Nancy Hernandez

From: Mike Mohajer <MikeMohajer@yahoo.com>
Sent: Sunday, January 07, 2018 4:39 AM
To: Janet Chairez Gallardo
Cc: Dorcas Hanson-Lugo
Subject: Notification - Antelope Valley Landfill Permit revision application
Attachments: AVPL JTD Nov 2017 Appendix C Supplemental Traffic Inmpact Analysis.pdf

Hi Janet,

Thank you for forwarding me the attached City of Palmdale Supplemental Impact Analysis for Antelope Valley Landfill Expansion, dated 9/17/2004 which was subsequently revised on September 20, 2005 to evaluate Traffic Impact Analysis (TIA) for the calendar year 2007. As recommended by the subject report and considering all the new residential, commercial and industrial developments in the Antelope Valley (Cities of Lancaster, Palmdale and the LA County Unincorporated communities) since the calendar year 2007, (an 11-year period), the subject traffic study needs to be updated/amended to include a Traffic Impact Analysis for the Calendar Years 2018 and 2023, and provide mitigating measures as a part of consideration of the issuance of the Revised Solid Waste Management Permit. The subject TIAs should be prepared by the City of Palmdale , as the "Lead Agency" pursuant to the CEQA, OR the "Responsible Agency" (i.e. the LEA, the LA County Department of Public Health)

Please consider the above as my formal comments, as a private citizen, and please make copies available to the Cities of Lancaster, Palmdale, LA County, CalRecycle and general publics.

Please feel free to contact me should you have any questions. Thank you,

Mike Mohajer
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P. O. Box 3334, San Dimas, CA 91773

APPENDIX C
SUPPLEMENTAL TRAFFIC IMPACT ANALYSIS

CITY OF PALMDALE

ANTELOPE VALLEY LANDFILL EXPANSION

TRAFFIC IMPACT ANALYSIS (REVISED)

Prepared by:

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September 17, 2004
(Revised September 20, 2005)

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City of Palmdale

Antelope Valley Landfill Expansion

Traffic Impact Analysis (Revised)

This report contains the revised traffic impact analysis for the proposed Antelope Valley Landfill expansion. The current landfill is designated as landfill #1 and the expansion is designated landfill #2, which will operate as one landfill. For the purposes of this traffic analysis the expected increases in traffic of the landfill, including the expansion, has been analyzed. The landfill traffic (truck and employee traffic) to both landfill #1 and landfill #2 utilize the same entry road. The project site is located at the existing terminus of City Ranch Road, west of Tierra Subida Avenue in the Palmdale area of Los Angeles County.

The traffic report contains documentation of existing traffic conditions, traffic generated by the project, distribution of the project traffic to roads outside the project, and an analysis of future traffic conditions. Each of these topics is contained in a separate section of the report. The first section is "Findings", and subsequent sections expand upon the findings. In this way, information on any particular aspect of the study can be easily located by the reader.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

1. Findings

This section summarizes the existing traffic conditions, project traffic impacts, and the proposed mitigation measures.

Existing Traffic Conditions

a. The existing landfill is currently accepting an average of 1,372 tons of material per day. The project site is currently generating approximately an average of 626 daily vehicle trips, 53 vehicles per hour during the morning peak hour and 60 vehicles per hour during the evening peak hour (see Table 6). However, the existing landfill also accepts concrete for recycling and/or materials used for daily cover or beneficial use, and when a major inflow of these materials occurs, then the daily tonnage can reach 3,800 tons per day. This peak inflow of concrete or daily cover material is sporadic and lasts for a few days.

b. Arterial roadways in the vicinity of the site are at present only partially improved.

c. The roadway links in the vicinity of the site currently operate within acceptable Levels of Service.

d. The intersections in the vicinity of the site currently operate at Level of Service B or better during the peak hours (see Table 1b).

e. Traffic signals appear to currently be warranted at the following study area intersections (see Appendix D):

Tierra Subida Avenue (NS) at:
5th Street West (EW)
Rayburn Road (EW)
Avenue S (EW) (Installation will be in 2005)

Traffic Impacts

a. For purposes of this analysis, it was assumed that the project site will increase operations to an average of 3,613 tons per day, and a peak of 5,548 tons per day. The project site is projected to generate an average of approximately 1,324 trips per day, 105 and 85 of which occur during the morning and evening peak hours, respectively. During peak inflow conditions when large quantities of concrete for recycling and/or materials used for alternative daily cover or beneficial use are received, the daily

volume reaches 1,594 trips per day, 124 and 96 of which occur during the morning and evening peak hours, respectively (see Tables 1a and 6).

b. The landfill expansion is projected to generate on average approximately 698 new daily vehicle trips, 52 new vehicles per hour will occur during the morning peak hour, and 25 new vehicles per hour will occur during the evening peak hour (see Tables 1a and 6). During peak inflow conditions when large quantities of concrete for recycling and/or materials used for alternative daily cover or beneficial use are received, up to 968 new daily vehicle trips, 71 new vehicles per hour will occur during the morning peak hour, and 36 new vehicles per hour will occur during the evening peak hour (see Tables 1a and 6).

c. The roadway links in the vicinity of the site are projected to continue to operate within acceptable Levels of Service for existing plus project traffic conditions for average as well as peak inflow of material conditions.

d. For existing plus project traffic conditions, the intersections in the vicinity of the site are projected to continue to operate at Level of Service B or better during the peak hours for average and peak inflow of material conditions (see Table 1b).

e. The project does not have a significant traffic impact using the County of Los Angeles Congestion Management Program criteria. That criteria is that a project has a significant traffic impact if any of the following is met:

> Project increases ICU by more than 1.0 percent and ICU is more than 90 percent after the project traffic is added.
>
> Project increases ICU by more than 2.0 percent and ICU is more than 80 percent after the project traffic is added.
>
> Project increases ICU by more than 4.0 percent and ICU is more than 70 percent after the project traffic is added.

f. The roadway links in the vicinity of the site are projected to operate within acceptable Levels of Service for Year 2007 without project traffic conditions, except for Tierra Subida Avenue between 5th Street West and Rayburn Road. This condition will remain until Tierra Subida is widened to its ultimate General Plan designation.

g. For year 2007 without project traffic conditions, the intersections in the vicinity of the site are projected to operate at Level of Service D or better during the peak hours (see Table 1b).

h. The roadway links in the vicinity of the site are projected to operate within acceptable Levels of Service for Year 2007 with project traffic conditions, except for Tierra Subida Avenue between 5th Street West and Rayburn Road. This condition will remain until Tierra Subida is widened to its ultimate General Plan designation.

i. For Year 2007 with project traffic conditions, the intersections in the vicinity of the site are projected to operate at Level of Service D or better during the peak hours for average and peak inflow of material traffic conditions (see Table 1b).

j. Because the project does not have a significant traffic impact when the project is added to existing traffic conditions, nor when it is added to 2007 traffic conditions, it will also not have a significant traffic impact at any other future point in time such as year 2025. This is because the project will never increase the ICU's shown in Table 1b by more than the amounts shown in Table 1b. However, the project should pay standard traffic impact fees to the City of Palmdale and receive credits for improvements consistent with the City's Traffic Impact Fee Ordinance.

k. The SR 14 Freeway receives a maximum of 10 percent of the project's traffic and that is south of Avenue S. For average inflow conditions, this is 70 vehicles per day, and for peak inflow conditions this is 97 vehicles per day. The SR 14 south of Avenue S has 70,000 vehicles per day per the latest available Caltrans counts, and the added vehicles represents a 0.14 percent increase which is insignificant. Per the Los Angeles Congestion Management Program (LACMP) section D.4, 150 added vehicles in the peak *hour* is a significant impact. The SR 14 currently has 6,000 vehicles in the peak hour. It has 55.9 percent in the peak hour peak direction, or 3,354 vehicles in one direction. One way capacity is 4,000 vehicles per hour per LACMP Appendix A, and it is operating at a volume to capacity ratio of 0.84. The operating speeds in the peak hour peak direction are above 45 miles per hour, which is a Level of Service C per the LACMP, Exhibit 5-1.

Recommendations

The following measures are recommended to mitigate the impact of the project on traffic circulation:

a. Site-specific circulation and access recommendations are depicted on Figures 30 and 31.

b. It is proposed that the waste management access road alignment will be along R-5 as a two lane roadway (60 foot right-of-way). R-5 will intersect Tierra Subida Avenue opposite Rayburn Road (see Figures 30 and 31).

c. As is the case for any roadway design, the City of Palmdale should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Table 1a

Existing / Project Daily Traffic Generation Summary

Descriptor	Tons per Truck	Truck Loads In	Cars In	Trucks And Cars In	Total Trips (In + Out)
Average Existing Conditions (1,372 tons/day)	6.596	208	105	313	626
Proposed Average Condition (3,613 tons/day)	8.363	432	230	662	1324
Difference		224	125	349	698
Average Existing Conditions (1,372 tons/day)	6.596	208	105	313	626
Proposed Peak Condition (5,548 tons/day)	9.785	567	230	797	1594
Traffic Increase		359	125	484	968
Traffic Increase Local in Palmdale (Approximately 85 %)		286	125	411	823
Traffic Increase from Outside Palmdale (Approximately15 %)		71	0	71	142
Peak Permitted Condition (3,654 tons/day)	6.480	550	180	730	1460
Proposed Peak Condition (5,548 tons/day)	9.785	567	230	797	1594
Total Increase		17	50	67	134

Notes:

1. Details concerning the types of material hauled and the types of truck are contained in Table 4.

2. Details concerning the time of day the traffic occurs, including peak hours, are contained in Table 5.

3. A trip occurs when something is taken from point A to point B and something enters or exits the vehicle at point A or point B. When a vehicle enters the facility, deposits material, and leaves, that results in an "in trip" and an "out trip" (total of 2 trips).

4. Per Figure 19, 15 percent of the project traffic is assumed to come to Palmdale via the State Route 14 Freeway.

5. The anticipated number of transfer trucks coming to the facility from State Route 14 Freeway is 71 loads per day (per Table 6) for both the average and peak conditions. The 71 loads is 142 in plus out trips. The 142 in plus out trips is about 15 percent of the peak total traffic.

Table 1b

Summary of Intersection Capacity Utilization (ICU) and Level of Service (LOS)

Intersection	Scenario	Average Inflow of Material (3,613 tons per day) ICU-LOS[1] Morning	Average Inflow of Material (3,613 tons per day) ICU-LOS[1] Evening	Peak Inflow of Material (5,548 tons per day) ICU-LOS[1] Morning	Peak Inflow of Material (5,548 tons per day) ICU-LOS[1] Evening	Significant Impact[2] Average Inflow	Significant Impact[2] Peak Inflow
Tierra Subida Avenue (NS) at: Palmdale Boulevard (EW)	Existing	52.0-A	66.9-B	52.0-A	66.9-B		
	Existing Plus Project	52.2-A	67.1-B	52.3-A	67.2-B		
	Difference	+0.2	+0.2	+0.3	+0.3	NO	NO
	Year 2007 Without Project	66.2-B	86.3-D	66.2-B	86.3-D		
	Year 2007 With Project	66.5-B	86.5-D	66.5-B	86.6-B		
	Difference	+0.3	+0.2	+0.3	+0.3	NO	NO
Tierra Subida Avenue (NS) at: 5th Street West (EW)	Existing	39.9-A	48.9-A	39.9-A	48.9-A		
	Existing Plus Project	40.6-A	49.4-A	40.9-A	49.4-A		
	Difference	+0.7	+0.5	+1.0	+0.5	NO	NO
	Year 2007 Without Project	50.1-A	62.1-B	50.1-A	62.1-B		
	Year 2007 With Project	50.8-A	62.6-B	51.0-A	62.7-B		
	Difference	+0.7	+0.5	+0.9	+0.6	NO	NO
Tierra Subida Avenue (NS) at: Rayburn Road (EW)	Existing	51.3-A	63.4-B	51.3-A	63.4-B		
	Existing Plus Project	52.5-A	64.1-B	52.8-A	64.3-B		
	Difference	+1.2	+0.7	+1.5	+0.9	NO	NO
	Year 2007 Without Project	65.2-B	81.7-D	65.2-B	81.7-D		
	Year 2007 With Project	66.4-B	82.3-D	66.8-B	82.5-D		
	Difference	+1.2	+0.6	+1.6	+0.8	NO	NO
Tierra Subida Avenue (NS) at: City Ranch Road (EW)	Existing	27.1-A	42.7-A	27.1-A	42.7-A		
	Existing Plus Project	27.6-A	42.7-A	27.8-A	42.8-A		
	Difference	+0.5	+0.0	+0.7	+1.1	NO	NO
	Year 2007 Without Project	33.0-A	53.8-A	33.0-A	53.8-A		
	Year 2007 With Project	33.5-A	53.8-A	33.7-A	54.0-A		
	Difference	+0.5	+0.0	+0.7	+0.2	NO	NO
Tierra Subida Avenue (NS) at: Avenue S (EW)	Existing	40.6-A	55.9-A	40.5-A	55.9-A		
	Existing Plus Project	41.3-A	56.4-A	41.7-A	56.5-A		
	Difference	+0.8	+0.5	+1.2	+0.6	NO	NO
	Year 2007 Without Project	50.8-A	71.5-C	50.8-A	71.5-C		
	Year 2007 With Project	51.7-A	72.0-C	52.0-A	72.1-C		
	Difference	+0.9	+0.5	+1.2	+0.6	NO	NO
5th Street West (NS) at: Palmdale Boulevard (EW)	Existing	30.0-A	51.7-A	30.0-A	51.7-A		
	Existing Plus Project	30.0-A	51.7-A	30.2-A	51.7-A		
	Difference	+0.0	+0.0	+0.2	+0.0	NO	NO
	Year 2007 Without Project	36.7-A	65.9-B	36.7-A	65.9-B		
	Year 2007 With Project	36.8-A	65.9-B	36.9-A	65.9-B		
	Difference	+0.1	+0.0	+0.2	+0.0	NO	NO
SR-14 Freeway SB Ramps (NS) at: Palmdale Boulevard (EW)	Existing	38.6-A	67.3-B	38.6-A	67.3-B		
	Existing Plus Project	38.6-A	67.3-B	38.6-A	67.3-B		
	Difference	+0.0	+0.0	+0.0	+0.0	NO	NO
	Year 2007 Without Project	45.6-A	86.9-D	45.6-A	86.9-D		
	Year 2007 With Project	45.6-A	86.9-D	45.6-A	86.9-D		
	Difference	+0.0	+0.0	+0.0	+0.0	NO	NO
SR-14 Freeway SB Ramps (NS) at: Avenue S (EW)	Existing	46.1-A	48.9-A	46.1-A	48.9-A		
	Existing Plus Project	46.2-A	49.0-A	46.3-A	49.1-A		
	Difference	+0.1	+0.1	+0.2	+0.2	NO	NO
	Year 2007 Without Project	58.2-A	62.1-B	58.2-A	62.1-B		
	Year 2007 With Project	58.4-A	62.2-B	58.4-A	62.3-B		
	Difference	+0.2	+0.1	+0.2	+0.2	NO	NO
SR-14 Freeway NB Ramps (NS) at: Palmdale Boulevard (EW)	Existing	26.9-A	44.0-A	26.9-A	44.0-A		
	Existing Plus Project	26.9-A	44.0-A	26.9-A	44.0-A		
	Difference	+0.0	+0.0	+0.0	+0.0	NO	NO
	Year 2007 Without Project	32.6-A	55.7-A	32.6-A	55.7-A		
	Year 2007 With Project	32.6-A	55.7-A	32.6-A	55.7-A		
	Difference	+0.0	+0.0	+0.0	+0.0	NO	NO
SR-14 Freeway NB Ramps (NS) at: Avenue S (EW)	Existing	30.0-A	41.4-A	30.0-A	41.4-A		
	Existing Plus Project	30.4-A	41.5-A	30.4-A	41.6-A		
	Difference	+0.4	+0.1	+0.4	+0.2	NO	NO
	Year 2007 Without Project	36.8-A	52.1-A	36.8-A	52.1-A		
	Year 2007 With Project	37.1-A	52.2-A	37.2-A	52.3-A		
	Difference	+0.3	+0.1	+0.4	+0.2	NO	NO

[1] ICU-LOS = Intersection Capacity Utilization - Level of Service

[2] In the County of Los Angeles, the change in the ICU value is considered insignificant if the change in the ICU is less than 1 percent regardless of the ICU value, or if the change in the ICU value is less than 2 percent and the ICU with the project is less than 90 percent.

2. Congestion Management Program (CMP) Methodology

This section discusses the Los Angeles County Congestion Management Program (CMP). The purpose, prescribed methodology, and definition of a significant traffic impact are discussed.

County Congestion Management Program (CMP)

The CMP is a result of Proposition 111 which was a statewide initiative approved by the voters in June, 1990. The proposition allowed for a nine cent per gallon state gasoline tax increase over a five year period.

Proposition 111 explicitly stated that the new gas tax revenues were to be used to fix existing traffic problems and was not to be used to promote future development. For a city to get its share of the Proposition 111 gas tax, it has to follow certain procedures specified by the State Legislature. The legislation requires that a Traffic Impact Analysis (TIA) be prepared for new development. The TIA is prepared to monitor and fix traffic problems caused by new development.

The Legislature requires that adjacent jurisdictions use a standard methodology for conducting a TIA. To assure that adjacent jurisdictions use a standard methodology in preparing TIA's, one common procedure is that all cities within a county, and the county agency itself, adopt and use one standard methodology for conducting TIA's.

Although each county has developed standards for preparing TIA's, TIA requirements do vary in detail from one county to another, but not in overall intent or concept. The general approach selected by each county for conducting TIA's has common elements.

The general approach for conducting a TIA is that existing weekday peak hour traffic is counted and the percent of roadway capacity currently used is determined. Then growth in traffic is accounted for and added to existing traffic and the percent of roadway capacity used is again determined. Then the project traffic is added and the percent of roadway capacity used is again determined. If the new project adds traffic to an overcrowded facility, then the new project has to mitigate the traffic impact so that the facility operates at a level that is no worse than before the project traffic was added.

If the project size is below a certain minimum threshold level, then a project does not have to have a TIA prepared, once it is shown or agreed that the project is below the minimum threshold. If a project is bigger than the minimum threshold size, then a TIA is required.

Prescribed Methodology for A Traffic Impact Analysis (TIA)

The TIA must include all monitored intersections to which the project adds traffic above a certain minimum amount. In Los Angeles County, the monitored intersections are contained in Appendix A of the Congestion Management Program (CMP) for the County of Los Angeles. In the Appendix A referenced immediately above, no intersections are listed that are near the project. So from that point of view, no traffic analysis is required.

This traffic study analyzes all arterial intersections that are reasonably foreseen to receive traffic from this project, and analyze those intersections using the Intersection Capacity Utilization (ICU) methodology.

In Los Angeles County, the technique used to calculate ICU's is as follows. Lane capacity is 1600 vehicles per lane per hour of green time for through and turn lanes, except that a capacity of 2880 vehicles per lane per hour of green time is used for dual turn lanes. A total yellow clearance time of 10 percent is added.

If the intersection has to be analyzed for deficiencies, then mitigation is required if the existing traffic plus anticipated traffic growth plus project traffic does cause the ICU to go above a certain point. In Los Angeles County, mitigation is required if the ICU is worse than Level of Service E, which corresponds to an ICU of 100 percent or more.

In Los Angeles County, future traffic volumes are determined using growth rates that are applied to existing traffic volumes. The growth rates differ from one area of the County to another. According to the CMP, the expected growth rate for North County is 0.9 percent per year.

Although a 0.9 percent per year growth rate is recommended by the CMP, a "conservative" growth rate of 6.0 percent per year is used as a maximum likely estimate within this analysis. The reason 6.0 percent per year is used is because (1) it was used in our previous analysis, and (2) the historic growth rate along the SR-14 Freeway in the study area is approximately 3 percent. The SR-14 Freeway is referenced because it is a good barometer of growth in this portion of North County.

Mitigation Measures

If a project is large enough to require that a TIA be prepared, and if the project adds traffic to an intersection above a minimum threshold, and if the intersection is operating at above an acceptable level of operation, then the project must mitigate its traffic impact.

Traffic mitigation can be in many forms including adding lanes. Lanes can sometimes be obtained through restriping or elimination of parking, and sometimes require spot roadway widening.

3. Project Description

This section discusses the project's location, proposed development, and traffic characteristics of such a development. Figure 1 shows the project location map. Figures 2 and 3 illustrate the landfill parcels and topographic map, respectively.

Location

The project site is located at the existing terminus of City Ranch Road, west of Tierra Subida Avenue in the Palmdale area of Los Angeles County.

Proposed Development

Although the current landfill operation is permitted to receive up to 434 truckloads that correspond to roughly 1,400 tons per day, it is estimated that at this time approximately 1,372 tons of material are received each day on average. For purposes of this traffic study, it is assumed that the future operation will reach an average of 3,613 tons per day of deposited material.

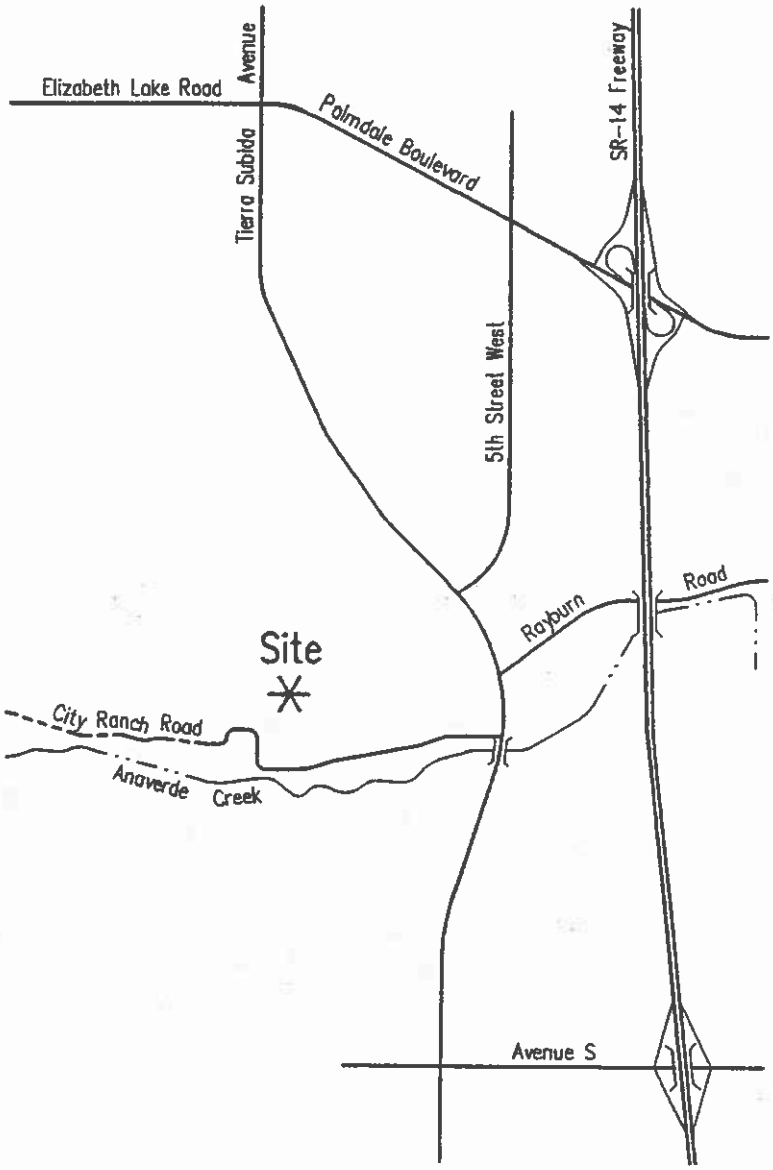
However, the existing landfill also accepts concrete for recycling and/or materials used for daily cover or beneficial use, and when a major inflow of these materials occurs, then the daily tonnage today increases to as much as 3,800 tons per day. In the future when the average tons per day is 3,613, it is expected the peak inflow of material can reach 5,548 tons per day. This peak inflow of concrete or daily cover material is sporadic and will last for a few days. The terms "average" inflow of material and "peak" inflow of material will be used to distinguish these two traffic conditions in this traffic analysis.

Today, on average there are 208 loads per day and 1,372 tons per day of deposited material. These 208 loads consist of 142 municipal solid waste loads, 16 transfer trailer loads, 17 contaminated soil loads, 23 greenwaste loads, and 10 loads by others. Waste Management trucks average 4.05 tons each for municipal solid waste, 21 tons each for transfer trailers, 25 tons each for contaminated soil, 0.7 tons each for greenwaste, and an average of 8 tons each for others.

The municipal solid waste truck drivers and helpers arrive at work between 4:00 AM and 6:00 AM and leave between 11:00 AM and 3:00 PM. The office workers arrive at work between 7:00 AM and 8:00 AM and depart between 4:00 PM and 5:00 PM. Typically the municipal solid waste trucks are exiting prior to 7:00 AM.

It is proposed that the waste management access road alignment will be along R-5 as a two lane roadway (60 foot right-of-way). R-5 will intersect Tierra Subida Avenue opposite Rayburn Road (see Figures 30 and 31).

Figure 1
Project Location Map



Kunzman Associates

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Figure 2
Landfill Parcels

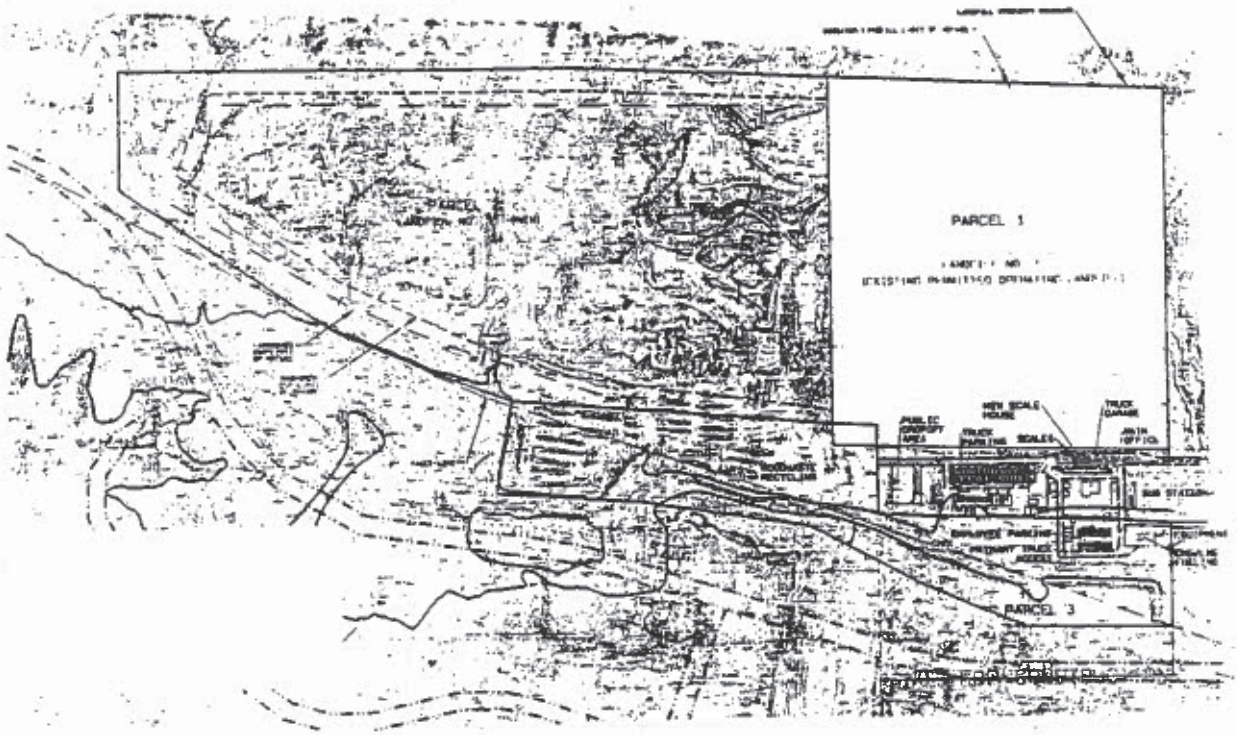

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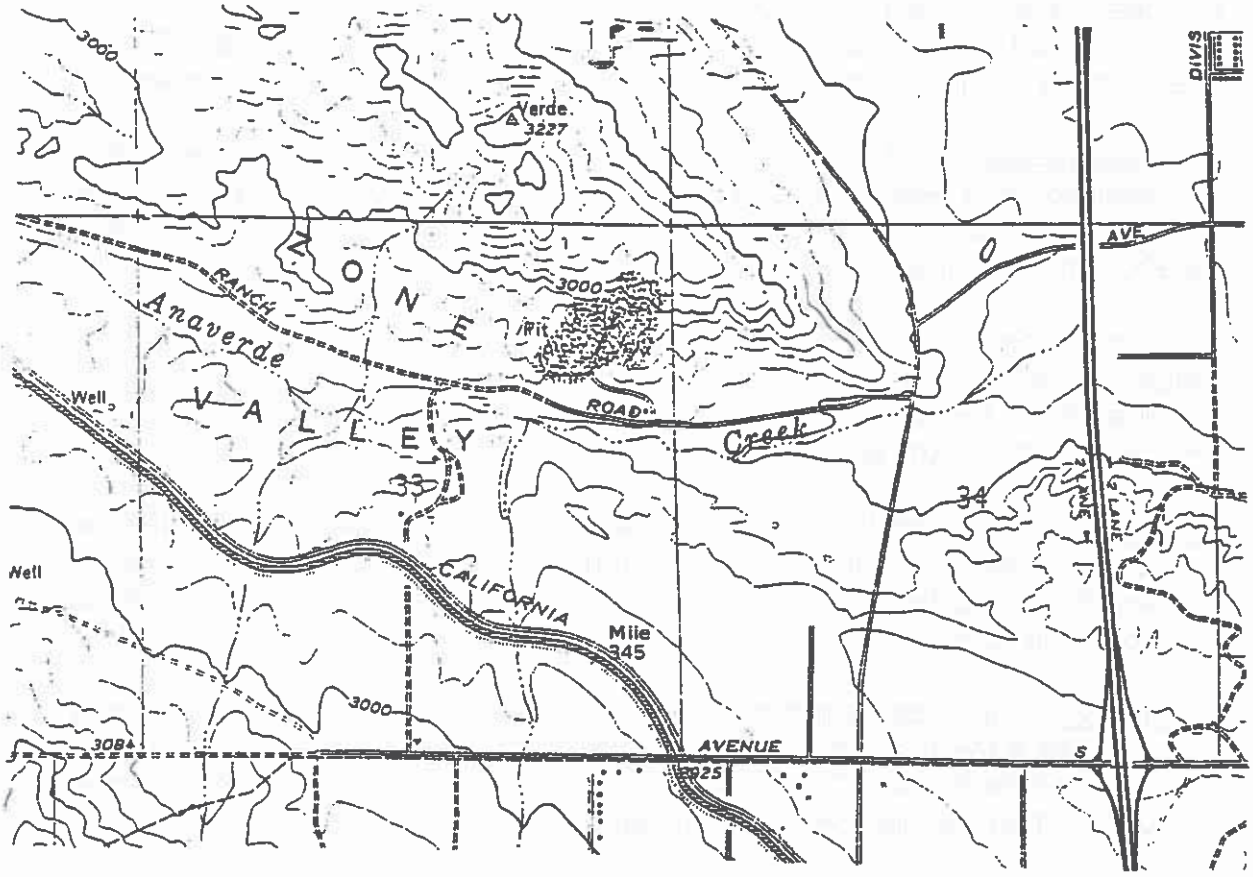
Figure 3
Topographic Map



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2051F/3

4. Existing Traffic Conditions

The traffic conditions as they exist today are discussed below and illustrated in Figures 4 to 13.

Surrounding Street System

Roadways that will be utilized by the site expansion include Palmdale Boulevard, Rayburn Road, City Ranch Road, Avenue S, Tierra Subida Avenue, and 5th Street West. In the vicinity of the project site, the following roadway conditions exist.

Palmdale Boulevard: This east-west four lane divided to six lane divided roadway is classified as a Regional Arterial (six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 12,400 to 19,900 vehicles per day in the study area.

Rayburn Road: This east-west two lane undivided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 5,100 vehicles per day in the study area.

City Ranch Road: This east-west two lane undivided roadway is classified as a Secondary Arterial (84 foot right-of-way; four lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 700 vehicles per day in the study area.

Avenue S: This east-west two lane undivided to four lane divided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 1,100 to 24,000 vehicles per day in the study area.

Tierra Subida Avenue: This north-south two lane undivided to six lane divided roadway is classified as a Regional Arterial north of Palmdale Boulevard, Major Arterial (114 foot right-of-way; six lane divided) between Palmdale Boulevard and Avenue S, and a Secondary Arterial (84 foot right-of-way; four lane divided) south of Avenue S on the City of Palmdale General Plan Circulation Element. It currently carries approximately 1,700 to 14,100 vehicles per day in the study area.

5th Street West: This north-south four lane divided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) north of Palmdale Boulevard and as a Secondary Arterial (84 foot right-of-way; four lane divided) south of Palmdale Boulevard on the City of Palmdale General Plan Circulation Element. It currently carries approximately 2,900 to 4,100 vehicles per day in the study area.

Existing Travel Lanes and Intersection Controls

Figure 4 identifies the existing roadway conditions for arterials near the site. The number of through lanes for existing roadways and the existing intersection controls are identified.

Existing Average Daily Traffic (ADT) Volumes

Figure 5 depicts the existing average daily traffic (ADT) volumes. Traffic volumes were obtained from the 2001 Traffic Volumes on California State Highways by Caltrans and factored from peak hour intersection turning movement counts obtained by Kunzman Associates (see Appendix B).

Existing Volume to Capacity Ratios

Roadway capacity is generally defined as the number of vehicles that can be reasonably expected to pass over a given section of road in a given time period. Congestion, high accident rates, the quality of traffic flow (Level of Service), and environmental acceptability all come into play in defining a particular roadway's effective capacity. It is possible to identify maximum desirable volumes for typical roadway types based on the number of roadway travel lanes. These daily volumes reflect estimates of the amount of daily traffic that will result in peak hour traffic volumes equal to the maximum desirable capacity of each roadway type. Table 2 contains City of Palmdale daily capacities by roadway type.

By dividing existing ADT volumes by the daily roadway capacities listed in Table 2, existing daily volume to capacity ratios have been calculated and are shown in Figure 6. As may be seen on Figure 6, the roadway links in the vicinity of the site currently operate within acceptable Levels of Service.

Existing Intersection Capacity Utilization (ICU)

The technique used to assess the operation of an intersection is known as Intersection Capacity Utilization (ICU). To calculate an ICU value the volume of traffic using the intersection is compared with the capacity of the intersection. An ICU value is usually expressed as a percent. The percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The ICU's for the existing traffic conditions have been calculated and are shown in Table 3. Existing ICU values are based upon manual morning and evening peak hour turning movement counts obtained by Kunzman Associates in November, 2002 (see Figures 7 and 8). Traffic count worksheets are provided in Appendix B. There are two peak hours in a weekday. The morning peak hour is between 7:00 AM and 9:00 AM, and the evening peak hour is between 4:00 PM and 6:00 PM. The actual peak hour within the two hour interval is the four consecutive 15 minute

periods with the highest total volume when all movements are added together. Thus, the evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15 minute periods have the highest combined volume.

The intersections in the vicinity of the site currently operate at Level of Service B or better during the peak hours. Existing ICU worksheets are provided in Appendix C.

Comparison of daily volume to capacity ratios and corresponding Level of Service, and peak hour Intersection Capacity Utilization and corresponding Level of Service reveals significant differences. The differences between daily link volume to capacity ratios and peak hour ICU values is particularly pronounced when cross traffic is light. Daily volume to capacity ratios assume that all cross streets require 50 percent of the time to satisfy their demand, and assume that the subject street has 50 percent of the time available to it. The daily link volume to capacity ratios are a generalized indicator while peak hour ICU actually represents what can be expected in the peak hour at intersections. Of the two indicators, the peak hour ICU value and corresponding LOS is by far the best measure of roadway performance.

Existing City of Palmdale General Plan Circulation Element

Figure 9 exhibits the City of Palmdale General Plan Circulation Element. Both existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 9. This figure shows the nature and extent of arterial highways that are needed to serve adequately the ultimate development depicted by the Land Use Element of the General Plan.

Figure 10 shows the existing General Plan land use designations and Figure 11 shows the existing land use zoning in the vicinity of the site.

Figure 12 shows the parcels and lot numbers for the land surrounding the landfill. Figure 13 shows which lots are vacant and occupied. A lot was considered occupied if it had an above ground structure on it or was part of the landfill.

Existing Traffic Signal Warrants

Traffic signals appear to currently be warranted at the following study area intersections (see Appendix D):

Tierra Subida Avenue (NS) at:
- 5th Street West (EW)
- Rayburn Road (EW)
- Avenue S (EW) (Installation will be in 2005)

Table 2

City of Palmdale
Roadway Capacities

Facility Type	Number of Lanes
Two Lane Undivided	12,000 vehicles per day
Four Lane Divided	36,000 vehicles per day
Six Lane Divided	54,000 vehicles per day

Table 3

Existing Intersection Capacity Utilization (ICU) and Level of Service (LOS)

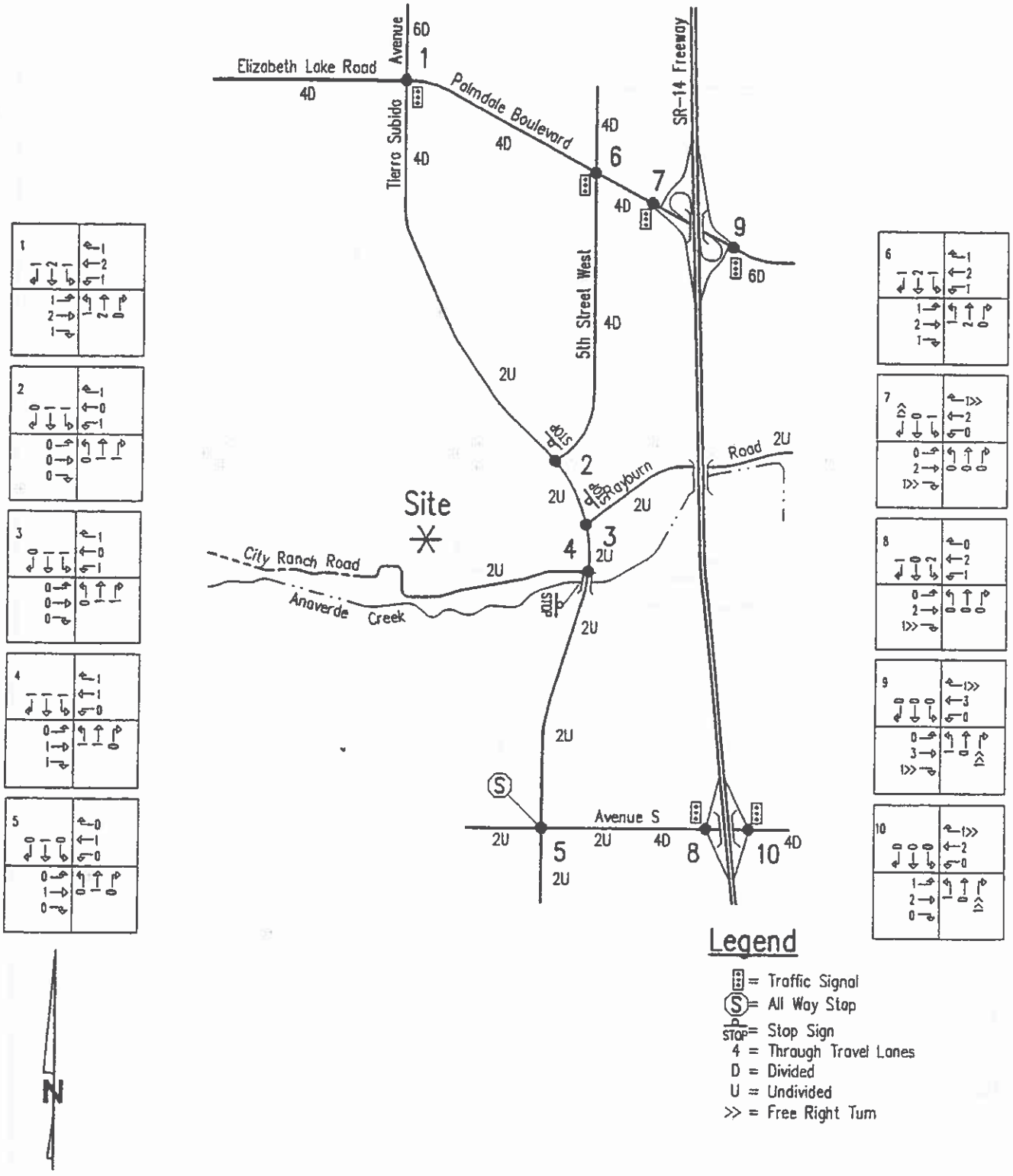
Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour ICU-LOS[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Tierra Subida Avenue (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	52.0-A	66.9-B
5th Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	39.9-A	48.9-A
Rayburn Road (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	51.3-A	63.4-B
City Ranch Road (EW)	CSS	1	1	0	1	1	1	0	1	1	0	1	1	27.1-A	42.7-A
Avenue S (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	40.5-A	55.9-A
5th Street West (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	30.0-A	51.7-A
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	36.6-A	67.3-B
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	46.1-A	48.9-A
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	26.9-A	44.0-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	30.0-A	41.4-A

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; >> = Free Right Turn

[2] ICU-LOS = Intersection Capacity Utilization - Level of Service

[3] TS = Traffic Signal
CSS = Cross Street Stop
AWS = All Way Stop

Figure 4
Existing Through Travel Lanes and Intersection Controls



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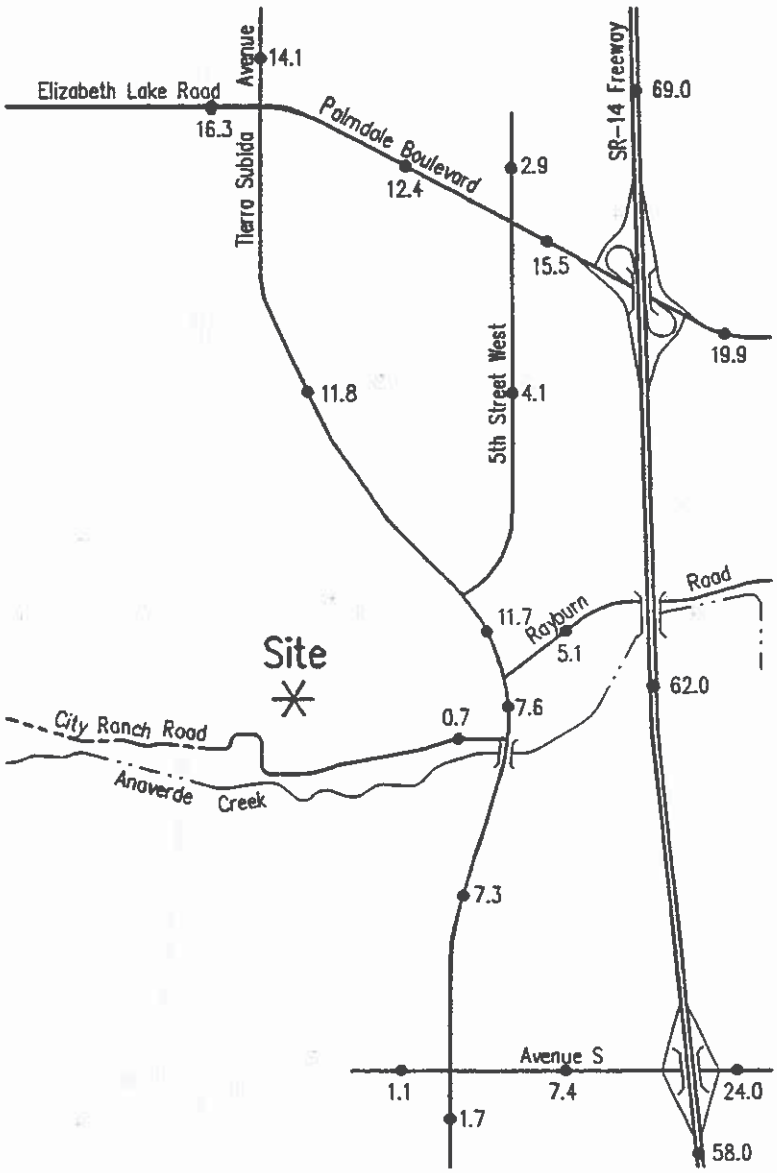
Intersection reference numbers are in upper left corner of turning movement boxes.

205IF/4

Figure 5
Existing Average Daily Traffic (ADT) Volumes



Legend

1.5 = Vehicles Per Day (1000's)

N

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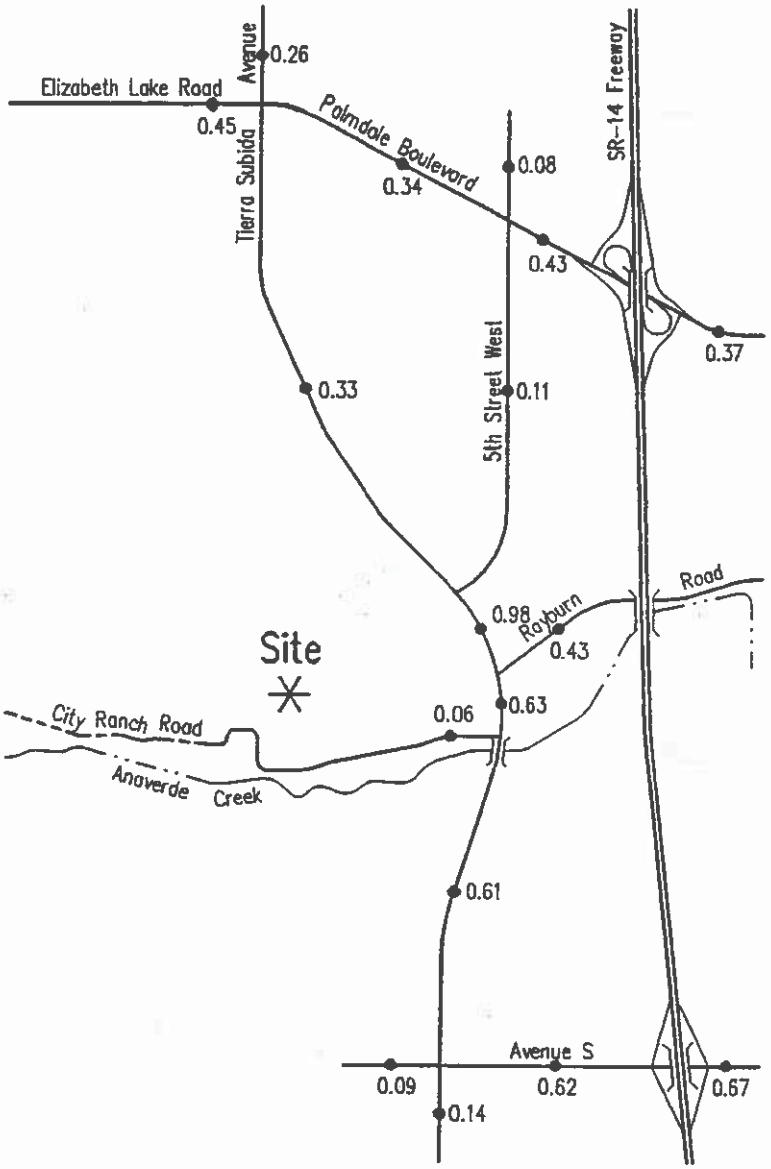
2051G/5

Figure 6
Existing Volume to Capacity Ratios



Legend

0.14 = Volume To Capacity Ratio

N

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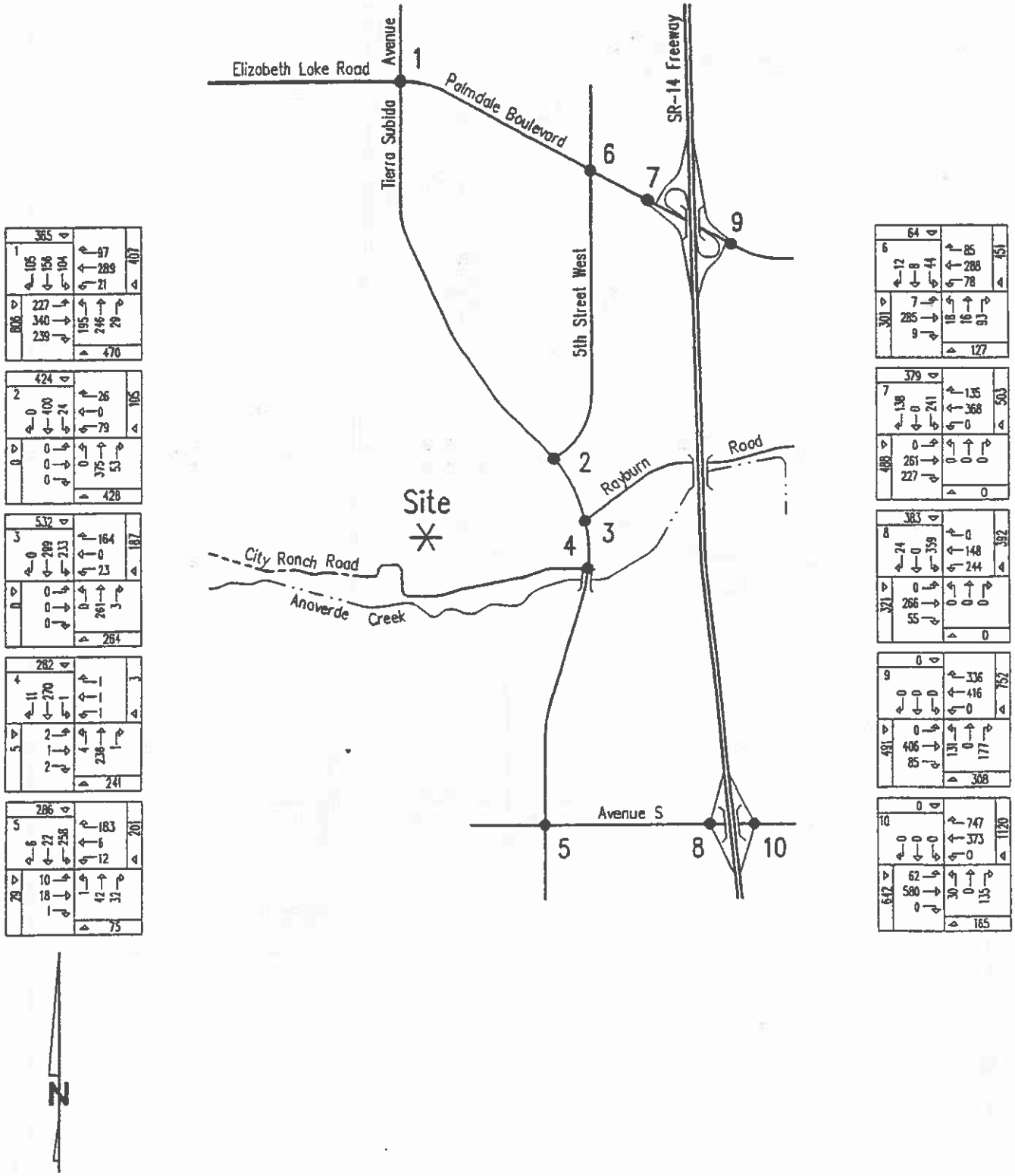
2051G/6

Figure 7
Existing Morning Peak Hour Intersection Turning Movement Volumes

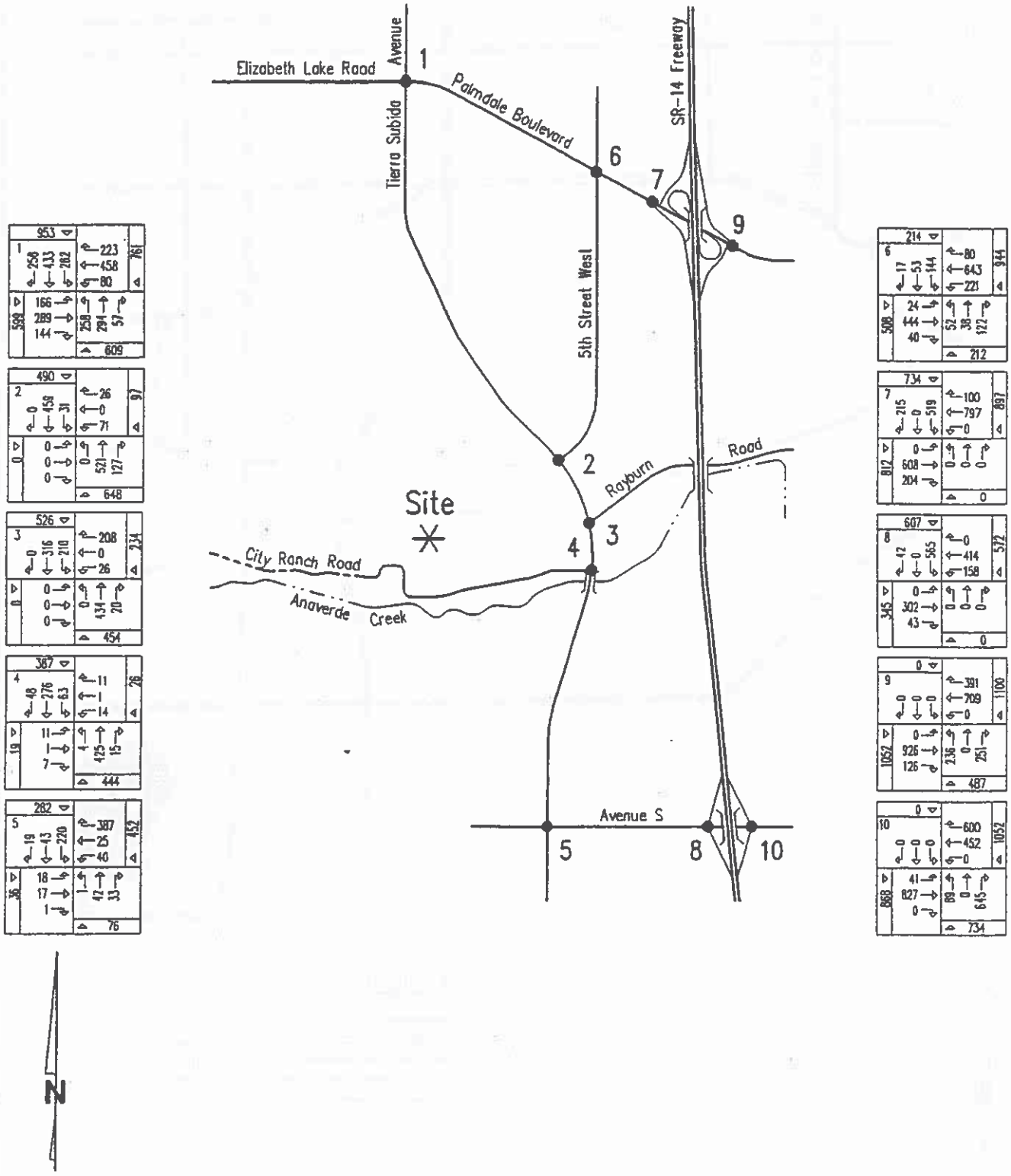


Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbos

Figure 8
Existing Evening Peak Hour Intersection Turning Movement Volumes



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Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

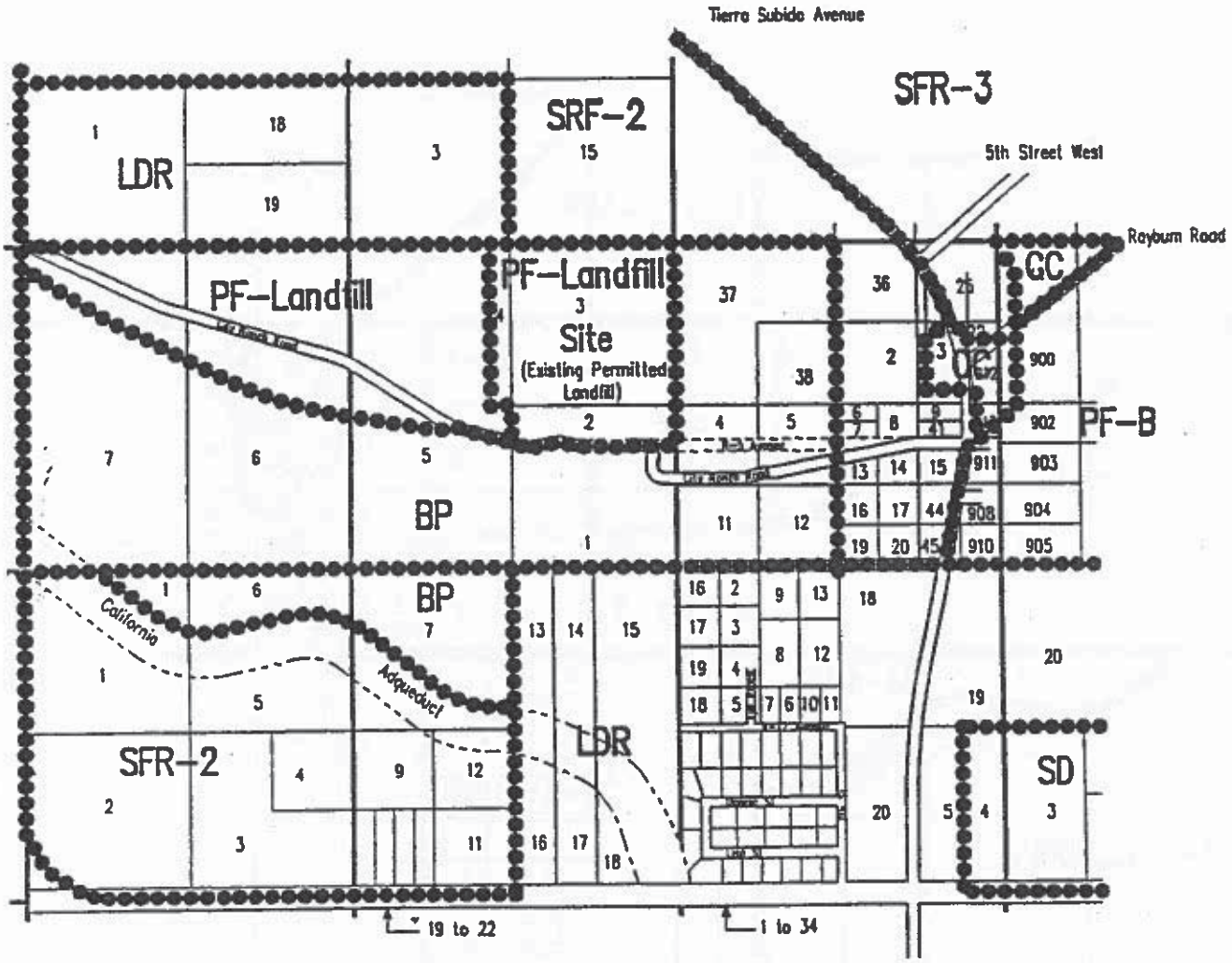
Figure 9
City of Palmdale General Plan Circulation Element

Kunzman Associates

Source: City of Palmdale

2051F/9

Figure 10
General Plan Land Use Designations



Legend

LDR = Low Density Residential (1 du/ac)

SFR-1 = 1 Single Family (0-3 du/ac)

SFR-3 = 3 Single Family (3.1-6 du/ac)

CC = Community Commercial

OC = Office Commercial

PB = Business Park

PF = Public Facility

SD = Special Development

N

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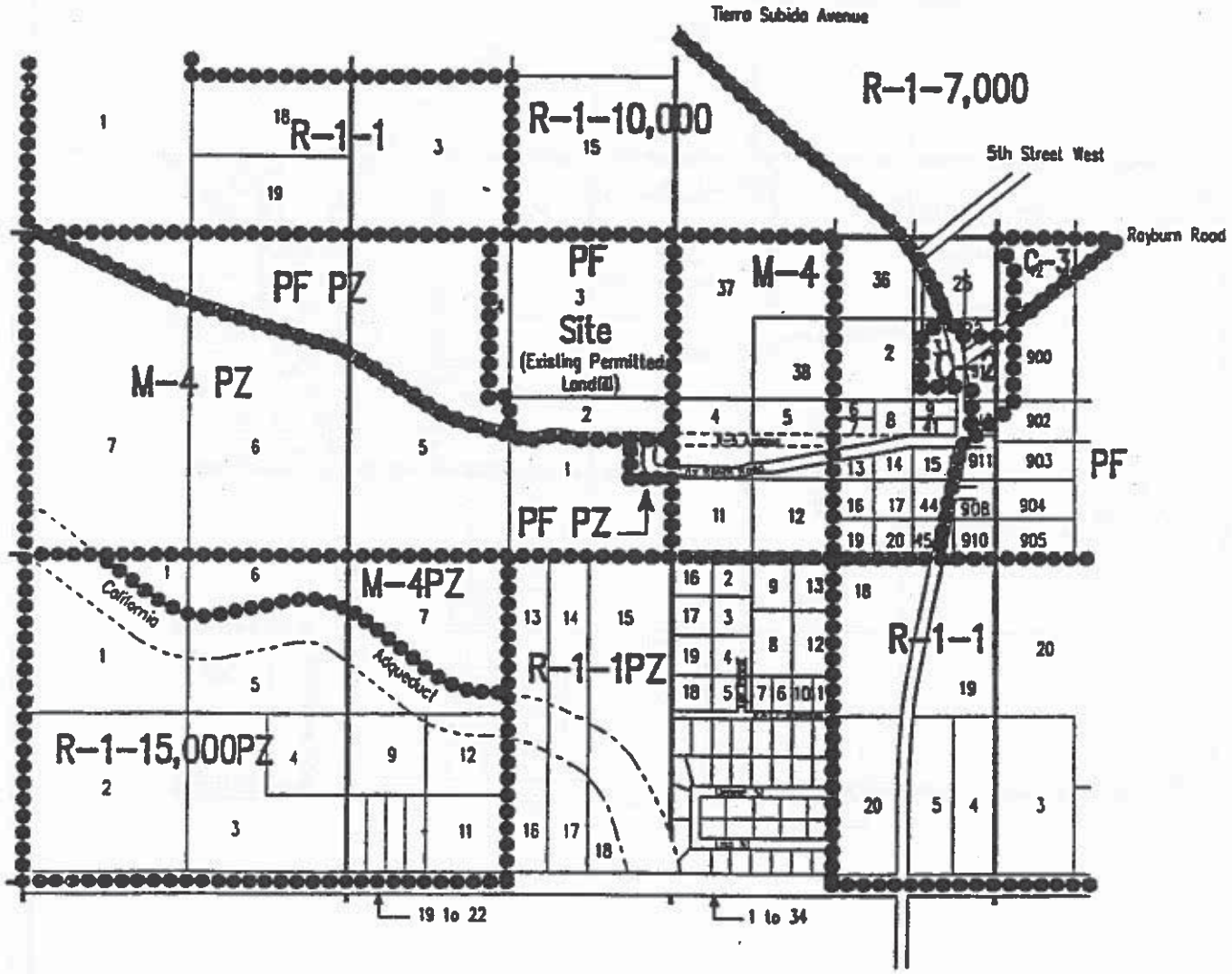
2051F/10

Figure 11
Zoning Designations



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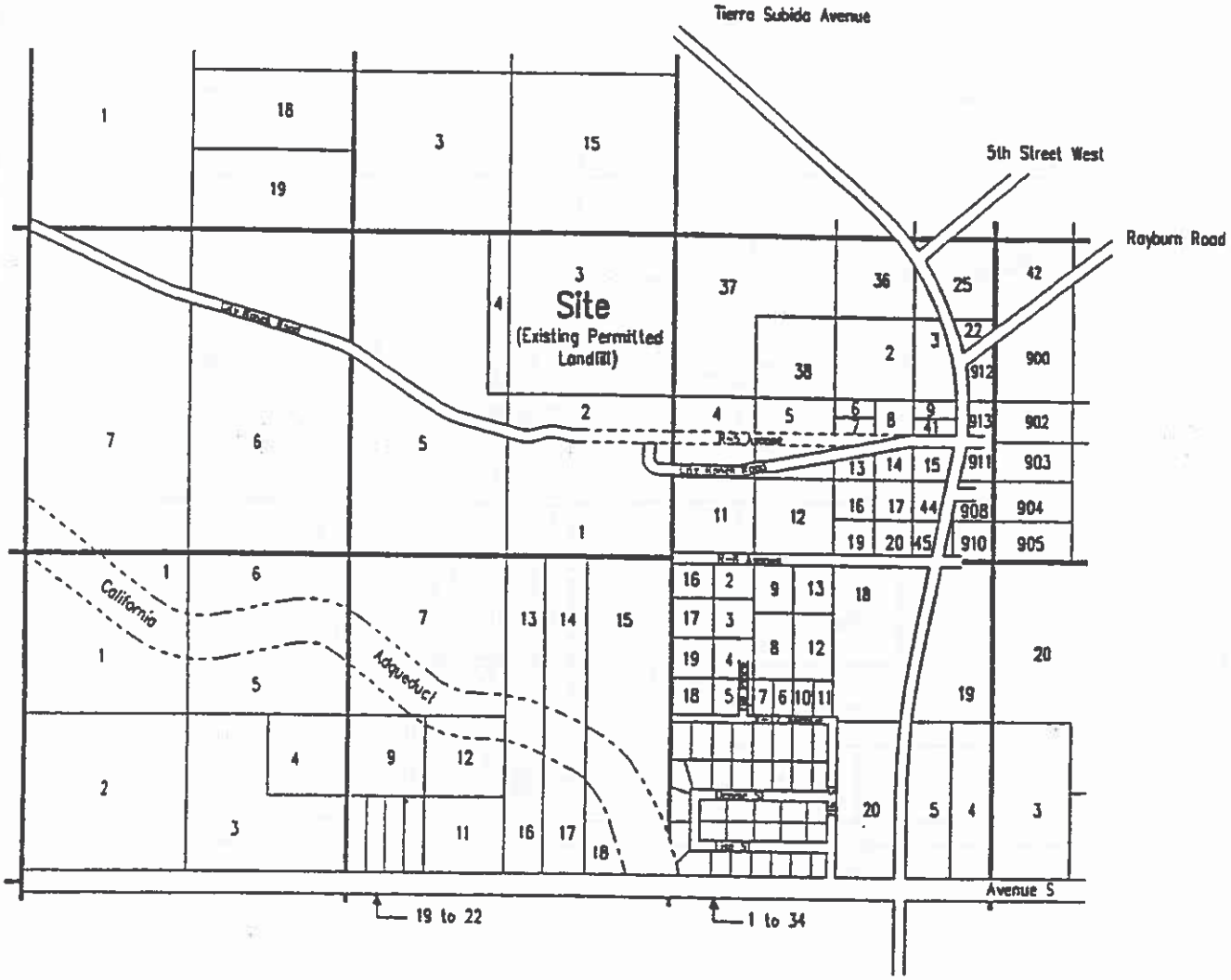
2051F/11

Figure 12
Lot Numbers



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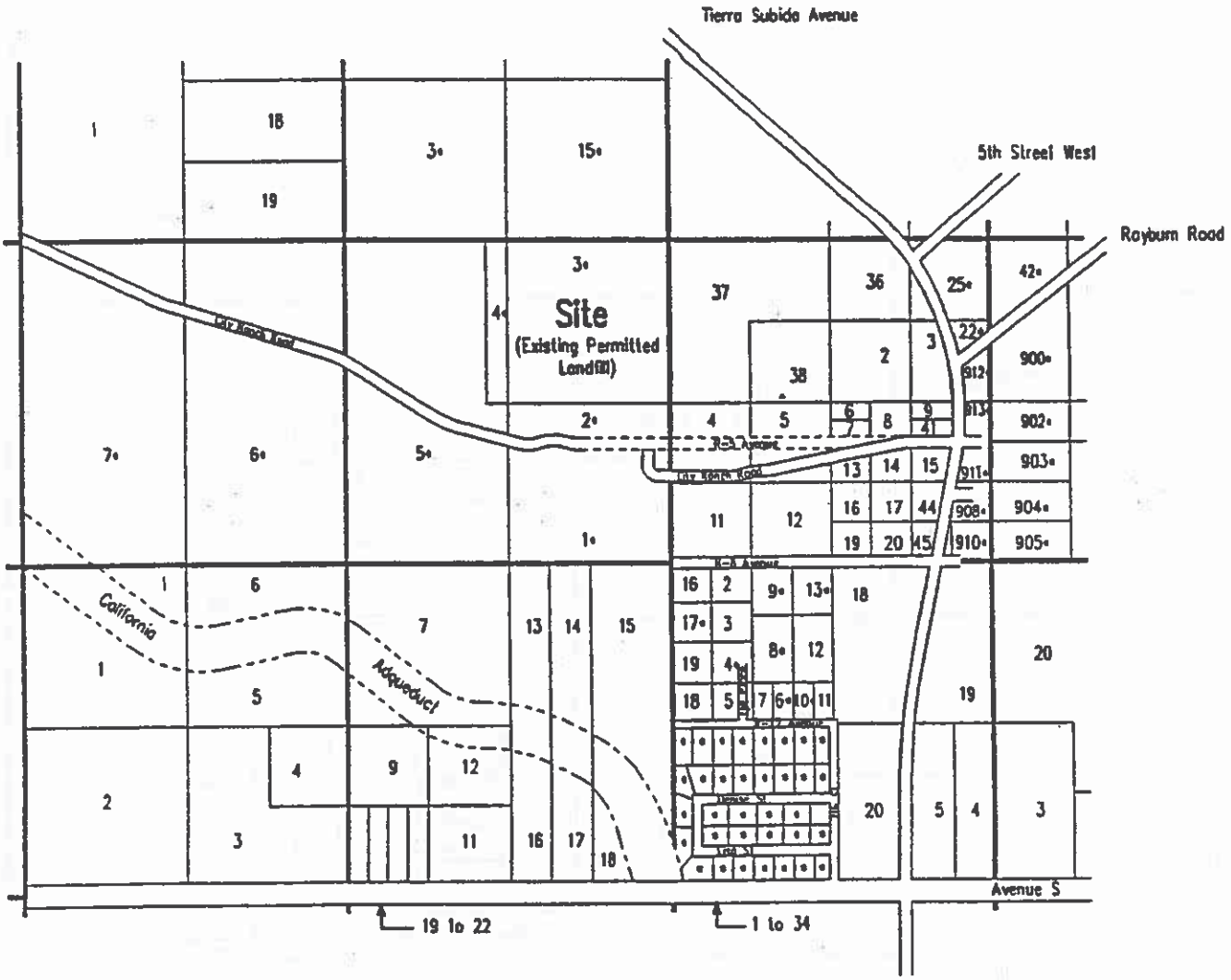
Numbers shown in each parcel are Lot Numbers

2051F/12

Figure 13
Vacant and Occupied Lots



Legend

7 = Vacant Lot
7• = Occupied Lot (Has a structure or is landfill)

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Numbers shown in each parcel are Lot Numbers

2051F/13

5. Project Traffic

The existing landfill is currently accepting an average of 1,372 tons of material per day. For purposes of this analysis, it was assumed that the project site will increase operations to an average of 3,613 tons per day.

However, the existing landfill also accepts concrete for recycling and/or materials used for daily cover or beneficial use, and when a major inflow of these materials occurs, then the daily tonnage can reach 3,800 tons per day. This peak inflow of concrete or daily cover material is sporadic and lasts for a few days.

For purposes of this analysis, it was assumed that the project site will increase operations to an average of 3,613 tons per day, and a peak of 5,548 tons per day.

Traffic Generation

The traffic generated by the project is determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of vehicles to drive, and our life styles remain similar to what we know today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. Trip generation is documented in Tables 4, 5, and 6.

Table 4 shows actual existing count data for truck loads and tonnage. The data was collected over 51 working days. Table 4 also shows the expected future truck loads and tonnage, as well as the expected change between the existing and future operation. It should be noted that the change in transfer trucks is 71 loads per day, or 142 in plus out trips. These trucks will all use the State Route 14 Freeway. They represent approximately 15 percent of the increase in traffic by the proposed land fill expansion. Also, see Table 1a for a summary of changes in traffic generation.

Table 5 shows data collected on an hourly basis. It shows when the trucks arrive and depart the site, as well as when cars arrive and depart the site. From Table 5 one can determine the peak hour and daily in and out volumes. The peak hour and daily volumes in Table 5 are summarized in Table 6.

Table 6 exhibits the traffic generation rates, project peak hour volumes, and project daily traffic volumes. Per Table 6, the existing landfill is currently generating 416 truck trips per day, 39 and 24 of which occur during the morning and evening peak hours, respectively. In addition, the site is currently generating 210 car trips per day, of which 14 and 36 occur during the morning and evening peak hours, respectively (see Table 6).

The project site is projected to generate in the future on the average a total of approximately 1,324 trips per day (662 in and 662 out), 105 and 85 of which occur during the morning and evening peak hours, respectively (see Table 6).

The landfill expansion is projected to generate on the average approximately 698 new daily vehicle trips, 52 new vehicles per hour will occur during the morning peak hour, and 25 new vehicles per hour will occur during the evening peak hour (see Table 6).

The project site is projected to generate in the future for peak inflow conditions a total of approximately 1,594 trips per day (797 in and 797 out), 124 and 96 of which occur during the morning and evening peak hours, respectively (see Table 6).

The landfill expansion is projected to generate for peak inflow conditions approximately 968 new daily vehicle trips, 71 new vehicles per hour will occur during the morning peak hour, and 36 new vehicles per hour will occur during the evening peak hour (see Table 6).

Traffic Distribution and Assignment

Traffic distribution is the determination of the directional orientation of traffic. It is based on the geographical location of employment centers, commercial centers, recreational areas, or residential area concentrations.

Traffic assignment is the determination of which specific route development traffic will use, once the generalized traffic distribution is determined. The basic factors affecting route selection are minimum time path and minimum distance path.

Figure 14 contains an estimate of the directional distribution and assignment of the existing traffic from the landfill. This estimate is based on information in the previous traffic studies for the landfill and field observations. Traffic from the landfill expansion is expected to have a distribution that is similar to the existing landfill traffic.

Project-Related Traffic

Based on the identified traffic generation and distribution, project related ADT volumes are shown on Figure 15. The project related morning and evening peak hour intersection turning movement volumes are shown on Figures 16 and 17, respectively.

The project traffic is expected to have an average one-way trip length of 5.5 miles for trips originating in the City and 15 miles for trips originating outside of the City. It is approximately 15 miles to Lancaster going north on the State Route 14 Freeway, and approximately 15 miles to the Antelope Valley Air Pollution Control District boundary going south on the State Route 14 Freeway.

Table 4

Truck Traffic For Antelope Valley Landfill

Existing Truck Traffic					
Type	Tons	Loads	Tons/Load	Tons/Day	Loads/Day
Municipal Solid Waste (Com., Res., Ind.)	29,299	7,228	4.05	574	142
Transfer Trailers	16,743	797	21.01	328	16
Recycle (Com., Res., Ind.)	0	0	4.20	0	0
Recycle - Concrete	1,182	264	4.48	23	5
Cover Soil	414	16	25.88	8	1
Contaminated Soil	21,412	856	25.01	420	17
Greenwaste	826	1,189	0.69	16	23
Other Recycling	103	194	0.53	2	4
Total	69,979	10,544		1,372	208

Average Inflow of Material Future Truck Traffic (3,613 tons per day)					
Type	Tons	Loads	Tons/Load	Tons/Day	Loads/Day
Municipal Solid Waste (Com., Res., Ind.)	59,874	14,771	4.05	1174	290
Transfer Trailers	93,093	4,433	21.00	1826	87
Recycle (Com., Res., Ind.)	1,180	281	4.20	20	5
Recycle - Concrete	1,020	228	4.48	20	5
Cover Soil	345	14	25.00	7	1
Contaminated Soil	25,486	1,019	25.00	500	20
Greenwaste	14,095	4,698	3.00	64	21
Other Recycling	102	192	0.53	2	4
Total	195,195	25,636		3,613	432

Difference For Truck Traffic for Average Inflow of Material					
Type	Tons	Loads	Tons/Load	Tons/Day	Loads/Day
Municipal Solid Waste (Com., Res., Ind.)	30,575	7,543	4.05	600	148
Transfer Trailers	76,350	3,636	21.00	1,498	71
Recycle (Com., Res., Ind.)	1,180	281	4.20	20	5
Recycle - Concrete	-162	-36	4.48	-3	0
Cover Soil	-69	-2	25.00	-1	0
Contaminated Soil	4,074	163	25.00	80	3
Greenwaste	13,269	3,509	3.00	48	-2
Other Recycling	-1	-2	0.53	0	0
Total Difference	125,216	15,092		2,241	224

Peak Inflow of Material Future Truck Traffic (5,548 tons per day)					
Type	Tons	Loads	Tons/Load	Tons/Day	Loads/Day
Municipal Solid Waste (Com., Res., Ind.)	59,822	14,771	4.05	1174	290
Transfer Trailers	93,093	4,433	21.00	1826	87
Recycle (Com., Res., Ind.)	1,180	281	4.20	20	5
Recycle - Concrete	1,020	228	4.48	337	75
Cover Soil	357	14	25.00	250	10
Contaminated Soil	25,500	1,019	25.00	1875	75
Greenwaste	14,095	4,698	3.00	64	21
Other Recycling	102	192	0.53	2	4
Total	195,169	25,636		6,548	567

Difference For Peak Inflow of Material Truck Traffic					
Type	Tons	Loads	Tons/Load	Tons/Day	Loads/Day
Municipal Solid Waste (Com., Res., Ind.)	30,523	7,543	4.05	600	148
Transfer Trailers	76,350	3,636	21.00	1,498	71
Recycle (Com., Res., Ind.)	1,180	281	4.20	20	5
Recycle - Concrete	-162	-38	4.48	314	70
Cover Soil	-57	-2	25.00	242	9
Contaminated Soil	4,088	163	25.00	1,455	58
Greenwaste	13,269	3,509	3.00	48	-2
Other Recycling	-1	-2	0.53	0	0
Total Difference	125,190	15,092		4,176	359

Notes:

1.) Existing Measured January 1, 2003 to February 28, 2003 (51 working days).
2.) Future assumes additional 400 tons per day Municipal Solid Waste from Lancaster.
3.) Future assumes 20 tons per day of Greenwaste transferred from Lancaster.
4.) Future assumes 30 tons per day from proposed Palmdale Greenwaste.
5.) The columns labeled "Tons" and "Loads" are for 51 working days.
6.) Because of rounding, some totals may differ by 1 compared to the sum of the components.

Traffic Schedule For Antelope Valley Landfill - Average Inflow of Material Condition

Existing Traffic Schedule For Antelope Valley Landfill

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	3	0	3	3	0	0	0	0	0	0	0	0	0	0	3
6:00 AM - 7:00 AM	3	0	0	0	0	3	5	0	5	8	30	0	3	0	0	33	0	0	0	33	41
7:00 AM - 8:00 AM	3	0	2	0	0	5	27	0	27	32	30	0	4	1	0	35	0	0	0	35	67
8:00 AM - 9:00 AM	10	5	2	0	1	18	0	7	7	25	17	2	2	0	0	21	0	7	7	28	53
9:00 AM - 10:00 AM	10	1	2	1	6	20	0	8	8	28	17	3	2	1	5	28	0	8	8	36	64
10:00 AM - 11:00 AM	19	0	4	0	2	25	0	5	8	33	14	1	2	0	2	19	0	8	8	27	60
11:00 AM -12:00 NOON	15	4	2	1	1	23	0	8	8	31	14	2	4	1	2	23	0	8	8	31	62
12:00 NOON - 1:00 PM	13	1	2	0	5	21	0	8	8	29	7	3	2	0	4	16	0	8	8	24	53
1:00 PM - 2:00 PM	13	0	2	1	1	17	0	8	8	25	7	0	2	1	2	12	0	8	8	20	45
2:00 PM - 3:00 PM	18	4	3	1	1	27	0	8	8	35	3	2	2	0	1	8	3	8	11	19	54
3:00 PM - 4:00 PM	19	1	4	1	3	28	0	8	8	36	3	3	0	1	2	9	5	8	13	22	58
4:00 PM - 5:00 PM	19	0	0	0	2	21	0	7	7	28	0	0	0	0	3	3	22	7	29	32	60
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	0	5	6	6
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
After 8:00 PM	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	142	16	23	5	22	208	35	70	105	313	142	16	23	5	22	208	35	70	105	313	626

Future Traffic Schedule For Antelope Valley Landfill for Average Inflow of Material (3,613 tons per day)

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	65	0	65	65	0	0	0	0	0	0	0	0	0	0	65
6:00 AM - 7:00 AM	5	0	1	0	1	7	25	2	27	34	60	0	2	0	1	63	0	2	2	65	99
7:00 AM - 8:00 AM	6	0	1	0	1	8	42	2	44	52	60	0	3	1	1	65	0	2	2	67	119
8:00 AM - 9:00 AM	21	19	1	0	2	43	0	7	7	50	35	11	1	0	1	48	0	7	7	55	105
9:00 AM - 10:00 AM	21	4	1	1	6	33	0	8	8	41	35	10	1	1	5	52	0	9	8	60	101
10:00 AM - 11:00 AM	39	0	3	0	2	44	0	8	8	52	29	2	1	0	2	34	0	8	8	42	94
11:00 AM -12:00 NOON	29	19	1	1	2	52	0	9	9	51	29	11	3	1	2	46	0	9	9	55	116
12:00 NOON - 1:00 PM	27	4	2	0	5	38	0	9	9	47	15	10	2	0	4	31	0	9	9	40	87
1:00 PM - 2:00 PM	27	0	2	1	1	31	0	9	9	40	15	2	2	1	2	22	0	9	9	31	71
2:00 PM - 3:00 PM	37	19	2	1	1	60	0	9	9	69	6	11	1	0	2	20	20	9	29	49	118
3:00 PM - 4:00 PM	39	4	3	1	3	50	3	8	11	61	6	10	1	1	2	20	35	8	43	63	124
4:00 PM - 5:00 PM	19	0	1	0	2	22	5	8	13	35	0	2	1	0	3	6	35	8	43	49	84
5:00 PM - 6:00 PM	15	10	1	0	1	27	0	4	4	31	0	8	1	0	2	11	39	4	43	54	85
6:00 PM - 7:00 PM	4	8	1	0	1	14	0	4	4	18	0	10	1	0	1	12	3	4	7	19	37
7:00 PM - 8:00 PM	1	0	1	0	1	3	0	3	3	6	0	0	1	0	1	2	0	3	3	5	11
After 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	8	8
Total	290	87	21	5	29	432	140	90	230	662	290	87	21	5	29	432	140	90	230	662	1,324

Difference in Traffic Schedule For Antelope Valley Landfill for Average Inflow of Material (3,613 tons per day)

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	GW	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	62	0	62	62	0	0	0	0	0	0	0	0	0	0	62
6:00 AM - 7:00 AM	2	0	1	0	1	4	20	2	22	26	30	0	-1	0	1	30	0	2	2	32	58
7:00 AM - 8:00 AM	3	0	-1	0	1	3	15	2	17	20	30	0	-1	0	1	30	0	2	2	32	52
8:00 AM - 9:00 AM	11	14	-1	0	1	25	0	0	0	25	18	9	-1	0	1	27	0	0	0	27	52
9:00 AM - 10:00 AM	11	3	-1	0	0	13	0	0	0	13	18	7	-1	0	0	24	0	0	0	24	37
10:00 AM - 11:00 AM	20	0	-1	0	0	19	0	0	0	19	15	1	-1	0	0	15	0	0	0	15	34
11:00 AM -12:00 NOON	14	15	-1	0	1	29	0	1	1	30	15	9	-1	0	0	23	0	1	1	24	54
12:00 NOON - 1:00 PM	14	3	0	0	0	17	0	1	1	15	8	7	0	0	0	15	0	1	1	16	34
1:00 PM - 2:00 PM	14	0	0	0	0	14	0	1	1	18	8	2	0	0	0	10	0	1	1	11	26
2:00 PM - 3:00 PM	19	15	-1	0	0	33	0	1	1	34	3	9	-1	0	1	12	17	1	18	30	64
3:00 PM - 4:00 PM	20	3	-1	0	0	22	3	0	3	25	3	7	1	0	0	11	30	0	30	41	66
4:00 PM - 5:00 PM	0	0	1	0	0	1	5	1	6	7	0	2	1	0	0	3	13	1	14	17	24
5:00 PM - 6:00 PM	15	10	1	0	1	27	0	4	4	31	0	8	1	0	1	10	34	4	38	48	79
6:00 PM - 7:00 PM	4	8	1	0	1	14	0	4	4	18	0	10	1	0	1	12	3	4	7	19	37
7:00 PM - 8:00 PM	1	0	1	0	1	3	0	3	3	5	0	0	1	0	1	2	0	3	3	5	11
After 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	8	8
Total	148	71	-2	0	7	224	105	20	125	349	148	71	-2	0	7	224	105	20	125	349	698

Table 5 continues on next page

Notes:

1.) MSW[1] = Municipal Solid Waste

2.) Assumes average roundtrips to landfill 3.5 hours.

3.) Other = Contaminated soil, clean soil, recycling, and other included under inbound recycling.

4.) Inbound/Outbound recycling refers to crushed concrete.

5.) Truck count includes commercial vehicles and residential customers (pickup trucks, etc.)

6.) Misc. = Car and pickup trips to pay disposable bill, recycle oil, recycle batteries, etc.

7.) Because of rounding, some totals may differ by 1 compared to the sum of the components.

Traffic Schedule For Antelope Valley Landfill - Peak Inflow of Material Condition

Existing Traffic Schedule For Antelope Valley Landfill

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	3	0	3	3	0	0	0	0	0	0	0	0	0	0	3
6:00 AM - 7:00 AM	3	0	0	0	0	3	8	0	8	8	30	0	3	0	0	33	0	0	0	33	41
7:00 AM - 8:00 AM	3	0	2	0	0	5	27	0	27	32	30	0	4	1	0	35	0	0	0	35	67
8:00 AM - 9:00 AM	10	5	2	0	1	18	0	7	7	25	17	2	2	0	0	21	0	7	7	28	53
9:00 AM - 10:00 AM	10	1	2	1	8	20	0	8	8	28	17	3	2	1	5	28	0	8	8	36	64
10:00 AM - 11:00 AM	19	0	4	0	2	25	0	8	8	33	14	1	2	0	2	19	0	8	8	27	60
11:00 AM -12:00 NOON	15	4	2	1	1	23	0	8	8	31	14	2	4	1	2	23	0	8	8	31	62
12:00 NOON - 1:00 PM	13	1	2	0	5	21	0	8	8	29	7	3	2	0	4	16	0	8	8	24	53
1:00 PM - 2:00 PM	13	0	2	1	1	17	0	8	8	25	7	0	2	1	2	12	0	8	8	20	45
2:00 PM - 3:00 PM	18	4	3	1	1	27	0	8	8	35	3	2	2	0	1	8	3	8	11	18	54
3:00 PM - 4:00 PM	19	1	4	1	3	28	0	8	8	36	3	3	0	1	2	9	5	8	13	22	58
4:00 PM - 5:00 PM	19	0	0	0	2	21	0	7	7	28	0	0	0	0	3	3	22	7	29	32	60
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5	0	5	6	6
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
After 8:00 PM	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	142	16	23	5	22	208	35	70	105	313	142	16	23	5	22	208	35	70	105	313	626

Future Traffic Schedule For Antelope Valley Landfill for Peak Inflow of Material (5,848 tons per day)

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	65	0	65	65	0	0	0	0	0	0	0	0	0	0	65
6:00 AM - 7:00 AM	6	0	1	0	1	7	25	2	27	34	60	0	2	0	1	63	0	2	2	65	99
7:00 AM - 8:00 AM	6	0	1	0	2	9	42	2	44	53	60	0	3	3	2	68	0	2	2	70	123
8:00 AM - 9:00 AM	21	19	1	7	5	53	0	7	7	60	35	11	1	5	5	57	0	7	7	64	124
9:00 AM - 10:00 AM	21	4	1	10	10	46	0	8	8	54	35	10	1	10	10	66	0	8	8	74	128
10:00 AM - 11:00 AM	39	0	3	10	9	61	0	8	8	69	29	2	1	10	9	51	0	8	8	59	128
11:00 AM -12:00 NOON	29	19	1	10	8	67	0	9	9	76	29	11	3	10	8	61	0	9	9	70	146
12:00 NOON - 1:00 PM	27	4	2	10	11	54	0	9	9	63	15	10	2	10	11	48	0	9	9	57	120
1:00 PM - 2:00 PM	27	0	2	10	10	49	0	9	9	58	15	2	2	10	10	39	0	9	9	48	106
2:00 PM - 3:00 PM	37	19	2	10	8	78	0	9	9	85	8	11	1	10	8	36	20	9	29	65	150
3:00 PM - 4:00 PM	39	4	3	8	9	63	3	8	11	74	6	10	1	7	9	33	35	8	43	76	150
4:00 PM - 5:00 PM	19	0	1	0	10	30	5	8	13	43	0	2	1	0	10	13	35	8	43	56	99
5:00 PM - 6:00 PM	15	10	1	0	7	33	0	4	4	37	0	8	1	0	7	16	39	4	43	59	96
6:00 PM - 7:00 PM	4	8	1	0	2	15	0	4	4	19	0	10	1	0	2	13	3	4	7	20	39
7:00 PM - 8:00 PM	1	0	1	0	2	4	0	3	3	7	0	0	1	0	2	3	0	3	3	6	13
After 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	8	8
Total	290	87	21	75	94	567	140	90	230	797	290	87	21	75	94	567	140	90	230	797	1,594

Difference in Traffic Schedule For Antelope Valley Landfill for Peak Inflow of Material (5,848 tons per day)

	Inbound										Outbound										Total Inbound/ Outbound Trucks & Cars
	Trucks (includes pickups)						Cars			Total Trucks & Cars	Trucks (includes pickups)						Cars			Total Trucks & Cars	
Time Period	MSW[1]	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		MSW	Transfer	G/W	Recycle/ Concrete	Other	Total Trucks	Employee	Misc.	Total Cars		
5:00 AM - 6:00 AM	0	0	0	0	0	0	62	0	62	62	0	0	0	0	0	0	0	0	0	0	62
6:00 AM - 7:00 AM	2	0	1	0	1	4	20	2	22	26	30	0	-1	0	1	30	0	2	2	32	58
7:00 AM - 8:00 AM	3	0	-1	0	2	4	15	2	17	21	30	0	-1	2	2	33	0	2	2	35	56
8:00 AM - 9:00 AM	11	14	-1	7	4	35	0	0	0	35	18	9	-1	5	5	36	0	0	0	36	71
9:00 AM - 10:00 AM	11	3	-1	9	4	26	0	0	0	26	18	7	-1	9	5	38	0	0	0	38	64
10:00 AM - 11:00 AM	20	0	-1	10	7	36	0	0	0	36	15	1	-1	10	7	32	0	0	0	32	68
11:00 AM -12:00 NOON	14	15	-1	9	7	44	0	1	1	45	15	9	-1	9	8	38	0	1	1	39	84
12:00 NOON - 1:00 PM	14	3	0	10	8	33	0	1	1	34	8	7	0	10	7	32	0	1	1	33	67
1:00 PM - 2:00 PM	14	0	0	9	9	32	0	1	1	33	8	2	0	9	8	27	0	1	1	28	61
2:00 PM - 3:00 PM	19	15	-1	9	7	49	0	1	1	50	3	9	-1	10	7	28	17	1	18	46	96
3:00 PM - 4:00 PM	20	3	-1	7	8	36	3	0	3	38	3	7	1	6	7	24	30	0	30	54	92
4:00 PM - 5:00 PM	0	0	1	0	8	9	5	1	6	15	0	2	1	0	7	10	13	1	14	24	39
5:00 PM - 6:00 PM	15	10	1	0	7	33	0	4	4	37	0	8	1	0	6	15	34	4	38	53	90
6:00 PM - 7:00 PM	4	8	1	0	2	15	0	4	4	19	0	10	1	0	2	13	3	4	7	20	39
7:00 PM - 8:00 PM	1	0	1	0	2	4	0	3	3	7	0	0	1	0	2	3	0	3	3	6	13
After 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	8	8
Total	148	71	-2	70	72	359	105	20	125	484	148	71	-2	70	72	359	105	20	125	484	966

Notes:

1.) MSW[1] = Municipal Solid Waste

2.) Assumes average roundtrips to landfill 3.5 hours.

3.) Other = Contaminated soil, clean soil, recycling, and other included under inbound recycling.

4.) Inbound/Outbound recycling refers to crushed concrete.

5.) Truck count includes commercial vehicles and residential customers (pickup trucks, etc.)

6.) Misc. = Car and pickup trips to pay disposable bill, recycle oil, recycle batteries, etc.

7.) Because of rounding, some totals may differ by 1 compared to the sum of the components.

Table 6
Project Traffic Generation

Average Inflow Of Material (3,613 ons per day)							
	Existing Average Volume (1,372 Tons/Day)			Future Average Volume (3,613 Tons/Day)			
Time Period	Trucks	Cars	Total	Trucks	Cars	Total	Difference
Morning Peak Hour (8:00 AM - 9:00 AM)							
Inbound	18	7	25	43	7	50	25
Outbound	21	7	28	48	7	55	27
Total	39	14	53	91	14	105	52
Evening Peak Hour (5:00 PM - 6:00 PM)							
Inbound	21	7	28	27	4	31	3
Outbound	3	29	32	11	43	54	22
Total	24	36	60	38	47	85	25
Daily	416	210	626	864	460	1,324	698

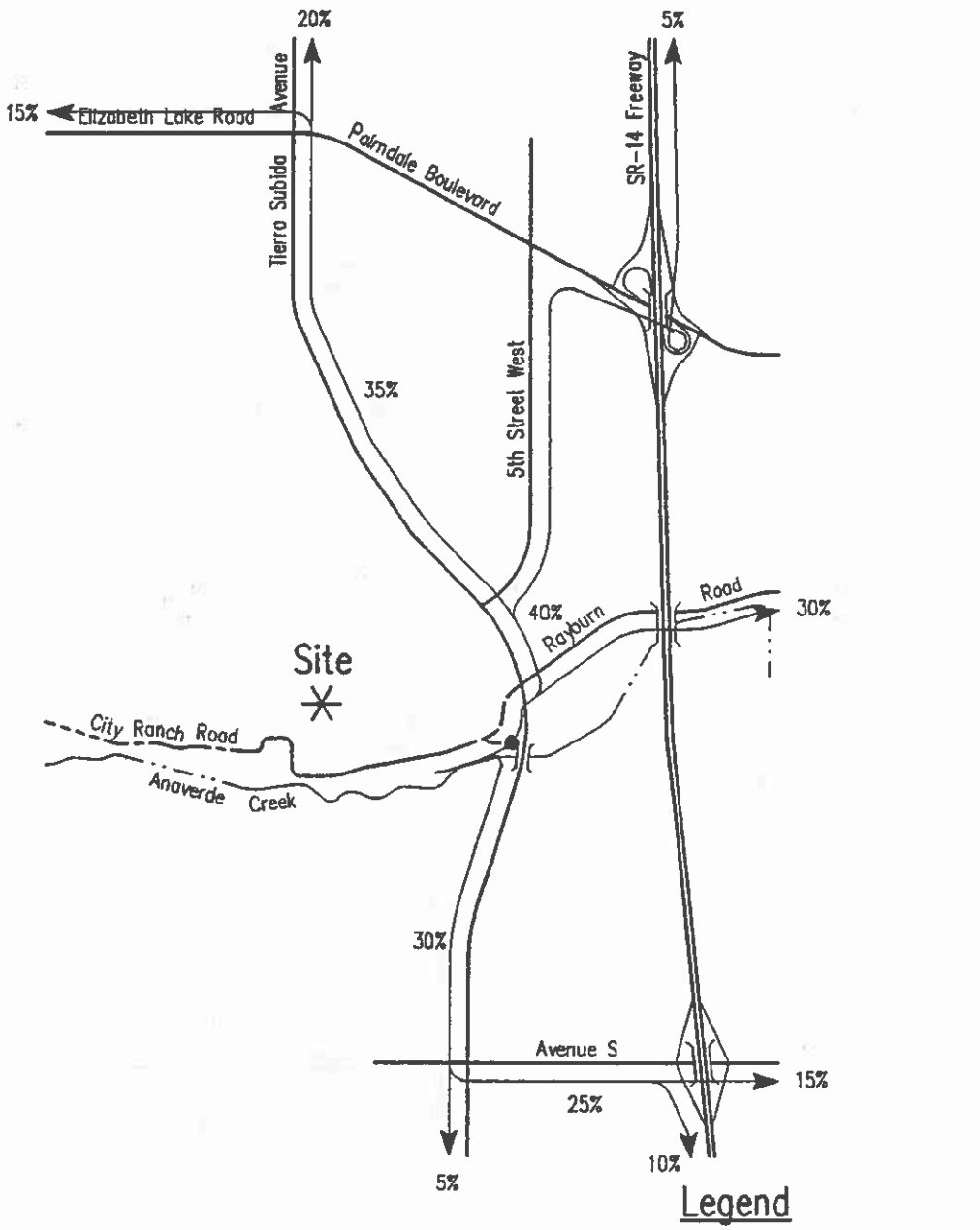
Peak Inflow Of Material (5,548 tons per day)							
	Existing Average Volume (1,372 Tons/Day)			Future Peak Volume (5,548 Tons/Day)			
Time Period	Trucks	Cars	Total	Trucks	Cars	Total	Difference
Morning Peak Hour (8:00 AM - 9:00 AM)							
Inbound	18	7	25	53	7	60	35
Outbound	21	7	28	57	7	64	36
Total	39	14	53	110	14	124	71
Evening Peak Hour (5:00 PM - 6:00 PM)							
Inbound	21	7	28	33	4	37	9
Outbound	3	29	32	16	43	59	27
Total	24	36	60	49	47	96	36
Daily	416	210	626	1,134	460	1,594	968

Permitted Peak to Future Peak Comparison							
	Permitted Peak Volume (3,564 Tons/Day)			Future Peak Volume (5,548 Tons/Day)			
Time Period	Trucks	Cars	Total	Trucks	Cars	Total	Total Difference
Daily	1,100	360	1,460	1,134	460	1,594	134

The truck tonnage capacities have changed since the 1993 CUP aapproval. Today, trucks can accommodate a larger tonnage than in 1993; therefore, less trucks are required today for the same tonnage.

Because of rounding, some totals may differ by 1 compared to the sum of the componentns.

Figure 14
Project Traffic Distribution



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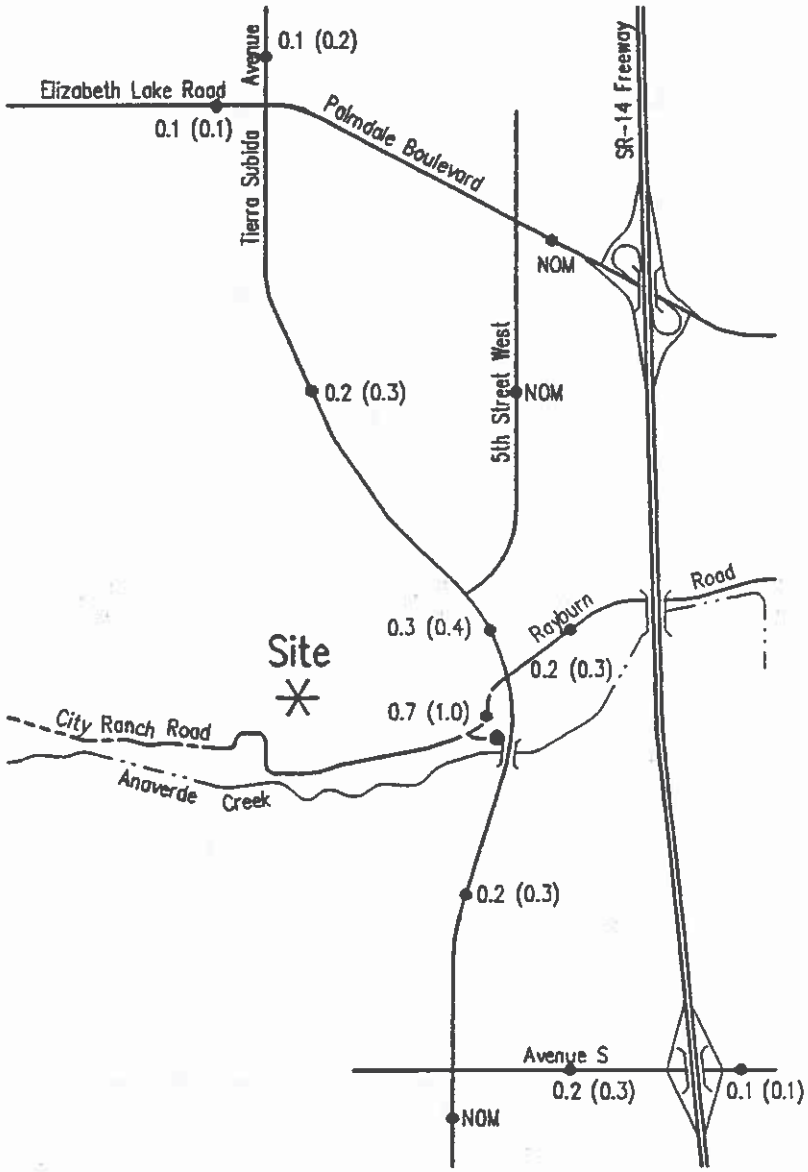
2051G/14

Figure 15
Project Average Daily Traffic (ADT) Volumes



Legend

0.1 (0.1) = Vehicles Per Day (1000's) for Average and Peak Inflow of Material

NOM = Nominal, Less Than 50 Vehicles Per Day

N

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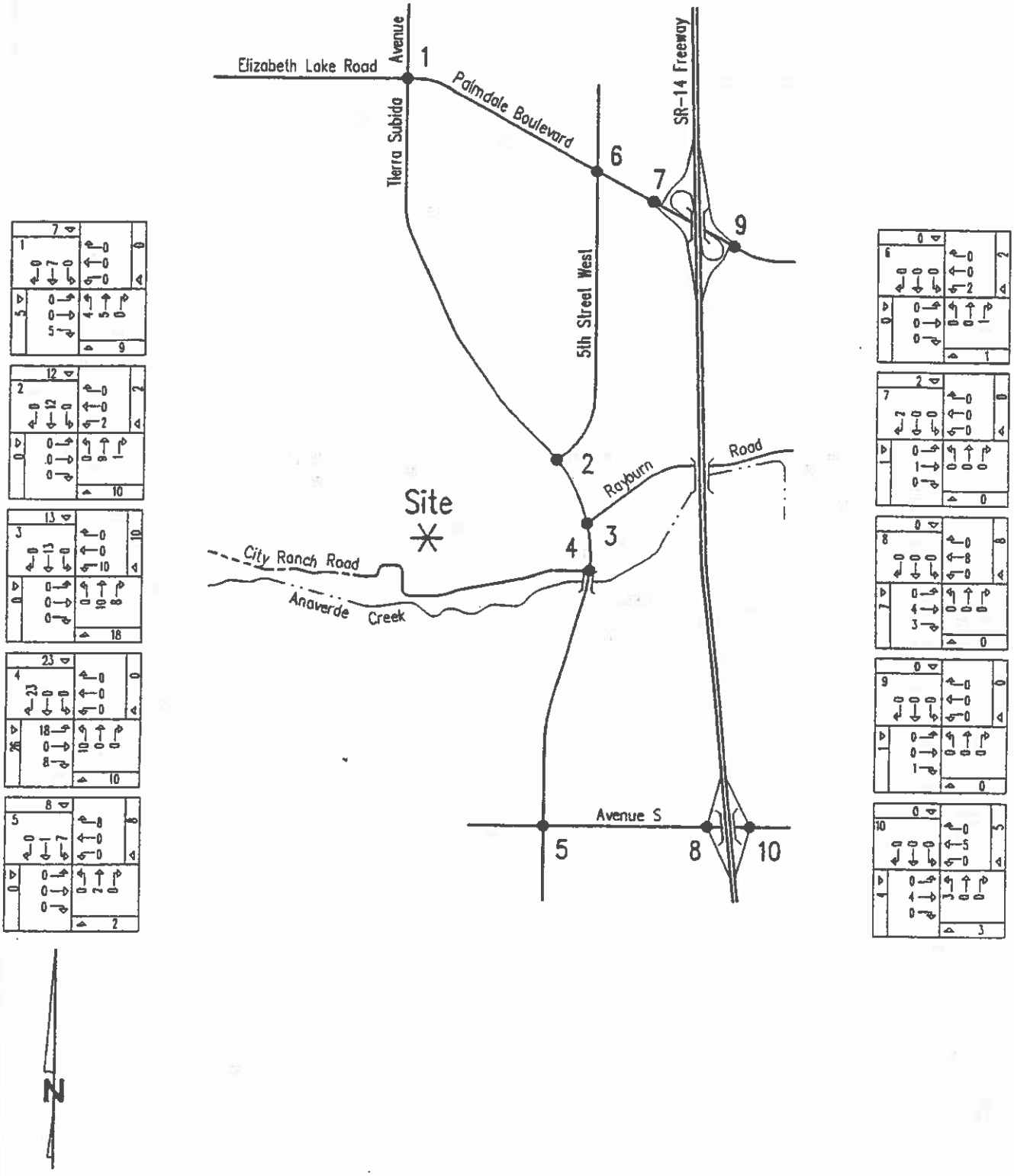
2051G/15

Figure 16
Project Morning Peak Hour Intersection Turning Movement Volumes



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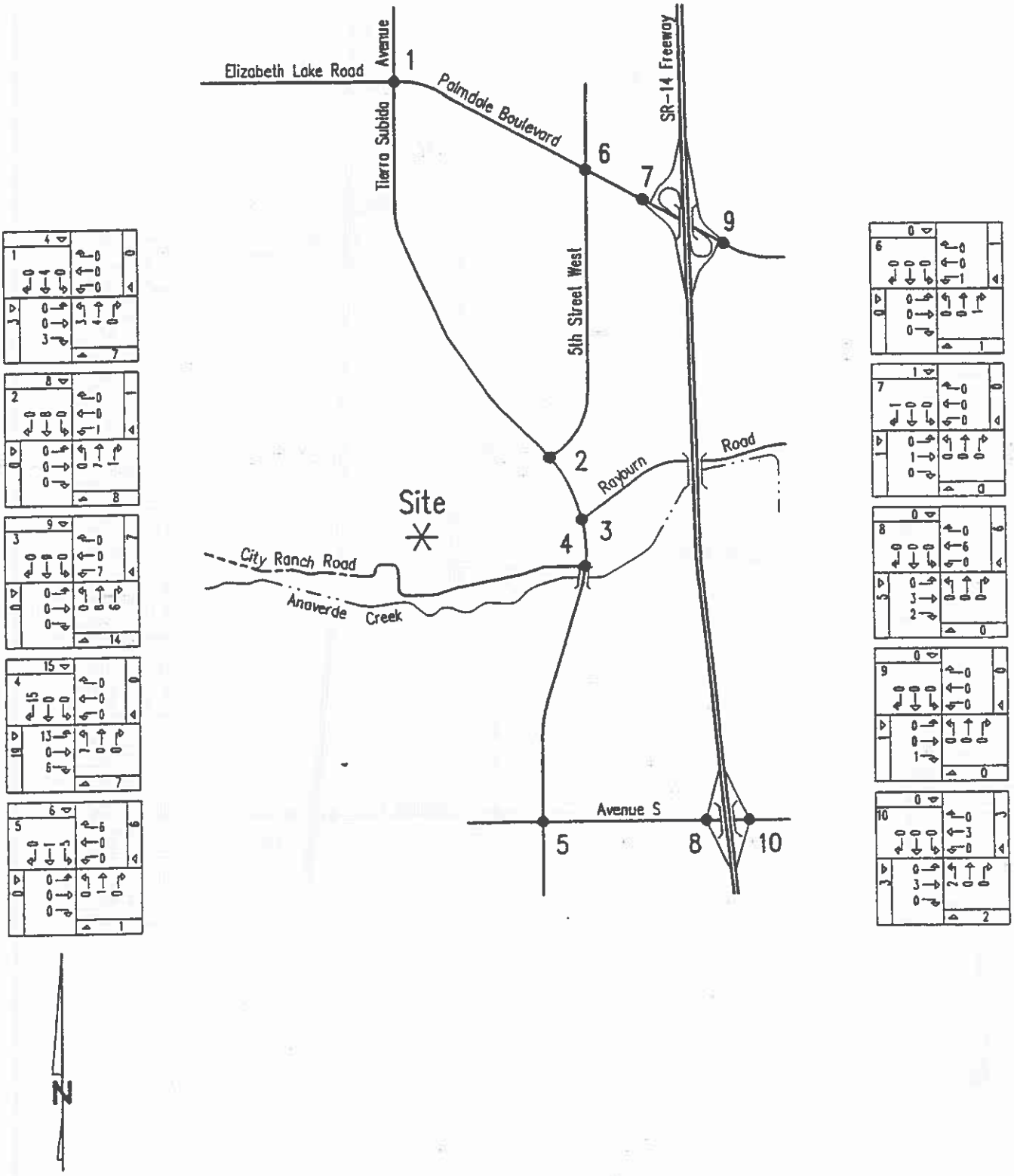
Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

Figure 17
Project Evening Peak Hour Intersection Turning Movement Volumes



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Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

6. Existing Plus Project Traffic Conditions

Once the project-related traffic is assigned to the existing street network and added to existing volumes, the traffic impact can be assessed. Figures 18 to 21 illustrate the existing plus project traffic conditions.

Existing Plus Project Average Daily Traffic (ADT) Volumes

With the landfill expansion, the existing plus project ADT volumes are as illustrated on Figure 18.

Existing Plus Project Volume to Capacity Ratios

For existing plus project traffic conditions, daily volume to capacity ratios have been calculated and are as shown on Figure 19. Daily volume to capacity ratios are based on City of Palmdale roadway capacities depicted in Table 2. For existing plus project traffic conditions, the roadway links in the vicinity of the site are projected to continue to operate within acceptable Levels of Service.

Existing Plus Project Intersection Capacity Utilization (ICU)

The technique used to assess the operation of an intersection is known as Intersection Capacity Utilization (ICU). To calculate an ICU value the volume of traffic using the intersection is compared with the capacity of the intersection. An ICU value is usually expressed as a percent. The percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The ICU's for the existing plus project traffic conditions have been calculated and are shown in Table 7. Existing plus project morning and evening peak hour turning movement volumes are shown on Figures 20 and 21, respectively.

For existing plus project traffic conditions, the intersections in the vicinity of the site are projected to continue to operate at Level of Service B or better during the peak hours. Existing plus project ICU worksheets are provided in Appendix C.

Table 7

Existing Plus Project Intersection Capacity Utilization (ICU) and Level of Service (LOS)

Average Inflow of Material (3,613 tons per day)															
		Intersection Approach Lanes[1]												Peak Hour ICU-LOS[2]	
	Traffic	Northbound			Southbound			Eastbound			Westbound				
Intersection	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Tierra Subida Avenue (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	52.2-A	67.1-B
5th Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	40.6-A	49.4-A
Rayburn Road (EW)	TS	1	1	1	1	1	1	1	1	0	1	1	0	52.5-A	64.1-B
City Ranch Road (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	27.6-A	42.7-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	41.3-A	56.4-A
5th Street West (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	30.0-A	51.7-A
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	36.6-A	67.3-B
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	46.2-A	49.0-A
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	26.9-A	44.0-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	30.4-A	41.5-A

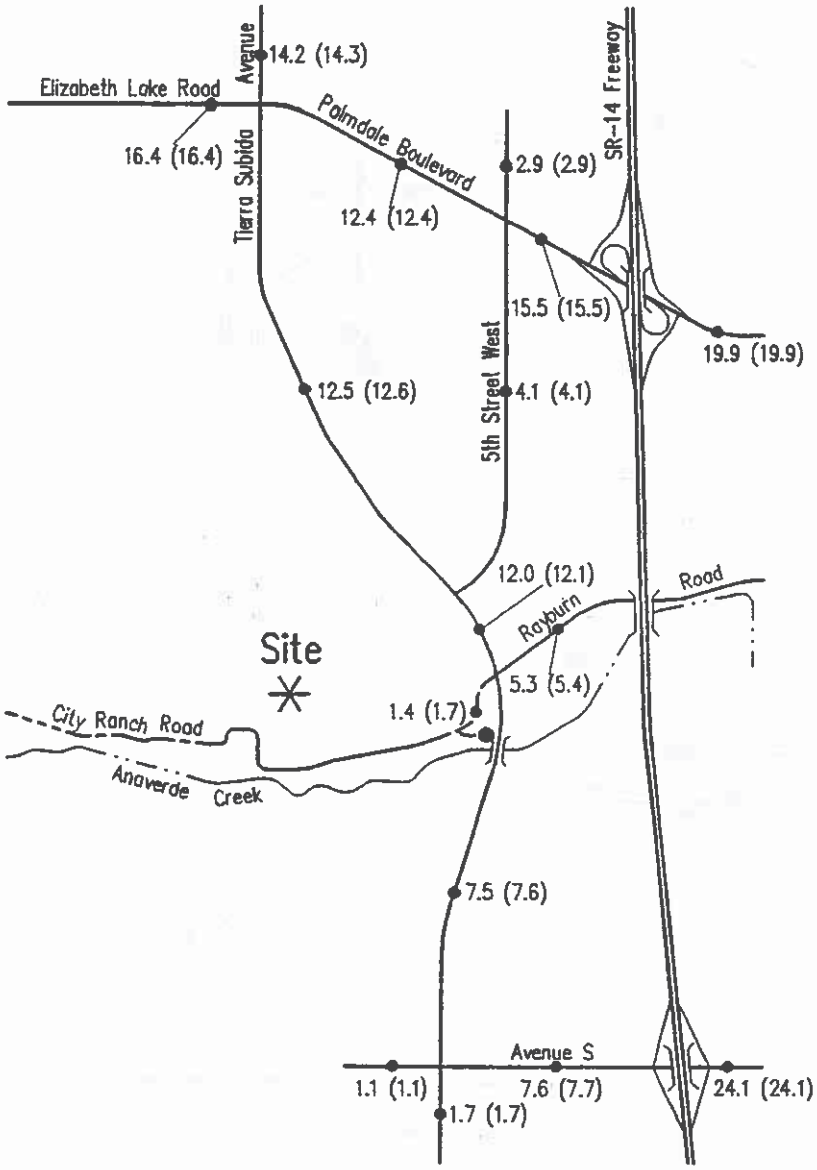
Peak Inflow of Material (5,548 tons per day)															
		Intersection Approach Lanes[1]												Peak Hour ICU-LOS[2]	
	Traffic	Northbound			Southbound			Eastbound			Westbound				
Intersection	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Tierra Subida Avenue (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	52.3-A	67.2-B
5th Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	40.9-A	49.4-A
Rayburn Road (EW)	TS	1	1	1	1	1	1	1	1	0	1	1	0	52.8-A	64.3-B
City Ranch Road (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	27.8-A	42.8-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	41.7-A	56.5-A
5th Street West (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	30.2-A	51.7-A
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	36.6-A	67.3-B
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	46.3-A	49.1-A
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	26.9-A	44.0-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	30.4-A	41.6-A

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; >> = Free Right Turn; 1 = Improvement

[2] ICU-LOS = Intersection Capacity Utilization - Level of Service

[3] TS = Traffic Signal
CSS = Cross Street Stop
AWS = All Way Stop

Figure 18
Existing Plus Project Average Daily Traffic (ADT) Volumes



Legend

1.7 (1.7) = Vehicles Per Day (1000's) for Average and Peak Inflow of Material

N

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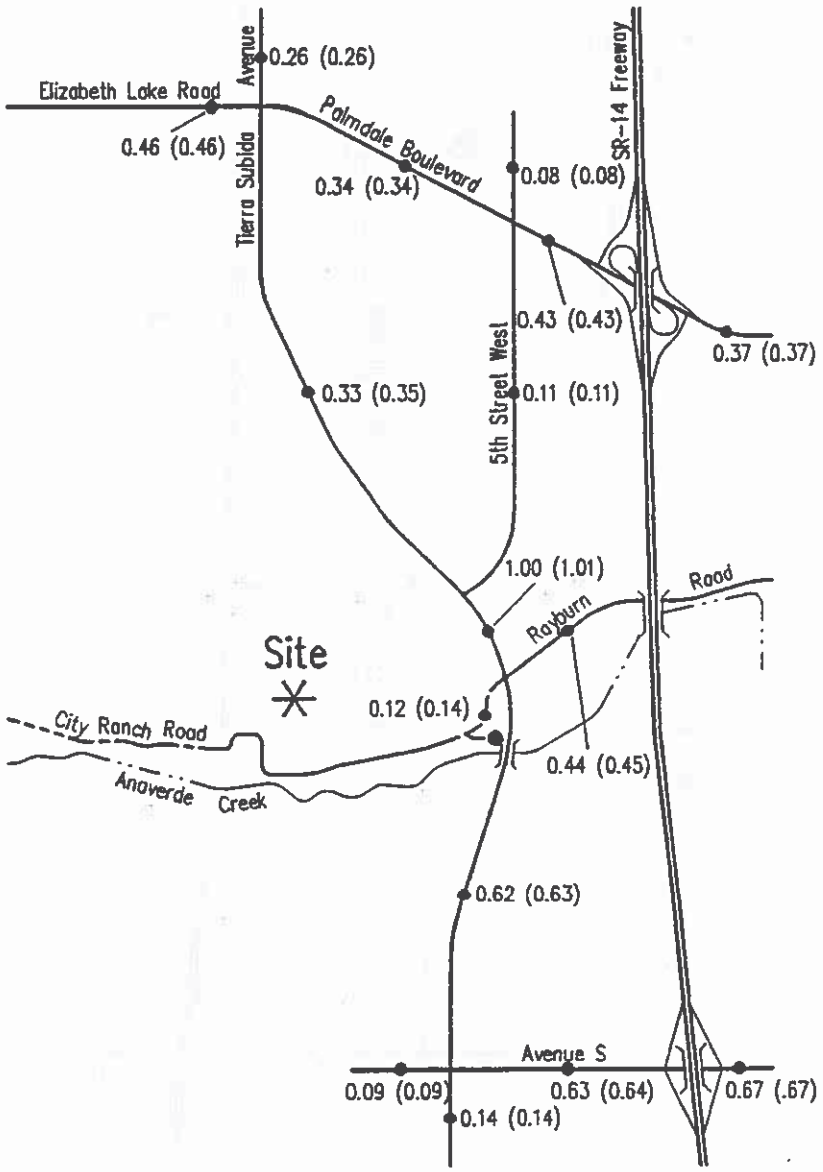
2051H/18

Figure 19
Existing Plus Project Volume to Capacity Ratios



Legend

0.14 (0.14) = Volume to Capacity Ratio for Average and Peak Inflow of Material

N

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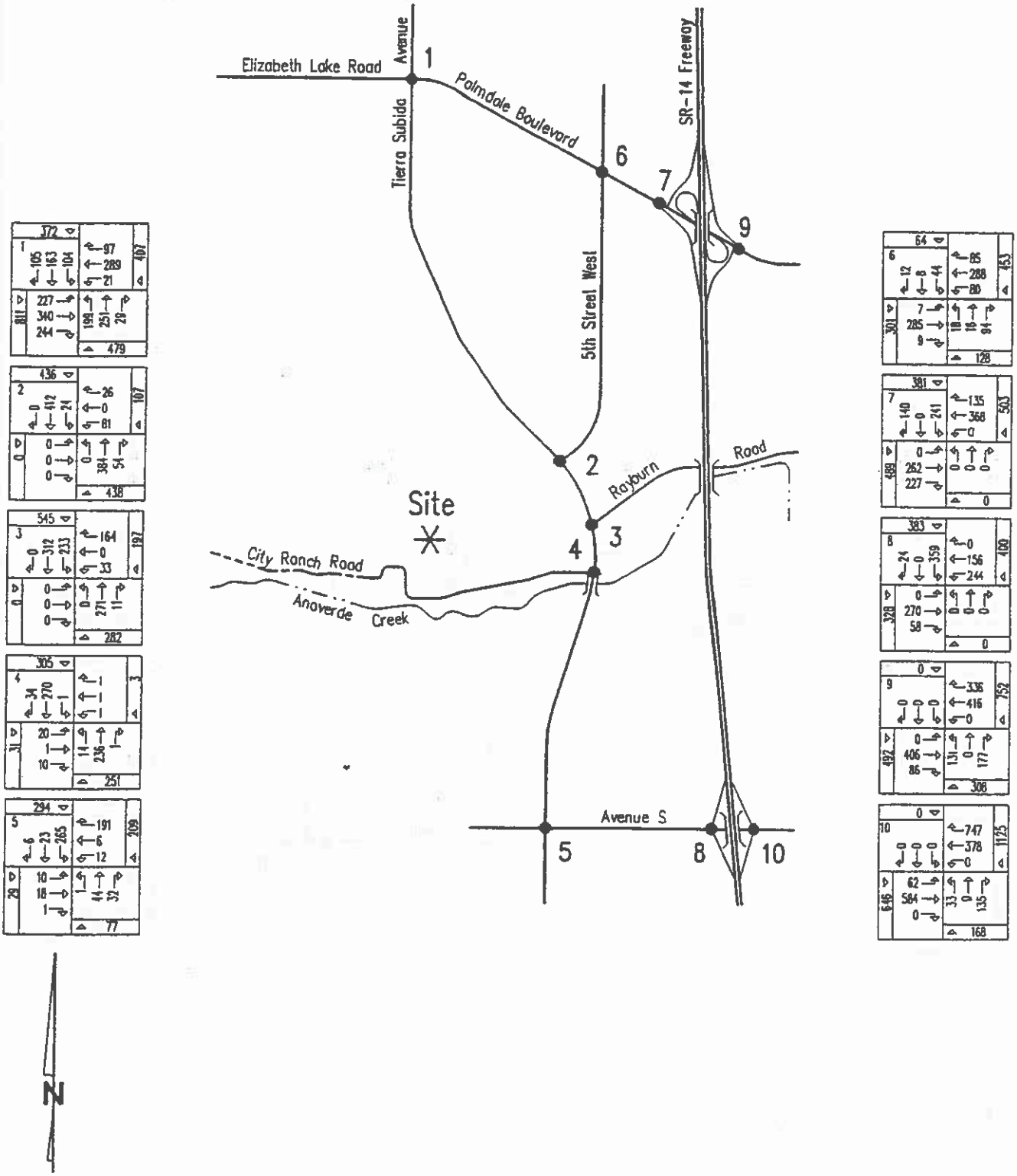
2051G/19

Figure 20
Existing Plus Project
Morning Peak Hour Intersection Turning Movement Volumes



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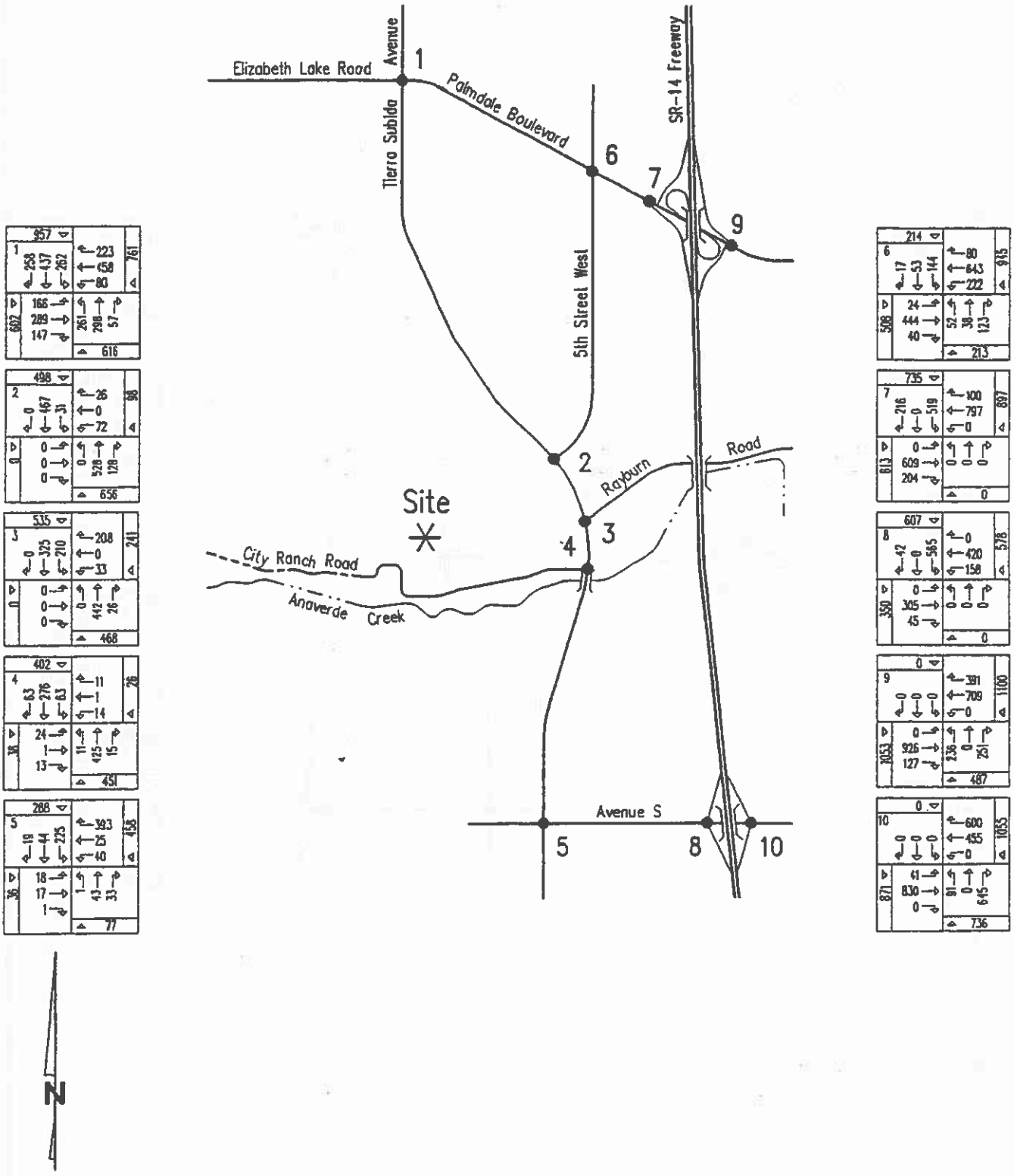
Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

Figure 21
Existing Plus Project
Evening Peak Hour Intersection Turning Movement Volumes



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Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbos

7. Year 2007 Traffic Conditions

In this section, Year 2007 traffic conditions without and with the project are discussed. Figures 22 to 31 show the Year 2007 traffic conditions.

Method of Projection

To account for areawide growth on roadways, Year 2007 traffic volumes have been calculated based on a 6.0 percent annual growth rate of existing traffic volumes over a 5 year period. The Los Angeles County Congestion Management Plan calls for an annual growth rate of 0.6 percent for North County, which is the area encompassing the Lancaster / Palmdale and is northeast of the San Fernando Valley. For this study, 6.0 percent was assumed.

Areawide growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the project.

Year 2007 Average Daily Traffic (ADT) Volumes

Year 2007 without project ADT volumes are depicted on Figure 22 and the Year 2007 with project ADT volumes are as illustrated on Figure 23.

Year 2007 Volume to Capacity Ratios

For Year 2007 without and with project traffic conditions, daily volume to capacity ratios have been calculated and are as shown on Figures 24 and 25. Daily volume to capacity ratios are based on City of Palmdale roadway capacities depicted in Table 2. For Year 2007 without project and with project traffic conditions, most of the roadway links in the vicinity of the site are projected to operate within acceptable Levels of Service, except for Tierra Subida Avenue between 5th Street West and Rayburn Road. This cumulative impact condition will remain until Tierra Subida is widened to its ultimate General Plan designation. Implementation of the proposed mitigation/recommendations will reduce the project's contribution to the this unacceptable Level of Service.

Year 2007 Intersection Capacity Utilization (ICU)

The technique used to assess the operation of an intersection is known as Intersection Capacity Utilization (ICU). To calculate an ICU value the volume of traffic using the intersection is compared with the capacity of the intersection. An ICU value is usually expressed as a percent. The percent represents that portion

Table 9

Year 2007 With Project Intersection Capacity Utilization (ICU) and Level of Service (LOS)

Average Inflow of Material (3,613 tons per day)															
		Intersection Approach Lanes[1]												Peak Hour ICU-LOS[2]	
	Traffic	Northbound			Southbound			Eastbound			Westbound				
Intersection	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Tierra Subida Avenue (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	66.5-B	86.5-D
5th Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	50.8-A	62.6-B
Rayburn Road (EW)	TS	1	1	1	1	1	1	1	1	0	1	1	0	66.4-B	82.3-D
City Ranch Road (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	33.5-A	53.8-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	51.7-A	72.0-C
5th Street West (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	36.8-A	65.9-B
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	45.6-A	86.9-D
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	58.4-A	62.2-B
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	32.6-A	55.7-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	37.1-A	52.2-A

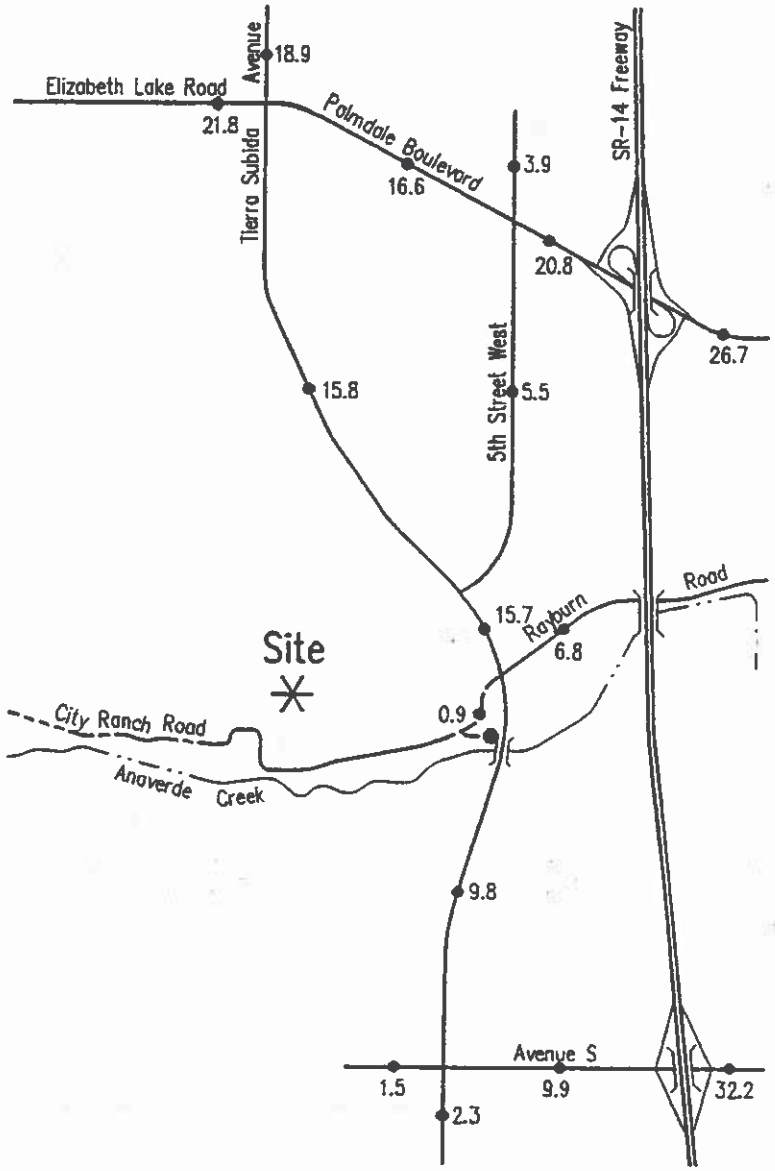
Peak Inflow of Material (5,548 tons per day)															
		Intersection Approach Lanes[1]												Peak Hour ICU-LOS[2]	
	Traffic	Northbound			Southbound			Eastbound			Westbound				
Intersection	Control[3]	L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Tierra Subida Avenue (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	66.5-B	86.6-D
5th Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	51.0-A	62.7-B
Rayburn Road (EW)	TS	1	1	1	1	1	1	1	1	0	1	1	0	66.8-B	82.5-D
City Ranch Road (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	33.7-A	54.0-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	52.0-A	72.1-C
5th Street West (NS) at:															
Palmdale Boulevard (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	36.9-A	65.9-B
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	45.6-A	86.9-D
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	58.4-A	62.3B
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Boulevard (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	32.6-A	55.7-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	37.2-A	52.3-A

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; >> = Free Right Turn; 1 = Improvement

[2] ICU-LOS = Intersection Capacity Utilization - Level of Service

[3] TS = Traffic Signal
CSS = Cross Street Stop
AWS = All Way Stop

Figure 22
Year 2007 Without Project Average Daily Traffic (ADT) Volumes



Legend

2.3 = Vehicles Per Day (1000's)

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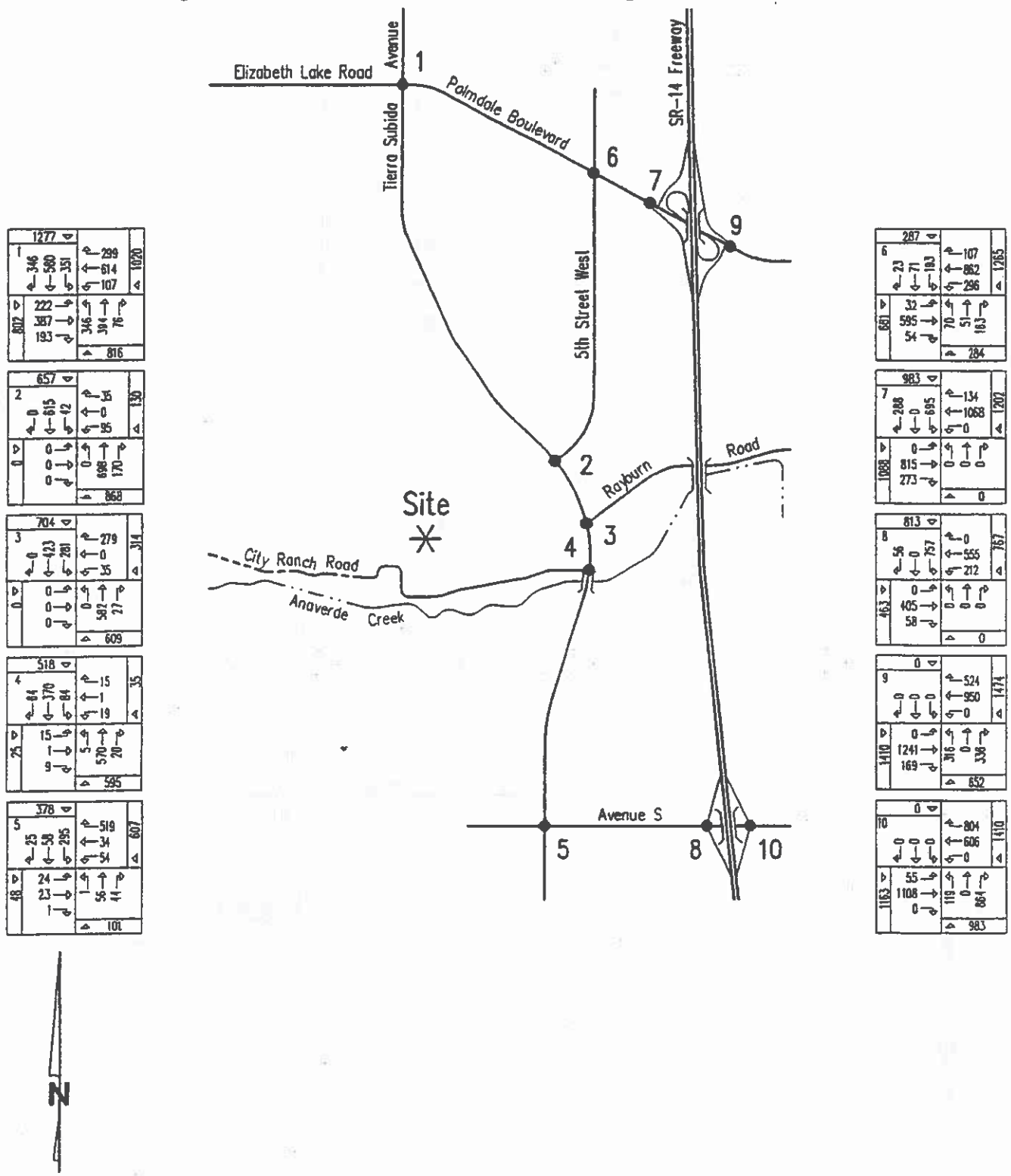
2051G/22

Figure 27
Year 2007 Without Project
Morning Peak Hour Intersection Turning Movement Volumes

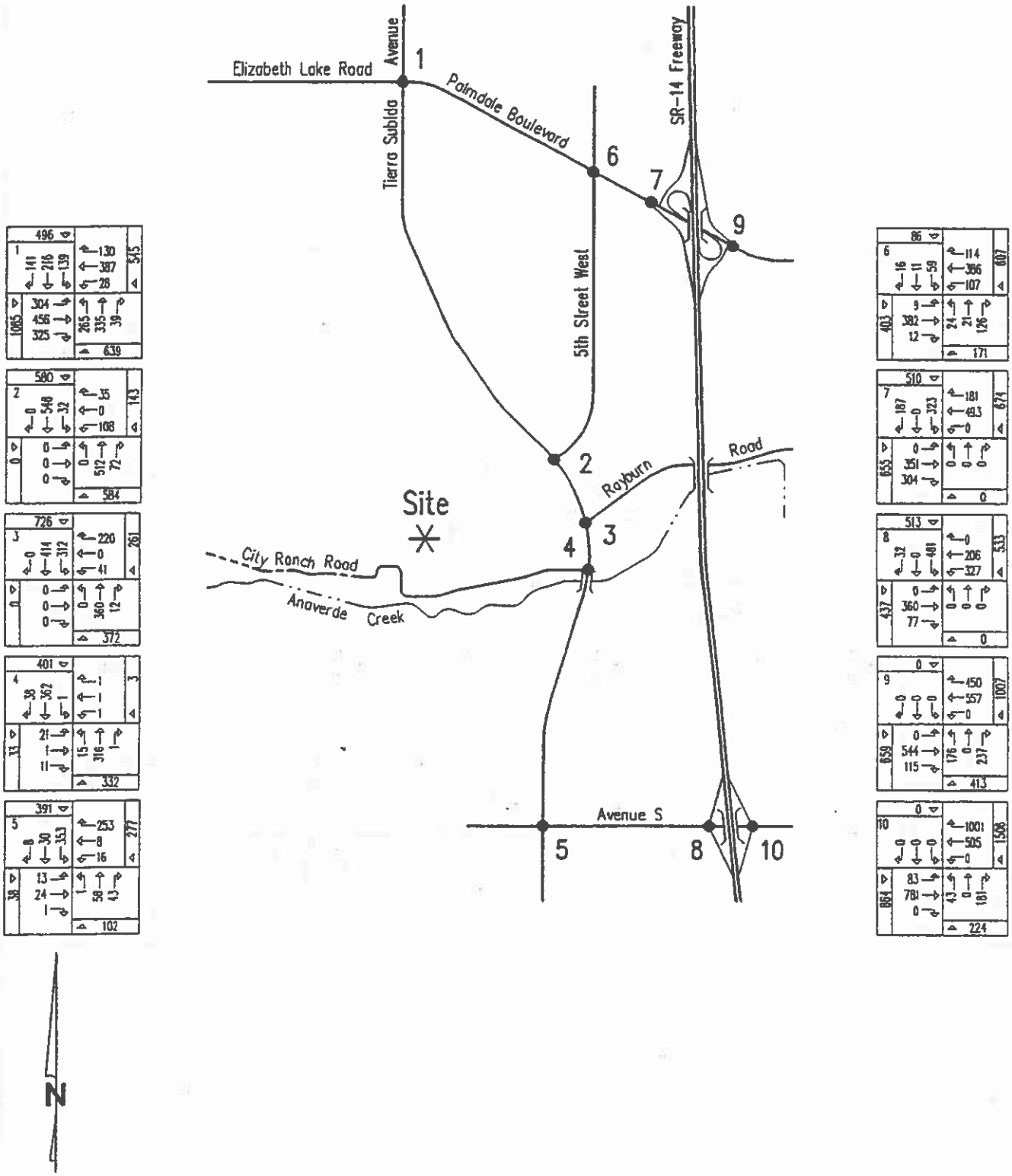


Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

Figure 28
Year 2007 With Project
Morning Peak Hour Intersection Turning Movement Volumes

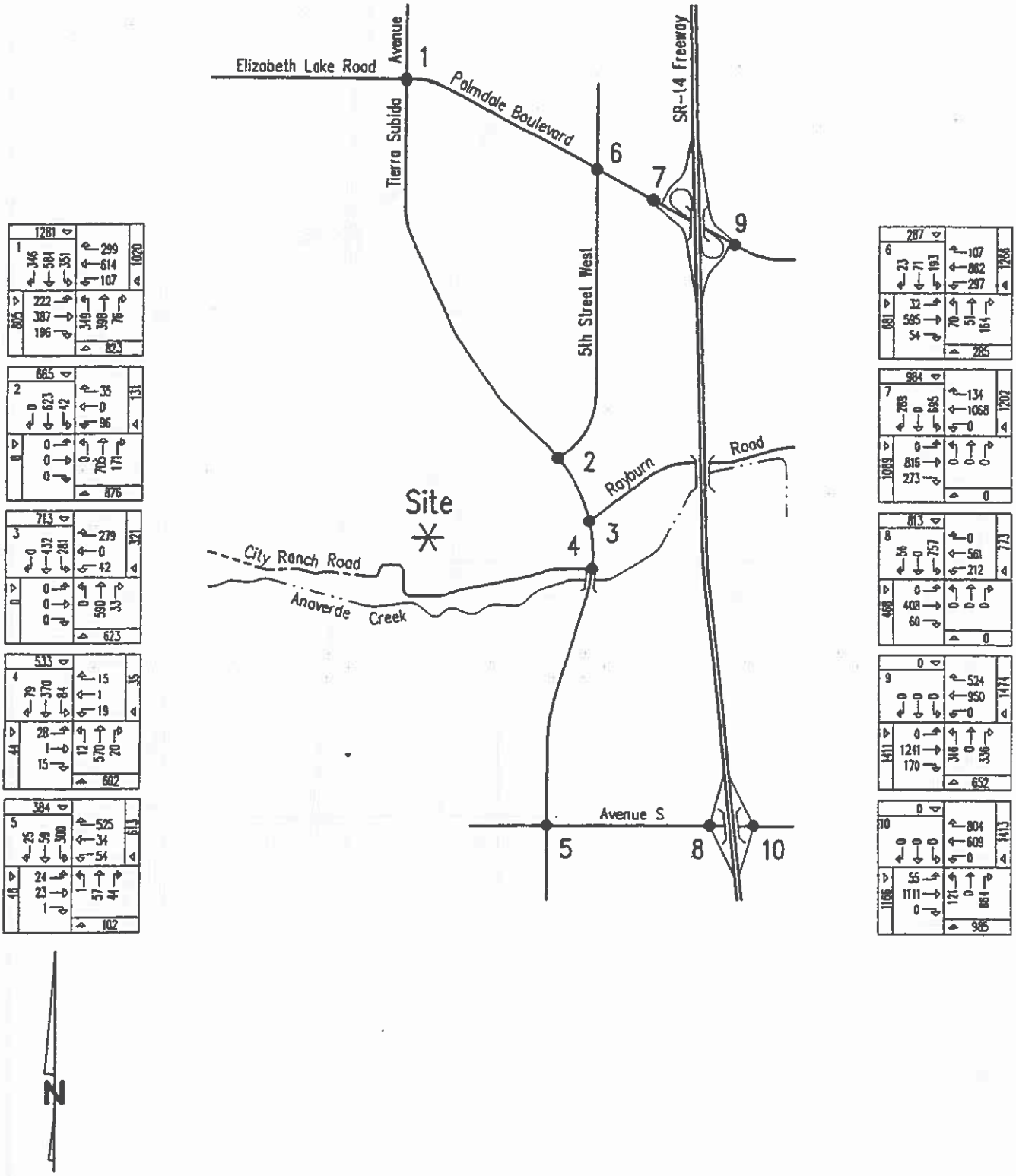


Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

Figure 29
Year 2007 With Project
Morning Peak Hour Intersection Turning Movement Volumes



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Intersection reference numbers are in upper left corner of turning movement boxes.

2051F/bbas

8. Circulation Recommendations

Site-specific circulation and access recommendations are depicted on Figures 30 and 31.

Site Access

It is proposed that the waste management access road alignment will be along R-5 as a two lane roadway (60 foot right-of-way). R-5 will intersect Tierra Subida Avenue opposite Rayburn Road (see Figures 30 and 31).

The realignment of the waste management access to R-5 will improve the following:

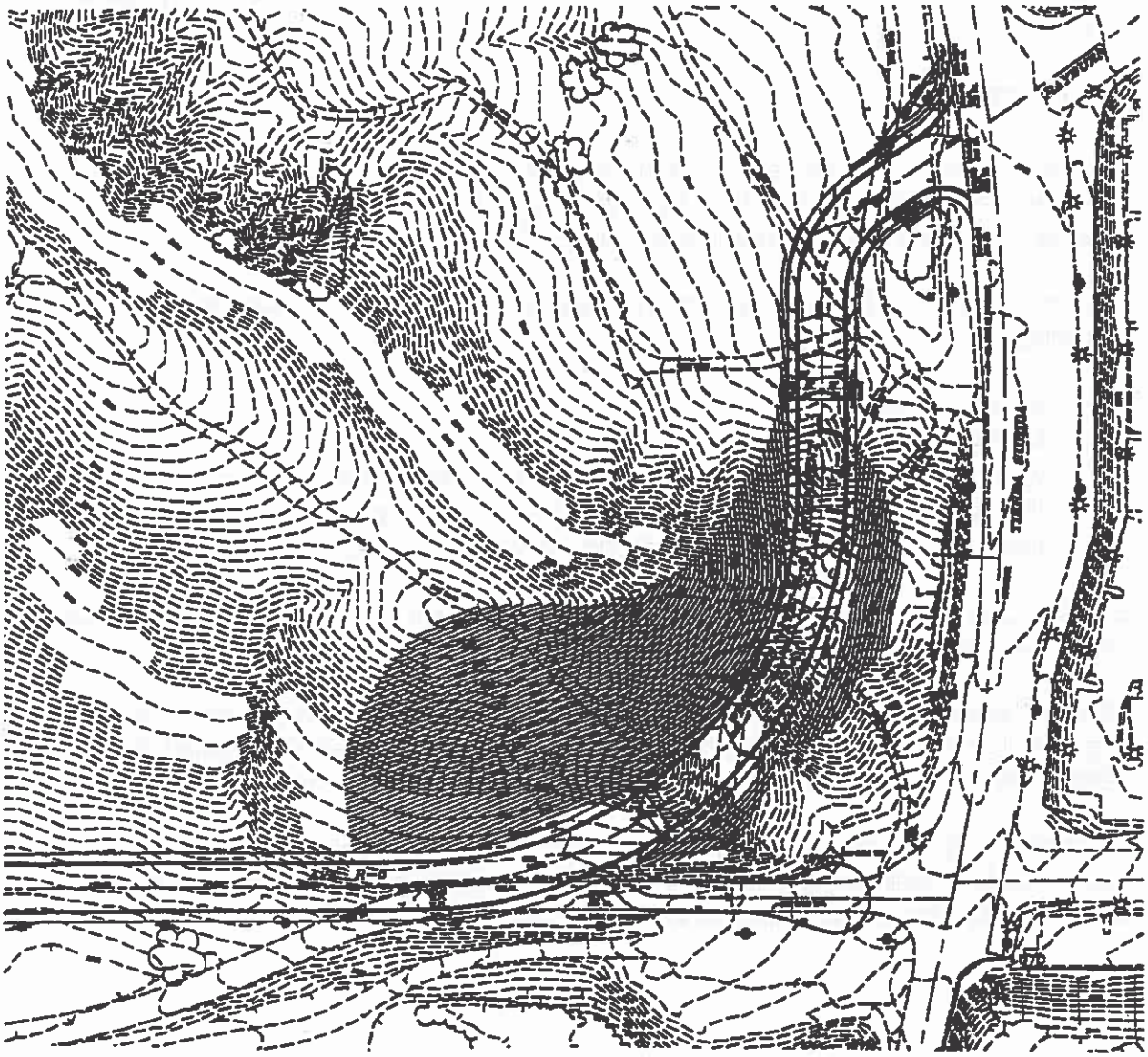
- sight distance
- horizontal and vertical alignment
- wider lanes will result at the Tierra Subida Avenue/Rayburn Road intersection than at the City Ranch Road intersection
- improve traffic signal spacing along Tierra Subida Avenue

Existing City Ranch Road in the realigned portion will terminate as a cul-de-sac bulb immediately west of Tierra Subida Avenue.

The intersection of existing City Ranch Road and R-5 will be at a skew; however, because the existing City Ranch Road cul-de-sac only serves a small hillside parcel that is vacant, no traffic operational problems are expected.

As is the case for any roadway design, the City of Palmdale should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Figure 30
Proposed Realignment of City Ranch Road to be Opposite Rayburn Road at Tierra Subida Avenue



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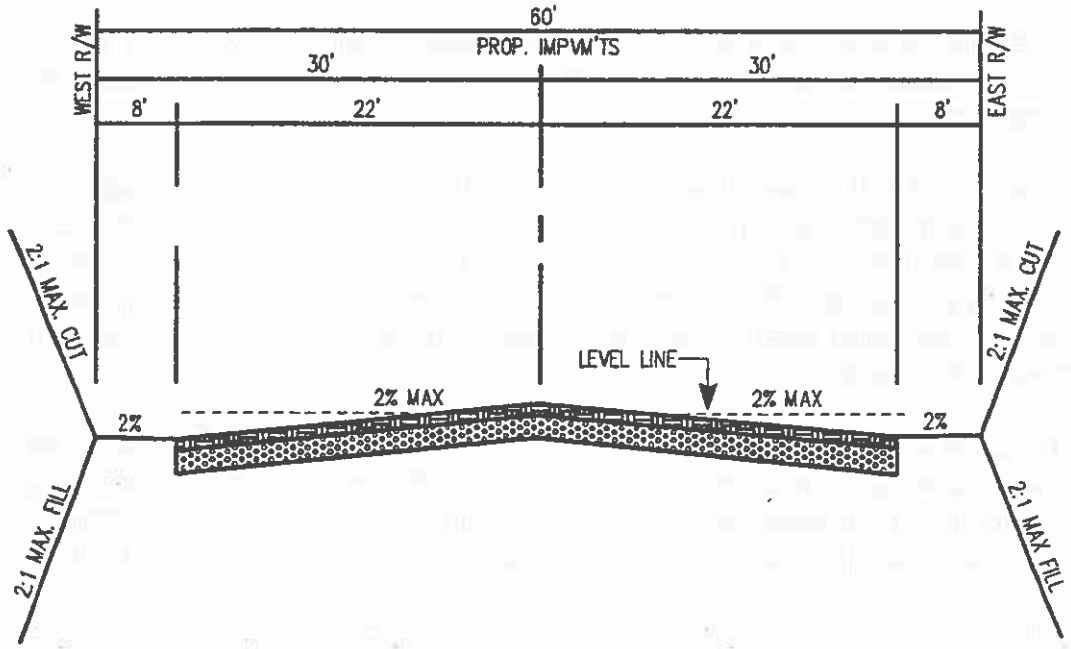
2051G/33

Figure 31
Proposed City Ranch Road Roadway Cross-Section



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2051G/34

9. Traffic Generation Comparison

The study to this point has discussed Existing Conditions traffic generation average for an average tonnage intake of 1,372 tons per day. And the study has discussed Future Average Conditions traffic generation for 3,613 total tons per day, as well as Future Peak Conditions traffic generation for 5,548 tons per day.

The analysis of the change in the traffic impacts between existing and future scenarios should be viewed as a maximum likely analysis with over estimation of traffic impacts.

Because Land Fill II is permitted by County CUP 93041 to receive a peak intake of 3,564 tons per day, which corresponds to a total truck traffic volume of 1,100 trucks per day (Refer to the September 7, 1993 correspondence and supplemental traffic analysis contained in Appendix E), a permitted peak to proposed peak comparison has also been provided. Table 6 shows the permitted peak and the proposed future peak.

For purposes of measuring the future traffic impact, the change in trip generation for existing average conditions compared to future average conditions, or existing peak conditions compared to future peak conditions should be used. What should not be used is existing average conditions compared to future peak conditions.

Appendices

Appendix A	Glossary of Transportation Terms
Appendix B	Traffic Count Worksheets
Appendix C	Explanation and Calculation of Intersection Capacity Utilization (ICU)
Appendix D	Traffic Signal Warrant Worksheets

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quality of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

Traffic Count Worksheets

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: 10th St. West DATE: 11/14/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: THURSDAY PROJECT# 02-1401-008 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	78	89	5	29	47	38	50	99	61	3	147	38	684
7:15 AM	73	44	10	29	36	26	75	121	107	3	80	19	623
7:30 AM	21	42	5	20	44	20	58	65	32	4	30	20	361
7:45 AM	23	71	9	26	29	21	44	55	39	11	32	20	380
8:00 AM	19	65	8	26	43	18	30	41	17	10	30	27	334
8:15 AM	35	54	12	29	37	22	37	49	17	12	22	23	349
8:30 AM	24	50	8	29	41	24	48	38	24	12	30	27	355
8:45 AM	29	71	17	40	36	23	62	57	18	9	43	37	442
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 302	NT 486	NR 74	SL 228	ST 313	SR 192	EL 404	ET 525	ER 315	WL 64	WT 414	WR 211	TOTAL 3528

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	195	246	29	104	156	105	227	340	239	21	289	97	2048

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: 10th St. West DATE: 11/14/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: THURSDAY PROJECT# 02-1401-008 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	1	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	49	66	8	77	99	59	47	76	31	11	91	67	681
4:15 PM	55	76	13	64	89	61	54	77	29	12	118	67	715
4:30 PM	47	68	9	63	83	61	47	78	23	18	68	64	629
4:45 PM	70	83	15	65	98	65	38	71	37	20	96	49	707
5:00 PM	77	62	13	67	80	66	43	68	40	19	129	59	723
5:15 PM	61	71	20	65	129	62	44	68	34	23	128	52	757
5:30 PM	50	78	9	65	126	65	41	82	33	18	105	63	735
5:45 PM	63	79	20	73	114	66	34	48	30	17	87	56	687
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	472	583	107	539	818	505	348	568	257	138	822	477	5634
PM Peak Hr Begins at:	445 PM												
PEAK VOLUMES =	258	294	57	262	433	258	166	289	144	80	458	223	2922

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: 5th St. West DAY: TUESDAY PROJECT# 02-1401-011 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:		1	1	1	1					1	0	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		166	12	5	87					17		4	291
7:15 AM		88	14	6	135					19		9	271
7:30 AM		52	12	5	96					20		8	193
7:45 AM		69	15	8	82					23		5	202
8:00 AM		54	12	5	53					15		7	146
8:15 AM		49	11	4	55					16		6	141
8:30 AM		67	17	3	61					13		8	169
8:45 AM		68	14	5	52					11		7	157
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	613	107	41	621	0	0	0	0	134	0	54	1570

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	375	53	24	400	0	0	0	0	79	0	26	957

CONTROL: 1-Way Stop, West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: 5th St. West DAY: TUESDAY PROJECT# 02-1401-011 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:		1	1	1	1					1	0	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		72	19	5	98					16		8	218
4:15 PM		97	25	4	107					20		6	259
4:30 PM		88	28	8	98					25		9	256
4:45 PM		127	31	4	107					23		5	297
5:00 PM		131	37	9	97					18		8	300
5:15 PM		138	31	10	137					14		6	336
5:30 PM		125	28	8	118					16		7	302
5:45 PM		112	26	7	87					13		5	250
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	890	225	55	849	0	0	0	0	145	0	54	2218

PM Peak Hr Begins at: 445 PM

PEAK													
VOLUMES =	0	521	127	31	459	0	0	0	0	71	0	26	1235

CONTROL: 1-Way Stop, West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Rayburn Rd. DAY: TUESDAY PROJECT# 02-1401-012 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT 1	NR 1	SL 1	ST 1	SR	EL	ET	ER	WL 1	WT 0	WR	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		131	0	62	92					3		47	335
7:15 AM		52	0	76	79					5		49	261
7:30 AM		31	2	59	58					8		38	196
7:45 AM		47	1	36	70					7		30	191
8:00 AM		30	3	37	36					8		35	149
8:15 AM		31	2	32	41					6		28	140
8:30 AM		43	3	30	44					4		34	158
8:45 AM		49	4	29	3S					2		32	1S1
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	414	15	361	455	0	0	0	0	43	0	293	1581
AM Peak Hr Begins at:		700 AM											
PEAK VOLUMES =	0	261	3	233	299	0	0	0	0	23	0	164	983

CONTROL: 1-Way Stop, West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Rayburn Rd. DAY: TUESDAY PROJECT# 02-1401-012 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:		1	1	1	1					1	0		
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		57	10	28	80					2		32	209
4:15 PM		78	8	42	85					5		40	258
4:30 PM		80	7	51	71					6		37	252
4:45 PM		103	6	58	67					7		52	293
5:00 PM		118	3	47	66					4		49	287
5:15 PM		110	5	51	93					8		58	325
5:30 PM		103	6	54	90					7		49	309
5:45 PM		93	5	46	57					6		40	247
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	742	50	377	609	0	0	0	0	45	0	357	2180

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =													
	0	434	20	210	316	0	0	0	0	26	0	208	1214

CONTROL: 1-Way Stop, West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: City Ranch Rd. DAY: TUESDAY PROJECT# 02-1401-013 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2	89	0	0	50	4	1		0	0		1	147
7:15 AM	1	60	0	0	74	3	0		1	0		0	139
7:30 AM	0	49	0	1	82	2	1		0	0		0	135
7:45 AM	1	38	0	0	64	2	0		1	0		0	106
8:00 AM	0	34	0	1	54	4	1		0	1		0	95
8:15 AM	0	38	1	0	45	2	2		0	0		1	89
8:30 AM	1	49	0	0	43	1	1		1	0		0	96
8:45 AM	0	44	0	1	47	2	0		0	0		0	94
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	5	401	1	3	459	20	6	0	3	1	0	2	901

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	4	236	0	1	270	11	2	0	2	0	0	1	527

CONTROL: 2-Way Stop, East & West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: City Ranch Rd. DAY: TUESDAY PROJECT# 02-1401-013 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	69	3	3	66	10	3		2	1		0	157
4:15 PM	4	91	5	4	70	13	6		1	2		4	200
4:30 PM	2	110	3	4	76	11	5		3	2		1	217
4:45 PM	1	103	1	8	75	14	3		1	3		0	209
5:00 PM	1	99	4	25	63	12	2		2	5		3	216
5:15 PM	0	113	7	26	62	11	1		1	4		7	232
5:30 PM	1	96	5	14	50	10	2		1	6		5	190
5:45 PM	0	54	4	13	45	9	4		2	7		6	144
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	9	735	32	97	507	90	26	0	13	30	0	26	1565

PM Peak Hr Begins at: 430 PM

PEAK													
VOLUMES =	4	425	15	63	276	48	11	0	7	14	0	11	874

CONTROL: 2-Way Stop, East & West

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/14/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: THURSDAY PROJECT# 02-1401-014 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		12	5	44	2	0	1	3	0	2	0	75	144
7:15 AM		15	7	60	7	1	2	2	0	4	0	45	143
7:30 AM		9	6	65	6	3	4	5	0	4	5	36	143
7:45 AM		6	14	89	7	2	3	8	0	2	1	27	159
8:00 AM		8	10	40	5	3	4	5	0	3	2	35	115
8:15 AM		9	9	24	5	2	5	4	1	4	2	33	98
8:30 AM		9	5	30	9	1	3	2	0	8	6	32	105
8:45 AM		6	4	25	6	1	2	1	0	6	5	27	83
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	74	60	377	47	13	24	30	1	33	21	310	990

AM Peak Hr Begins at: 700 AM

PEAK													
VOLUMES =	0	42	32	258	22	6	10	18	0	12	6	183	589

CONTROL: 4-Way Stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Tierra Subida Ave. DATE: 11/14/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: THURSDAY PROJECT# 02-1401-014 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	11	8	55	14	9	0	5	1	2	4	61	170
4:15 PM	0	7	6	50	10	7	1	2	0	5	5	80	173
4:30 PM	1	8	7	43	13	11	3	4	0	9	7	95	201
4:45 PM	0	1	10	58	9	8	4	6	1	12	6	102	217
5:00 PM	0	17	5	53	7	5	5	2	0	9	3	88	194
5:15 PM	0	14	7	52	20	0	3	2	0	9	1	103	211
5:30 PM	0	10	11	57	7	6	6	7	0	10	15	94	223
5:45 PM	1	8	6	49	8	3	3	4	0	7	8	87	184
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 2	NT 76	NR 60	SL 417	ST 88	SR 49	EL 25	ET 32	ER 2	WL 63	WT 49	WR 710	TOTAL 1573

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	42	33	220	43	19	18	17	1	40	25	387	845

CONTROL: 4-Way Stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: 5th St. West DATE: 11/13/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: WEDNESDAY PROJECT# 02-1401-018 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	9	21	2	0	1	1	71	3	8	53	3	173
7:15 AM	5	5	21	11	0	2	0	69	4	7	38	12	174
7:30 AM	5	9	33	5	2	2	1	75	4	13	58	13	220
7:45 AM	6	4	26	11	2	2	3	97	0	22	69	25	267
8:00 AM	4	6	16	8	4	5	2	54	3	22	64	28	216
8:15 AM	4	3	28	6	0	2	2	67	1	24	60	18	215
8:30 AM	4	2	18	13	2	1	2	71	1	12	69	19	214
8:45 AM	6	5	31	17	2	4	1	93	4	20	95	20	298
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	35	43	194	73	12	19	12	597	20	128	506	138	1777

AM Peak Hr Begins at: 800 AM

PEAK VOLUMES =	18	16	93	44	8	12	7	285	9	78	288	85	943

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: 5th St. West DATE: 11/13/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: WEDNESDAY PROJECT# 02-1401-018 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	12	5	14	30	14	2	2	140	11	35	141	25	431
4:15 PM	9	5	21	23	18	6	6	120	12	42	169	29	460
4:30 PM	7	7	28	28	18	6	5	115	13	46	140	30	443
4:45 PM	13	11	26	28	20	3	5	136	10	45	142	23	462
5:00 PM	14	10	37	48	13	3	5	81	17	50	170	20	468
5:15 PM	11	10	17	38	11	6	11	108	8	61	184	26	491
5:30 PM	15	8	39	32	15	4	5	94	10	52	131	17	422
5:45 PM	12	10	29	26	14	4	3	161	5	58	158	17	497
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	93	66	211	253	123	34	42	955	86	389	1235	187	3674

PM Peak Hr Begins at: 500 PM

PEAK													
VOLUMES =	52	38	122	144	53	17	24	444	40	221	643	80	1878

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 SB Off-Ramp DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: TUESDAY PROJECT# 02-1401-019 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				1		1		2	0		2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				26		18		29	62		55	31	221
7:15 AM				31		18		35	71		59	42	256
7:30 AM				45		30		25	72		58	40	270
7:45 AM				63		46		67	66		101	43	386
8:00 AM				77		34		54	59		93	26	343
8:15 AM				55		28		71	55		79	40	328
8:30 AM				46		30		69	47		95	26	313
8:45 AM				43		27		65	44		83	30	292
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 386	ST 0	SR 231	EL 0	ET 415	ER 476	WL 0	WT 623	WR 278	TOTAL 2409

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	NL 0	NT 0	NR 0	SL 241	ST 0	SR 138	EL 0	ET 261	ER 227	WL 0	WT 368	WR 135	TOTAL 1370

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 SB Off-Ramp DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: TUESDAY PROJECT# 02-1401-019 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				1		1		2	0		2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				115		36		119	35		162	41	508
4:15 PM				126		32		117	49		151	54	529
4:30 PM				114		43		130	37		178	32	534
4:45 PM				100		54		141	28		203	41	567
5:00 PM				113		40		139	40		197	28	557
5:15 PM				135		62		166	60		207	23	653
5:30 PM				142		59		156	57		204	26	644
5:45 PM				129		54		147	47		189	23	589
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	0	0	974	0	380	0	1115	353	0	1491	268	4581

PM Peak Hr Begins at: 500 PM

PEAK													
VOLUMES =	0	0	0	519	0	215	0	608	204	0	797	100	2443

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 SB Ramps DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: TUESDAY PROJECT# 02-1401-021 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				2		1		2	0	1	1		
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				72		2		29	14	76	62		255
7:15 AM				85		6		58	12	69	51		281
7:30 AM				97		7		65	18	61	42		290
7:45 AM				93		4		81	10	54	22		264
8:00 AM				84		7		62	15	60	33		261
8:15 AM				79		3		55	8	63	28		236
8:30 AM				88		5		26	17	51	35		222
8:45 AM				62		2		29	14	26	18		151
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 660	ST 0	SR 36	EL 0	ET 405	ER 108	WL 460	WT 291	WR 0	TOTAL 1960

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	0	0	0	359	0	24	0	266	55	244	148	0	1096

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 SB Ramps DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: TUESDAY PROJECT# 02-1401-021 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				2		1		2	0	1	1		
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				107		6		67	13	29	58		280
4:15 PM				116		5		58	8	33	63		283
4:30 PM				118		14		54	12	37	79		314
4:45 PM				137		20		65	10	51	54		337
5:00 PM				136		16		96	13	66	85		412
5:15 PM				146		8		65	11	48	81		359
5:30 PM				145		13		82	12	24	117		393
5:45 PM				138		5		59	7	20	131		360
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 1043	ST 0	SR 87	EL 0	ET 546	ER 86	WL 308	WT 668	WR 0	TOTAL 2738

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	0	0	0	565	0	42	0	302	43	158	414	0	1524

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 NB Off-Ramp DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: TUESDAY PROJECT# 02-1401-020 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1		1					2	1		3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	8		5					46	22		80	42	203
7:15 AM	10		20					60	21		85	45	241
7:30 AM	18		21					66	27		87	68	287
7:45 AM	30		48					97	33		125	106	439
8:00 AM	38		49					118	13		115	79	412
8:15 AM	32		37					95	25		90	71	350
8:30 AM	31		43					96	14		86	80	350
8:45 AM	26		36					85	13		81	76	317
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	193	0	259	0	0	0	0	663	168	0	749	567	2599

AM Peak Hr Begins at: 745 AM

PEAK													
VOLUMES =	131	0	177	0	0	0	0	406	85	0	416	336	1551

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 NB Off-Ramp DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Palmdale Blvd. DAY: TUESDAY PROJECT# 02-1401-020 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1		1					2	1		3	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	58		61					224	26		165	76	610
4:15 PM	63		66					237	35		170	89	660
4:30 PM	52		55					230	31		180	90	638
4:45 PM	63		69					235	34		194	136	731
5:00 PM	46		29					232	14		191	90	602
5:15 PM	49		32					277	21		162	51	592
5:30 PM	48		26					259	18		160	46	557
5:45 PM	40		23					243	16		142	44	508
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	419	0	361	0	0	0	0	1937	195	0	1364	622	4898

PM Peak Hr Begins at: 400 PM

PEAK													
VOLUMES =	236	0	251	0	0	0	0	926	126	0	709	391	2639

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 NB Ramps DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: TUESDAY PROJECT# 02-1401-022 A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1		1				1	1			2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2		26				15	93			138	162	436
7:15 AM	3		38				20	123			127	189	500
7:30 AM	8		28				19	149			96	170	470
7:45 AM	9		41				13	161			65	203	492
8:00 AM	10		28				10	147			85	185	465
8:15 AM	11		57				9	125			81	131	414
8:30 AM	10		52				10	104			76	158	410
8:45 AM	2		45				8	83			41	174	353
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	55	0	315	0	0	0	104	985	0	0	709	1372	3540

AM Peak Hr Begins at: 715 AM

PEAK													
VOLUMES =	30	0	135	0	0	0	62	580	0	0	373	747	1927

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-14 NB Ramps DATE: 11/12/2002 LOCATION: City of Palmdale

E-W STREET: Ave. S DAY: TUESDAY PROJECT# 02-1401-022 P

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1		1				1	1			2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	9		128				4	1B1			78	136	536
4:15 PM	10		139				8	196			96	144	593
4:30 PM	29		148				15	157			83	139	571
4:45 PM	22		163				11	193			88	153	630
5:00 PM	23		166				10	203			128	161	691
5:15 PM	20		170				8	205			109	148	660
5:30 PM	24		146				12	226			127	138	673
5:45 PM	23		107				9	189			118	118	S64
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	160	0	1167	0	0	0	77	1550	0	0	827	1137	4918

PM Peak Hr Begins at: 445 PM

PEAK													
VOLUMES =	89	0	645	0	0	0	41	827	0	0	452	600	2654

CONTROL: Signalized

APPENDIX C

Explanation and Calculation of Intersection Capacity Utilization (ICU)

EXPLANATION AND CALCULATION OF INTERSECTION CAPACITY UTILIZATION (ICU)

Overview

The ability of a roadway to carry traffic is referred to as capacity. The capacity is usually greater between intersections and less at intersections because traffic flows continuously between them and only during the green phase at them. Capacity at intersections is best defined in terms of vehicles per lane per hour of green. If capacity is 1600 vehicles per lane per hour of green, and if the green phase is 50 percent of the cycle and there are three lanes, then the capacity is 1600 times 50 percent times 3 lanes, or 2400 vehicles per hour for that approach.

The technique used to compare the volume and capacity at an intersection is known as Intersection Capacity Utilization (ICU). ICU, usually expressed as a percent, is the proportion of an hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. If an intersection is operating at 80 percent of capacity (i.e., an ICU of 80 percent), then 20 percent of the signal cycle is not used. The signal could show red on all indications 20 percent of the time and the signal would just accommodate approaching traffic.

ICU analysis consists of (a) determining the proportion of signal time needed to serve each conflicting movement of traffic, (b) summing the times for the movements, and (c) comparing the total time required to the total time available. For example, if for north-south traffic the northbound traffic is 1600 vehicles per hour, the southbound traffic is 1200 vehicles per hour, and the capacity of either direction is 3200 vehicles per hour, then the northbound traffic is critical and requires 1600/3200 or 50 percent of the signal time. If for east-west traffic, 30 percent of the signal time is required, then it can be seen that the ICU is 50 plus 30, or 80 percent. When left turn arrows (left turn phasing) exist, they are incorporated into the analysis. The critical movements are usually the heavy left turn movements and the opposing through movements.

The ICU technique is an ideal tool to quantify existing as well as future intersection operation. The impact of adding a lane can be quickly determined by examining the effect the lane has on the Intersection Capacity Utilization.

ICU Worksheets That Follow This Discussion

The ICU worksheet table contains the following information:

1. Peak hour turning movement volumes.
2. Number of lanes that serve each movement.
3. For right turn lanes, whether the lane is a free right turn lane, whether it has a right turn arrow, and the percent of right turns on red that are assumed.
4. Capacity assumed per lane.
5. Capacity available to serve each movement (number of lanes times capacity per lane).
6. Volume to capacity ratio for each movement.
7. Whether the movement's volume to capacity ratio is critical and adds to the ICU value.
8. The yellow time or clearance interval assumed.
9. Adjustments for right turn movements.
10. The ICU and LOS.

The ICU Worksheet also has two graphics on the same page. These two graphics show the following:

1. Peak hour turning movement volumes.
2. Number of lanes that serve each movement.
3. The approach and exit leg volumes.

4. The two-way leg volumes.

5. An estimate of daily traffic volumes that is fairly close to actual counts and is based strictly on the peak hour leg volumes multiplied by a factor.

6. Percent of daily traffic in peak hours.

7. Percent of peak hour leg volume that is inbound versus outbound.

A more detailed discussion of ICU and LOS follows.

Level of Service (LOS)

Level of Service is used to describe the quality of traffic flow. Levels of Service A to C operate quite well. Level of Service C is typically the standard to which rural roadways are designed.

Level of Service D is characterized by fairly restricted traffic flow. Level of Service D is the standard to which urban roadways are typically designed. Level of Service E is the maximum volume a facility can accommodate and will result in possible stoppages of momentary duration. Level of Service F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages of long duration.

A description of the various Levels of Service appears at the end of the ICU description, along with the relationship between ICU and Level of Service.

Signalized and Unsignalized Intersections

Although calculating an ICU value for an unsignalized intersection is invalid, the presumption is that a signal can be installed and the calculation shows whether the geometrics are capable of accommodating the expected volumes with a signal. A traffic signal becomes warranted before Level of Service D is reached for a signalized intersection.

Signal Timing

The ICU calculation assumes that a signal is properly timed. It is possible to have an ICU well below 100 percent, yet have severe traffic congestion. This would occur if one or more movements is not getting sufficient green time to satisfy its demand, and excess green time exists on other movements. This is an operational problem that should be remedied.

Lane Capacity

Capacity is often defined in terms of roadway width; however, standard lanes have approximately the same capacity whether they are 11 or 14 feet wide. Our data indicates a typical lane, whether a through lane or a left turn lane, has a capacity of approximately 1750 vehicles per hour of green time, with nearly all locations showing a capacity greater than 1600 vehicles per hour of green per lane. Right turn lanes have a slightly lower capacity; however 1600 vehicles per hour is a valid capacity assumption for right turn lanes.

This finding is published in the August, 1978 issue of ITE Journal in the article entitled, "Another Look at Signalized Intersection Capacity" by William Kunzman. A capacity of 1600 vehicles per hour per lane with no yellow time penalty, or 1700 vehicles per hour with a 3 or 5 percent yellow time penalty is reasonable.

Yellow Time

The yellow time can either be assumed to be completely used and no penalty applied, or it can be assumed to be only partially usable. Total yellow time accounts for approximately 10 percent of a signal cycle, and a penalty of 3 to 5 percent is reasonable.

During peak hour traffic operation the yellow times are nearly completely used. If there is no left turn phasing, the left turn vehicles completely use the yellow time. Even if there is left turn phasing, the through traffic continues to enter the intersection on the yellow until just a split second before the red.

Shared Lanes

Shared lanes occur in many locations. A shared lane is often found at the end of an off ramp where the ramp forms an intersection with the cross street. Often at a diamond interchange off ramp, there are three lanes. In the case of a diamond interchange, the middle lane is sometimes shared, and the driver can turn left, go through, or turn right from that lane.

If one assumes a three lane off ramp as described above, and if one assumes that each lane has 1600 capacity, and if one assumes that there are 1000 left turns per hour, 500 right turns per hour, and 100 through vehicles per hour, then how should one assume that the three lanes operate. There are three ways that it is done.

One way is to just assume that all 1600 vehicles (1000 plus 500 plus 100) are served simultaneously by three lanes. When this is done, the capacity is 3 times 1600 or 4800, and the amount of green time needed to serve the ramp is 1600 vehicles divided by 4800 capacity or 33.3 percent. This assumption effectively assumes perfect lane distribution between the three lanes that is not realistic. It also means a left turn can be made from the right lane.

Another way is to equally split the capacity of a shared lane and in this case to assume there are 1.33 left turn lanes, 1.33 right turn lanes, and 0.33 through lanes. With this assumption, the critical movement is the left turns and the 1000 left turns are served by a capacity of 1.33 times 1600, or 2133. The volume to capacity ratio of the critical move is 1000 divided by 2133 or 46.9 percent.

The first method results in a critical move of 33.3 percent and the second method results in a critical move of 46.9 percent. Neither is very accurate, and the difference in the calculated Level of Service will be approximately 1.5 Levels of Service (one Level of Service is 10 percent).

The way Kunzman Associates does it is to assign fractional lanes in a reasonable way. In this example, it would be assumed that there is 1.1 right turn lanes, 0.2 through lanes, and 1.7 left turn lanes. The volume to capacity ratios for each movement would be 31.3 percent for the through traffic, 28.4 percent for the right turn movement, and 36.8 percent for the

left turn movement. The critical movement would be the 36.8 percent for the left turns.

Right Turn on Red

Kunzman Associates' software treats right turn lanes in one of five different ways. Each right turn lane is classified into one of five cases. The five cases are (1) free right turn lane, (2) right turn lane with separate right turn arrow, (3) standard right turn lane with no right turns on red allowed, (4) standard right turn lane with a certain percentage of right turns on red allowed, and (5) separate right turn arrow and a certain percentage of right turns on red allowed.

Free Right Turn Lane

If it is a free right turn lane, then it is given a capacity of one full lane with continuous or 100 percent green time. A free right turn lane occurs when there is a separate approach lane for right turning vehicles, there is a separate departure lane for the right turning vehicles after they turn and are exiting the intersection, and the through cross street traffic does not interfere with the vehicles after they turn right.

Separate Right Turn Arrow

If there is a separate right turn arrow, then it is assumed that vehicles are given a green indication and can proceed on what is known as the left turn overlap.

The left turn overlap for a northbound right turn is the westbound left turn. When the left turn overlap has a green indication, the right turn lane is also given a green arrow indication. Thus, if there is a northbound right turn arrow, then it can be turned green for the period of time that the westbound left turns are proceeding.

If there are more right turns than can be accommodated during the northbound through green and the time that the northbound right turn arrow is on, then an adjustment is made to the ICU to account for the green time that needs to be added to the northbound through green to accommodate the northbound right turns.

Standard Right Turn Lane, No Right Turns on Red

A standard right turn lane, with no right turn on red assumed, proceeds only when there is a green indication displayed for the adjacent through movement. If additional green time is needed above that amount of time, then in the ICU calculation a right turn adjustment green time is added above the green time that is needed to serve the adjacent through movement.

Standard Right Turn Lane, With Right Turns on Red

A standard right turn lane with say 20 percent of the right turns allowed to turn right on a red indication is calculated the same as the standard right turn case where there is no right turn on red allowed, except that the right turn adjustment is reduced to account for the 20 percent of the right turning vehicles that can logically turn right on a red light. The right turns on red are never allowed to exceed the time the overlap left turns take plus the unused part of the green cycle that the cross street traffic moving from left to right has.

As an example of how 20 percent of the cars are allowed to turn right on a red indication, assume that the northbound right turn volume needs 40 percent of the signal cycle to be satisfied. To allow 20 percent of the northbound right turns to turn right on red, then during 8 percent of the signal cycle (40 percent of signal cycle times 20 percent that can turn right on red) right turns on red will be allowed if it is feasible.

For this example, assume that 15 percent of the signal cycle is green for the northbound through traffic, and that means that 15 percent of the signal cycle is available to satisfy northbound right turns. After the northbound through traffic has received its green, 25 percent of the signal cycle is still needed to satisfy the northbound right turns (40 percent of the signal cycle minus the 15 percent of the signal cycle that the northbound through used).

Assume that the westbound left turns require a green time of 6 percent of the signal cycle. This 6 percent of the signal cycle is used by northbound right turns on red. After accounting for the northbound right turns that occur on the westbound overlap left turn, 19 percent of the signal cycle is still needed for the northbound right turns (25 percent of the cycle was needed after the northbound through green time was

accounted for [see above paragraph], and 6 percent was served during the westbound left turn overlap). Also, at this point 6 percent of the signal cycle has been used for northbound right turns on red, and still 2 percent more of the right turns will be allowed to occur on the red if there is unused eastbound through green time.

For purpose of this example, assume that the westbound through green is critical, and that 15 percent of the signal cycle is unused by eastbound through traffic. Thus, 2 percent more of the signal cycle can be used by the northbound right turns on red since there is 15 seconds of unused green time being given to the eastbound through traffic.

At this point, 8 percent of the signal cycle was available to serve northbound right turning vehicles on red, and 15 percent of the signal cycle was available to serve right turning vehicles on the northbound through green. So 23 percent of the signal cycle has been available for northbound right turns.

Because 40 percent of the signal cycle is needed to serve northbound right turns, there is still a need for 17 percent more of the signal cycle to be available for northbound right turns. What this means is the northbound through traffic green time is increased by 17 percent of the cycle length to serve the unserved right turn volume, and a 17 percent adjustment is added to the ICU to account for the northbound right turns that were not served on the northbound through green time or when right turns on red were assumed.

Separate Right Turn Arrow, With Right Turns on Red

A right turn lane with a separate right turn arrow, plus a certain percentage of right turns allowed on red is calculated the same way as a standard right turn lane with a certain percentage of right turns allowed on red, except the turns which occur on the right turn arrow are not counted as part of the percentage of right turns that occur on red.

Critical Lane Method

ICU parallels another calculation procedure known as the Critical Lane Method with one exception. Critical Lane Method dimensions capacity in terms of standardized vehicles per hour per lane. A Critical Lane Method result of 800 vehicles per hour means that the intersection

operates as though 800 vehicles were using a single lane continuously. If one assumes a lane capacity of 1600 vehicles per hour, then a Critical Lane Method calculation resulting in 800 vehicles per hour is the same as an ICU calculation of 50 percent since 800/1600 is 50 percent. It is our opinion that the Critical Lane Method is inferior to the ICU method simply because a statement such as "The Critical Lane Method value is 800 vehicles per hour" means little to most persons, whereas a statement such as "The Intersection Capacity Utilization is 50 percent" communicates clearly. Critical Lane Method results directly correspond to ICU results. The correspondence is as follows, assuming a lane capacity of 1600 vehicles per hour and no clearance interval.

Critical Lane Method Result	ICU Result
800 vehicles per hour	50 percent
960 vehicles per hour	60 percent
1120 vehicles per hour	70 percent
1280 vehicles per hour	80 percent
1440 vehicles per hour	90 percent
1600 vehicles per hour	100 percent
1760 vehicles per hour	110 percent

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LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Volume to Capacity Ratio
A	Level of Service A occurs when progression is extremely favorable and vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0.600 and below
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	0.601 to 0.700
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	0.701 to 0.800
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	0.801 to 0.900
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent.	0.901 to 1.000
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs when oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	1.001 and up

[1]Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council Washington D.C., 2000.

Existing

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

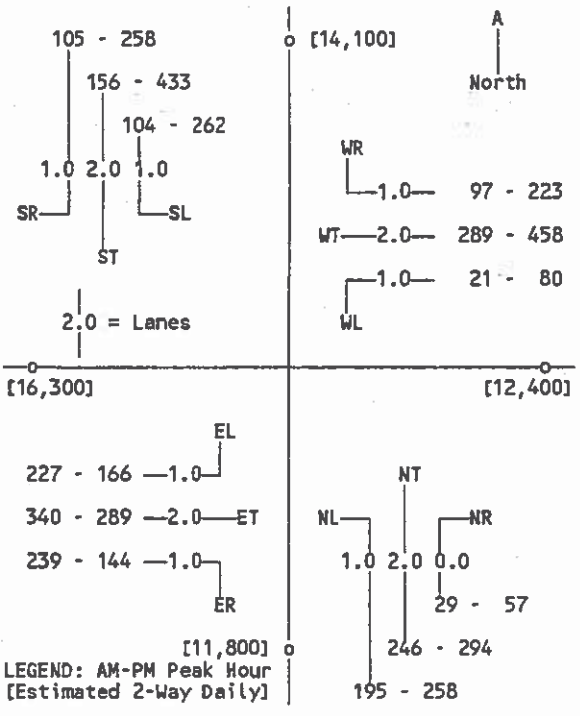
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING

COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	195	258	0	0	195	258	0.122*	0.161*
Northbound Through	2	3200	246	294	0	0	246	294	0.086	0.110
Northbound Right	0	0	29	57	0	0	29	57	0.000	0.000
Southbound Left	1	1600	104	262	0	0	104	262	0.065	0.164
Southbound Through	2	3200	156	433	0	0	156	433	0.049*	0.135*
Southbound Right	1	1600	105	258	0	0	105	258	0.066	0.161
Eastbound Left	1	1600	227	166	0	0	227	166	0.142*	0.104*
Eastbound Through	2	3200	340	289	0	0	340	289	0.106	0.090
Eastbound Right	1	1600	239	144	0	0	239	144	0.149	0.090
Westbound Left	1	1600	21	80	0	0	21	80	0.013	0.050
Westbound Through	2	3200	289	458	0	0	289	458	0.090*	0.143*
Westbound Right	1	1600	97	223	0	0	97	223	0.061	0.139
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.017*	0.026*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.520	0.669
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

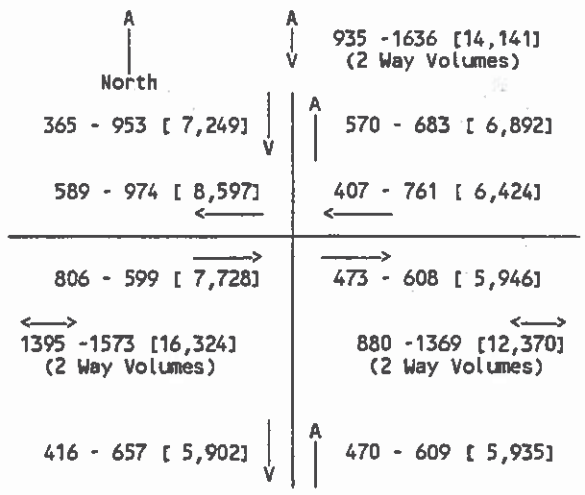
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	7 - 11	7 - 11	9 - 10

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

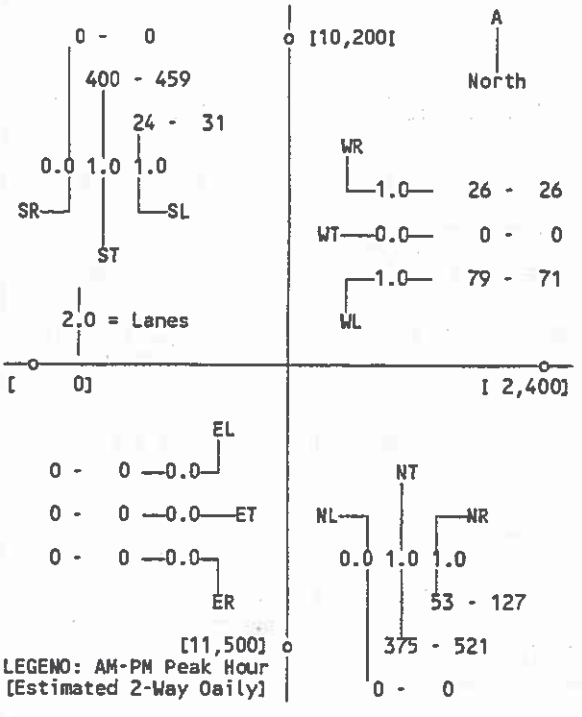
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: EXISTING

COUNT DATE: 11-12-02
GEOMETRICS: Existing

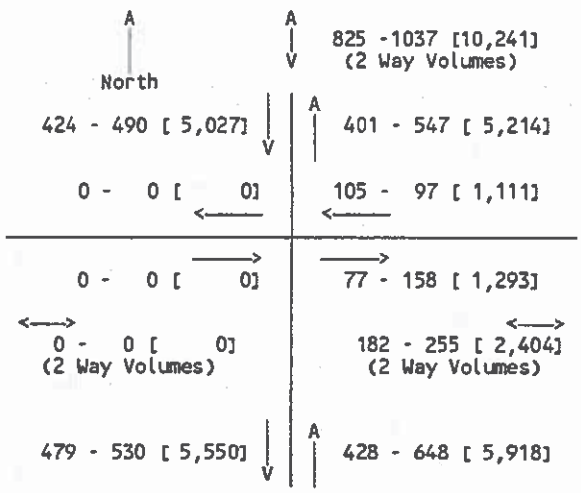
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	375	521	0	0	375	521	0.234	0.326*
Northbound Right	1	1600	53	127	0	0	53	127	0.033	0.079
Southbound Left	1	1600	24	31	0	0	24	31	0.015	0.019*
Southbound Through	1	1600	400	459	0	0	400	459	0.250*	0.287
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	79	71	0	0	79	71	0.049*	0.044*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	26	26	0	0	26	26	0.016	0.016
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.399	0.489
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

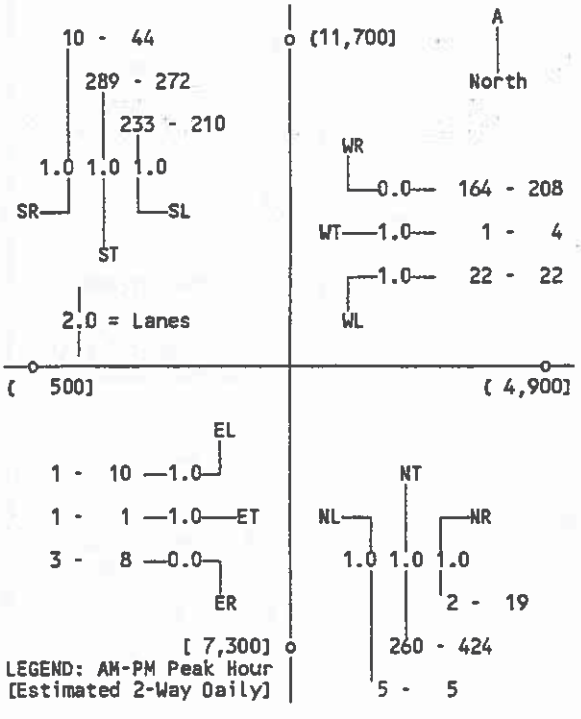
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and RAYBURN ROAD (EW)
LAND USE: EXISTING

COUNT DATE: 11-12-02
GEOMETRICS: Improved

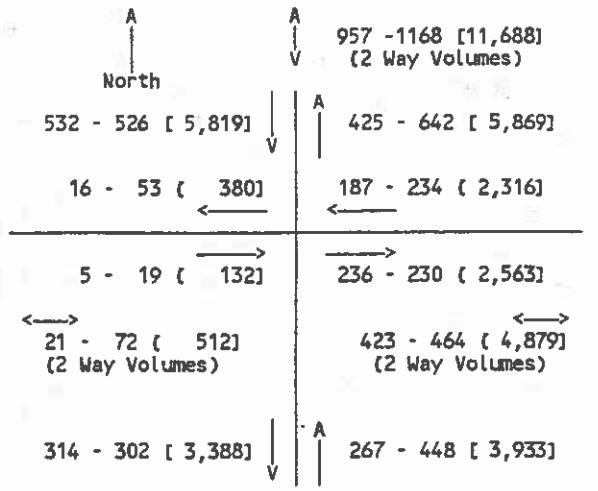
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	5	5	0	0	5	5	0.003	0.003
Northbound Through	1	1600	260	424	0	0	260	424	0.163*	0.265*
Northbound Right	1	1600	2	19	0	0	2	19	0.001	0.012
Southbound Left	1	1600	233	210	0	0	233	210	0.146*	0.131*
Southbound Through	1	1600	289	272	0	0	289	272	0.181	0.170
Southbound Right	1	1600	10	44	0	0	10	44	0.006	0.028
Eastbound Left	1	1600	1	10	0	0	1	10	0.001*	0.006*
Eastbound Through	1	1600	1	1	0	0	1	1	0.003	0.006
Eastbound Right	0	0	3	8	0	0	3	8	0.000	0.000
Westbound Left	1	1600	22	22	0	0	22	22	0.014	0.014
Westbound Through	1	1600	1	4	0	0	1	4	0.103*	0.132*
Westbound Right	0	0	164	208	0	0	164	208	0.000	0.000

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.513	0.634
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	56 - 45	46 - 60	44 - 50	24 - 26
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	9 - 10	4 - 14

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

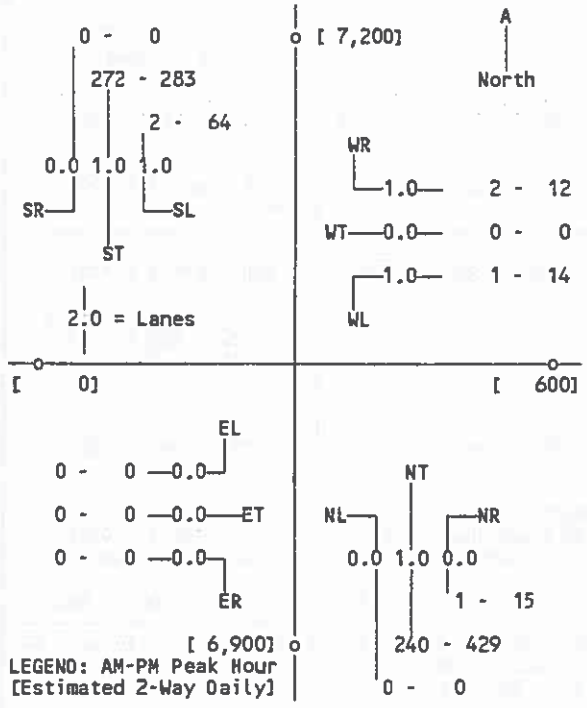
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and CITY RANCH ROAD (EW)
LAND USE: EXISTING

COUNT DATE: 11-12-02
GEOMETRICS: Improved

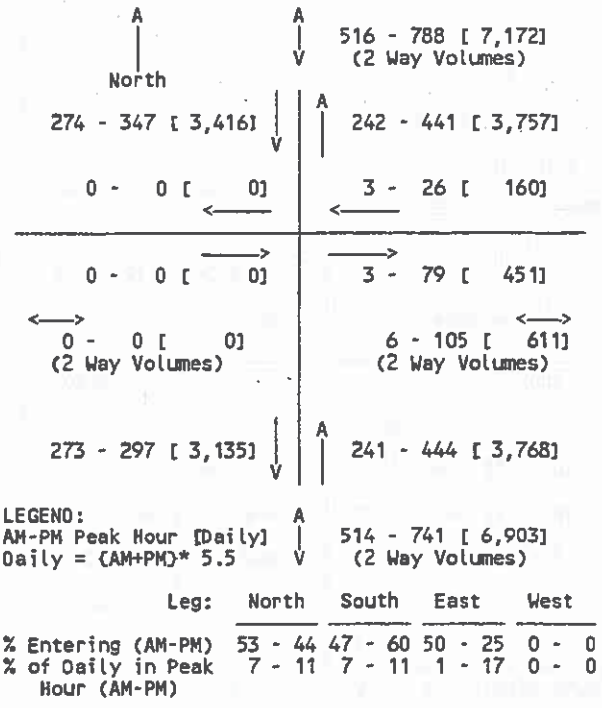
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	240	429	0	0	240	429	0.151	0.278*
Northbound Right	0	0	1	15	0	0	1	15	0.000	0.000
Southbound Left	1	1600	2	64	0	0	2	64	0.001	0.040*
Southbound Through	1	1600	272	283	0	0	272	283	0.170*	0.177
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	1	14	0	0	1	14	0.001*	0.009*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	2	12	0	0	2	12	0.001	0.008
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.271	0.427
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	53 - 44	47 - 60	50 - 25	0 - 0
% of Daily in Peak Hour (AM-PM)	7 - 11	7 - 11	1 - 17	0 - 0

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

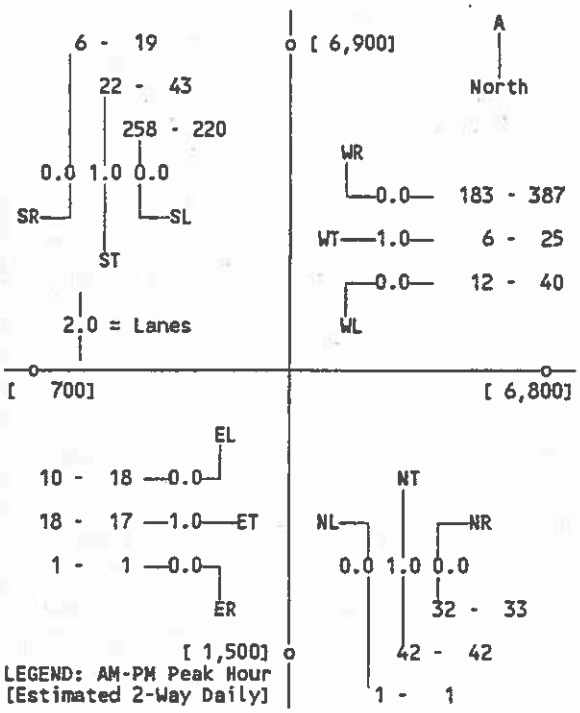
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and AVENUE S (EW)
LAND USE: EXISTING

COUNT DATE: 11-14-02
GEOMETRICS: Existing

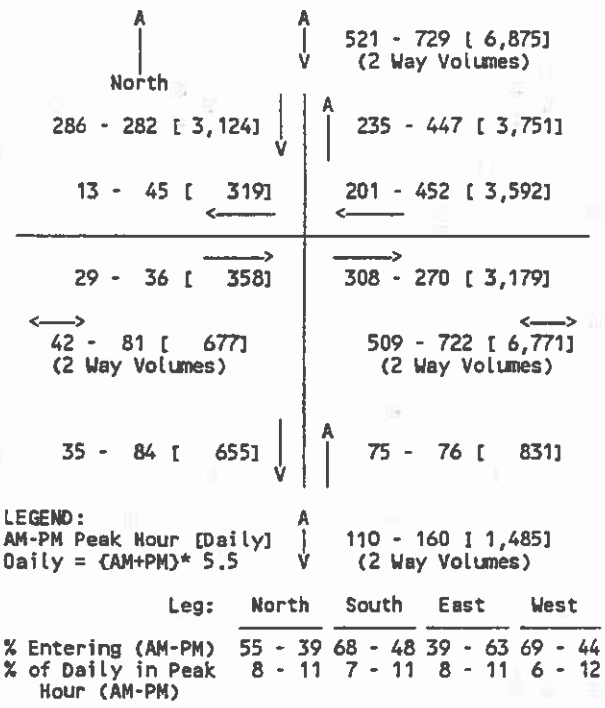
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	1	1	0	0	1	1	0.000*	0.000*
Northbound Through	1	1600	42	42	0	0	42	42	0.047	0.048
Northbound Right	0	0	32	33	0	0	32	33	0.000	0.000
Southbound Left	0	0	258	220	0	0	258	220	0.000	0.000
Southbound Through	1	1600	22	43	0	0	22	43	0.179*	0.176*
Southbound Right	0	0	6	19	0	0	6	19	0.000	0.000
Eastbound Left	0	0	10	18	0	0	10	18	0.000*	0.000*
Eastbound Through	1	1600	18	17	0	0	18	17	0.018	0.023
Eastbound Right	0	0	1	1	0	0	1	1	0.000	0.000
Westbound Left	0	0	12	40	0	0	12	40	0.000	0.000
Westbound Through	1	1600	6	25	0	0	6	25	0.126*	0.283*
Westbound Right	0	0	183	387	0	0	183	387	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.405	0.559
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	55 - 39	68 - 48	39 - 63	69 - 44
% of Daily in Peak Hour (AM-PM)	8 - 11	7 - 11	8 - 11	6 - 12

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

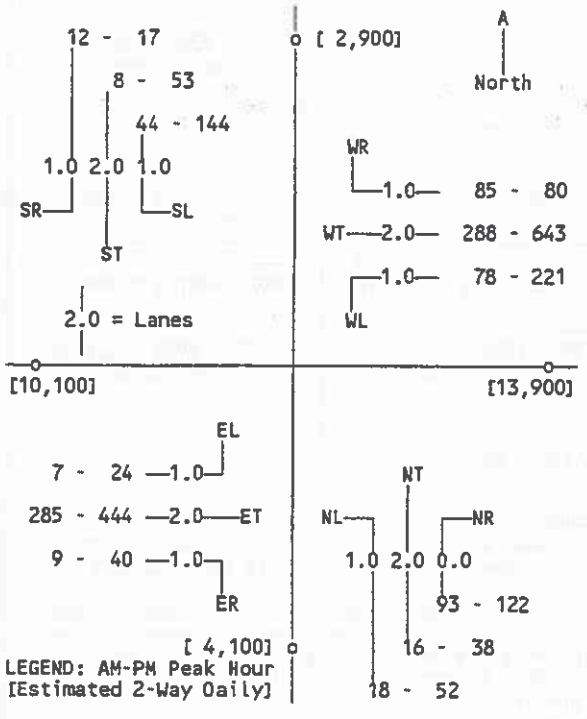
INTERSECTION: 5TH STREET WEST (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING

COUNT DATE: 11-13-02
GEOMETRICS: Existing

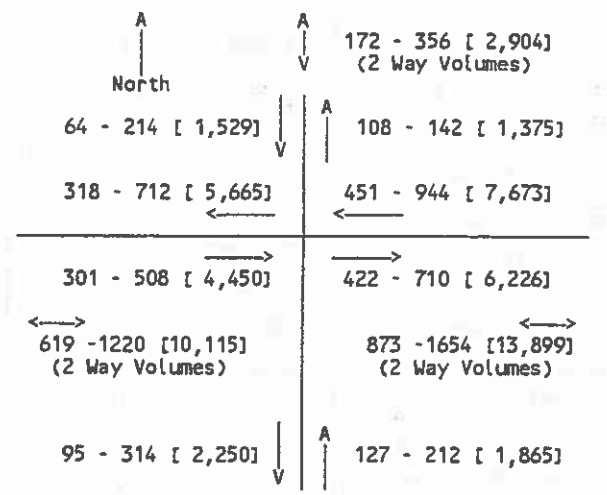
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	18	52	0	0	18	52	0.011	0.033
Northbound Through	2	3200	16	38	0	0	16	38	0.034*	0.050*
Northbound Right	0	0	93	122	0	0	93	122	0.000	0.000
Southbound Left	1	1600	44	144	0	0	44	144	0.028*	0.090*
Southbound Through	2	3200	8	53	0	0	8	53	0.003	0.017
Southbound Right	1	1600	12	17	0	0	12	17	0.008	0.011
Eastbound Left	1	1600	7	24	0	0	7	24	0.004	0.015
Eastbound Through	2	3200	285	444	0	0	285	444	0.089*	0.139*
Eastbound Right	1	1600	9	40	0	0	9	40	0.006	0.025
Westbound Left	1	1600	78	221	0	0	78	221	0.049*	0.138*
Westbound Through	2	3200	288	643	0	0	288	643	0.090	0.201
Westbound Right	1	1600	85	80	0	0	85	80	0.053	0.050
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.300	0.517
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	37 - 60	57 - 40	52 - 57	49 - 42
% of Daily in Peak Hour (AM-PM)	6 - 12	5 - 13	6 - 12	6 - 12

Kunzman Associates

INTERSECTION VOLUMES. LANES. AND INTERSECTION CAPACITY UTILIZATION CALCULATION

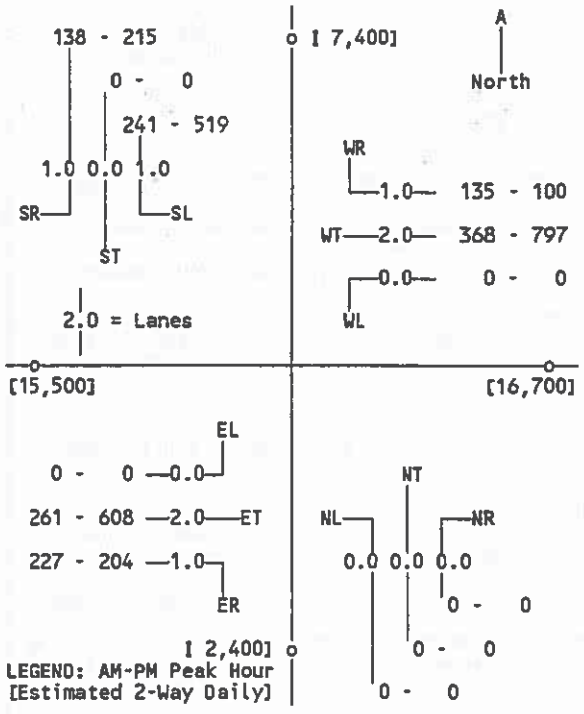
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING

COUNT DATE: 11-12-02
GEOMETRICS: Existing

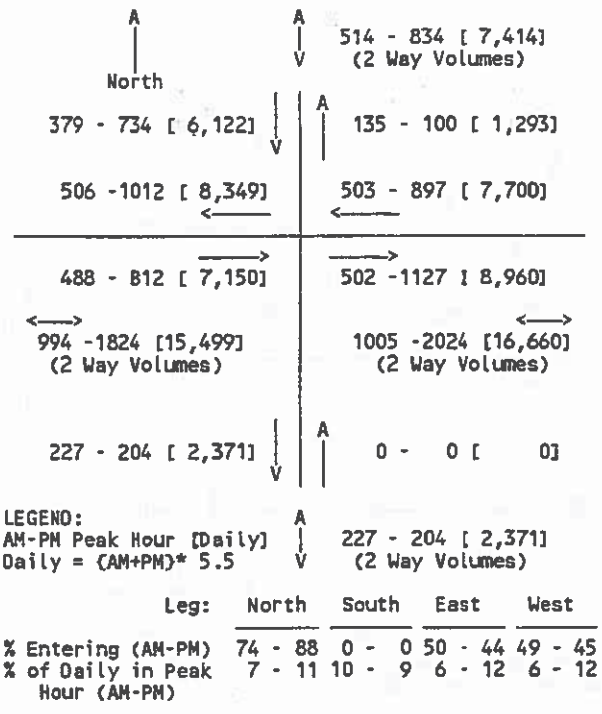
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	241	519	0	0	241	519	0.151*	0.324*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	138	215	0	0	138	215	0.086	0.134
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	261	608	0	0	261	608	0.082	0.190
Eastbound Right	Free 1	1600	227	204	0	0	227	204	0.142	0.128
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	368	797	0	0	368	797	0.115*	0.249*
Westbound Right	Free 1	1600	135	100	0	0	135	100	0.084	0.063
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.366	0.673
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

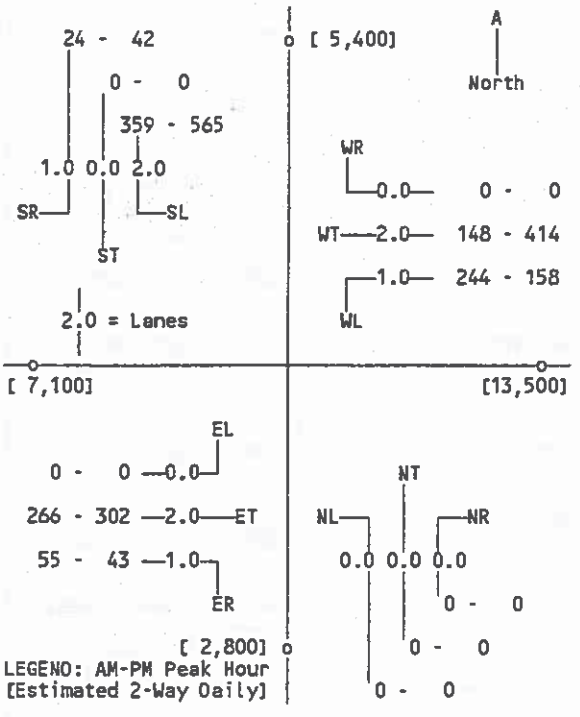
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING

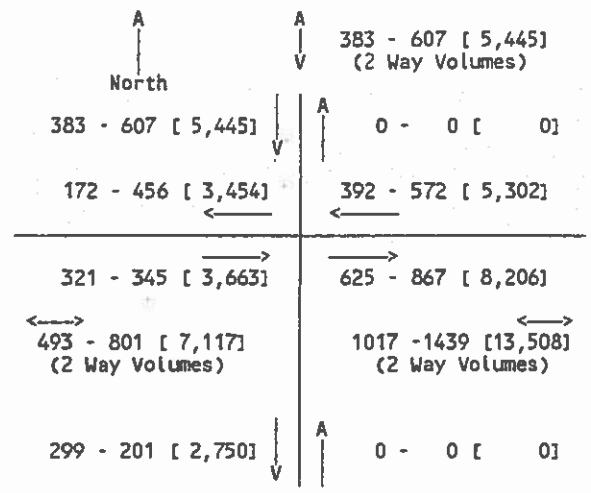
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	359	565	0	0	359	565	0.125*	0.196*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	24	42	0	0	24	42	0.015	0.026
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	266	302	0	0	266	302	0.083*	0.094*
Eastbound Right	Free 1	1600	55	43	0	0	55	43	0.034	0.027
Westbound Left	1	1600	244	158	0	0	244	158	0.153*	0.099*
Westbound Through	2	3200	148	414	0	0	148	414	0.046	0.129
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.461	0.489
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

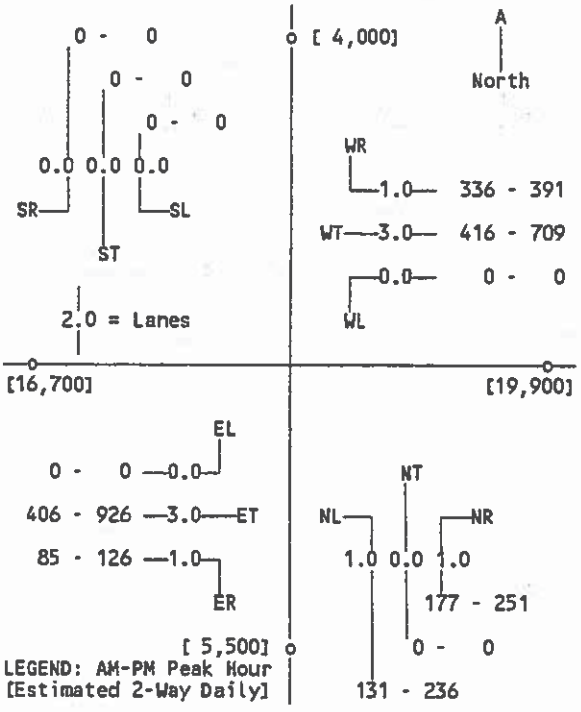
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING

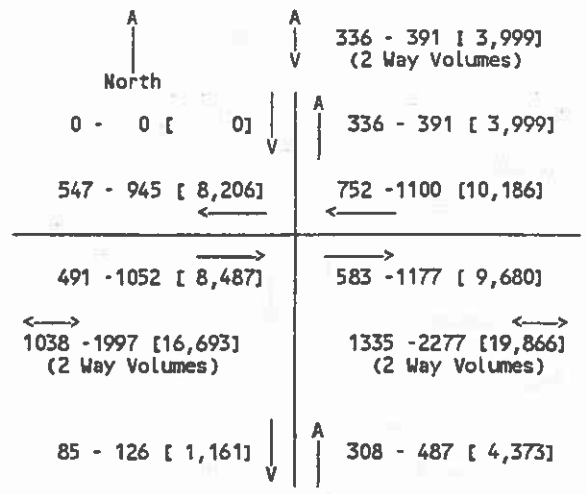
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	131	236	0	0	131	236	0.082*	0.147*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	177	251	0	0	177	251	0.111	0.157
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	406	926	0	0	406	926	0.085	0.193*
Eastbound Right	Free 1	1600	85	126	0	0	85	126	0.053	0.079
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	416	709	0	0	416	709	0.087*	0.148
Westbound Right	Free 1	1600	336	391	0	0	336	391	0.210	0.244
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.269	0.440
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+]									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

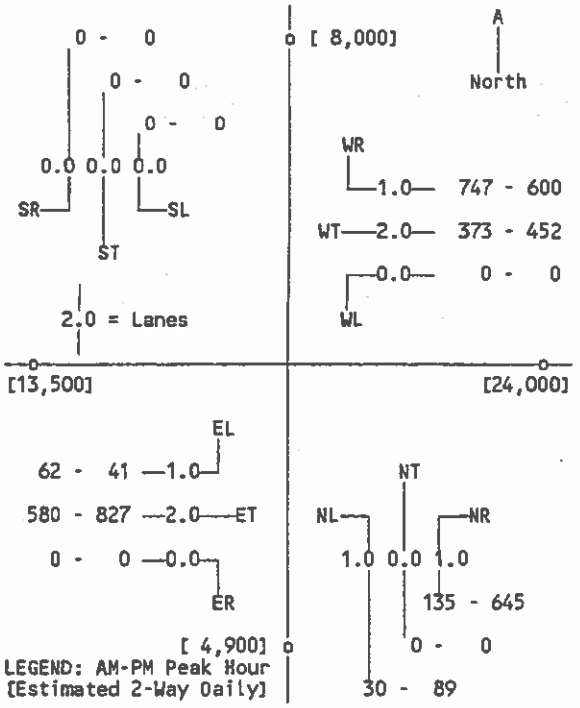
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING

COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	30	89	0	0	30	89	0.019*	0.056*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	135	645	0	0	135	645	0.084	0.403
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	62	41	0	0	62	41	0.039	0.026
Eastbound Through	2	3200	580	827	0	0	580	827	0.181*	0.258*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	373	452	0	0	373	452	0.117	0.141
Westbound Right	Free 1	1600	747	600	0	0	747	600	0.467	0.375
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.300	0.414
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

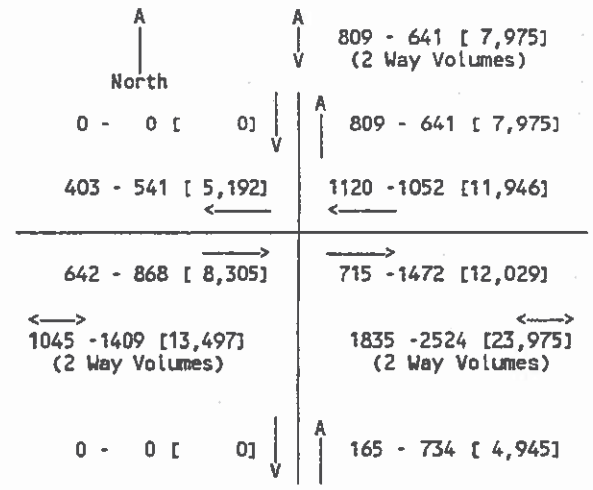
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Existing Plus Project
(Avergae Inflow of Material, 3,613 Tons per Day)

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

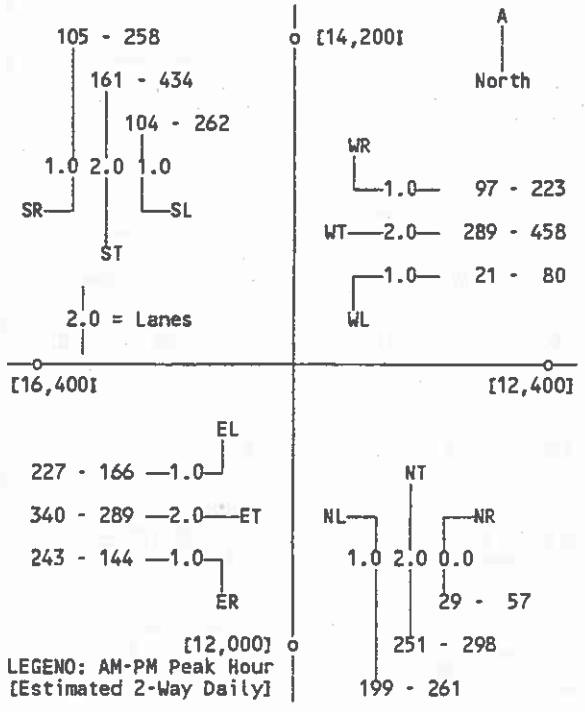
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-14-02
GEOMETRICS: Existing

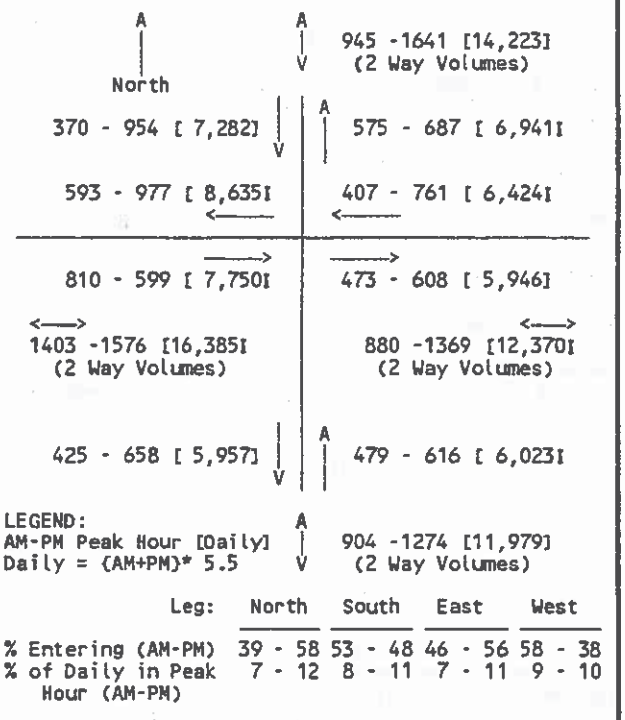
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	195	258	4	3	199	261	0.124*	0.163*
Northbound Through	2	3200	246	294	5	4	251	298	0.088	0.111
Northbound Right	0	0	29	57	0	0	29	57	0.000	0.000
Southbound Left	1	1600	104	262	0	0	104	262	0.065	0.164
Southbound Through	2	3200	156	433	5	1	161	434	0.050*	0.136*
Southbound Right	1	1600	105	258	0	0	105	258	0.066	0.161
Eastbound Left	1	1600	227	166	0	0	227	166	0.142*	0.104*
Eastbound Through	2	3200	340	289	0	0	340	289	0.106	0.090
Eastbound Right	1	1600	239	144	4	0	243	144	0.152	0.090
Westbound Left	1	1600	21	80	0	0	21	80	0.013	0.050
Westbound Through	2	3200	289	458	0	0	289	458	0.090*	0.143*
Westbound Right	1	1600	97	223	0	0	97	223	0.061	0.139
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.016*	0.025*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.522	0.671
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	8 - 11	7 - 11	9 - 10

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

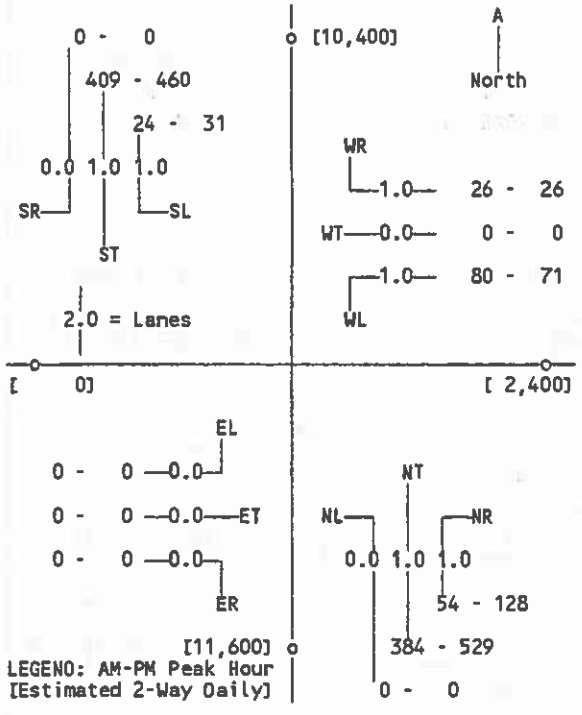
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT OATE: 11-12-02
GEOMETRICS: Existing

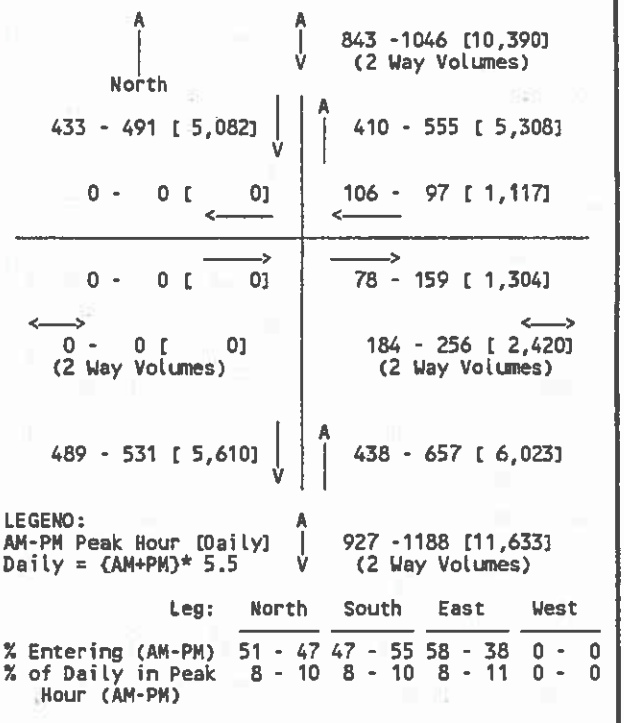
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDEO VOLUME (AM)	ADDEO VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACJTY RATJO (AM)	VOLUME TO CAPACJTY RATJO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	375	521	9	8	384	529	0.240	0.331*
Northbound Right	1	1600	53	127	1	1	54	128	0.034	0.080
Southbound Left	1	1600	24	31	0	0	24	31	0.015	0.019*
Southbound Through	1	1600	400	459	9	1	409	460	0.256*	0.288
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	79	71	1	0	80	71	0.050*	0.044*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	26	26	0	0	26	26	0.016	0.016

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Jnterval		0.100*	0.100*
JNTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.406	0.494
LEVEL OF SERVJCE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

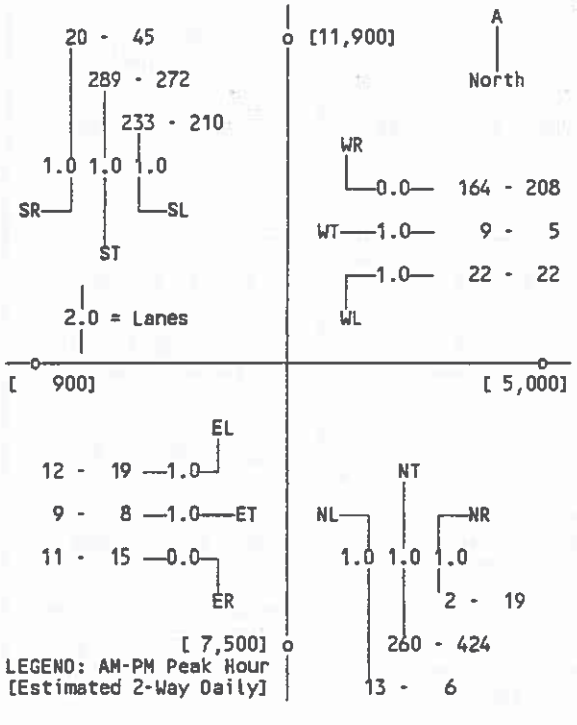
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIDA AVENUE (NS) and RAYBURN ROAD (EW)
LAND USE: EXISTING PLUS PROJECT

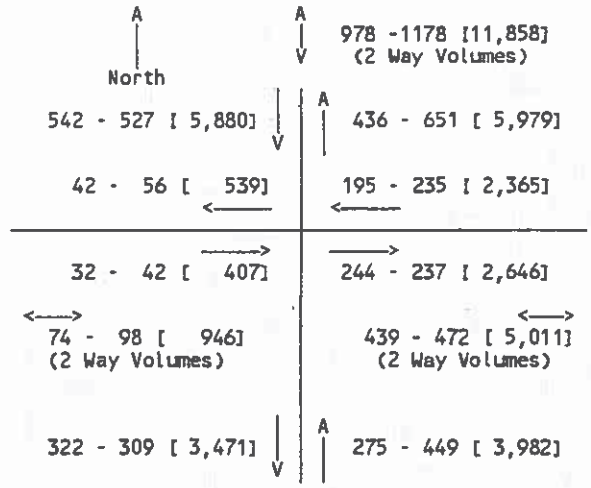
COUNT DATE: 11-12-02
GEOMETRICS: Improved

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	5	5	8	1	13	6	0.008	0.004
Northbound Through	1	1600	260	424	0	0	260	424	0.163*	0.265*
Northbound Right	1	1600	2	19	0	0	2	19	0.001	0.012
Southbound Left	1	1600	233	210	0	0	233	210	0.146*	0.131*
Southbound Through	1	1600	289	272	0	0	289	272	0.181	0.170
Southbound Right	1	1600	10	44	10	1	20	45	0.013	0.028
Eastbound Left	1	1600	1	10	11	9	12	19	0.008*	0.012*
Eastbound Through	1	1600	1	1	8	7	9	8	0.013	0.014
Eastbound Right	0	0	3	8	8	7	11	15	0.000	0.000
Westbound Left	1	1600	22	22	0	0	22	22	0.014	0.014
Westbound Through	1	1600	1	4	8	1	9	5	0.108*	0.133*
Westbound Right	0	0	164	208	0	0	164	208	0.000	0.000
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.525	0.641
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	55 - 45	46 - 59	44 - 50	43 - 43
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	9 - 9	8 - 10

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

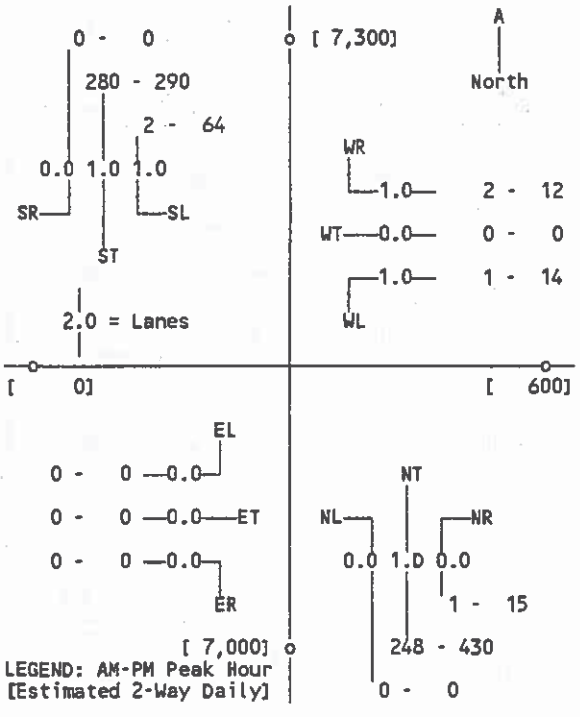
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and CITY RANCH ROAD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Improved

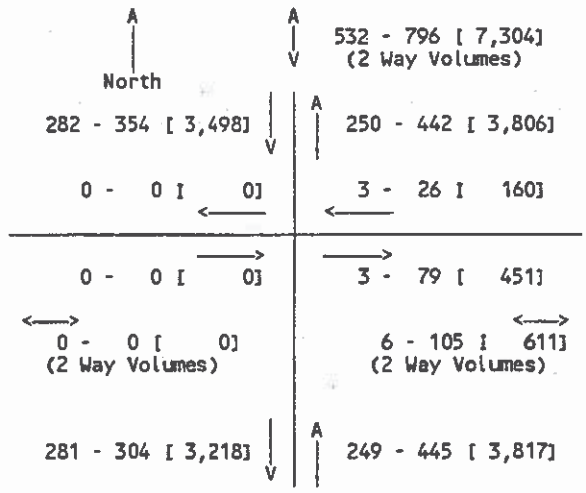
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	240	429	8	1	248	430	0.156	0.278*
Northbound Right	0	0	1	15	0	0	1	15	0.000	0.000
Southbound Left	1	1600	2	64	0	0	2	64	0.001	0.040*
Southbound Through	1	1600	272	283	8	7	280	290	0.175*	0.181
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	1	14	0	0	1	14	0.001*	0.009*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	2	12	0	0	2	12	0.001	0.008
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.276	0.427
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	53 - 44	47 - 59	50 - 25	0 - 0
% of Daily in Peak Hour (AM-PM)	7 - 11	8 - 11	1 - 17	0 - 0

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

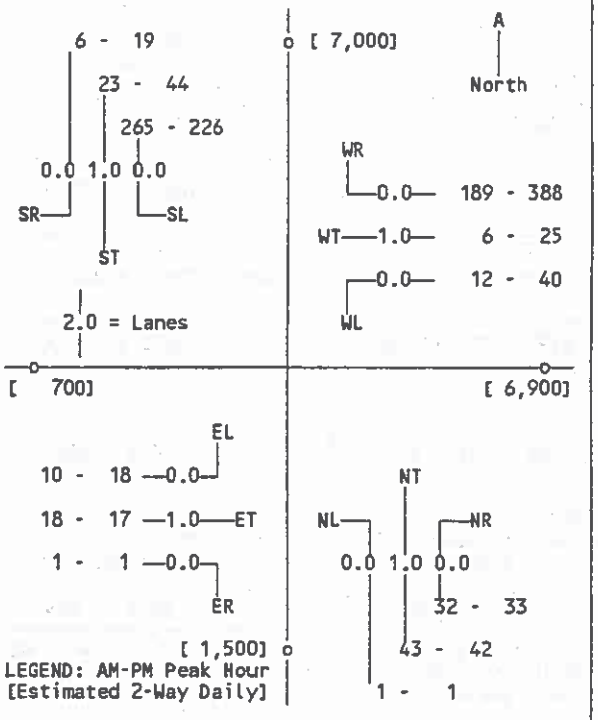
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and AVENUE S (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-14-02
GEOMETRICS: Existing

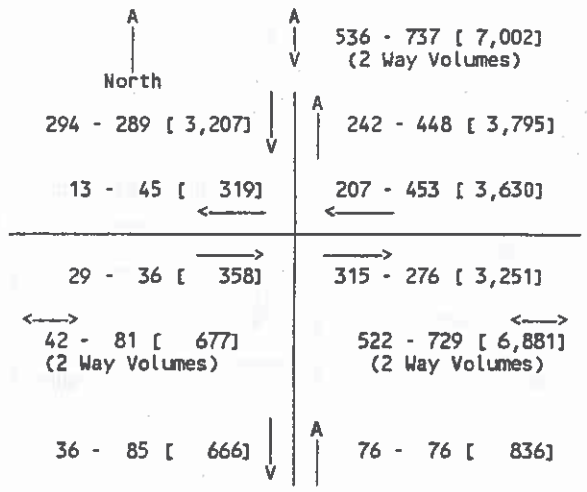
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	1	1	0	0	1	1	0.000*	0.000*
Northbound Through	1	1600	42	42	1	0	43	42	0.048	0.048
Northbound Right	0	0	32	33	0	0	32	33	0.000	0.000
Southbound Left	0	0	258	220	7	6	265	226	0.000	0.000
Southbound Through	1	1600	22	43	1	1	23	44	0.184*	0.181*
Southbound Right	0	0	6	19	0	0	6	19	0.000	0.000
Eastbound Left	0	0	10	18	0	0	10	18	0.000*	0.000*
Eastbound Through	1	1600	18	17	0	0	18	17	0.018	0.023
Eastbound Right	0	0	1	1	0	0	1	1	0.000	0.000
Westbound Left	0	0	12	40	0	0	12	40	0.000	0.000
Westbound Through	1	1600	6	25	0	0	6	25	0.129*	0.283*
Westbound Right	0	0	183	387	6	1	189	388	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.413	0.564
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	55 - 39	68 - 47	40 - 62	69 - 44
% of Daily in Peak Hour (AM-PM)	8 - 11	7 - 11	8 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

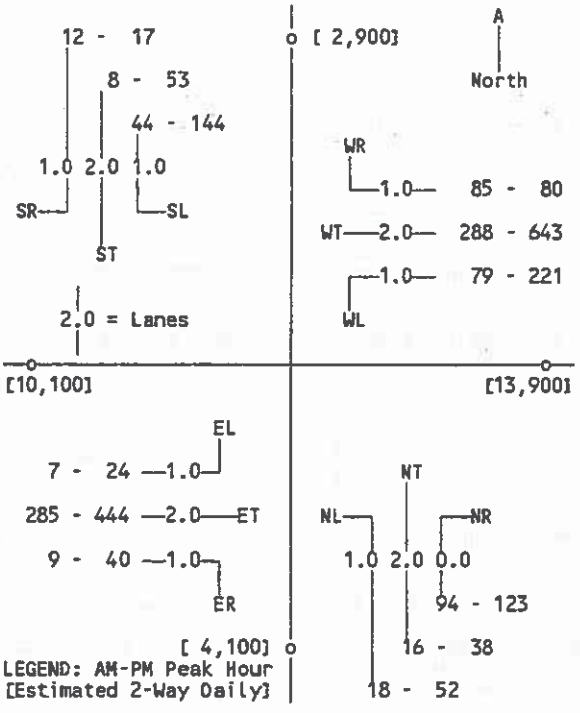
INTERSECTION: 5TH STREET WEST (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-13-02
GEOMETRICS: Existing

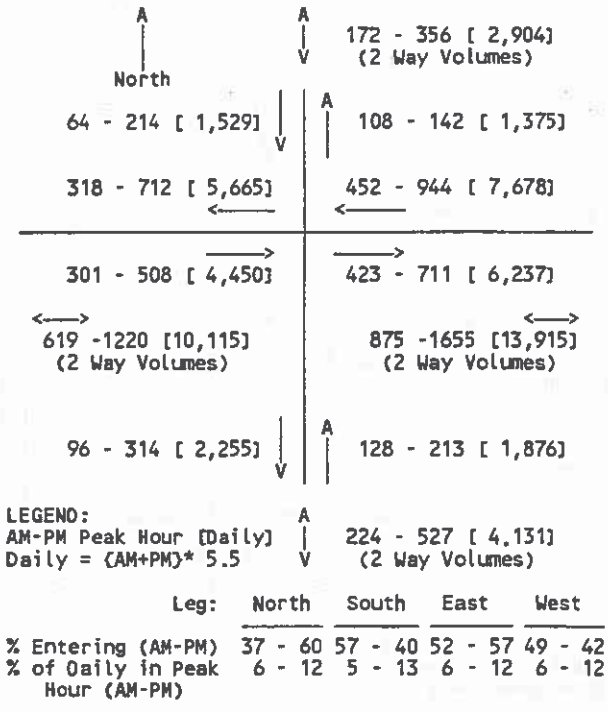
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	18	52	0	0	18	52	0.011	0.033
Northbound Through	2	3200	16	38	0	0	16	38	0.034*	0.050*
Northbound Right	0	0	93	122	1	1	94	123	0.000	0.000
Southbound Left	1	1600	44	144	0	0	44	144	0.028*	0.090*
Southbound Through	2	3200	8	53	0	0	8	53	0.003	0.017
Southbound Right	1	1600	12	17	0	0	12	17	0.008	0.011
Eastbound Left	1	1600	7	24	0	0	7	24	0.004	0.015
Eastbound Through	2	3200	285	444	0	0	285	444	0.089*	0.139*
Eastbound Right	1	1600	9	40	0	0	9	40	0.006	0.025
Westbound Left	1	1600	78	221	1	0	79	221	0.049*	0.138*
Westbound Through	2	3200	288	643	0	0	288	643	0.090	0.201
Westbound Right	1	1600	85	80	0	0	85	80	0.053	0.050
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.300	0.517
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	37 - 60	57 - 40	52 - 57	49 - 42
% of Daily in Peak Hour (AM-PM)	6 - 12	5 - 13	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

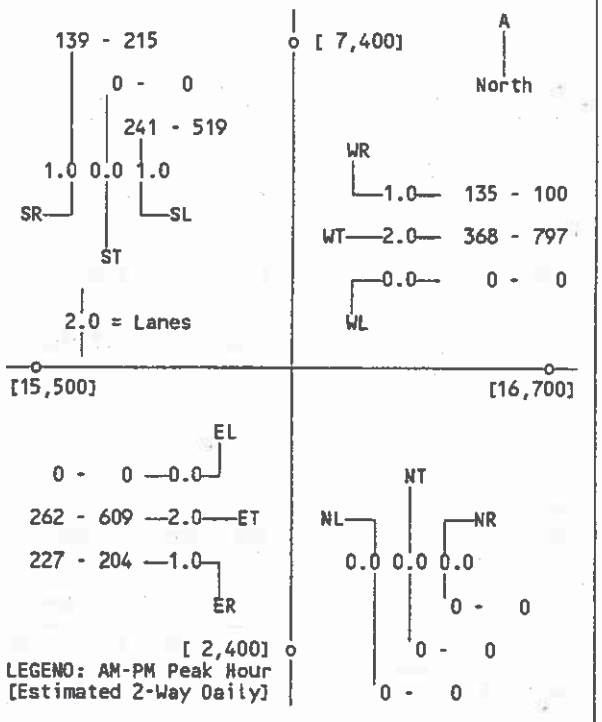
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

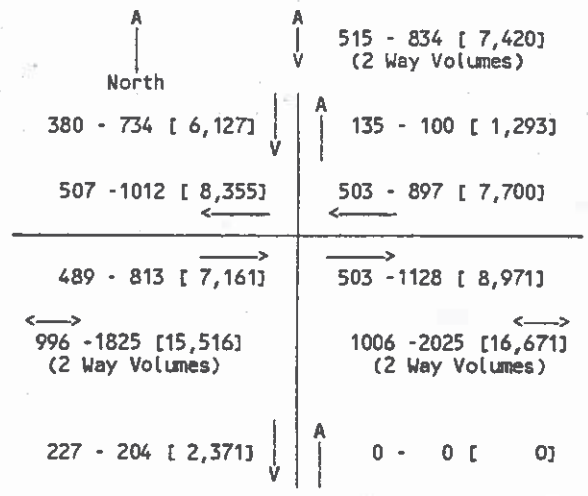
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	241	519	0	0	241	519	0.151*	0.324*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	138	215	1	0	139	215	0.087	0.134
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	261	608	1	1	262	609	0.082	0.190
Eastbound Right	Free 1	1600	227	204	0	0	227	204	0.142	0.128
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	368	797	0	0	368	797	0.115*	0.249*
Westbound Right	Free 1	1600	135	100	0	0	135	100	0.084	0.063
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.366	0.673
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

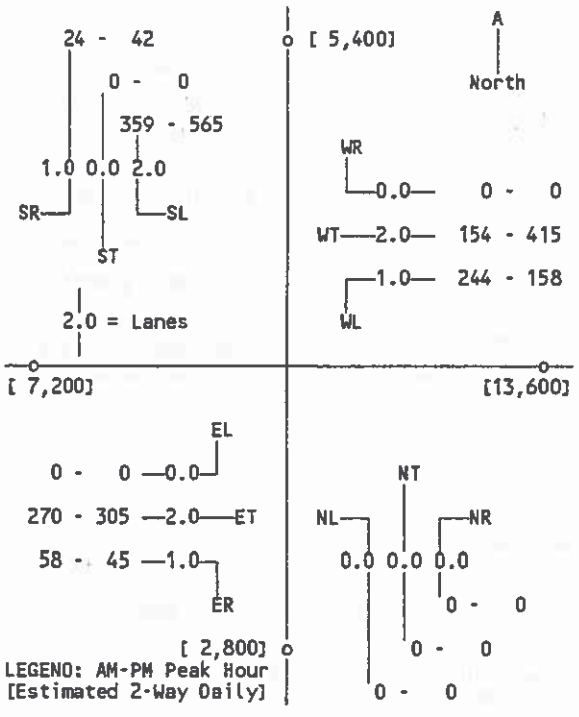
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING PLUS PROJECT

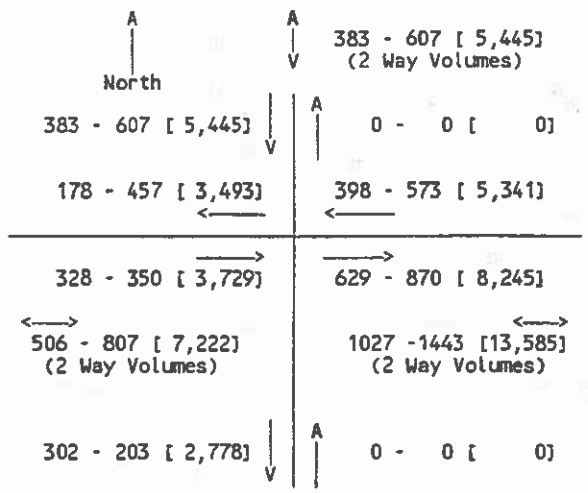
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	359	565	0	0	359	565	0.125*	0.196*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	24	42	0	0	24	42	0.015	0.026
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	266	302	4	3	270	305	0.084*	0.095*
Eastbound Right	Free 1	1600	55	43	3	2	58	45	0.036	0.028
Westbound Left	1	1600	244	158	0	0	244	158	0.153*	0.099*
Westbound Through	2	3200	148	414	6	1	154	415	0.048	0.130
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.462	0.490
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

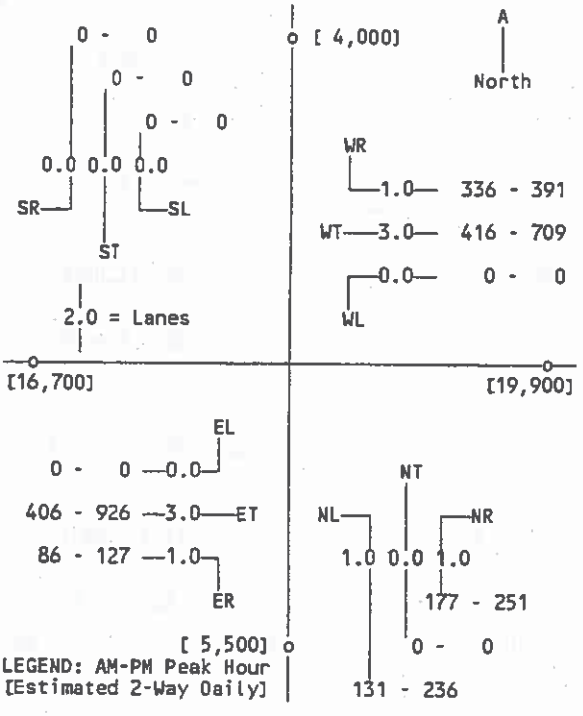
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

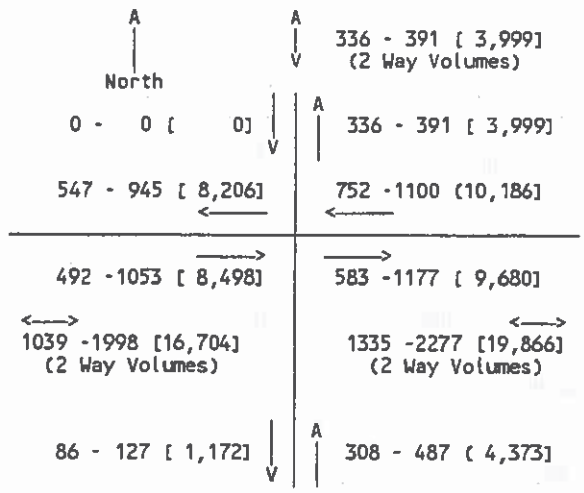
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	131	236	0	0	131	236	0.082*	0.147*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	177	251	0	0	177	251	0.111	0.157
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	406	926	0	0	406	926	0.085	0.193*
Eastbound Right	Free 1	1600	85	126	1	1	86	127	0.054	0.079
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	416	709	0	0	416	709	0.087*	0.148
Westbound Right	Free 1	1600	336	391	0	0	336	391	0.210	0.244
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.269	0.440
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

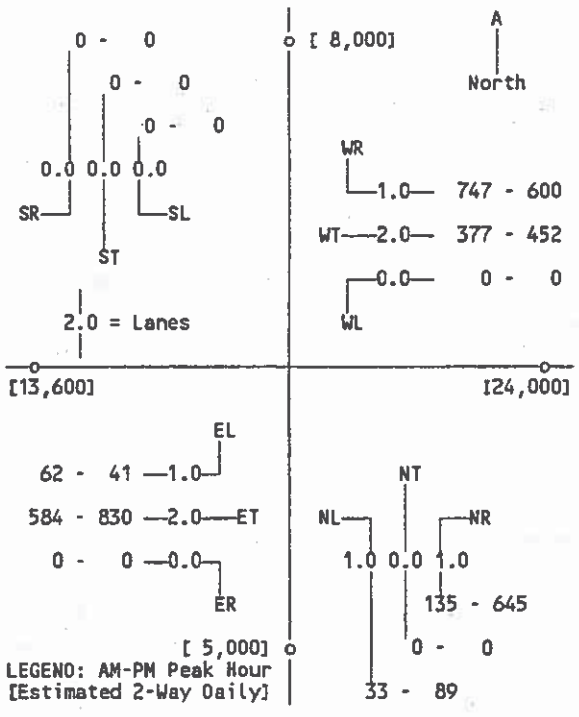
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING PLUS PROJECT

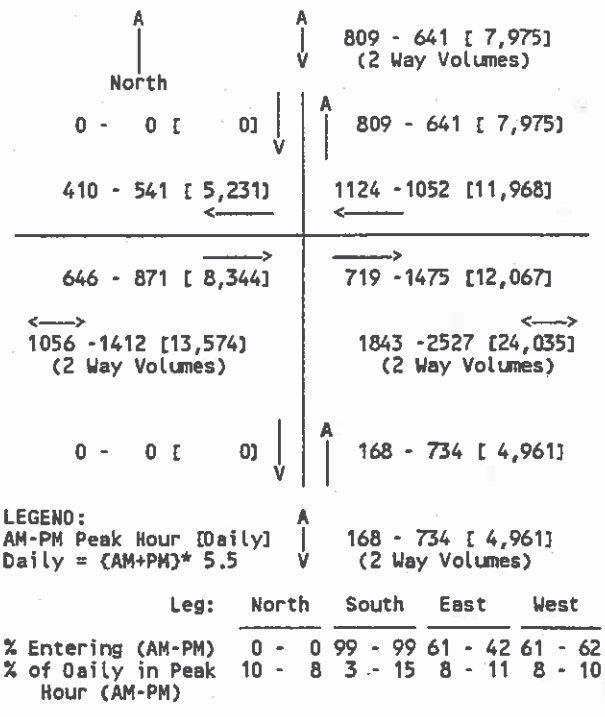
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	30	89	3	0	33	89	0.021*	0.056*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	135	645	0	0	135	645	0.084	0.403
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	62	41	0	0	62	41	0.039	0.026
Eastbound Through	2	3200	580	827	4	3	584	830	0.183*	0.259*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	373	452	4	0	377	452	0.118	0.141
Westbound Right	Free 1	1600	747	600	0	0	747	600	0.467	0.375
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.304	0.415
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Year 2007 With Project
(Avergae Inflow of Material, 3,613 Tons per Day)

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

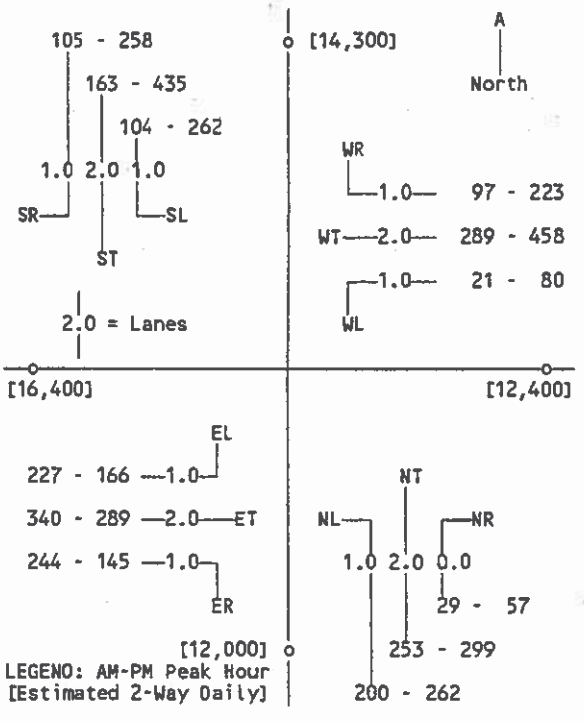
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	195	258	5	4	200	262	0.125*	0.164*
Northbound Through	2	3200	246	294	7	5	253	299	0.088	0.111
Northbound Right	0	0	29	57	0	0	29	57	0.000	0.000
Southbound Left	1	1600	104	262	0	0	104	262	0.065	0.164
Southbound Through	2	3200	156	433	7	2	163	435	0.051*	0.136*
Southbound Right	1	1600	105	258	0	0	105	258	0.066	0.161
Eastbound Left	1	1600	227	166	0	0	227	166	0.142*	0.104*
Eastbound Through	2	3200	340	289	0	0	340	289	0.106	0.090
Eastbound Right	1	1600	239	144	5	1	244	145	0.153	0.091
Westbound Left	1	1600	21	80	0	0	21	80	0.013	0.050
Westbound Through	2	3200	289	458	0	0	289	458	0.090*	0.143*
Westbound Right	1	1600	97	223	0	0	97	223	0.061	0.139
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.015*	0.025*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.523	0.672
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

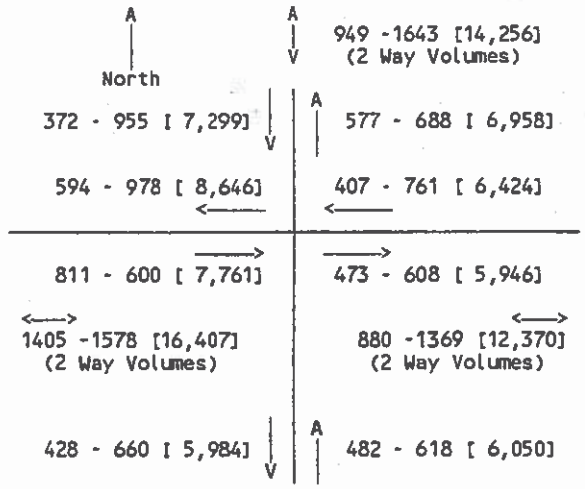
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	8 - 11	7 - 11	9 - 10

Kunzman Associates

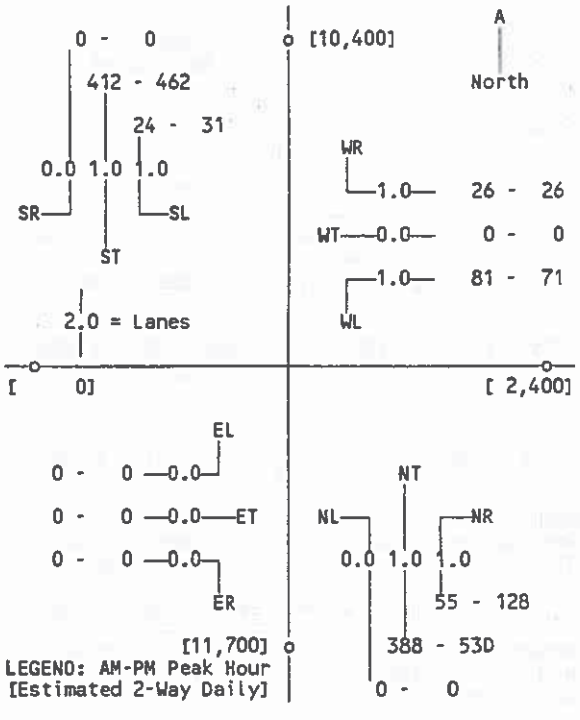
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIDA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

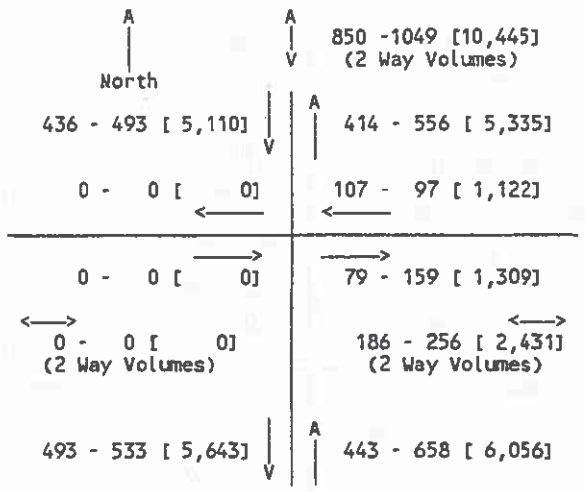
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	375	521	13	9	388	530	0.243	0.331*
Northbound Right	1	1600	53	127	2	1	55	128	0.034	0.080
Southbound Left	1	1600	24	31	0	0	24	31	0.015	0.019*
Southbound Through	1	1600	400	459	12	3	412	462	0.258*	0.289
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	79	71	2	0	81	71	0.051*	0.044*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	26	26	0	0	26	26	0.016	0.016
Northbound Right Turn Adjustment		None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.							0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.409	0.494
LEVEL OF SERVICE (A=.DDD-.6 ICU; B=.601-.7; C=.701-.8; D=.8D1-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

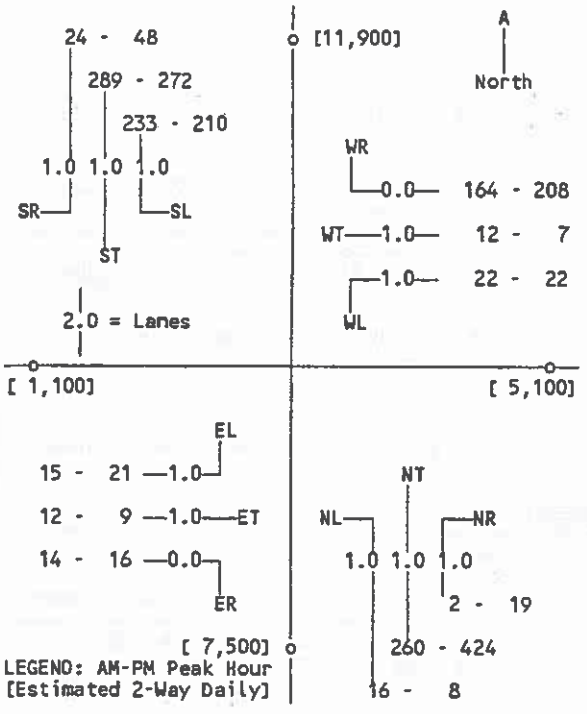
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and RAYBURN ROAD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Improved

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	5	5	11	3	16	8	0.010	0.005
Northbound Through	1	1600	260	424	0	0	260	424	0.163*	0.265*
Northbound Right	1	1600	2	19	0	0	2	19	0.001	0.012
Southbound Left	1	1600	233	210	0	0	233	210	0.146*	0.131*
Southbound Through	1	1600	289	272	0	0	289	272	0.181	0.170
Southbound Right	1	1600	10	44	14	4	24	48	0.015	0.030
Eastbound Left	1	1600	1	10	14	11	15	21	0.009*	0.013*
Eastbound Through	1	1600	1	1	11	8	12	9	0.016	0.016
Eastbound Right	0	0	3	8	11	8	14	16	0.000	0.000
Westbound Left	1	1600	22	22	0	0	22	22	0.014	0.014
Westbound Through	1	1600	1	4	11	3	12	7	0.110*	0.134*
Westbound Right	0	0	164	208	0	0	164	208	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.528	0.643
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

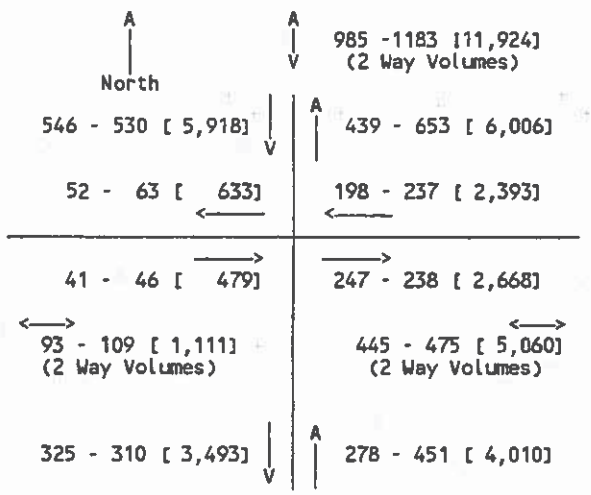
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

A
603 - 761 [7,502]
(2 Way Volumes)

Leg:	North	South	East	West
% Entering (AM-PM)	55 - 45	46 - 59	44 - 50	44 - 42
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	9 - 9	8 - 10

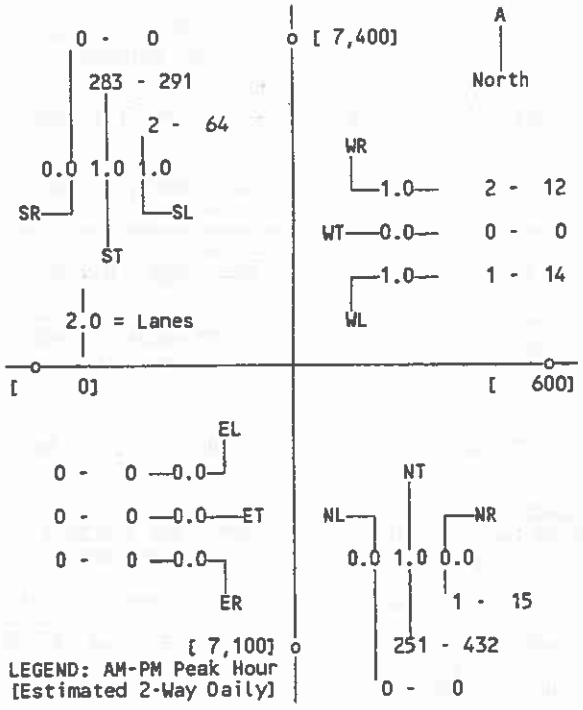
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and CITY RANCH ROAD (EW)
LAND USE: EXISTING PLUS PROJECT

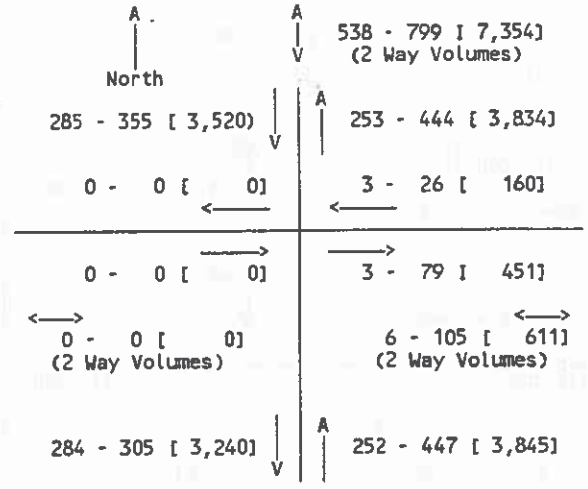
COUNT DATE: 11-12-02
GEOMETRICS: Improved

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	240	429	11	3	251	432	0.158	0.279*
Northbound Right	0	0	1	15	0	0	1	15	0.000	0.000
Southbound Left	1	1600	2	64	0	0	2	64	0.001	0.040*
Southbound Through	1	1600	272	283	11	8	283	291	0.177*	0.182
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	1	14	0	0	1	14	0.001*	0.009*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	2	12	0	0	2	12	0.001	0.008
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.278	0.428
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily] 536 - 752 [7,084]
Daily = (AM+PM)* 5.5 (2 Way Volumes)

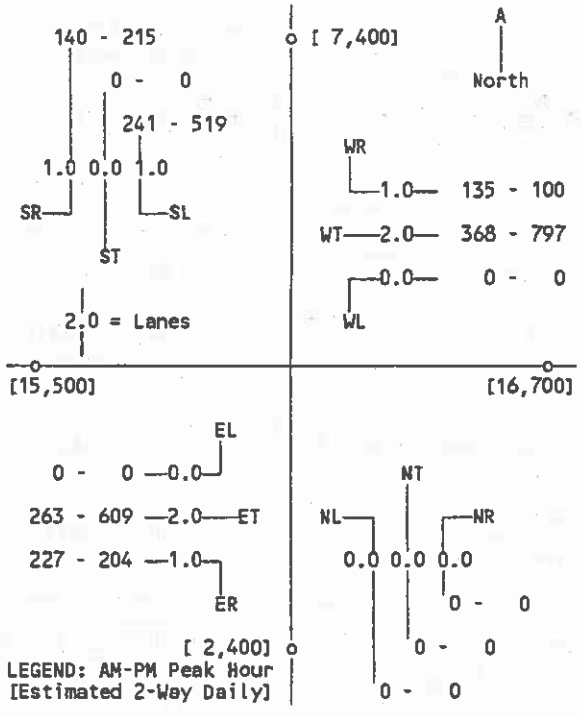
Leg:	North	South	East	West
% Entering (AM-PM)	53 - 44	47 - 59	50 - 25	0 - 0
% of Daily in Peak Hour (AM-PM)	7 - 11	8 - 11	1 - 17	0 - 0

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

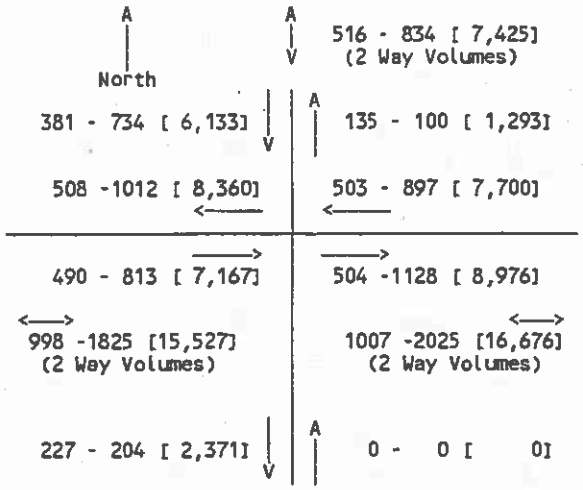
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW) — COUNT DATE: 11-12-02
LAND USE: EXISTING PLUS PROJECT — GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	241	519	0	0	241	519	0.151*	0.324*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	138	215	2	0	140	215	0.088	0.134
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	261	608	2	1	263	609	0.082	0.190
Eastbound Right	Free 1	1600	227	204	0	0	227	204	0.142	0.128
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	368	797	0	0	368	797	0.115*	0.249*
Westbound Right	Free 1	1600	135	100	0	0	135	100	0.084	0.063
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.366	0.673
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

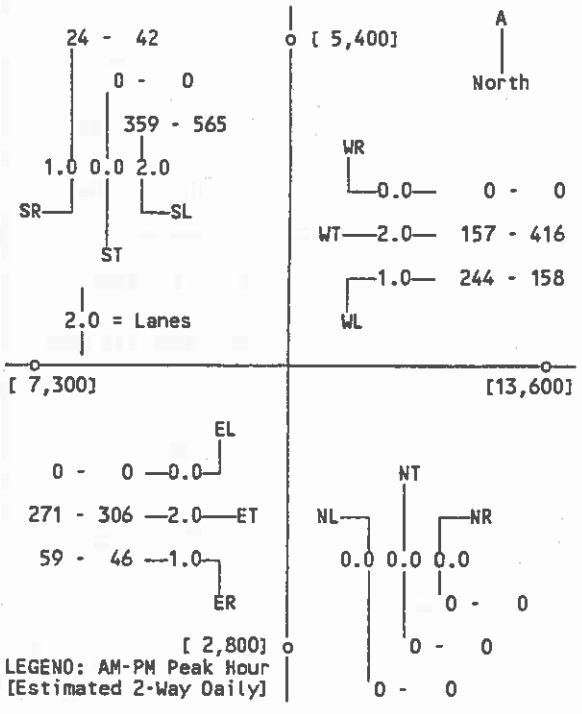
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

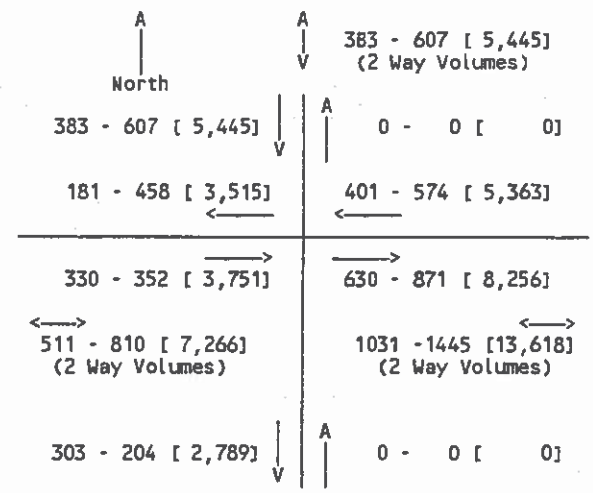
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	359	565	0	0	359	565	0.125*	0.196*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	24	42	0	0	24	42	0.015	0.026
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	266	302	5	4	271	306	0.085*	0.096*
Eastbound Right	Free 1	1600	55	43	4	3	59	46	0.037	0.029
Westbound Left	1	1600	244	158	0	0	244	158	0.153*	0.099*
Westbound Through	2	3200	148	414	9	2	157	416	0.049	0.130
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.463	0.491
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

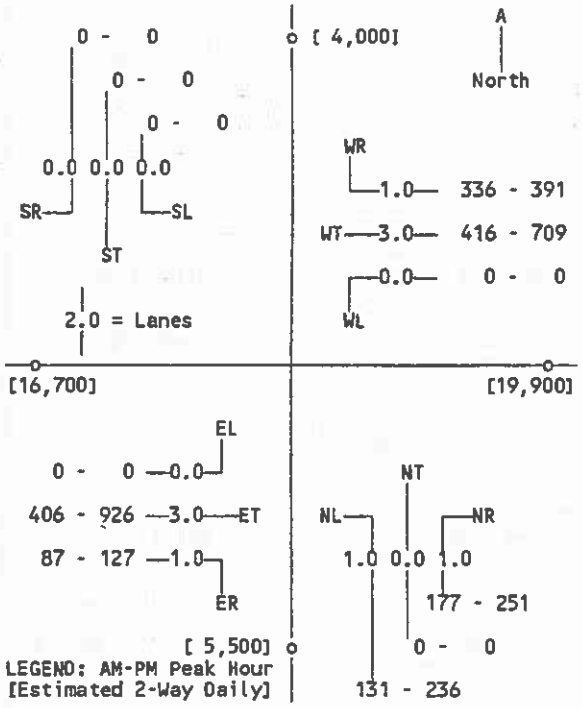
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

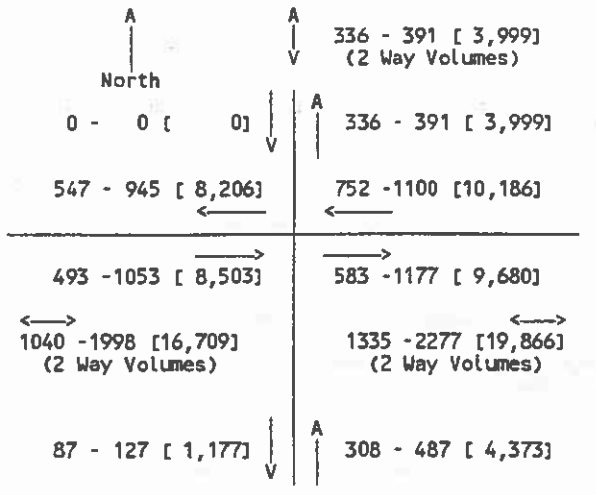
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	131	236	0	0	131	236	0.082*	0.147*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	177	251	0	0	177	251	0.111	0.157
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	406	926	0	0	406	926	0.085	0.193*
Eastbound Right	Free 1	1600	85	126	2	1	87	127	0.054	0.079
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	416	709	0	0	416	709	0.087*	0.148
Westbound Right	Free 1	1600	336	391	0	0	336	391	0.210	0.244

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.269	0.440
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

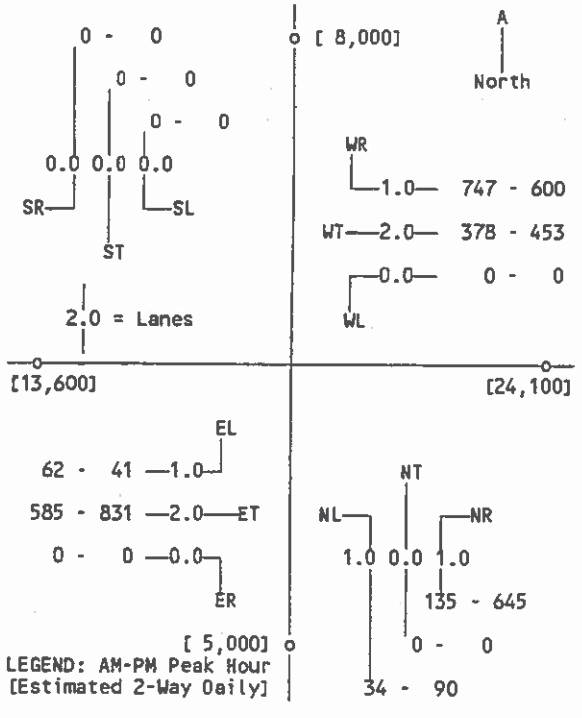
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: EXISTING PLUS PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	30	89	4	1	34	90	0.021*	0.056*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	135	645	0	0	135	645	0.084	0.403
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	62	41	0	0	62	41	0.039	0.026
Eastbound Through	2	3200	580	827	5	4	585	831	0.183*	0.260*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	373	452	5	1	378	453	0.118	0.142
Westbound Right	Free 1	1600	747	600	0	0	747	600	0.467	0.375
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.304	0.416
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

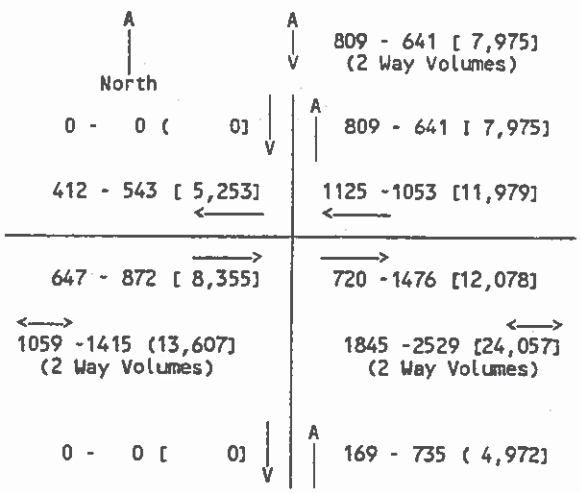
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

A
169 - 735 [4,972]
(2 Way Volumes)

Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Year 2007 Without Project

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LANO USE: YEAR 2007 WITHOUT PROJECT

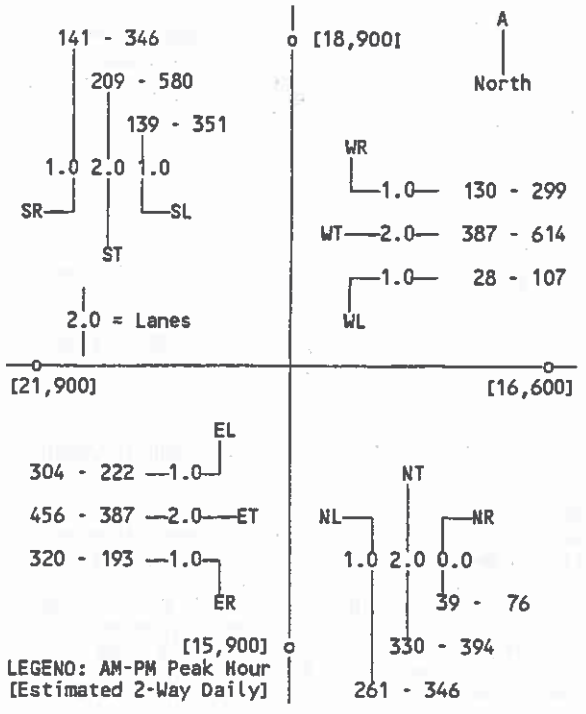
COUNT OATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	261	346	0	0	261	346	0.163*	0.216*
Northbound Through	2	3200	330	394	0	0	330	394	0.115	0.147
Northbound Right	0	0	39	76	0	0	39	76	0.000	0.000
Southbound Left	1	1600	139	351	0	0	139	351	0.087	0.219
Southbound Through	2	3200	209	580	0	0	209	580	0.065*	0.181*
Southbound Right	1	1600	141	346	0	0	141	346	0.088	0.216
Eastbound Left	1	1600	304	222	0	0	304	222	0.190*	0.139*
Eastbound Through	2	3200	456	387	0	0	456	387	0.142	0.121
Eastbound Right	1	1600	320	193	0	0	320	193	0.200	0.121
Westbound Left	1	1600	28	107	0	0	28	107	0.018	0.067
Westbound Through	2	3200	387	614	0	0	387	614	0.121*	0.192*
Westbound Right	1	1600	130	299	0	0	130	299	0.081	0.187

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.023*	0.035*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*

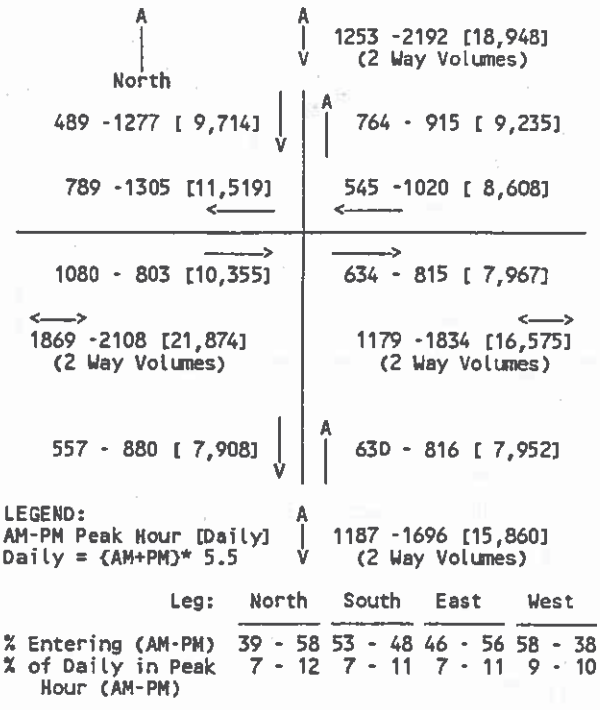
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→	0.662	0.863
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)	B	D

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGENO: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	7 - 11	7 - 11	9 - 10

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

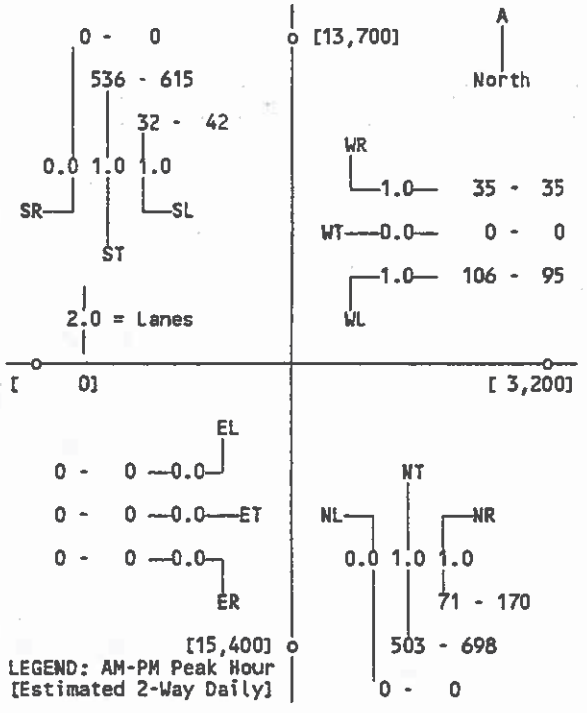
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

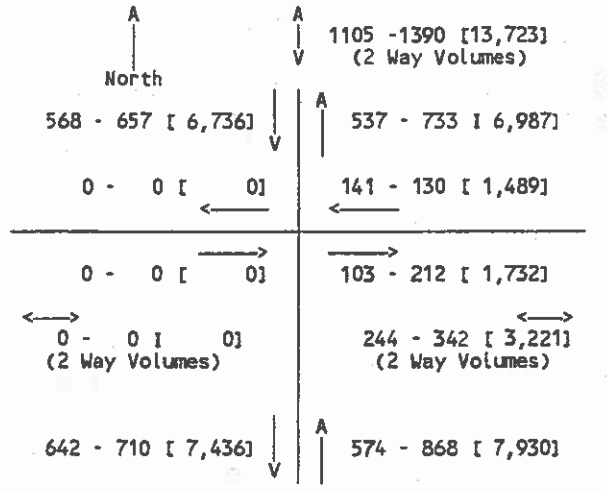
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	503	698	0	0	503	698	0.314	0.436*
Northbound Right	1	1600	71	170	0	0	71	170	0.044	0.106
Southbound Left	1	1600	32	42	0	0	32	42	0.020	0.026*
Southbound Through	1	1600	536	615	0	0	536	615	0.335*	0.384
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	106	95	0	0	106	95	0.066*	0.059*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	35	35	0	0	35	35	0.022	0.022
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.501	0.621
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

Kunzman Associates

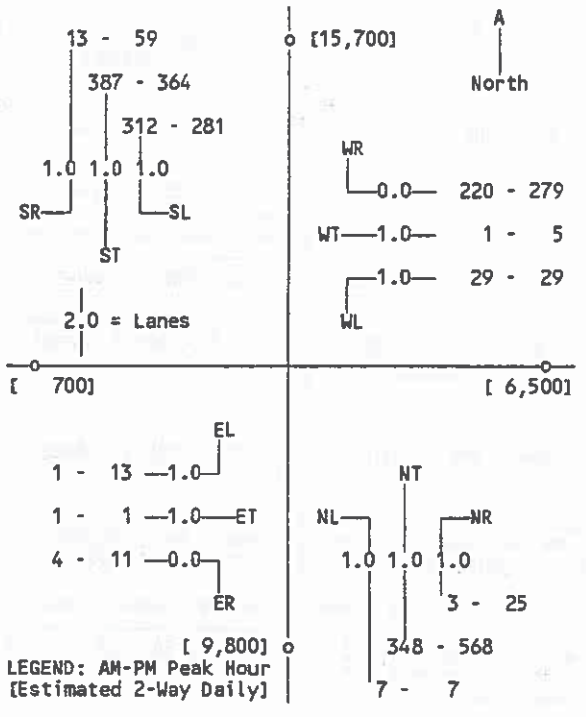
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and RAYBURN ROAD (EW) — COUNT DATE: 11-12-02
LAND USE: YEAR 2007 WITHOUT PROJECT — GEOMETRICS: Improved

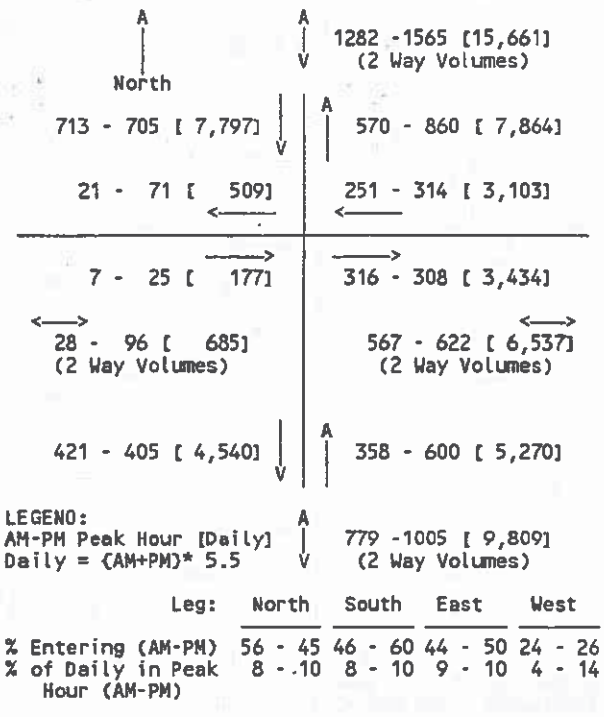
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	7	7	0	0	7	7	0.004	0.004
Northbound Through	1	1600	348	568	0	0	348	568	0.218*	0.355*
Northbound Right	1	1600	3	25	0	0	3	25	0.002	0.016
Southbound Left	1	1600	312	281	0	0	312	281	0.195*	0.176*
Southbound Through	1	1600	387	364	0	0	387	364	0.242	0.228
Southbound Right	1	1600	13	59	0	0	13	59	0.008	0.037
Eastbound Left	1	1600	1	13	0	0	1	13	0.001*	0.008*
Eastbound Through	1	1600	1	1	0	0	1	1	0.003	0.008
Eastbound Right	0	0	4	11	0	0	4	11	0.000	0.000
Westbound Left	1	1600	29	29	0	0	29	29	0.018	0.018
Westbound Through	1	1600	1	5	0	0	1	5	0.138*	0.178*
Westbound Right	0	0	220	279	0	0	220	279	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) →									0.652	0.817
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									B	D

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	56 - 45	46 - 60	44 - 50	24 - 26
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	9 - 10	4 - 14

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

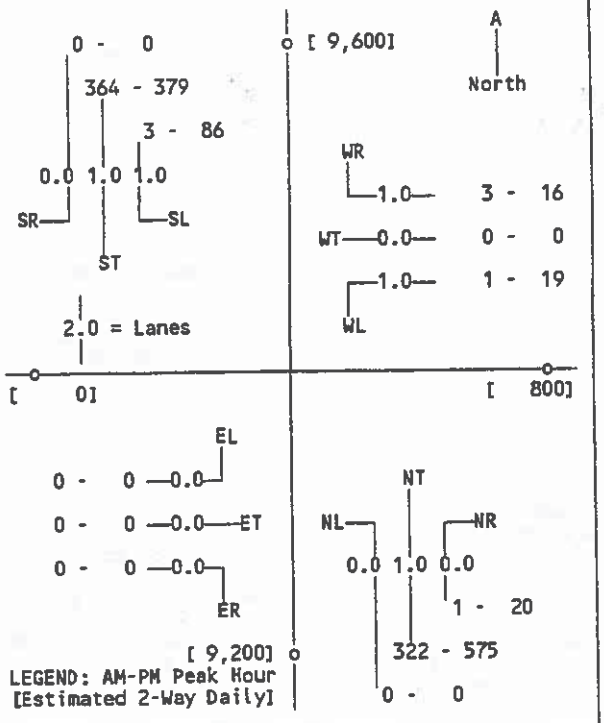
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and CITY RANCH ROAD (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Improved

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	322	575	0	0	322	575	0.202	0.372*
Northbound Right	0	0	1	20	0	0	1	20	0.000	0.000
Southbound Left	1	1600	3	86	0	0	3	86	0.002	0.054*
Southbound Through	1	1600	364	379	0	0	364	379	0.228*	0.237
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	1	19	0	0	1	19	0.001*	0.012*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	3	16	0	0	3	16	0.002	0.010
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.001*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.330	0.538
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

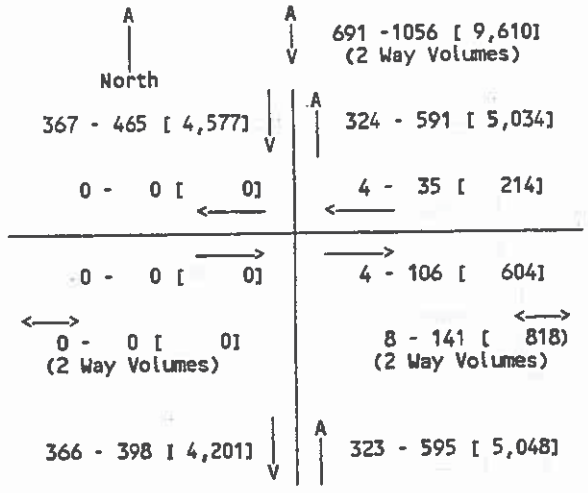
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLDT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	53 - 44	47 - 60	50 - 25	0 - 0
% of Daily in Peak Hour (AM-PM)	7 - 11	7 - 11	1 - 17	0 - 0

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

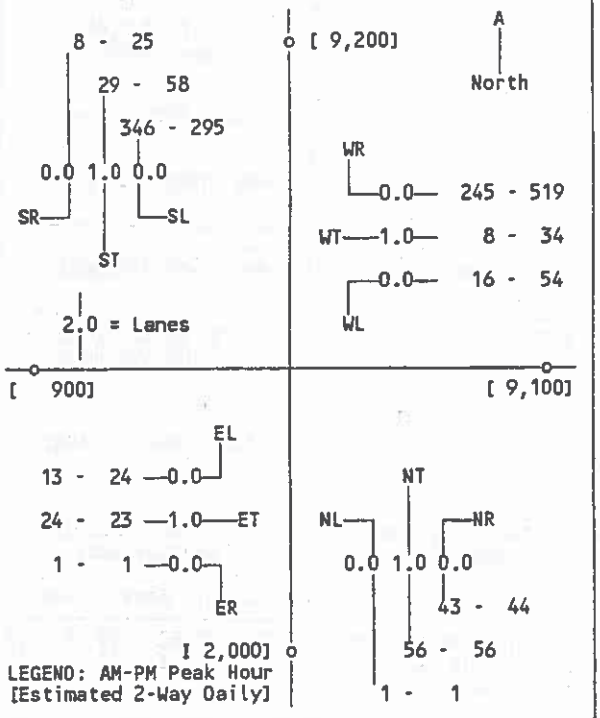
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	1	1	0	0	1	1	0.000*	0.000*
Northbound Through	1	1600	56	56	0	0	56	56	0.063	0.064
Northbound Right	0	0	43	44	0	0	43	44	0.000	0.000
Southbound Left	0	0	346	295	0	0	346	295	0.000	0.000
Southbound Through	1	1600	29	58	0	0	29	58	0.240*	0.236*
Southbound Right	0	0	8	25	0	0	8	25	0.000	0.000
Eastbound Left	0	0	13	24	0	0	13	24	0.000*	0.000*
Eastbound Through	1	1600	24	23	0	0	24	23	0.024	0.030
Eastbound Right	0	0	1	1	0	0	1	1	0.000	0.000
Westbound Left	0	0	16	54	0	0	16	54	0.000	0.000
Westbound Through	1	1600	8	34	0	0	8	34	0.168*	0.379*
Westbound Right	0	0	245	519	0	0	245	519	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.508	0.715
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	C

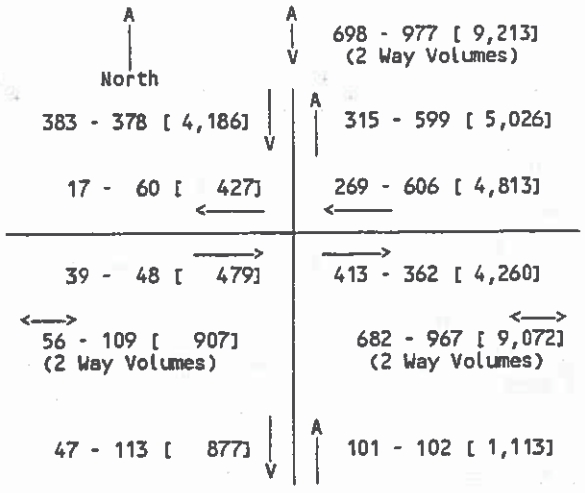
None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

Leg:	North	South	East	West
% Entering (AM-PM)	55 - 39	68 - 48	39 - 63	69 - 44
% of Daily in Peak Hour (AM-PM)	8 - 11	7 - 11	8 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

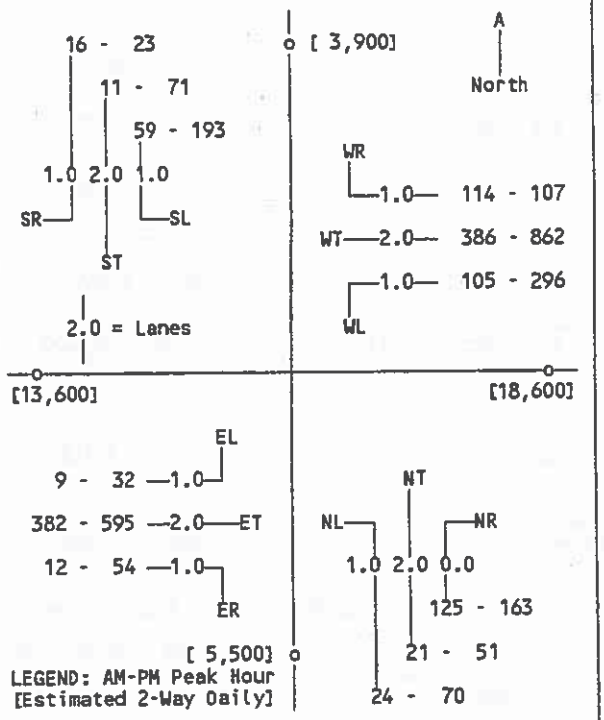
INTERSECTION: 5TH STREET WEST (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-13-02
GEOMETRICS: Existing

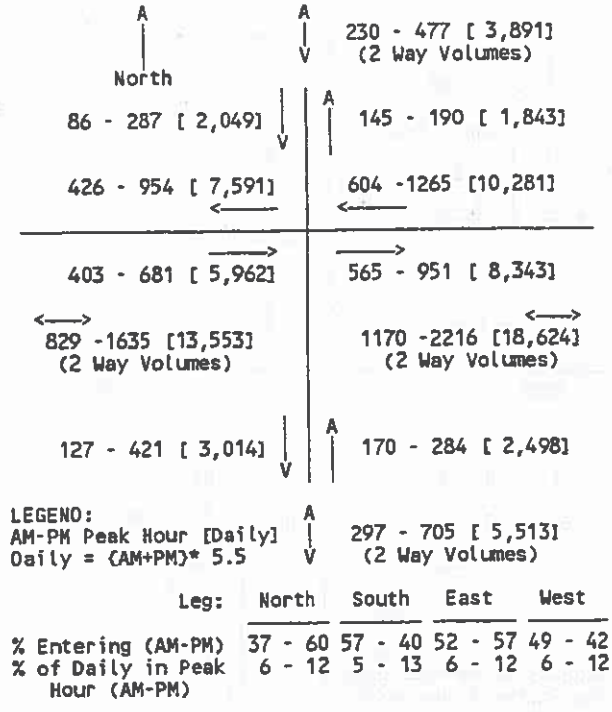
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	24	70	0	0	24	70	0.015	0.044
Northbound Through	2	3200	21	51	0	0	21	51	0.046*	0.067*
Northbound Right	0	0	125	163	0	0	125	163	0.000	0.000
Southbound Left	1	1600	59	193	0	0	59	193	0.037*	0.121*
Southbound Through	2	3200	11	71	0	0	11	71	0.003	0.022
Southbound Right	1	1600	16	23	0	0	16	23	0.010	0.014
Eastbound Left	1	1600	9	32	0	0	9	32	0.006	0.020
Eastbound Through	2	3200	382	595	0	0	382	595	0.119*	0.186*
Eastbound Right	1	1600	12	54	0	0	12	54	0.008	0.034
Westbound Left	1	1600	105	296	0	0	105	296	0.065*	0.185*
Westbound Through	2	3200	386	862	0	0	386	862	0.121	0.269
Westbound Right	1	1600	114	107	0	0	114	107	0.071	0.067
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.367	0.659
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	37 - 60	57 - 40	52 - 57	49 - 42
% of Daily in Peak Hour (AM-PM)	6 - 12	5 - 13	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

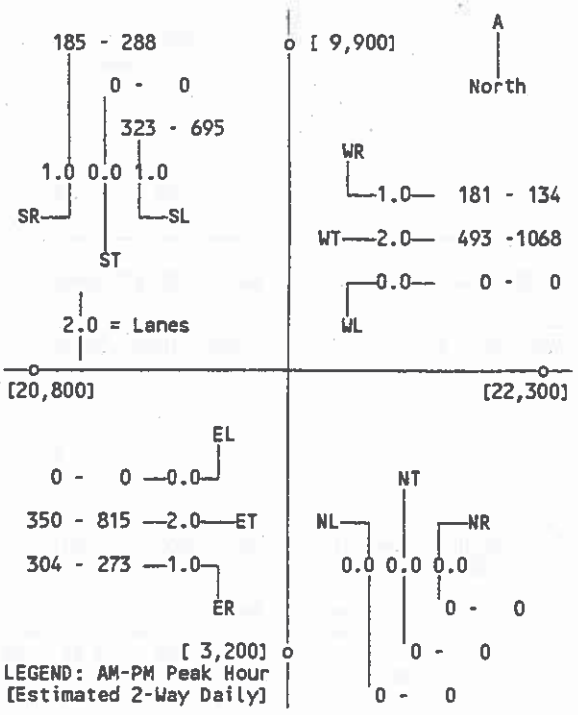
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

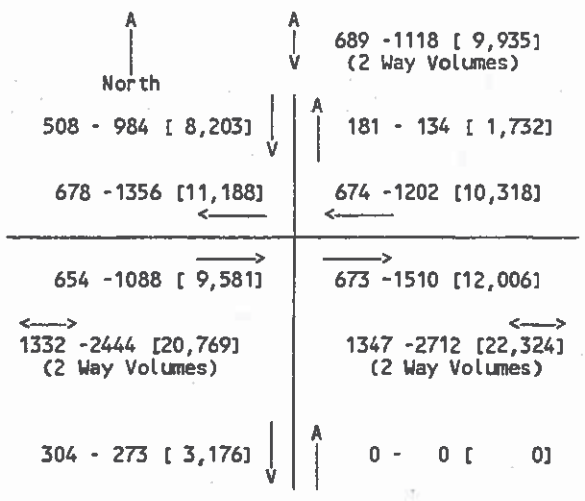
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	323	695	0	0	323	695	0.202*	0.435*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	185	288	0	0	185	288	0.116	0.180
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	350	815	0	0	350	815	0.109	0.255
Eastbound Right	Free 1	1600	304	273	0	0	304	273	0.190	0.171
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	493	1068	0	0	493	1068	0.154*	0.334*
Westbound Right	Free 1	1600	181	134	0	0	181	134	0.113	0.084
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.456	0.869
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	D

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

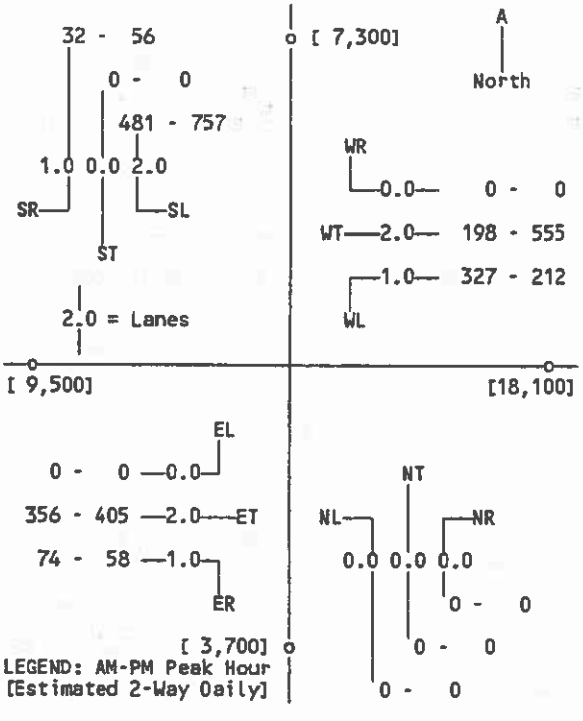
INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

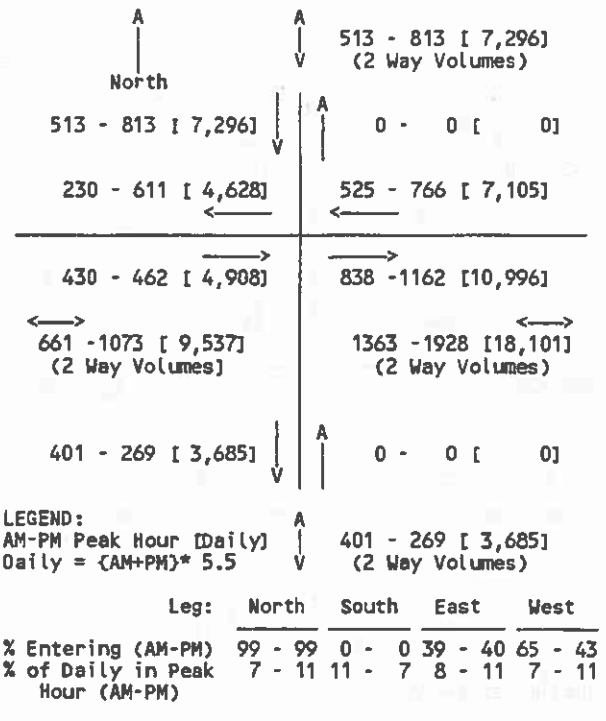
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	481	757	0	0	481	757	0.167*	0.263*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	32	56	0	0	32	56	0.020	0.035
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	356	405	0	0	356	405	0.111*	0.126*
Eastbound Right	Free 1	1600	74	58	0	0	74	58	0.046	0.036
Westbound Left	1	1600	327	212	0	0	327	212	0.204*	0.132*
Westbound Through	2	3200	198	555	0	0	198	555	0.062	0.173
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.582	0.621
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

Kunzman Associates

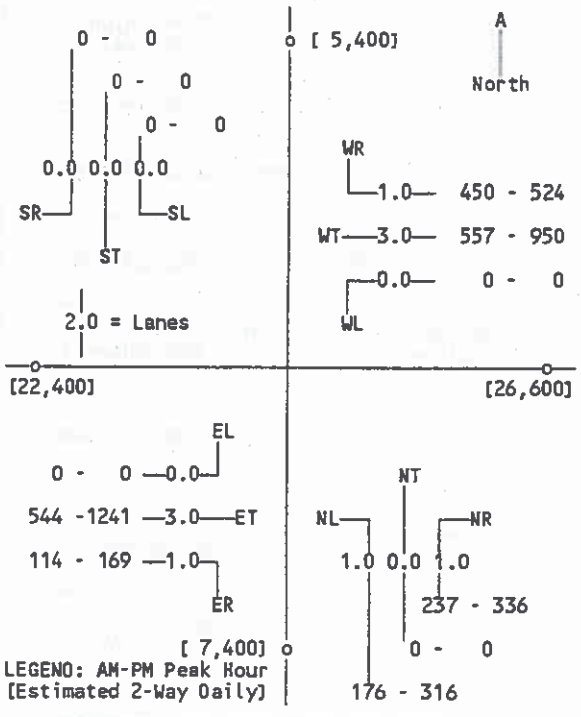
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

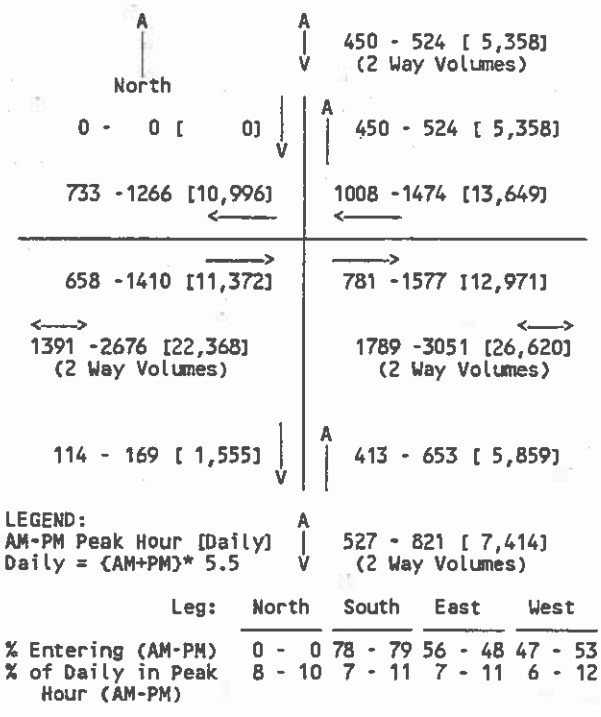
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	176	316	0	0	176	316	0.110*	0.198*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	237	336	0	0	237	336	0.148	0.210
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	544	1241	0	0	544	1241	0.113	0.259*
Eastbound Right	Free 1	1600	114	169	0	0	114	169	0.071	0.106
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	557	950	0	0	557	950	0.116*	0.198
Westbound Right	Free 1	1600	450	524	0	0	450	524	0.281	0.327
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.326	0.557
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

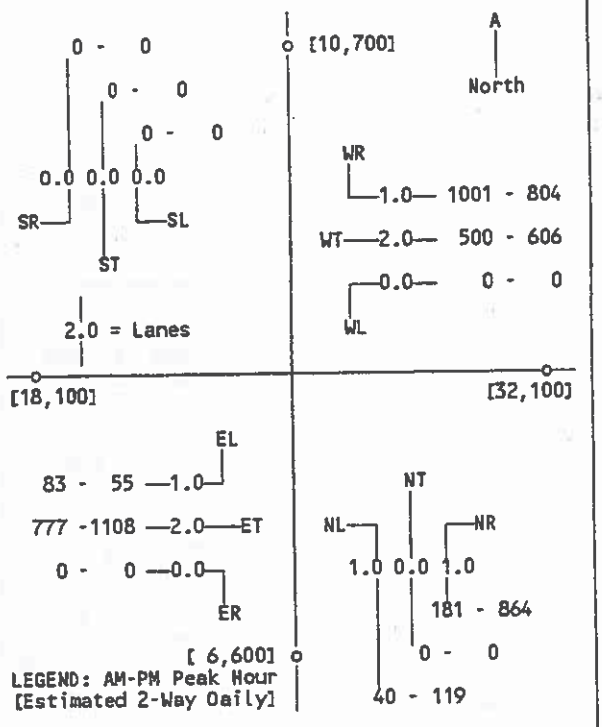
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITHOUT PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

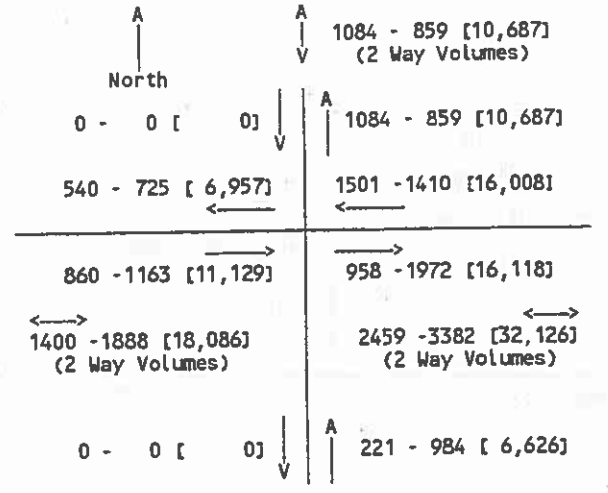
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	40	119	0	0	40	119	0.025*	0.075*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	181	864	0	0	181	864	0.113	0.540
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	83	55	0	0	83	55	0.052	0.034
Eastbound Through	2	3200	777	1108	0	0	777	1108	0.243*	0.346*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	500	606	0	0	500	606	0.156	0.189
Westbound Right	Free 1	1600	1001	804	0	0	1001	804	0.626	0.503
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.368	0.521
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Year 2007 With Project
(Avergae Inflow of Material, 3,613 Tons per Day)

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

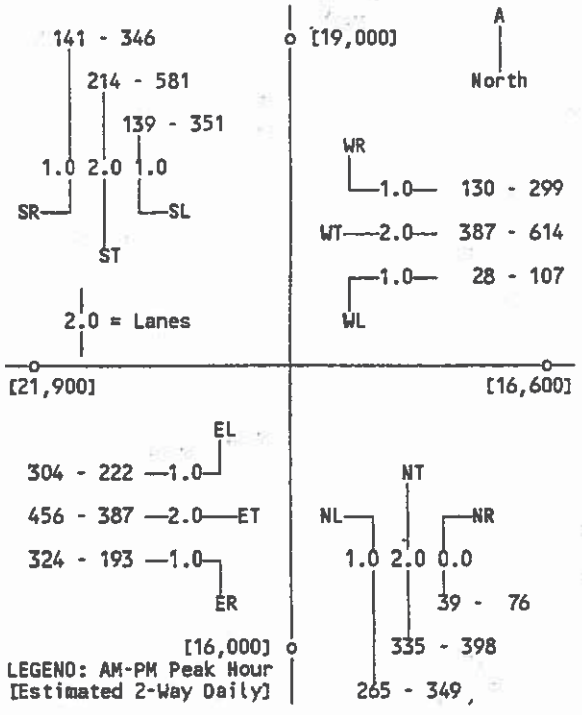
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-14-02
GEOMETRICS: Existing

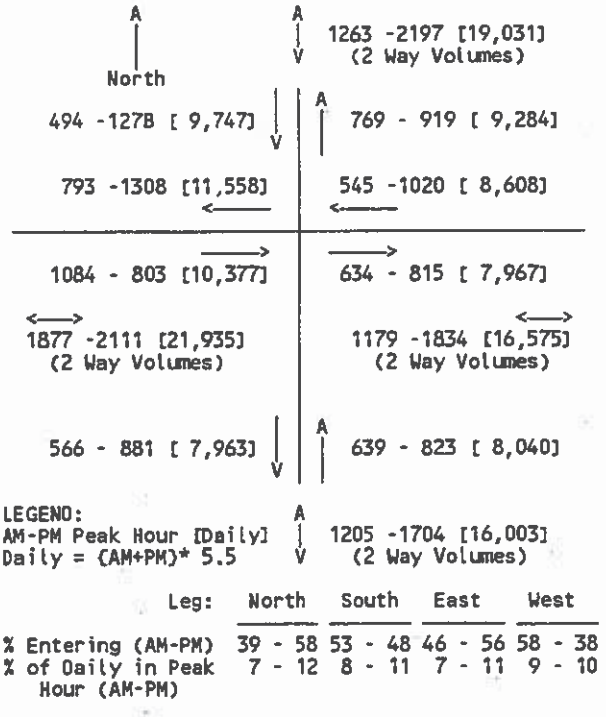
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	261	346	4	3	265	349	0.166*	0.218*
Northbound Through	2	3200	330	394	5	4	335	398	0.117	0.148
Northbound Right	0	0	39	76	0	0	39	76	0.000	0.000
Southbound Left	1	1600	139	351	0	0	139	351	0.087	0.219
Southbound Through	2	3200	209	580	5	1	214	581	0.067*	0.182*
Southbound Right	1	1600	141	346	0	0	141	346	0.088	0.216
Eastbound Left	1	1600	304	222	0	0	304	222	0.190*	0.139*
Eastbound Through	2	3200	456	387	0	0	456	387	0.142	0.121
Eastbound Right	1	1600	320	193	4	0	324	193	0.203	0.121
Westbound Left	1	1600	28	107	0	0	28	107	0.018	0.067
Westbound Through	2	3200	387	614	0	0	387	614	0.121*	0.192*
Westbound Right	1	1600	130	299	0	0	130	299	0.081	0.187

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.021*	0.034*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)		0.665	0.865
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		B	D

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	8 - 11	7 - 11	9 - 10

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

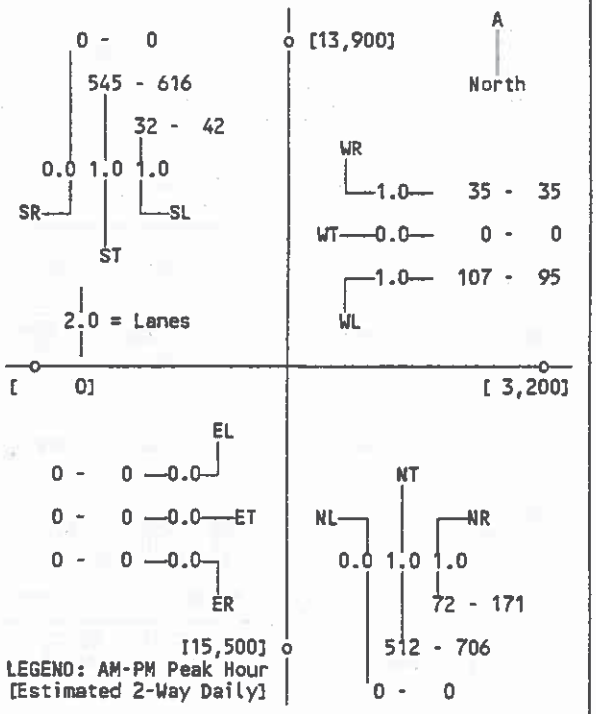
INTERSECTION: TIERRA SUBIOA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

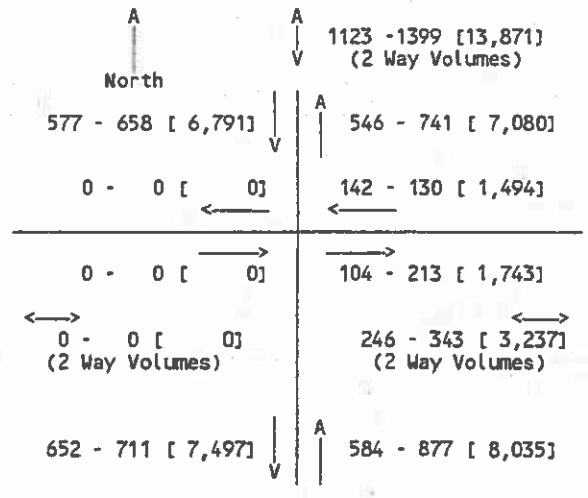
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	503	698	9	8	512	706	0.320	0.441*
Northbound Right	1	1600	71	170	1	1	72	171	0.045	0.107
Southbound Left	1	1600	32	42	0	0	32	42	0.020	0.026*
Southbound Through	1	1600	536	615	9	1	545	616	0.341*	0.385
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	106	95	1	0	107	95	0.067*	0.059*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	35	35	0	0	35	35	0.022	0.022
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.508	0.626
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

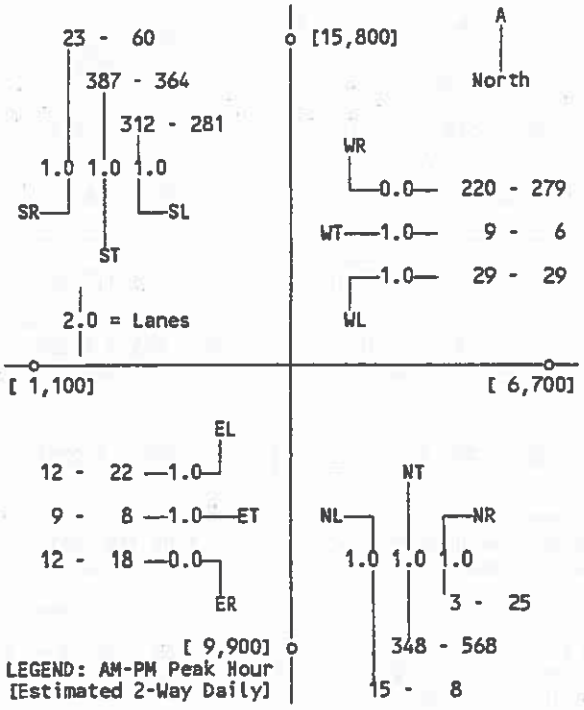
INTERSECTION: TIERRA SUBIDA AVENUE (NS) and RAYBURN ROAD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Improved

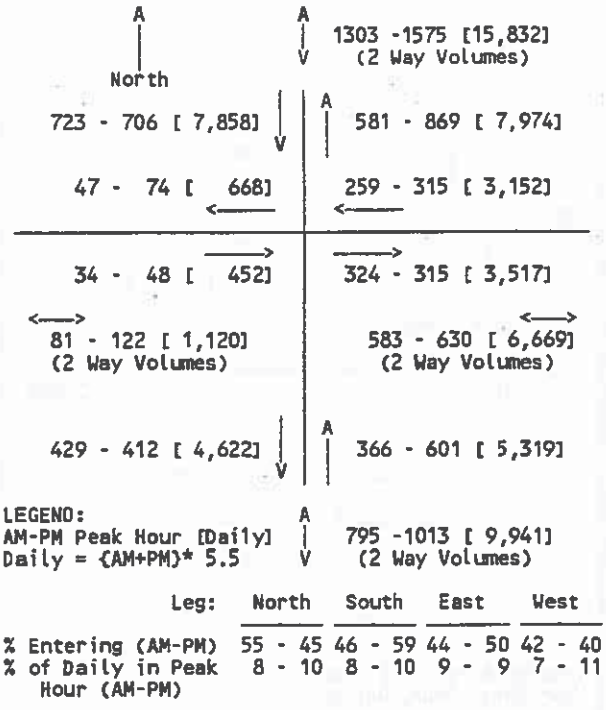
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	7	7	8	1	15	8	0.009	0.005
Northbound Through	1	1600	348	568	0	0	348	568	0.218*	0.355*
Northbound Right	1	1600	3	25	0	0	3	25	0.002	0.016
Southbound Left	1	1600	312	281	0	0	312	281	0.195*	0.176*
Southbound Through	1	1600	387	364	0	0	387	364	0.242	0.228
Southbound Right	1	1600	13	59	10	1	23	60	0.015	0.037
Eastbound Left	1	1600	1	13	11	9	12	22	0.008*	0.014*
Eastbound Through	1	1600	1	1	8	7	9	8	0.013	0.016
Eastbound Right	0	0	4	11	8	7	12	18	0.000	0.000
Westbound Left	1	1600	29	29	0	0	29	29	0.018	0.018
Westbound Through	1	1600	1	5	8	1	9	6	0.143*	0.178*
Westbound Right	0	0	220	279	0	0	220	279	0.000	0.000
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.664	0.823
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									B	D

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	55 - 45	46 - 59	44 - 50	42 - 40
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	9 - 9	7 - 11

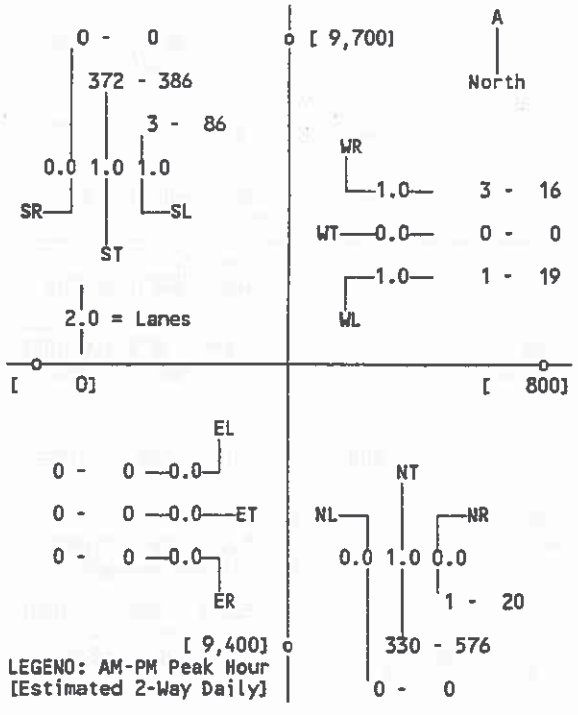
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and CITY RANCH ROAD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Improved

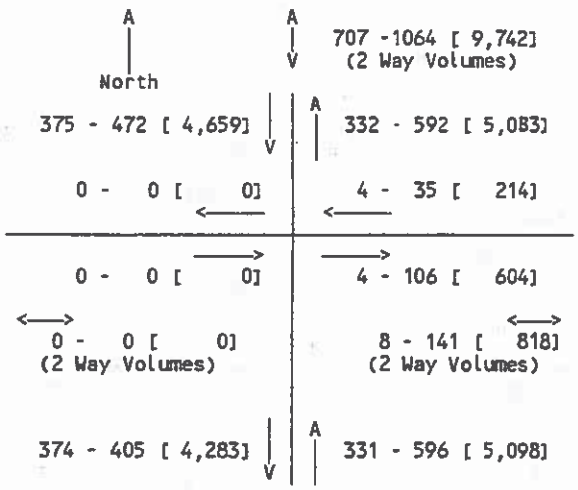
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	322	575	8	1	330	576	0.207	0.372*
Northbound Right	0	0	1	20	0	0	1	20	0.000	0.000
Southbound Left	1	1600	3	86	0	0	3	86	0.002	0.054*
Southbound Through	1	1600	364	379	8	7	372	386	0.233*	0.241
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	1	19	0	0	1	19	0.001*	0.012*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	3	16	0	0	3	16	0.002	0.010
Northbound Right Turn Adjustment		None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.							0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.001*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.335	0.538
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

A
705 -1001 [9,381]
(2 Way Volumes)

Leg:	North	South	East	West
% Entering (AM-PM)	53 - 44	47 - 60	50 - 25	0 - 0
% of Daily in Peak Hour (AM-PM)	7 - 11	8 - 11	1 - 17	0 - 0

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

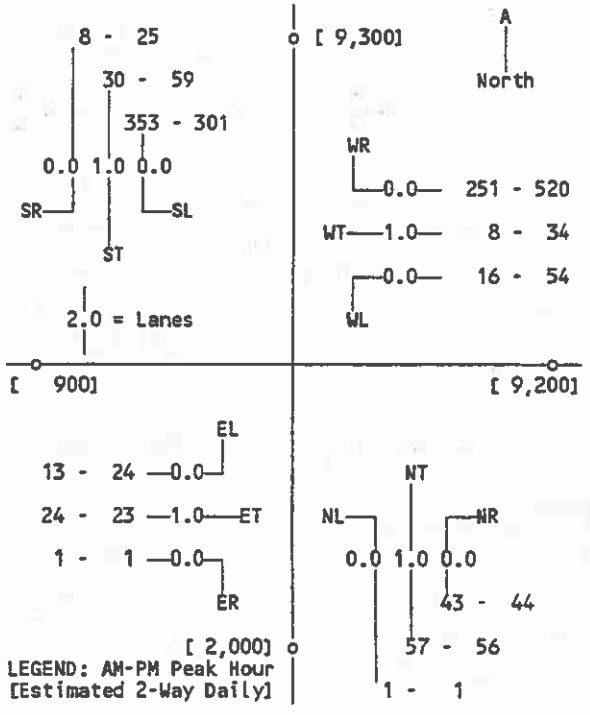
COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	1	1	0	0	1	1	0.000*	0.000*
Northbound Through	1	1600	56	56	1	0	57	56	0.063	0.064
Northbound Right	0	0	43	44	0	0	43	44	0.000	0.000
Southbound Left	0	0	346	295	7	6	353	301	0.000	0.000
Southbound Through	1	1600	29	58	1	1	30	59	0.245*	0.241*
Southbound Right	0	0	8	25	0	0	8	25	0.000	0.000
Eastbound Left	0	0	13	24	0	0	13	24	0.000*	0.000*
Eastbound Through	1	1600	24	23	0	0	24	23	0.024	0.030
Eastbound Right	0	0	1	1	0	0	1	1	0.000	0.000
Westbound Left	0	0	16	54	0	0	16	54	0.000	0.000
Westbound Through	1	1600	8	34	0	0	8	34	0.172*	0.379*
Westbound Right	0	0	245	519	6	1	251	520	0.000	0.000

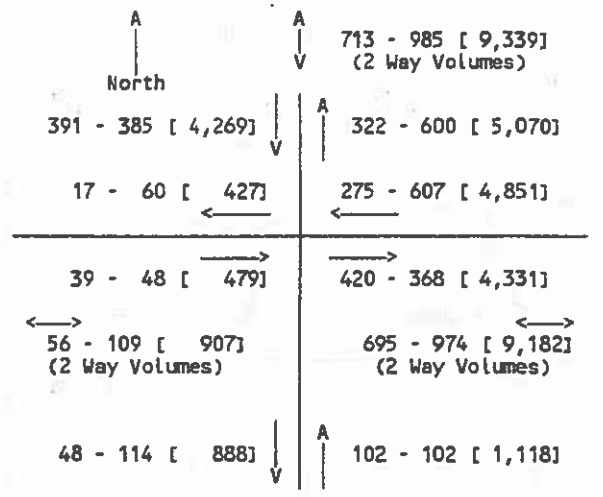
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*

INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→	D.517	0.720
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)	A	C

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



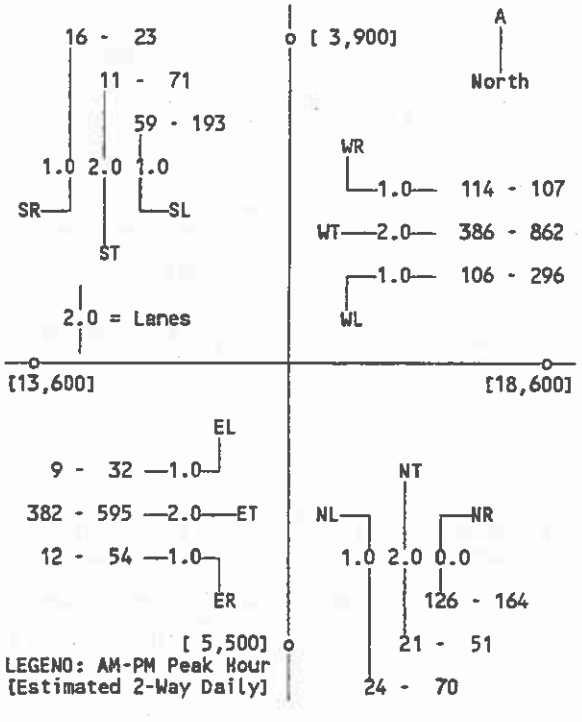
Leg:	North	South	East	West
% Entering (AM-PM)	55 - 39	68 - 47	40 - 62	69 - 44
% of Daily in Peak Hour (AM-PM)	8 - 11	7 - 11	8 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

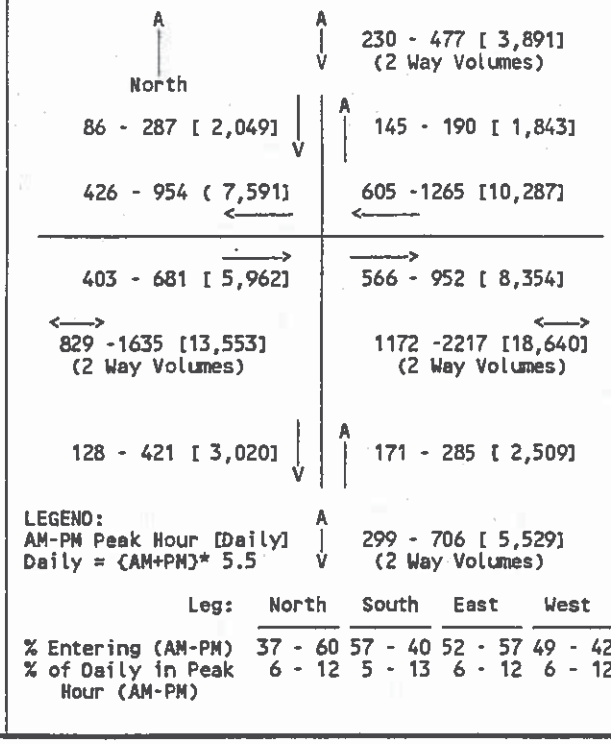
INTERSECTION: 5TH STREET WEST (NS) and PALMDALE BOULEVARD (EW) — COUNT DATE: 11-13-02
LAND USE: YEAR 2007 WITH PROJECT — GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	24	70	0	0	24	70	0.015	0.044
Northbound Through	2	3200	21	51	0	0	21	51	0.046*	0.067*
Northbound Right	0	0	125	163	1	1	126	164	0.000	0.000
Southbound Left	1	1600	59	193	0	0	59	193	0.037*	0.121*
Southbound Through	2	3200	11	71	0	0	11	71	0.003	0.022
Southbound Right	1	1600	16	23	0	0	16	23	0.010	0.014
Eastbound Left	1	1600	9	32	0	0	9	32	0.006	0.020
Eastbound Through	2	3200	382	595	0	0	382	595	0.119*	0.186*
Eastbound Right	1	1600	12	54	0	0	12	54	0.008	0.034
Westbound Left	1	1600	105	296	1	0	106	296	0.066*	0.185*
Westbound Through	2	3200	386	862	0	0	386	862	0.121	0.269
Westbound Right	1	1600	114	107	0	0	114	107	0.071	0.067
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.368	0.659
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	37 - 60	57 - 40	52 - 57	49 - 42
% of Daily in Peak Hour (AM-PM)	6 - 12	5 - 13	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

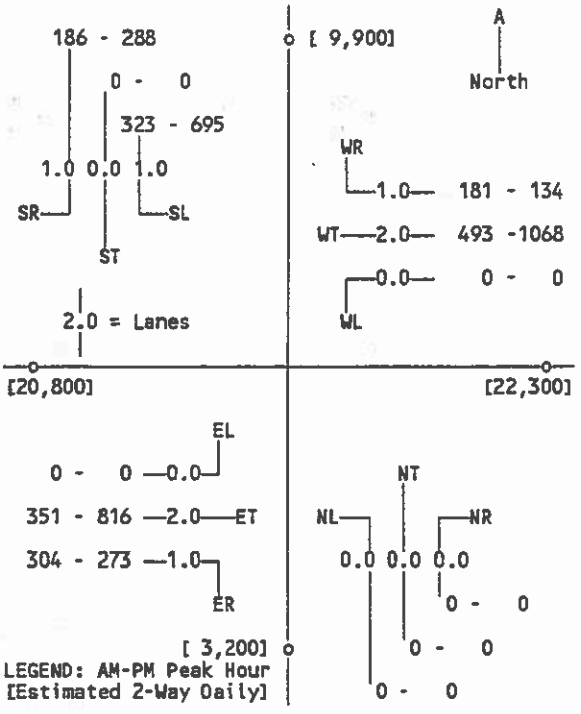
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	323	695	0	0	323	695	0.202*	0.435*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	185	288	1	0	186	288	0.116	0.180
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	350	815	1	1	351	816	0.110	0.255
Eastbound Right	Free 1	1600	304	273	0	0	304	273	0.190	0.171
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	493	1068	0	0	493	1068	0.154*	0.334*
Westbound Right	Free 1	1600	181	134	0	0	181	134	0.113	0.084

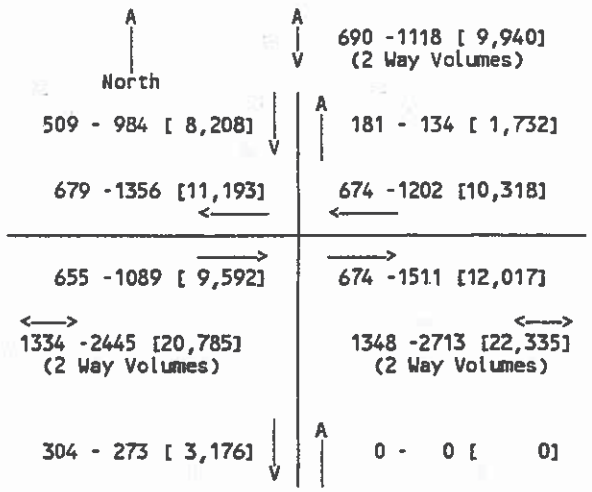
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*

INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——————>	0.456	0.869
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)	A	D

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

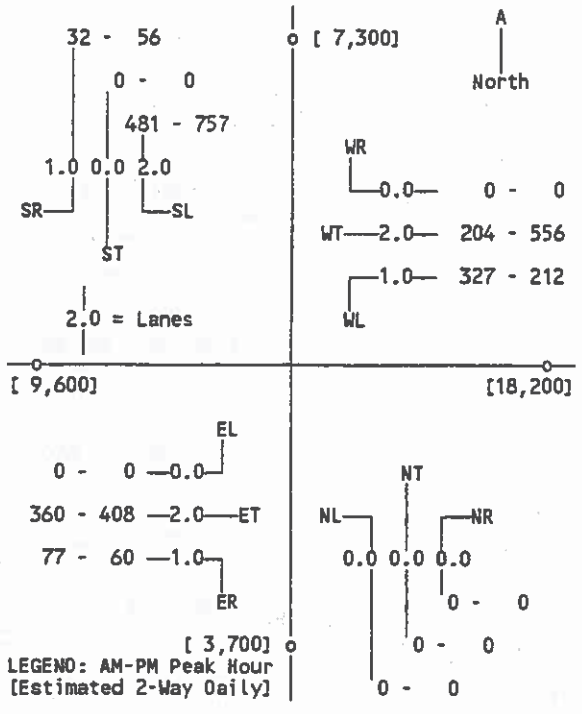
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	481	757	0	0	481	757	0.167*	0.263*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	32	56	0	0	32	56	0.020	0.035
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	356	405	4	3	360	408	0.113*	0.127*
Eastbound Right	Free 1	1600	74	58	3	2	77	60	0.048	0.037
Westbound Left	1	1600	327	212	0	0	327	212	0.204*	0.132*
Westbound Through	2	3200	198	555	6	1	204	556	0.064	0.174
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000

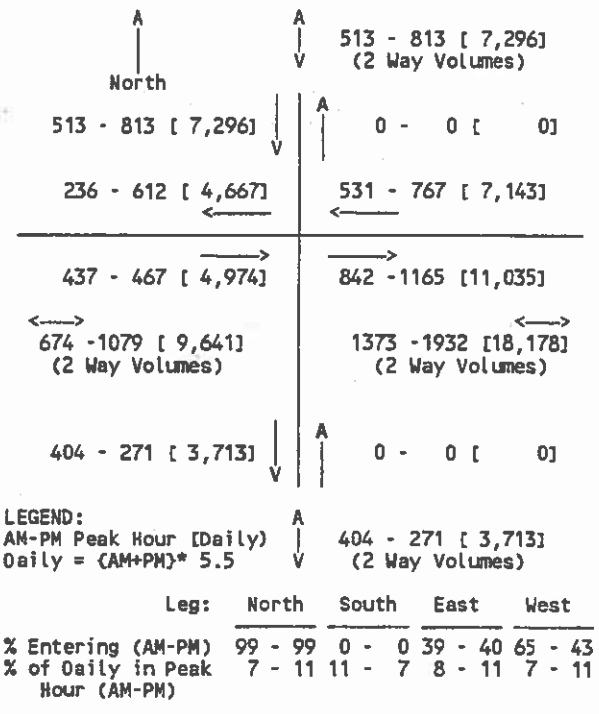
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*

INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——————>	0.584	0.622
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)	A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

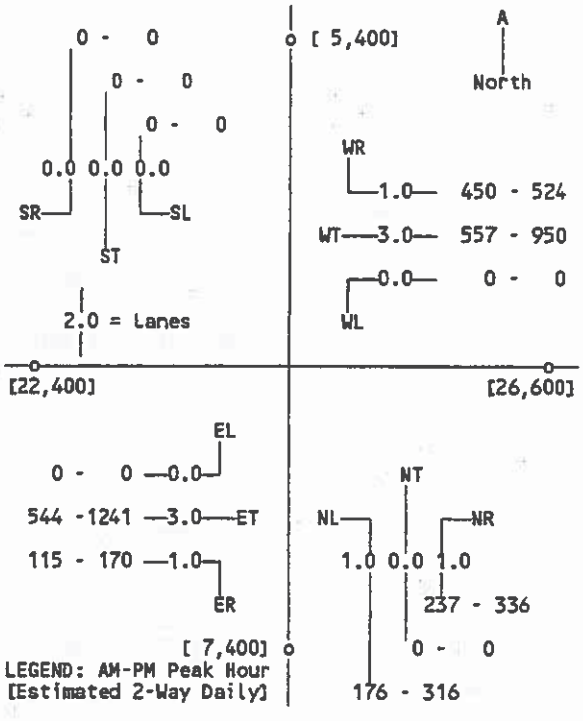
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

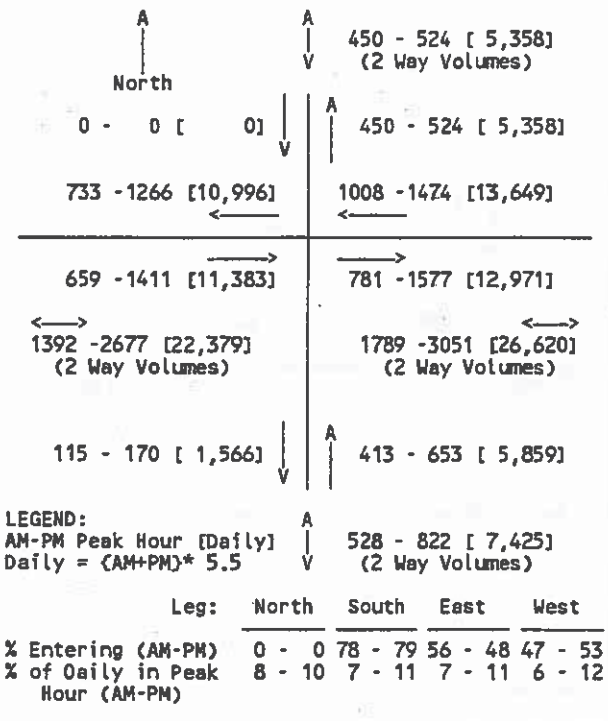
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	176	316	0	0	176	316	0.110*	0.198*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	237	336	0	0	237	336	0.148	0.210
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	544	1241	0	0	544	1241	0.113	0.259*
Eastbound Right	Free 1	1600	114	169	1	1	115	170	0.072	0.106
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	557	950	0	0	557	950	0.116*	0.198
Westbound Right	Free 1	1600	450	524	0	0	450	524	0.281	0.327
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.326	0.557
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

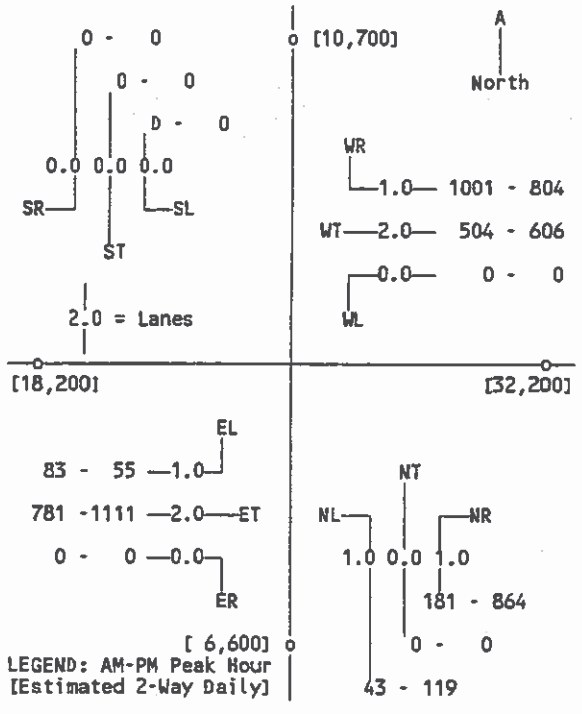
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

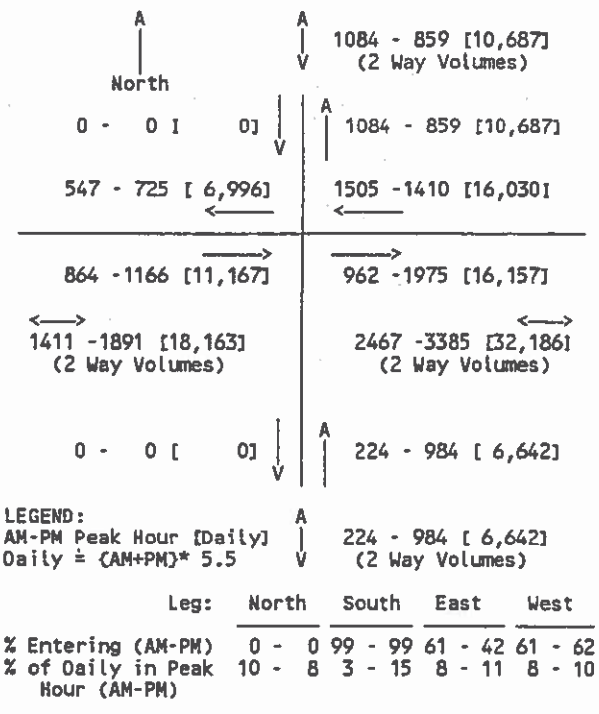
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	40	119	3	0	43	119	0.027*	0.075*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	181	864	0	0	181	864	0.113	0.540
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	83	55	0	0	83	55	0.052	0.034
Eastbound Through	2	3200	777	1108	4	3	781	1111	0.244*	0.347*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	500	606	4	0	504	606	0.157	0.189
Westbound Right	Free 1	1600	1001	804	0	0	1001	804	0.626	0.503
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.371	0.522
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	A

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Existing Plus Project
(Peak Inflow of Material, 5,548 Tons per Day)

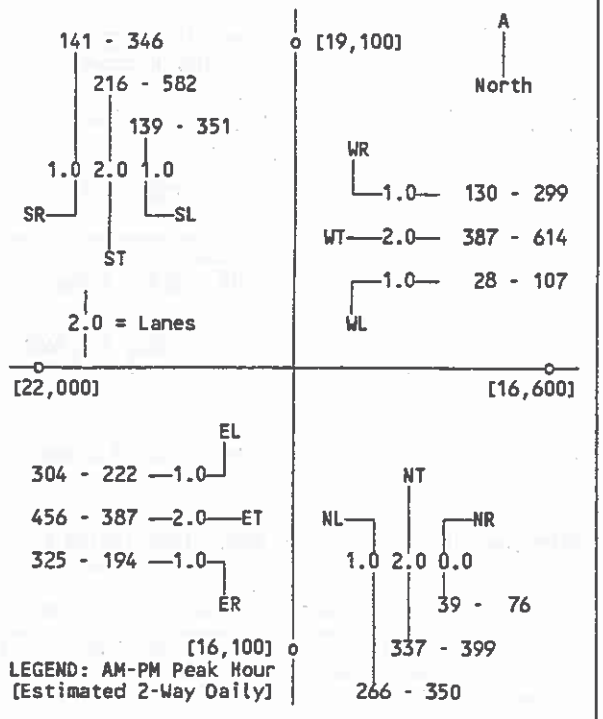
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

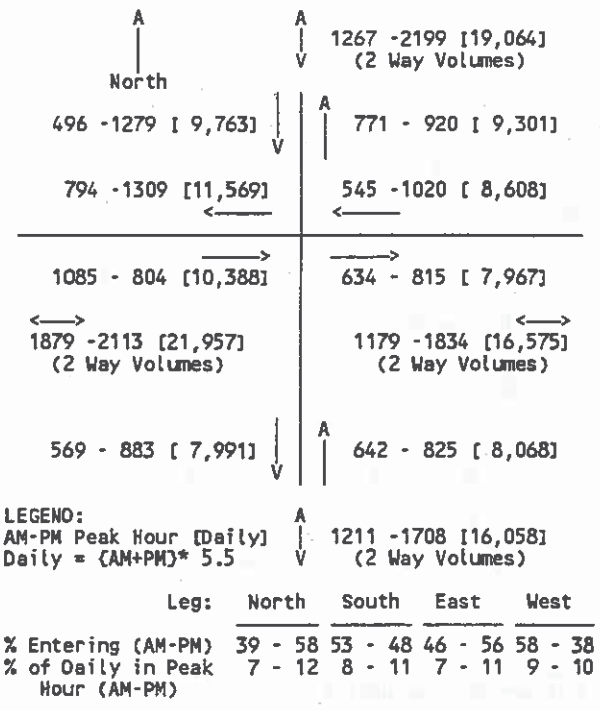
COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME [PM]	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO [PM]
Northbound Left	1	1600	261	346	5	4	266	350	0.166*	0.219*
Northbound Through	2	3200	330	394	7	5	337	399	0.117	0.149
Northbound Right	0	0	39	76	0	0	39	76	0.000	0.000
Southbound Left	1	1600	139	351	0	0	139	351	0.087	0.219
Southbound Through	2	3200	209	580	7	2	216	582	0.068*	0.182*
Southbound Right	1	1600	141	346	0	0	141	346	0.088	0.216
Eastbound Left	1	1600	304	222	0	0	304	222	0.190*	0.139*
Eastbound Through	2	3200	456	387	0	0	456	387	0.142	0.121
Eastbound Right	1	1600	320	193	5	1	325	194	0.203	0.121
Westbound Left	1	1600	28	107	0	0	28	107	0.018	0.067
Westbound Through	2	3200	387	614	0	0	387	614	0.121*	0.192*
Westbound Right	1	1600	130	299	0	0	130	299	0.081	0.187
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.020*	0.034*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.665	0.866
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									B	D

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	39 - 58	53 - 48	46 - 56	58 - 38
% of Daily in Peak Hour (AM-PM)	7 - 12	8 - 11	7 - 11	9 - 10

Kunzman Associates

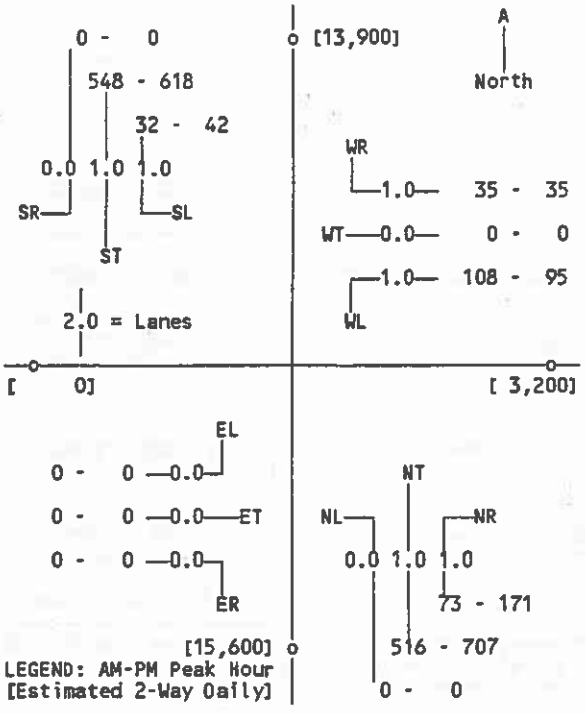
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIOA AVENUE (NS) and 5TH STREET WEST (EW)
LAND USE: YEAR 2007 WITH PROJECT

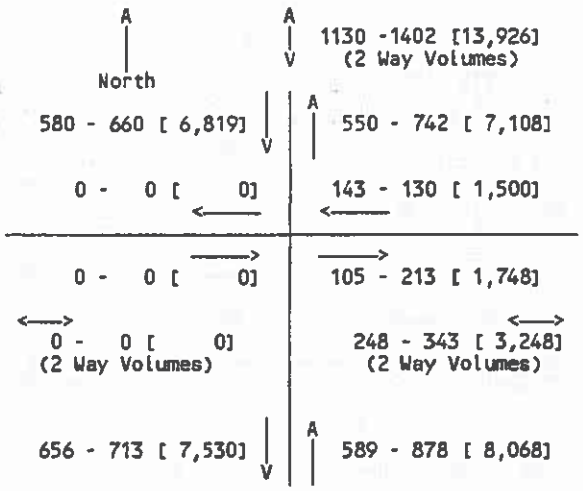
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Northbound Through	1	1600	503	698	13	9	516	707	0.322	0.442*
Northbound Right	1	1600	71	170	2	1	73	171	0.046	0.107
Southbound Left	1	1600	32	42	0	0	32	42	0.020	0.026*
Southbound Through	1	1600	536	615	12	3	548	618	0.343*	0.386
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	1	1600	106	95	2	0	108	95	0.067*	0.059*
Westbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Right	1	1600	35	35	0	0	35	35	0.022	0.022
Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.								0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.510	0.627
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	51 - 47	47 - 55	58 - 38	0 - 0
% of Daily in Peak Hour (AM-PM)	8 - 10	8 - 10	8 - 11	0 - 0

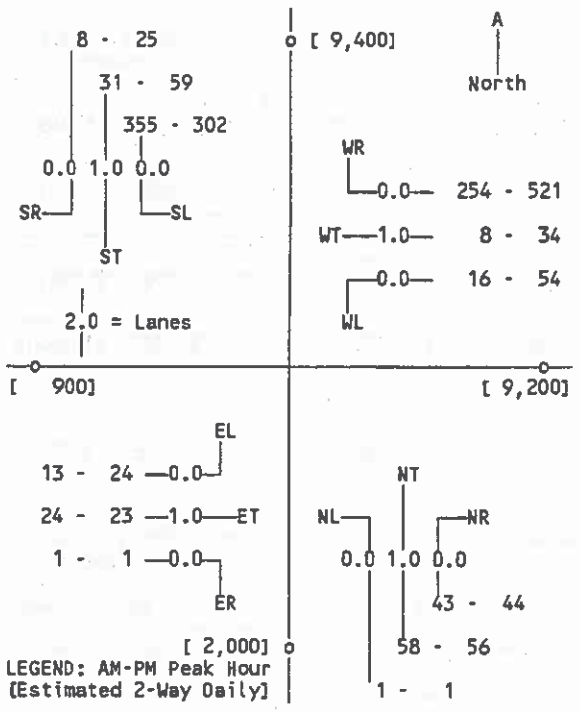
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: TIERRA SUBIDA AVENUE (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

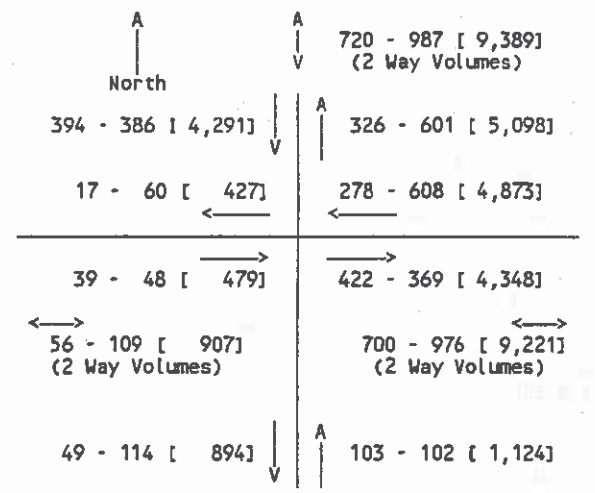
COUNT DATE: 11-14-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	1	1	0	0	1	1	0.000*	0.000*
Northbound Through	1	1600	56	56	2	0	58	56	0.064	0.064
Northbound Right	0	0	43	44	0	0	43	44	0.000	0.000
Southbound Left	0	0	346	295	9	7	355	302	0.000	0.000
Southbound Through	1	1600	29	58	2	1	31	59	0.246*	0.241*
Southbound Right	0	0	8	25	0	0	8	25	0.000	0.000
Eastbound Left	0	0	13	24	0	0	13	24	0.000*	0.000*
Eastbound Through	1	1600	24	23	0	0	24	23	0.024	0.030
Eastbound Right	0	0	1	1	0	0	1	1	0.000	0.000
Westbound Left	0	0	16	54	0	0	16	54	0.000	0.000
Westbound Through	1	1600	8	34	0	0	8	34	0.174*	0.380*
Westbound Right	0	0	245	519	9	2	254	521	0.000	0.000
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.520	0.721
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	C

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	55 - 39	68 - 47	40 - 62	69 - 44
% of Daily in Peak Hour (AM-PM)	8 - 11	8 - 11	8 - 11	6 - 12

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

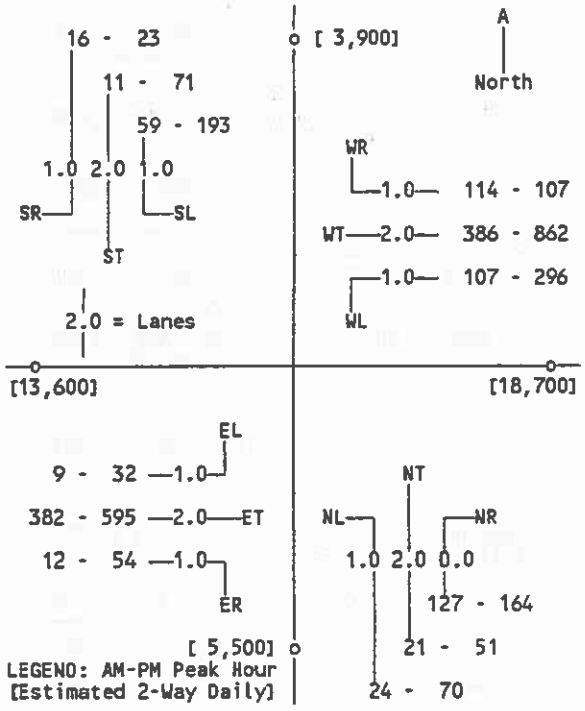
INTERSECTION: 5TH STREET WEST (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-13-02
GEOMETRICS: Existing

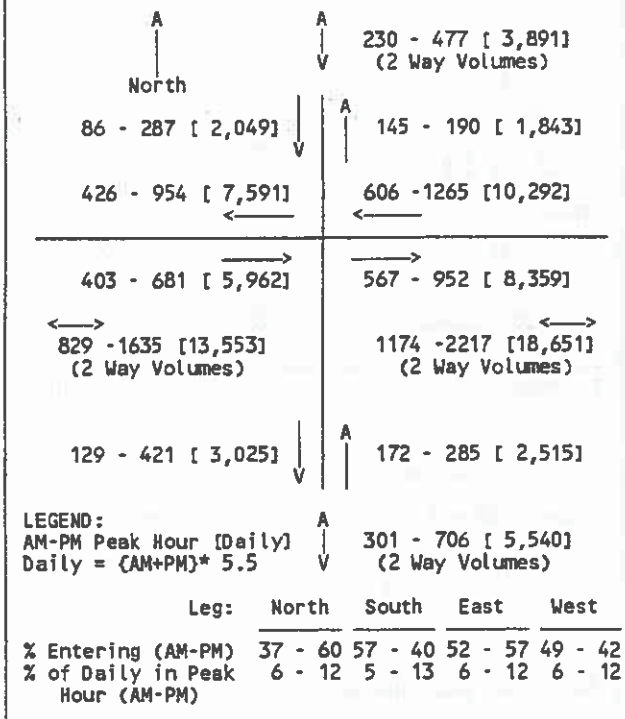
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	24	70	0	0	24	70	0.015	0.044
Northbound Through	2	3200	21	51	0	0	21	51	0.046*	0.067*
Northbound Right	0	0	125	163	2	1	127	164	0.000	0.000
Southbound Left	1	1600	59	193	0	0	59	193	0.037*	0.121*
Southbound Through	2	3200	11	71	0	0	11	71	0.003	0.022
Southbound Right	1	1600	16	23	0	0	16	23	0.010	0.014
Eastbound Left	1	1600	9	32	0	0	9	32	0.006	0.020
Eastbound Through	2	3200	382	595	0	0	382	595	0.119*	0.186*
Eastbound Right	1	1600	12	54	0	0	12	54	0.008	0.034
Westbound Left	1	1600	105	296	2	0	107	296	0.067*	0.185*
Westbound Through	2	3200	386	862	0	0	386	862	0.121	0.269
Westbound Right	1	1600	114	107	0	0	114	107	0.071	0.067
Northbound Right Turn Adjustment									0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *)									0.369	0.659
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	37 - 60	57 - 40	52 - 57	49 - 42
% of Daily in Peak Hour (AM-PM)	6 - 12	5 - 13	6 - 12	6 - 12

Kunzman Associates

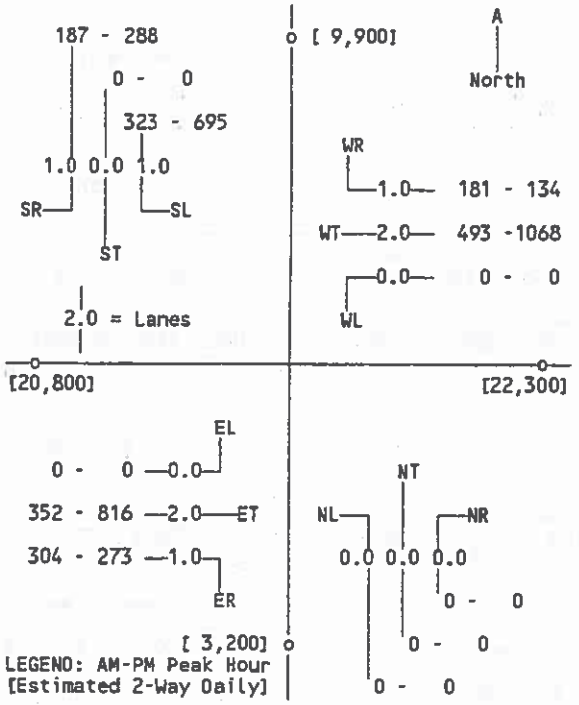
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

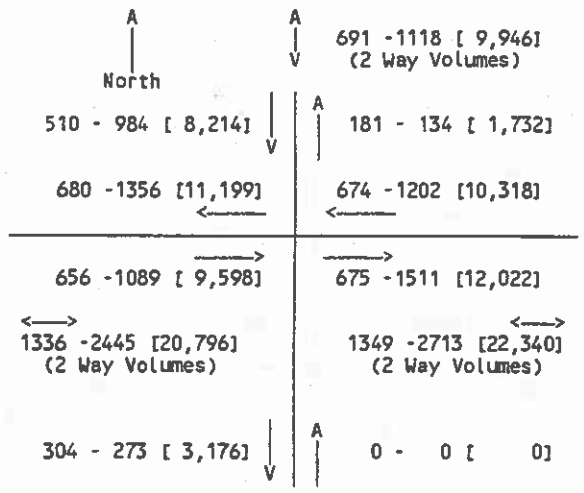
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	1	1600	323	695	0	0	323	695	0.202*	0.435*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	Free 1	1600	185	288	2	0	187	288	0.117	0.180
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Eastbound Through	2	3200	350	815	2	1	352	816	0.110	0.255
Eastbound Right	Free 1	1600	304	273	0	0	304	273	0.190	0.171
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Through	2	3200	493	1068	0	0	493	1068	0.154*	0.334*
Westbound Right	Free 1	1600	181	134	0	0	181	134	0.113	0.084
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——>									0.456	0.869
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	D

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



LEGEND: AM-PM Peak Hour
[Estimated 2-Way Daily]

PLOT OF INTERSECTION LEG VOLUMES



LEGEND:
AM-PM Peak Hour [Daily]
Daily = (AM+PM)* 5.5

A
V
304 - 273 [3,176]
(2 Way Volumes)

Leg:	North	South	East	West
% Entering (AM-PM)	74 - 88	0 - 0	50 - 44	49 - 45
% of Daily in Peak Hour (AM-PM)	7 - 11	10 - 9	6 - 12	6 - 12

Kunzman Associates

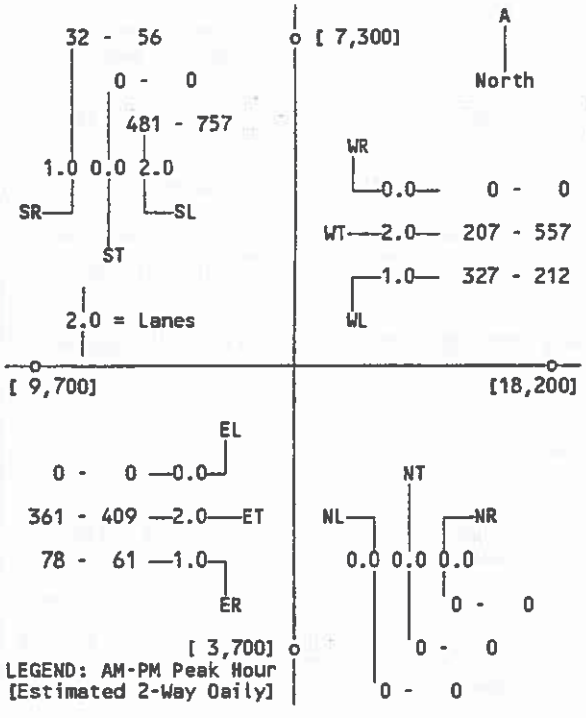
INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

INTERSECTION: SR-14 FREEWAY SB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

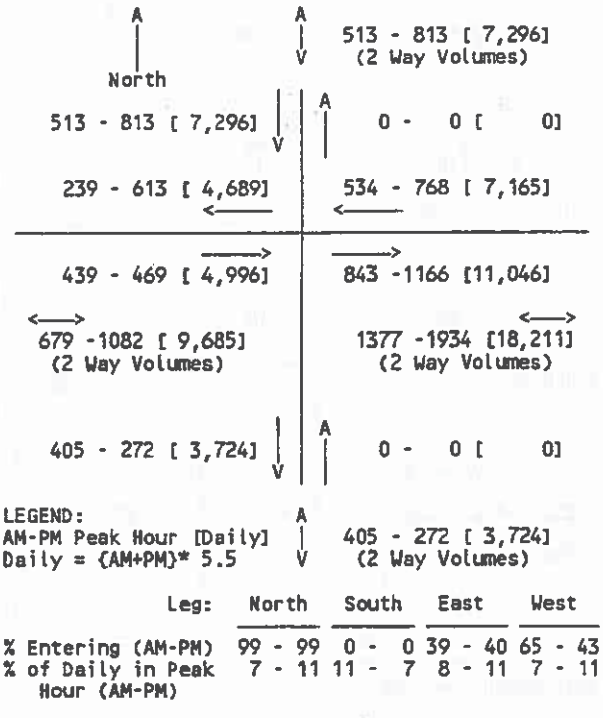
COUNT DATE: 11-12-02
GEOMETRICS: Existing

MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Northbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Left	2	2880	481	757	0	0	481	757	0.167*	0.263*
Southbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Right	1	1600	32	56	0	0	32	56	0.020	0.035
Eastbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Through	2	3200	356	405	5	4	361	409	0.113*	0.128*
Eastbound Right	Free 1	1600	74	58	4	3	78	61	0.049	0.038
Westbound Left	1	1600	327	212	0	0	327	212	0.204*	0.132*
Westbound Through	2	3200	198	555	9	2	207	557	0.065	0.174
Westbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right Turn Adjustment			None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.						0.000*	0.000*
Southbound Right Turn Adjustment									0.000*	0.000*
Eastbound Right Turn Adjustment									0.000*	0.000*
Westbound Right Turn Adjustment									0.000*	0.000*
Clearance Interval									0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→									0.584	0.623
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)									A	B

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	99 - 99	0 - 0	39 - 40	65 - 43
% of Daily in Peak Hour (AM-PM)	7 - 11	11 - 7	8 - 11	7 - 11

Kunzman Associates

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

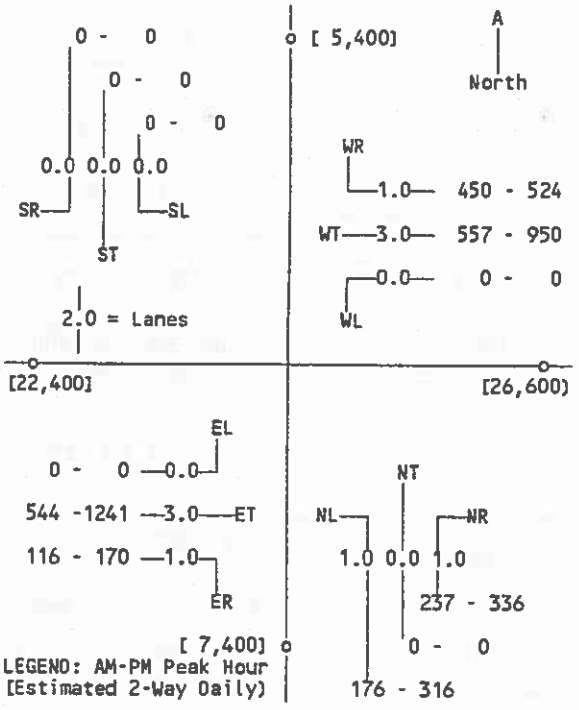
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and PALMDALE BOULEVARD (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT OATE: 11-12-02
GEOMETRICS: Existing

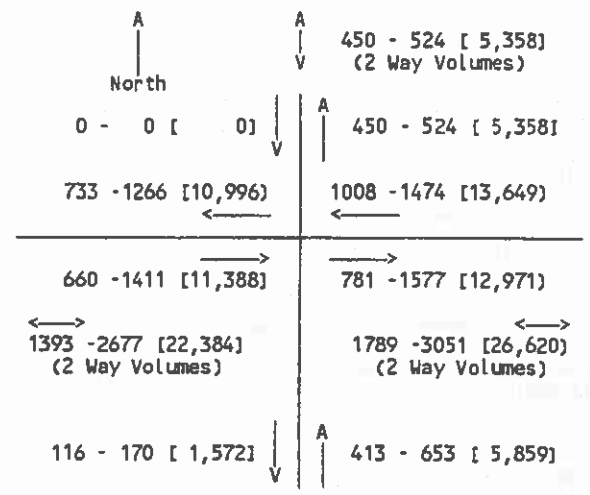
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	176	316	0	0	176	316	0.110*	0.198*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	237	336	0	0	237	336	0.148	0.210
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	0	0	0	0	0	0	0	0	0.000*	0.000
Eastbound Through	3	4800	544	1241	0	0	544	1241	0.113	0.259*
Eastbound Right	Free 1	1600	114	169	2	1	116	170	0.072	0.106
Westbound Left	0	0	0	0	0	0	0	0	0.000	0.000*
Westbound Through	3	4800	557	950	0	0	557	950	0.116*	0.198
Westbound Right	Free 1	1600	450	524	0	0	450	524	0.281	0.327

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.326	0.557
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+]		A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	78 - 79	56 - 48	47 - 53
% of Daily in Peak Hour (AM-PM)	8 - 10	7 - 11	7 - 11	6 - 12

INTERSECTION VOLUMES, LANES, AND INTERSECTION CAPACITY UTILIZATION CALCULATION

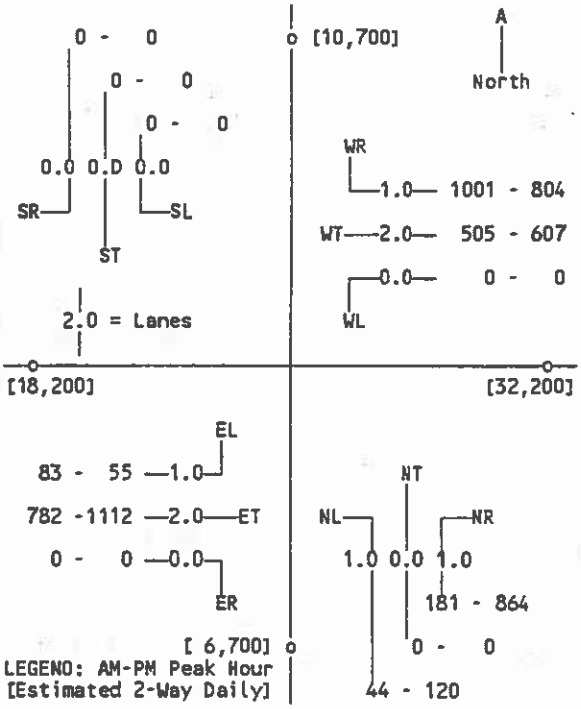
INTERSECTION: SR-14 FREEWAY NB RAMPS (NS) and AVENUE S (EW)
LAND USE: YEAR 2007 WITH PROJECT

COUNT DATE: 11-12-02
GEOMETRICS: Existing

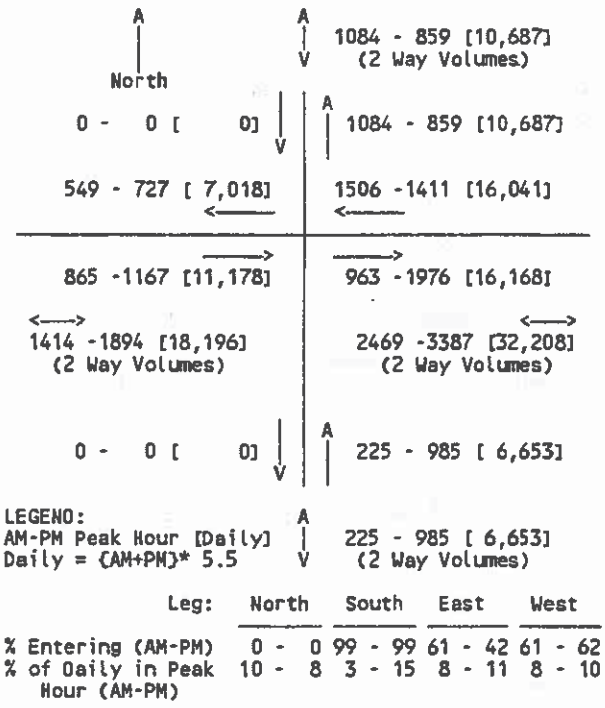
MOVEMENT	LANES	CAPACITY	BASE VOLUME (AM)	BASE VOLUME (PM)	ADDED VOLUME (AM)	ADDED VOLUME (PM)	TOTAL VOLUME (AM)	TOTAL VOLUME (PM)	VOLUME TO CAPACITY RATIO (AM)	VOLUME TO CAPACITY RATIO (PM)
Northbound Left	1	1600	40	119	4	1	44	120	0.028*	0.075*
Northbound Through	0	0	0	0	0	0	0	0	0.000	0.000
Northbound Right	Free 1	1600	181	864	0	0	181	864	0.113	0.540
Southbound Left	0	0	0	0	0	0	0	0	0.000	0.000
Southbound Through	0	0	0	0	0	0	0	0	0.000*	0.000*
Southbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Eastbound Left	1	1600	83	55	0	0	83	55	0.052	0.034
Eastbound Through	2	3200	777	1108	5	4	782	1112	0.244*	0.348*
Eastbound Right	0	0	0	0	0	0	0	0	0.000	0.000
Westbound Left	0	0	0	0	0	0	0	0	0.000*	0.000*
Westbound Through	2	3200	500	606	5	1	505	607	0.158	0.190
Westbound Right	Free 1	1600	1001	804	0	0	1001	804	0.626	0.503

Northbound Right Turn Adjustment	None of right turns (RT) are assumed to occur on red light when there is separate RT lane & when movement is permitted.	0.000*	0.000*
Southbound Right Turn Adjustment		0.000*	0.000*
Eastbound Right Turn Adjustment		0.000*	0.000*
Westbound Right Turn Adjustment		0.000*	0.000*
Clearance Interval		0.100*	0.100*
INTERSECTION CAPACITY UTILIZATION, ICU (Sum of Components with *) ——→		0.372	0.523
LEVEL OF SERVICE (A=.000-.6 ICU; B=.601-.7; C=.701-.8; D=.801-.9; E=.901-1.0; F=1.001+)		A	A

PLOT OF PEAK HOUR TURNING VOLUMES AND LANES



PLOT OF INTERSECTION LEG VOLUMES



Leg:	North	South	East	West
% Entering (AM-PM)	0 - 0	99 - 99	61 - 42	61 - 62
% of Daily in Peak Hour (AM-PM)	10 - 8	3 - 15	8 - 11	8 - 10

Kunzman Associates

APPENDIX D

Traffic Signal Warrant Worksheets

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

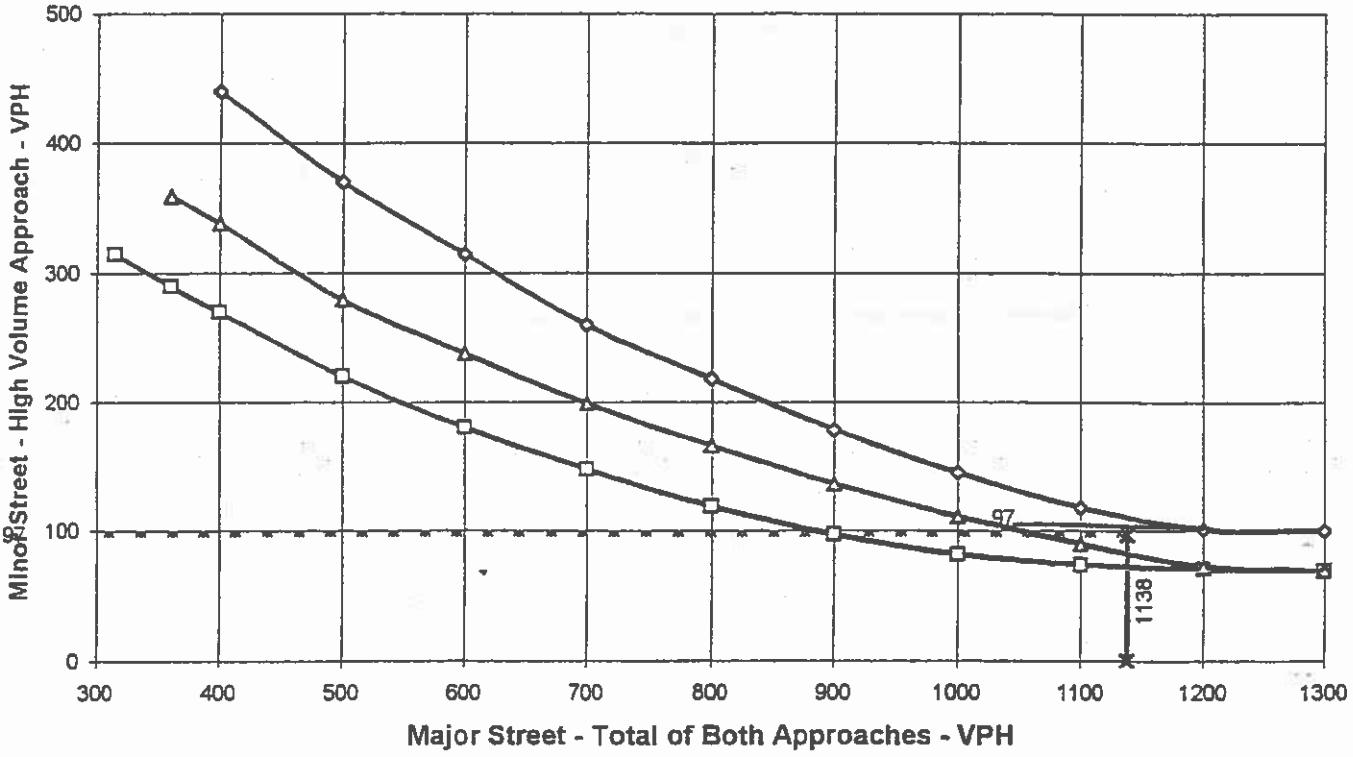
Major Street Name = **Tierra Subida Avenue** Total of Both Approaches (VPH) = **1138**

Number of Approach Lanes Major Street = **1**

Minor Street Name = **5th Street West** High Volume Approach (VPH) = **97**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



1 Lane (Major) & 1 Lane (Minor)

2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)

2+ Lanes (Major) & 2+ Lanes (Minor)

Major Street Approaches

Minor Street Approaches

** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

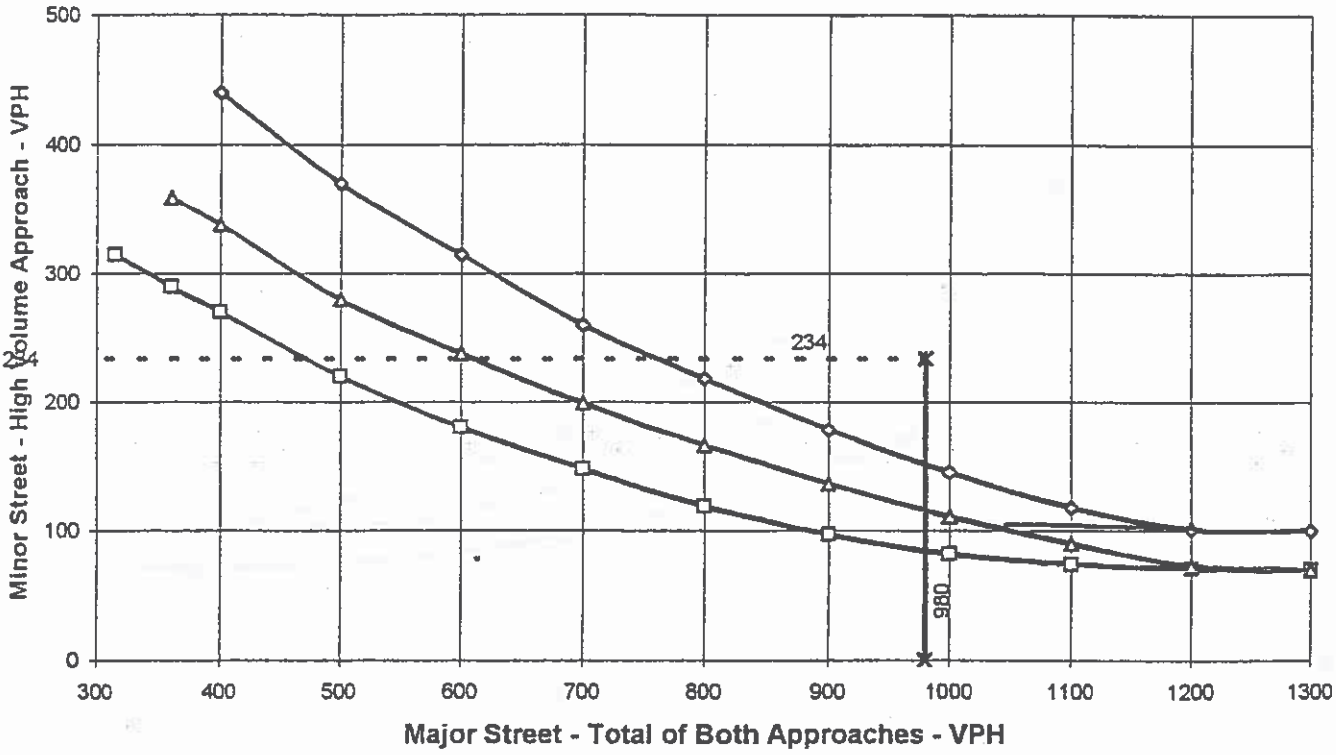
Major Street Name = **Tierra Subida Avenue** Total of Both Approaches (VPH) = **980**

Number of Approach Lanes Major Street = **1**

Minor Street Name = **Rayburn Road** High Volume Approach (VPH) = **234**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



1 Lane (Major) & 1 Lane (Minor)

2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)

2+ Lanes (Major) & 2+ Lanes (Minor)

Major Street Approaches

Minor Street Approaches

** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT
(Rural Areas)

Existing

Major Street Name = **Avenue S**

Total of Both Approaches (VPH) = **488**

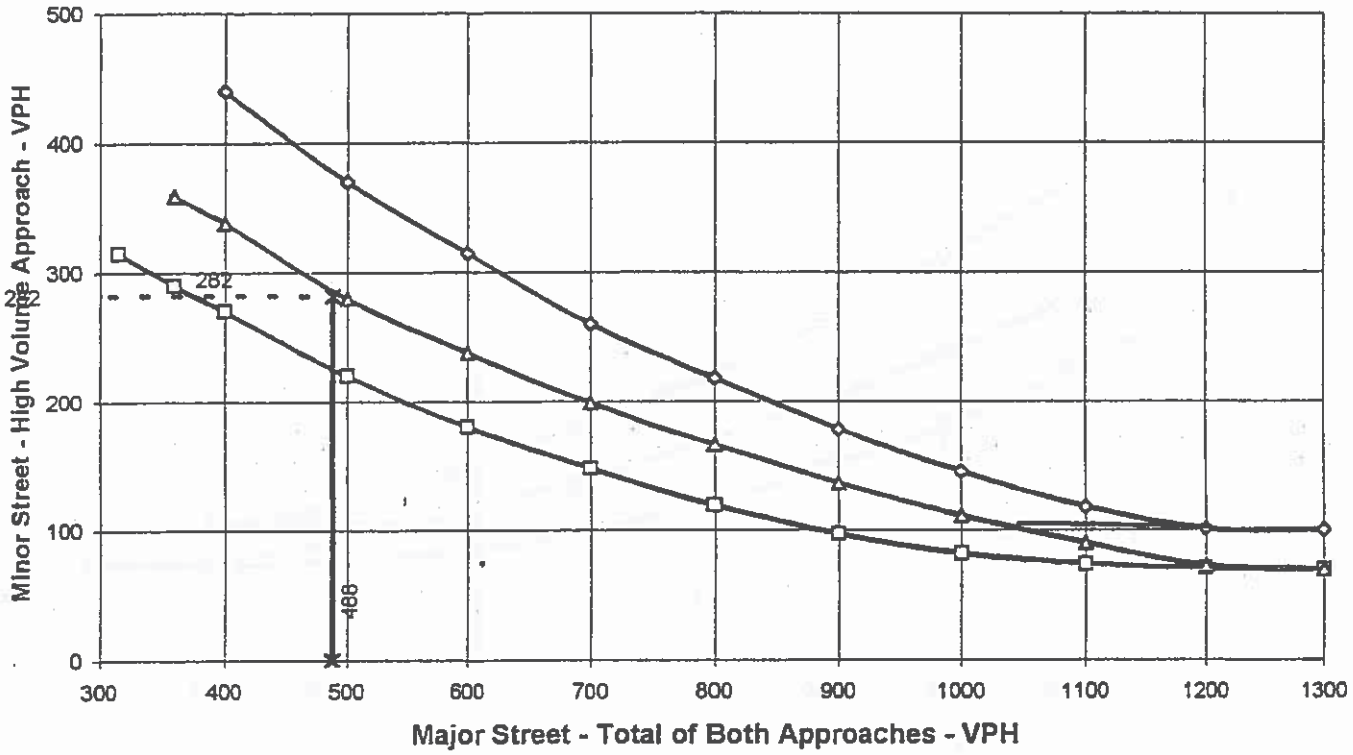
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Tierra Subida Avenue**

High Volume Approach (VPH) = **282**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



1 Lane (Major) & 1 Lane (Minor)

2+ Lanes (Major) & 1 Lane (Minor) OR 1 Lane (Major) & 2+ Lanes (Minor)

2+ Lanes (Major) & 2+ Lanes (Minor)

Major Street Approaches

Minor Street Approaches

** NOTE:
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

APPENDIX E

Approved County CUP #93041 September, 1993
Supplemental Traffic Analysis of 3,564 Tons per Day at AVPL

EDAW

September 7, 1993

Mr. Joaquin Herrera
L.A. County Public Works
900 South Fremont
Alhambra, California 91803-1331

RE: Antelope Valley Landfill - Modification to Conditional Use Permit #86162 (CUP #93041)

Dear: Mr. Herrera:

I am forwarding additional traffic information related to the Supplemental Traffic analysis (Revised April, 1993) Antelope Valley Public Landfill Expansion. My enclosed letter to Dick Frazier summarizes what this informatin is and why it was generated. Although our traffic engineer said that no additional mitigation measures are necessary as a result of the analysis, Dick would like you to review your May 20th, 1993 memo and confirm that this is the case. I would appreciate it if you could prepare another memo to Dick Frazier after you have completed your review of the enclosed information and let him know that your recommendations still apply.

Additionally, we would like further clarification added to the end of the recommendation presented on page 2 of your 5/20/93 memo. Per the note listed on page 3 of the April 1993 traffic study, we requested that the following wording be added to the recommendations on page 2 of your memo: "Prior to the payment of prorata contributions listed above, the applicant shall have the traffic conditions re-evaluated after the installation of Palmdale Boulevard signals in order to confirm the need for the mitigations listed above." This additional clarification is important since the traffic analysis concludes that the future signals on Palmdale Boulevard at SR-14 may significantly reduce existing traffic on Avenue S at SR-14. The analysis also points out that a continued slow housing market may result in less than the projected traffic increases.

As you can probably guess, this is on a tight time schedule. Could you please let me know when you can get Dick Frazier a response. I can be reached at (714) 660-8044.

Very Truly Yours,

Jayna Morgan

Jayna Morgan
Senior Associate

Enclosure

cc Project Team

Landscape Architecture
Planning
Urban Design
Environmental Analysis
Site Engineering
Graphic Design

EDAW, Inc.
1920 Main Street, Suite 450
Irvine, CA 92714
714 660-8044
FAX 714 660-1046

San Francisco
Alexandria
Atlanta
Fort Collins/Denver
Irvine
Seattle
Phoenix
Sydney, Australia

EDAW

September 7. 1993

Mr. Richard Frazier, Regional Planner II
Zoning Permits Section
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

Landscape Architecture
Planning
Urban Design
Environmental Analysis
Site Engineering
Graphic Design

RE: Antelope Valley Landfill - Modification to Conditional Use Permit #86162 (CUP #93041)

EDAW, Inc.
1920 Main Street, Suite 450
Irvine, CA 92714
714 660-8044
FAX 714 660-1046

Dear Dick:

At our meeting August 26th, we discussed wording condition 10d consistent with the previous CUP (ie. net vs gross). You indicated that in order for you to change this condition, the traffic analysis prepared by Kunzman Associates needs to contain the same scenario which was included in the DKS traffic study. I am forwarding this additional traffic scenario prepared by Kunzman Associates last week. Per your direction, I have also sent a copy to Mr. Joaquin Herrera of Traffic and Lighting.

Per my review of the enclosed tables and discussions with Mr. Gary Hansen of Kunzman Associates, this analysis *does not* result in the need for any additional mitigation measures. The measures suggested in the original Kunzman Associates study (~~March~~ April, 1993) and required by the Traffic and Lighting Division in their My 20, 1993 Memorandum are still applicable. I am sure Traffic and Lighting will confirm this conclusion.

It should be noted that Table 9 compares the 2010 condition presented in the DKS report (1,188 tons/day) to the new condition we discussed at our 8/26 meeting (3,564 tons/day). The original conclusion from the DKS study was as follows:

> "As shown in Table 4-12, the proposed project traffic contributes to less than 1% of the intersection capacity utilization at the study intersection. The maximum capacity of the proposed project for a worst case daily waste stream of 1,188 tons, therefore, would not result in a significant impact on the area circulation system..."

San Francisco
Alexandria
Atlanta
Fort Collins/Denver
Irvine
Seattle
Phoenix
Sydney, Australia

Per conversations with Mr. Gary Hansen, he indicated that under the new scenario, proposed project traffic contributes less than 2% of the intersection capacity unitization at the study intersections. Therefore the original conclusion of the DKS study would remain unchanged.

I will let you know when you can expect a buy-off from Traffic and Lighting. Hopefully they can prepare an additional memo confirming their requirements in their May 20, 1993 memo by the end of this week. You indicated once you receive their buy-off we can reschedule this item for Planning Commission hearing.

Please give me a call if you have any questions regarding this information.

Very Truly Yours,

Jayna Morgan

Jayna Morgan

cc: Project Team
Joaquin Herrera

Table 4

ESTIMATED PROJECT TRAFFIC GENERATION

Scenario	Morning Peak Hour		Evening Peak Hour		Daily
	In	Out	In	Out	
EXISTING - 1993					
Material (600 tons/day)	10	10	10	10	190
Employees (130)	10	*	10	10	280
Total	20	10	20	20	470
POTENTIAL EXPANSION					
Material (3,564 tons/day)	70	40	70	70	1,100
Employees (170)	20	*	10	10	360
Total	90	40	80	80	1,460

Note: Trips generated are rounded to nearest 10.

* Nominal (i.e. less than 5)

Table 9

COMPARISON OF YEAR 2010 INTERSECTION LEVELS OF SERVICE

Intersection	AM Peak						PM Peak					
	Without Project		1,188 Tons/Day		3,564 Tons/Day		Without Project		1,188 Tons/Day		3,564 Tons/Day	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Palmdale Rd./ Tierra Subida Ave. (1)	21.2	C	21.0	C	20.8	C	27.7	D	28.2	D	29.2	D
SR-14 SB Off Ramp/ Palmdale Blvd.	18.8	C	18.8	C	19.1	C	24.3	C	24.6	C	26.2	D
SR-14 NB Off Ramp/ Palmdale Blvd.	4.1	A	4.1	A	4.1	A	15.4	C	15.4	C	15.5	C
Intersection	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
City Ranch Rd./ Tierra Subida Ave.	0.77	C	0.78	C	0.83	D	0.89	D	0.89	D	0.90	D
Avenue S/Tierra Subida Ave.	0.89	D	0.89	D	0.90	D	0.89	D	0.89	D	0.89	D
SR-14 SB Ramps/ Avenue S	0.24	A	0.24	A	0.36	A	0.81	D	0.81	D	0.91	E
SR-14 NB Ramps/ Avenue S	0.33	A	0.33	A	0.41	A	0.87	D	0.87	D	0.90	D

(1) With southbound free right turn

SB = southbound
NB = northbound