights Rd
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

467 ↰
466 ↱
467 →
467 →

PHASE II

Free
↑
← 490
← 490
← 489
209 →
208 →

PHASE III

414 ↰ 413 ↑ 414 ↱

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
467	490

PHASE III	PHASE IV
414	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1371

TRAFFIC CONDITIONS:

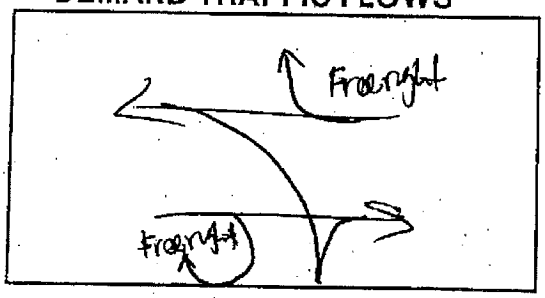
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Via de la Valle
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
Freeright 624 623 447 446 Freeright	433 434 433

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
624	434

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,058

TRAFFIC CONDITIONS:

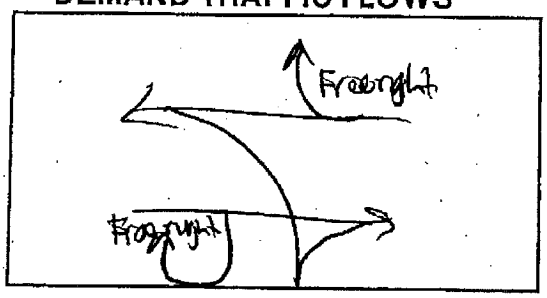
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Via de la Valle
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. / P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

Freeright
468
467
446
445
Freeright

PHASE II

500 500 500

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
468	500
PHASE III	**PHASE IV**

TOTAL OPERATING LEVEL (ILV/HR): IS... 968

TRAFFIC CONDITIONS:

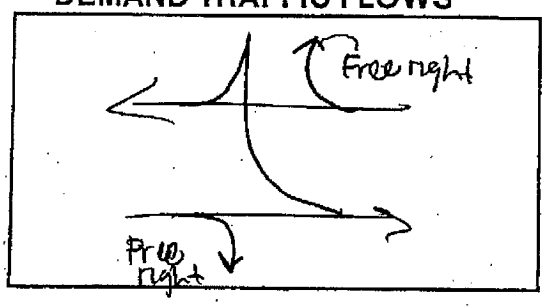
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Via Dolorille
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2008
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
Free right 629 629 356 356 Free right	267 267 266

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
629	267

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 896

TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Via de la Valle
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS

LANE VOLUMES (ILV/HR)

PHASE I

free right
608
607
484
484
free right

PHASE II

273
274
273

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
608	274

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 882

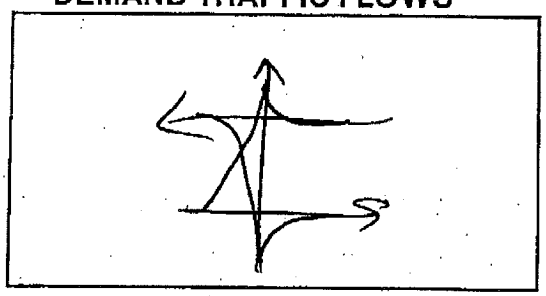
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Lomas Santa Fe Drive
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

365 ↑
375 →
374 →

PHASE II

529 ↑
528 ←
10 →
9 →

PHASE III

328 ↰
332 ↱

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
375	529

PHASE III	PHASE IV
332	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,236

TRAFFIC CONDITIONS:

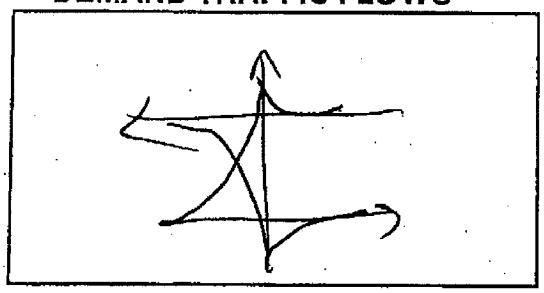
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Camino Santa Fe Drive
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

499 ↰
441 →
440 →

PHASE II

469 ↑
469 ←
0 →
0 →

PHASE III

↰ ↱
375
375

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
499	469

PHASE III	PHASE IV
375	

TOTAL OPERATING LEVEL (ILV/HR): IS...

1,343

TRAFFIC CONDITIONS:

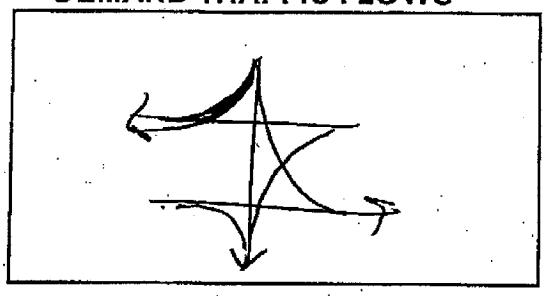
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Lomas Santa Fe Drive
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 332 ← 332 ↓ 332	← 32 ← 31 611 → 610 ↓

PHASE III	PHASE IV
↳ 459 ↓ 261	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
332	611

PHASE III	PHASE IV
459	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,402

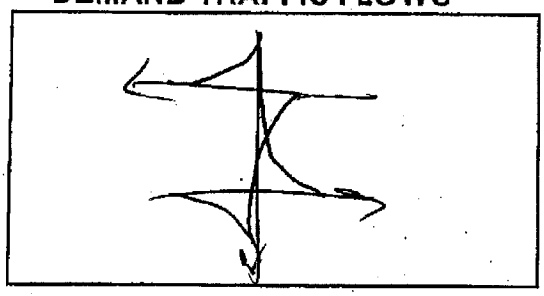
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Lavas Santa Fe Drive
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. (P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 283 ← 283 ↓ 283	← 7 ← 6 740 ↘ 739 ↓

PHASE III	PHASE IV
492 ↲ 308 ↓→	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
283	740

PHASE III	PHASE IV
492	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

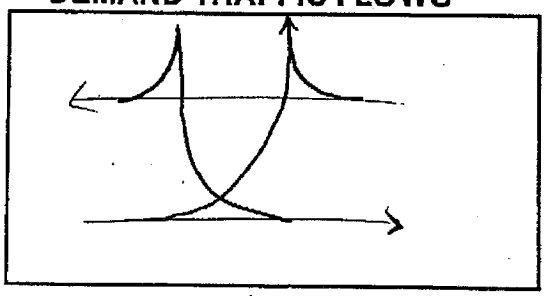
	< 1200 ILV/HR
	> 1200 BUT < 1500 ILV/HR
1,515	> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Manchester Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
84 ↰ ↑ 84 →	↑ ↳ 76 ← 546 ← 546 93 →

PHASE III	PHASE IV
↰ 78 ↳ 361 ↳ 361	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
84	546

PHASE III	PHASE IV
361	

TOTAL OPERATING LEVEL (ILV/HR): IS... 991

TRAFFIC CONDITIONS:

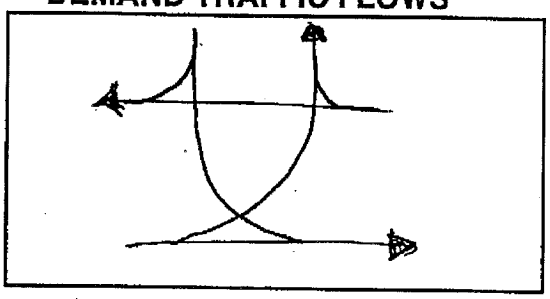
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Manchester Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
87 ↰ 87 →	↰ 83 ← 535 ← 536 154 →

PHASE III	PHASE IV
183 ↰ 608 ↳ 609 ↳	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
87	536

PHASE III	PHASE IV
609	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1232

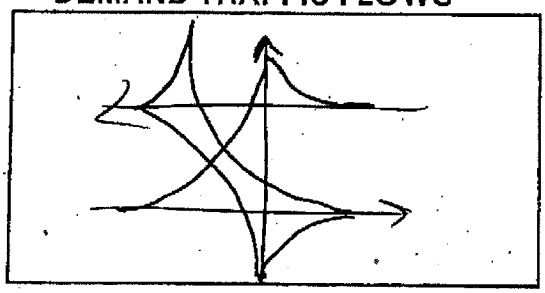
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Santa Fe Drive ② DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
73 ↑ 73 → 73 →	↑ 308 ← 308 ← 308 55 → 55 →

PHASE III	PHASE IV
483 ↓ ← →	↰ ↑ ↱ 153 153 144

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
73	308

PHASE III	PHASE IV
483	153

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,017

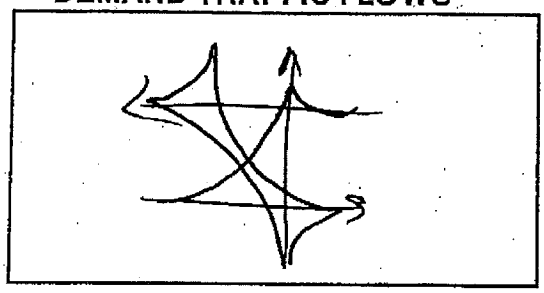
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Santa Fe Drive ② DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
106 ↑	↑ 224
106 →	← 224
106 →	← 224
	116 →
	116 →

PHASE III	PHASE IV
107	↰ ↑ ↱
↳	180 180 160

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
106	224

PHASE III	PHASE IV
107	180

TOTAL OPERATING LEVEL (ILV/HR): IS... 617

TRAFFIC CONDITIONS:

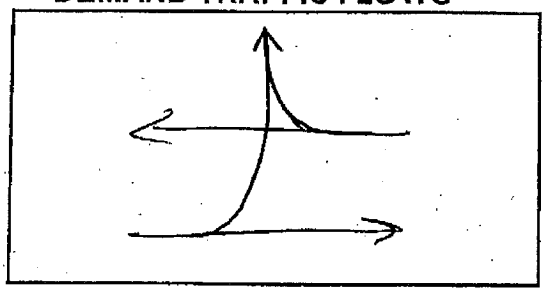
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Santa Fe Drive ①
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
233 ↑	↑ 247
165 →	0 → ← 513
164 →	0 → ← 513

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
233	513

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 746

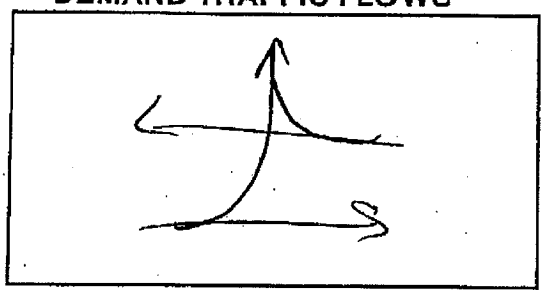
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Santa Fe Drive (1) DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
402 ↰ 9	↑ 188
275 →	← 342
275 →	← 342
	0 →
	0 →

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
402	342

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 744

TRAFFIC CONDITIONS:

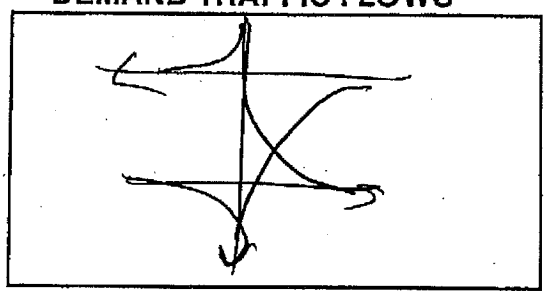
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Encinitas Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2008
TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 380 ← 350 ↓ 482	↙ 0 ← 0 380 → 380 ↓

PHASE III	PHASE IV
↙ 333 ↓ 547	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
482	380

PHASE III	PHASE IV
547	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,409

TRAFFIC CONDITIONS:

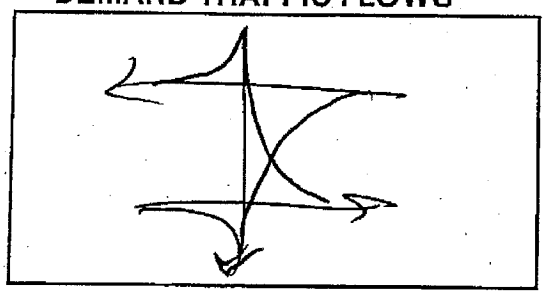
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Encinitas Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 370 ← 370 ↓ 519	← 0 ← 0 548 → 547 ↓

PHASE III	PHASE IV
↓ 262 ↓ 498	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
519	548

PHASE III	PHASE IV
498	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,565

TRAFFIC CONDITIONS:

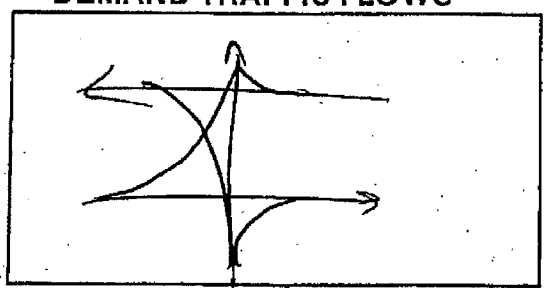
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Encinitas Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
150 ↑	↑ 490
150 →	← 509
150 →	← 508
	330 →
	330 →

PHASE III	PHASE IV
↰ 165 ↱ 515	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
150	509

PHASE III	PHASE IV
515	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,174

TRAFFIC CONDITIONS:

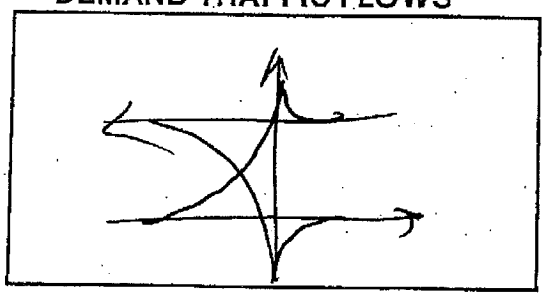
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Encinitas Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

215 ↗
215 →
215 →

PHASE II

↑ 664
← 537
← 537
374 →
373 →

PHASE III

↰ ↑ ↱
88 53

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
215	664

PHASE III	PHASE IV
534	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,413

TRAFFIC CONDITIONS:

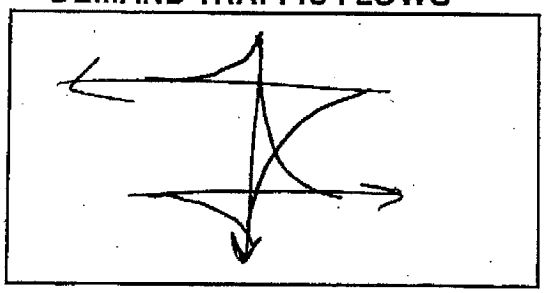
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Encadia Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2008
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 214 ← 214 ↓ 214 ↓ 213	← 100 ← 99 334 → 333 → 153 ↓

PHASE III	PHASE IV
← 179 ↓ 261 ↳ 280	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
214	334

PHASE III	PHASE IV
261	

TOTAL OPERATING LEVEL (ILV/HR): IS... 809

TRAFFIC CONDITIONS:

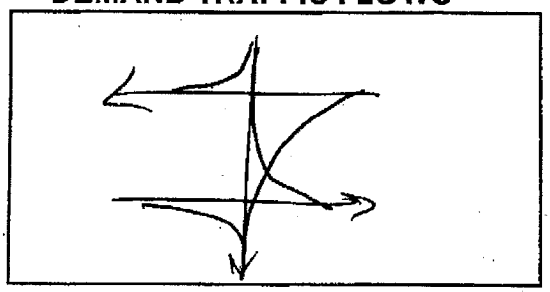
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Lomcadia Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 186 ← 186 ↓ 186 ↓ 186	← 187 ← 187 412 → 411 → 146 ↓

PHASE III	PHASE IV
← 206 ↓ 227 ↳ 227	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
186	412

PHASE III	PHASE IV
227	

TOTAL OPERATING LEVEL (ILV/HR): IS... 825

TRAFFIC CONDITIONS:

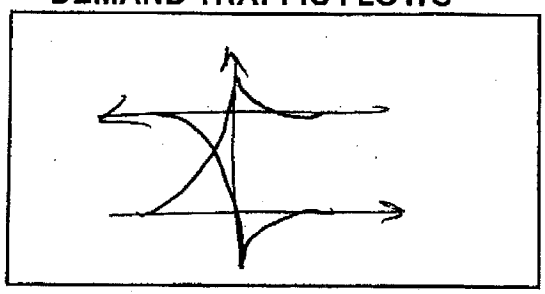
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Lexington Blvd
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

184 ↑
184 →
184 →

PHASE II

449 ↑
449 ←
449 ←
318 →
318 →

PHASE III

↰ ↰ ↱ ↱
109 137 25 25

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
184	449

PHASE III	PHASE IV
137	

TOTAL OPERATING LEVEL (ILV/HR): IS... 770

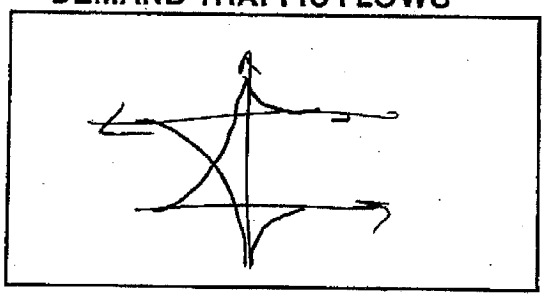
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Lencadia Blvd DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

165 ↱
165 →
165 →

PHASE II

620 ↑
467 ←
467 ←
390 →
390 →

PHASE III

↰ ↰ ↱ ↱
130 129 281 280

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
165	620

PHASE III	PHASE IV
281	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1066

TRAFFIC CONDITIONS:

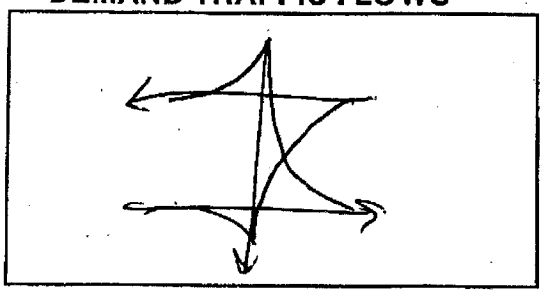
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I5 SB Ramps / La Costa Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 129
← 128
↓ 376
↓ 375

PHASE II

← 0
← 0
438 →
437 →
139 ↓

PHASE III

216 ↲
192 ↓↳
192 ↳

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
376	438

PHASE III	PHASE IV
216	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1030

TRAFFIC CONDITIONS:

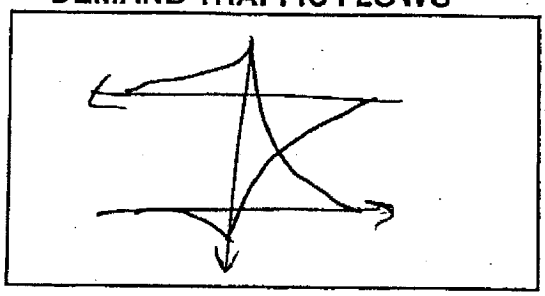
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / La Costa Avenue
ALTERNATIVE: Existing Conditions

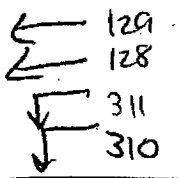
DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M. / P.M.

DEMAND TRAFFIC FLOWS

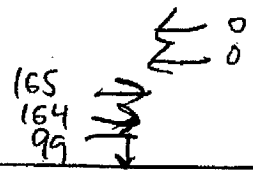


LANE VOLUMES (ILV/HR)

PHASE I



PHASE II



PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
311	165

PHASE III	PHASE IV
338	

TOTAL OPERATING LEVEL (ILV/HR): IS... 814

TRAFFIC CONDITIONS:

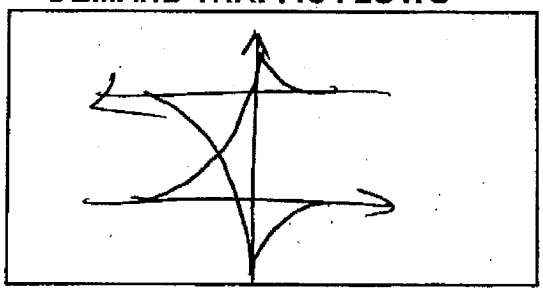
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / La Costa Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
190 ↑	↑ 470
190 →	← 315
190 →	← 315
	← 315
	345 →
	344 →

PHASE III	PHASE IV
↰ 63	
↱ 279	
↱ 278	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
190	470

PHASE III	PHASE IV
279	

TOTAL OPERATING LEVEL (ILV/HR): IS... 939

TRAFFIC CONDITIONS:

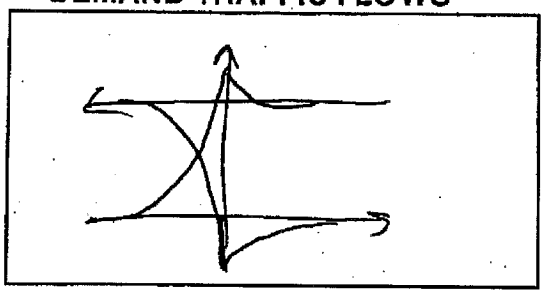
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / La Costa Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 21 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

162 ↑
162 →
162 →

PHASE II

↑ 493
← 250
← 250
← 249
260 →
260 →

PHASE III

↰ ↱ ↱
184 363 363

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
162	493

PHASE III	PHASE IV
363	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,018

TRAFFIC CONDITIONS:

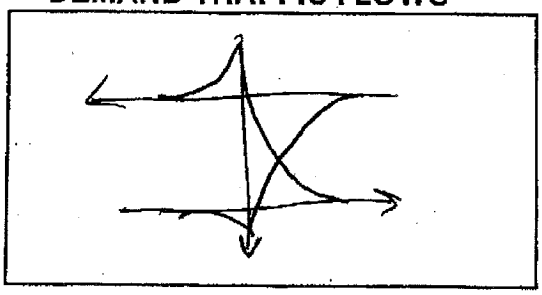
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Poinsettia Lane
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 242 ← 242 ↓ 241 ↓ 242	← 9 ← 8 176 → 176 → 137 ↓

PHASE III	PHASE IV
↰ 25 ↓ 41 ↳ 42	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
242	176

PHASE III	PHASE IV
257	

TOTAL OPERATING LEVEL (ILV/HR): IS... 675

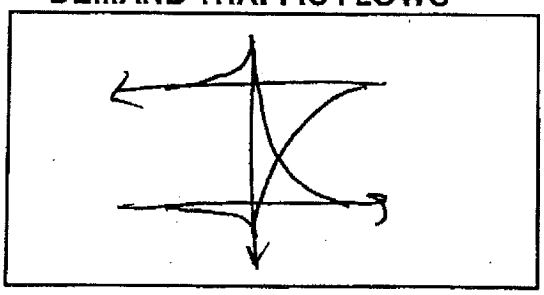
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Poinsettia Lane
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 20 Feb 2008
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 258 ← 258 ↓ 257 ↓ 258	← 20 ← 19 383 → 383 → 175 ↴

PHASE III	PHASE IV
227 ↓ 88 88 ↲ ↓↳	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
258	383

PHASE III	PHASE IV
227	

TOTAL OPERATING LEVEL (ILV/HR): IS... 868

TRAFFIC CONDITIONS:

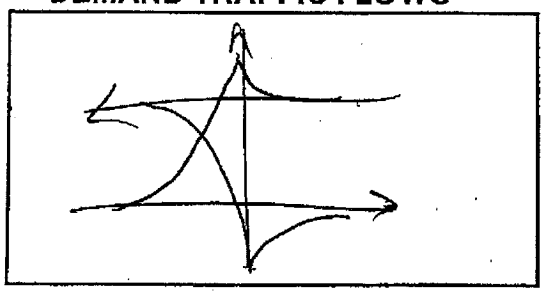
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Pansetta Lane
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
128 ↑	↑ 370
128 →	← 279
128 →	← 279
	← 279
	126 →
	125 →

PHASE III	PHASE IV
↰ ↑ ↱ ↱	
149 266 265	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
128	370

PHASE III	PHASE IV
266	

TOTAL OPERATING LEVEL (ILV/HR): IS... 764

TRAFFIC CONDITIONS:

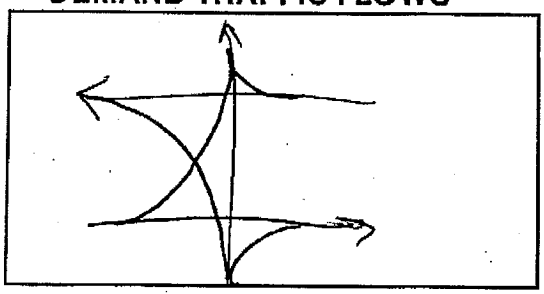
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Poinsettia Lane
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M. (P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
250 ↱ 250 → 250 →	↑ 228 ← 292 ← 291 ← 291 190 → 189 →

PHASE III	PHASE IV
↰ ↑ ↱ ↱ 198 281 281	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
250	292

PHASE III	PHASE IV
281	

TOTAL OPERATING LEVEL (ILV/HR): IS... 823

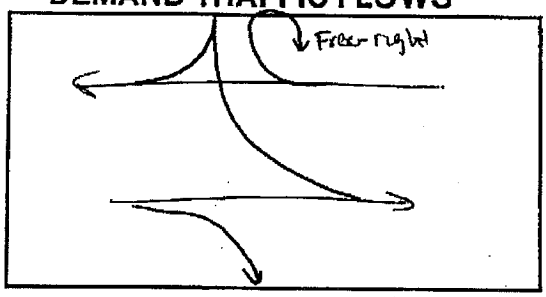
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Palomar Airport Road DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
Free right turn 281 281 236 236 280	500 900 90

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
281	900

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 1181

TRAFFIC CONDITIONS:

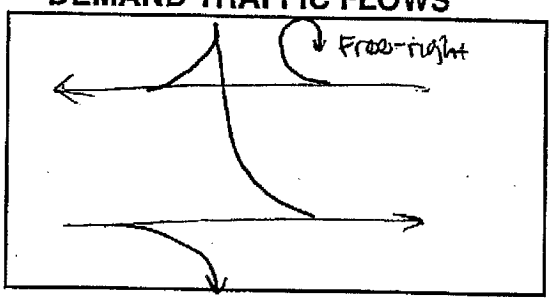
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I5 SB Ramps / Palomar Airport Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

Free right turn
398
398
411
412
412

PHASE II

360
445
445

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
412	445

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 857

TRAFFIC CONDITIONS:

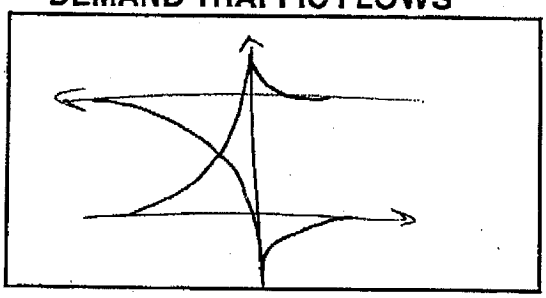
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Palomar Airport Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

192 ↱
192 →
192 →
192 →

PHASE II

454 ↰
454 ↰
693 ←
693 ←
692 ←
501 →
501 →
502 →

PHASE III

234 ↰ ↑
683 ↱
683 ↱

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
192	693

PHASE III	PHASE IV
683	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

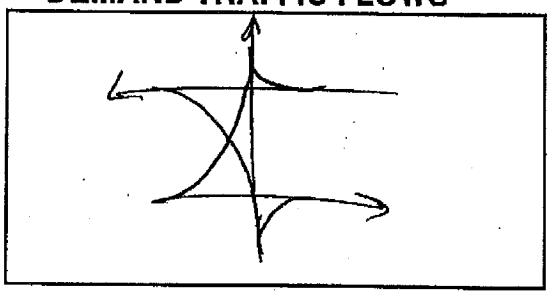
1,568

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Palomar Airport Road DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 17 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

400
400
400
400

PHASE II

700
700
841
841
841
61
62
62

PHASE III

173
538
539

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
400	841
PHASE III	**PHASE IV**
539	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1780

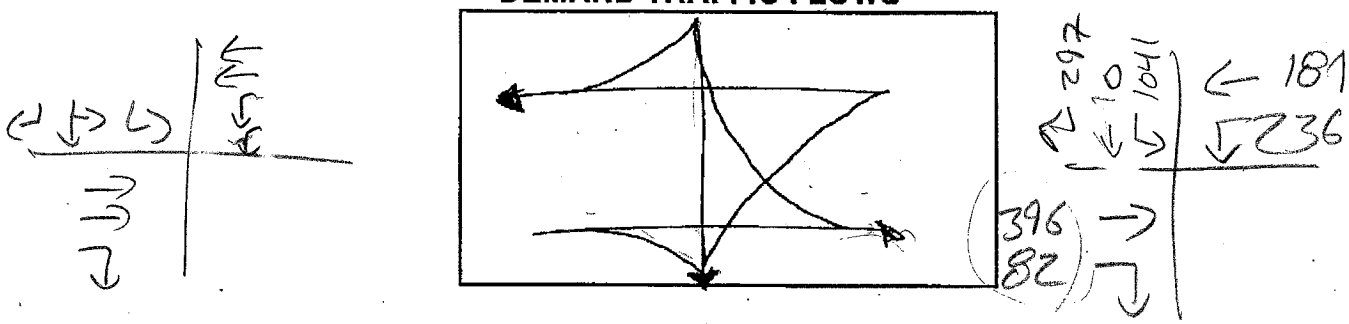
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB RAMPS / CANNON ROAD
ALTERNATIVE: EXISTING CONDITIONS

DIST. CO. RTE.
P.M.
DATE: 17 FEB 2006
TIME: PEAK (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

90
91
118
118

PHASE II

0
0
198
198
82

PHASE III

521
525
521

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
118	198

PHASE III	PHASE IV
521	0

TOTAL OPERATING LEVEL (ILV/HR): IS... 837

TRAFFIC CONDITIONS:

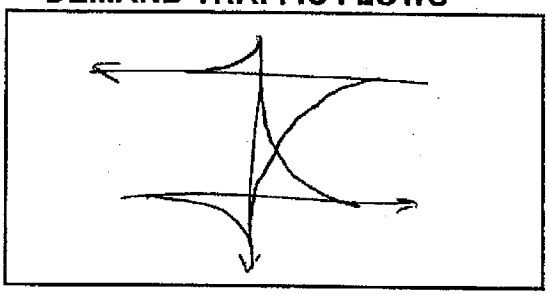
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB RAMPS/CANNON ROAD
ALTERNATIVE: EXISTING CONDITIONS

DIST. CO. RTE.
P.M.
DATE: 17 FEB 2006
TIME: PEAK A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

249
249
249
249

PHASE II

220
221
223
223
95

PHASE III

210
255
255

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
249	223

PHASE III	PHASE IV
255	0

TOTAL OPERATING LEVEL (ILV/HR): IS... 727

TRAFFIC CONDITIONS:

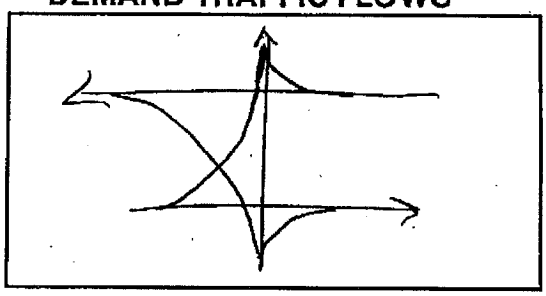
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Cannon Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
136 ↰ 135 ↰ 136 → 136 →	↑ 259 ↑ 259 ← 259 446 → 446 →

PHASE III	PHASE IV
↰ ↱ ↱ 69 256 25	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
136	446

PHASE III	PHASE IV
256	

TOTAL OPERATING LEVEL (ILV/HR): IS... 838

TRAFFIC CONDITIONS:

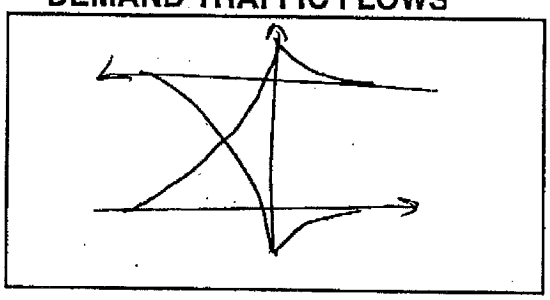
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Cannon Road
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 17 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

143
142
143
143

PHASE II

672
672
671
189
189

PHASE III

187
[illegible]
[illegible]

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
143	672

PHASE III	PHASE IV
187	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1002

TRAFFIC CONDITIONS:

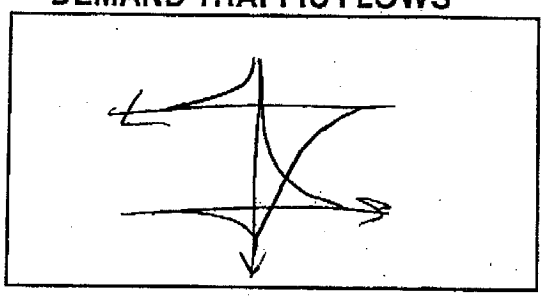
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Tamarack Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 169 ← 170 ↓ 443	← 0 ← 0 221 → 221 → 406 ↓

PHASE III	PHASE IV
203 ← 127 ↓	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
443	406

PHASE III	PHASE IV
203	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,052

TRAFFIC CONDITIONS:

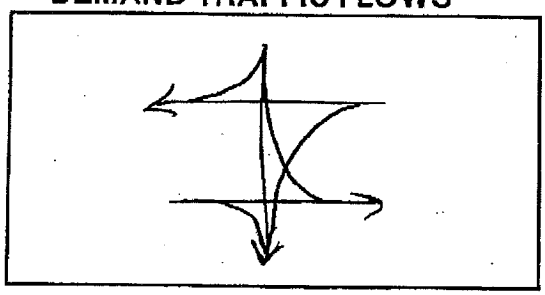
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Tamarack Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 202
← 201
↓ 296

PHASE II

← 0
← 0
313 →
312 →
264 →

PHASE III

← 294
↓ 186

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
296	313

PHASE III	PHASE IV
294	

TOTAL OPERATING LEVEL (ILV/HR): IS... 903

TRAFFIC CONDITIONS:

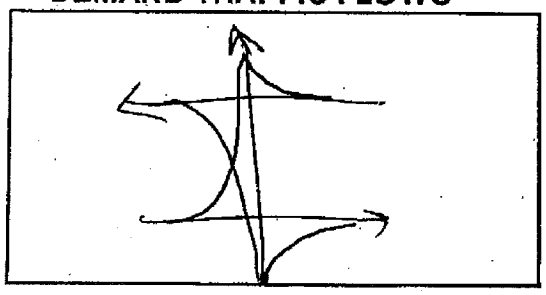
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Tamarack Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
176 ↑	↖ 549
176 →	← 549
176 →	20 →
	20 →

PHASE III	PHASE IV
↰ ↱	
88 412	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
176	549

PHASE III	PHASE IV
412	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,137

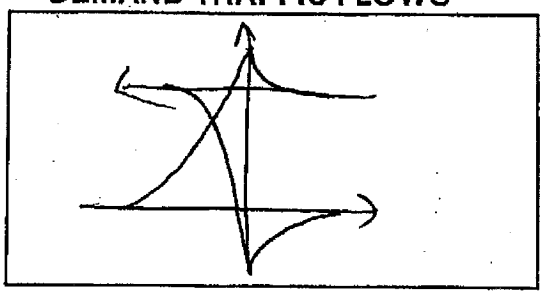
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps/ Tamarack Avenue DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 20 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
169 ↑	↑ 322
169 →	← 321
169 →	152 →
	152 →

PHASE III	PHASE IV
↰ ↱	
297 553	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
169	322

PHASE III	PHASE IV
553	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1044

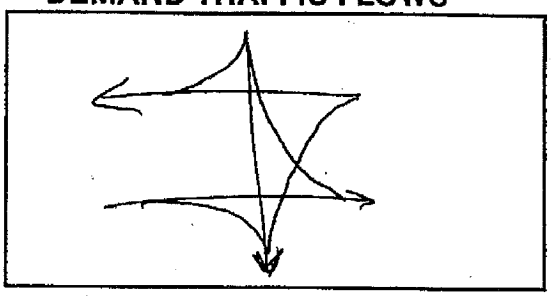
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: IS SB Ramps / Carlsbad Village Dr
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 20 Feb 2008
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 231 ← 231 ↓ 231	← 189 ← 188 438 → 438 →

PHASE III	PHASE IV
240 ↓ 240 ↔	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
231	438

PHASE III	PHASE IV
240	

TOTAL OPERATING LEVEL (ILV/HR): IS... 909

TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

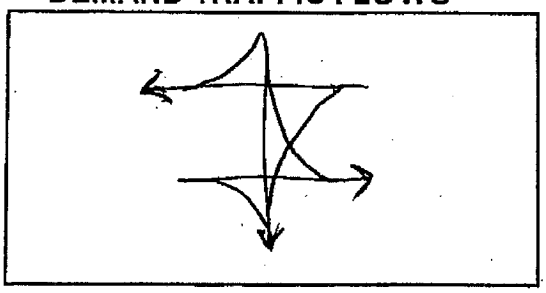
INTERSECTION: I-5 SB Ramps / Carlsbad Village Dr. DIST. CO. RTE.

ALTERNATIVE: Existing Conditions P.M.

DATE: 20 Feb 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 154 ← 154 ↓ 154	← 303 ← 303 736 → 736 ↓

PHASE III	PHASE IV
← 295 ↕ 295	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
154	736

PHASE III	PHASE IV
295	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,185

TRAFFIC CONDITIONS:

< 1200 ILV/HR

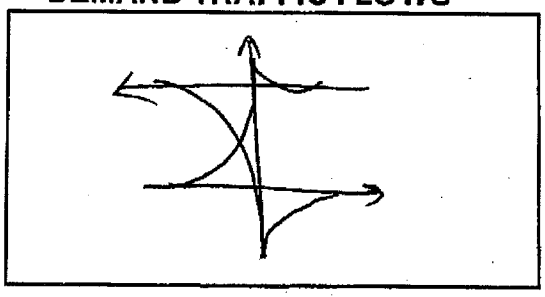
> 1200 BUT < 1500 ILV/HR

> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Carlsbad Village Dr
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
337 ↰ 140 → 139 →	↑ 416 ← 416 0 → 0 →

PHASE III	PHASE IV
↰ ↑ ↱ 383 86	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
337	416

PHASE III	PHASE IV
383	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,136

TRAFFIC CONDITIONS:

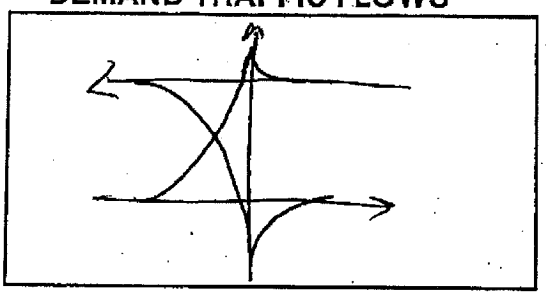
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Cortkland Village Dr
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M. / P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
363 ↰↑ 363 → 363 →	↰↑ 440 ← 440 17 → 16 →

PHASE III	PHASE IV
↰↑ ↱ 375 375	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
363	440

PHASE III	PHASE IV
375	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1,178

TRAFFIC CONDITIONS:

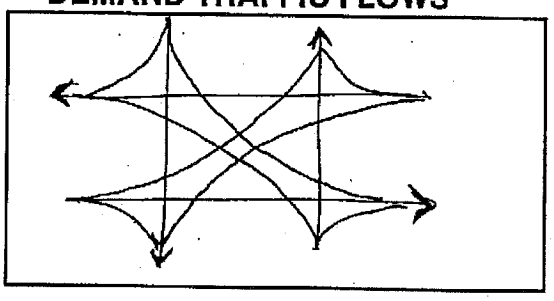
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB RAMPS/OCEANSIDE BLVD
ALTERNATIVE: EXISTING CONDITIONS

DIST. CO. RTE.
P.M.
DATE: 17 FEB 2006
TIME: PEAK A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

377 ↑
29 ↓

PHASE II

690 ↑
263 ←
263 ←
138 →
138 →

PHASE III

180 ↓
180 ↳

PHASE IV

↰ ↱
102 ↑

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
377	690

PHASE III	PHASE IV
180	102

TOTAL OPERATING LEVEL (ILV/HR): IS... 1349

TRAFFIC CONDITIONS:

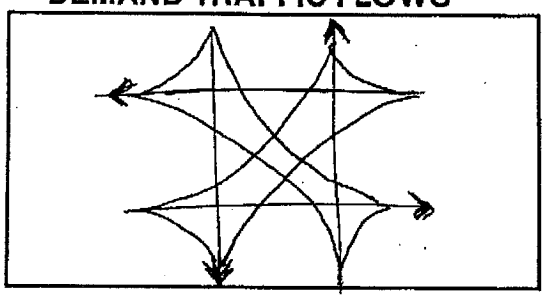
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB RAMPS / OCEANSIDE BLVD
ALTERNATIVE: EXISTING CONDITIONS

DIST. CO. RTE.
P.M.
DATE: 17 FEB 2006
TIME: PEAK A.M. / P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

291 ↑ ↓ 77

PHASE II

513 ↑
457 ←
456 ←
286 →
286 → ↓

PHASE III

300 ↔
289 ↳

PHASE IV

↰ ↱
46 37

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
291	513

PHASE III	PHASE IV
300	46

TOTAL OPERATING LEVEL (ILV/HR): IS... 1150

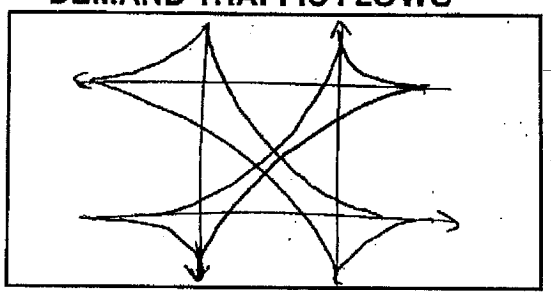
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB RAMPS / OCEANSIDE BLVD
DIST. CO. RTE.
ALTERNATIVE: EXISTING CONDITIONS
P.M.
DATE: 17 FEB 2006
TIME: PEAK A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

89 →
↓ ← 34

PHASE II

↑ ← 301
← 415
← 414
251 →
251 → ↓

PHASE III

← 337
↓ → 257
↳ 256

PHASE IV

↰ ↰ ↱
70 69 39

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
89	415

PHASE III	PHASE IV
337	70

TOTAL OPERATING LEVEL (ILV/HR): IS... 911

TRAFFIC CONDITIONS:

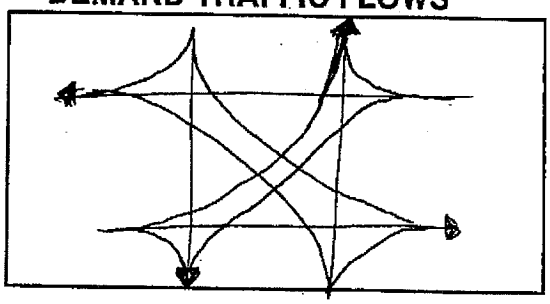
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB RAMPS / OCEANSIDE BLVD
ALTERNATIVE: EXISTING CONDITIONS

DIST. CO. RTE.
P.M.
DATE: 17 FEB 2006
TIME: PEAK A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

34
116

PHASE II

285
403
403
478
478

PHASE III

474
413
413

PHASE IV

103
102
19

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
116	478

PHASE III	PHASE IV
474	103

TOTAL OPERATING LEVEL (ILV/HR): IS... 1171

TRAFFIC CONDITIONS:

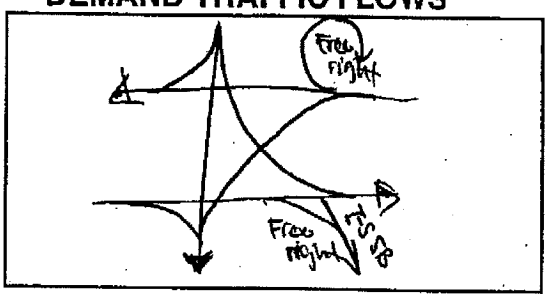
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Mission Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

Free right
240
240
240

PHASE II

Free right
191
191
229
229
8

PHASE III

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
240	229

PHASE III	PHASE IV
184	

TOTAL OPERATING LEVEL (ILV/HR): IS... 653

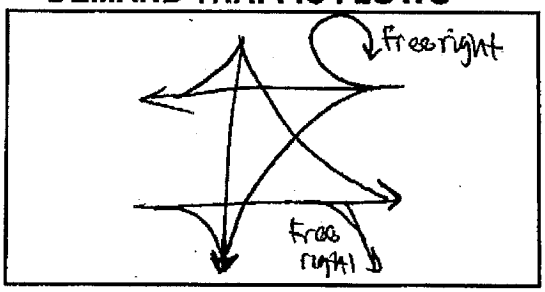
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / Mission Avenue
DIST. CO. RTE.
ALTERNATIVE: Existing Conditions
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
Free right 14 14 14	Free right 517 517 519 519 3

PHASE III	PHASE IV
15 285	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
14	519

PHASE III	PHASE IV
285	

TOTAL OPERATING LEVEL (ILV/HR): IS... 818

TRAFFIC CONDITIONS:

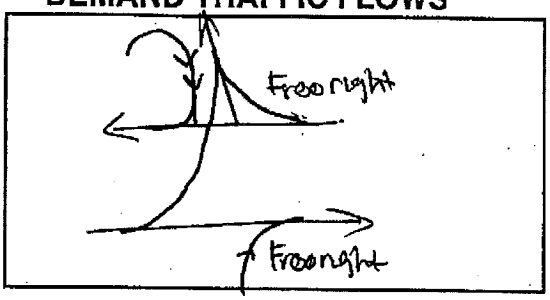
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Mission Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
167 ↑	↑ free right
167 →	← 726
167 →	← 725
	162 →
	161 →

PHASE III	PHASE IV
← 463	
free right →	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
167	726

PHASE III	PHASE IV
463	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

IS...
1356

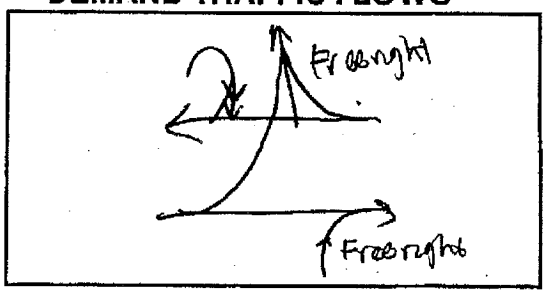
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / Mission Avenue
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
182 ↑ 182 → 182 →	Free right ← 539 ← 538 491 → 491 →

PHASE III	PHASE IV
698 ← Free right ↱	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
182	539

PHASE III	PHASE IV
698	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1419

TRAFFIC CONDITIONS:

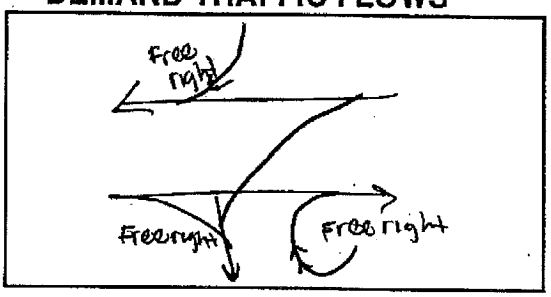
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / SR-76
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 208 ← 208 ↓ 696 ↓ 696	← 0 ← 0 146 → 146 → Free right ↓

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
696	146

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 842

TRAFFIC CONDITIONS:

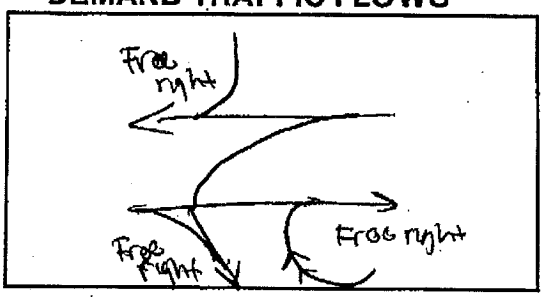
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I5 SB Ramps / SR-76
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 297	← 0
← 297	← 0
↓ 366	301 →
↓ 366	300 →
	Free right ↓

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
366	301

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 667

TRAFFIC CONDITIONS:

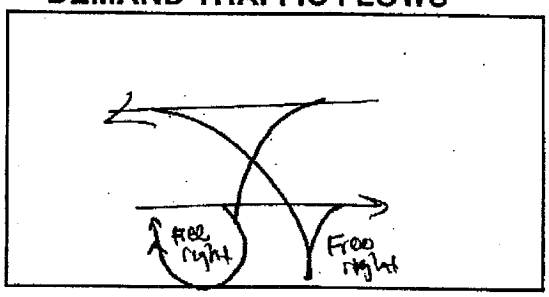
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 NB Ramps / SR-76
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

← 333
← 333
↓ 333
↓ 332

PHASE II

← 546
← 545
221 →
221 →
Free right ↓

PHASE III

↰ 51
↱ Free right

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
333	546

PHASE III	PHASE IV
51	

TOTAL OPERATING LEVEL (ILV/HR): IS... 930

TRAFFIC CONDITIONS:

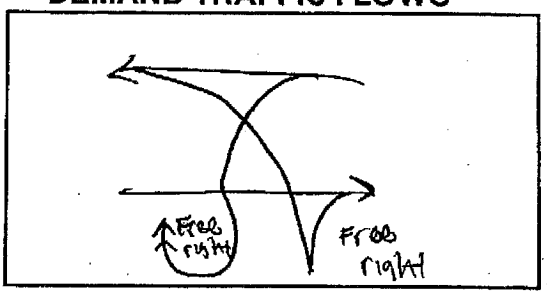
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: FS NB Ramps / SR-76
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

140
140
140
139

PHASE II

500
499
673
673
Free right

PHASE III

47
Free right

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
140	673

PHASE III	PHASE IV
47	

TOTAL OPERATING LEVEL (ILV/HR): IS... 860

TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

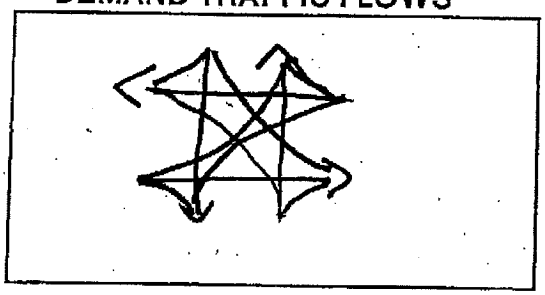
INTERSECTION: I-5 SB/Harbor Dr./N. Coast Hwy DIST. CO. RTE.

ALTERNATIVE: Existing Conditions P.M.

DATE: 22 Feb 2006

TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

45 ↑

↓ 81

PHASE II

882 ←

481 ←

23 →

73 ↓

PHASE III

← ↑ ↱

81 49

PHASE IV

88 ↰

142 ↰

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
81	882

PHASE III	PHASE IV
81	142

TOTAL OPERATING LEVEL (ILV/HR): IS... 1186

TRAFFIC CONDITIONS:

< 1200 ILV/HR

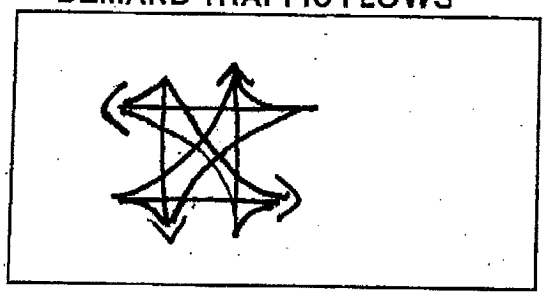
> 1200 BUT < 1500 ILV/HR

> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB/Harbor Dr. / N. Coast Hwy DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 22 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

145 ↑
↓ 299

PHASE II

← ↑ 1226
← 148
56 →
149 ↓

PHASE III

← ↑ ↱
199 257

PHASE IV

← 62 153
↳ ↲

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
299	1226

PHASE III	PHASE IV
257	153

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1935

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

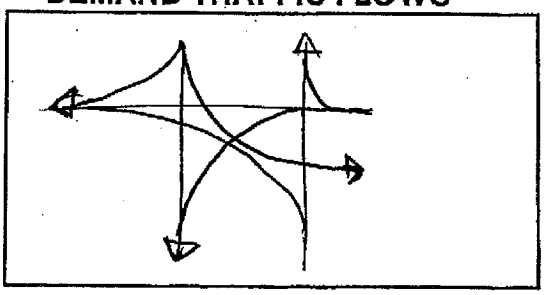
INTERSECTION: I-5/San Rafael Drive / Vandergrift Blvd DIST. CO. RTE.

ALTERNATIVE: Existing Conditions P.M.

DATE: 17 Feb 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
↰ 80	← 102, ↓ 231, ↓ 231, → 747, ↱ 746

PHASE III	PHASE IV
← ↑ ↓ 80, ↳ 79	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
80	747

PHASE III	PHASE IV
80	

TOTAL OPERATING LEVEL (ILV/HR): IS... 907

TRAFFIC CONDITIONS:

< 1200 ILV/HR

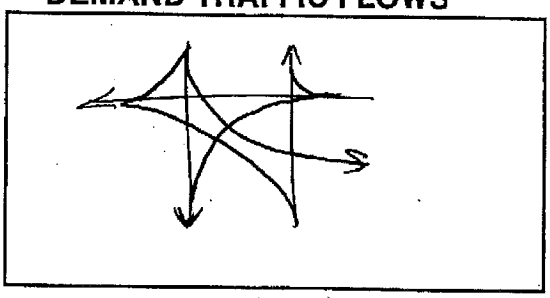
> 1200 BUT < 1500 ILV/HR

> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5/San Rafael Drive / Vandergrift Blvd. DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 19 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
14 ↳ ↰ 67	↲ 159 ↓ 101 ↓ 500 ↑ 464 ↑ 794

PHASE III	PHASE IV
← ↕ 52 ↓ 52	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
67	501

PHASE III	PHASE IV
52	

TOTAL OPERATING LEVEL (ILV/HR): IS... 620

TRAFFIC CONDITIONS:

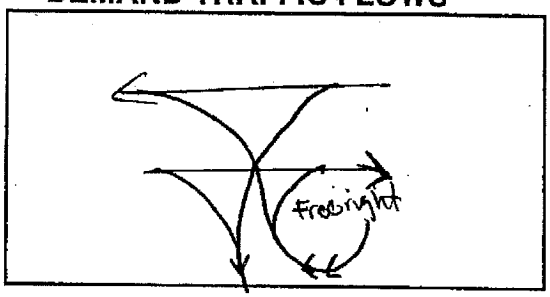
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / SR-78
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak (A.M./P.M.)

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 714 ↓ 997 ↓ 998	← 0 221 → 222 ↱

PHASE III	PHASE IV
↰ ↱ ↱ 15 free right free right	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
998	222

PHASE III	PHASE IV
15	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1235

TRAFFIC CONDITIONS:

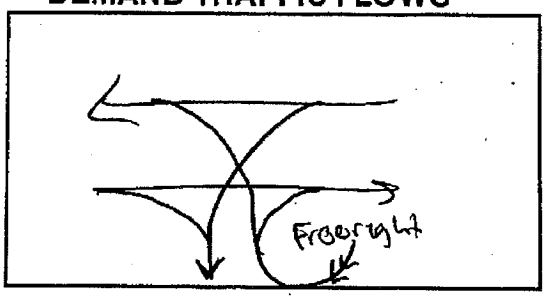
< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-5 SB Ramps / SR-78
ALTERNATIVE: Existing Conditions

DIST. CO. RTE.
P.M.
DATE: 20 Feb 2006
TIME: Peak A.M. P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 654 ↓ 1129 ↓ 1129	← 0 374 → 374 ↱

PHASE III	PHASE IV
↰ 35 ↱ free right ↱ free right	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
1129	374

PHASE III	PHASE IV
35	

TOTAL OPERATING LEVEL (ILV/HR): 1,538

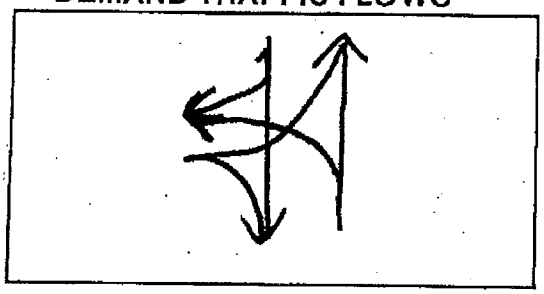
TRAFFIC CONDITIONS:

IS...	
	< 1200 ILV/HR
	> 1200 BUT < 1500 ILV/HR
1,538	> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-805 NB / Vista Sorrento Blvd DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
↰ ↰ ↑ 334 334 334	↰ 132 ↰ 429 ↑

PHASE III	PHASE IV
371 215 214 ↰↑ ↰	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
334	429

PHASE III	PHASE IV
371	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1134

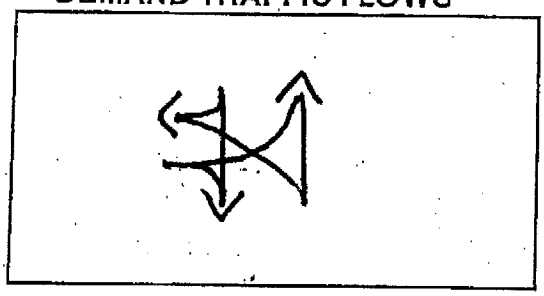
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-805 NB/Vista Sorrento Blvd DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
↰ ↰ ↑ 458 457 393	↰ ↰ ↑ 245 631 0

PHASE III	PHASE IV
↰ ↰ ↓ 146 145 204	

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
458	631

PHASE III	PHASE IV
209	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1298

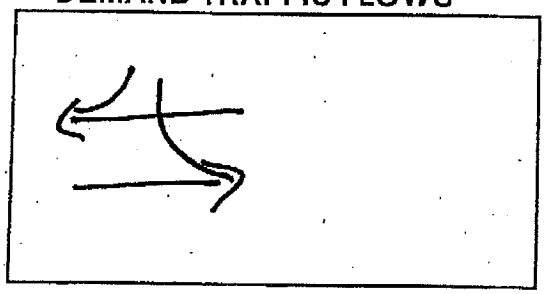
TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-805 SB off/Sorrento Valley Blvd DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 356 ← 355 435 → 434 →	↰ 212 ↳ 764 ↳ 764

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
435	764

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 1199

TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: I-805 off/Sorrento Valley Blvd DIST. CO. RTE.
ALTERNATIVE: Existing Conditions P.M.
DATE: 22 Feb 2006
TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS

LANE VOLUMES (ILV/HR)

PHASE I	PHASE II
← 597 ← 597 392 → 392 →	↰ 212 ↳ 352 ↳ 353

PHASE III	PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
597	353

PHASE III	PHASE IV

TOTAL OPERATING LEVEL (ILV/HR): IS... 950

TRAFFIC CONDITIONS:

< 1200 ILV/HR
> 1200 BUT < 1500 ILV/HR
> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: Vista Sorrento Blvd/I-805 NB/ Mira Mesa Blvd

ALTERNATIVE: Existing Conditions

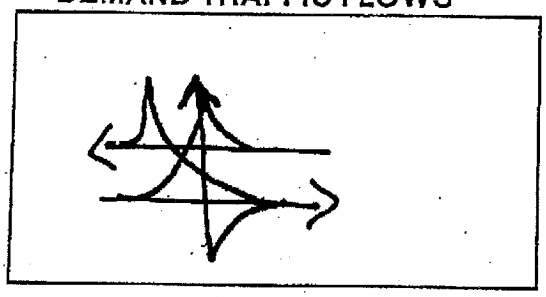
DIST. CO. RTE.

P.M.

DATE: 22 Feb 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

128
128
128
128
128

PHASE II

567
497
497
496
496
433
433
432

PHASE III

240
1086
1087
1087

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
128	497

PHASE III	PHASE IV
1087	

TOTAL OPERATING LEVEL (ILV/HR): IS...

TRAFFIC CONDITIONS:

1712

< 1200 ILV/HR

> 1200 BUT < 1500 ILV/HR

> 1500 ILV/HR (CAPACITY)

SIGNALIZED INTERSECTION
CAPACITY ANALYSIS

INTERSECTION: Vista Sorrento Blvd / I-805 NB / Mira Mesa Blvd

ALTERNATIVE: Existing Conditions

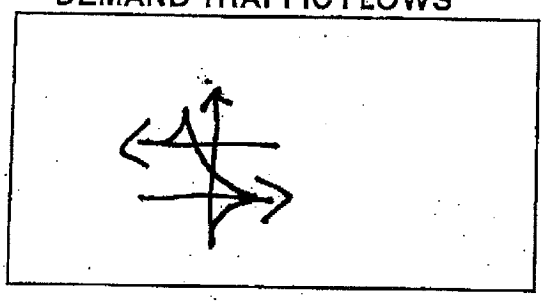
DIST. CO. RTE.

P.M.

DATE: 22 Feb 2006

TIME: Peak A.M./P.M.

DEMAND TRAFFIC FLOWS



LANE VOLUMES (ILV/HR)

PHASE I

61
61
61
61
61

PHASE II

844
758
758
758
757
228
228
227

PHASE III

342
484
484
484

PHASE IV

CRITICAL LANE VOLUMES PER HOUR (ILV/HR)

PHASE I	PHASE II
61	844

PHASE III	PHASE IV
486	

TOTAL OPERATING LEVEL (ILV/HR): IS... 1391

TRAFFIC CONDITIONS:

< 1200 ILV/HR

> 1200 BUT < 1500 ILV/HR

> 1500 ILV/HR (CAPACITY)