COSTCO

COMMERCIAL COMPLEX

Revised Recirculated Transportation/Traffic Section
Draft Environmental Impact Report

July 2004

Prepared for:

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REVISED RECIRCULATED TRANSPORTATION / TRAFFIC SECTION
DRAFT ENVIRONMENTAL IMPACT REPORT

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Introduction

A Draft Environmental Impact Report (DEIR) was prepared for the proposed new Costco Commercial Complex at the southeast corner of Lone Hill Avenue and Gladstone Street in the City of San Dimas, and circulated for public review (August 26, 2003 through October 10, 2003). The City of San Dimas' Specific Plan No. 24, which includes the proposed project site, encompasses approximately 26.5 acres. The proposed project site is located less than 1/4-mile west of the 57 Freeway (former Foothill Freeway (Interstate 210)).

As a result of substantial comments on the traffic section of the EIR, the traffic analysis was substantially revised and recirculated for public review (March 5, 2004 to April 19, 2004). Due to additional minor changes, the traffic analysis has again been revised and is being recirculated for public review from July 16, 2004 to August 30, 2004. Revisions are indicated with new language as underlined text and deleted language shown in bubbles to the right of the text.

1.1 CEQA GUIDELINES

As described in Section 15088.5(a) of the CEQA Guidelines:

> *(a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:*
>
> *(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.*
>
> *(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.*
>
> . . .
>
> *(c) If the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified.*
>
> *(d) Recirculation of an EIR requires notice pursuant to Section 15087, and consultation pursuant to Section 15086.*
>
> . . .
>
> *(f) The lead agency shall evaluate and respond to comments as provided in Section 15088. Recirculating an EIR can result in the lead agency receiving more than one set of comments from reviewers. Following are two ways in which the lead agency may identify the set of comments to which it will respond. This dual approach avoids confusion over whether the lead agency must response to comments which are duplicates*

or which are no longer pertinent due to revisions to the EIR. In no case shall the lead agency fail to respond to pertinent comments on significant environmental issues.

. . .

(2) When the EIR is revised only in part and the lead agency is recirculating only the revised chapters or portions of the EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions. The lead agency need only respond to (i) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (ii) comments received during the recirculation period that relate to the chapters or portions of the earlier EIR that were revised and recirculated. The lead agency's request that reviewers limit the scope of their comments shall be included either within the text of the revised EIR or by attachment to the revised EIR.

(g) When recirculating a revised EIR, either in whole or in part, the lead agency shall, in the revised EIR or by an attachment to the revised EIR, summarize the revisions made to the previously circulated draft EIR.

1.2 AVAILABILITY AND REVIEW OF THE REVISED RECIRCULATED TRANSPORTATION/TRAFFIC SECTION

The Revised Recirculated Transportation/Traffic Section will be distributed to affected agencies, surrounding cities, counties and interested parties for a 45-day review period in accordance with Section 15088.5 and 15087 of the CEQA Guidelines. During the 45-day public review period, which commences on July 16 and ends on August 30, the Revised Recirculated Transportation/Traffic Section along with the original Draft EIR (August 2003) and the Recirculated Transportation/Traffic Section (March 2004) will be available for public review at the following locations:

- City of San Dimas
  Planning Department
  245 E. Bonita Avenue
  San Dimas, CA 91773
  Phone: (909) 394-6250
  Hours: 7:30AM to 5:30PM (Monday to Thursday) and 8AM to 5PM (Friday)

- San Dimas Library
  145 N. Walnut Avenue
  San Dimas, CA 91773
  Phone: (909) 599-6738
  Hours: 12PM to 8PM (Tuesday)
  1PM to 8PM (Wednesday and Thursday)
  10AM to 5PM (Friday and Saturday)

Additionally, the Revised Recirculated Transportation/Traffic Section can be downloaded or reviewed via the Internet at:

http://www.cityofsandimas.com

Interested parties may provide written comments on the Revised Recirculated Transportation/Traffic Section. Written comments must be received by 5:30 pm on August 30 and should be addressed to:

Mr. Larry Stevens, AICP
Director of Community Development
City of San Dimas
Planning Department
245 E. Bonita Avenue
San Dimas, CA 91773

Upon completion of the 45-day recirculation period, written responses to all comments on environmental issues discussed in the EIR will be prepared and incorporated into a Final EIR. These comments, and their responses, will be included in the Final EIR for consideration by the City, as well as any other public decision-makers. In accordance with CEQA Guidelines Section 15088.5 f(2), **the City is requesting that reviewers limit their comments during this recirculated period to this Revised Recirculated Transportation/Traffic Section**. The City of San Dimas will respond (i) to all comments received during the initial circulation period of the entire DEIR (August 26, 2003 through October 10, 2003) that relate to all portions of the DEIR that were not revised and recirculated (i.e., everything except the Transportation/Traffic section), (ii) comments received during the first recirculation period (March 5 to April 19, 2004) that relate to the Recirculated Transportation/Traffic Section, and (iii) comments received during the second recirculation period (July 16 to August 30, 2004) that relate to the Revised Recirculated Transportation/Traffic Section.

1.3 CHANGES MADE IN THIS REVISED RECIRCULATED TRANSPORTATION/ TRAFFIC SECTION

The Revised Recirculated Transportation/Traffic Section includes the following changes compared to the Recirculated Transportation/Traffic Section of March 2004:

- New identification of an impact as significant during the Saturday mid-day peak hour for the intersection of Lone Hill Avenue/Auto Centre Drive; previously, the section identified an impact in the p.m. peak hour only.
- Clarification of significant impacts for the unsignalized intersections of Willow Street/Gladstone Street, Valley Center Avenue/Gladstone Street, and Lone Hill Avenue/Kenoma Street; the previous section identified the impacts and provided mitigation but did not clarify the level of significance.

Executive Summary

Due to revisions made to the Recirculated Transportation/Traffic Section, the list of mitigation measures and residual impacts shown in the Executive Summary of the Draft EIR from August 2003 and the Recirculated Transportation/Traffic Section is changed. The following Table shows the revised mitigation measures and residual impacts. This table revises and replaces the Transportation/Traffic portion of Table ES-1 of the Draft EIR from August 2003 and Table ES-1 of the Recirculated Transportation/Traffic Section from March 2004. Revisions are indicated with new language as underlined text and deleted language shown in bubbles to the right of the text.

TABLE ES-1: SUMMARY OF IMPACTS AND MITIGATION FOR THE COSTCO COMMERCIAL COMPLEX

Impact	Significance	Mitigation Measure(s)	Level of Significance After Mitigation
3L. Transportation/Traffic			
3L1. The proposed project would impact local intersections and exceed significance criteria established by the City of San Dimas at nine intersections.	S	**M-3L.1** A traffic signal shall be constructed at the intersection of Lone Hill Avenue and the proposed project site's full access (south driveway). **M-3L.2** The applicant shall make a fair-share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for the implementation of a second eastbound exclusive right turn lane at the intersection of Lone Hill Avenue/Route 66. Northbound U-turns onto southbound Lone Hill Avenue would be prohibited. **M-3L.3** The applicant shall make fair-share contributions, as reasonably determined by the City of San Dimas based on a nexus study, for future improvements at the following intersections: • Lone Hill Avenue and I-210 Westbound Ramps • Lone Hill Avenue and Auto Center Drive **M-3L.4** The applicant shall make a fair-share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for future improvements at the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection. **M-3L.5** The intersection of Lone Hill Avenue and Gladstone Street shall be improved with an additional northbound left turn lane and an additional southbound left turn lane. **M-3L.6** The applicant shall make a fair-share	**Significant and Unavoidable** Impacts can be mitigated at eight of the nine intersections. However, six of these intersections are outside the jurisdiction of the Lead Agency and mitigation cannot be assured. Therefore, for purposes of this EIR, they are considered to remain significant. **Unmitigable Impact:** • Lone Hill Avenue/Arrow Highway **Mitigable but Outside Lead Agency Jurisdiction:** • Lone Hill Avenue/Route 66 • Lone Hill Avenue/I-210 Westbound Ramps • Lone Hill Avenue/Auto Center Drive • **Willow Street/Gladstone Street** • **Valley Center Avenue/Gladstone Street** • **Lone Hill Avenue/Kenoma Avenue**

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TABLE ES-1: SUMMARY OF IMPACTS AND MITIGATION FOR THE COSTCO COMMERCIAL COMPLEX - (Cont.)

Impact	Significance	Mitigation Measure(s)	Level of Significance After Mitigation
		contribution, as reasonably determined by the City of San Dimas based on a nexus study, for future signalization at the Willow Street/Gladstone Street, Valley Center Avenue/Gladstone Street, and Lone Hill Avenue/Kenoma Street intersections.	
3L2. The proposed project would have a less than significant impact on residences located west of the proposed project site along Lone Hill Avenue.	LTS	**M-3L.7** It is recommended that Option 3 (Alternative), Option 3/4 or Option 3/4 (Alternative) or other feasible design variations be implemented to provide better access for residences located west of the proposed project site, along Lone Hill Avenue. The City of San Dimas and the applicant shall work directly with these residents to determine the most feasible design option.	Less than significant.
3L3. The proposed project would provide adequate parking supply.	LTS	No mitigation required.	Less than significant.
3L4. The proposed project would not substantially increase hazards due to a design feature or incompatible use.	LTS	**M-3L.8** With the exception of the southerly full access driveway along Lone Hill Avenue, a median shall be constructed fronting access driveways off of Gladstone Street and Lone Hill Avenue to limit the driveways to right turn in/out only. **M-3L.9** The service driveway proposed at the east side of the proposed project site shall be restricted to right-turn only. Furthermore, a fence shall be built between the proposed Costco site and the railroad right-of-way. **M-3L.10** The applicant shall submit a truck routing plan detailing the routes delivery vehicles will take for entering and exiting the proposed commercial complex. **M-3L.11** The proposed project traffic signal at the intersection of the west access driveway and Lone Hill Avenue shall be coordinated with the	Less than significant.

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TABLE ES-1: SUMMARY OF IMPACTS AND MITIGATION FOR THE COSTCO COMMERCIAL COMPLEX - (Cont.)

Impact	Significance	Mitigation Measure(s)	Level of Significance After Mitigation
		signal at the intersection of Lone Hill Avenue and Gladstone Street. The final coordination plan will be based on an assessment of traffic operations at these intersections, which should be conducted after the opening of the project.	
3L5. The proposed project would have adequate emergency access.	LTS	No mitigation is required.	Less than significant.
3L6. The proposed project would significantly impact traffic in the vicinity of schools.	S	Refer to mitigation measure **M-3L.6**. **M-3L.12.** With the cooperation and approval of the City of Glendora, the applicant shall make a fair share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for the construction of a traffic signal at the Valley Center Avenue/Gladstone Street intersection, as well as for the widening and re-striping of Gladstone Street in the vicinity of Gladstone Elementary School to provide for one through-lane, a left-turn lane and parking along the south side of Gladstone Street.	**Significant and Unavoidable.** Impacts to this intersection can be mitigated. However, this intersection is outside the jurisdiction of the Lead Agency and mitigation cannot be assured. Therefore, for purposes of this EIR they are considered to remain significant.
3L7. With mitigation, the proposed project would not exceed either individually or cumulatively the established LOS standards at CMP facilities in the project area.	S	Refer to mitigation measure **M-3L.4**.	Less than significant.
3L8. Cumulative development would significantly impact area traffic	S	Refer to mitigation measures **M-3L.1** through **M-3L.6** and **M-3L.12.**	**Significant and Unavoidable.** See Impact 3L1. for explanation.

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LTS = Less Than Significant Impact
LTS/M = Less Than Significant Impact with Mitigation Incorporation
S = Significant Impact

Transportation/Traffic

INTRODUCTION

This chapter presents the results of a traffic and circulation study prepared for the proposed project in February and July 2004 by Katz, Okitsu & Associates. A traffic study was prepared for the proposed project in February 2001 and updated in July 2003. These two previous studies analyzed a total of eight intersections in the project study area and were summarized in Section 3L of the Draft EIR circulated August 26, 2003 to October 10, 2003. In response to comments received on the Draft EIR, a new traffic study was prepared in February 2004. The February 2004 study reassesses the project for completion in 2005 and updates the cumulative project list based on new information provided by the City of San Dimas and the City of Glendora. The February 2004 study includes traffic counts taken in January 2004 at the same eight intersections in San Dimas, as well as thirteen additional intersections in and near the City of Glendora. These counts reflect existing conditions since the opening of the eastward extension of the Interstate 210 Freeway from San Dimas to Fontana in 2003.

Comments received on the March 5, 2004 Recirculated Transportation/Traffic Section required that further minor changes and clarifications be made, and a revised version of the traffic study was prepared in July 2004. The following analysis summarizes the July 2004 traffic study and amends and clarifies the analysis presented in the March 5, 2004 Recirculated Transportation/Traffic Section. Primarily, changes consist of corrections and changing the significance of impacts to one signalized intersection and three non-signalized intersections from less than significant to significant. New language is underlined and deleted language is shown in bubbles to the right of the original text.

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The July 2004 traffic study performed by Katz, Okitsu & Associates is included in the recirculated materials at the end of this document and replaces Appendix E of the Draft EIR. Technical appendices to the traffic study are available for review at City of San Dimas City Hall.

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SETTING

The proposed project site consists of 22.83 acres spread over 47 separate parcels. West 5th Street, to be removed as part of the proposed project, extends through the southern portion of the project site east of Lone Hill Avenue. The proposed project site is currently occupied by open land with scattered trees and vegetation and vacant lots. The majority of the previous site uses, including single family residential and commercial/light industrial, have either been abandoned or demolished.[1]

[1] Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.

Existing Area Transit Network

57 Freeway (former Interstate 210) is a major east-west freeway that traverses the Los Angeles metropolitan area. Interstate 210 was recently extended (via the SR-210 designation) eastward from SanDimas to Interstate 15 in San Bernardino County. The freeway previously had an eastern terminus at Interstate 10 and State Route 57, south of the Project site. The north-south portion of the I-210 freeway between San Dimas and Interstate 10 has now been renamed as part of the SR-57 (Orange) freeway. This portion of the freeway is located approximately ¼-mile east of the proposed project site. The 57 Freeway is generally a north-south freeway that extends from Interstate 5 from the south and terminates at Interstate 210 to the north. Freeway interchanges in the project vicinity are located at Covina Boulevard southeast of the proposed project site and at West Arrow Highway and Auto Centre Drive.

Deleted: is a major freeway that traverses the Los Angeles metropolitan area. Interstate 210 was recently extended from its previous terminus at Interstate 10 and State Route 57 and now extends eastward to Interstate 15. The portion of this freeway that is located approximately ¼-mile east of the proposed project site is now known as the 57 Freeway. The former eastern terminus of Interstate 210 is now a northern extension of the 57 Freeway. The 57 Freeway is generally a north-south freeway that extends from Interstate 5 from the south and terminates at Interstate 210 to the north. Freeway interchanges in the project vicinity are located at Covina Boulevard southeast of the proposed project site and at West Arrow Highway and Auto

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Interstate 210 is an eight-lane east-west freeway that connects San Dimas and Glendora on the east with Interstate 5 to the west. The Interstate 210 was recently extended from its previous terminus in San Dimas (via the State Route 210 designation) from its interchange with the SR-57 freeway to the Interstate 15 freeway in Fontana. Construction is currently underway to extend the Interstate 210 further eastward from the terminus in Fontana to Interstate 215 in San Bernardino. Interstate 210 has a freeway interchange north of the proposed project site at Lone Hill Avenue and northwest of the project site at Sunflower Avenue. Interstate 210 is located approximately one mile north of the proposed project site.

Interstate 10 is a transcontinental freeway located approximately 3 miles south of the proposed project site. Interstate 10 provides regional access to the proposed project site from the Cities of West Covina, Covina, Walnut, Pomona, Chino and Ontario.

Sunflower Avenue is a four-lane secondary roadway that provides north-south access within western San Dimas and southwestern Glendora. In the vicinity of Gladstone Street, the roadway has four travel lanes with a striped centerline. The northern terminus of the roadway is at a full interchange with the I-210 freeway. Near this northern terminus, the roadway's four travel lanes transition into two travel lanes with a striped centerline.

Lone Hill Avenue is a four-lane north arterial roadway that provides north-south access between Route 66 and the Glendora foothills on the north to southern San Dimas. The roadway is predominantly divided with a center raised median and turn pockets at intersections. The two nearest signalized intersections are Gladstone Street north of the proposed project site and Arrow Highway south of the proposed project site. Lone Hill Avenue terminates as an arterial roadway at Covina Boulevard to the south and at Alosta Avenue to the north. Lone Hill Avenue has a full diamond interchange with Interstate 210 north of the proposed project site.

Amelia Avenue is a two-lane east-west secondary roadway that is located on the eastern end of the site. The roadway has a striped centerline and serves residential, light industrial and commercial uses. On-street parking is allowed.

Route 66 and Foothill Boulevard constitute a four-lane regional arterial that provides east-west access across both the San Gabriel Valley and western San Bernardino County. West of Amelia Avenue, the roadway lies within Glendora as Route 66. East of Amelia Avenue, the roadway

lies within San Dimas and is named Foothill Boulevard. The western continuation of Foothill Boulevard from Amelia Avenue begins at a point further north of the Route 66-Foothill Boulevard intersection. Within the study area, the roadway is primarily divided by a landscaped raised median, with turn pockets at major intersections.

Auto Centre Drive is a two-lane east-west roadway that provides access to the San Dimas auto dealers and the Walmart development, in the area west of the SR-57 freeway. Immediately east of Amelia Avenue, the roadway name transitions into Allen Avenue.

Gladstone Street is a two-lane roadway that provides east-west access across San Dimas and to La Verne on the east and southern Azusa on the west. The roadway defines the northern boundary of the Project site, and serves both light industrial and residential uses. Parking is allowed along most segments of the roadway. In the vicinity of Lone Hill Avenue, the roadway provides left turn pockets at intersections and a continuous left turn lane. Parking is prohibited to the west of Lone Hill Avenue.

Arrow Highway is a six-lane east-west regional arterial that provides access across the eastern San Gabriel Valley and western San Bernardino County. It is located approximately ½-mile south of the proposed project site. Along most portions of the route within San Dimas, the roadway is divided by a landscaped/raised median and parking is prohibited. Turn pockets are provided at major intersections. The intersection of Lone Hill Avenue with Arrow Highway is controlled by a traffic signal that provides protected left-turn phasing in all directions

Existing Area Transit Service

The Project study area is served by bus transit lines operated by Foothill Transit. There is no major transit access point, such as a transfer center, within ¼-mile walking distance of the Project site. Therefore, no trip reduction credits were taken for the Project for potential transit use. The following individual transit lines provide service adjacent to the Project site, or within the study area:

Foothill Transit Line 187: This line provides service along Foothill Boulevard-Route 66, on its route between downtown Claremont/Montclair and Pasadena. This line runs from approximately 4:00 a.m. to 12:00 a.m. on weekdays at an approximate peak frequency of 15 minutes. The line also provides service on Saturdays, Sundays, and holidays.

Foothill Transit Line 189: This line provides service along Foothill Boulevard-Route 66, as a weekday deviation from Line 187, on its route between downtown Claremont/Montclair and Pasadena. The deviation provides service on portions of Gladstone Street, Lone Hill Avenue, and Arrow Highway.

Foothill Transit Line 492: This line provides service along Arrow Highway and Bonita Avenue on its route between downtown Claremont/Montclair and El Monte/Los Angeles. This line runs from approximately 5:00 a.m. to 9:00 a.m. on weekdays at an approximate peak frequency of 30 minutes. The line also provides service on Saturdays, Sundays, and holidays.

Foothill Transit Line 494: This line provides local service within the study area (although it utilizes freeways to reach Los Angeles along the western portion of the route), along portions of Lone Hill Avenue and Arrow Highway. The line's eastern terminus is at the San Dimas Park & Ride, east of the study area limits. This line runs on weekdays at a frequency of 30 minutes during the peak a.m. and p.m. commute periods.

Foothill Transit Line 690: This line provides express service along the I-210 and Foothill Boulevard corridor between Montclair/Claremont and Pasadena. The line does not serve local streets within the Project study area, but provides direct service to the Lone Hill Park & Ride facility at Lone Hill Avenue and the I-210 freeway. This line runs on weekdays during the peak a.m. and p.m. commute periods.

Planned Transit Service

Phase II of the Metro Gold Line is currently planned for completion between East Pasadena and Claremont by 2009. Initial planned segments of Phase II would extend the line to Irwindale from Pasadena. Phase I of this light rail transit line was completed between downtown Los Angeles and East Pasadena in Summer 2003. Phase II would be constructed by the Pasadena Blue Line Construction Authority, and handed over to the MTA for operation and maintenance upon completion of construction and testing. An EIR is currently being conducted for Phase II.

The nearest stations to the project site on the Gold Line would be at the Santa Fe Depot in San Dimas, near the intersection of Cataract Avenue/Bonita Avenue, and in Glendora near the intersection of Glendora Avenue/Route 66. The San Dimas station would be located approximately 1.5 miles from the project site, and the Glendora station would be approximately 3.0 miles from the project site.

As these stations would be located farther than the typical accepted walking distance from a major transit stop (one-quarter to one-half mile), and the nature of the proposed project uses are generally not conducive to transit use, it is assumed that no measurable reductions in trip generation could be applied due to the potential opening of the light rail line. Furthermore, as development of the line is uncertain at this point due to MTA budget constraints, it is unlikely that service would begin through Glendora and San Dimas before 2009, well beyond the Project Year of 2005. The eastern terminus of the line within that timeframe could be Irwindale (under which scenario no service would run near the Project site) or Claremont, depending upon the final alternative selected during the environmental review process.

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It is acknowledged that the Gold Line Project could potentially cause delay at the Lone Hill Avenue and Gladstone Street at-grade railroad crossings. When gates are down and Gold Line trains are crossing in one or both directions, certain movements will be blocked at the intersection of Lone Hill Avenue/Auto Centre Drive, as the tracks cross Lone Hill Avenue immediately south of this intersection. Delay in north-south movements along Lone Hill Avenue, and delay in east-west movements along Gladstone Street, could cause queuing and blocking issues at nearby intersections and driveways. It is not feasible to quantify such potential delay. The traffic section of the Gold Line EIR document does not identify any specific traffic impacts from the Gold Line within the project study area.

Quantifying corridor delay on Lone Hill Avenue and Gladstone Street would be speculative at this point. The operating frequency of the constructed line will be unknown until final design is initiated. Currently, the environmental process for the Gold Line is based on a number of project alternatives – one of these alternatives is a bus improvement alternative with no rail service. Therefore, it is not reasonably foreseeable that light rail service will be established across the Lone Hill and Gladstone crossings.

Therefore, no analysis was conducted of operation of the Gold Line at the nearby grade crossings on Lone Hill Avenue and Gladstone Street.

Existing Traffic Conditions

LOS Definitions. The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS), which is a description of traffic performance at intersections. The level of service concept is a measure of average operating conditions at intersections during an hour. It is based on volume-to-capacity (V/C) ratio with the ability to carry (the capacity) compared to the level of traffic during the peak hours (volume). This method is also known as the Intersection Capacity Utilization (ICU) technique. Levels range from A to F with A representing excellent (free-flow) conditions and F representing extreme congestion. Table 3L-1 describes the level of service concept and the operating conditions expected under each level of service for signalized intersections.

Figure 3L-1 shows the study area intersection locations and Figure 3L-2 shows the existing number of through lanes and intersection controls.

Project Area LOS. A field inventory was conducted of all study intersection locations. The inventory included review of intersection geometric layout, traffic control, lane configuration, posted speed limits, land use and parking. This information is required for the subsequent traffic impact analysis. Figure 3L-2 includes the existing number of through lanes and intersection controls. The majority of traffic volumes for the AM and PM peak hours were obtained from traffic counts taken in January 2004. Additional information was provided by the City of Glendora. Counts were conducted weekdays from 7:00 AM to 9:00 AM, and 4:00 PM to 6:00 PM with the highest single hour traffic volumes at each location used for purposes of the impact analysis. Analysis of additional time periods outside the traditional AM and PM peak hours is generally not required since other time periods usually have lesser traffic volumes than during the typical weekday commute periods. Saturday mid-day peak hour counts were conducted from 12:00 PM to 2:00 PM at nine selected intersections. Fewer intersections were analyzed on Saturday because peak hour traffic on Saturday is generally less and project impacts are not anticipated to extend as far from the site as during peak hours on weekdays, i.e. if there are no impacts at a given intersection, it is assumed that the next intersection further out will not be impacted. Therefore, only intersections closer to the site were selected for analysis.

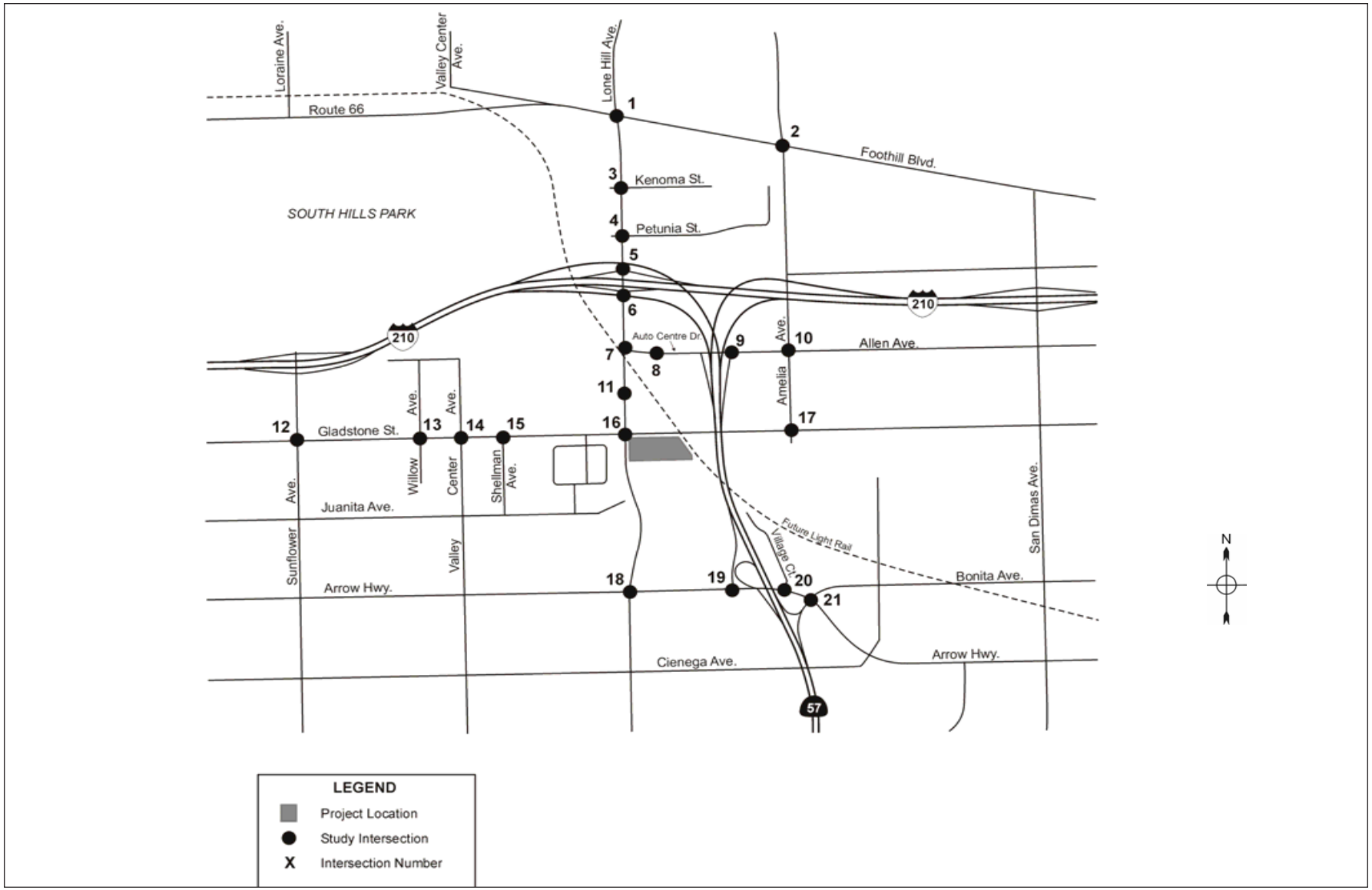
Figure 3L-3 shows the existing weekday AM peak hour traffic volumes at the 21 study intersections. Figure 3L-4 shows the existing weekday PM peak hour traffic volumes at the 21 study intersections. Figure 3L-5 shows the existing Saturday peak hour traffic volumes at the study intersections.

TABLE 3L-1: INTERSECTION LEVEL OF SERVICE DEFINITIONS

LOS	Interpretation	Signalized Intersection Volume to Capacity Ratio (ICU/CMA)	Stop-Controlled Intersection Average Stop Delay (HCM)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600	≤ 10 seconds
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 - 0.700	> 10 and ≤ 15 seconds
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers felt somewhat restricted.	0.701 – 0.800	> 15 and ≤ 25 seconds
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900	> 25 and ≤ 35 seconds
E	Poor Operations. Some long-standing vehicular queues develop on critical approaches.	0.901 – 1.000	> 35 and ≤ 50 seconds
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.000	> 50 seconds

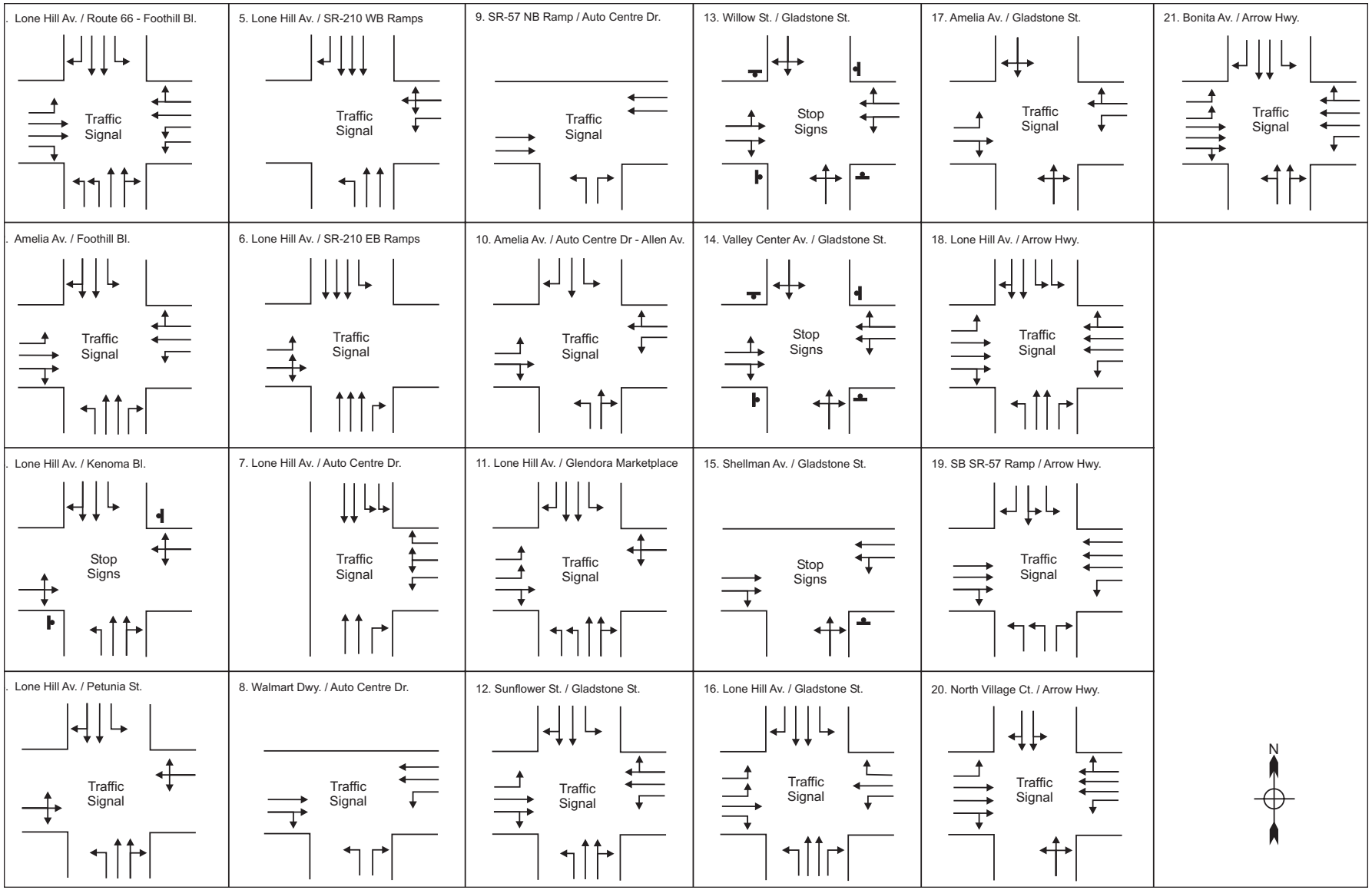
Source: Highway Capacity Manual (HCM), Special Report 209. Transportation Research Board, Washington D.C., 1997.

Level of service D is generally considered to be the lowest acceptable LOS in an urban or suburban area. Level of service E and F are considered to be unacceptable operating conditions, which warrant mitigation. The V/C and LOS results of the study area intersections are summarized below in Table 3L-2. As shown in Table 3L-2, there are four study intersections that currently operate at LOS E or worse during the weekday PM peak period. The following are some highlights of the poorer performing intersections:



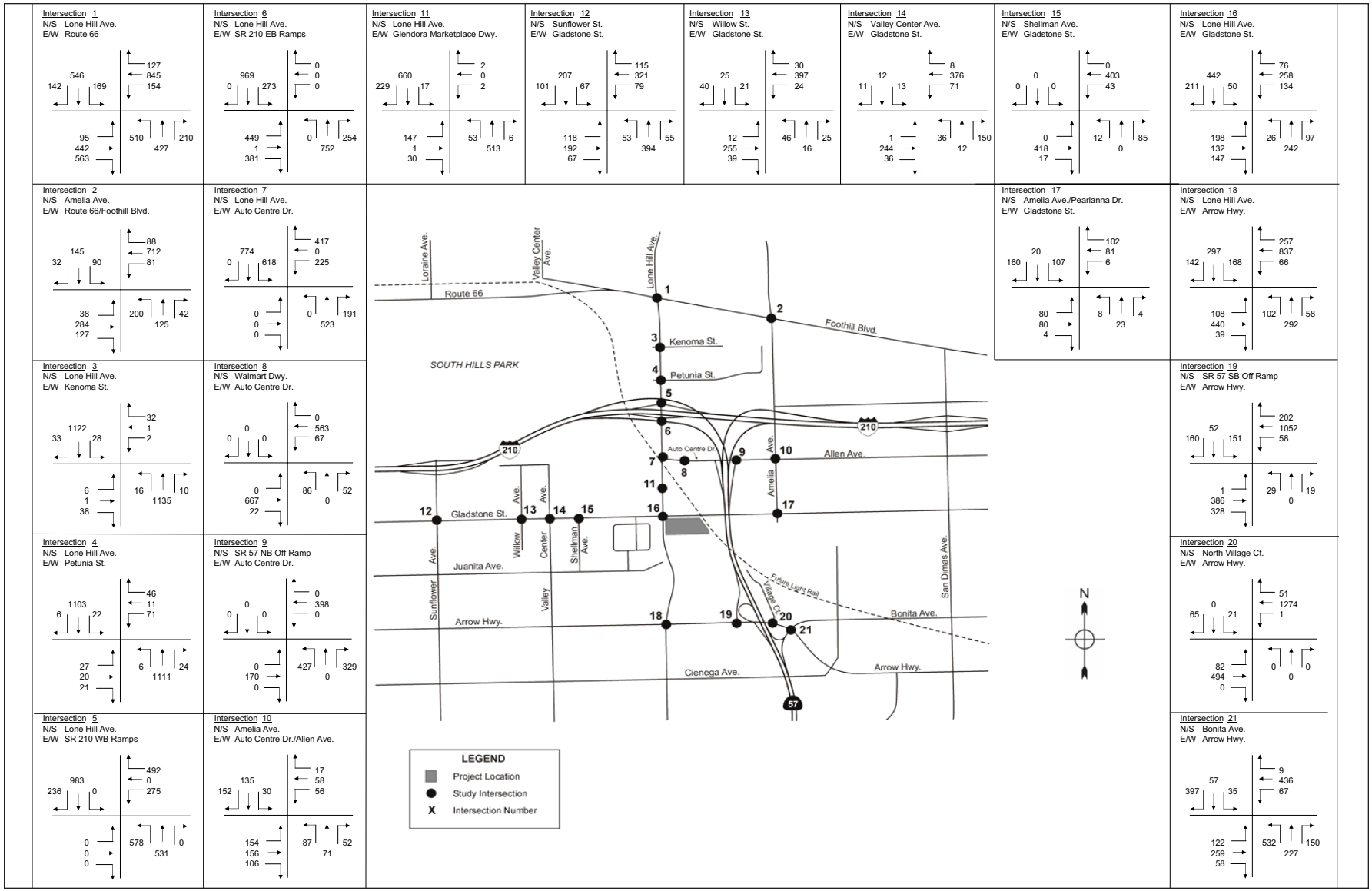
SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-1
Traffic Study Intersections



SOURCE: Katz, Okitsu & Associates, February 2004

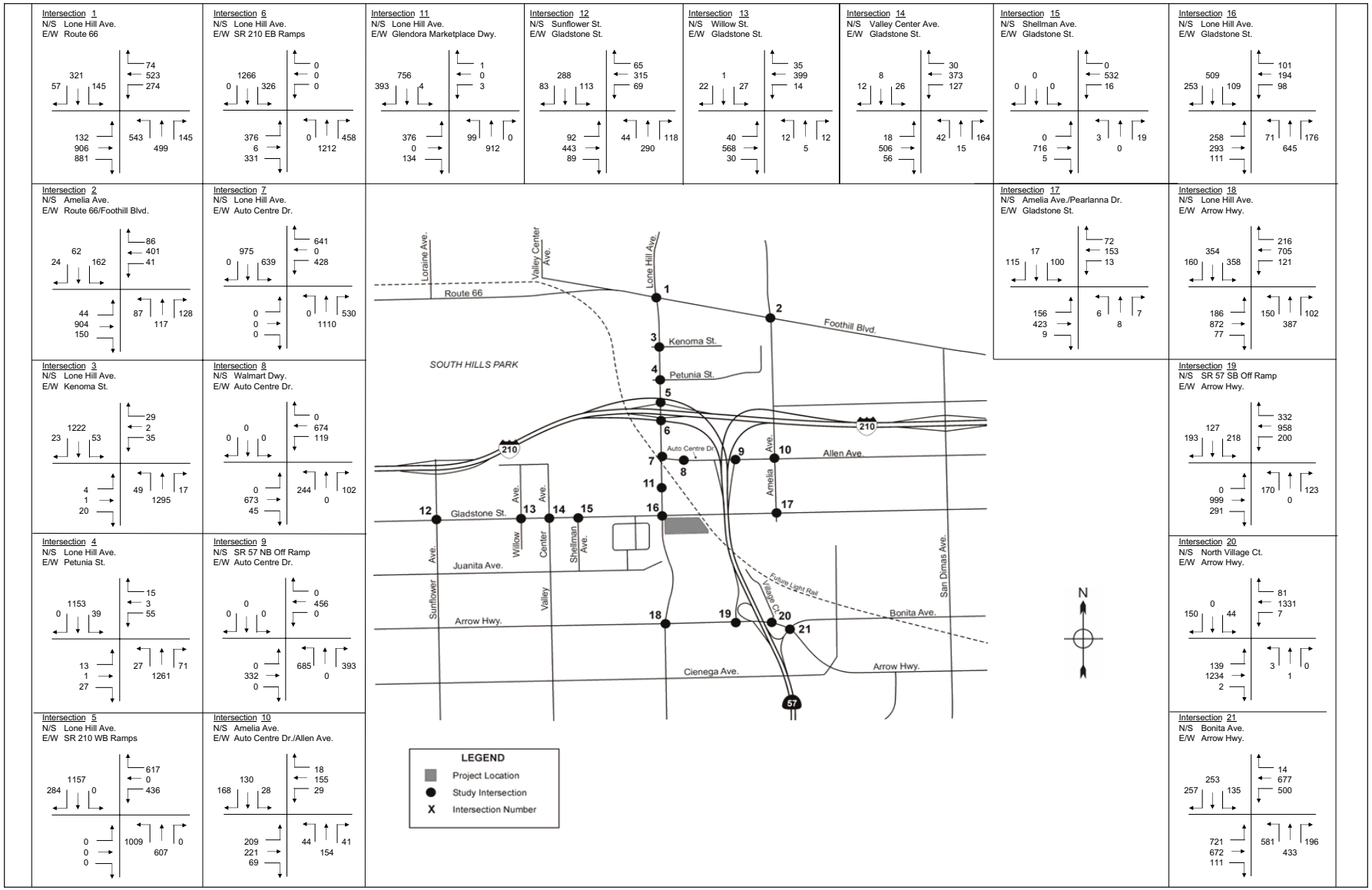
Figure 3L-2
Through Lanes and Intersection Controls



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-3

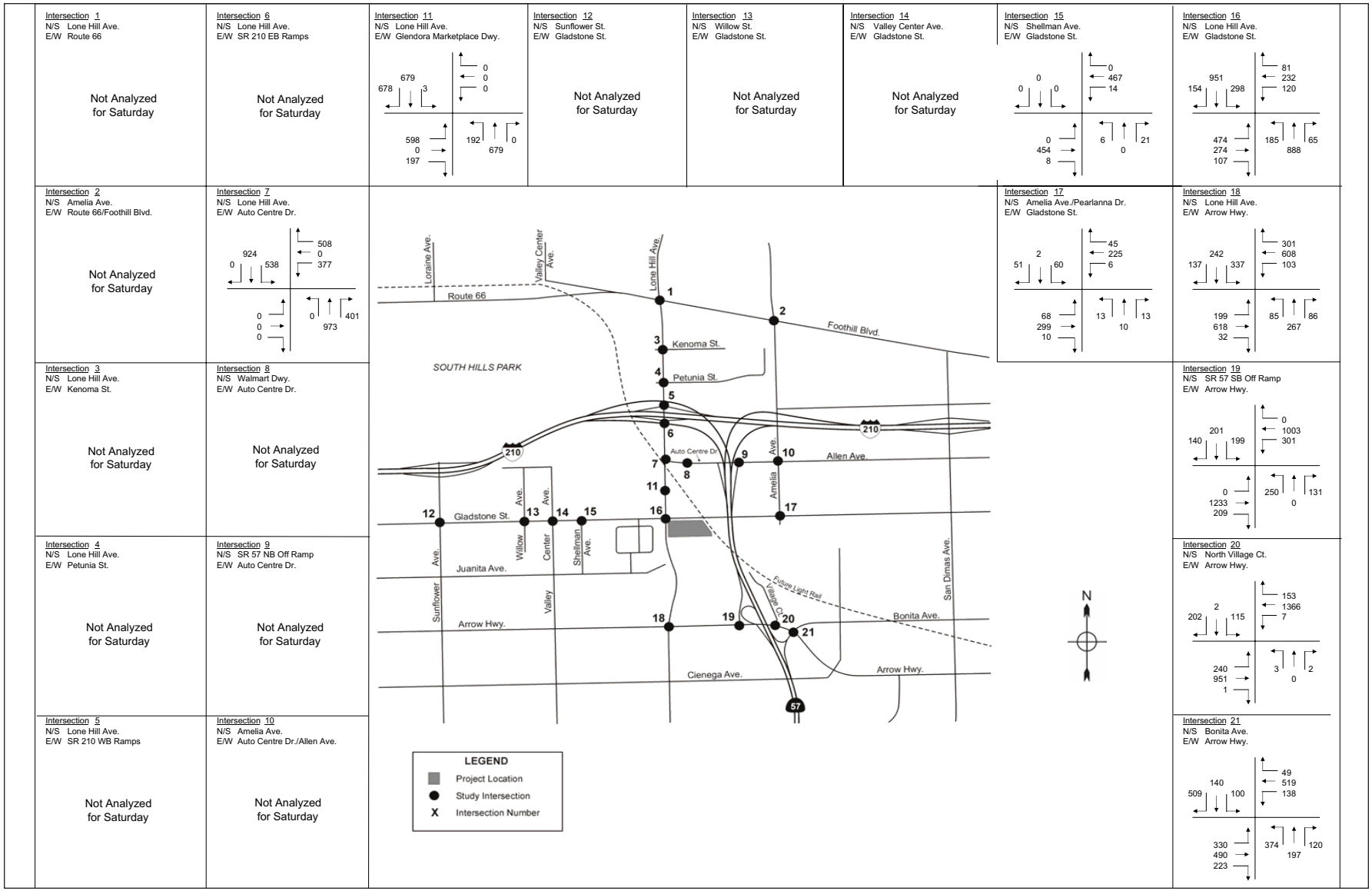
Existing Weekday AM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-4

Existing Weekday PM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-5

Existing Saturday Peak Hour Traffic Volumes

TABLE 3L-2: EXISTING LEVELS OF SERVICE DURING THE PEAK HOURS (2004)

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak**	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.693	B	0.758	C	-	-
2. Amelia Ave./Route 66	0.454	A	0.489	A	-	-
3. Lone Hill Ave./Kenoma St. *	31.1 sec.	D	>100 s.	F	-	-
4. Lone Hill Ave./Petunia St.	0.465	A	0.494	A	-	-
5. Lone Hill Ave./I-210 Wb ramps	0.874	D	1.257	F	-	-
6. Lone Hill Ave./I-210 Eb ramps	0.608	B	0.725	C	-	-
7. Lone Hill Ave./Auto Centre Dr.	0.490	A	0.769	C	0.657	B
8. Walmart Dwy./Auto Centre Dr.	0.311	A	0.451	A	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.391	A	0.571	A	-	-
10. Amelia Ave./Auto Centre Dr.-Allen	0.348	A	0.378	A	-	-
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.271	A	0.408	A	0.484	A
12. Sunflower St./Gladstone St.	0.392	A	0.408	A	-	-
13. Willow St./Gladstone St. *	10.0 sec.	B	11.4 sec.	B	-	-
14. Valley Center Ave./Gladstone St. *	10.5 sec.	B	13.5 sec.	B	-	-
15. Shellman Ave. /Gladstone St. *	11.1 sec.	B	12.2 sec.	B	11.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.378	A	0.514	B	0.757	C
17. Amelia Ave.-Pearlanna/Gladstone St.	0.349	A	0.427	A	0.290	A
18. Lone Hill Ave./Arrow Hwy.	0.496	A	0.563	A	0.502	A
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.494	A	0.591	A	0.696	B
20. Arrow Hwy./North Village Ct.	0.368	A	0.477	A	0.595	A
21. Arrow Hwy./Bonita Ave./SR-57 Nb ramps	0.717	C	0.938	E	0.714	C

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California,* February 24, 2004.

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- Poor LOS at the Lone Hill Avenue/Route 66-Foothill Blvd. intersection is the result of high eastbound right turn volumes and high northbound left turn volumes.

- Poor LOS at the Lone Hill Avenue/Kenoma Avenue intersection is the result of delay experienced by motorists attempting to cross or enter traffic flows on Lone Hill Avenue from Kenoma Avenue. This intersection is not signalized, but has stop sign control for the Kenoma Avenue approaches.

- Poor LOS at the Lone Hill Avenue/I-210 westbound ramps intersection is due to high westbound right turn movements (from the off-ramp) and high northbound left turn volumes (onto the on-ramp).

- Poor LOS at the Bonita Avenue/Arrow Highway/SR-57 Northbound Ramps intersection is caused by high volumes at the northbound approach (off-ramp) and high left turn volumes at the eastbound (Arrow Highway) and southbound (Bonita Avenue) approaches.

There are two school sites located in the vicinity of the proposed project site. The closest school is Gladstone Elementary School located a little over ¼-mile west of the proposed project site, south of Gladstone Street. This elementary school serves residential areas located primarily to the west of the proposed project site. A second school site is located at the southwest corner of Auto Centre Drive and Allen Avenue at Amelia Avenue.

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APPLICABLE REGULATIONS

County of Los Angeles

New projects within the County must comply with the Congestion Management Program (CMP) for Los Angeles County, which was adopted by the Los Angeles County Metropolitan Transportation Authority (LACMTA) in November 1995 pursuant to state law. The CMP involves monitoring traffic conditions on the designated transportation network, performance measures, analysis of the impact of land use decisions on the transportation network, and mitigation to reduce impacts of the network.

Appendix D of the CMP includes Transportation Impact Assessment (TIA) guidelines. The TIA guidelines require analysis at monitored street intersections and segments, including freeway on- or off-ramp intersections, at which a project is expected to add 50 or more peak hour vehicle trips, and mainline freeway or ramp monitoring locations where the project will add 150 or more peak hour trips. If a project does not add, but merely shifts trips at a given monitoring location, the CMP analysis is not required.

An evaluation of transit impacts is required by the CMP for all projects for which an EIR will otherwise be prepared. The CMP also requires that transit system operators receive the NOP for all EIRs to evaluate the potential impacts on existing transit systems, and establishes evaluation

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procedures. Transit corridors and centers subject to CMP requirements are identified in Appendix F of the CMP.[2]

City of San Dimas

The City of San Dimas Planning Department is responsible for transportation issues within the City boundaries. The proposed project would comply with the goals, objectives and policies outlined in the City of San Dimas General Plan's Circulation Element.[3] The Circulation Element identifies the general location and extent of the existing and proposed major roads, highways, trails, railroads, public transit routes and stations, and other public utilities and public facilities.

City of Glendora

The City of Glendora was consulted for information regarding intersections and cumulative projects near the proposed project site. The City of Glendora reviewed the Draft EIR and provided comments. This revised section incorporates responses to those comments concerning traffic.

IMPACTS AND MITIGATION

Methodology

The intersection analysis was performed utilizing the Intersection Capacity Utilization (ICU) Methodology for signalized intersections. County of Los Angeles standards for traffic studies were applied to all of the study intersections. The TRAFFIX software was used to perform the analysis for the surface street network. The Institute of Traffic Engineer's *Trip Generation Manual, Sixth Edition* was used to estimate project-generated trips.

The intersections studied are listed below. These intersections were selected in consultation with City of San Dimas and the City of Glendora. They were analyzed for the weekday AM and PM peak hours. Nine of the intersections (noted with asterisks) were also analyzed during the Saturday mid-day peak period.

1. Lone Hill Avenue (NS)/Route 66 (EW)
2. Amelia Avenue (NS)/Route 66 (EW)
3. Lone Hill Avenue (NS)/Kenoma Street (EW)
4. Lone Hill Avenue (NS)/Petunia Street (EW)
5. Lone Hill Avenue (NS)/I-210 Westbound Ramps (EW)
6. Lone Hill Avenue (NS)/I-210 Eastbound Ramps (EW)
7. Lone Hill Avenue (NS)/Auto Centre Drive (EW)*

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[2] Los Angeles County MTA, *Congestion Management Plan*, 2002.

[3] City of San Dimas, *General Plan – Circulation Element*, 1991.

8. Walmart Driveway (NS)/Auto Centre Drive (EW)
9. SR-57 Northbound Off-Ramp (NS)/Auto Centre Drive (EW)
10. Amelia Avenue (NS)/Auto Centre Drive-Allen Avenue (EW)
11. Lone Hill Avenue (NS)/Glendora Marketplace Driveway (EW) *
12. Sunflower Street (NS)/Gladstone Street (EW)
13. Willow Street (NS)/Gladstone Street (EW)
14. Valley Center Avenue (NS)/Gladstone Street (EW)
15. Shellman Avenue (NS)/Gladstone Street (EW) *
16. Lone Hill Avenue (NS)/Gladstone Street (EW) *
17. Amelia Avenue-Pearlanna (NS)/Gladstone Street (EW) *
18. Lone Hill Avenue (NS)/Arrow Highway (EW) *
19. Arrow Highway (EW)/SR-57 Southbound Off-Ramp (NS) *
20. Arrow Highway (EW)/North Village Court (NS) *
21. Arrow Highway (EW)/Bonita Avenue/SR-57 Northbound Ramps (NS) *

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The analysis of peak hour intersection Level of Service (LOS) is the primary indicator of circulation system performance. The level of service during the peak hour at intersections ranges from LOS A (optimal conditions, little congestion) to LOS F (stop-and-go traffic, very heavy congestion). Traffic operating conditions at intersections near the proposed project site were analyzed using the Intersection Capacity Utilization (ICU) method. The ICU method for evaluating signalized intersection involves the computation of volume-to-capacity (V/C) ratios for each critical movement. Capacity, or saturation flow rate, is defined as the maximum rate of flow that can pass through a given intersection approach under prevailing traffic and roadway conditions. The sum of all critical movement V/C ratios, plus an efficiency lost factor of 0.1 to account for the effect of change intervals, is used to determine the total intersection capacity utilization and corresponding level of service from Table 3L-1.

Criteria for Determining Significant Impacts

Significant impacts for the proposed project were determined by comparing V/C for traffic conditions for the year 2005 with cumulative projects and the proposed project to traffic conditions for the year 2005 with cumulative projects only. The County of Los Angeles Traffic Impact Analysis Report Guidelines define the following project-related increases in v/c (or ICU value) at a signalized intersection as significant:

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Pre-Project LOS & v/c	Project Related v/c increase
C: 0.71– 0.80	Equal to or greater than 0.04
D: 0.81 – 0.90	Equal to or greater than 0.02
E: 0.91 or more	Equal to or greater than 0.01

As an example of how this methodology is applied, if an intersection operates at LOS A in a pre-project scenario and worsens to LOS C in a post-project scenario, there would be no significant impact. The impact threshold utilized is based on the *pre-project* LOS, not post-project LOS.

The County of Los Angeles does not define significant impact standards for unsignalized intersections. At these locations, peak-hour traffic signal warrant analyses were conducted for this study, for pre-project and post-project conditions. The peak-hour signal warrant analyses conducted for the unsignalized study

intersections examined intersection approach and total turn movement volumes. The warrant analyses determined if traffic signal installation would be justified based on these volumes. These warrants were originally developed by Caltrans, and are now part of the Manual of Uniform Traffic Control Devices (MUTCD). If such warrants are not met, municipalities generally do not install traffic signals at the analyzed location. Beyond the significant impact analysis utilized in the traffic report for this project, signal warrant analyses are provided for all unsignalized study intersections. Impacts at unsignalized intersections were determined to be significant where 1) project traffic would result in LOS degradation from "E" or better to "F" or within LOS "F", and/or 2) project traffic would contribute to conditions under which traffic signal warrant analyses would be met.

Study Hours of Analysis

In order to capture the peak hours during the peak periods, traffic counts were performed for the following times at the study intersections:

Weekday	AM Period	7 AM to 9AM
	PM Period	4 PM to 6 PM
Saturday	Mid-Day	12 PM to 2 PM (9 selected intersections)

Project Impacts

Impact 3L1: The proposed project would impact local intersections and exceed significance criteria established by the City of San Dimas at nine intersections.

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The project site is located in a developed area of the City of San Dimas just south of the border of Glendora. To evaluate the potential impact of the proposed project on local traffic conditions, existing traffic volumes in the study area were first assessed without consideration of the proposed project. This provides a basis against which to measure the proposed project traffic impacts.

There are currently four intersections in the project study area that operate at LOS E or worse during the weekday PM peak period, as shown in Table 3L-2. Level of service D is generally considered to be the lowest acceptable LOS in an urban or suburban area. None of the study intersections operate at LOS E or worse during the weekday AM peak period or the Saturday mid-day peak period.

Signalized Intersections

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Future (Year 2005) Growth-Only Traffic Conditions

Completion of the proposed project is anticipated for the year 2005. To calculate base traffic conditions for 2005, existing peak hour conditions were increased by a factor of 1.01. This represents a 1% annual rate of growth for one year. Table 3L-3 provides the V/C ratios or delay and LOS values for each study intersection for future (2005) ambient growth conditions. Figures 3L-6 and 3L-7 provide 2005 weekday ambient AM and PM peak hour traffic volumes, respectively. Figure 3L-8 provides 2005 ambient Saturday mid-day peak hour traffic volumes.

TABLE 3L-3: YEAR 2005 AMBIENT GROWTH TRAFFIC CONDITIONS

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak**	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.700	C	0.766	C	-	-
2. Amelia Ave./Route 66	0.459	A	0.494	A	-	-
3. Lone Hill Ave./Kenoma St. *	32.1 sec.	D	>100 sec.	F	-	-
4. Lone Hill Ave./Petunia St.	0.470	A	0.499	A	-	-
5. Lone Hill Ave./I-210 Wb ramps	0.882	D	1.270	F	-	-
6. Lone Hill Ave./I-210 Eb ramps	0.614	B	0.732	C	-	-
7. Lone Hill Ave./Auto Centre Dr.	0.495	A	0.777	C	0.663	B
8. Walmart Dwy./Auto Centre Dr.	0.314	A	0.456	A	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.395	A	0.576	A	-	-
10. Amelia Ave./Auto Centre Dr.-Allen	0.352	A	0.378	A	-	-
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.274	A	0.412	A	0.489	B
12. Sunflower St./Gladstone St.	0.396	A	0.412	B	-	-
13. Willow St./Gladstone St. *	10.1 sec.	B	11.5 sec.	B	-	-
14. Valley Center Ave./Gladstone St. *	10.5 sec.	B	13.6 sec.	B	-	-
15. Shellman Ave. /Gladstone St. *	11.1 sec.	B	12.3 sec.	A	11.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.381	A	0.519	A	0.764	C
17. Amelia Ave.-Pearlanna/Gladstone St.	0.352	A	0.431	A	0.293	A
18. Lone Hill Ave./Arrow Hwy.	0.501	A	0.568	A	0.508	A
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.499	A	0.597	A	0.703	C
20. Arrow Hwy./North Village Ct.	0.372	A	0.481	A	0.601	B
21. Arrow Hwy./Bonita Ave.	0.724	C	0.948	E	0.721	C

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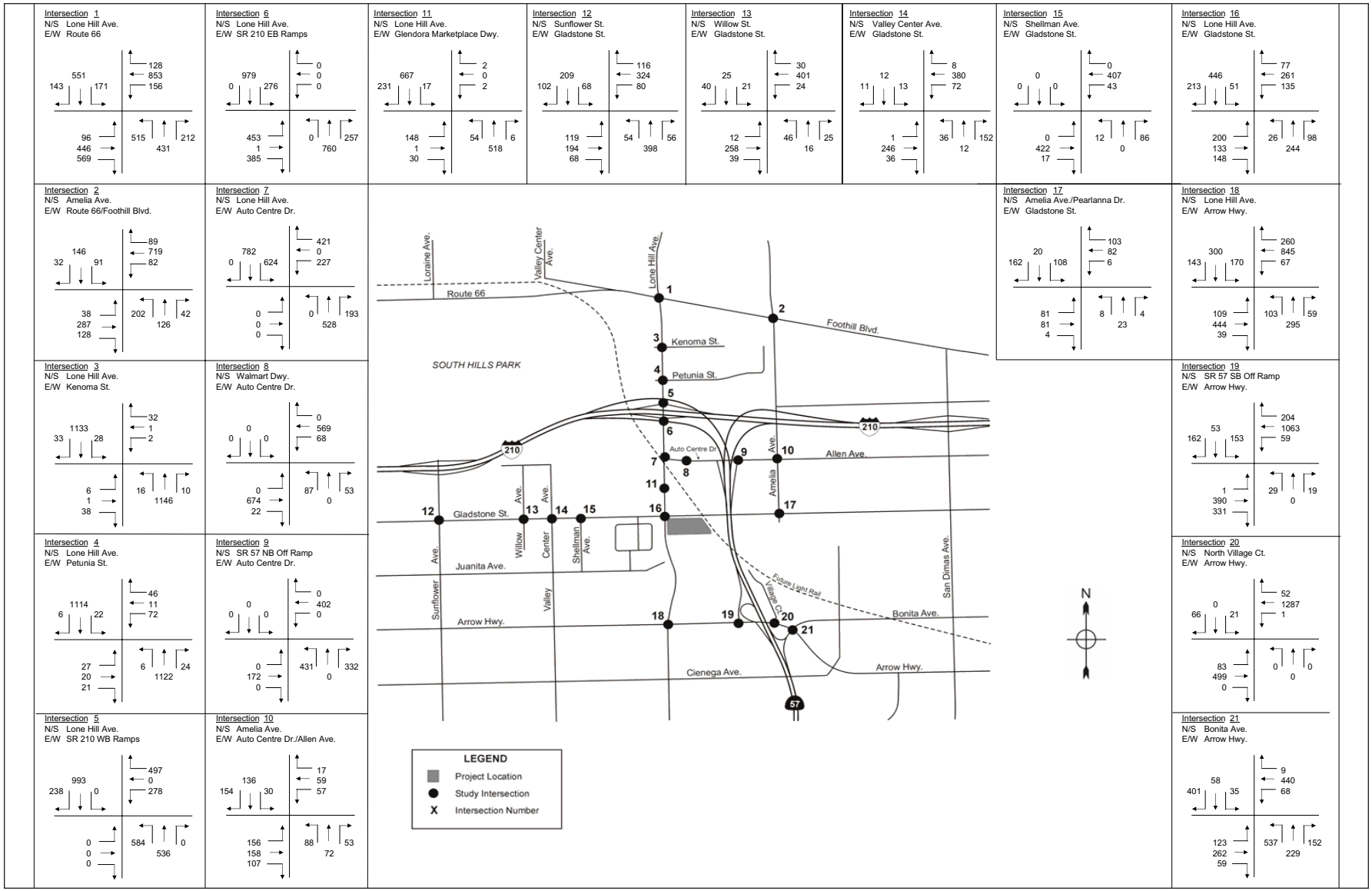
** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

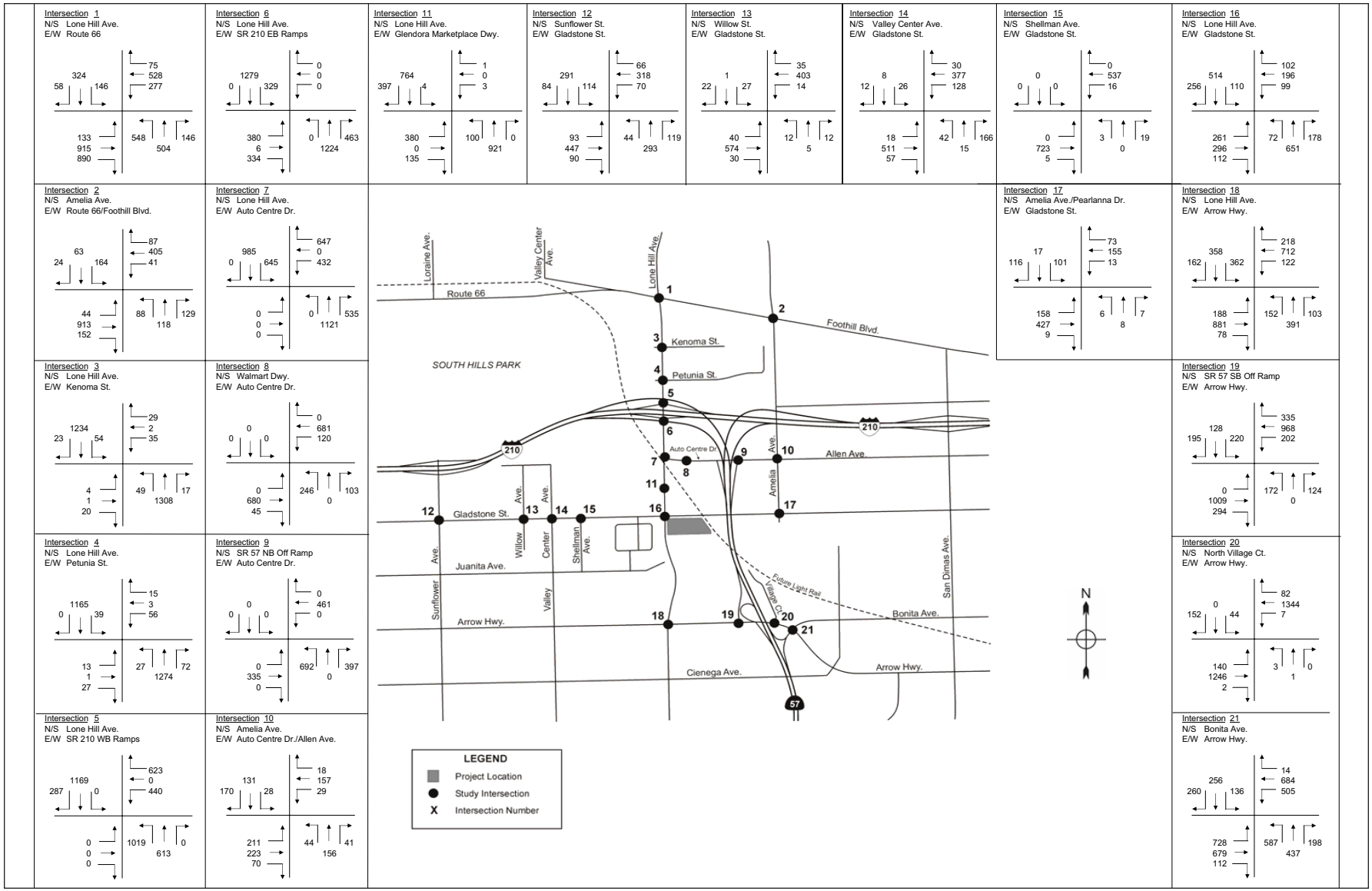
Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California,* February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-6

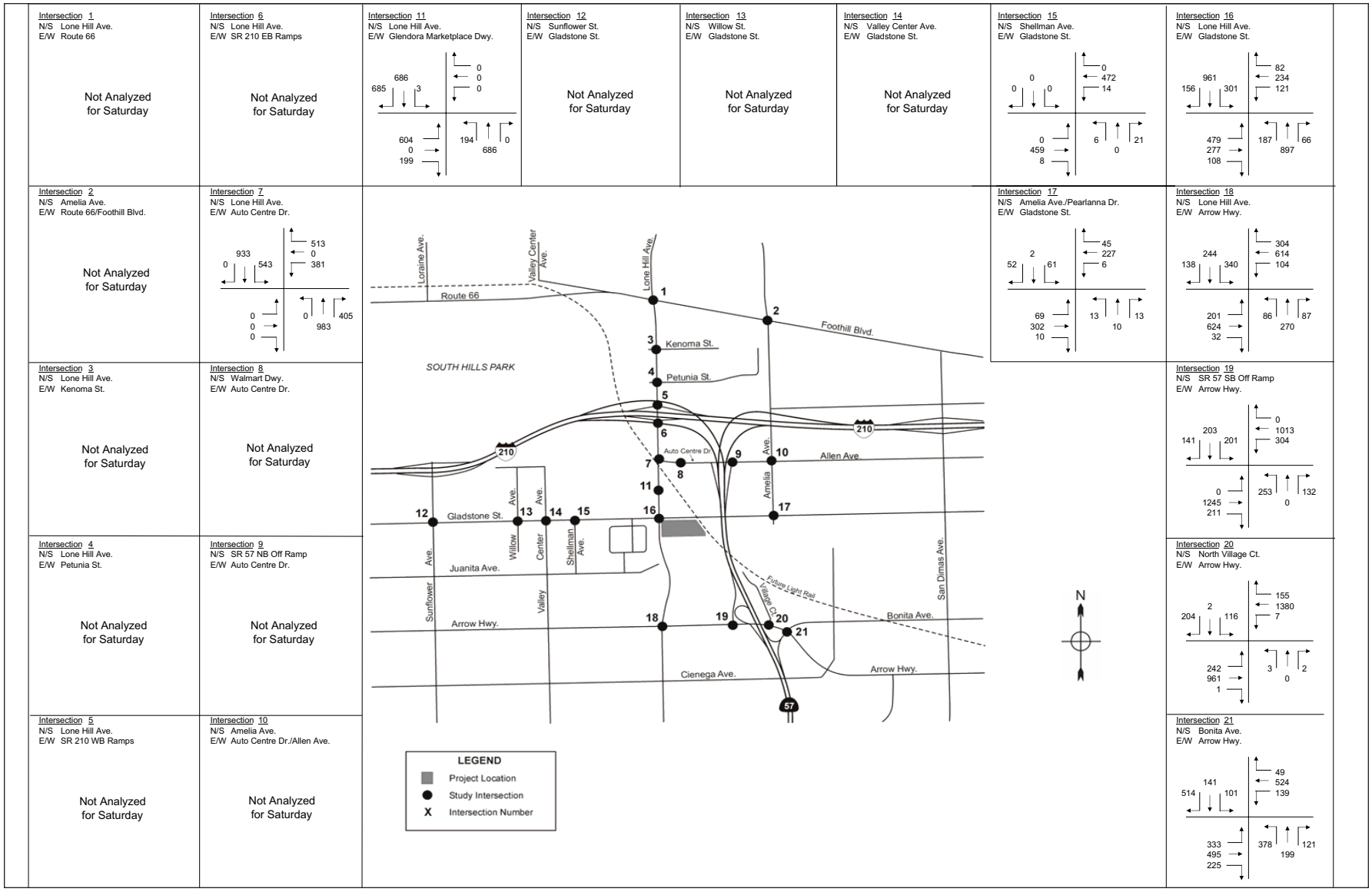
Future (2005) Weekday Ambient AM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-7

Future (2005) Weekday Ambient PM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-8

Future (2005) Saturday Ambient Peak Hour Traffic Volumes

Proposed Project Only Traffic Conditions

Based on trip generation rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 6th* Edition, the proposed development is projected to generate a net total of 12,123 trips per day with 362 weekday AM peak trips and 853 weekday PM peak trips. [4]

Trip distribution represents the directional orientation of traffic to and from the proposed project site. Trip distribution is influenced by the geographical location of the site, the location of employment, commercial, residential, and recreational facilities; and the proximity of the regional freeway system. The directional orientation of area traffic was determined by evaluating the existing and proposed land uses within the community and existing traffic volumes. Trip distribution for the traffic study was based upon near-term conditions which considered those highway facilities that were in place at the time the study was conducted. The patterns for the proposed project area on major roadways are shown in Figure 3L-9. Figure 3L-10 shows project trip distribution percentages for intersections in the project study area. The "internal distribution area" illustrated in Figure 3L-10 represents a distribution to local destinations near the Project site, such as the WalMart or Marketplace developments or close-in residential areas. Identification of this internal distribution area provides greater understanding of trip generation and distribution. In such an area people may be expected to visit multiple locations while running errands, for example. The assignment of traffic from the proposed project site to the adjoining roadway system was based on the proposed project site's trip generation, trip distributions, and existing arterial highway and local street systems. The same distribution was utilized for the a.m. as for the p.m. peak period and Saturday mid-day peak period, as the Costco gas station would be operational in the a.m. peak period and many users in the morning would likely be commuters. Therefore, trip attraction to and from the freeway would be roughly the same in either period. Based on identified project trip generation and distribution, the weekday AM and PM peak hour project trips are depicted in Figures 3L-11 and 3L-12, respectively. Figure 3L-13 depicts Saturday mid-day peak hour project trips.

Year 2005 With Proposed Project Traffic Conditions

In order to assess the impact of the proposed project on ambient conditions in 2005, proposed project traffic only volumes were combined with projected Year 2005 ambient traffic volumes. Table 3L-4 provides the V/C ratios or delay and LOS values for this scenario. LOS would be worsened by project traffic at one study intersection in the weekday AM peak period, five intersections in the weekday PM period, and three intersections in the Saturday mid-day period. In two occurrences—at Lone Hill Avenue/I-210 westbound ramp and Lone Hill Avenue/Gladstone Street—decline involves LOS values of E. Peak hour traffic volumes for this scenario are provided in Figures 3L-14 through 3L-16.

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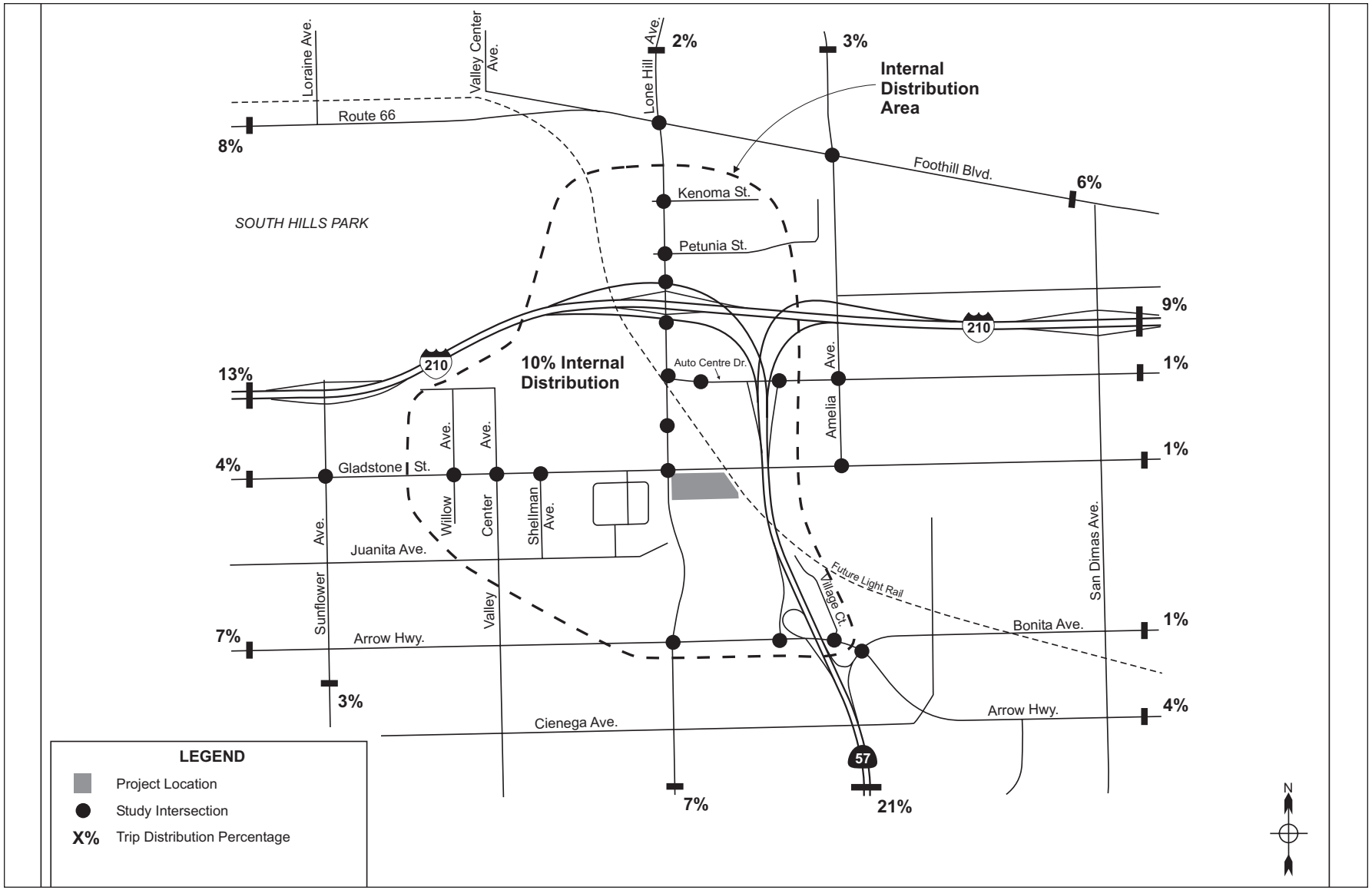
Year 2005 With Cumulative Development Traffic Conditions

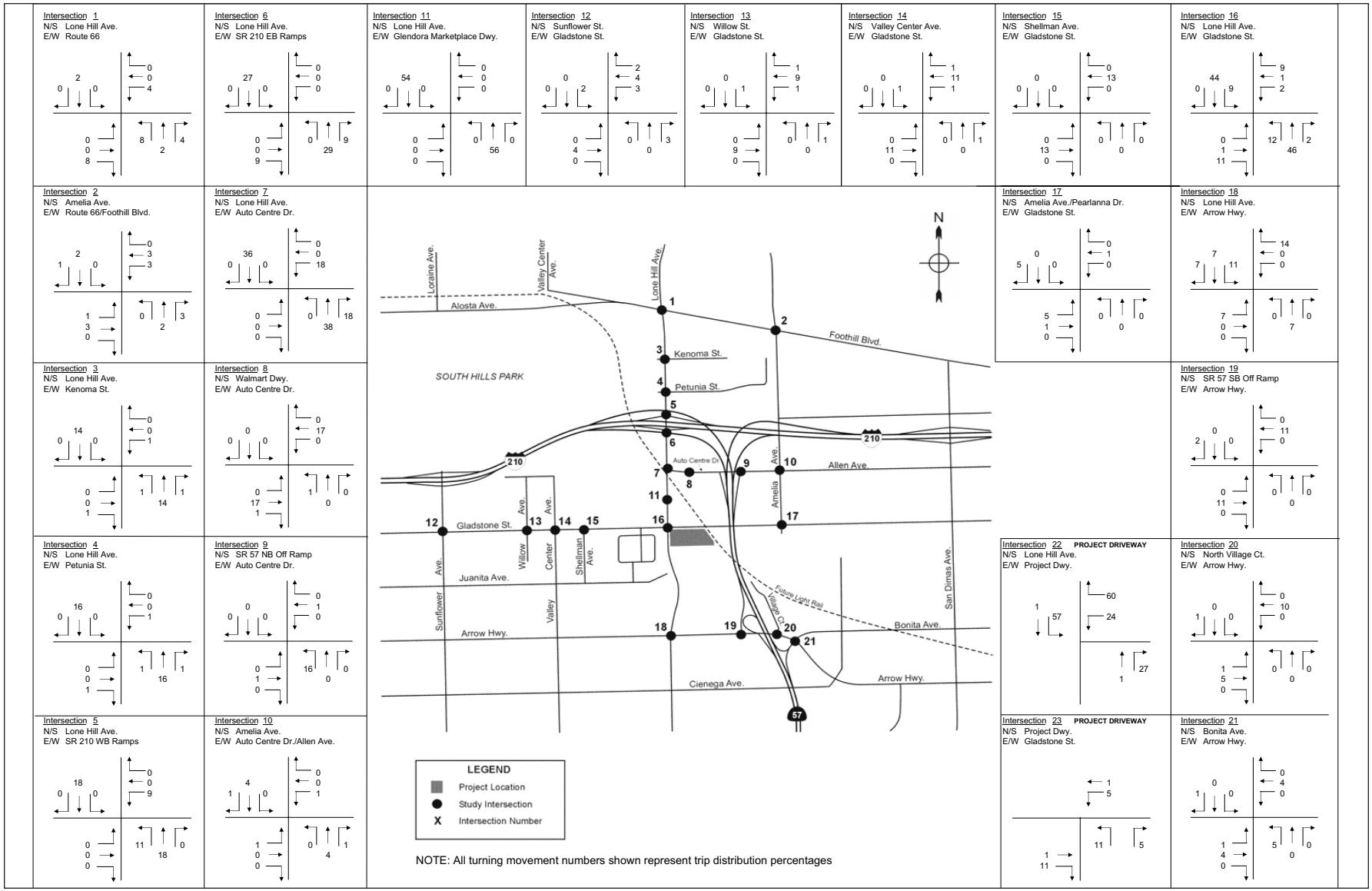
Approved and pending projects within a two-mile radius of the project site were considered for the cumulative analysis. The size of this radius is beyond the 1.5 mile radius required in the Los

[4] Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

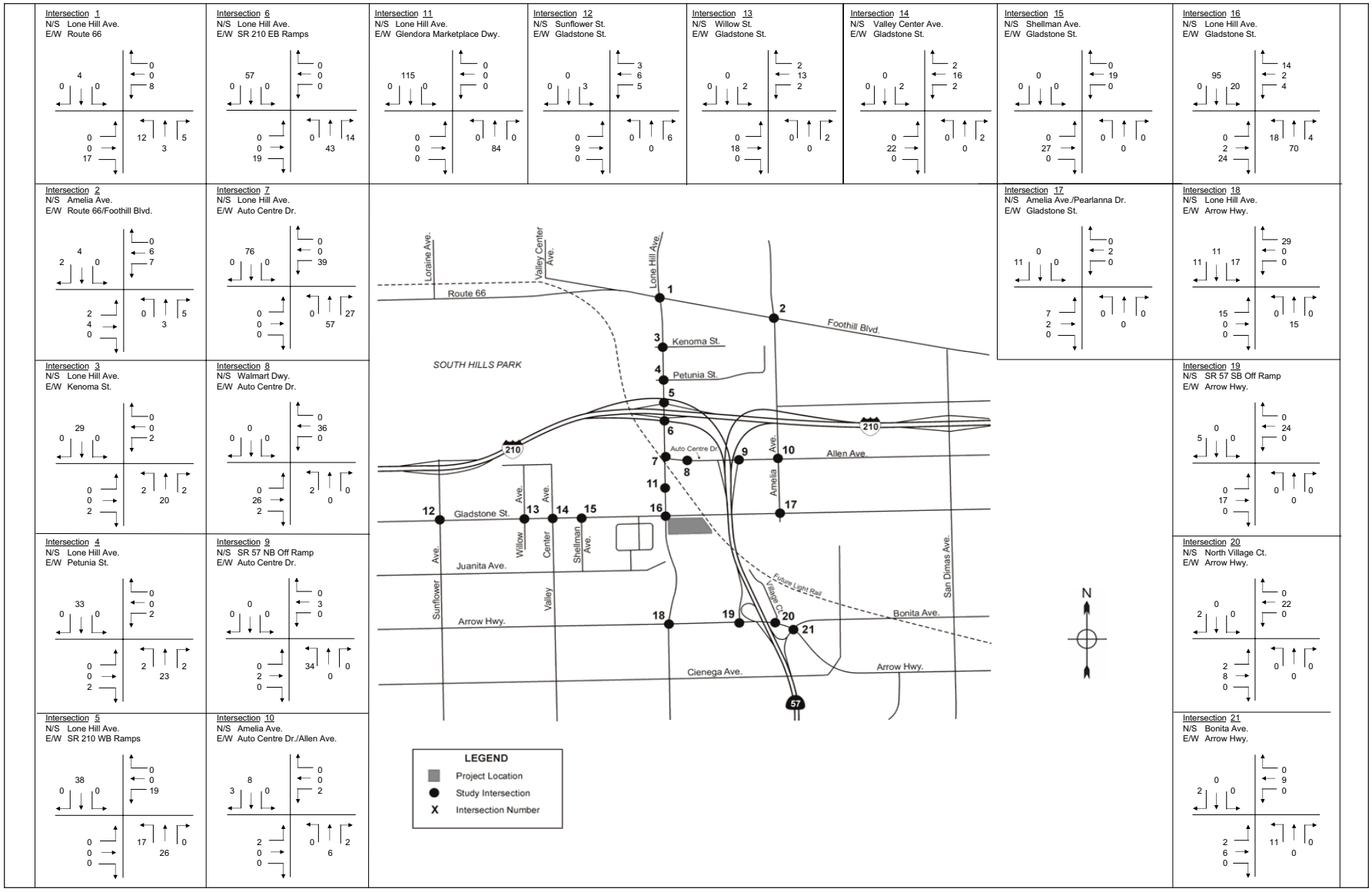
Figure 3L-9
Major Roadway Project Trip Distribution



SOURCE: Katz, Okitsu & Associates, February 2004

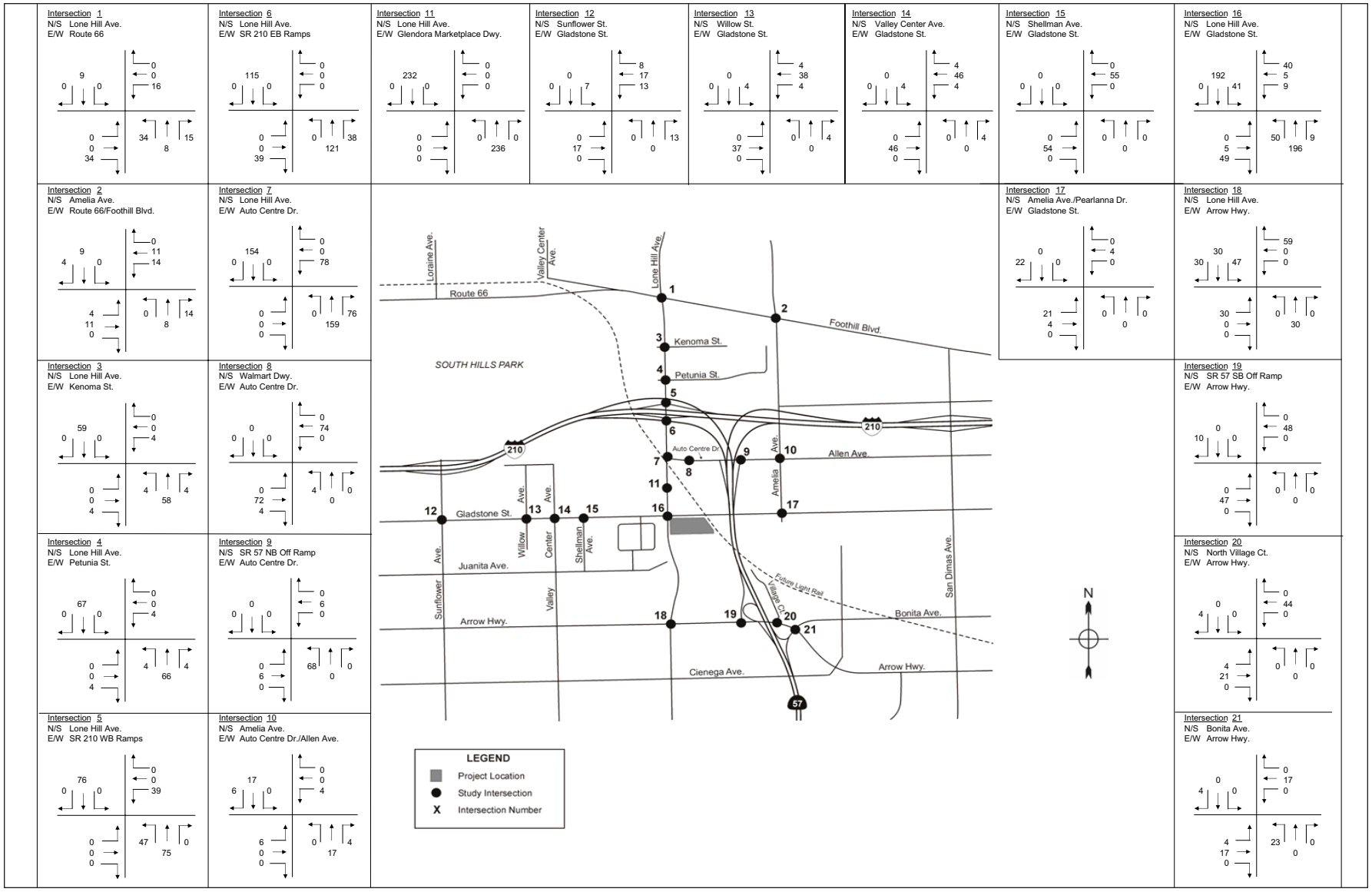
Figure 3L-10

Intersection Project Trip Distribution Percentages



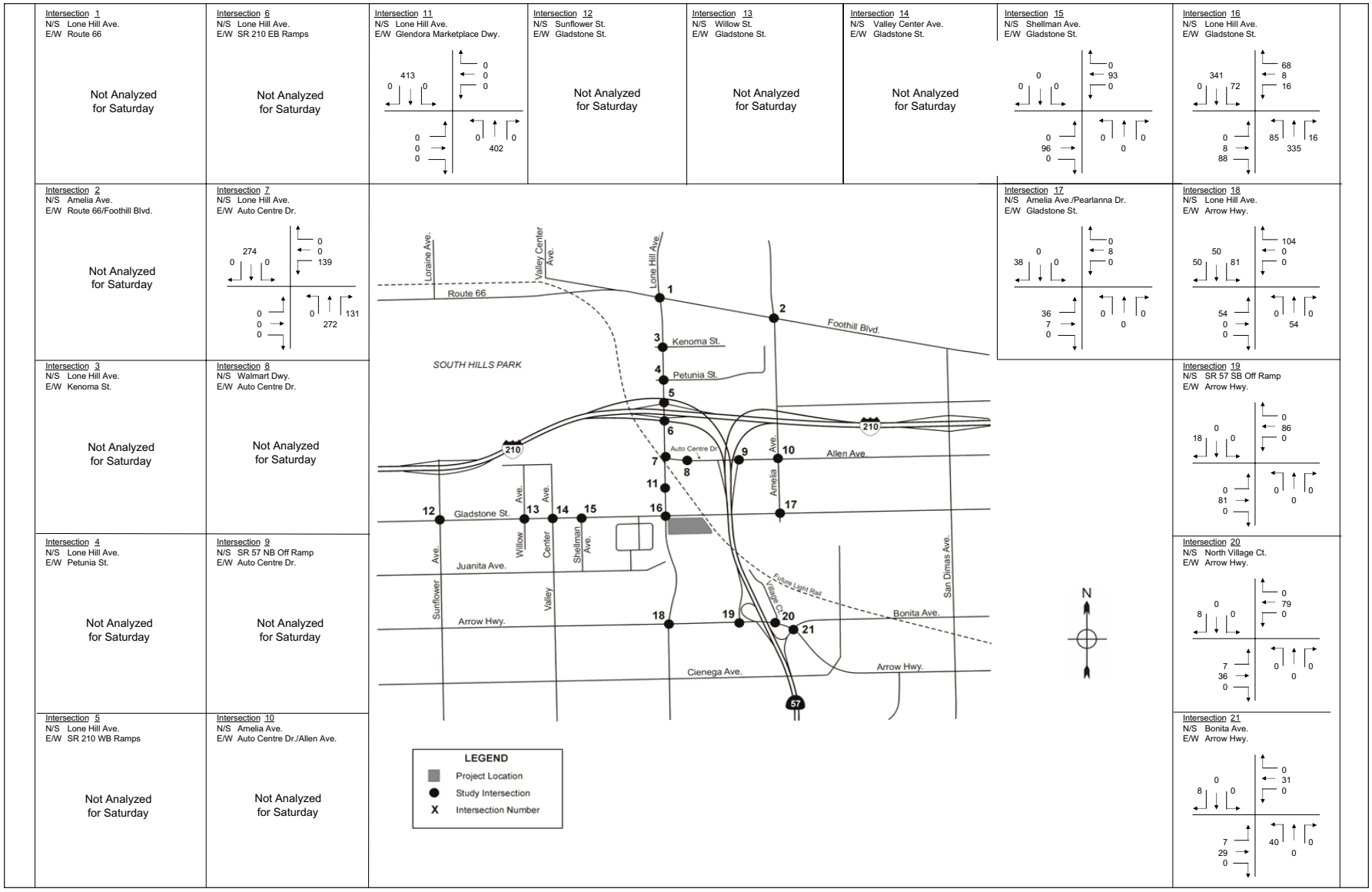
SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-11
Weekday AM Peak Hour Project Trips



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-12
Weekday PM Peak Hour Project Trips



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-13
Saturday Peak Hour Project Trips

TABLE 3L-4: YEAR 2005 WITH PROPOSED PROJECT ONLY

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak**	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66-Foothill Blvd.	0.705	C	0.789	C	-	-
2. Amelia Ave./Foothill Blvd.	0.464	A	0.515	A	-	-
3. Lone Hill Ave./Kenoma St. *	33.9 sec.	D	>100 sec.	F	-	-
4. Lone Hill Ave./Petunia St.	0.479	A	0.533	A	-	-
5. Lone Hill Ave./I-210 Wb ramps	0.901	E	1.315	F	-	-
6. Lone Hill Ave./I-210 Eb ramps	0.623	B	0.756	C	-	-
7. Lone Hill Ave./Auto Centre Dr.	0.521	A	0.843	D	0.777	C
8. Walmart Dwy./Auto Centre Dr.	0.324	A	0.482	A	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.417	A	0.621	B	-	-
10. Amelia Ave./Auto Centre Dr.-Allen	0.355	A	0.399	A	-	-
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.310	A	0.485	A	0.593	A
12. Sunflower St./Gladstone St.	0.403	A	0.433	A	-	-
13. Willow St./Gladstone St. *	10.3 sec.	B	12.2 sec.	B	-	-
14. Valley Center Ave./Gladstone St. *	10.8 sec.	B	15.0 sec.	B	-	-
15. Shellman Ave. /Gladstone St. *	11.3 sec.	B	12.8 sec.	B	12.0 sec.	B
16. Lone Hill Ave./Gladstone St.	0.423	A	0.615	B	0.919	E
17. Amelia Ave.-Pearlanna/Gladstone St.	0.365	A	0.447	A	0.344	A
18. Lone Hill Ave./Arrow Hwy.	0.524	A	0.618	B	0.647	B
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.512	A	0.613	B	0.720	C
20. Arrow Hwy./North Village Ct.	0.379	A	0.496	A	0.626	B
21. Arrow Hwy./Bonita Ave./SR-57 Nb ramps	0.735	C	0.958	E	0.761	C

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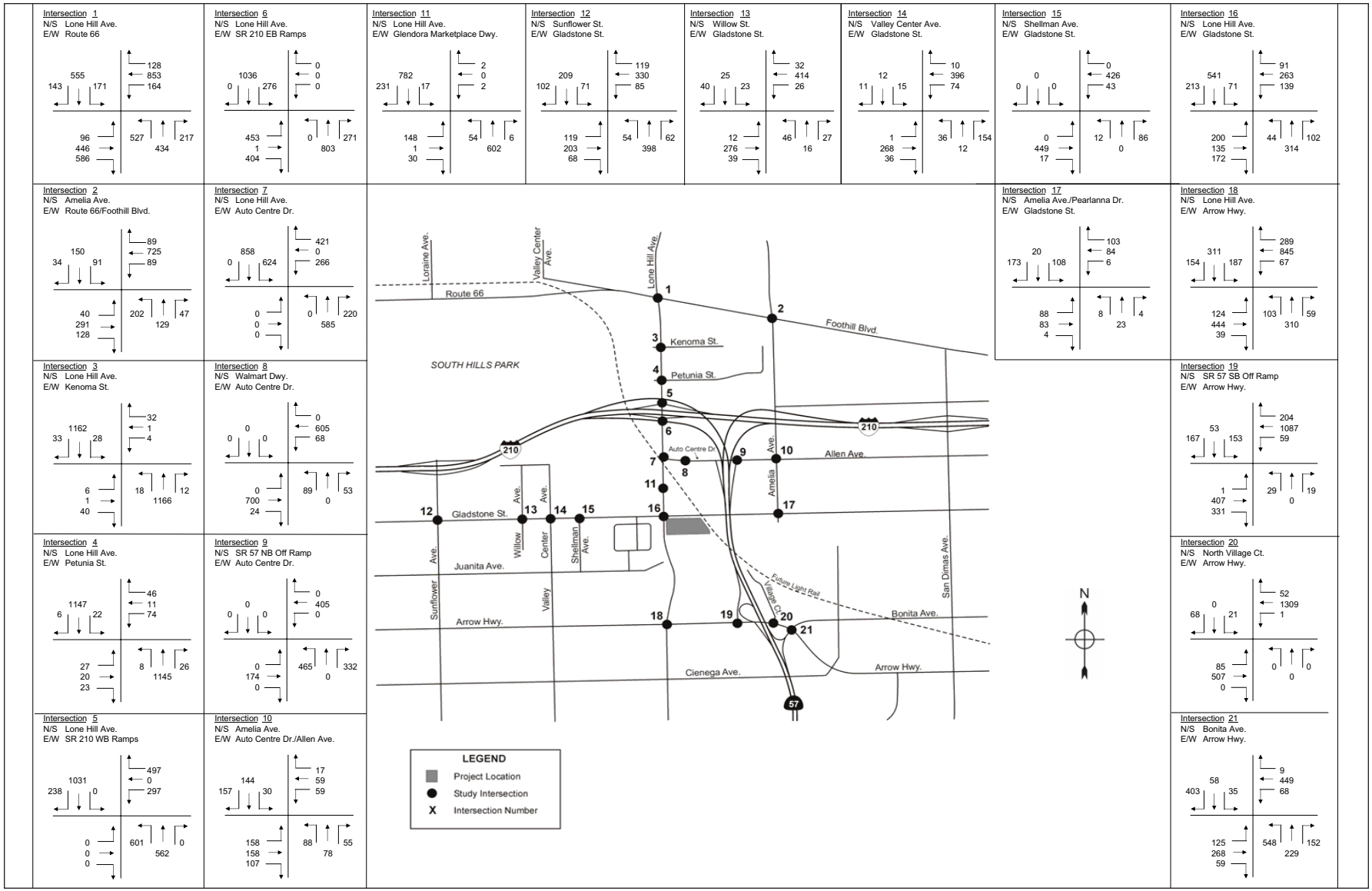
** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

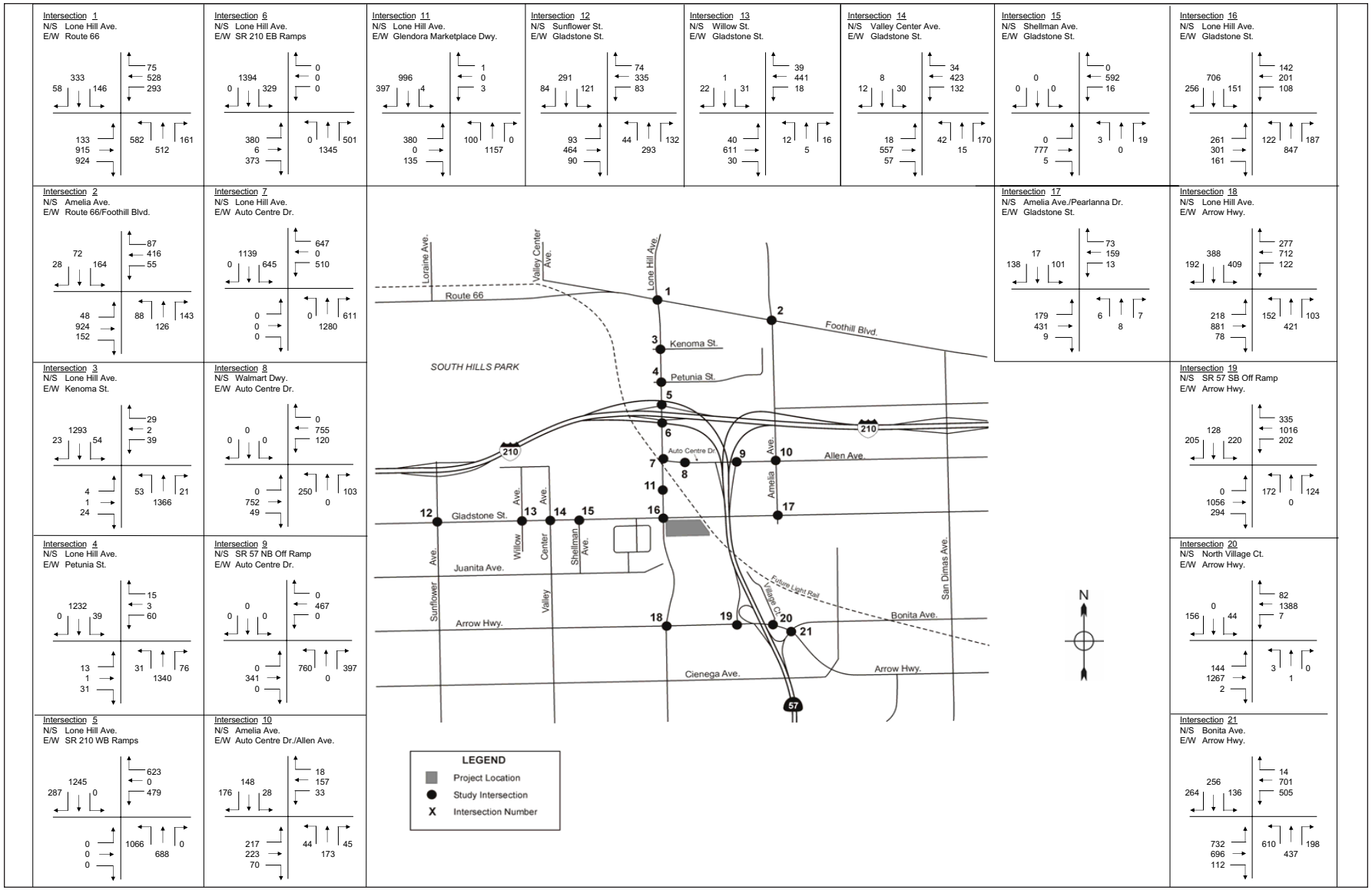
Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-14

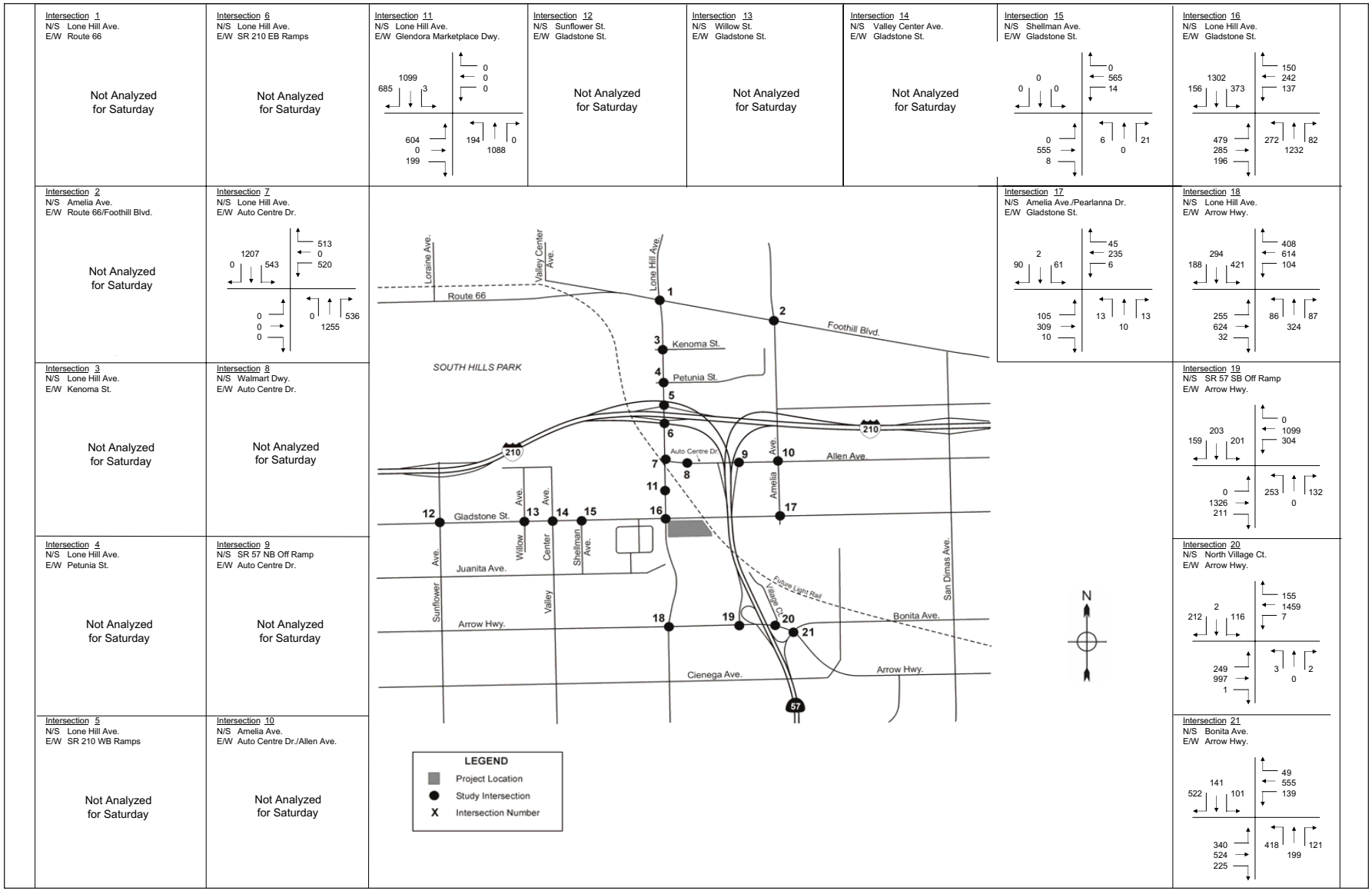
Future (2005) with Project Weekday AM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-15

Future (2005) with Project Weekday PM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-16

Future (2005) with Project Saturday Peak Hour Traffic Volumes

Angeles County traffic study guidelines. Based on information from the City of San Dimas and the City of Glendora, a total of 24 cumulative projects will contribute measurable traffic volumes to the study area within the year 2005 timeframe. A list of these cumulative projects is shown in Table 3L-5. Trip generation totals for these projects were taken from information from recent traffic studies provided by the City of San Dimas or the City of Glendora. If this information was not available, ITE trip generation rates were utilized for weekday or Saturday trip generation based on the planned intensity of each project.

The Gold Line light rail project, with stations near the downtown areas of both Glendora and San Dimas, was not included in the cumulative projects list. This project, under current projections, would not be operational until 2009, which is well after build-out of the Costco project. The eastern terminus of the line within that timeframe could be Irwindale or Claremont, depending upon the final alternative selected during the environmental review process. The project and its operations are not considered reasonably foreseeable and to identify impacts would be entirely speculative because a) light rail service may or may not be established across the Lone Hill and Gladstone crossings, depending on the light rail project alternative chosen, and b) no information currently exists concerning proposed operating frequencies. Figure 3L-17 shows the locations of cumulative projects.

Prior to assessing this scenario with the year 2005 ambient conditions, cumulative project trips alone were assessed for the peak hours. Figures 3L-18 and 3L-19 indicate weekday AM and PM peak hour cumulative project trips. Figure 3L-20 shows Saturday mid-day peak hour cumulative project trips.

Cumulative project trips were combined with data for year 2005 ambient traffic conditions to obtain data for traffic conditions for the year 2005 with cumulative projects. Table 3L-6 summarizes the LOS of the study intersections under this scenario. Bold text indicates where cumulative project traffic would worsen LOS values compared to future ambient growth conditions. The addition of traffic from cumulative projects would worsen the LOS at three study intersections in the AM peak period, eleven intersections in the weekday peak period, and six intersections in the Saturday mid-day peak period.

Peak hour traffic volumes for the year 2005 with cumulative development are shown in Figures 3L-21 through 3L-23.

Year 2005 With Cumulative Projects And Proposed Project Traffic Conditions

Table 3L-7 summarizes the intersection operations and LOS values for opening year 2005 conditions (including cumulative projects) with the proposed project. Figures 3L-24 through 3L-26 show the peak hour traffic volumes for opening year 2005 conditions with cumulative projects and the proposed project.

The analysis of significant impacts was based on significance thresholds detailed on page 3L-15. Table 3L-8 summarizes results of the traffic study scenarios and indicates intersections and hours of significant impacts. The comparison of V/C values indicates significant impacts before mitigation to traffic and circulation for two study intersections during the weekday AM peak

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TABLE 3L-5: CUMULATIVE PROJECT LIST

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
1	Glendora	Tract 46684 (Gard Ranch)	Under Constr.	27 dwelling units	27.000	Units	258	20	5	15	27	17	10	25	14	12
2	Glendora	Amelia Avenue and Wildwood Ranch Road	Zoning Application	76 hillside dwelling units	76.000	Units	727	57	14	43	77	49	28	71	39	33
3	Glendora	Lone Hill, North of Foothill	Under Constr.	67 hillside dwelling units	109.000	Units	1,043	82	20	61	110	70	40	102	55	47
4	Glendora	Amelia and Foothill	Under Constr.	22 SF dwelling units	22.000	Units	211	17	4	12	22	14	8	21	11	10
5	Glendora	NE corner of Amelia & Route 66	Under Constr.	65 SF dwelling units	65.000	Units	622	49	12	37	66	42	24	61	33	28
6	Glendora	Lone Hill and Auto Centre	Pending Approval	12-purnp service station	12.000	Pump	2,023	147	75	72	175	89	86	175	89	86
7	Glendora	NW corner of Lone Hill and Gladstone	Under Constr.	40,000 sq. ft. auto dealer	40.000	KSF	1,500	88	64	24	112	45	67	119	61	58
8	San Dimas	1255 and 1256 West Arrow	Under Constr.	28,118 sq.ft. Kaiser office	28.118	KSF	1,016	68	55	14	103	28	75	102	58	44
9	San Dimas	120 East Bonita Avenue	Under Construction	13,013 sq.ft. drive-thru pharmacy	13.013	KSF	1,147	35	20	15	135	66	69	135	66	69
10	San Dimas	742 East Bonita Avenue	Under Constr.	Church, 45,600 sq.ft. expans.	45.600	KSF	415	33	18	15	30	16	14	148	110	39

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
11	San Dimas	NE corner of Arrow and Eucla	Approved	Hotel (assumed size at 100 rooms)	100.000	Units	563	45	17	28	47	25	22	76	34	42
12-a	San Dimas	328 West Arrow Highway	Pending Approval	Multi use facility w/auto repair	20.000	KSF	676	59	38	21	68	34	34	68	34	34
12-b				614 self-storage units	614.000	Units	172	92	54	38	160	81	78	246	123	123
13	San Dimas	SW corner of Arrow & San Dimas	Pending Approval	Mixed-Use Project	40.000	KSF	1,717	41	25	16	150	72	78	199	103	95
14	San Dimas	SE corner of Arrow & San Dimas	Pending Approval	16 industrial buildings	172.000	KSF	1,199	158	139	19	169	21	148	24	11	13
15	San Dimas	320 West Covina Blvd.	Pending Approval	new industrial building	23.691	KSF	165	22	19	3	23	3	20	3	2	2
16	Covina	21000 Block East Cypress	Pending Approval	Construct 25 condos	25.000	Units	208	17	4	12	21	12	9	12	6	5
17	San Dimas	1335 West Cypress Street	Under Constr.	26,061 sq.ft. medical office	26.061	KSF	942	63	51	13	95	26	70	95	54	41
18	San Dimas	1160 South Valley Center	Approved	Subdivide 22 lots into 19 residential lots	19.000	Units	182	14	4	11	19	12	7	18	10	8
19	San Dimas	Baptist Bible College	Pending Approval	106 new single family homes	106.000	Units	1,014	80	20	60	107	69	39	100	54	46
20	Glendora	NEC Valley Center/ Gladstone	Application	Free-standing discount store	276.000	KSF	12,961	508	259	249	1,054	517	538	1,355	691	664

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
21A	Glendora	SWC Gladstone & Sunflower	Approved	Sunflower Library	15.000	KSF	810	16	11	4	106	51	55	101	54	48
21B				New soccer fields	3.000	Fields	214	4	2	2	62	43	19	86	41	45
22	Glendora	NEC Amelia & Route 66	Approved	9,000 sq.ft. office building	9.000	KSF	99	14	12	2	13	2	11	4	2	2
23	Glendora	Louie Pompei Sports Park, Valley Center near I-210	Approved	Add'l acres *	3.600	acres	6	0	0	0	0	0	0	6	3	2
				Ball fields **	9.000	Fields	729	0	0	0	243	122	122	481	241	241
				Soccer fields	3.000	Fields	214	4	2	2	62	43	19	86	41	45
24	Glendora	Lone Hill and Auto Centre	Application	Expansion of existing dealership	40.000	KSF	1,500	88	65	24	112	45	67	119	61	58
TOTALS:							**32,332**	**1,821**	1,011	810	**3,368**	1,614	1,755	**4,037**	2,100	1,937

** For City Park uses, ITE does not provide rates outside of daily rates per acre. This rate was therefore factored into peak numbers utilizing the ratios of peak and daily rates in the County Park category.*

*** Trip generation for ball fields taken from Field Usage Appendix of the South Weymouth Naval Air Station Open Space and Recreation Plan (re-use of base); Daylor Consulting Group, Inc.; January, 2002.*

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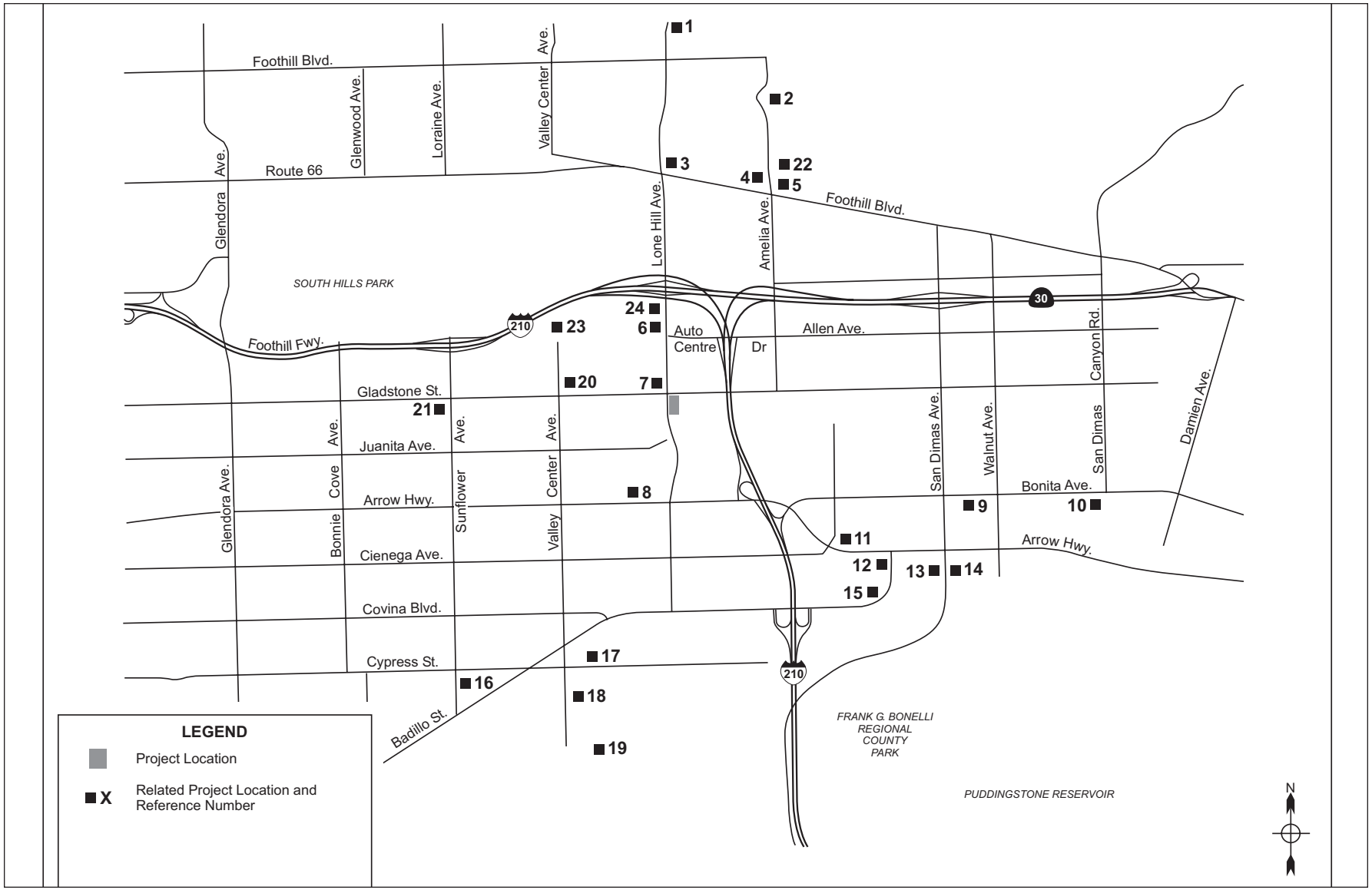
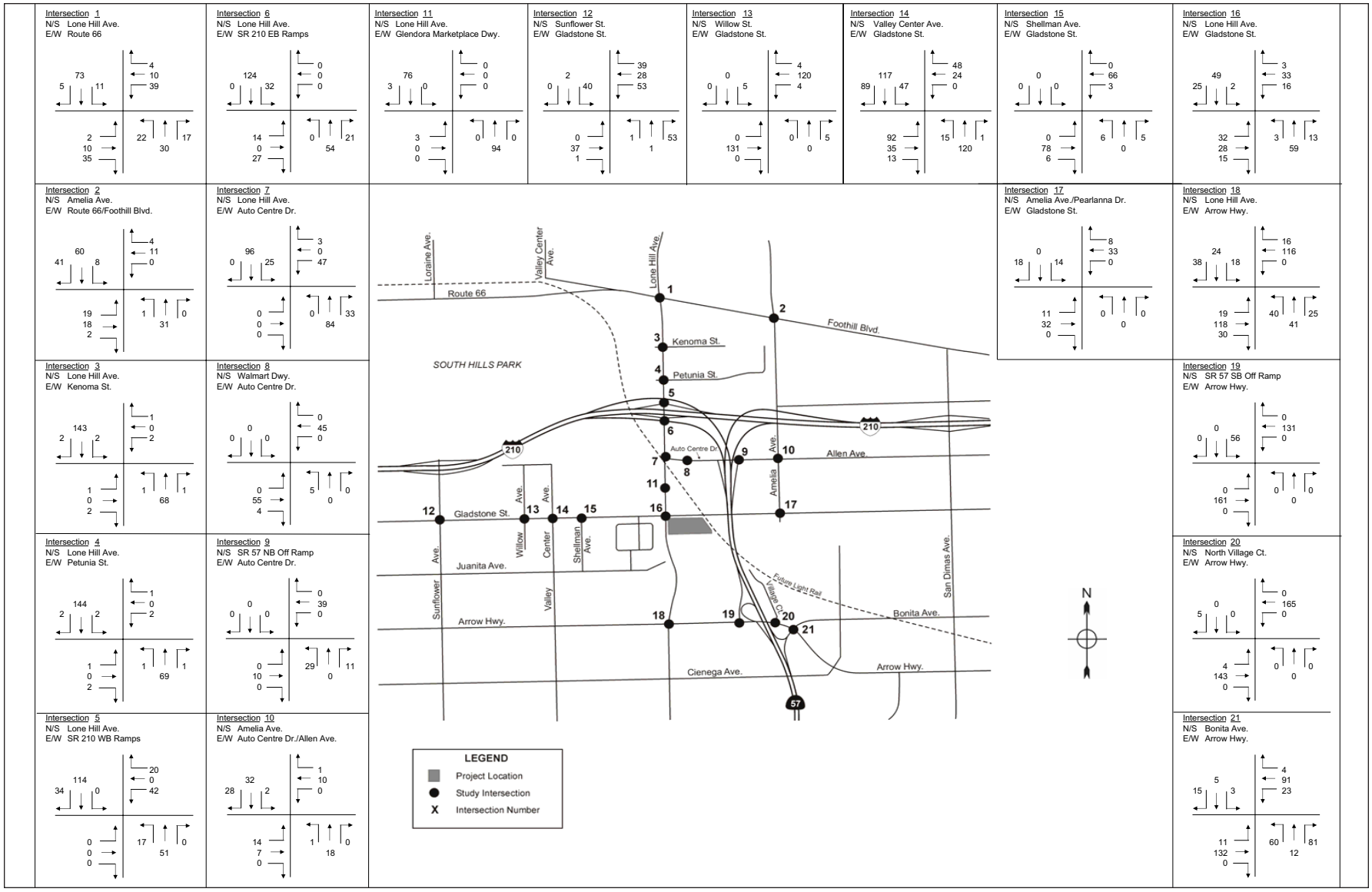
Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

Costco Commercial Complex / 202349 ■

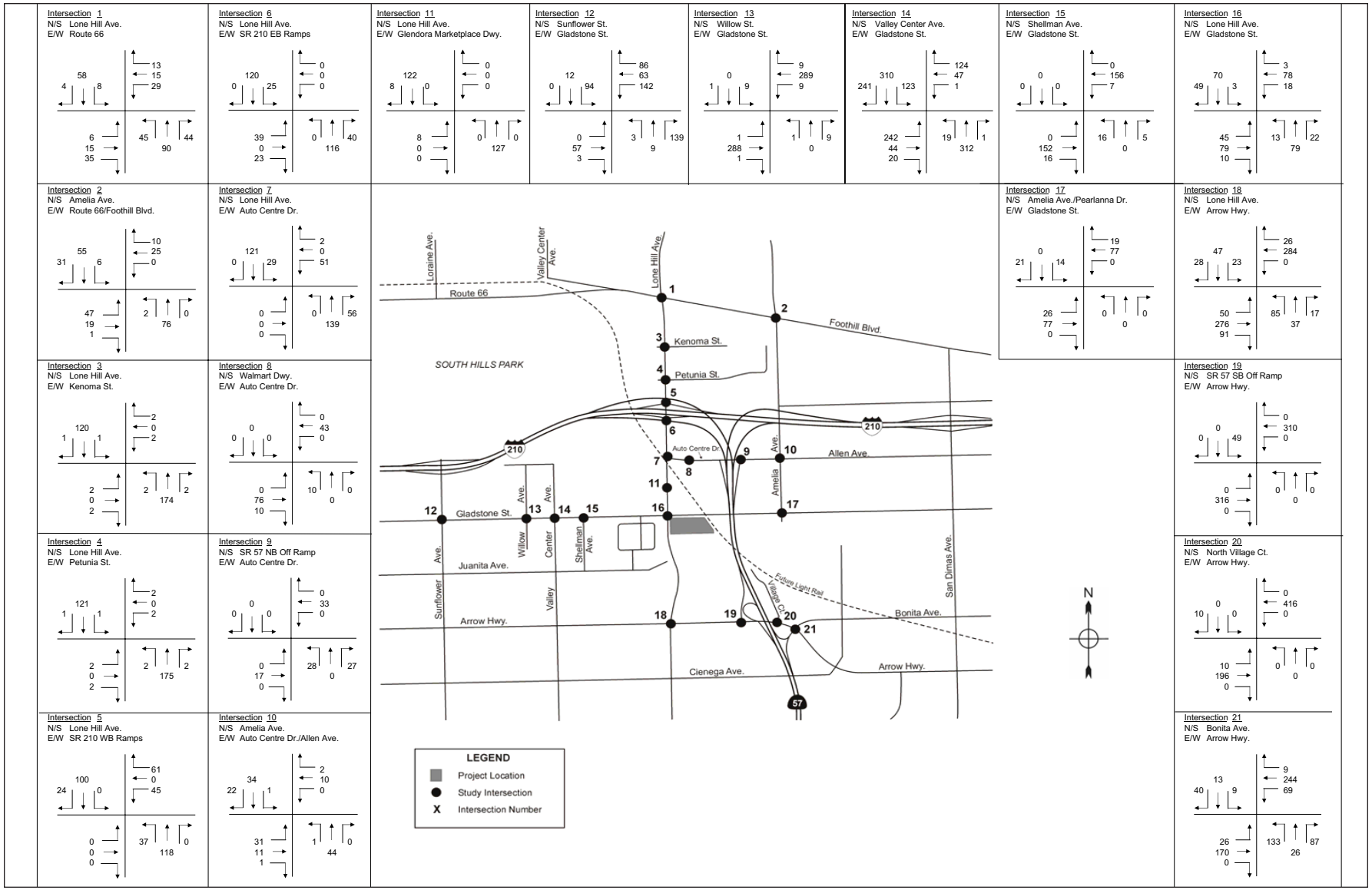
Figure 3L-17
Locations of Cumulative Projects



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-18

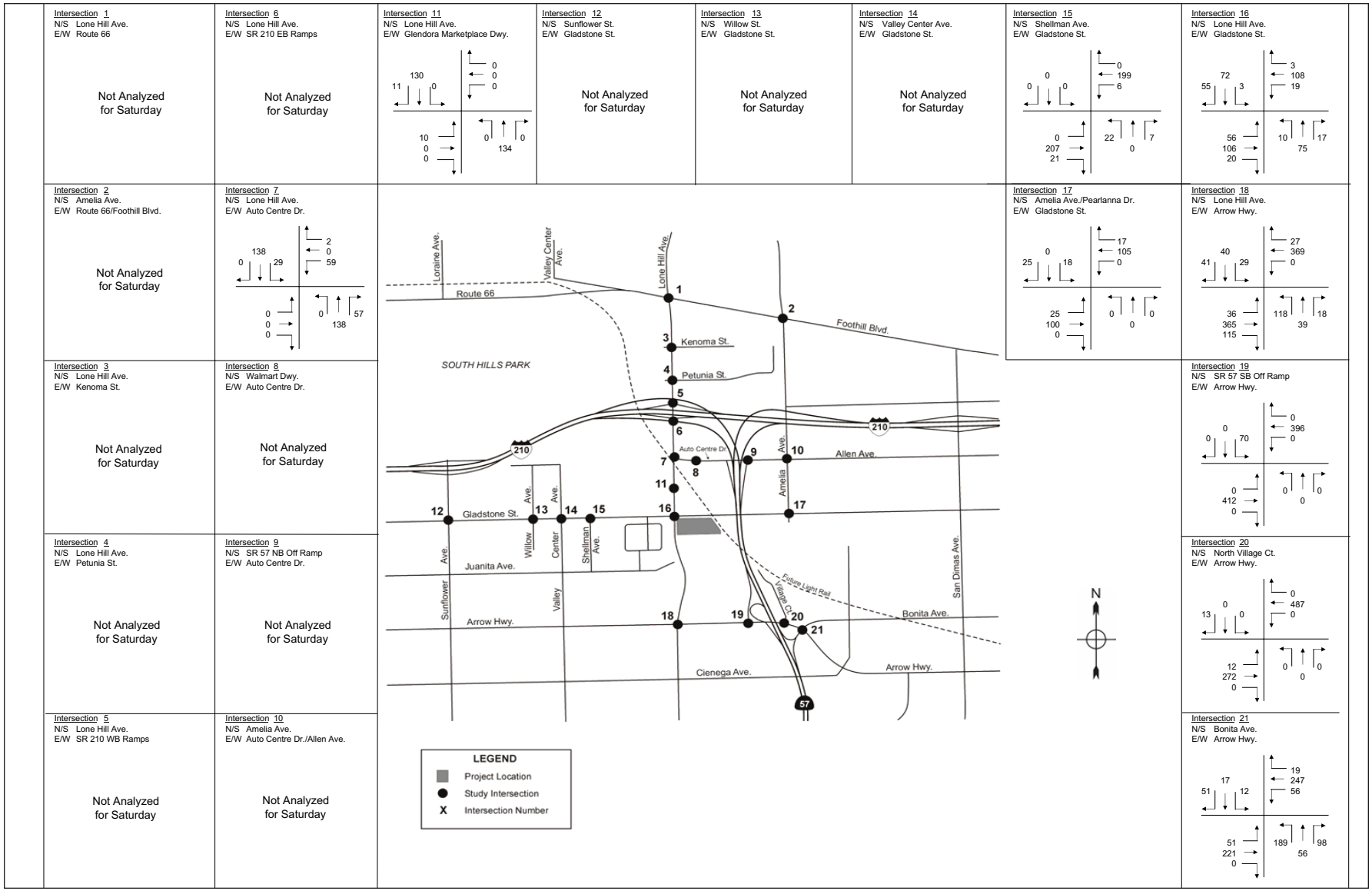
Weekday AM Peak Hour Cumulative Project Trips



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-19

Weekday PM Peak Hour Cumulative Project Trips



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-20

Saturday Peak Hour Cumulative Project Trips

TABLE 3L-6: YEAR 2005 WITH CUMULATIVE PROJECTS TRAFFIC CONDITIONS

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak**	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.735	C	0.830	D	-	-
2. Amelia Ave./Route 66	0.507	A	0.504	A	-	-
3. Lone Hill Ave./Kenoma St. *	48.6 sec.	E	>100 s.	F	-	-
4. Lone Hill Ave./Petunia St.	0.496	A	0.565	A	-	-
5. Lone Hill Ave./I-210 Wb ramps	0.929	E	1.352	F	-	-
6. Lone Hill Ave./I-210 Eb ramps	0.654	B	0.797	C	-	-
7. Lone Hill Ave./Auto Centre Dr.	0.540	A	0.841	D	0.728	C
8. Walmart Dwy./Auto Centre Dr.	0.336	A	0.489	A	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.425	A	0.604	B	-	-
10. Amelia Ave./Auto Centre Dr.-Allen	0.366	A	0.437	A	-	-
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.299	A	0.454	A	0.507	A
12. Sunflower St./Gladstone St.	0.459	A	0.624	B	-	-
13. Willow St./Gladstone St.	11.8 sec.	B	20.4 sec.	C	-	-
14. Valley Center Ave./Gladstone St.	19.1 sec.	B	>100 s.	F	-	-
15. Shellman Ave. /Gladstone St. *	12.4 sec.	B	21.4 sec.	C	18.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.429	A	0.606	B	0.875	D
17. Amelia Ave.-Pearlanna/Gladstone St.	0.405	A	0.501	A	0.412	A
18. Lone Hill Ave./Arrow Hwy.	0.585	A	0.741	C	0.694	B
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.577	A	0.665	B	0.810	D
20. Arrow Hwy./North Village Ct.	0.412	A	0.581	A	0.718	C
21. Arrow Hwy./Bonita Ave./SR-57 Nb ramps	0.799	C	1.109	F	0.948	E

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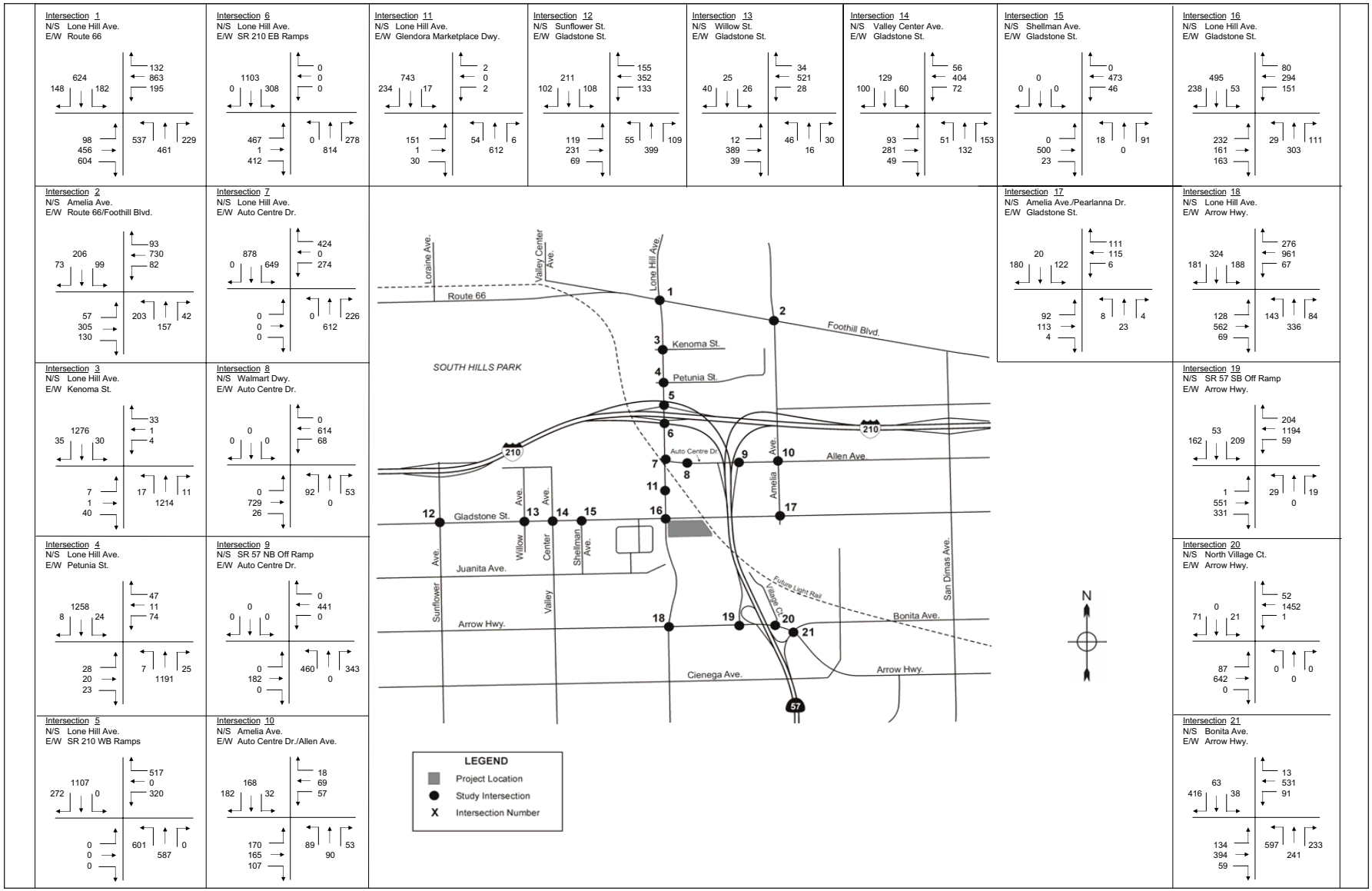
** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

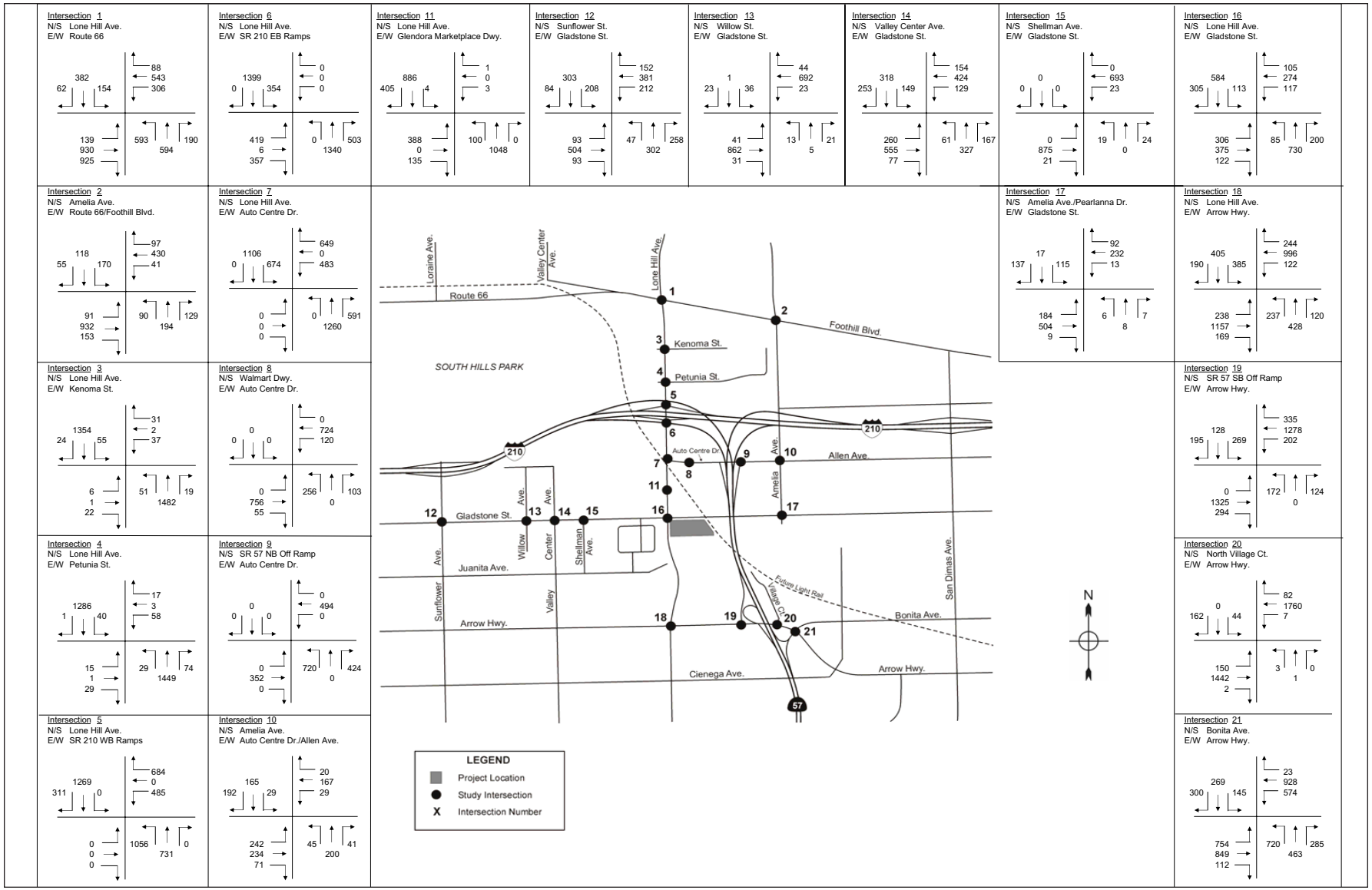
Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California,* February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-21

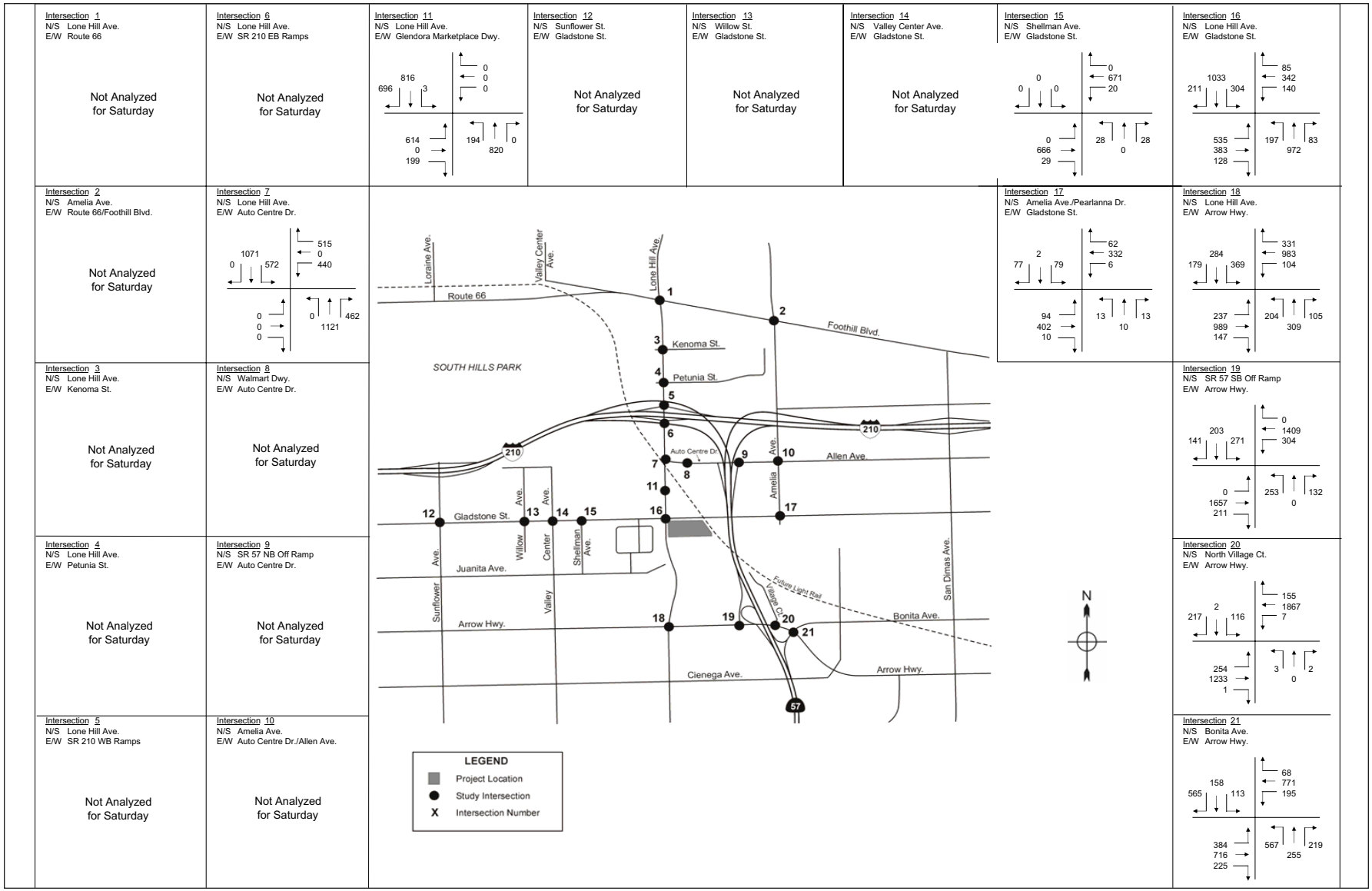
Future (2005) with Cumulative Projects Weekday AM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-22

Future (2005) with Cumulative Projects Weekday PM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-23

Future (2005) with Cumulative Projects Saturday Peak Hour Traffic Volumes

TABLE 3L-7: YEAR 2005 WITH CUMULATIVE PROJECTS AND PROPOSED PROJECT TRAFFIC CONDITIONS

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak**	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.741	C	0.854	D	-	-
2. Amelia Ave./Route 66	0.512	A	0.525	A	-	-
3. Lone Hill Ave./Kenoma St. *	52.5 sec.	F	>100 sec.	F	-	-
4. Lone Hill Ave./Petunia St.	0.505	A	0.592	A	-	-
5. Lone Hill Ave./I-210 Wb ramps	0.948	E	1.397	F	-	-
6. Lone Hill Ave./I-210 Eb ramps	0.663	B	0.820	D	-	-
7. Lone Hill Ave./Auto Centre Dr.	0.566	A	0.906	E	0.842	D
8. Walmart Dwy./Auto Centre Dr.	0.345	A	0.515	A	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.448	A	0.648	B	-	-
10. Amelia Ave./Auto Centre Dr.-Allen	0.377	A	0.454	A	-	-
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.335	A	0.528	A	0.636	B
12. Sunflower St./Gladstone St.	0.466	A	0.645	B	-	-
13. Willow St./Gladstone St. *	12.1 sec.	B	23.5 sec.	B	-	-
14. Valley Center Ave./Gladstone St. *	20.1 sec.	C	>100 sec.	F	-	-
15. Shellman Ave. /Gladstone St. *	12.7 sec.	B	23.5 sec.	C	21.4 sec.	C
16. Lone Hill Ave./Gladstone St.	0.471	A	0.702	C	1.029	F
17. Amelia Ave.-Pearlanna/Gladstone St.	0.418	A	0.519	A	0.462	A
18. Lone Hill Ave./Arrow Hwy.	0.607	B	0.790	C	0.781	C
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.590	A	0.679	B	0.827	D
20. Arrow Hwy./North Village Ct.	0.418	A	0.595	A	0.743	C
21. Arrow Hwy./Bonita Ave./SR-57 Nb ramps	0.811	D	1.119	F	0.988	E

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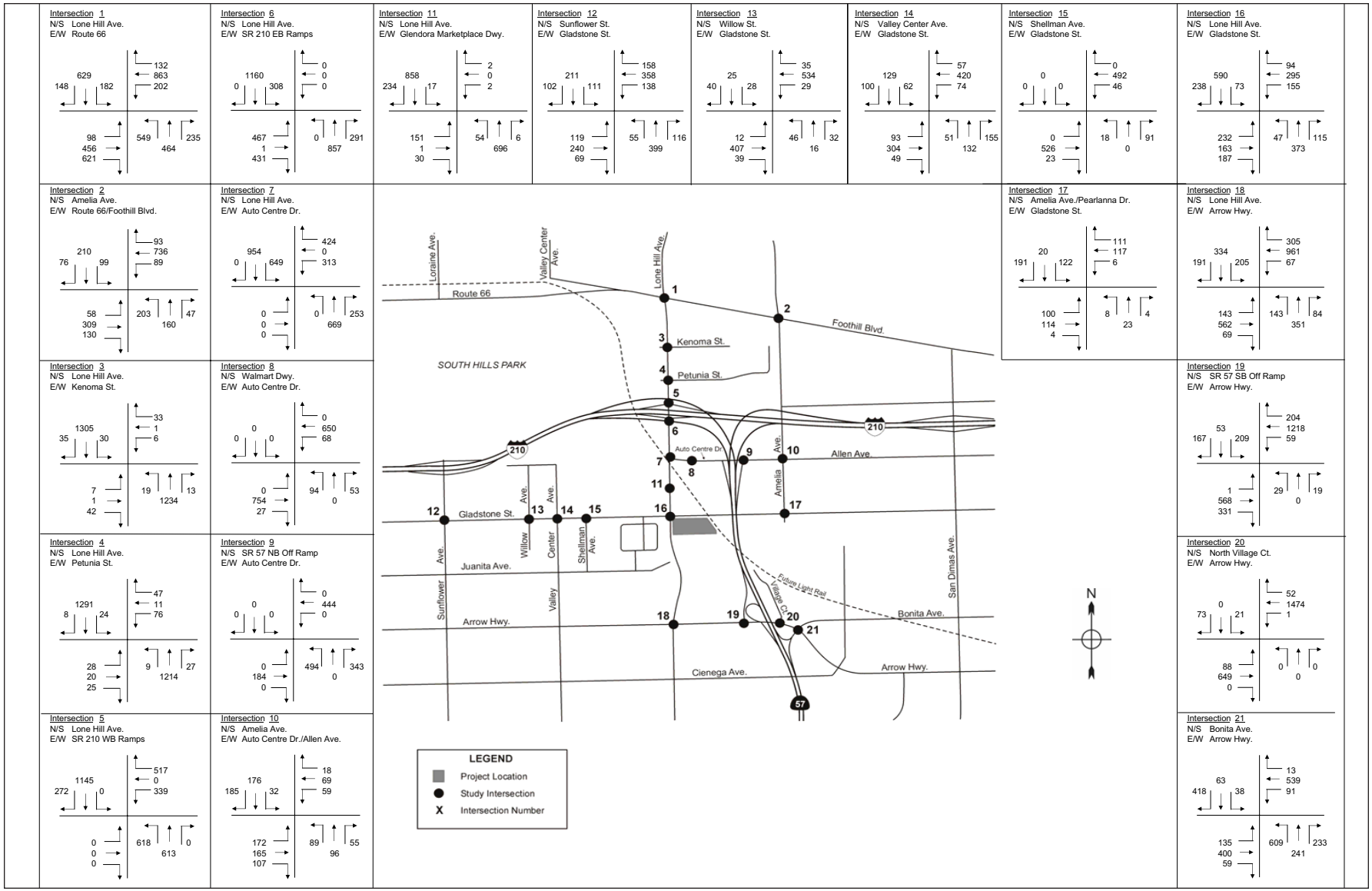
** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

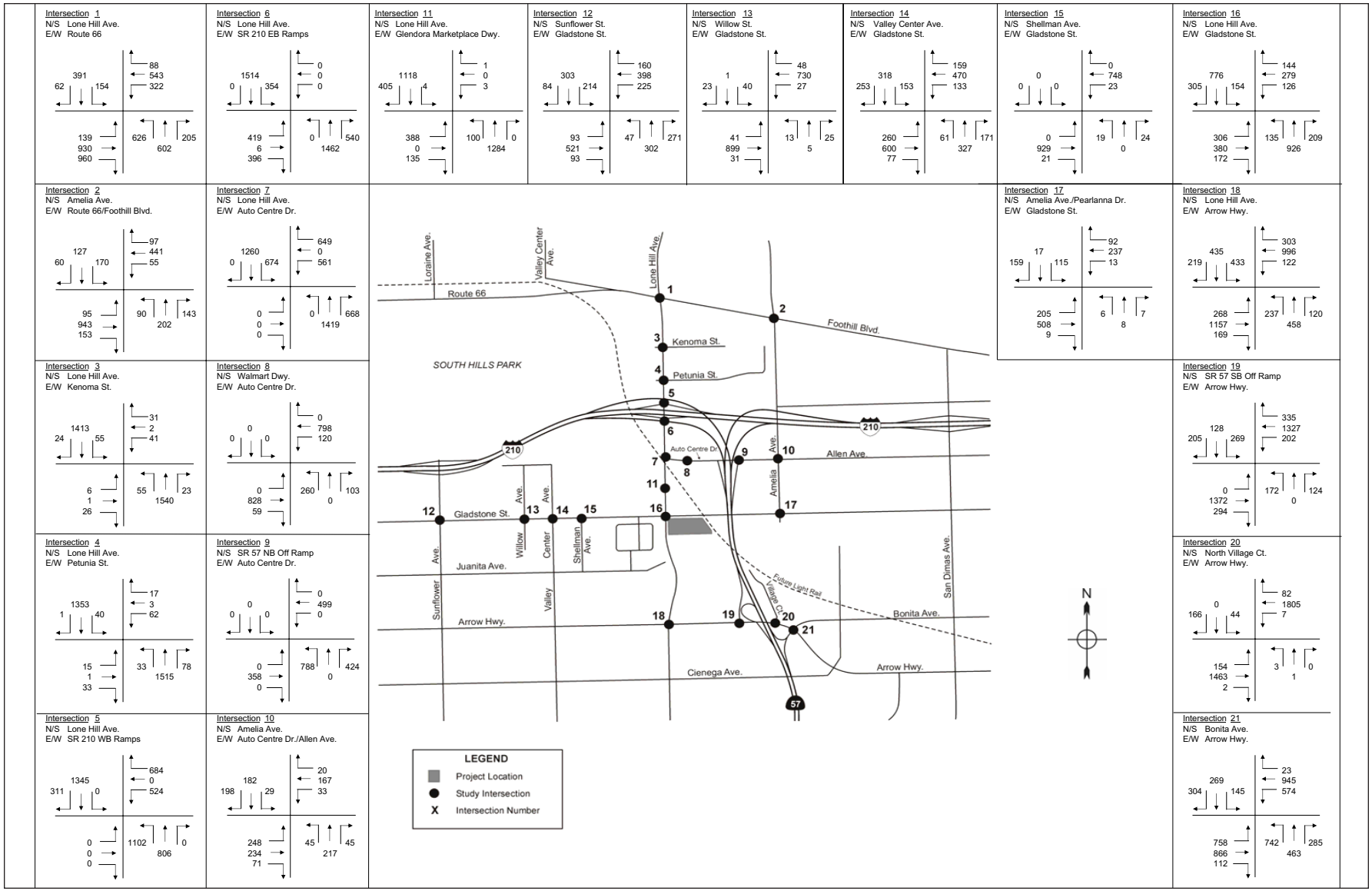
Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-24

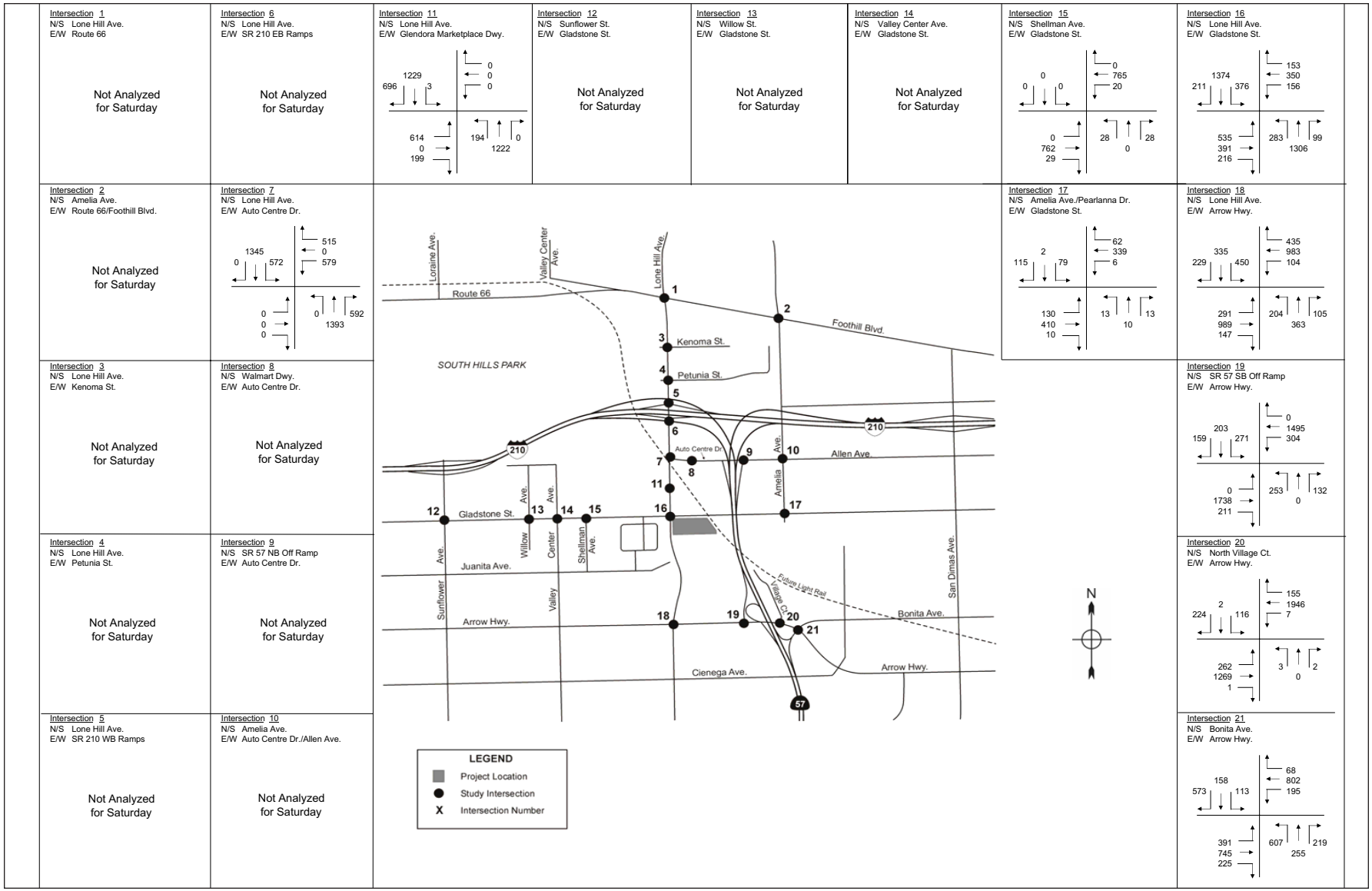
Future (2005) with Cumulative Projects and Proposed Project Weekday AM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-25

Future (2005) with Cumulative Projects and Proposed Project Weekday PM Peak Hour Traffic Volumes



SOURCE: Katz, Okitsu & Associates, February 2004

Figure 3L-26

Future (2005) with Cumulative Projects and Proposed Project Saturday Peak Hour Traffic Volumes

TABLE 3L-8: SIGNIFICANT IMPACT ANALYSIS

Intersection		Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)		Future + Cumulative Projects (Year 2005)		Future + Cumulative + Proposed Project (Year 2005)		Diff.	Signf?
		V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS		
1. Lone Hill Ave./Route 66	AM	0.693	B	0.700	C	0.735	C	0.741	C	0.006	No
	PM	0.758	C	0766	C	0.830	D	0.854	D	0.024	**Yes**
	Sat**	-	-	-	-	-	-	-	-	-	-
2. Amelia Ave./Route 66	AM	0.454	A	0.459	A	0.507	A	0.512	A	0.005	No
	PM	0.489	A	0.494	A	0.504	A	0.525	A	0.021	No
	Sat**	-	-	-	-	-	-	-	-	-	-
3. Lone Hill Ave./Kenoma St. *	AM	31.1 sec.	D	32.1 sec.	D	48.6 sec.	E	52.5 sec.	F	-	**Yes**
	PM	>100 sec.	F	>100 sec.	F	>100 sec.	F	>100 sec.	F	-	**Yes**
	Sat**	-	-	-	-	-	-	-	-	-	-
4. Lone Hill Ave./Petunia St.	AM	0465	A	0.470	A	0.496	A	0.505	A	0.009	No
	PM	0.494	A	0.499	A	0.565	A	0.592	A	0.027	No
	Sat**	-	-	-	-	-	-	-	-	-	-
5. Lone Hill Ave./I-210 Wb on and off ramps	AM	0.874	D	0.882	D	0.929	E	0.948	E	0.019	**Yes**
	PM	1.257	F	1.270	F	1.352	F	1.397	F	0.045	**Yes**
	Sat**	-	-	-	-	-	-	-	-	-	-
6. Lone Hill Ave./I-210 Eb on and off ramps	AM	0.608	B	0.614	B	0.654	B	0.663	B	0.009	No
	PM	0.725	C	0.732	C	0.797	C	0.820	D	0.023	No
	Sat**	-	-	-	-	-	-	-	-	-	-
7. Lone Hill Ave./Auto Centre Dr.	AM	0.490	A	0.495	A	0.540	A	0.566	A	0.026	No
	PM	0.769	C	0.777	C	0.841	D	0.906	E	0.065	**Yes**
	Sat**	0.657	B	0.663	B	0.728	C	0.842	D	0.114	**Yes**
8. Walmart Dwy./Auto Centre Dr.	AM	0.311	A	0.314	A	0.336	A	0.345	A	0.009	No
	PM	0.451	A	0.456	A	0.489	A	0.515	A	0.026	No
	Sat**	-	-	-	-	-	-	-	-	-	-
9. SR-57 Nb off-ramp at Auto Centre Dr.	AM	0.391	A	0.395	A	0.425	A	0.448	A	0.023	No
	PM	0.571	A	0.576	A	0.604	B	0.648	B	0.044	No
	Sat**	-	-	-	-	-	-	-	-	-	-
10. Amelia Ave./ Auto Centre Dr. Allen Ave.	AM	0.348	A	0.352	A	0.366	A	0.377	A	0.011	No
	PM	0.378	A	0.378	A	0.437	A	0.454	A	0.017	No
	Sat**	-	-	-	-	-	-	-	-	-	-
11. Lone Hill Ave./Glendora Marketplace Dwy.	AM	0.271	A	0.274	A	0.299	A	0.335	A	0.036	No
	PM	0.408	A	0.412	A	0.454	A	0.528	A	0.074	No
	Sat**	0.484	A	0.489	A	0.507	A	0.636	B	0.129	No
12. Sunflower St./ Gladstone St.	AM	0.392	A	0.396	A	0.459	A	0.466	A	0.007	No
	PM	0.408	A	0.412	A	0.624	B	0.645	B	0.021	No
	Sat**	-	-	-	-	-	-	-	-	-	-
13. Willow St./Gladstone St. *	AM	10.0 sec.	B	10.1 sec.	B	11.8 sec.	B	12.1 sec.	B	-	**No**
	PM	11.4 sec.	B	11.5 sec.	B	20.4 sec.	C	23.5 sec.	C	-	**Yes**
	Sat**	-	-	-	-	-	-	-	-	-	-
14. Valley Center Ave./Gladstone St. *	AM	10.5 sec.	B	10.5 sec.	B	19.1 sec.	B	20.1 sec.	C	-	**No**
	PM	13.5 sec.	B	13.6 sec.	B	>100 sec.	F	>100 sec.	F	-	**Yes**
	Sat**	-	-	-	-	-	-	-	-	-	-
15. Shellman Ave./Gladstone St. *	AM	11.1 sec.	B	11.1 sec.	B	12.4 sec.	B	12.7 sec.	B	-	**No**
	PM	12.2 sec.	B	12.3 sec.	B	21.4 sec.	C	23.5 sec.	C	-	**No**
	Sat	11.1 sec.	B	11.1 sec.	B	18.1 sec.	C	21.4 sec.	C	-	-
16. Lone Hill Ave./Gladstone St.	AM	0.378	A	0.381	A	0.429	A	0.471	A	0.042	No
	PM	0.514	A	0.519	A	0.606	B	0.702	C	0.096	No
	Sat	0.757	C	0.764	C	0.875	D	1.029	F	0.154	**Yes**
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	AM	0.349	A	0.352	A	0.405	A	0.418	A	0.013	No
	PM	0.427	A	0.431	A	0.501	A	0.519	A	0.018	No
	Sat	0.290	A	0.293	A	0.412	A	0.462	A	0.050	No
18. Lone Hill Ave./Arrow Hwy.	AM	0.496	A	0.501	A	0.585	A	0.607	B	0.022	No
	PM	0.563	A	0.568	A	0.741	C	0.790	C	0.049	**Yes**
	Sat	0.502	A	0.508	A	0.694	B	0.781	C	0.087	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	AM	0.494	A	0.499	A	0.577	A	0.590	A	0.013	No
	PM	0.591	A	0.597	A	0.665	B	0.679	B	0.014	No
	Sat	0.696	B	0.703	C	0.810	D	0.827	D	0.017	No
20. Arrow Hwy./North Village Ct.	AM	0.368	A	0.372	A	0.412	A	0.418	A	0.006	No
	PM	0.477	A	0.481	A	0.581	A	0.595	A	0.014	No
	Sat	0.595	A	0.601	B	0.718	C	0.743	C	0.025	No
21. Arrow Hwy./Bonita Ave./SR-57 Nb ramps	AM	0.717	C	0.724	C	0.799	C	0.811	D	0.012	No
	PM	0.938	E	0.948	E	1.109	F	1.119	F	0.010	**Yes**
	Sat	0.714	C	0.721	C	0.948	E	0.988	E	0.040	**Yes**

**-Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. Because Los Angeles County Guidelines do no identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation from LOS "D" or better to "E" or "F" and/or the need for a traffic signal based on a traffic signal warrant analysis (see Table 3L-9).*

***Saturday mid-day counts were taken at the nine study intersections closest to the project site.*

Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.

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hours, eight study intersections during the weekday PM peak hours, and three study intersections during the Saturday mid-day peak period.

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Without mitigation, a number of study intersections would be significantly impacted.

In the weekday AM peak hour, the following signalized intersections would be significantly impacted:

- Lone Hill Avenue/I-210 Westbound Ramps

In the weekday PM peak hour, the following signalized intersections would be significantly impacted:

Deleted: the Lone Hill Avenue/I-210 Westbound Ramps intersection would be significantly impacted in the weekday AM peak hour. The Lone Hill Avenue/Gladstone Street and Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersections would be significantly impacted in the Saturday mid-day peak hour.

- Lone Hill Avenue/Route 66
- Lone Hill Avenue/I-210 Westbound Ramps
- Lone Hill Avenue/Auto Centre Drive
- Lone Hill Avenue/Arrow Highway
- Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps

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In the Saturday mid-day peak hour, the following signalized intersections would be significantly impacted:

- Lone Hill Avenue/Gladstone Street
- Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps
- Lone Hill Avenue/Auto Centre Drive

Additionally, the proposed project's driveway on Lone Hill Avenue could result in a significant impact without mitigation. With incorporation of mitigation measure **M-3L.1,** impacts to traffic due to the proposed project driveway would be reduced to less than significant.

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Impacts to the intersections of Lone Hill Avenue and Route 66, Lone Hill Avenue and I-210 Westbound Ramps, and Lone Hill Avenue and Auto Centre Drive could be mitigated to less than significant levels with the incorporation of mitigation measures **M-3L.2** and **M-3L.3**. However, because these intersections are located within the City of Glendora and, therefore, outside the jurisdiction of the Lead Agency, the implementation of mitigation measures cannot be assured and impacts would remain significant. A detailed explanation and assessment of feasibility of the implementation of mitigation for each intersection follows each individual mitigation measure listed below.

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Impacts to the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection would be reduced to less than significant levels with the implementation of mitigation measure **M-3L.4**. Impacts to the Lone Hill Avenue/Gladstone Street intersection would be reduced to less than significant with the implementation of mitigation measure **M-3L.5**. A detailed explanation and assessment of feasibility of the implementation of mitigation for each intersection follows each individual mitigation measure listed below.

Impacts to the Lone Hill Avenue/Arrow Highway intersection would be significant and unavoidable. The Lone Hill Avenue/Arrow Highway intersection is controlled by a traffic signal

with protected left turn phasing at all approaches, and two southbound left turn lanes. Mitigation of project impacts (which occur in the p.m. peak period only) at this study intersection would involve either an additional northbound left turn lane, an additional southbound through lane, an additional eastbound left turn lane, or an additional westbound through lane. No additional roadway width exists at any of these locations that could be used for approach restriping. An alternative mitigation measure was researched based on recommendations from the City of San Dimas. This measure would provide a northbound thru/left lane and northbound/southbound split signal phasing and would not require roadway widening and additional right-of-way. It was found that this mitigation measure would not improve intersection operations to the extent needed for removal of the significant p.m. peak-hour project impact at this location. Therefore, no mitigation can be implemented at this location, due to the infeasibility of widening any of the intersection approaches. Widening of the intersection would likely require purchase of additional roadway right-of-way and could affect the parking lot layouts and existing structures at adjacent commercial centers. Impacts to this intersection would remain significant.

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Unsignalized Intersections

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The need for traffic signals at intersections that are currently unsignalized was assessed with a traffic signal warrant analysis. Three of the standard signal warrant analyses defined by the Manual of Uniform Traffic Control Devices (taken from Caltrans standards which they now supercede) were utilized to analyze weekday PM peak and Saturday mid-day operations. The analysis compares operations with future (2005) ambient conditions and cumulative projects to operations with future (2005) ambient conditions, cumulative projects, and the proposed project. The results of the traffic signal warrant analysis are shown in Table 3L-9:

Comment: **The following two paragraphs and table have been moved from Impact 3L8 on page 3L-65 of the Recirculated Transportation/Traffic Section.**

TABLE 3L-9: TRAFFIC SIGNAL WARRANT SUMMARY

Location	Analysis Results		
	Warrant 1 (Vehicle-Hours)	Warrant 2 (Approach Volume)	Warrant 3 (Total Volume)
FUTURE AMBIENT GROWTH ONLY			
Lone Hill Ave./Kenoma St.	Succeed	Fail	Succeed
Willow St./Gladstone St.	Succeed	Succeed	Succeed
Valley Center Ave./Gladstone St.	Succeed	Succeed	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed
FUTURE GROWTH PLUS PROJECT			
Lone Hill Ave./Kenoma St.	Succeed	Fail	Succeed
Willow St./Gladstone St.	Succeed	Succeed	Succeed
Valley Center Ave./Gladstone St.	Succeed	Succeed	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed

Source: Katz, Okitsu & Associates, *Traffic Study for the Proposed Costco Commercial Complex, San Dimas, California*, February 24, 2004.

All three warrants at a given intersection must succeed in order for a new traffic signal to be justified. As shown in Table 3L-9, the pattern of signal warrant results is the same with and

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without traffic contributed by the proposed project. However, at two of the intersections, Willow Street/Gladstone Street and Valley Center Avenue/Gladstone Street signal warrants are met whether or not traffic from the proposed project is included. This implies that traffic from both ambient growth and cumulative projects in the area causes these warrants to succeed. Because these warrants would be met during the opening and early operations of the proposed project, traffic resulting from the proposed project would contribute to the poor LOS at these intersections. Additionally, although the intersection of Lone Hill Avenue and Kenoma Street does not meet traffic signal warrants, LOS at the intersection would degrade from "E" to "F" with implementation of the proposed project (see Table 3L-8). In order to reduce the impacts of the proposed project at these three intersections to less than significant, the applicant would make a fair-share contribution for the signalization of these intersections, as detailed in mitigation measure, **M-3L.6**.

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A detailed explanation and assessment of feasibility of implementation of mitigation for each intersection follows each individual mitigation measure listed below.

Mitigation Measures

M-3L.1 *A traffic signal shall be constructed at the intersection of Lone Hill Avenue and the proposed project site's full access (south driveway).*

M-3L.2 *The applicant shall make a fair-share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for the implementation of a second eastbound exclusive right turn lane at the intersection of Lone Hill Avenue/Route 66. Northbound U-turns onto southbound Lone Hill Avenue would be prohibited.*

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Impacts to the Lone Hill Avenue/Route 66 intersection would be minimized by the implementation of an additional exclusive eastbound right turn lane. Such an improvement would require roadway widening and potential purchase of additional right-of-way. Such widening could negatively affect the operations of the on-site parking area of the existing business at the southwest corner of the intersection. With the implementation of mitigation measure **M-3L.2**, traffic impacts to this intersection could be reduced to less than significant. However, because this intersection is within the City of Glendora implementation of these improvements cannot be assured. Therefore, impacts to this intersection, for purposes of this EIR, are considered to remain significant.

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Deleted: which would not involve lane restriping or any widening. This mitigation would, however, affect the northbound U-turn movement. At this approach, northbound U-turns onto southbound Lone Hill Avenue would need to be prohibited. Commercial centers on the southwest and southeast corners of the intersection have additional access points further west and further east of the intersection that would continue to provide full-access to these locations.

M-3L.3 *The applicant shall make fair-share contributions, as reasonably determined by the City of San Dimas based on a nexus study, for future improvements at the following intersections:*

- *Lone Hill Avenue and I-210 Westbound Ramps*
- *Lone Hill Avenue and Auto Centre Drive*

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Mitigation of impacts at the Lone Hill Avenue/I-210 Westbound Ramps intersection involves the addition of a second northbound left turn lane. This would require the partial or full reconstruction of the freeway bridge support structure, as the related intersection approach lanes are located primarily underneath the freeway overhead structure. With a fair-share contribution

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by the applicant for future improvement to this interchange, as detailed in mitigation measure **M-3L.3**, traffic impacts to the intersection would be less than significant. However, because this intersection is within the City of Glendora implementation of these improvements cannot be assured. The intersection, and the freeway bridge, are also under the control of Caltrans. Acceptance of such improvements by Caltrans, or a potential timeframe for implementation, would be unknown until engineering studies were undertaken. Therefore, impacts to this intersection, for purposes of this EIR, are considered to remain significant.

A modification to the westbound approach and northern receiving lanes of the Lone Hill Avenue/Auto Centre Drive intersection was approved by the City of Glendora in December 2003. The goal of the improvement planned by the City of Glendora is to provide on-street parking along the east side of Lone Hill Avenue, north of Auto Center Drive. The provision of on-street parking would necessitate modifying the westbound approach of the intersection. Operations at the intersection would worsen in order to provide these parking areas. Existing conditions at this intersection and traffic counts were documented in the field by Katz, Okitsu & Associates prior to implementation of this modification. Cursory analysis of this modification indicated that during peak periods, LOS would degrade by at least one letter grade beyond conditions documented in Table 3L-8. V/C and LOS values shown in Table 3L-8 do not reflect traffic conditions with implementation of the proposed on-street parking.

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With or without the on-street parking improvement planned by the City of Glendora, the westbound intersection approach would have three lanes. In order to mitigate impacts of the proposed project, this approach would need to be widened to four lanes. This improvement would successfully mitigate impacts of proposed project traffic despite the degradation of LOS caused by the parking space addition proposed by the City of Glendora. Widening of the westbound intersection approach could potentially require the acquisition of additional right-of-way. Such an improvement could negatively affect the operation of the auto sales lot at the northeast corner of the intersection. Final design of improvements for this mitigation measure would need to be determined by an engineering study prior to implementation. With a fair-share contribution by the applicant for future improvement to this intersection, as detailed in mitigation measure **M-3L.3,** traffic impacts to the intersection would be less than significant**.** However, because this intersection is within the City of Glendora implementation of these improvements cannot be assured. Therefore, impacts to this intersection, for purposes of this EIR, are considered to remain significant.

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M-3L.4 *The applicant shall make a fair-share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for future improvements at the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection.*

The mitigation of project impacts at the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection would involve the reconfiguration of the SR-57 northbound off-ramp at this location. The receiving lanes of this approach lead to the SR-57 northbound on-ramp. A wide raised median exists between the approach lanes and the receiving lanes. This width could potentially be utilized to provide all or some of the width required for the improvement. Widening of the northbound approach beyond this area would require reconstruction of berms on each side of the approach that provide the grade differential between the SR-57 (higher in elevation) and the intersection (lower in elevation) The alignment of the centerline of the northbound approach of this intersection (the SR-57 ramps) to the southbound approach (Bonita

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Avenue) with such an improvement would be slightly off-center. The final centerline alignment, and potential need for partial reconstruction of the off-ramp to accommodate this alignment, would need to be determined by an engineering study. With a fair-share contribution by the applicant for future improvement to this intersection, as detailed in mitigation measure **M-3L.4**, traffic impacts to the intersection would be less than significant.

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M-3L.5 *The intersection of Lone Hill Avenue and Gladstone Street shall be improved with an additional northbound left turn lane and an additional southbound left turn lane.*

The implementation of an additional northbound left turn lane and an additional southbound left turn lane to the Lone Hill Avenue/Gladstone Street intersection would mitigate the impacts of the proposed project. These improvements would require roadway widening. The necessary improvements match conceptual drawings developed by Crain & Associates in December 2003. This improvement is considered feasible for the proposed project. Impacts of the proposed project to this intersection would be less than significant with implementation of mitigation measure **M-3L.5**.

M-3L-6 *The applicant shall make a fair-share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for future signalization at the Willow Street/Gladston Street, Valley Center Avenue/Gladstone Street, and Lone Hill Avenue/Kenoma Street intersections.*

The implementation of traffic signals at the Willow Street/Gladstone Street, Valley Center Avenue/Gladstone Street, and Lone Hill Avenue/Kenoma Street intersections, as detailed in mitigation measure **M-3L.6**, would reduce the impacts of the proposed project to these intersections to less than significant levels. However, because these intersections are within the City of Glendora, implementation of these improvements cannot be assured. Therefore, impacts to these intersections, for purposes of this EIR, are considered to remain significant.

Residual Impacts

Impacts to the Lone Hill Avenue/Arrow Highway intersection would remain significant and unavoidable. Because the intersections of Lone Hill Avenue and Route 66, Lone Hill Avenue and I-210 Westbound Ramps, Lone Hill Avenue and Auto Centre Drive, Willow Street and Gladstone Street, Valley Center Avenue and Gladstone Street, and Lone Hill Avenue and Kenoma Street are located within the City of Glendora and, therefore, outside the jurisdiction of the Lead Agency, the implementation of mitigation measures cannot be assured; for purposes of this EIR, these impacts are considered to remain significant and unavoidable. However, the City of San Dimas and the applicant will pursue implementation of these measures with the City of Glendora.

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Impact 3L2: The proposed project would have a less than significant impact on residences located west of the proposed project site along Lone Hill Avenue.

There are currently 16 residential homes located on the west side of Lone Hill Avenue south of Gladstone Street across from the proposed project site (see Figure 3L-27). These homes have direct access (driveways) fronting Lone Hill Avenue. While it is not desirable to have direct

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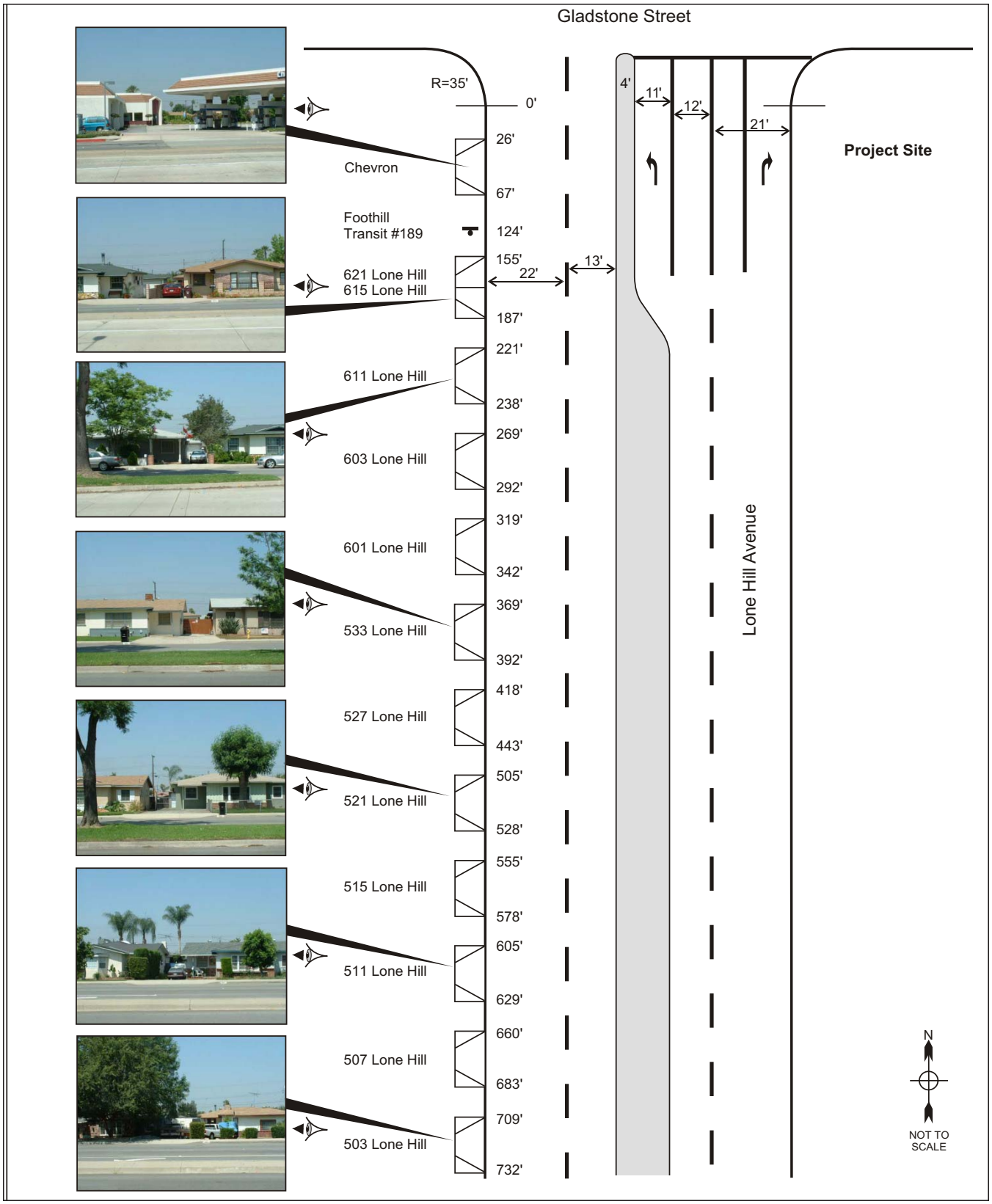

SOURCE: George Dunn Engineering, 2003.

Costco Commercial Complex / 202349 ■

Figure 3L-27

Existing Conditions for Lone Hill Avenue Residences

residential frontage on an arterial highway such as Lone Hill Avenue, this condition has existed for some time in this area. These residents generally have to back out of their driveways onto Lone Hill Avenue to access the existing highway. Lone Hill Avenue is currently a four-lane divided 84-foot wide highway that is designated as a major highway by the City of San Dimas General Plan. Currently, the curb lanes on both sides of Lone Hill Avenue are sufficiently wide to provide for on-street parking. In general the residential driveways along the west side of Lone Hill Avenue provide for parking and access to garages located behind the residences. Based on recent field observations, it appears that several of the garage structures behind the residential properties are not used for parking. In addition, some residents currently back their vehicles into their driveways to make departure onto Lone Hill Avenue easier. The existing median island makes these residential driveways right-turn in and right-turn out only.

The proposed project would include the construction of three driveways on the east side Lone Hill Avenue. It is proposed that the middle driveway be signalized. In order to provide the signalized access on Lone Hill Avenue, the proposed project would make a median island break and create a signalized intersection approximately 500 feet south of Gladstone Street. The driveway would provide full access to the commercial complex and would require the removal of on-street parking for at least 100 feet on the west side of Lone Hill Avenue adjacent to the signalized driveway access. This would directly affect on-street parking and driveway access to the properties between 533 Lone Hill Avenue to the north and 515 Lone Hill Avenue to the south, providing a single southbound left-turn lane.

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The residents on Lone Hill Avenue (across from the proposed project site) have an access problem when they leave their driveways and are forced to back out into traffic. The proposed project's traffic would not significantly contribute to the existing problem and is anticipated to have a less than significant impact on the residents of Lone Hill Avenue (across from the proposed project site). This conclusion is supported by the following:

Deleted: The majority the residents' potential problems occur during the weekday AM peak hours when the residents leave for work. The proposed project would not open until 10AM when most residents have already left for work. The proposed project would not generate a significant amount of traffic when the stores are closed. However, additional traffic from the proposed project site would occur during the evening and on weekends. However, based on the anticipated number of trips exiting and entering the Lone Hill Avenue access points at the project site, t

- Anticipated small increase in delay time for residents to exit driveways
- Limited accident history in the area

Observations made for four hours (two hours each during AM and PM peak) indicate that the average number of vehicles exiting residences in a reverse direction is 6-7 vehicles per hour. Delay times for this maneuver varied between 0 and 15 seconds with an average delay time of 5 seconds.

A review of accident history information (from 1999 to present) provided by the County Sheriff Department indicates that 25 accidents were reported for the portion of Lone Hill between Gladstone Street and Overland Court. Nineteen of the accidents occurred at the signalized intersections (Lone Hill Avenue/Gladstone Street and Lone Hill Avenue/Overland Court). The remaining accidents occurred proximate to the unsignalized intersection of Lone Hill Avenue and 5th Street. Of these accidents there were three side-swipes, one head-on collision, one rear-end collision, and one accident involving collision with a stationary object. While the accident reports do not indicate whether any of these accidents were associated with the maneuvers of residents backing out of driveways, it is nevertheless apparent that few, if any accidents, could have involved this maneuver (possibly only the rear-end collision).

The addition of project traffic to existing conditions, including existing delay and accident history attributable to this maneuver, would not result in significant impacts to traffic. The implementation of mitigation measure **M-3L.7** is recommended to improve conditions in the area.

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The following five access design options (and three alternatives) have been proposed to provide improved access to the residences located west of the proposed project site (see Figures 3L-28 and 3L-29):

- Option 1: Removal of select properties to provide for 7 hammer head turning areas adjacent to the remaining houses.
- Option 1 (Alternative): Removal of select properties to provide for 6 hammer head turning areas adjacent to the remaining houses.
- Option 2: Elimination of the sidewalk on the west side of Lone Hill Avenue to provide additional roadway width.
- Option 3 (Alternative): Creation of a one-way frontage road along the west side of Lone Hill Avenue to provide for residential driveway access restricted to local residences only.
- Option 3/4: Creation of a one-way frontage road along the west side of Lone Hill Avenue as well as widening along the proposed project site (east side of Lone Hill Avenue) to provide additional lane width.
- Option 3/4 (Alternative): Creation of a one-way frontage road along the west side of Lone Hill Avenue as well as widening along both sides of Lone Hill Avenue to provide additional lane width.
- Option 5: Modification of existing median and half signal alternative where southbound through traffic on Lone Hill Avenue would not stop at driveway signal.

Option 1 would remove select properties and create driveways that would be hammer head turning areas and allow vehicles to drive into the residential driveway at one end of the hammer head turning area and exit at the other end of the hammer head (see Figure 3L-28). This would require the removal of one property (seven total) for every driveway constructed. This option would not assist with access at the proposed signalized intersection of the proposed project's southern driveway.

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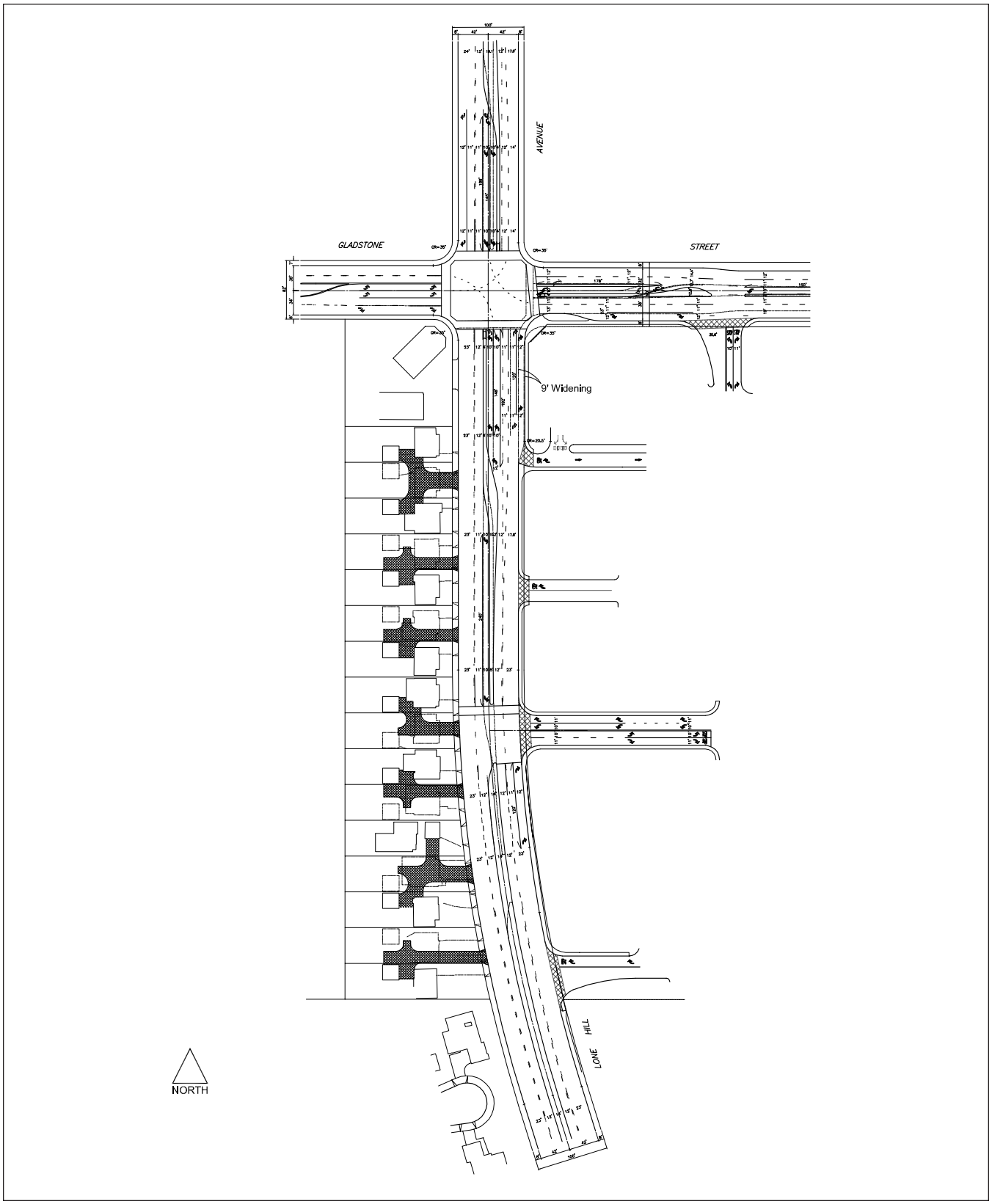
Under Option 1 the remaining local residents would not need to back out of the reconstructed driveways onto Lone Hill Avenue, but instead would be able to drive out in a forward direction. However, Option 1 would result in the removal of more than half of the residential uses along the west side of Lone Hill Avenue and fail to address access concerns at the newly constructed traffic signal.

Option 1 (Alternative) would seek to make similar changes as Option 1. The primary difference would be the number of hammer head turning areas proposed in Option 1 is 7 and in Option 1 (Alternative) is 6 (see Figure 3L-29).

Option 1 and Option 1 (Alternative) are considered infeasible and are therefore not recommended for further consideration for the following reasons:

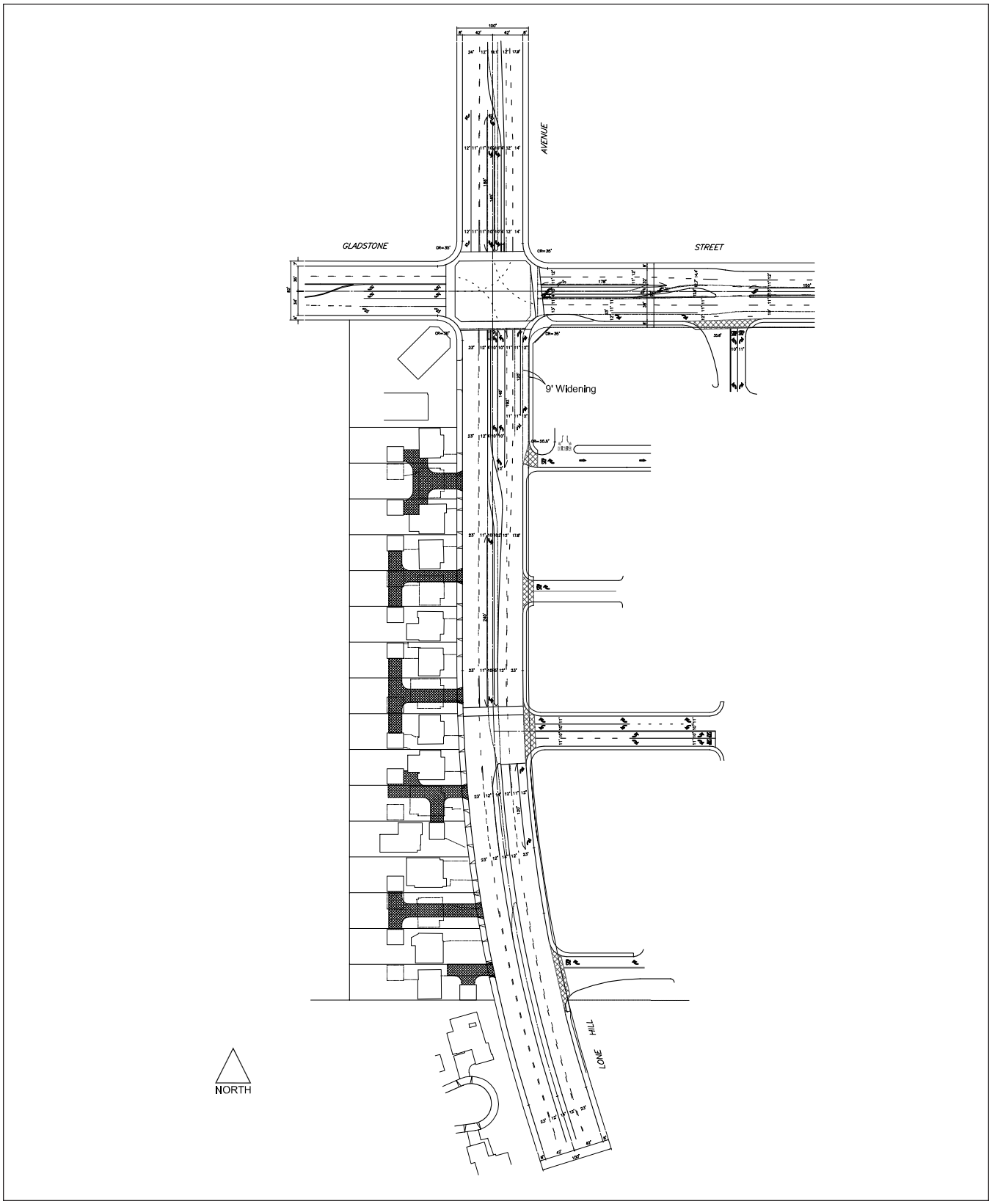


SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-28

Option 1 - Removal of Selected Properties to Provide Hammer Head Turning Areas



SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-29

Option 1 (Alternative) - Removal of Selected Properties to Provide Hammer Head Turning Areas

- Opposition expressed by affected residents;
- Difficulty in voluntary acquisition of selected single-family properties; and,
- Failure to address on-street parking needs proximate to the proposed traffic signal.

Option 2 would require the removal of the sidewalk on the west side of Lone Hill Avenue and would provide approximately five feet that could be utilized for roadway widening (see Figure 3L-30). If this width was combined with the existing 20-foot curb lane, the total 26 feet could be used to create an additional southbound lane, delineated with either a median or roadway marker that could be used only by residents to access their driveways. The advantage of adding a separate southbound lane to serve only local residents is that traffic entering and exiting residential driveways would be separated from southbound through traffic on Lone Hill Avenue.

The disadvantage of Option 2 is that the removal of the sidewalk and construction of such a lane would require the removal of on-street parking and pedestrian access to and from the existing residences. In addition, this type of treatment near a busy intersection (Lone Hill Avenue and Gladstone Street) is not a standard treatment and would be difficult to sign and stripe to avoid confusion of southbound motorists. Option 2 is considered infeasible and is therefore not recommended for further consideration for the following reasons:

- Eliminates necessary pedestrian access for residents;
- Eliminates all or most street parking for residents;
- Fails to eliminate safety concerns associated with backing into street; and,
- Opposition expressed by affected residents since this option would involve demolition of some residences.

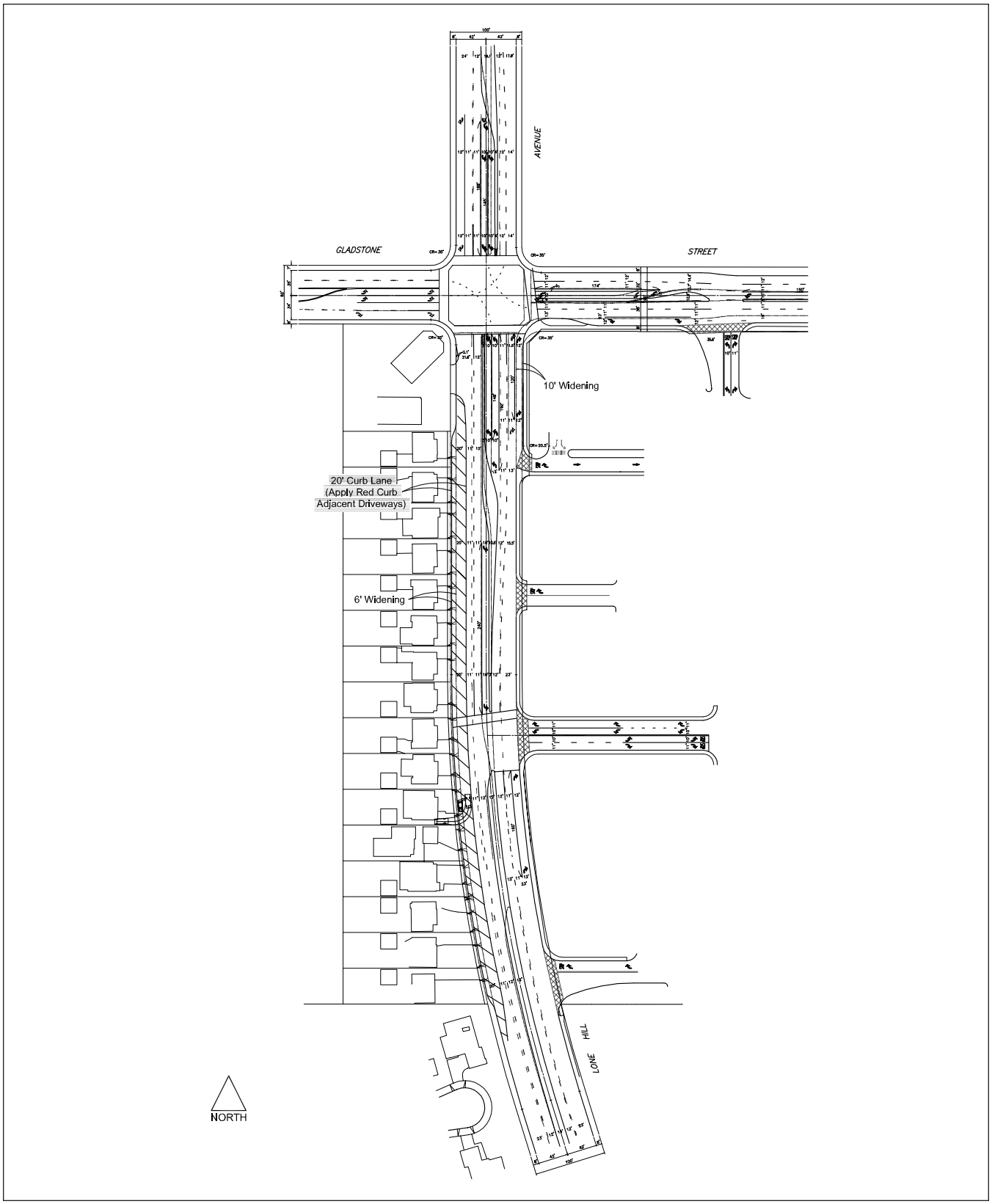
Deleted: Finally, Option 2 would be difficult to implement without right-of-way acquisition if roadway striping is ultimately required to provide a second southbound left-turn lane and the new signalized project driveway on Lone Hill Avenue.

Option 3 (Alternative) would require the creation of a one-way frontage road along the west side of Lone Hill Avenue to provide for residential driveway access restricted to local residences only (see Figure 3L-31). This option is intended to separate residential traffic entering and exiting driveways from southbound traffic on Lone Hill Avenue. This option would not remove pedestrian access to the existing residences but would be able to utilize only the 20-foot curb lane to provide for a through-lane and the frontage road. This option would result in physically separate driveway access from Lone Hill Avenue traffic for some but not all of the 16 affected residences. It may create some confusion for southbound motorists depending on signing and striping and some motorists may use it to by-pass the proposed traffic signal.

Deleted: This width is not sufficient to provide for two lanes of traffic, and even if it was, it has the same drawbacks as Option 2.

Option 3/4 and Option 3/4 (Alternative) are intended to separate residential traffic entering and existing residential driveways on the west side of Lone Hill Avenue from southbound through traffic (see Figures 3L-32 and 3L-33). Widening along the project frontage to provide additional roadway width and shifting north-south lanes towards the west would require widening along the roadway segments both north and south of the proposed project site so that lane transitions could be provided to accommodate striping changes along the proposed project frontage. This additional space may provide sufficient width for a one-way southbound access road with parking. However, such a configuration would be non-standard and difficult to sign and stripe. This option would result in physically separate driveway access from Lone Hill Avenue traffic for some but not all of the 16 affected residences. It may create some confusion for southbound

Deleted: Even if this widening were possible, the re-striping would likely provide an additional 10 to 12 feet of roadway adjacent to the residential uses.

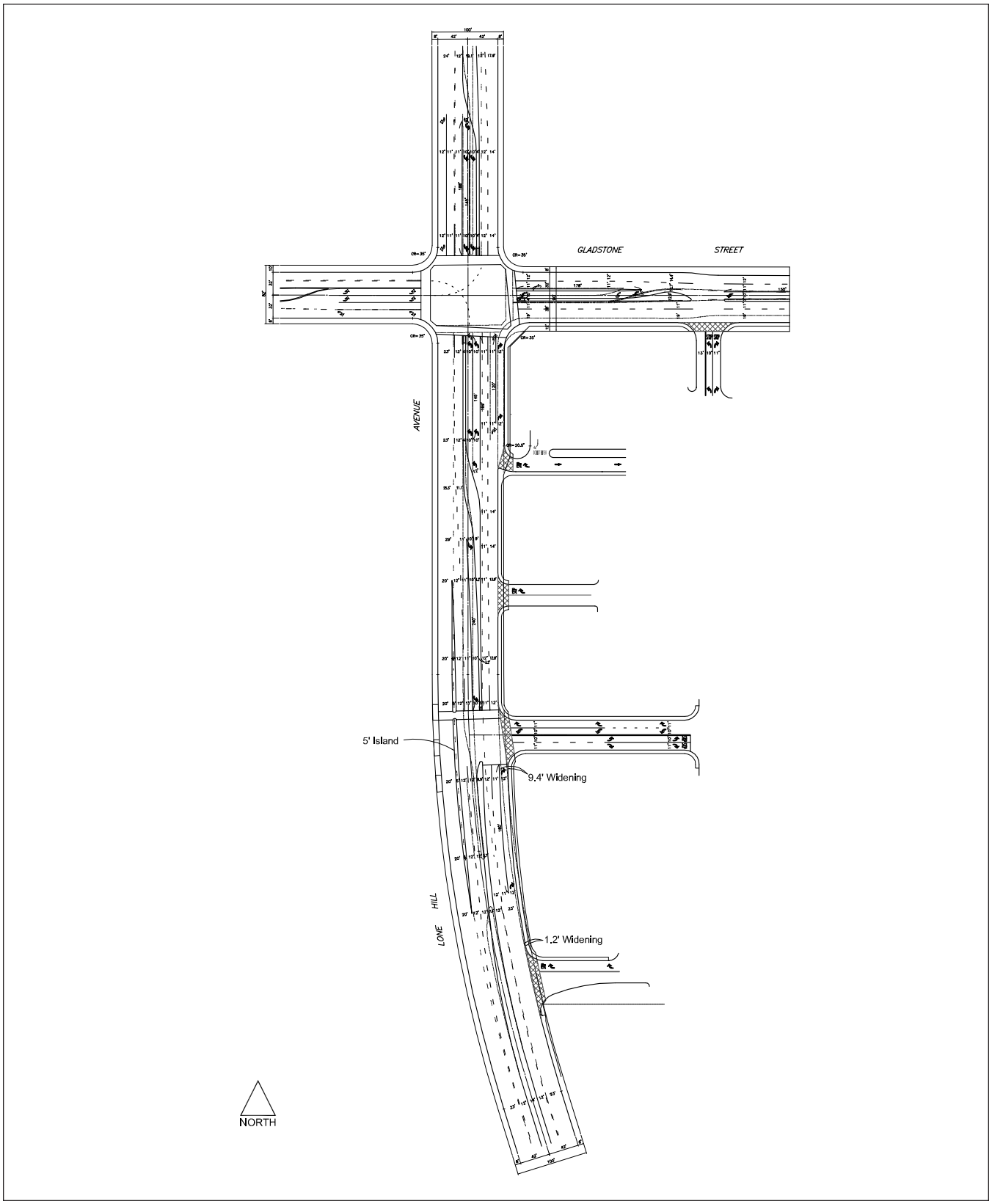


SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-30

Option 2 - Widening Along West Side of Lone Hill Avenue to Provide Wide Curb Lane

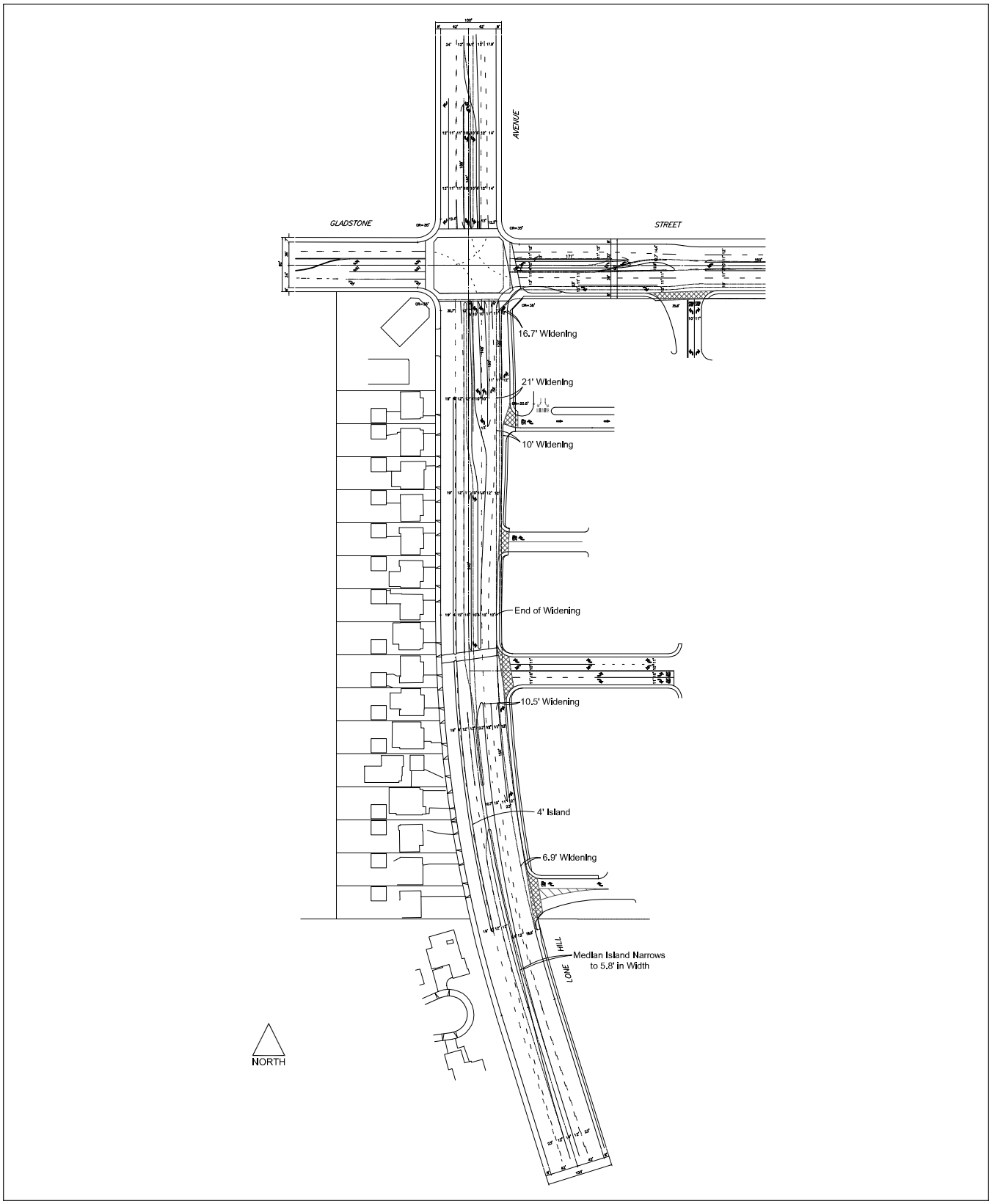


SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-31

Option 3 (Alternative) - Construction of Partial Frontage Road Opposite Main Project Driveway

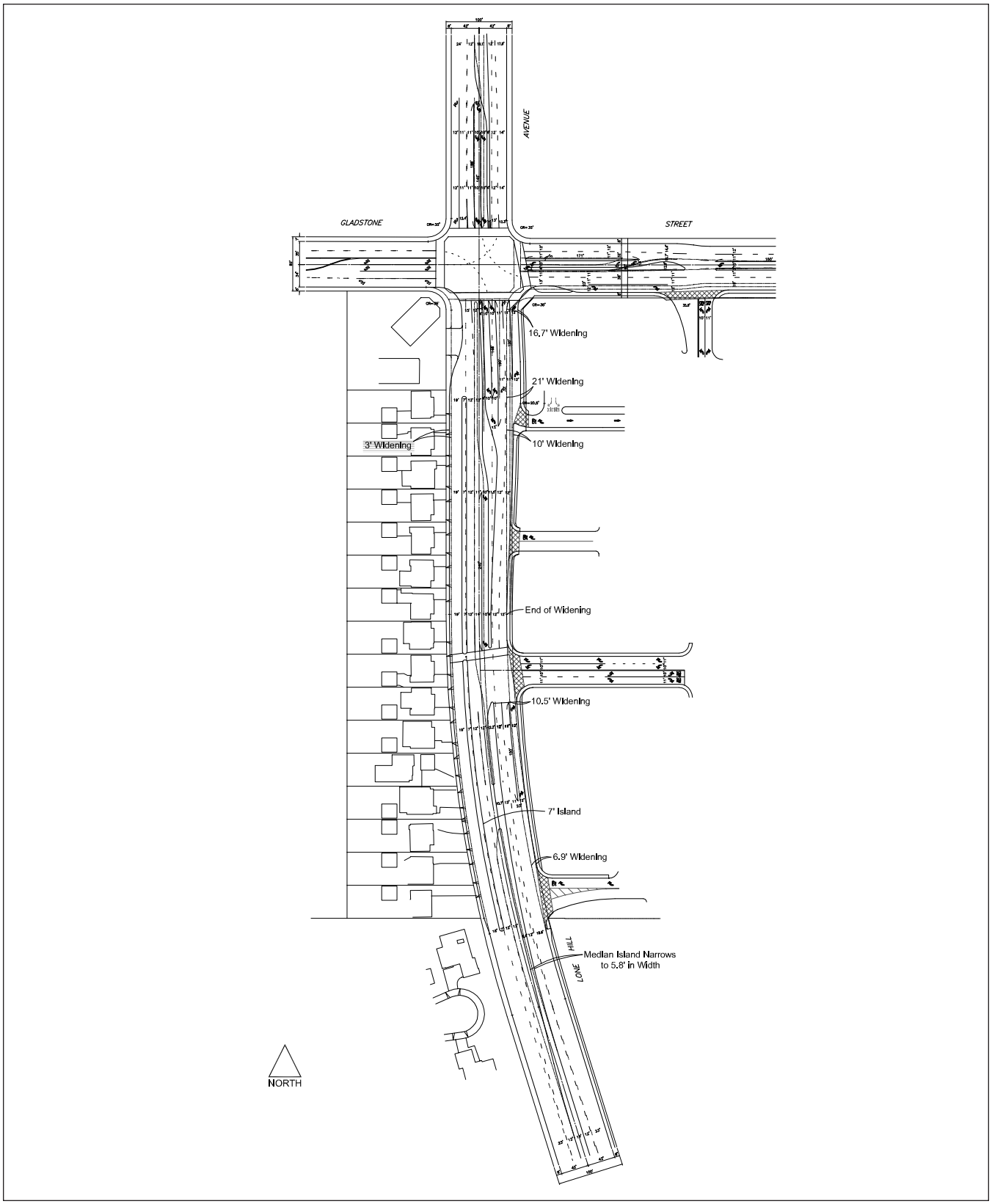


SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-32

Option 3/4 - Construction of Frontage Road with Widening on East Side of Lone Hill Avenue



SOURCE: Crain & Associates

Figure 3L-33

Option 3/4 (Alternative) - Construction of Frontage Road with Widening on Both Sides of Lone Hill Avenue

motorists depending on signing and striping and some motorists may use it to by-pass the proposed traffic signal.

Option 5 examined an alternative configuration of the main Costco driveway intersection with Lone Hill Avenue (see Figure 3L-34). This option would provide a "half signal" at the intersection, which would control the northbound through movement, the southbound left turn movement, and the westbound (driveway) movement. The southbound through movement would not be controlled by the traffic signal under this option.

This option would include a provision of a free-flow southbound through movement would reduce localized congestion at this intersection. The free-flow movement would reduce the probability of queue spillback of southbound traffic to the Lone Hill/Gladstone intersection. The design would enhance access/egress to and from the site and lessen congestion and delay at this intersection. Improvements to the intersection would not physically affect the frontages of the nearby residential uses. However, this improvement would not change or reduce the conflicts between the residential driveways and the southbound flow of traffic on Lone Hill. Traffic exiting the Costco driveway and making a left turn onto southbound Lone Hill Avenue would be forced to merge with the free-flow southbound traffic movement, which some motorists might find confusing. If adequate merging distance is not provided for westbound left turn onto southbound Lone Hill Avenue there is a chance for increased potential for hazards, specifically rear-end and side-swipe collisions. These accidents could occur where the acceleration lane merges into the southbound lanes of Lone Hill Avenue.

Option 5 is considered infeasible and is not recommended for further consideration for the following reasons:

- Fails to eliminate safety concerns associated with backing into street
- Safety concerns associated with non-standard traffic signal design

With rejection of infeasible Option 1, Option 1 (Alternative), Option 2, and Option 5, the proposed mitigation would result in reducing safety concerns and conflicts for affected residents by providing a separated one-way frontage road with parking. Each of the remaining options have slight design variations but are otherwise similar.

The only potential secondary impacts related to safety concerns associated with minimizing possible confusion for southbound through traffic on Lone Hill and with constraining southbound traffic which may try to by-pass the traffic signal. Installation of the frontage road does not constrain future expansion of Lone Hill to six lanes.

Recommended Mitigation Measure

M-3L.7 *It is recommended that Option 3 (Alternative), Option 3/4 or Option 3/4 (Alternative) or other feasible design variations be implemented to provide better access for residences located west of the proposed project site, along Lone Hill Avenue. The City of San Dimas and the applicant shall work directly with these residents to determine the most feasible design option.*

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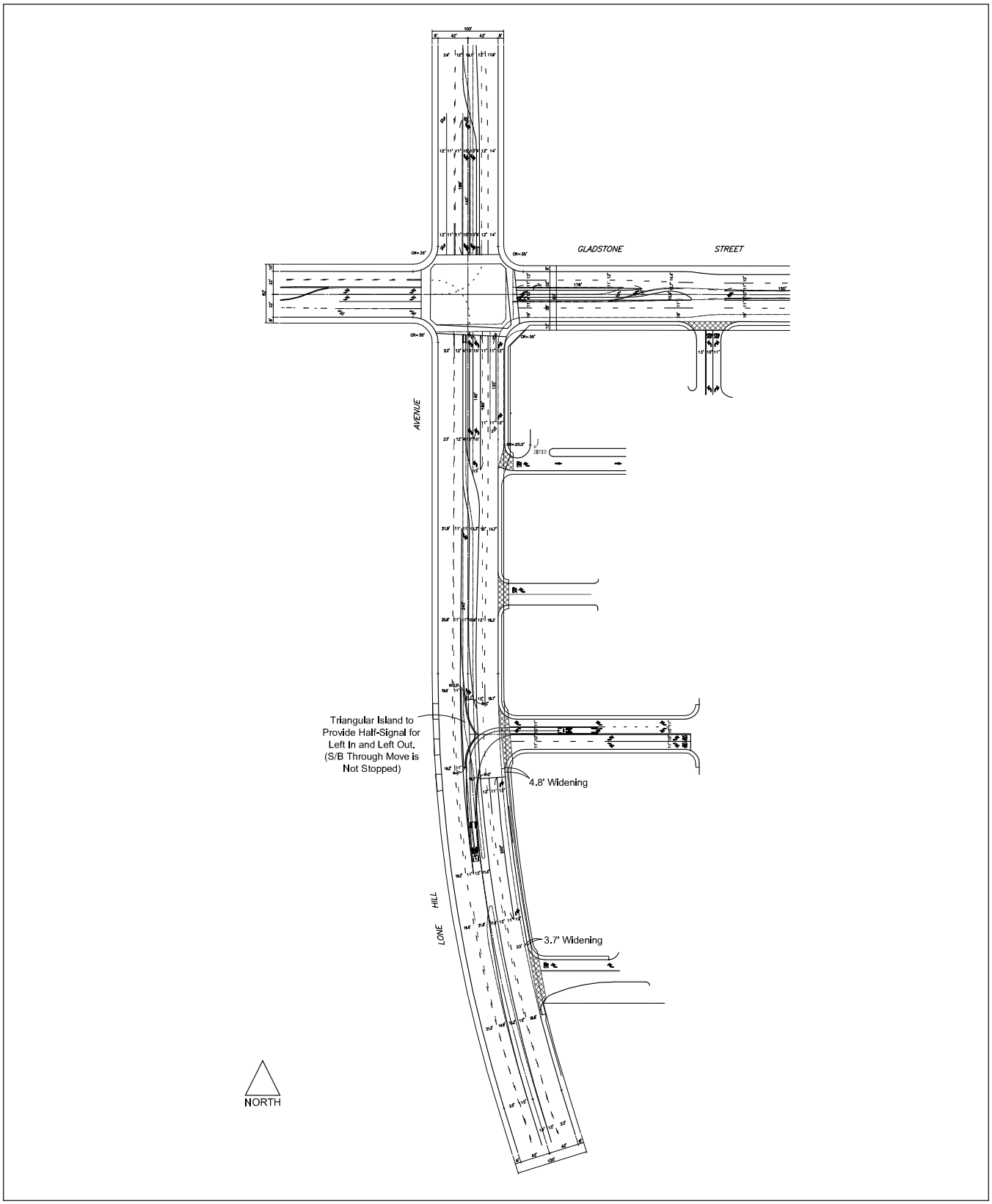
Deleted: *further studies be conducted to determine the feasibility of the proposed project's design options (Options 1 through 5),*



SOURCE: Crain & Associates

Costco Commercial Complex / 202349 ■

Figure 3L-34

Option 5 - Half Signal Alternative (Southbound through traffic on Lone Hill Avenue is not stopped at driveway signal)

Residual Impacts

Impacts would remain less than significant.

Impact 3L3: The proposed project would provide adequate parking supply.

The City of San Dimas does not have a code parking requirement for discount club use. A major shopping center rate of 4.5 parking spaces per 1,000 square feet was used for this type of use since the restaurant uses are less than 20 percent of the total building square footage. Table 3L-10 summarizes parking requirements. As outlined in Table 3L-10, the proposed project would provide 251 more than the anticipated parking spaces needed to serve the proposed project. Therefore, impacts would be less than significant.

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TABLE 3L-10: PARKING REQUIREMENTS FOR THE PROPOSED PROJECT

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Use	Size (Square Feet)	Rate	Space Required
Costco	148,474	4.5 spaces per 1,000 square feet	668
Fast Food w/Drive-Thru	3,500	4.5 spaces per 1,000 square feet	16
Restaurant	7,000	4.5 spaces per 1,000 square feet	32
Retail (under 20,000 square feet)	8,000	4.5 spaces per 1,000 square feet	36
Retail (under 20,000 square feet)	8,000	4.5 spaces per 1,000 square feet	36
Retail (under 20,000 square feet)	15,000	4.5 spaces per 1,000 square feet	68
Retail (over 20,000 square feet)	30,000	4.5 spaces per 1,000 square feet	135
Total Required	**219,974**	4.5 spaces per 1,000 square feet	**991**
Total Provided		5.6 spaces per 1,000 square feet	**1,242**

Source: RK Engineering Group, Costco *Traffic and Circulation Study (Revised), San Dimas, California*, May 29, 2001.

Mitigation Measure

No mitigation required.

Residual Impacts

Impacts would be less than significant.

Impact 3L4: The proposed project would not substantially increase hazards due to a design feature or incompatible use.

The proposed project will have access to Gladstone Street and Lone Hill Avenue through four access driveways. The access driveways on Gladstone Street, and the northerly access on Lone Hill Avenue will be right in/out only driveways. The southerly access on Lone Hill Avenue will

be a full access driveway. The existing ATSF railroad right-of-way crossing of Gladstone Street is located approximately 800 feet east of the centerline of Lone Hill Avenue. A service driveway is proposed at the east side of the Costco commercial complex to accommodate ingress/egress of service vehicles and deliveries to the proposed project site. The proposed easterly driveway would be located in close proximity to the existing railroad crossing, however, it is proposed to be restricted to right turns in/out only. According to consultation with Metrolink, this driveway is feasible. Implementation of the mitigation measures **M-3L.8** through **M-3L.10** would ensure a less than significant impact.

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The proposed project includes the installation of a new traffic signal at the southern project access driveway on Lone Hill Avenue. With implementation of the proposed project, there would be four traffic signals on Lone Hill Avenue within close proximity to each other:

- Lone Hill Avenue/West Project Access Driveway
- Lone Hill Avenue/Gladstone Street (approximately 500 feet to the north)
- Lone Hill Avenue/Glendora Marketplace Driveway (approximately 650 feet to the north)
- Lone Hill Avenue/Auto Centre Drive (approximately 670 feet to the north)

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This corridor was analyzed utilizing the SYNCHRO program by Trafficware with the assumption that the intersection of Lone Hill Avenue and the proposed project west access driveway would be signalized. The overall analysis of these four intersections included an examination of approximate queue lengths at the intersection approaches. It is estimated that during the Saturday mid-day peak, occasional queues would develop on northbound Lone Hill Avenue from the Lone Hill Avenue/Gladstone Street intersection that would block the proposed project driveway intersection. Similarly, occasional southbound queues would develop on Lone Hill Avenue from the west project access driveway intersection that could partially block the Lone Hill Avenue/Gladstone Street intersection. Without coordination of the Lone Hill Avenue/Gladstone Street signal with the west project driveway traffic signal, blockages at the Lone Hill Avenue/Gladstone Street intersection are anticipated during peak periods.

Deleted: With coordination of these signals, as detailed in mitigation measure **M-3L.10**, impacts would be reduced to less than significant.

The analysis of Lone Hill Avenue signal coordination was based on planning-level data and assumed optimal signal timing. The actual traffic patterns at these intersections cannot be fully known until the project is built and in operation. At that time, an operations-level analysis would need to be conducted. With final coordination of these signals, as detailed in mitigation measure **M-3L.11**, impacts would be reduced to less than significant.

Mitigation Measures

M-3L.8 *With the exception of the southerly full access driveway along Lone Hill Avenue, a median shall be constructed fronting access driveways off of Gladstone Street and Lone Hill Avenue to limit the driveways to right turn in/out only.*

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M-3L.9 *The service driveway proposed at the east side of the proposed project site shall be restricted to right-turn only. Furthermore, a fence shall be built between the proposed Costco site and the railroad right-of-way.*

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M-3L.10 *The applicant shall submit a truck routing plan detailing the routes delivery vehicles will take for entering and exiting the proposed commercial complex.*

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M-3L.11 *The proposed project traffic signal at the intersection of the west access driveway and Lone Hill Avenue shall be coordinated with the signal at the intersection of Lone Hill Avenue and Gladstone Street. The final coordination plan will be based on an assessment of traffic operations at these intersections, which should be conducted after the opening of the project.*

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Residual Impacts

Impacts would be less than significant.

Impact 3L5: The proposed project would have adequate emergency access.

The proposed project design would be in compliance with City planning requirements regarding emergency vehicle access. Therefore, no impacts are anticipated.

Mitigation Measure

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact 3L6: The proposed project would significantly impact traffic in the vicinity of schools.

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The Gladstone Elementary School, located west of Lone Hill Avenue, and south of Gladstone Street, is expected to experience increased traffic on Gladstone Street as a result of ambient growth, cumulative development and the proposed project. Much of the increased traffic can be attributed to approved projects in the vicinity of the proposed project site. The proposed project is expected to contribute approximately 14 weekday AM peak hour project trips and 29 weekday PM peak hour project trips between Shellman Avenue and Lone Hill Avenue along Gladstone Street adjacent to the school. Other approved projects and ambient growth in the San Dimas and Glendora areas would further increase traffic volumes on Gladstone Street in the vicinity of Gladstone Elementary School. Previous projects in the City of Glendora, including the Glendora Marketplace, provided several improvements at the school site. These improvements included an improved drop-off/pick-up area.

There are existing controlled crossings at the Lone Hill Avenue/Gladstone Street intersection (traffic signal) and Valley Center Avenue/Gladstone Street intersection (four-way stop sign). However, the relatively narrow width of Gladstone Street and substandard conditions along the south side of Gladstone Street, in the vicinity of Gladstone Elementary School, could pose safety concerns during student drop-off and pick-up. The intersection of Valley Center Avenue and Gladstone Street currently meets traffic signal warrants for existing conditions. Although future increases in traffic are anticipated in the vicinity of the Gladstone Elementary School, the

existing/planned traffic controls would facilitate movements into and out of the school. Additionally, the implementation of mitigation measure **3L.12** would further reduce impacts of existing and cumulative traffic as well as the proposed project to Gladstone Elementary School to less than significant.

Willow Elementary is located south of Gladstone Street on Willow Street, approximately ¼-mile west of Gladstone Elementary School. As stated in Impact 3L1, implementation of the proposed project would contribute to existing poor LOS at the intersection of Willow Street and Gladstone Street. With a fair-share contribution for future signalization of this intersection, as detailed in mitigation measure **M-3L.6**, impacts to this intersection would be reduced to less than significant.

Shull Elementary School is located in the project vicinity at the southwest corner of Auto Centre Drive and Allen Avenue at Amelia Avenue. The proposed project is anticipated to have minimal impact on this school site since proposed project traffic is generally not expected to traverse Amelia Avenue south of Auto Centre Drive. As shown in Table 3L-8, the intersection of Auto Centre Drive and Allen Avenue at Amelia Avenue would not be significantly impacted by project traffic.

Sutherland Elementary School is located on Amelia Avenue near the intersection with Baseline Road north of Shull Elementary School. The proposed project is also anticipated to have minimal impact on this school site since proposed project traffic is generally not expected to utilize Amelia Avenue. Because the two intersections nearest this location, the Amelia Avenue/Auto Center Drive/Allen Avenue and Amelia Avenue/Route 66 intersections, were shown to have less than significant impacts with implementation of the proposed project (see Table 3L-8), impacts to traffic at this location would also be considered less than significant.

The proposed project would, therefore, not significantly increase traffic in the vicinity of Shull Elementary School and Sutherland Elementary School. Implementation of mitigation measures **M-3L.6** and **M-3L.12** would reduce impacts to traffic in the vicinity of Willow Elementary School and Gladstone Elementary School, respectively, to less than significant levels. However, these intersections are located within Glendora outside the jurisdiction of the Lead Agency, therefore, implementation of mitigation measures cannot be assured. As a result, impacts to these intersections would remain significant and unavoidable for purposes of this EIR.

Mitigation Measure

Refer to mitigation measure **M-3L.6.**

M-3L.12 *With the cooperation and approval of the City of Glendora, the applicant shall make a fair share contribution, as reasonably determined by the City of San Dimas based on a nexus study, for the construction of a traffic signal at the Valley Center Avenue/Gladstone Street intersection, as well as for the widening and re-striping of Gladstone Street in the vicinity of Gladstone Elementary School to provide for one through-lane, a left-turn lane and parking along the south side of Gladstone Street.*

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Residual Impacts

Because the intersections of Valley Center Avenue/Gladstone Street and Willow Street/Gladstone Street are located within the City of Glendora and, therefore, outside the jurisdiction of the Lead Agency, the implementation of mitigation measures cannot be assured; for purposes of this EIR, these impacts are considered to remain significant and unavoidable. However, the City of San Dimas and the applicant will pursue implementation of these measures.

Deleted: Impacts would remain less than significant.¶

Impact 3L7: With mitigation, the proposed project would not exceed either individually or cumulatively the established LOS standards at CMP facilities in the project area.

The CMP was created statewide as a result of Proposition 111 and has been implemented locally by the LACMTA. The CMP for the County requires that the traffic impact of individual development projects of potentially regional significance be analyzed. A specific system of arterial roadways plus all freeways comprises the CMP system; 164 intersections are currently identified for monitoring on the system. This section describes the project-related analysis of the CMP system. The analysis has been conducted according to the guidelines set forth in CMP.

Per CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted:

- At CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project will add 50 or more trips during either AM or PM weekday peak hours.
- At CMP mainline freeway-monitoring locations, where the project will add 150 or more trips, in either direction, during the either the AM or PM weekday peak hours.

The nearest CMP routes to the proposed project site are the I-210 Freeway east of Sunflower Avenue and Arrow Highway east of I-210. The project will add a maximum of 36 trips to the I-210 east of Sunflower Avenue during the weekday AM peak period and a maximum of 86 trips during the weekday PM peak period. These volumes are bidirectional. Based on CMP data from Caltrans Annual Daily Traffic reports (AADT), an increase of 86 vehicles is a volume increase of 0.62%. The significant impact threshold for CMP facilities is an increase of 2% or more in V/C. Impacts to the I-210 Freeway are, therefore, considered less than significant.

Impacts to Arrow Highway would occur at the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection during the PM peak and Saturday mid-day periods. Impacts to this intersection are discussed in Impact 3L1. Mitigation to this intersection would involve the reconfiguration of the SR-57 northbound off-ramp. However, with a fair-share contribution by the applicant for future improvement to this intersection, as detailed in mitigation measure **M-3L.4**, impacts of the proposed project to this CMP facility would be less than significant.

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Deleted: This improvement could require full reconstruction of the freeway ramps and is, therefore, infeasible within the scope of the proposed project.

Mitigation Measure

Refer to mitigation measure **M-3L.4**.

Residual Impacts

Impacts would be less than significant.

Impact 3L8: Cumulative development would significantly impact area traffic.

Cumulative project traffic growth due to specific known development projects in the surrounding area is included in the analysis of impacts of the proposed project to signalized intersections, as discussed in Impact 3L1. Currently, several area projects are located within two miles of the project site that could pose a cumulative impact to area traffic conditions. These projects are listed in Table 3L-5. Table 3L-8 shows the cumulative impacts to several study intersections that without mitigation would result in a cumulative significant impact. With the exception of impacts to the intersection of Lone Hill Avenue and Arrow Highway, all cumulative impacts to signalized intersections could be reduced to less than significant levels with the implementation of mitigation measures **M-3L.1** through **M-3L.5**. However, the intersections of Lone Hill Avenue and Route 66, Lone Hill Avenue and I-210 Westbound Ramps, and Lone Hill Avenue and Auto Centre Drive are located within the city of Glendora, therefore, implementation of mitigation measures cannot be assured. As a result, impacts to these intersections would remain significant.

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As discussed in Impact 3L1, the unsignalized intersections of Willow Street and Gladstone Street, Valley Center Avenue and Gladstone Street, and Lone Hill Avenue and Kenoma Street would be significantly impacted by the proposed project without mitigation. Implementation of mitigation measures **M-3L.6** and **M-3L.12** would reduce impacts at these unsignalized intersections to less than significant levels. However, these intersections are located within the City of Glendora, therefore, implementation of mitigation measures cannot be assured. As a result, impact to these intersections are considered to remain significant for purposes of this EIR.

As shown under Impact 3L7, the proposed project and future projects would cumulatively exceed the CMP LOS standards at the Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps intersection without implementation of mitigation. However, with a fair-share contribution by the applicant for future improvement to this intersection, as detailed in mitigation measure **M-3L.4**, impacts of the proposed project to this CMP facility would be less than significant.

Therefore, with the implementation of mitigation measures **M-3L.4** and **M-3L.5**, cumulative impacts to the following intersections would be reduced to less than significant levels:

- Lone Hill Avenue/Gladstone Street (signalized)
- Arrow Highway/Bonita Avenue/SR-57 Northbound Ramps (signalized)

The intersections of Lone Hill Avenue and Route 66, Lone Hill Avenue and I-210 Westbound Ramps, Lone Hill Avenue and Auto Centre Drive, Willow Street and Gladstone Street, Valley Center Avenue and Gladstone Street, and Lone Hill Avenue and Kenoma Street are located within Glendora outside the jurisdiction of the Lead Agency, therefore, implementation of

Comment: The two paragraphs and table that followed here in the Recirculated Transportation/Traffic Section (page 3L-65) have been moved to Impact 3L1.

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Valley

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mitigation measures cannot be assured. As a result, impacts to these intersections would remain significant and unavoidable for purposes of this EIR.

Impacts to the intersection of Lone Hill Avenue and Arrow Highway would remain significant and unavoidable.

Mitigation Measure

Refer to mitigation measures **M-3L.1** through **M-3L.6 and M-3L.12.**

Deleted: M-3L.5.

Comment: Mitigation measure M-3L.12 was moved to the discussion under Impact 3L1 and renumbered as M-3L.6.

Residual Impacts

Impacts to the Lone Hill Avenue/Arrow Highway intersection would remain significant and unavoidable. Because the intersections of Lone Hill Avenue and Route 66, Lone Hill Avenue and I-210 Westbound Ramps, Lone Hill Avenue and Auto Centre Drive, Willow Street and Gladstone Street, Valley Center Avenue and Gladstone Street, and Lone Hill Avenue and Kenoma Street are located within the City of Glendora and, therefore, outside the jurisdiction of the Lead Agency, the implementation of mitigation measures cannot be assured; for purposes of this EIR, these are considered to remain significant and unavoidable. However, the City of San Dimas and the applicant will pursue implementation of these measures.

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Other CEQA Considerations

This section adds the results of the traffic study to the list of significant unavoidable impacts identified in the August 23, 2003 Draft EIR and the March 5, 2004 Recirculated Transportation/Traffic Section.

SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

- Operation of the proposed project would cause significant unavoidable traffic impacts to the Lone Hill Avenue/Arrow Highway intersection.

- Operation of the proposed project would cause significant unavoidable traffic impacts at the following intersections:

    - Lone Hill Avenue/Route 66
    - Lone Hill Avenue/I-210 Westbound Ramps
    - Lone Hill Avenue/Auto Center Drive.
    - Willow Street/Gladstone Street
    - Valley Center Avenue/Gladstone Street
    - Lone Hill Avenue/Kenoma Avenue

  Because these intersections are located within the City of Glendora and, therefore, outside the jurisdiction of the Lead Agency, the implementation of mitigation measures cannot be assured; for purposes of this EIR, these are considered to remain significant and unavoidable. However, the City of San Dimas and the applicant will pursue implementation of these measures.

APPENDIX

Traffic Study

Traffic Study for the Proposed Costco Commercial Complex At Lone Hill Avenue & Gladstone Street San Dimas, California

February 24, 2004
Revised July 9, 2004

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JA3263

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1. Introduction

This traffic study documents the assumptions, methodologies, and findings of the traffic analysis conducted for the proposed Costco Commercial Complex development (Project) located at the southeast corner of Lone Hill Avenue and Gladstone Street, in the City of San Dimas. The boundary between the City of San Dimas and the City of Glendora is generally located north of Gladstone Street in the vicinity of the Project site.

Existing uses at the Project site, and the proposed improvements, consist of the following land uses:

Existing Land Uses: None. Existing site uses have either been abandoned or demolished.

Project Land Uses: A Costco warehouse/retail facility (149,710 sq.ft.), a fast-food restaurant with drive-thru (3,500 sq.ft.), a quality restaurant (7,000 sq.ft.), two retail spaces (8,000 sq.ft. each), and two major retail spaces (45,000 sq.ft.)

The Project is expected to be completed and operational during the year 2005. Figure 1 shows the project location, and the proposed Project site plan is provided in Figure 2.

A. History of Project Traffic Review

The initial traffic study for the proposed Costco store was completed by RK Engineering Group, Inc. in May of 2001. An update to the RK Enginerring traffic study was completed by George Dunn Engineering in August of 2003. The two studies were similar, but the latter study utilized growth rates to update 2001 traffic volumes to 2003 volumes, and updates were made to intersection configurations and related area projects lists.

The study summarized in this report provides analysis with the following key updates:

- The number of study intersections was increased from eight to 21.
- The increase in study intersections includes 10 new locations within the City of Glendora.
- The increase in study intersections includes three new locations on or near the boundary between the City of San Dimas and the City of Glendora.
- New traffic counts were taken at most study intersections and recent counts at the remaining intersections were provided by the City of Glendora.
- Project analysis included separate trip generation rates for the proposed Cosctco gas station.

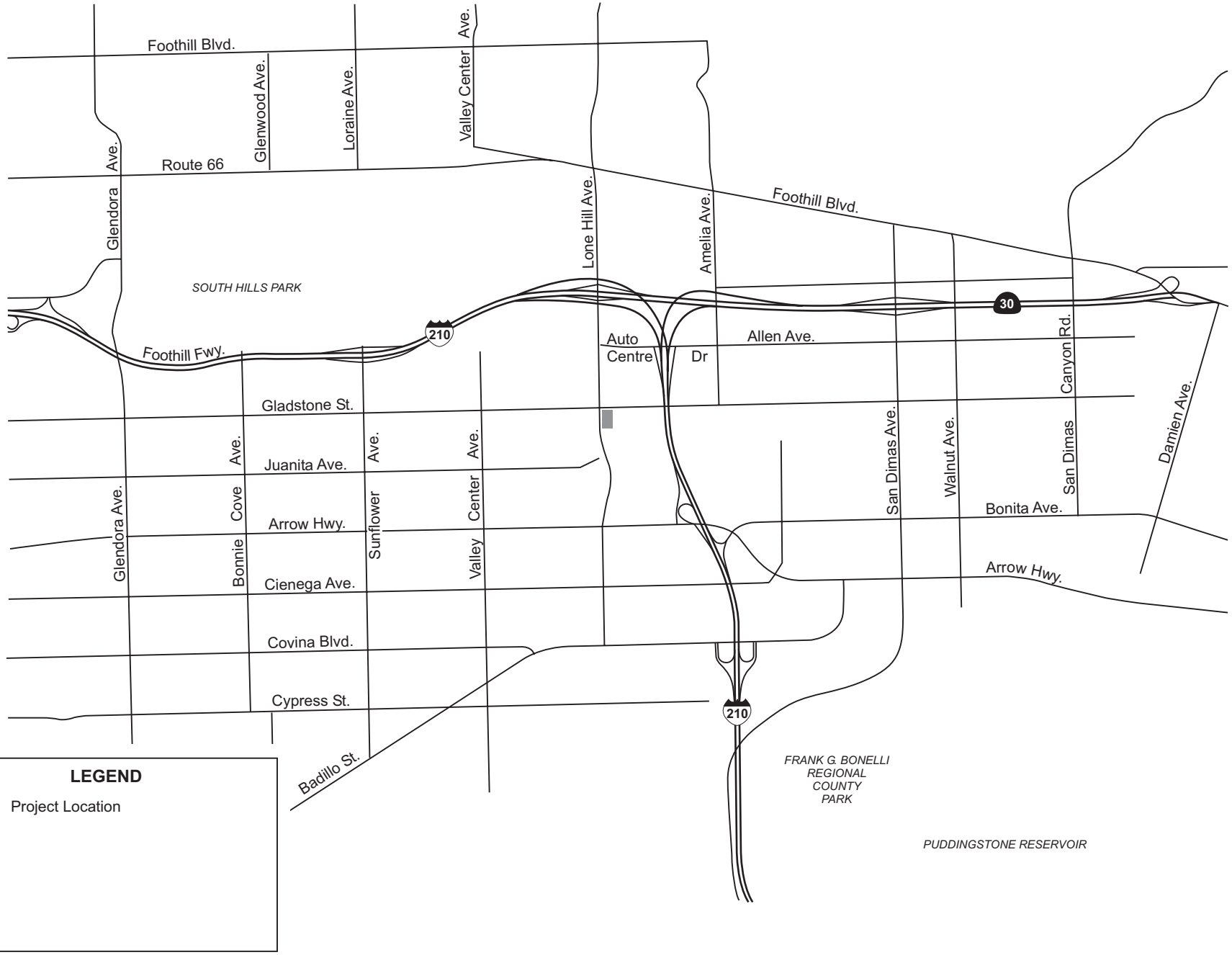
B. Overall Study Methodology

The study area for this traffic study includes 21 intersections in both the City of San Dimas and the City of Glendora. County of Los Angeles standards for traffic studies were applied to all of the study intersections. The Level of Service calculation methodology utilized in this study matches that utilized in the previous Project traffic report, and the recent *City of Glendora Route 66 Specific Plan Amendment Traffic Impact Study* conducted by the City of Glendora The final section of this report details Los Angeles County Congestion Management Plan (CMP) requirements and conformance.

In the sections that follow, the impacts are discussed of project-only traffic and its effect on year 2005 traffic volumes at the study intersections. Five separate traffic analysis scenarios were analyzed, as shown below:

- Existing (Year 2004) Conditions
- Future (Year 2005) Conditions with Ambient Growth
- Future (Year 2005) Conditions with Growth & Project
- Future (Year 2005) Conditions with Growth & Related Projects
- Future (Year 2005) Conditions with Growth & Related Projects & Project

The TRAFFIX software was used to perform the analysis for the surface street network for the above conditions. The Institute of Traffic Engineer's *Trip Generation Manual, Sixth Edition* was used to estimate Project-generated trips.



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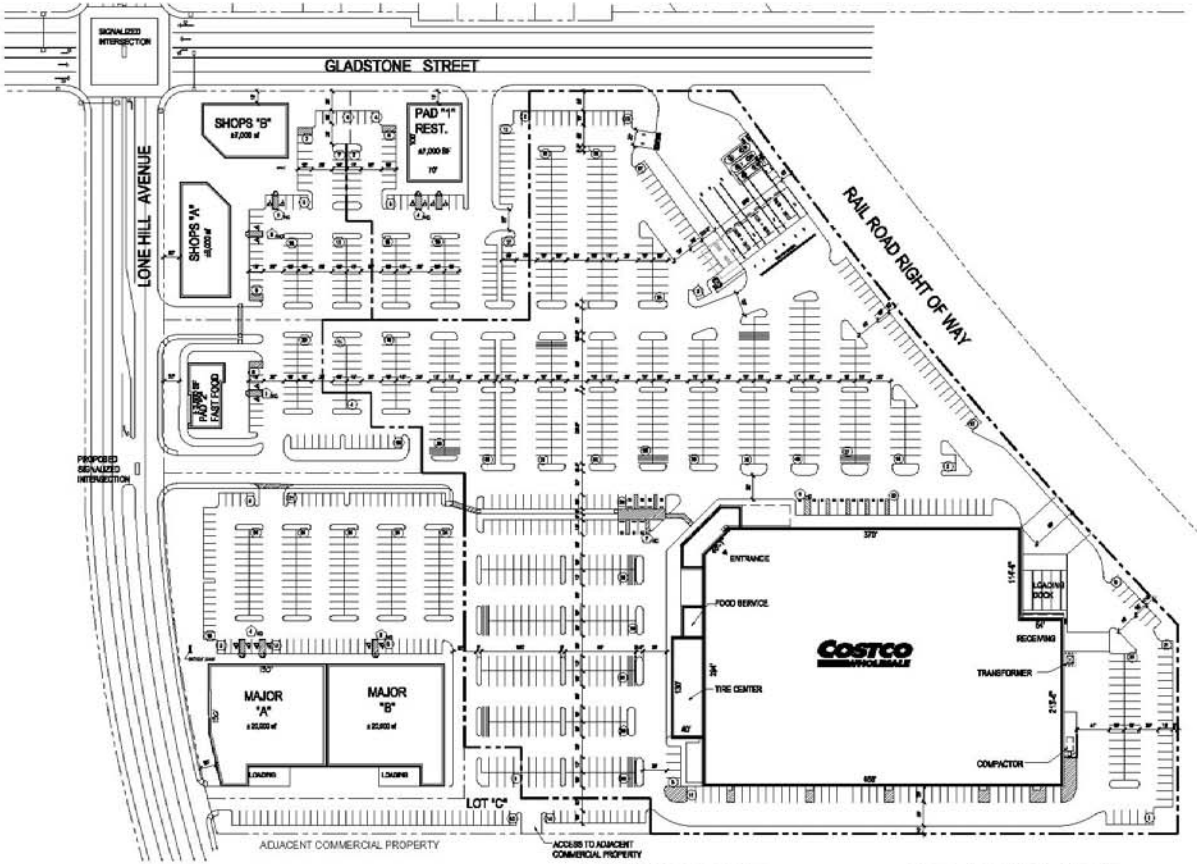
Traffic Engineers and Transportation Planners

Costco Commercial Complex, San Dimas, CA., Traffic Study

Figure 1

Project Location



PROJECT DATA

CLIENT:	COSTCO WHOLESALE 999 LAKE DRIVE ISSAQUAH, WA 98027
PROJECT ADDRESS:	NWC OF LONE HILL AVE. & GLADSTONE ST. SAN DIMAS, CALIFORNIA
ZONING:	M-2A
TOTAL SITE AREA:	22.83 ACRES (994,491 S.F.)
COSTCO SITE AREA:	14.54 ACRES (633,362 S.F.)
PAD "1" AREA:	1.44 ACRES (62,591 S.F.)
PAD "2" AREA:	1.12 ACRES (48,699 S.F.)
SHOPS "A" & "B" AREA:	1.64 ACRES (71,253 S.F.)
MAJOR "A" & "B" AREA:	3.42 ACRES (149,014 S.F.)
LOT "C" AREA:	.68 ACRES (29,562 S.F.)
JURISDICTION:	CITY OF SAN DIMAS
SETBACKS:	15'-0" AT GLADSTONE 20'-0" AT LONE HILL AVE. 0'-0" AT RAIL ROAD
BOUNDARIES INFORMATION:	THIS PLAN HAS BEEN PREPARED BY USING ASSESSOR'S PARCEL MAP DATED MARCH 27, 1998

COSTCO BUILDING DATA:	
BUILDING AREA	143,463 S.F.
TIRE CENTER	5,200 S.F.
FOOD SERVICE	1,642 S.F.
TOTAL BUILDING	149,705 S.F.

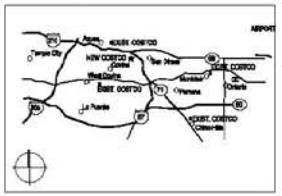
BUILDING DATA FOR CENTER USES:	
MAJOR "A"	APPROX. 29,000 S.F.
MAJOR "B"	APPROX. 29,000 S.F.
SHOPS "A"	APPROX. 9,000 S.F.
SHOPS "B"	APPROX. 7,000 S.F.
PAD "1" RESTAURANT	APPROX. 7,000 S.F.
PAD "2" FAST FOOD	APPROX. 3,500 S.F.
TOTAL BUILDINGS	APPROX. 66,500 S.F.
TOTAL BUILDINGS COSTCO & CENTER	APPROX. 216,205 S.F.

PARKING DATA:

COSTCO PARKING REQ'S:	
20,000 S.F. X 1/225 = 4.44/1000	89 STALLS
129,705 S.F. X 1/275 = 3.64/1000	472 STALLS
TOTAL REQUIRED STALLS	561 STALLS
PARKING PROVIDED:	
10' WIDE STALLS	909 STALLS
HANDICAP STALLS	16 STALLS
TOTAL PARKING PROVIDED	925 STALLS
MAJOR "A" & "B" PARKING REQ'S:	
40,000 S.F. X 1/225 = 4.44/1000	178 STALLS
PARKING PROVIDED:	
9' WIDE STALLS	187 STALLS
HANDICAP STALLS	6 STALLS
TOTAL PARKING PROVIDED	193 STALLS
PAD 2 FAST FOOD PARKING REQ'S:	
3,500 S.F. X 1/75 = 13.33	47 STALLS
PARKING PROVIDED:	
10' WIDE STALLS	4 STALLS
9' WIDE STALLS	41 STALLS
HANDICAP STALLS	2 STALLS
TOTAL PARKING PROVIDED	47 STALLS
SHOPS "A" & "B" PARKING REQ'S:	
16,000 S.F. X 1/225 = 4.44/1000	71 STALLS
PARKING PROVIDED:	
9' WIDE STALLS	67 STALLS
HANDICAP STALLS	4 STALLS
TOTAL PARKING PROVIDED	71 STALLS
PAD "1" RESTAURANT PARKING REQ'S:	
7,000 S.F. X 1/75 = 13.33/1000	94 STALLS
PARKING PROVIDED:	
10' WIDE STALLS	2 STALLS
9' WIDE STALLS	88 STALLS
HANDICAP STALLS	4 STALLS
TOTAL PARKING PROVIDED	94 STALLS
LOT "C" ADJACENT COMMERCIAL	
PARKING PROVIDED:	63 STALLS
EXISTING PARKING:	63 STALLS
TOTAL PARKING REQ'D BY CITY:	1,014 STALLS
TOTAL PARKING PROVIDED:	1,293 STALLS

VICINITY MAP

REGIONAL MAP



COSTCO WHOLESALE

SAN DIMAS, CA.

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JANUARY 31, 2002
CONCEPT SITE PLAN

D1.01-08

COSTCO WHOLESALE

SAN DIMAS, CALIFORNIA

CONCEPT SITE PLAN

JANUARY 31, 2002

N

B. Project Study Area

The defined study intersections are listed below. These intersections were selected in consultation with City of San Dimas staff, and include intersections recommended for inclusion by City of Glendora staff after review of the previous traffic study. The location of the signals is also indicated relative to position within city limits, or near the boundary between the two cities. Analysis scenarios included weekday a.m., ~~and~~ weekday p.m. peak, and Saturday mid-day peak hour study periods.

For the ~~An additional~~ Saturday mid-day study period, ~~was analyzed, but~~ only selected intersections close-in to the Project site were included. Fewer intersections were analyzed on Saturday because peak hour traffic on Saturday is generally less and project impacts are not anticipated to extend as far from the site as during peak hours on weekdays, i.e. if there are no impacts at a given intersection, it is assumed that the next intersection further out will not be impacted. Therefore, only intersections closer to the site were selected for analysis. The locations of these intersection are ~~(~~noted in the right-most column below~~)~~:

Intersection ID and Location	In or Bordering Jurisdiction(s)	Analysis of Impacts	
		Weekday Peak	Saturday Mid-Day
1. Lone Hill Ave./Route 66	Glendora	✓	
2. Amelia Ave./Route 66	San Dimas/Glendora	✓	
3. Lone Hill Ave./Kenoma St.	Glendora	✓	
4. Lone Hill Ave./Petunia St.	Glendora	✓	
5. Lone Hill Ave./SR-210 Westbd. Ramps	Glendora/Caltrans	✓	
6. Lone Hill Ave./SR-210 Eb ramps	Glendora/Caltrans	✓	
7. Lone Hill Ave./Auto Centre Dr.	Glendora	✓	✓
8. Walmart Dwy./Auto Centre Dr.	Glendora	✓	
9. SR-57 Nb off-ramp at Auto Centre Dr.	Glendora/Caltrans	✓	
10. Amelia Ave./Auto Centre Dr.-Allen Ave.	San Dimas/Glendora	✓	
11. Lone Hill Ave./Gl. Marketplace Dwy.	Glendora	✓	✓
12. Sunflower St./Gladstone St.	Glendora	✓	
13. Willow St./Gladstone St.	Glendora	✓	
14. Valley Center Ave./Gladstone St.	San Dimas/Glendora	✓	
15. Shellman Ave. /Gladstone St.	San Dimas/Glendora	✓	✓
16. Lone Hill Ave./Gladstone St.	San Dimas/Glendora	✓	✓
17. Amelia Ave.-Pearlanna/Gladstone St.	San Dimas	✓	✓
18. Lone Hill Ave./Arrow Hwy.	San Dimas	✓	✓
19. Arrow Hwy./Sb SR-57 Off-Ramp	San Dimas/Caltrans	✓	✓
20. Arrow Hwy./North Village Ct.	San Dimas	✓	✓
21. Arrow Hwy./Bonita Ave.-SR-57 nbd. ramps	San Dimas	✓	✓

The appendices of this report contain background materials for this analysis. These materials include summaries of manual intersection turn movement counts and intersection Level of Service (LOS) analysis worksheets.

The analysis of peak hour intersection Level of Service (LOS) is the primary indicator of circulation system performance. For the analysis of signalized study intersections, the Intersection Capacity Utilization (ICU) Method was utilized. Appendix A contains a discussion of the ICU methodology and corresponding level of service definitions. For the analysis of unsignalized study intersections, the Highway Capacity Manual 2000 method was utilized, as

the ICU method is not accurate for these types of intersections. The level of service during the peak hour at intersections ranges from LOS A (optimal conditions, little congestion) to LOS F (traffic volumes higher than roadway design, heavy congestion).

C. Significant Impact Criteria

The County of Los Angeles Traffic/Access Guidelines for significant transportation impacts at ~~an~~ signalized intersections are ~~is~~ provided below. As an example of how this methodology is applied, if an intersection operates at LOS A in a pre-project scenario and worsens to LOS C in a post-project scenario, there would be no significant impact. The impact threshold utilized is based on the *pre-project* LOS, not post-project LOS.

Pre-Project LOS & v/c*	Project Related v/c increase
C: 0.71– 0.80	Equal to or greater than 0.04
D: 0.81 – 0.90	Equal to or greater than 0.02
E: 0.91 or more	Equal to or greater than 0.01

The County of Los Angeles does not define significant impact standards for unsignalized intersections. At these locations, peak-hour traffic signal warrant analyses were conducted for this study, for pre-project and post-project conditions. The peak-hour signal warrant analyses conducted for the unsignalized study intersections examined intersection approach and total turn movement volumes. The warrant analyses determined if traffic signal installation would be justified based on these volumes. These warrants were originally developed by Caltrans, and are now part of the Manual of Uniform Traffic Control Devices (MUTCD). If such warrants are not met, municipalities generally do not install traffic signals at the analyzed location. Beyond the significant impact analysis utilized in the traffic report for this project, signal warrant analyses are provided for all of the unsignalized study intersections.

D. Study Hours of Analysis

The analysis focuses on the weekday a.m., weekday p.m., and Saturday mid-day peak hour conditions at the study intersections (selected locations for Saturday). New weekday traffic counts were conducted on Tuesday, January 13, 2004 and new Saturday traffic counts were conducted Saturday, January 10, 2004. These counts occurred at the following times at the study intersections:

Weekday AM Period - 7:00 a.m. to 9:00 a.m.
Weekday PM Period - 4:00 p.m. to 6:00 p.m.
Saturday Mid-Day Period - 12:00 p.m. to 2:00 p.m.

Existing weekday p.m. peak-hour volumes were provided for selected study intersection by the City of Glendora. These counts were taken from the *City of Glendora Route 66 Specific Plan Amendment Traffic Impact Study* document. These counts were originally conducted on

Wednesday, June 11, 2003. Level of service for the following four intersections were based upon p.m. peak period volumes from the Route 66 Specific Plan document:

- Lone Hill Avenue/Route 66
- Lone Hill Avenue/SR-210 westbound ramps
- Lone Hill Avenue/SR-210 eastbound ramps
- Lone Hill Avenue/Auto Centre Drive

At all of the study intersections, volumes utilized for analysis of Level of Service (LOS) are derived from the highest four consecutive 15-minute periods of total intersection volume. This defines the peak-hour of traffic analysis.

2. Existing (Year 2004) Conditions

This section documents the existing conditions in the study area. This includes discussion of roadway systems, transit systems, and existing operating characteristics of the study intersections.

A. Existing Traffic Circulation Network

The proposed Project site is generally located south of the SR-210 (Foothill Freeway) on Lone Hill Avenue in the City of San Dimas. The proposed Project site is at the southeast corner of Lone Hill Avenue and Gladstone Street.

The majority of the study intersections are located along Lone Hill Avenue. Additional study intersections are located on Auto ~~Center~~ Centre Drive-Allen Avenue, Amelia Avenue, Gladstone Street, and Arrow Highway. These primary roadways that define the locations of the study intersections are discussed within this report section. North-south roadways are discussed first, and east-west roadways are discussed second. A discussion of existing bus and planned rail transit follows the discussion of area roadways.

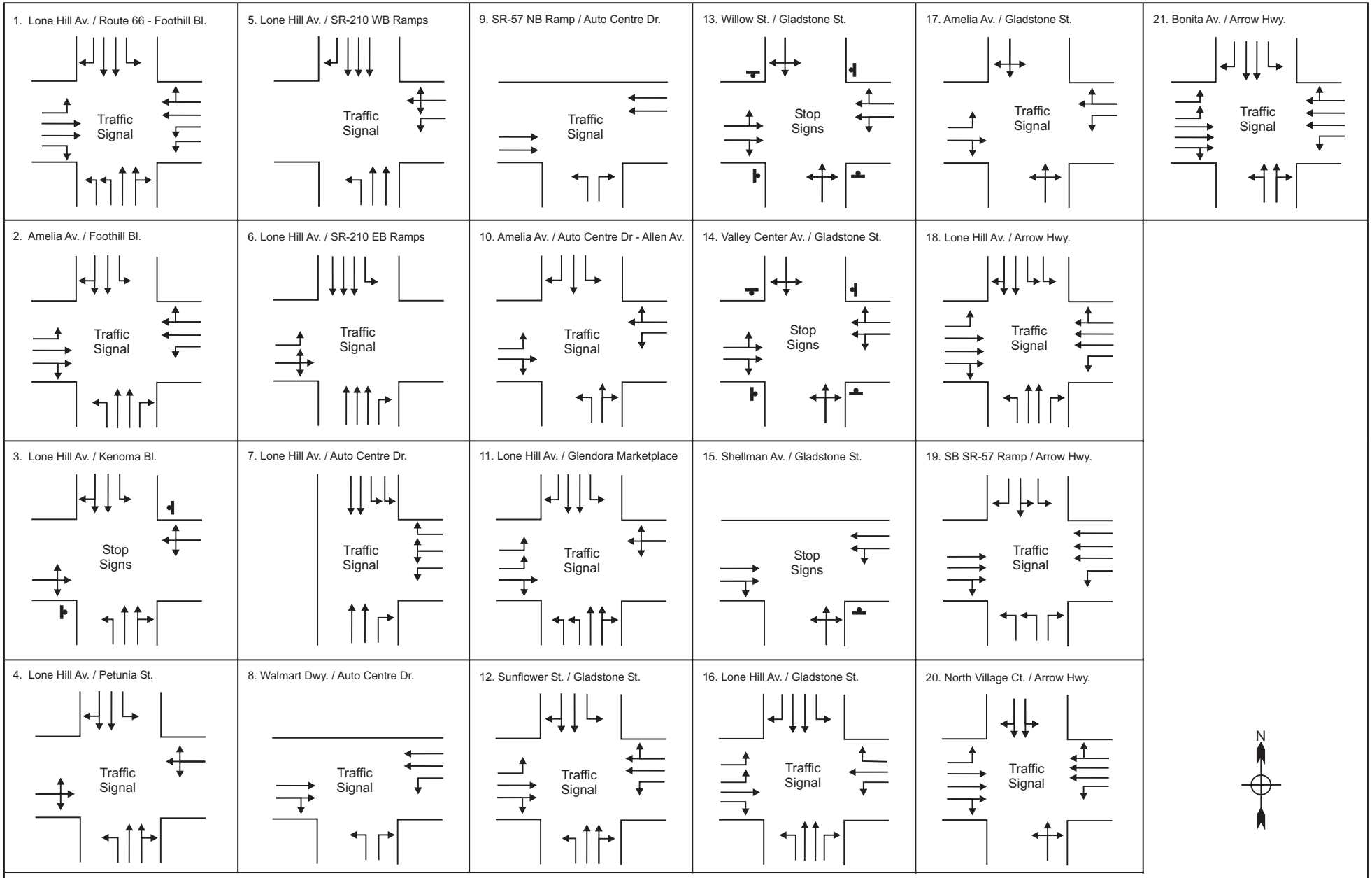
Figure 3 illustrates the approach lane configurations and traffic control at the study intersections.

North-South Roadways

Sunflower Avenue is a four-lane secondary roadway that provides north-south access within western San Dimas and southwestern Glendora. In the vicinity of Gladstone Street, the roadway has four travel lanes with a striped centerline. The northern terminus of the roadway is at a full interchange with the I-210 freeway. Near this northern terminus, the roadway's four travel lanes transition into two travel lanes with a striped centerline.

Lone Hill Avenue is a four-lane primary roadway that provides sub-regional north-south access between Route 66 and the Glendora foothills on the north to southern San Dimas. The roadway is predominantly divided with a center raised median and turn pockets at intersections. Parking is generally prohibited. At the I-210 Freeway, a full diamond interchange is provided.

Amelia Avenue is a two-lane secondary roadway that is located on the eastern end of the Project study area. The roadway has a striped centerline and serves residential, light industrial, and commercial uses. On-street parking is allowed.



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Traffic Engineers and Transportation Planners

Costco Commercial Complex, San Dimas, CA., Traffic Study

Figure 3

Intersection Lane Configuration and Control

East-West Roadways

Route 66 and Foothill Boulevard constitute a four-lane regional arterial that provides east-west access across both the San Gabriel Valley and western San Bernardino County. West of Amelia Avenue, the roadway lies within Glendora as Route 66. East of Amelia Avenue, the roadway lies within San Dimas and is named Foothill Boulevard. The western continuation of Foothill Boulevard from Amelia Avenue begins at a point further north of the Route 66-Foothill Boulevard intersection. Within the study area, the roadway is primarily divided by a landscaped raisedn median, with turn pockets at major intersections.

Auto Centre Drive is a two-lane roadway that provides access to the San Dimas auto dealers and the Walmart development, in the area west of the SR-57 freeway. Immediately east of Amelia Avenue, the roadway name transitions into Allen Avenue.

Gladstone Street is a two-lane roadway that provides east-west access across San Dimas and to La Verne on the east and southern Azusa on the west. The roadway defines the northern boundary of the Project site, and serves both light industrial and residential uses. Parking is allowed along most segments of the roadway. In the vicinity of Lone Hill Avenue, the roadway provides left turn pockets at intersections and a continuous left turn lane. Parking is prohibited to the west of Lone Hill Avenue.

Arrow Highway is a six-lane regional arterial that provides access across the eastern San Gabriel Valley and western San Bernardino County. Along most portions of the route within San Dimas, the roadway is divided by a landscaped/raised median and parking is prohibited. Turn pockets are provided at major intersections.

B. Existing Transit Service

The Project study area is served by bus transit lines operated by Foothill Transit. There is no major transit access point, such as a transfer center, within ¼-mile walking distance of the Project site. Therefore, no trip reduction credits were taken for the Project for potential transit use. The following individual transit lines provide service adjacent to the Project site, or within the study area:

Foothill Transit Line 187: This line provides service along Foothill Boulevard-Route 66, on its route between downtown Claremont/Montclair and Pasadena. This line runs from approximately 4:00 a.m. to 12:00 a.m. on weekdays at an approximate peak frequency of 15 minutes. The line also provides service on Saturdays, Sundays, and holidays.

Foothill Transit Line 189: This line provides service along Foothill Boulevard-Route 66, as a weekday deviation from Line 187, on its route between downtown Claremont/Montclair and Pasadena. The deviation provides service on portions of Gladstone Street, Lone Hill Avenue, and Arrow Highway.

Foothill Transit Line 492: This line provides service along Arrow Highway and Bonita Avenue, on its route between downtown Claremont/Montclair and El Monte/Los Angeles. This line runs from approximately 5:00 a.m. to 9:00 a.m. on weekdays at an approximate peak frequency of 30 minutes. The line also provides service on Saturdays, Sundays, and holidays.

Foothill Transit Line 494: This line provides local service within the study area (although it utilizes freeways to reach Los Angeles along the western portion of the route), along portions of Lone Hill Avenue and Arrow Highway. The line's eastern terminus is at the San Dimas Park & Ride, east of the study area limits. This line runs on weekdays at a frequency of 30 minutes during the peak a.m. and p.m. commute periods.

Foothill Transit Line 690: This line provides express service along the I-210 and Foothill Boulevard corridor between Montclair/Claremont and Pasadena. The line does not serve local streets within the Project study area, but provides direct service to the Lone Hill Park & Ride facility at Lone Hill Avenue and the I-210 freeway. This line runs on weekdays during the peak a.m. and p.m. commute periods.

C. Planned Transit Service

Phase II of the Metro Gold Line is currently planned for completion between East Pasadena and Claremont by 2009. Initial planned segments of Phase II would extend the line to Irwindale from Pasadena. Phase I of this light rail transit line was completed between downtown Los Angeles and East Pasadena in Summer of 2003. Phase II would be constructed by the Pasadena Blue Line Construction Authority, and handed over to the MTA for operation and maintanence upon completion of construction and testing. An Environmental Impact Report is currently being conducted for Phase II.

The nearest station to the Project site on the Gold Line would be at the Santa Fe Depot in San Dimas, near the intersection of Cataract Avenue/Bonita Avenue, and in Glendora near the intersection of Glendora Avenue/Route 66. The San Dimas station would be about 1.5 miles from the Project site, and the Glendora station would be about 3.0 miles from the Project site.

As these stations are farther than the typical accepted walking distance from a major transit stop (one-quarter to one-half of a mile), and the nature of the proposed Project uses are generally not conducive to transit use, it was assumed that no measurable reductions in trip generation could be applied due to the potential opening of the light rail line. Furthermore, as development of the line is uncertain at this point due to MTA budget constraints, it is unlikely that service would begin through Glendora and San Dimas ~~by the~~ before 2009, well beyond the Project Year of 2005. . The eastern terminus of the line within that timeframe could be Irwindale (under which scenario no service would run near the Project site) or Claremont, depending upon the final alternative selected during the environmental review process.

It is acknowledged that the Gold Line Project could potentially cause delay at the Lone Hill Avenue and Gladstone Street at-grade railroad crossings. When gates are down and Gold Line trains are crossing in one or both directions, certain movements will be blocked at the intersection of Lone Hill Avenue/Auto Centre Drive, as the tracks cross Lone Hill Avenue immediately south of this intersection. Delay in north-south movements along Lone Hill Avenue, and delay in east-west movements along Gladstone Street, could cause queuing and blocking issues at nearby intersections and driveways. It is not feasible to quantify such delay. The traffic section of the Gold Line EIR document does not identify any specific traffic impacts from the Gold Line within the project study area.

Quantifying corridor delay on Lone Hill Avenue and Gladstone Street would be speculative at this point. The operating frequency of the constructed line will be unknown until final design is initiated. Currently, the environmental process for the Gold Line is based on a number of

project alternatives – one of these alternatives is a bus improvement alternative with no rail service. Therefore, it is not reasonably foreseeable that light rail service will be established across the Lone Hill and Gladstone crossings.

Therefore, no analysis was conducted of operation of the Gold Line at the nearby grade crossings on Lone Hill Avenue and Gladstone Street.

C. Existing Intersection Levels of Service

From the traffic counts at the study area intersections, the Intersection Capacity Utilization (ICU) value or delay in seconds (at unsignalized and partially-controlled intersections) and related Level of Service (LOS) was determined. Table 1 provides these ICU or delay values, and the related LOS value, for each study intersection under existing (2004) conditions. Selected intersections were analyzed for the Saturday mid-day analysis period.

Table 1 - Summary of Intersection Performance
Existing (2004) Conditions

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.~~730~~ 693	~~C~~ B	**0.~~928~~** 758	~~**E**~~ C		
2. Amelia Ave./Route 66	0.454	A	0.489	A		
3. Lone Hill Ave./Kenoma St. *	31.1 sec.	D	**>100 s.**	**F**		
4. Lone Hill Ave./Petunia St.	0.465	A	0.494	A		
5. Lone Hill Ave./SR-210 Wb ramps	0.874	D	**1.257**	**F**		
6. Lone Hill Ave./SR-210 Eb ramps	0.608	B	0.725	C		
7. Lone Hill Ave./Auto Centre Dr.	0.490	A	0.769	C	0.657	B
8. Walmart Dwy./Auto Centre Dr.	0.311	A	0.451	A		
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.391	A	0.571	A		
10. Amelia Ave./Auto Centre Dr.-Allen	0.348	A	0.378	A		
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.271	A	0.408	A	0.484	A
12. Sunflower St./Gladstone St.	0.392	A	0.408	A		
13. Willow St./Gladstone St. *	10.0 sec.	B	11.4 sec.	B		
14. Valley Center Ave./Gladstone St. *	10.5 sec.	B	13.5 sec.	B		
15. Shellman Ave. /Gladstone St. *	11.1 sec.	B	12.2 sec.	B	11.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.378	A	0.514	B	0.757	C
17. Amelia Ave.-Pearlanna/Gladstone St.	0.349	A	0.427	A	0.290	A
18. Lone Hill Ave./Arrow Hwy.	0.496	A	0.563	A	0.502	A
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.494	A	0.591	A	0.696	B
20. Arrow Hwy./North Village Ct.	0.368	A	0.477	A	0.595	A
21. Arrow Hwy./Bonita-SR57 nbd. Ramps	0.717	C	**0.938**	**E**	0.714	C

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

As indicated by the bold text in Table 1, there are three ~~four~~ study intersections that currently operate at LOS E or worse during the weekday p.m. peak period. The following are some highlights of the poorer performing intersections:

- ~~Poor LOS at the Lone Hill Avenue/Route 66-Foothill Blvd. intersection is the result of~~

~~high eastbound right turn volumes and high northbound left turn volumes.~~

- Poor LOS at the Lone Hill Avenue/Kenoma Avenue intersection is the result of delay experienced by motorists attempting to cross or enter traffic flows on Lone Hill Avenue from Kenoma Avenue. This intersection is not signalized, but has stop sign control for the Kenoma Avenue approaches.

- Poor LOS at the Lone Hill Avenue/I-210 westbound ramps intersection is due to high westbound right turn movements (from the off-ramp) and high northbound left turn volumes (onto the on-ramp).

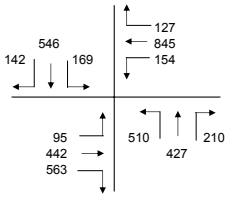
- Poor LOS at the Arrow Highway/Bonita Avenue-SR57 northbound ramps intersection is caused by high volumes at the northbound approach (off-ramp) and high left turn volumes at the eastbound (Arrow Highway) and southbound (Bonita Avenue) approaches.

Figure 4 provides the existing a.m. peak intersection turn movement volumes, Figure 5 provides existing p.m. peak volumes, and Figure 6 provides existing Saturday mid-day peak volumes.

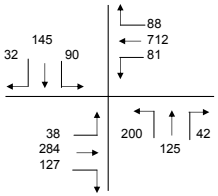
Summaries of the traffic counts utilized for analysis of existing conditions are provided in Appendix B of this report. The traffic analysis worksheets for the existing conditions scenario are provided in Appendix C.

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

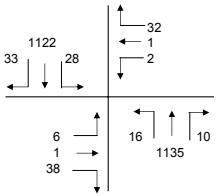
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



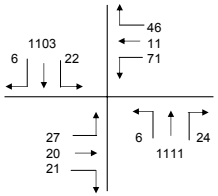
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



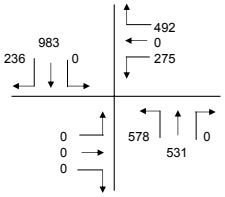
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



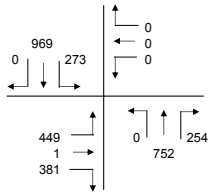
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



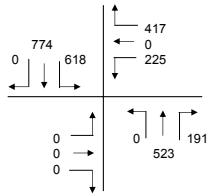
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



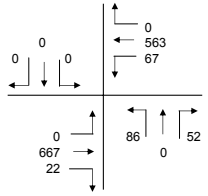
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



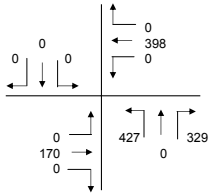
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



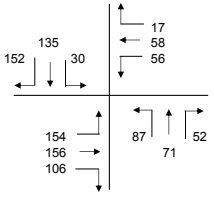
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



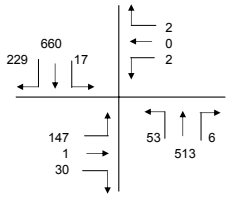
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



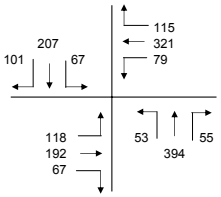
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



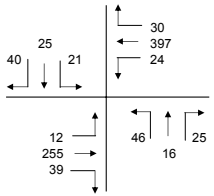
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



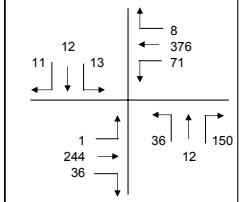
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



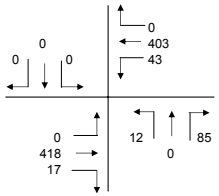
Intersection 13
N/S Willow St.
E/W Gladstone St.



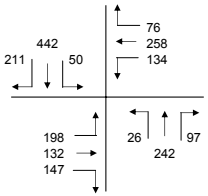
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



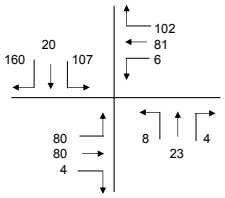
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



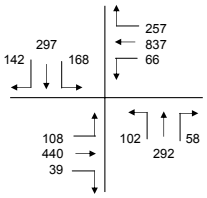
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



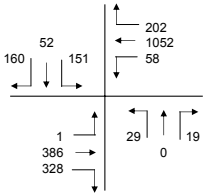
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



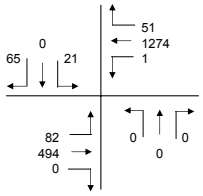
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



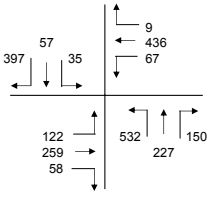
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

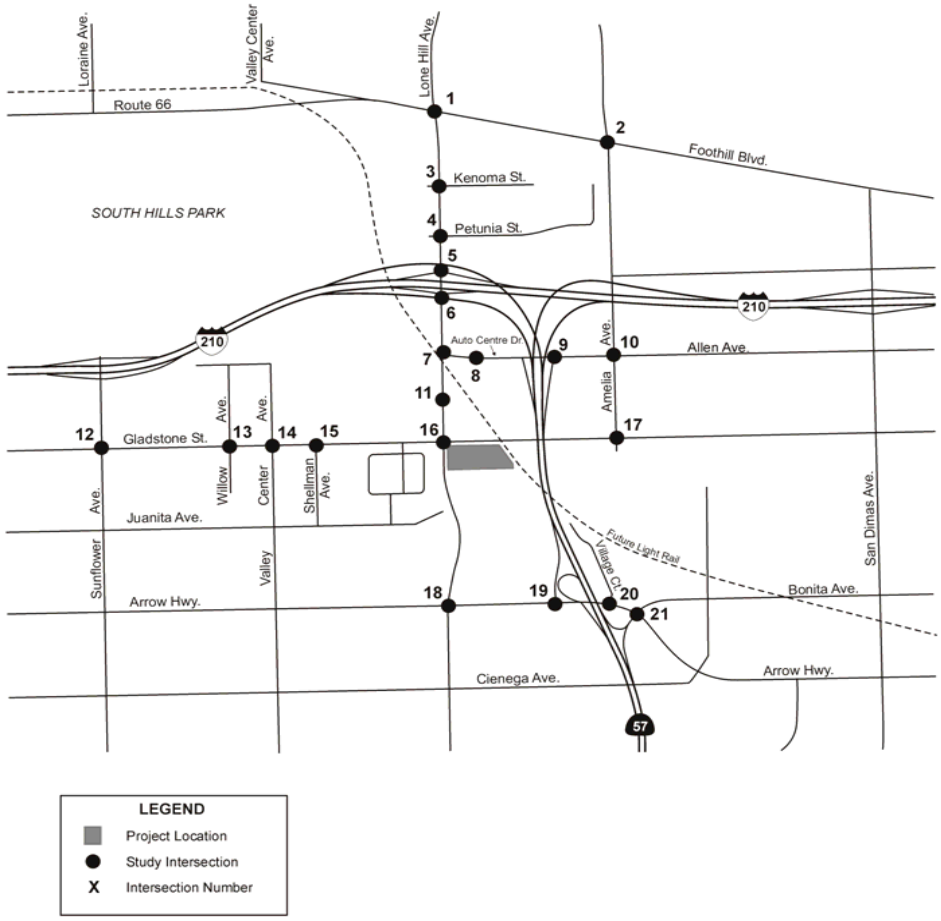


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





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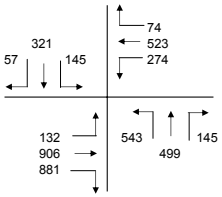
Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 4

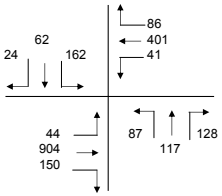
Existing (Year 2004) Weekday AM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

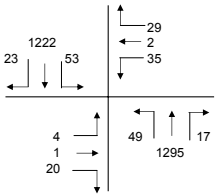
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



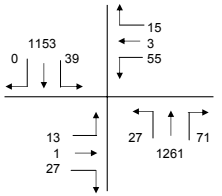
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



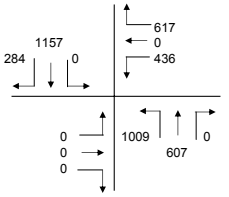
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



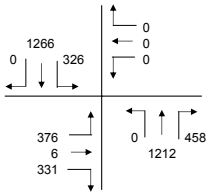
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



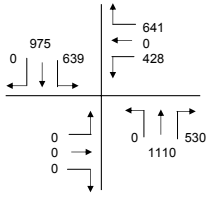
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



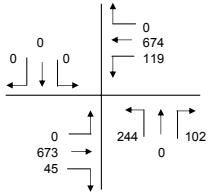
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



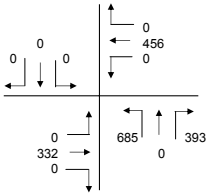
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



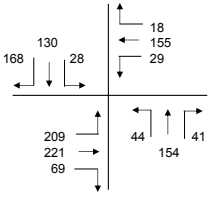
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



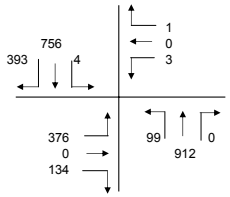
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



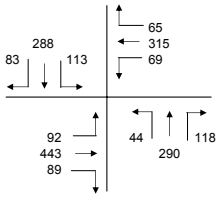
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



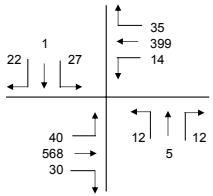
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



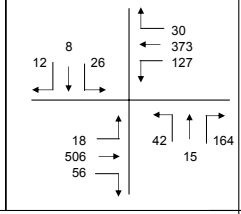
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



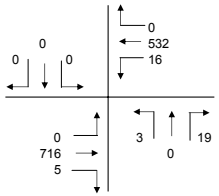
Intersection 13
N/S Willow St.
E/W Gladstone St.



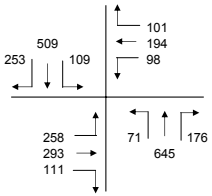
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



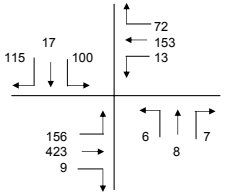
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



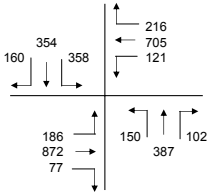
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



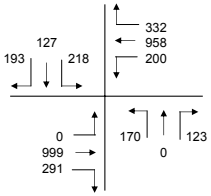
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



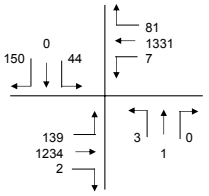
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



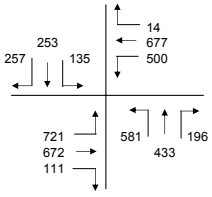
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

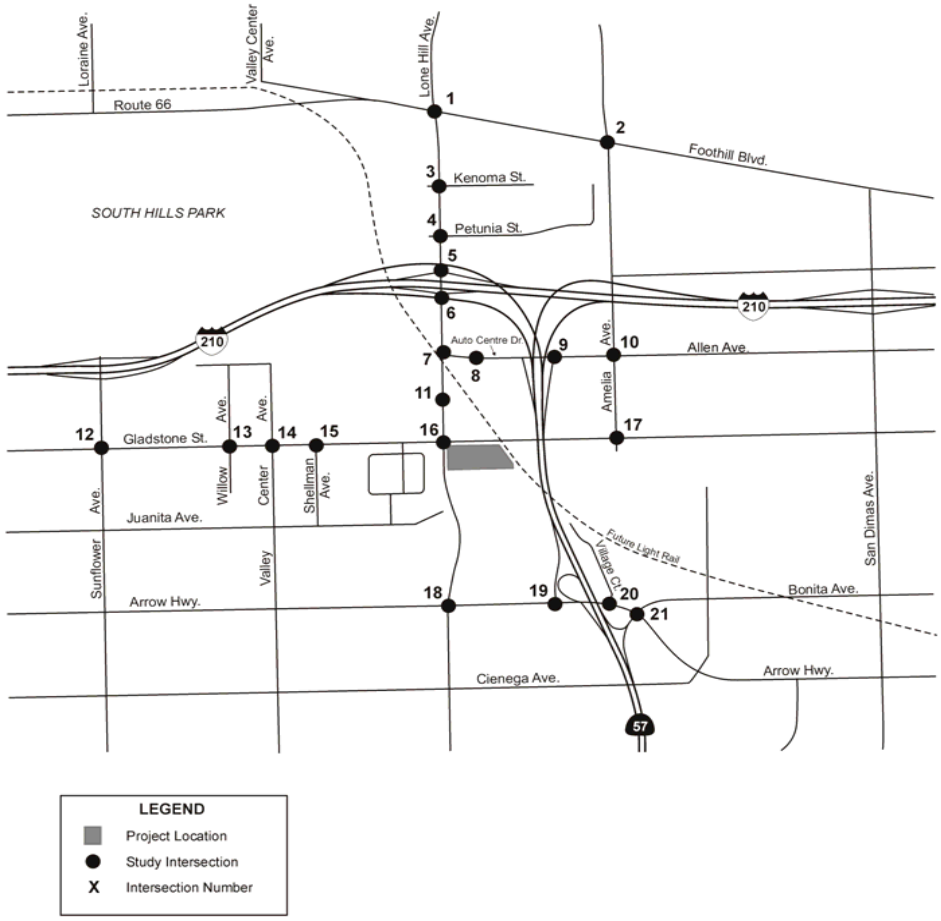


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Traffic Engineers and Transportation Planners

Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 5

Existing (Year 2004) Weekday PM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

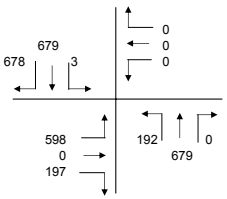
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

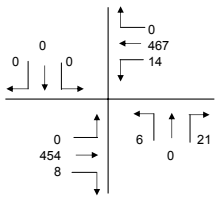
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

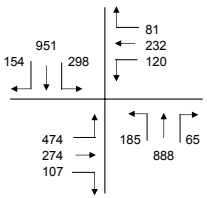
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



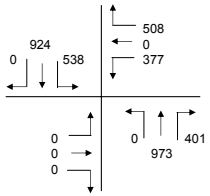
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.

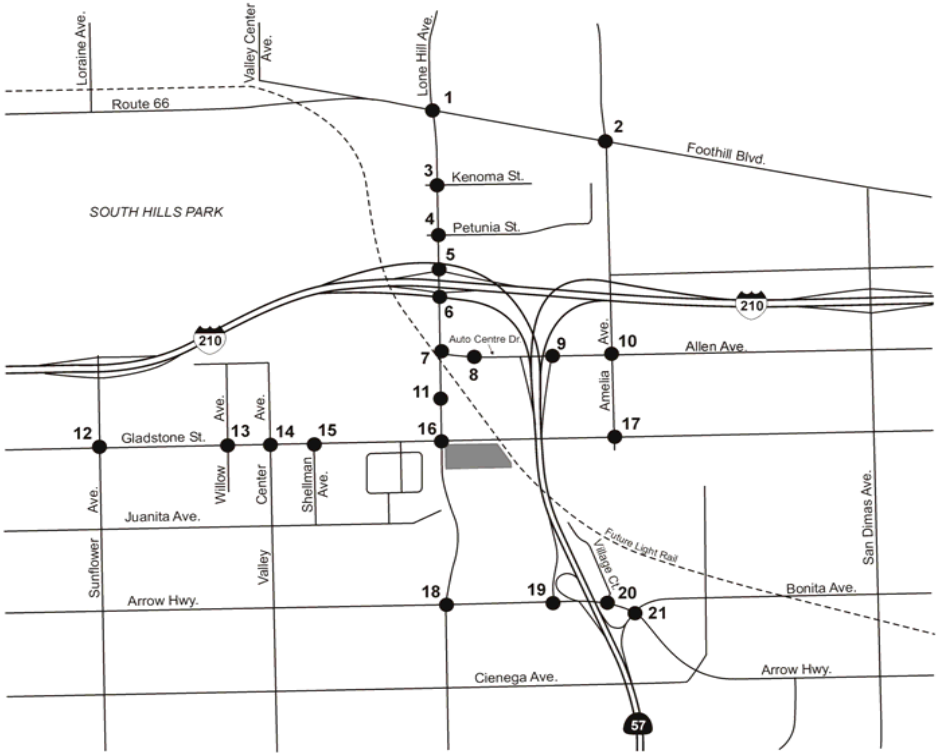


Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

Not Analyzed for Saturday

Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.





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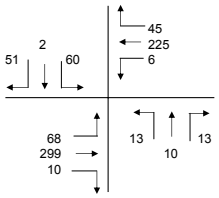
E/W Gladstone St.



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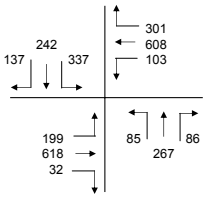
E/W Arrow Hwy.



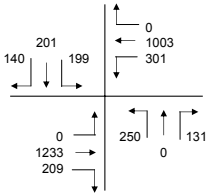
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



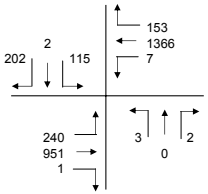
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



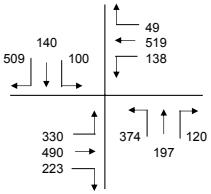
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



N

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Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 6

Existing (Year 2004) Saturday Peak Hour Traffic Volumes

3. Future (2005) Growth-Only Conditions

This section documents the future traffic conditions in the project study area with ambient growth only. The year 2005 was selected for analysis since it is anticipated that construction of the Project will be completed, and the new uses will be operational, in that year.

A. Ambient Growth

The Los Angeles County Congestion Management Program (CMP) has defined a series of average traffic growth factors for the County, by Regional Statistical Areas (RSAs). These factors are based on regional traffic modeling efforts and are intended to estimate the general effect of continuing development and other population/economic factors that would affect traffic growth in the region. The growth factors are developed for each sub-region in the County, including the San Gabriel Valley.

The CMP growth factors indicate an approximate average annual growth rate of approximately 1.0% for traffic in the San Gabriel Valley. As a timeframe of one year separates existing conditions (2004) and the Project Year (2005) for this report, a total ambient growth rate of 1.0% (1.0% x 1 year) was utilized for this report.

B. Analysis of Future Ambient Growth Conditions

To calculate base traffic volumes for the Future Ambient Growth Conditions scenario, existing peak-hour volumes were increased by a factor of 1.01 to simulate Year 2005 conditions. This represents a 1% annual rate of growth for one year. Project traffic is not added to the volumes utilized within this scenario.

Table 2 provides the volume/capacity ratios or delay and LOS values for each study intersection, for future (2005) ambient growth conditions.

Table 2 - Summary of Intersection Performance - Future (2005) Ambient Growth Conditions

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.~~737~~ ~~.~~700	C	0.~~937~~ 766	~~E~~ C		
2. Amelia Ave./Route 66	0.459	A	0.494	A		
3. Lone Hill Ave./Kenoma St. *	32.1 sec.	D	>100 sec.	F		
4. Lone Hill Ave./Petunia St.	0.470	A	0.499	A		
5. Lone Hill Ave./SR-210 Wb ramps	0.882	D	1.270	F		
6. Lone Hill Ave./SR-210 Eb ramps	0.614	B	0.732	C		
7. Lone Hill Ave./Auto Centre Dr.	0.495	A	0.777	C	0.663	B
8. Walmart Dwy./Auto Centre Dr.	0.314	A	0.456	A		
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.395	A	0.576	A		
10. Amelia Ave./Auto Centre Dr.-Allen	0.352	A	0.378	A		
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.274	A	0.412	A	0.489	B
12. Sunflower St./Gladstone St.	0.396	A	0.412	B		
13. Willow St./Gladstone St. *	10.1 sec.	B	11.5 sec.	B		
14. Valley Center Ave./Gladstone St. *	10.5 sec.	B	13.6 sec.	B		
15. Shellman Ave. /Gladstone St. *	11.1 sec.	B	12.3 sec.	A	11.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.381	A	0.519	A	0.764	C
17. Amelia Ave.-Pearlanna/Gladstone St.	0.352	A	0.431	A	0.293	A
18. Lone Hill Ave./Arrow Hwy.	0.501	A	0.568	A	0.508	A
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.499	A	0.597	A	0.703	C
20. Arrow Hwy./North Village Ct.	0.372	A	0.481	A	0.601	B
21. Arrow Hwy./Bonita-SR57 nbd. ramps.	0.724	C	0.948	E	0.721	C

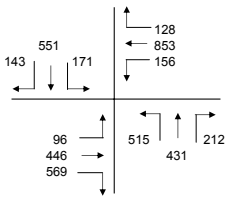
** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

The increase in traffic resulting from ambient traffic growth does not change weekday intersection LOS, versus existing conditions. In the Saturday peak period, two intersections would operate at worsened LOS due to this traffic growth – The intersection of Arrow Highway/SR-57 Off-Ramp would worsen to LOS C, and the intersection of Arrow Highway/North Village Court would worsen to LOS B. ~~These worsened LOS values are identified in Table 2 with bold text~~ .

Figure 7 provides the future a.m. peak intersection turn movement volumes, while Figure 8 provides future p.m. peak volumes, and Figure 9 provides future Saturday mid-day peak volumes. The traffic analysis worksheets for this scenario are provided in Appendix D of this report.

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

Intersection 1
N/S Lone Hill Ave.
E/W Route 66



Intersection 2
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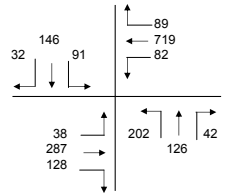
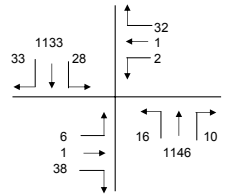
E/W Route 66/Foothill Blvd.



Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



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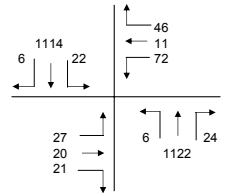
E/W Petunia St.



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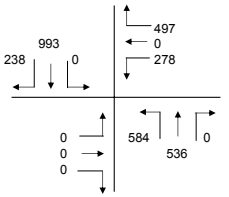
E/W SR 210 WB Ramps



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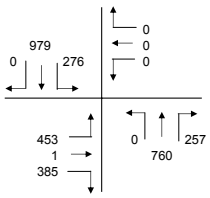
E/W SR 210 EB Ramps



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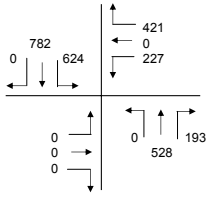
E/W Auto Centre Dr.



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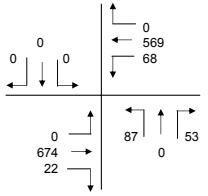
E/W Auto Centre Dr.



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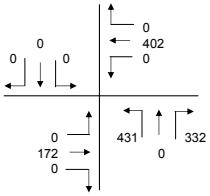
E/W Auto Centre Dr.



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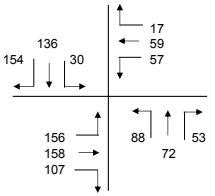
E/W Auto Centre Dr./Allen Ave.



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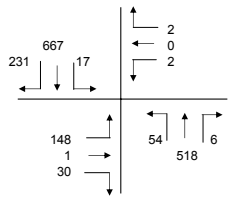
E/W Glendora Marketplace Dwy.



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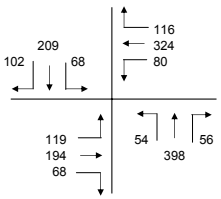
E/W Gladstone St.



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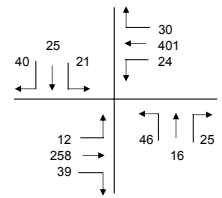

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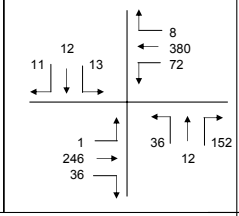
E/W Gladstone St.



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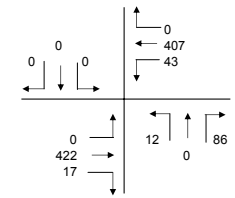

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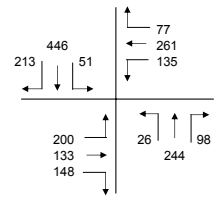

Intersection 17
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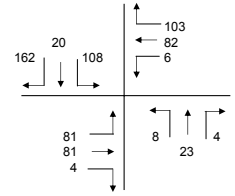
E/W Gladstone St.



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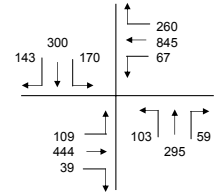

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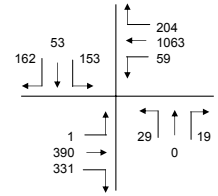
E/W Arrow Hwy.



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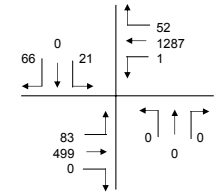
E/W Arrow Hwy.



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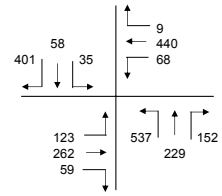

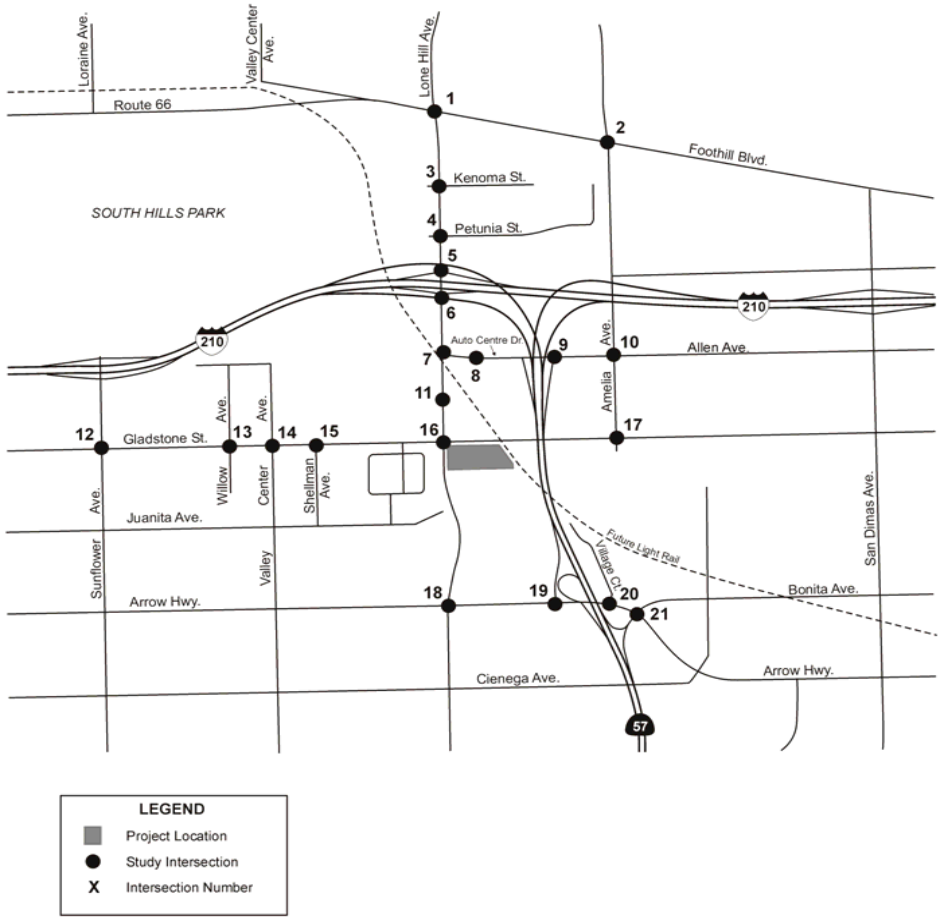

N

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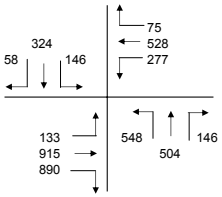
Figure 7

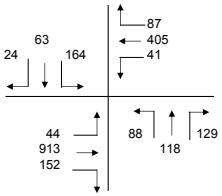
Future (Year 2005) Weekday Ambient AM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

Intersection 1
N/S Lone Hill Ave.
E/W Route 66



Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



Intersection 3
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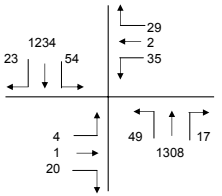
E/W Kenoma St.



Intersection 4
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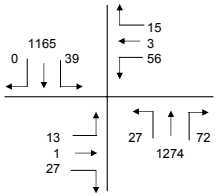
E/W Petunia St.



Intersection 5
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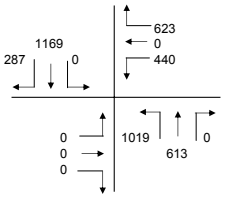
E/W SR 210 WB Ramps



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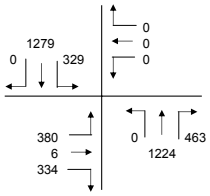
E/W SR 210 EB Ramps



Intersection 7
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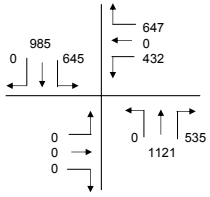
E/W Auto Centre Dr.



Intersection 8
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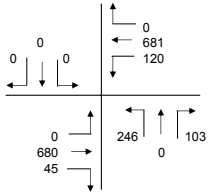
E/W Auto Centre Dr.



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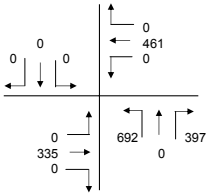
E/W Auto Centre Dr.



Intersection 10
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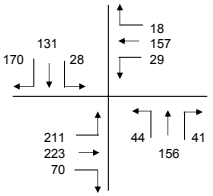
E/W Auto Centre Dr./Allen Ave.



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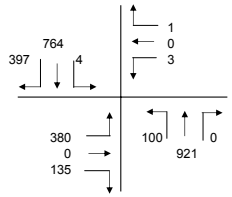
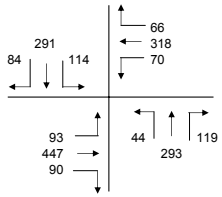
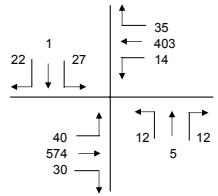
E/W Glendora Marketplace Dwy.



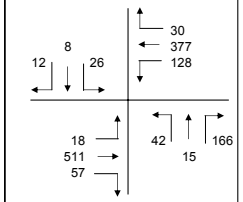
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



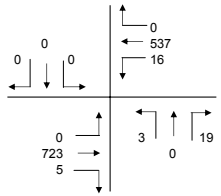
Intersection 13
N/S Willow St.
E/W Gladstone St.



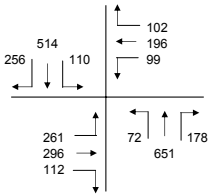
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



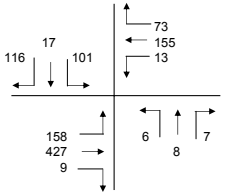
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



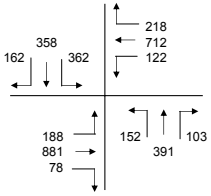
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



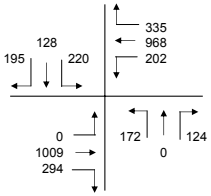
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



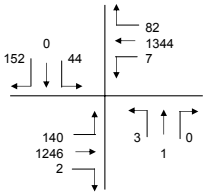
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



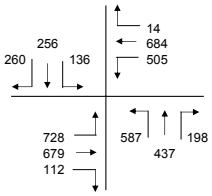
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

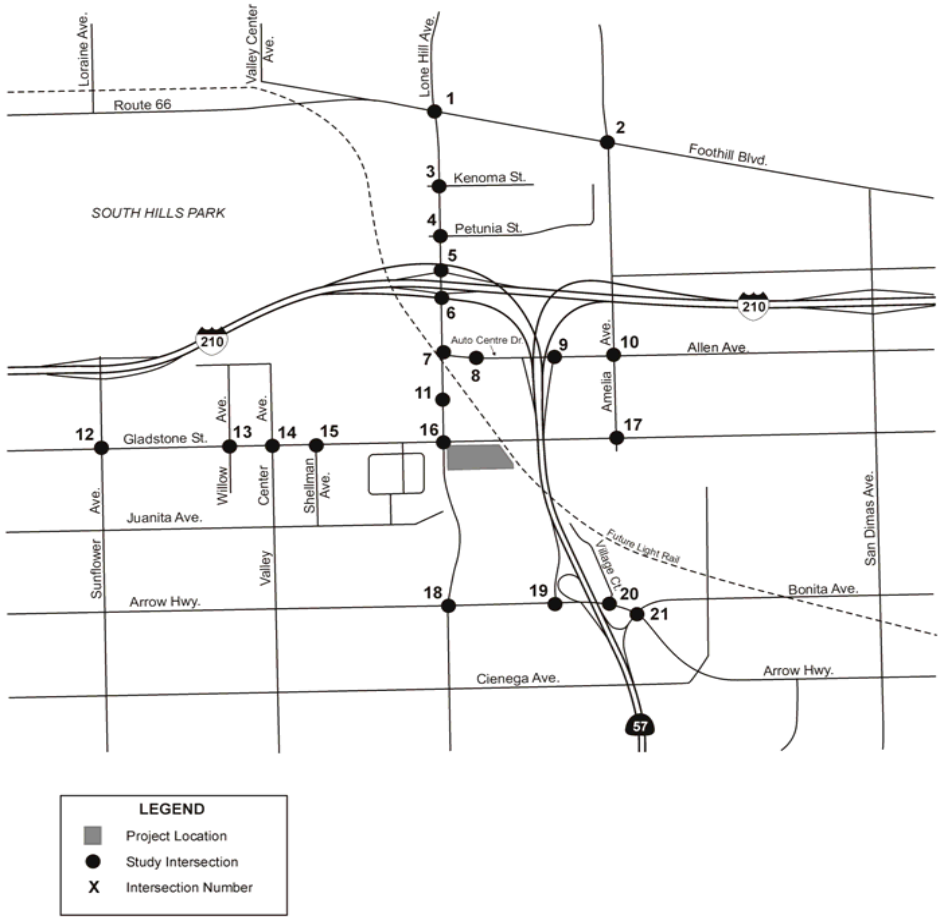


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





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Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 8

Future (Year 2005) Weekday Ambient PM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

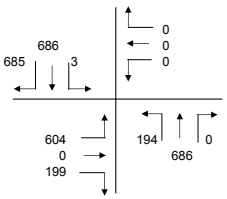
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

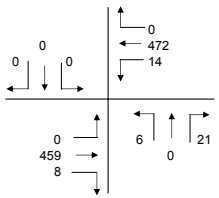
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

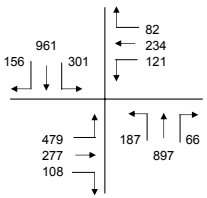
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



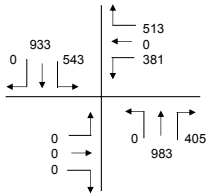
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



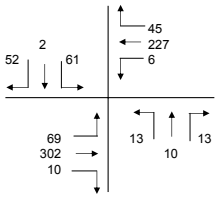
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

Not Analyzed for Saturday

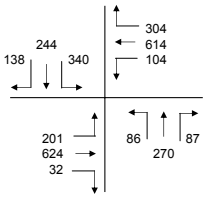
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



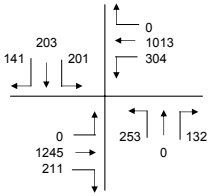
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



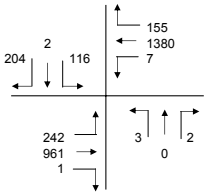
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



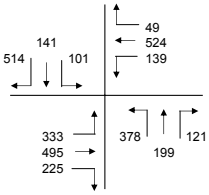
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

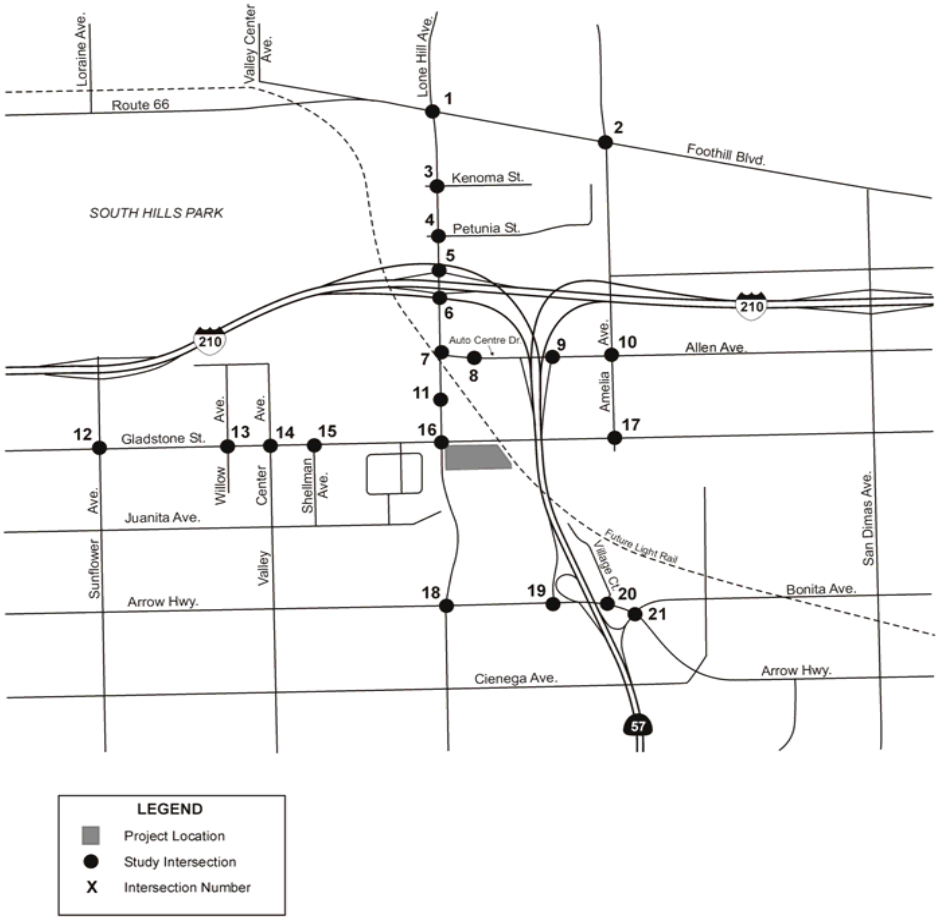
Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 9

Future (Year 2005) Saturday Ambient Peak Hour Traffic Volumes

4. Project Trip Generation

This section discusses the existing and proposed land uses for the Project site, and the resulting trip generation. Trip generation rates, trip generation calculations, trip distribution, and trip assignment to the study intersections are summarized in the sub-sections below.

A. Project Description

The proposed Costco Commercial Complex would be constructed at the southeast corner of the Lone Hill Avenue/Gladstone Street intersection. The southern boundary line of the City of Glendora lies roughly north of Gladstone Street. All remaining existing structures on the site will be demolished to allow for construction of the proposed Project land uses. Existing uses at the Project site, and the proposed improvements, consist of the following:

Existing Land Uses: None. Existing site uses have either been abandoned or demolished.

Project Land Uses: A Costco warehouse/retail facility (149,710 sq.ft.), a Costco gas station with 12 fueling positions, a fast-food restaurant with drive-thru (3,500 sq.ft.), a quality restaurant (7,000 sq.ft.), two retail spaces (8,000 sq.ft. each), and two major retail spaces (45,000 sq.ft.)

B. Project Trip Generation

In order to provide consistency with the traffic study review requirements defined by the Los Angeles County Department of Public Works, this study examined weekday a.m. peak and p.m .peak conditions within four study periods: existing (year 2004) conditions, future (year 2005) ambient growth conditions, future ambient growth with related project conditions, and future ambient growth with related and proposed Project conditions.

As part of the anslysis conducted for this report, Katz, Okitsu & Associates prepared trip generation forecasts for both the proposed Project. These trip generation forecasts are based on trip generation rates provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 6th Edition*. The ITE trip generation rates utilized for this study are provided in Table 3.

The vehicle trips that will be generated by the proposed uses were factored downward by subtracting pass-by trip percentages defined in the ITE Trip Generation Handbook. Pass-by trips are represented by diversions to the Project site when a driver makes an unplanned stop (i.e., the original trip was generated by demand for an unrelated destination).

Application of trip generation rates and reducation factors to the proposed uses for the Project are summarized in Table 3.

Table 3 – Project Trip Generation Calculations

TRIP GENERATION RATES												
Land Use	Intensity	Units	Daily Trips	Weekday AM Total	Weekday AM IN	Weekday AM OUT	Weekday PM Total	Weekday PM IN	Weekday PM OUT	Saturday Peak Total	Saturday Peak In	Saturday Peak Out
Free-Standing Discount Store (ITE Code 815)	149.705	KSF	56.63	0.99	0.65	0.34	4.24	2.12	2.12	7.66	3.91	3.75
Gas Station (ITE Code 844)	12.000	Fuel Pos.	168.56	12.27	6.26	6.01	14.56	7.43	7.13	14.56	7.43	7.13
Shopping Center (ITE Code 820)	56.000	KSF	42.92	1.03	0.63	0.40	3.74	1.80	1.94	4.97	2.58	2.39
Quality Restaurant (ITE Code 831)	7.000	KSF	89.95	0.81	0.42	0.39	7.49	5.02	2.47	10.82	6.38	4.44
Fast Food with Drive-thru (ITE Code 834)	3.500	KSF	496.12	49.86	25.43	24.43	33.48	17.41	16.07	58.91	30.04	28.87

FORECAST TRIP GENERATION												
Land Use	Intensity	Units	Daily Trips	Weekday AM Total	Weekday AM IN	Weekday AM OUT	Weekday PM Total	Weekday PM IN	Weekday PM OUT	Saturday Peak Total	Saturday Peak In	Saturday Peak Out
PROPOSED LAND USES												
Free-Standing Discount Store	149.705	KSF	8,478	148	98	50	635	318	318	1,147	585	562
Gas Station	12.000	Fuel Pos.	2,023	147	75	72	175	89	86	175	89	86
Shopping Center	56.000	KSF	2,404	58	35	22	209	101	109	278	145	134
Quality Restaurant	7.000	KSF	630	6	3	3	52	35	17	76	45	31
Fast Food with Drive-thru	3.500	KSF	1,736	175	89	86	117	61	56	206	105	101
Total Gross Trips			**15,270**	**533**	**300**	**233**	**1,189**	**603**	**586**	**1,882**	**969**	**913**

TRIP GENERATION CREDITS (based on ITE, AM% - PM% - Saturday%)											
Less 0% - 17.2% - 22.8% pass-by trips, discount store			-729	0	0	0	-109	-55	-55	-321	-164	-157
Less 58% - 42% - 0% pass-by trips, gas station			-1,011	-85	-44	-42	-73	-37	-36	0	0	0
Less 0% - 34% - 26% pass-by trips for shopping ctr. Uses			-409	0	0	0	-71	-34	-37	-72	-38	-35
Less 0% - 44% - 0% pass-by trips for quality restaurant			-139	0	0	0	-23	-15	-8	0	0	0
Less 49% / 50% pass-by trips for fast-food rest. w/d-thru			-860	-86	-44	-42	-59	-30	-28	0	0	0
Total NET Trips			**12,123**	**362**	**213**	**150**	**853**	**431**	**422**	**1,488**	**767**	**721**

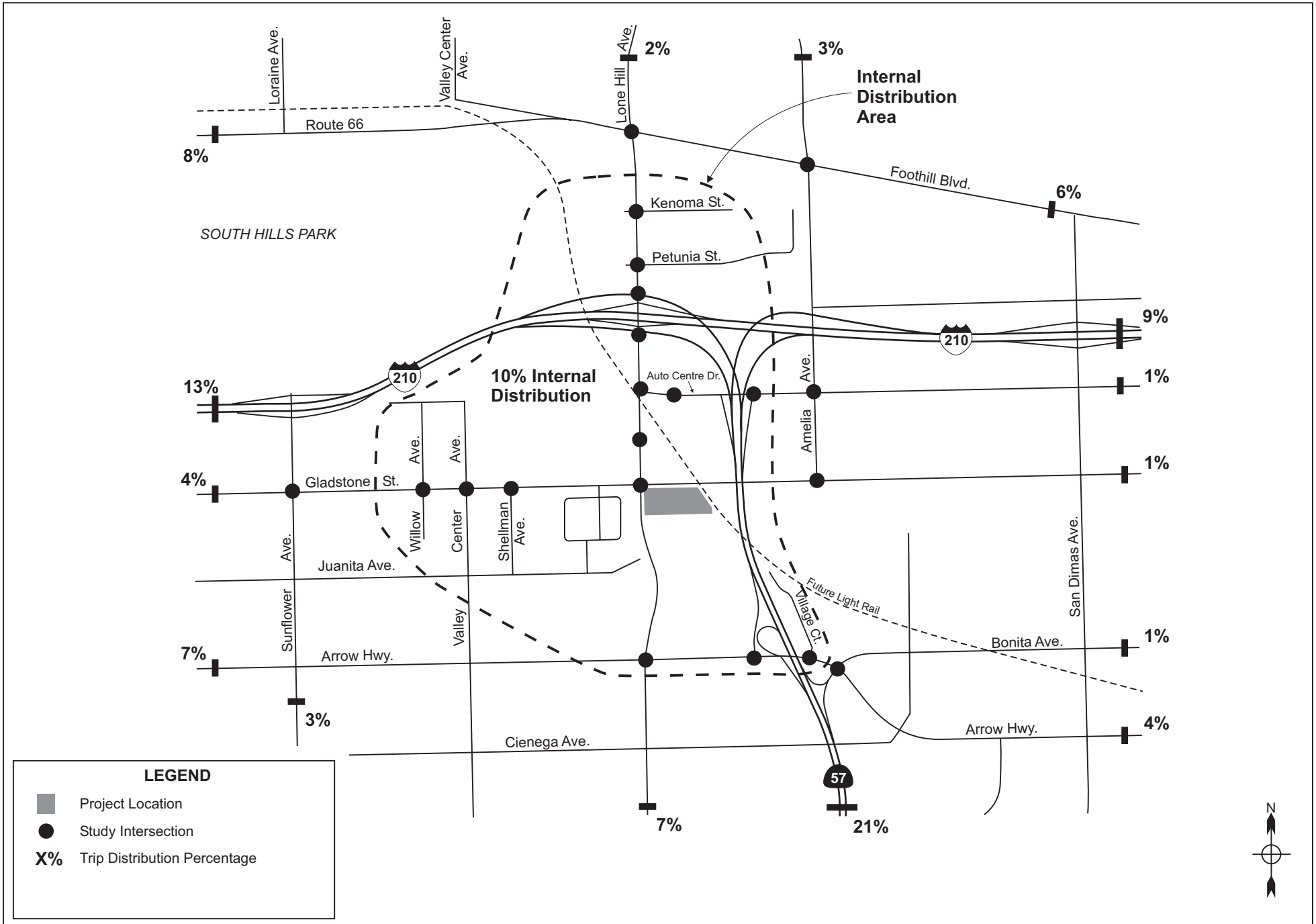
C. Project Trip Distribution

In order to forecast the percentage of project trips that would pass through each study intersection, it is necessary to develop trip distribution forecasts for the total net trip generation of the proposed Project. Trip distribution percentages utilized in this study are based on the following sources:

1. Regional distribution from outputs of the Traffic Analysis Zone model of the Los Angeles County Congestion Management Program (Zone 27 – San Dimas/Pomona).
2. Local distribution calculated from distribution of local routes to neighboring cities.

The forecast trip distribution percentages utilized for distribution of Project trips are illustrated in two separate figures. Figure 10 illustrates the overall geographic distribution to major roadways. The "internal distribution area" illustrated in Figure 10 represents a distribution to local destinations near the Project site, such as the WalMart or Marketplace developments or close-in residential areas. Identification of this internal distribution area provides greater understanding of trip generation and distribution. In such an area people may be expected to visit multiple locations while running errands, for example. The assignment of traffic from the proposed project site to the adjoining roadway system was based on the proposed project site's trip generation, trip distributions, and existing arterial highway and local street systems. The same distribution was utilized for the a.m. as for the p.m. peak period and Saturday mid-day peak period, as the Costco gas station would be operational in the a.m. peak period and many users in the morning would likely be commuters. Therefore, trip attraction to and from the freeway would be roughly the same in either period. Figure 11 illustrates the detailed distribution percentages for each study intersection approach and movement.

Figure 12 illustrates the distribution of weekday a.m. peak Project trips to the study area intersections. Figures 13 and 14 provide this same information for the weekday p.m. peak and Saturday mid-day peak periods, respectively.



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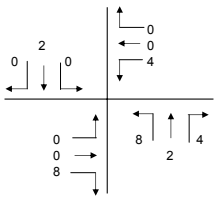
Costco Commercial Complex, San Dimas, CA., Traffic Study

Figure 10

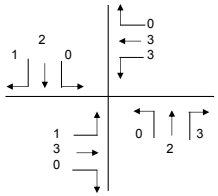
Overall Project Trip Distribution

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

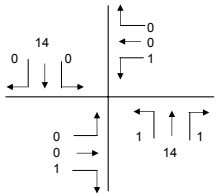
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



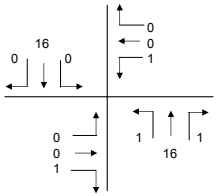
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



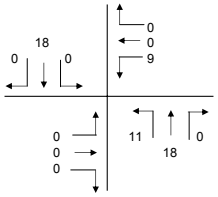
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



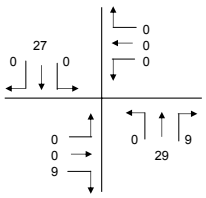
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



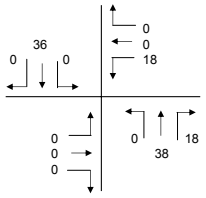
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



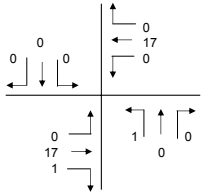
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



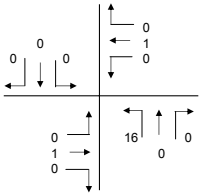
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



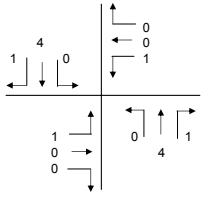
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



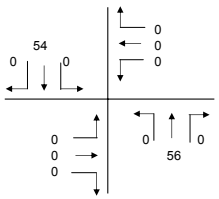
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



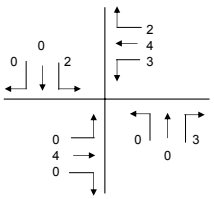
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



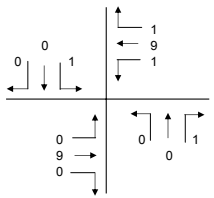
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



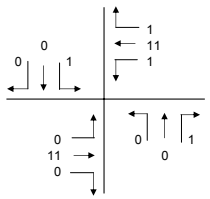
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



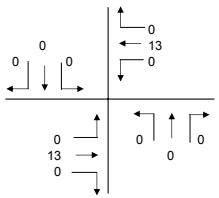
Intersection 13
N/S Willow St.
E/W Gladstone St.



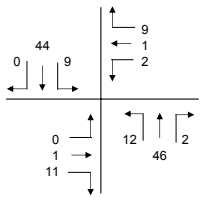
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



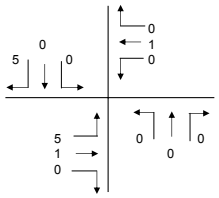
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



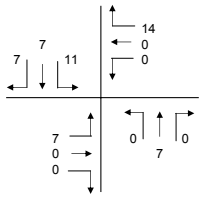
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



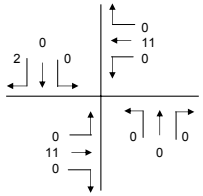
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



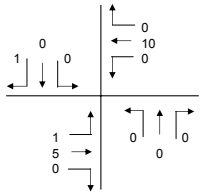
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



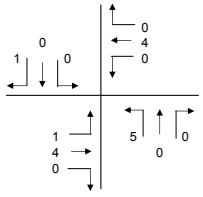
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



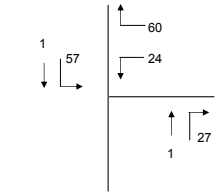
Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



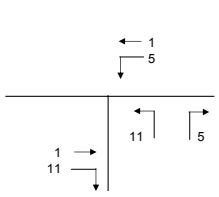
Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.

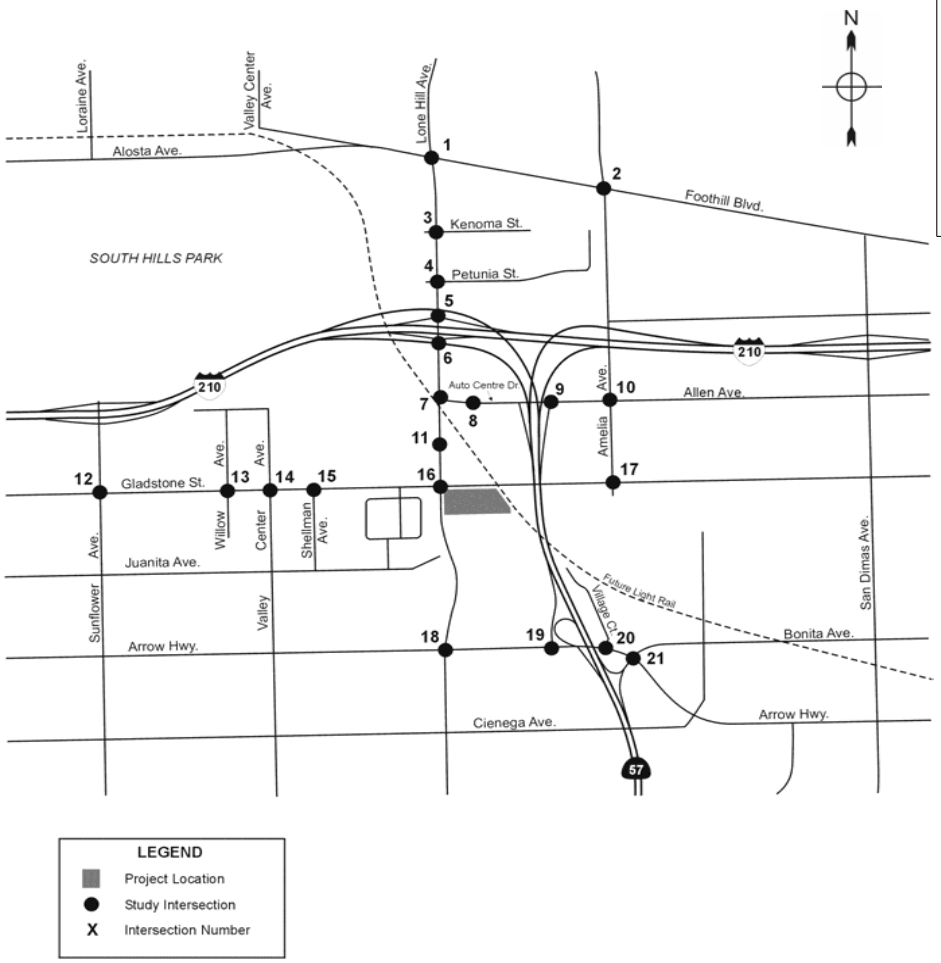


Intersection 22 **PROJECT DRIVEWAY**
N/S Lone Hill Ave.
E/W Project Dwy.



Intersection 23 **PROJECT DRIVEWAY**
N/S Project Dwy.
E/W Gladstone St.





NOTE: All turning movement numbers shown represent trip distribution percentages

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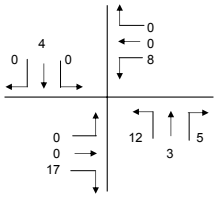
Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 11

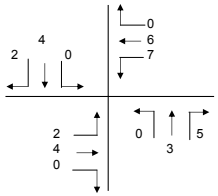
Project Trip Distribution Percentages

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

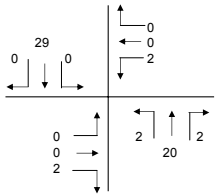
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



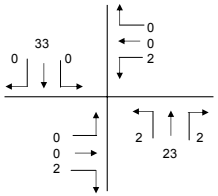
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



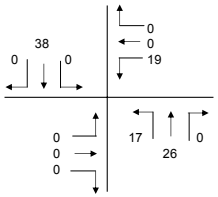
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



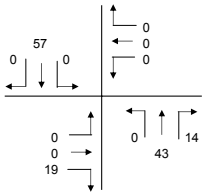
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



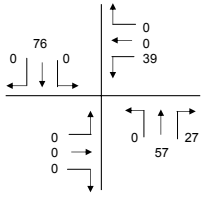
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



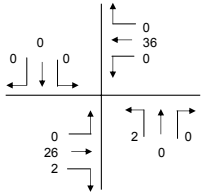
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



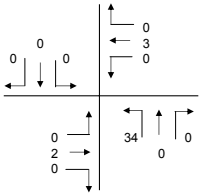
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



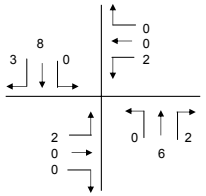
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



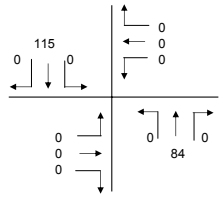
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



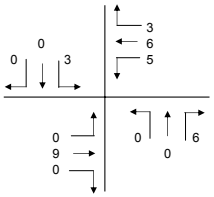
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



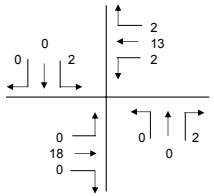
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



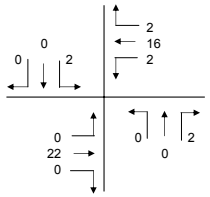
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



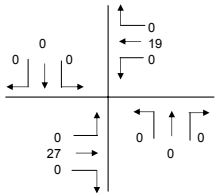
Intersection 13
N/S Willow St.
E/W Gladstone St.



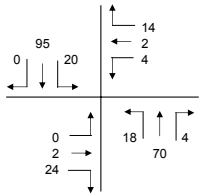
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



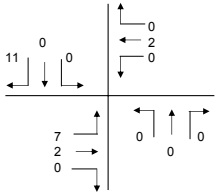
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



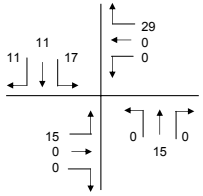
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



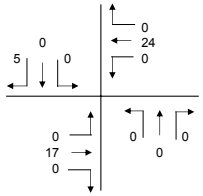
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



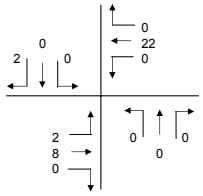
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



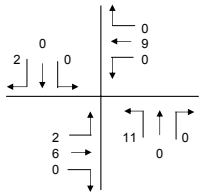
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

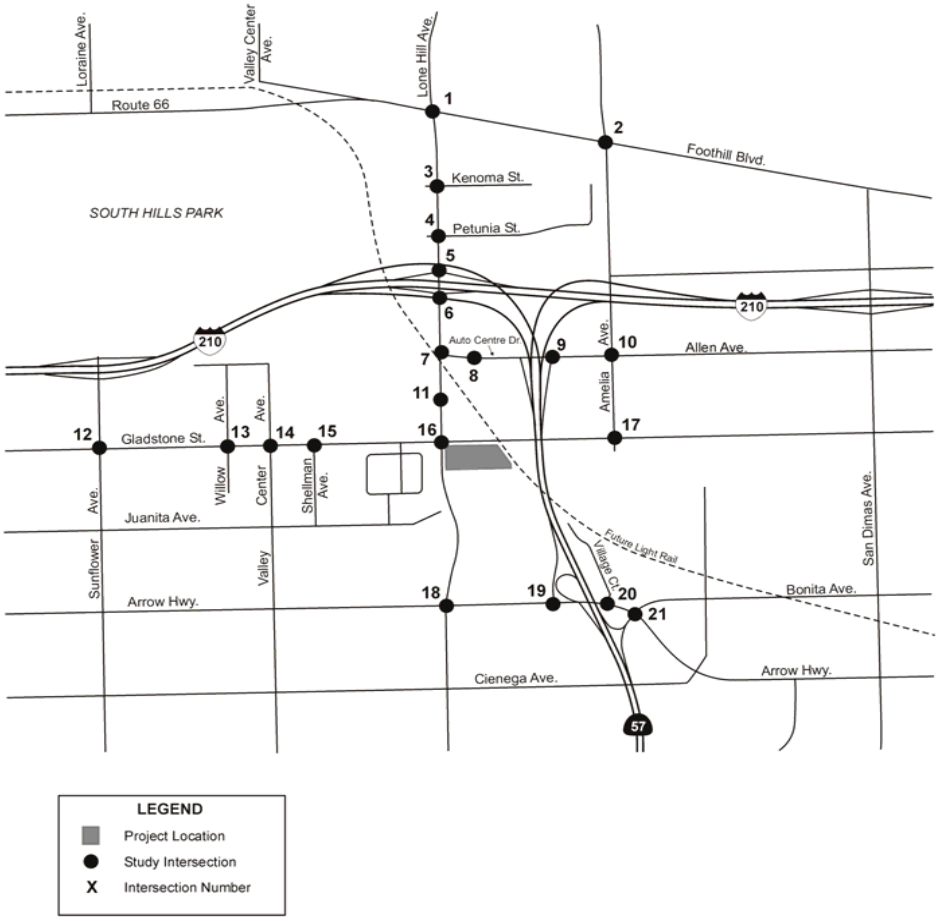


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





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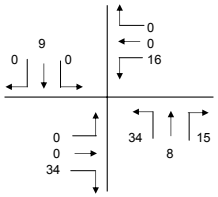
Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 12

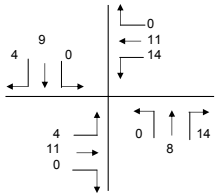
Weekday AM Peak Hour Project Trips

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

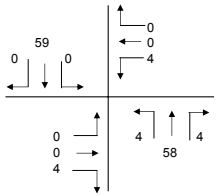
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



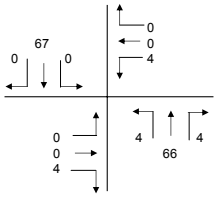
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



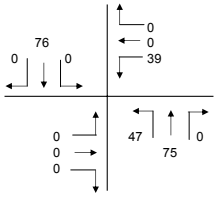
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



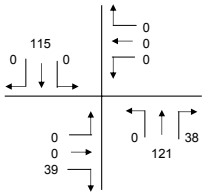
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



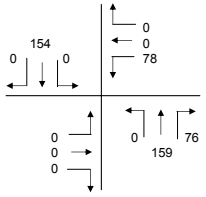
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



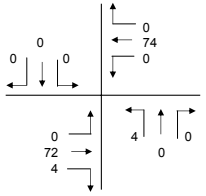
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



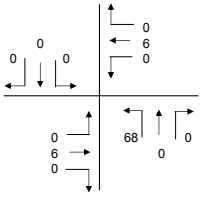
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



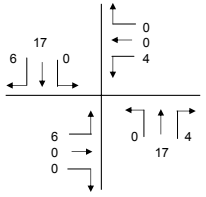
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



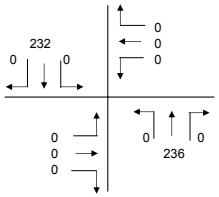
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



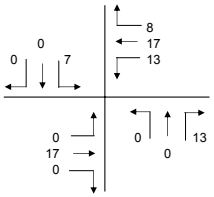
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



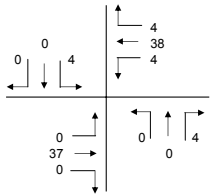
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



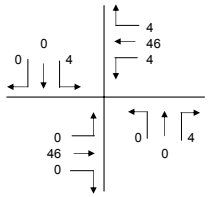
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



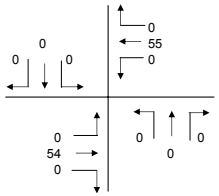
Intersection 13
N/S Willow St.
E/W Gladstone St.



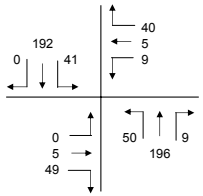
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



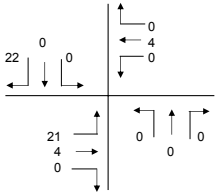
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



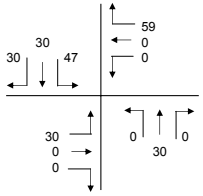
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



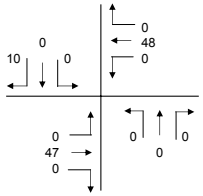
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



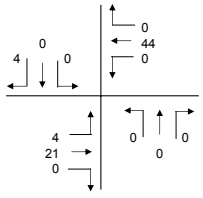
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



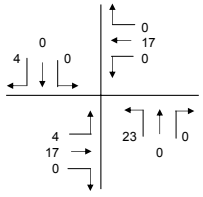
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

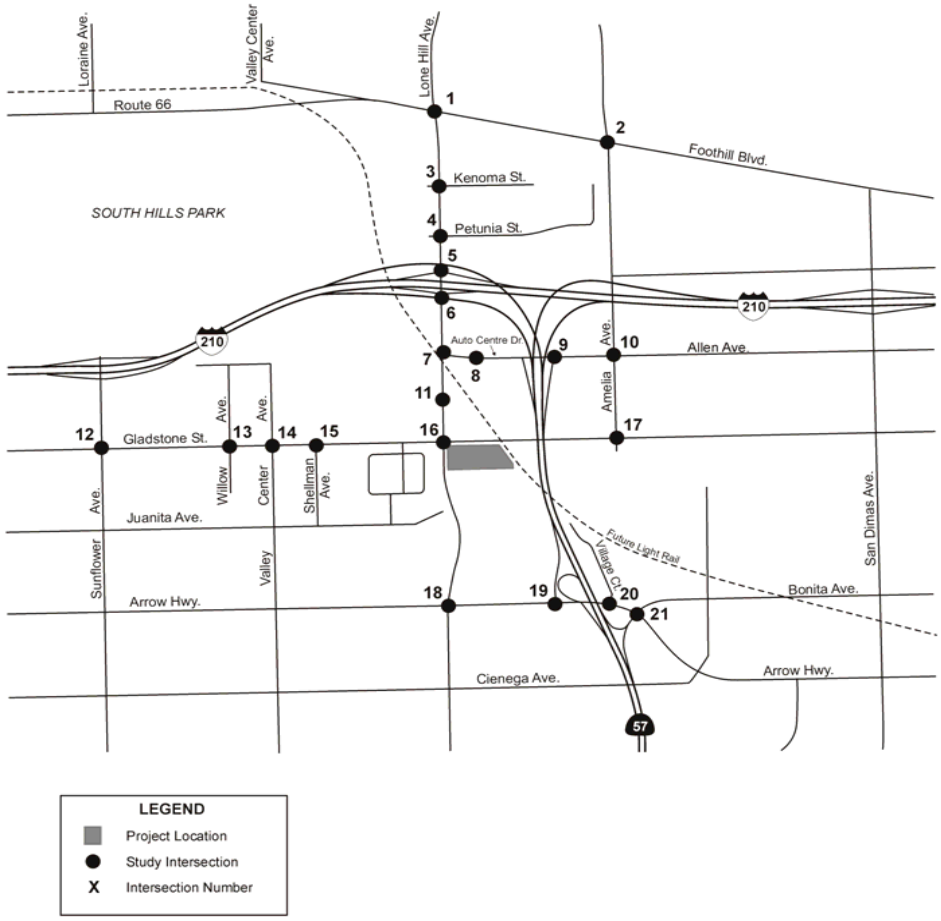


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Figure 13

Weekday PM Peak Hour Project Trips

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

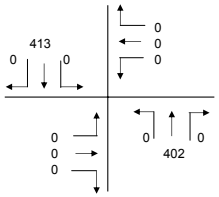
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

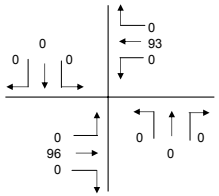
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

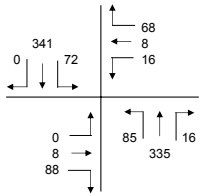
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



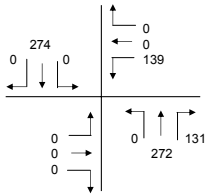
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.

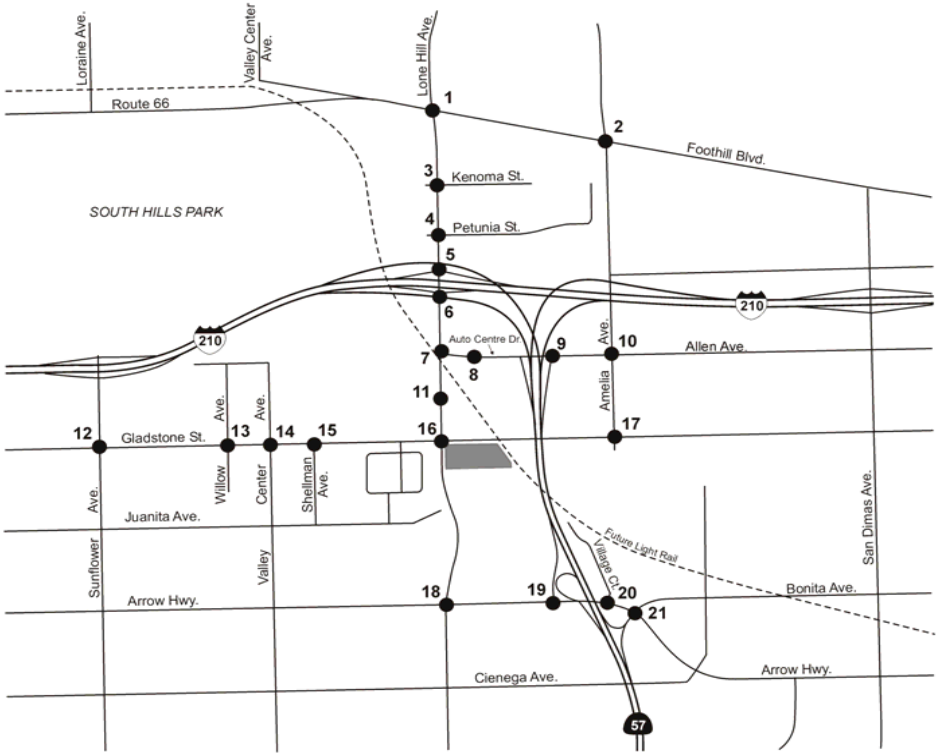


Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

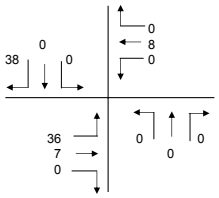
Not Analyzed for Saturday

Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.

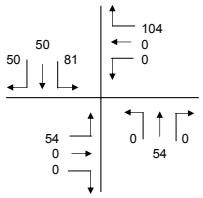




Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



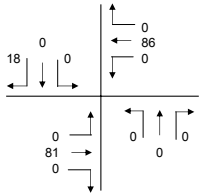
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



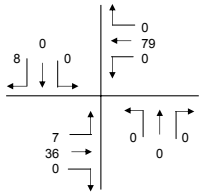
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



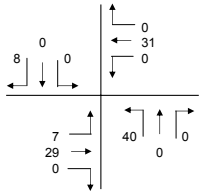
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



N

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Figure 14

Saturday Peak Hour Project Trips

5. Future (2005) Growth + Project Conditions

This section documents the future traffic conditions in the project study area under ambient growth conditions, with traffic added from the proposed Project. Project traffic was added to future ambient growth volumes to simulate this scenario.

A. Analysis of Future Ambient Growth + Project Conditions

Table 4 summarizes the intersection operations and LOS values under this analysis scenario.

Table 4 - Summary of Intersection Performance – Future (2005) Ambient Growth + Project Conditions

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66-Foothill Blvd.	0.~~755~~ 705	C	0.~~971~~ 789	~~E~~ C		
2. Amelia Ave./Foothill Blvd.	0.464	A	0.515	A		
3. Lone Hill Ave./Kenoma St. *	33.9 sec.	D	>100 sec.	F		
4. Lone Hill Ave./Petunia St.	0.479	A	0.533	A		
5. Lone Hill Ave./SR-210 Wb ramps	0.901	E	1.315	F		
6. Lone Hill Ave./SR-210 Eb ramps	0.623	B	0.756	C		
7. Lone Hill Ave./Auto Centre Dr.	0.521	A	0.843	D	0.777	C
8. Walmart Dwy./Auto Centre Dr.	0.324	A	0.482	A		
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.417	A	0.621	B		
10. Amelia Ave./Auto Centre Dr.-Allen	0.355	A	0.399	A		
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.310	A	0.485	A	0.593	A
12. Sunflower St./Gladstone St.	0.403	A	0.433	A		
13. Willow St./Gladstone St. *	10.3 sec.	B	12.2 sec.	B		
14. Valley Center Ave./Gladstone St. *	10.8 sec.	B	15.0 sec.	B		
15. Shellman Ave. /Gladstone St. *	11.3 sec.	B	12.8 sec.	B	12.0 sec.	B
16. Lone Hill Ave./Gladstone St.	0.423	A	0.615	B	0.919	E
17. Amelia Ave.-Pearlanna/Gladstone St.	0.365	A	0.447	A	0.344	A
18. Lone Hill Ave./Arrow Hwy.	0.524	A	0.618	B	0.647	B
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.512	A	0.613	B	0.720	C
20. Arrow Hwy./North Village Ct.	0.379	A	0.496	A	0.626	B
21. Arrow Hwy./Bonita-SR57 nbd. ramps	0.735	C	0.958	E	0.761	C

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

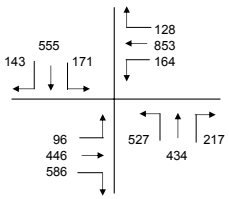
~~The bold text within Table 4 indicates where~~ LOS values would be worsened due to Project

traffic ~~This occurs at~~ one study intersection in the weekday a.m. peak period, ~~at~~ five intersections ~~times~~ in the weekday p.m. peak period, and ~~at~~ three intersections ~~times~~ in the Saturday mid-day period. In two occurrences – at the Lone Hill Ave./I-210 westbound ramps intersection in the a.m. peak period, and at the Lone Hill Ave./Gladstone St. intersection in the Saturday mid-day peak period – this worsening of LOS involves values of E.

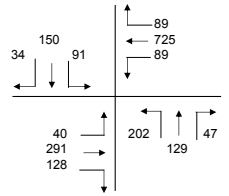
Traffic impacts created by the Project are analyzed later in this report section. The peak hour traffic volumes for this scenario are provided in Figures 15 (weekday a.m. peak), Figure 16 (weekday p.m. peak), and Figure 17 (Saturday mid-day peak). Appendix E contains the worksheets used for the analysis of this scenario.

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

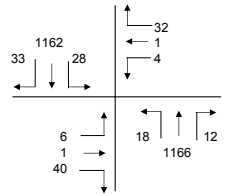
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



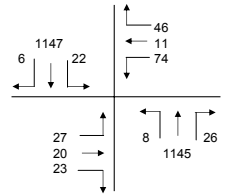
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



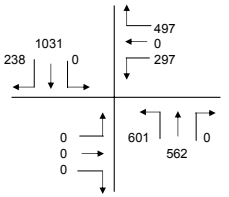
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



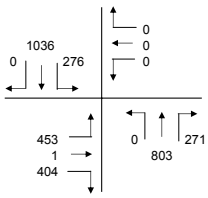
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



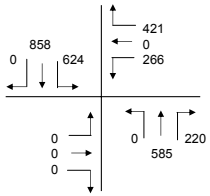
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



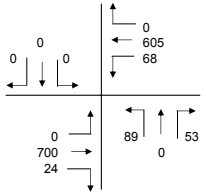
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



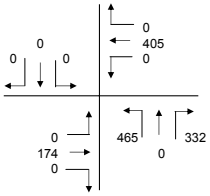
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



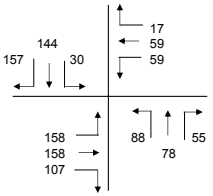
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



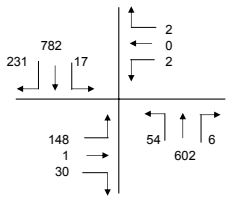
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



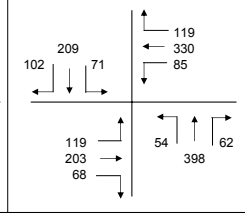
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



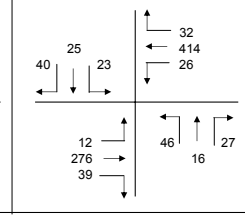
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



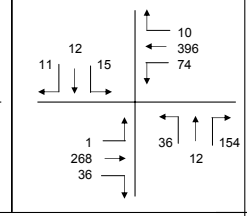
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



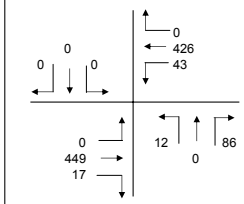
Intersection 13
N/S Willow St.
E/W Gladstone St.



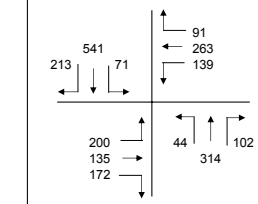
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



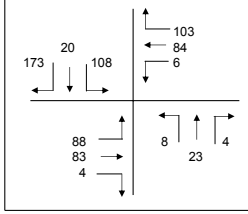
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



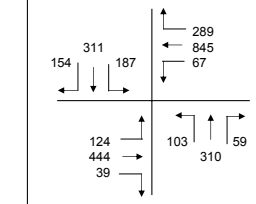
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



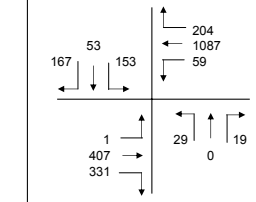
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



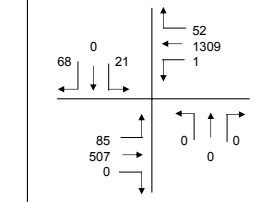
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



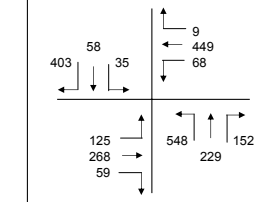
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



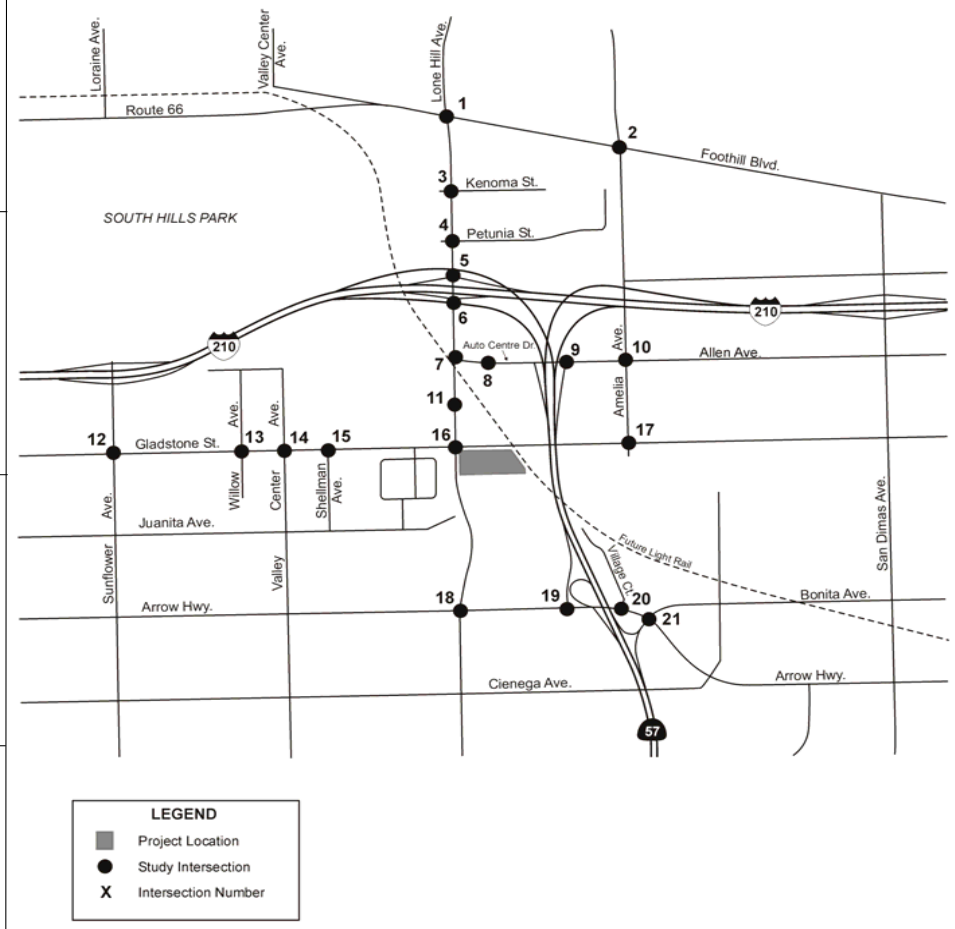


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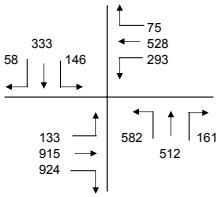
Figure 15

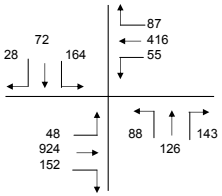
Future (Year 2005) Weekday Ambient Plus Project AM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

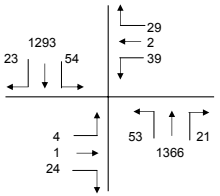
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



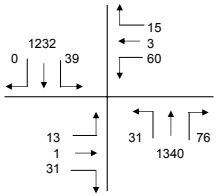
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



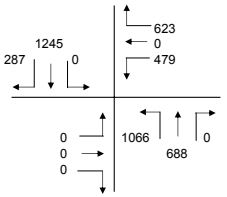
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



Intersection 6
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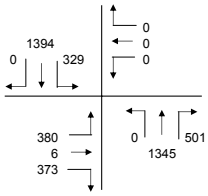
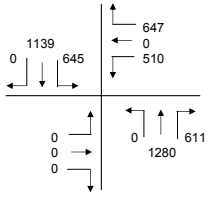
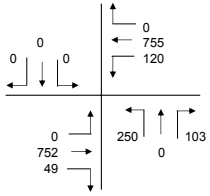
E/W SR 210 EB Ramps



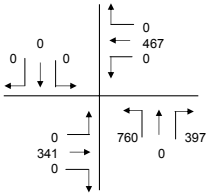
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



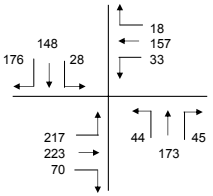
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



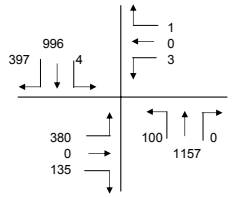
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



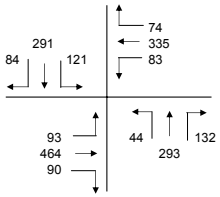
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



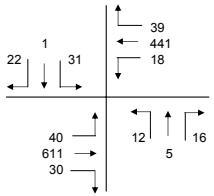
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



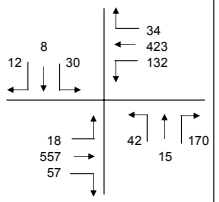
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



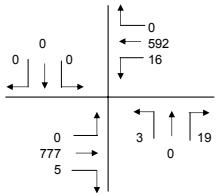
Intersection 13
N/S Willow St.
E/W Gladstone St.



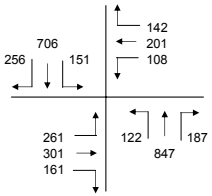
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



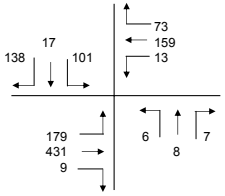
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



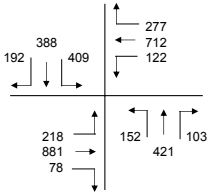
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



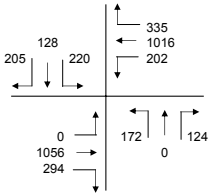
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



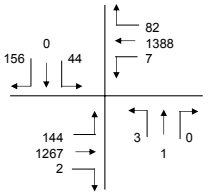
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



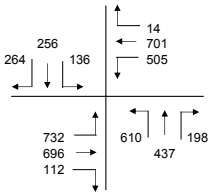
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

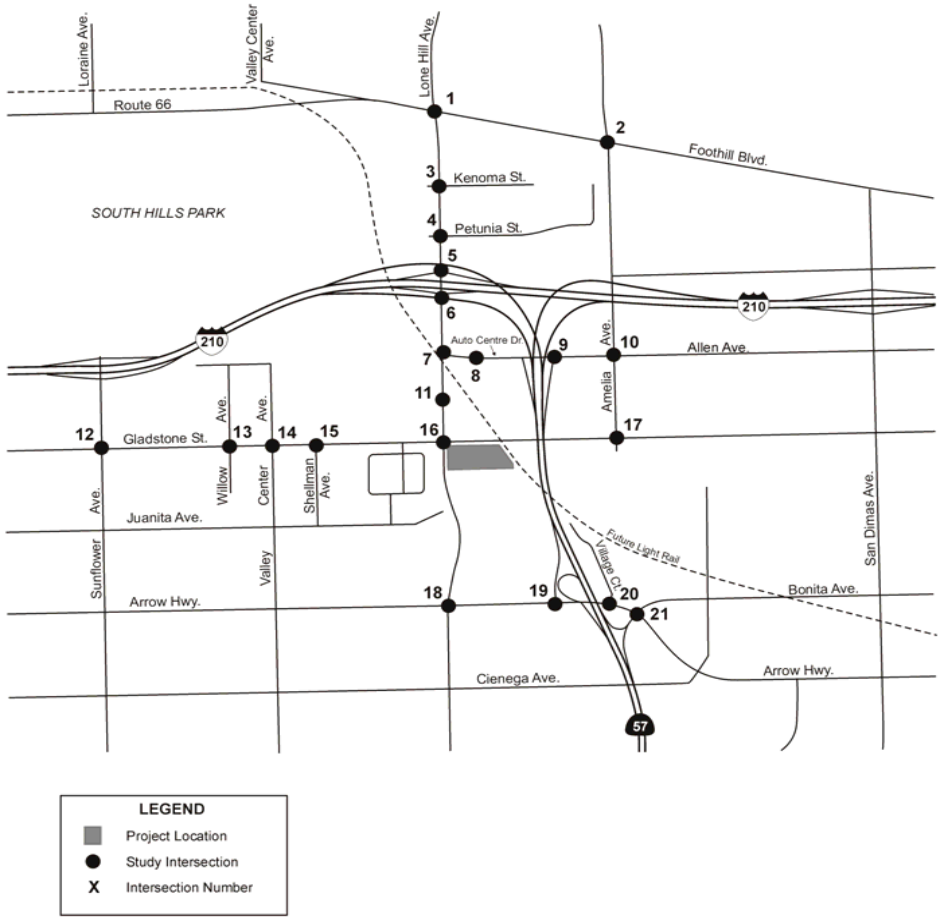


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Figure 16

Future (Year 2005) Weekday Ambient Plus Project PM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

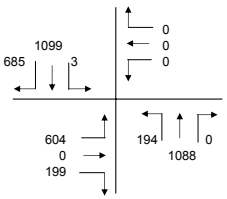
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

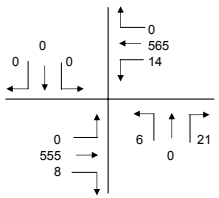
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

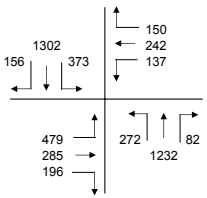
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



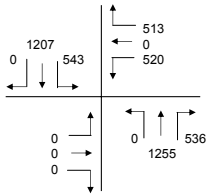
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.

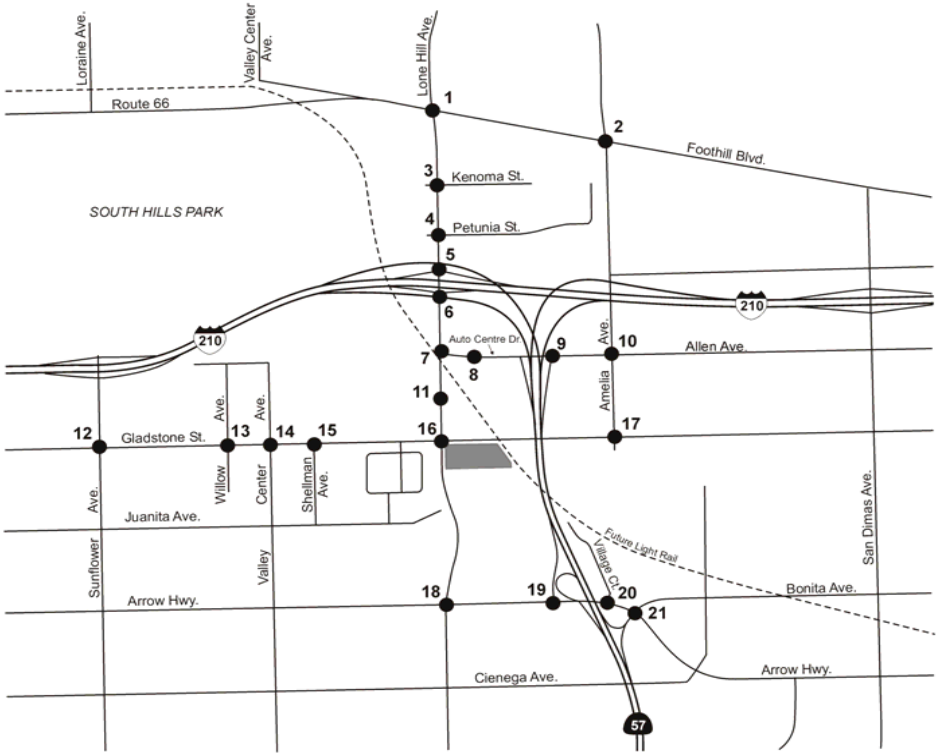


Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

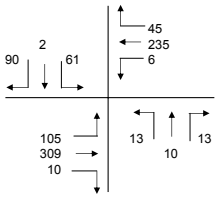
Not Analyzed for Saturday

Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.

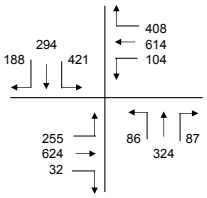




Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



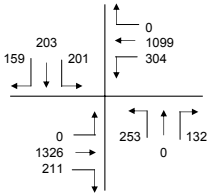
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



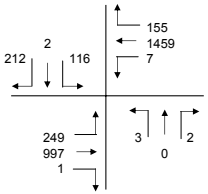
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



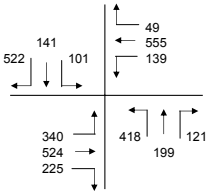
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



N

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Figure 17

Future (Year 2005) Saturday Ambient Plus Project Peak Hour Traffic Volumes

B. Determination of Significant Impacts

For the analysis of the Future Ambient Growth + Project Conditions, traffic study guidelines developed by the County of Los Angeles Public Works Department were used to determine the locations of significant Project traffic impacts amongst the study intersections. The County's Traffic Impact Analysis Report Guidelines defines the following project-related increases in v/c (or ICU value) at an intersection as significant:

Pre-Project LOS & v/c*	Project Related v/c increase
C: 0.71– 0.80	Equal to or greater than 0.04
D: 0.81 – 0.90	Equal to or greater than 0.02
E: 0.91 or more	Equal to or greater than 0.01

Using these standards, two operations scenarios at the study intersection were compared, utilizing volumes with ambient growth only and volumes with ambient growth and Project traffic volumes. The difference in ICU value was utilized to determine significant traffic impacts at the study intersections for the weekday a.m. peak, weekday p.m. peak, and Saturday mid-day peak periods. The significant impacts of each time period are summarized in a separate table.

A separate analysis of significant impacts, with traffic from related projects included, is discussed within Section 7 of this report. Recommended mitigation measures for all significant impacts are discussed in Section 8 of this report.

Los Angeles County guidelines for significant traffic impacts in this study do not quantify significant impact standards for partially-controlled unsignalized intersections. A common example of control at such an intersection would be stop signs at the two minor legs and free flow movements for the two major legs. LOS at these intersections is determined by average seconds of delay per vehicle, rather than the volume-to-capacity (v/c) ratios utilized in the significant impact standards. To complete the analysis at these locations, traffic signal warrants are discussed later in this report section.

Table 5 – Significant Impacts – Growth + Project – AM Peak

[numbers modified in first row of table, asterisks added to "diff." column, additional "no" entries added to "Signif?" column for unsignalized intersections.]

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)				Future + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS			V/C or Delay	LOS		
1. Lone Hill Ave./Route 66	0.693	B	0.700	C			0.705	C	0.005	No
2. Amelia Ave./Route 66	0.454	A	0.459	A			0.464	A	0.005	No
3. Lone Hill Ave./Kenoma St.	31.1 sec.	D	32.1 sec.	D			33.9 sec.	D	*	No
4. Lone Hill Ave./Petunia St.	0.465	A	0.470	A			0.479	A	0.009	No
5. Lone Hill Ave./SR-210 Wb on and off ramps	0.874	D	0.882	D			0.901	E	0.019	No
6. Lone Hill Ave./SR-210 Eb on and off ramps	0.608	B	0.614	B			0.623	B	0.009	No
7. Lone Hill Ave./Auto Centre Dr.	0.490	A	0.495	A			0.521	A	0.026	No
8. Walmart Dwy./Auto Centre Dr.	0.311	A	0.314	A			0.324	A	0.010	No
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.391	A	0.395	A			0.417	A	0.022	No
10. Amelia Ave./Auto Centre Dr.-Allen Ave.	0.348	A	0.352	A			0.355	A	0.003	No
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.271	A	0.274	A			0.310	A	0.036	No
12. Sunflower St./Gladstone St.	0.392	A	0.396	A			0.403	A	0.007	No
13. Willow St./Gladstone St.	10.0 sec.	B	10.1 sec.	B			10.3 sec.	B	*	No
14. Valley Center Ave./Gladstone St.	10.5 sec.	B	10.5 sec.	B			10.8 sec.	B	*	No
15. Shellman Ave. /Gladstone St.	11.1 sec.	B	11.1 sec.	B			11.3 sec.	B	*	No
16. Lone Hill Ave./Gladstone St.	0.378	A	0.381	A			0.423	A	0.042	No
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.349	A	0.352	A			0.365	A	0.013	No
18. Lone Hill Ave./Arrow Hwy.	0.496	A	0.501	A			0.524	A	0.023	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.494	A	0.499	A			0.512	A	0.013	No
20. Arrow Hwy./North Village Ct.	0.368	A	0.372	A			0.379	A	0.007	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.717	C	0.724	C			0.735	C	0.011	No

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E or F due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

As can be seen by the text in the right-most column of Table 5, the Project would not create any significant traffic impacts at the study intersections in the weekday a.m. future peak period without related project traffic.

Table 6 – Significant Impacts – Growth + Project – PM Peak

[numbers modified in first row of table, asterisks added to "diff." column, additional "no" entries added to "Signif?" column for unsignalized intersections.]

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)				Future + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS			V/C or Delay	LOS		
1. Lone Hill Ave./Route 66	0.758	C	0.766	C			0.789	C	0.023	No
2. Amelia Ave./Route 66	0.489	A	0.494	A			0.515	A	0.021	No
3. Lone Hill Ave./Kenoma St. *	> 100 sec.	F	> 100 sec.	F			> 100 sec.	F	**	**Yes**
4. Lone Hill Ave./Petunia St.	0.494	A	0.499	A			0.533	A	0.034	No
5. Lone Hill Ave./SR-210 Wb on and off ramps	1.257	F	1.270	F			1.315	F	0.045	**Yes**
6. Lone Hill Ave./SR-210 Eb on and off ramps	0.725	C	0.732	C			0.756	C	0.024	No
7. Lone Hill Ave./Auto Centre Dr.	0.769	C	0.777	C			0.843	D	0.066	**Yes**
8. Walmart Dwy./Auto Centre Dr.	0.451	A	0.456	A			0.482	A	0.026	No
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.571	A	0.576	A			0.621	B	0.045	No
10. Amelia Ave./Auto Centre Dr.-Allen Ave.	0.378	A	0.378	A			0.399	A	0.021	No
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.408	A	0.412	A			0.485	A	0.073	No
12. Sunflower St./Gladstone St.	0.408	A	0.412	A			0.433	A	0.021	No
13. Willow St./Gladstone St.	11.4 sec.	B	11.5 sec.	B			12.2 sec.	B	*	No
14. Valley Center Ave./Gladstone St.	13.5 sec.	B	13.6 sec.	B			15.0 sec.	B	*	No
15. Shellman Ave. /Gladstone St.	12.2 sec.	B	12.3 sec.	B			12.8 sec.	B	*	No
16. Lone Hill Ave./Gladstone St.	0.514	A	0.519	A			0.615	B	0.096	No
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.427	A	0.431	A			0.447	A	0.016	No
18. Lone Hill Ave./Arrow Hwy.	0.563	A	0.568	A			0.618	B	0.050	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.591	A	0.597	A			0.613	B	0.016	No
20. Arrow Hwy./North Village Ct.	0.477	A	0.481	A			0.496	A	0.015	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.938	E	0.948	E			0.958	E	0.010	**Yes**

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E or F due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

*** This intersection met measures of significance for this scenario and analysis period, based on degradation of operations within the LOS F range due to Project traffic.*

As can be seen by the bold text in the right-most column of Table 6, the Project would create significant traffic impacts at ~~three~~ four study intersections in the weekday p.m. future peak period without related project traffic.

Table 7 – Significant Impacts –
Growth + Project – Saturday Mid-Day Peak

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)		Future + Related Projects (Year 2005)		Future + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS		
7. Lone Hill Ave./Auto Centre Dr.	0.657	B	0.663	B			0.777	C	0.114	No
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.484	A	0.489	A			0.593	A	0.104	No
15. Shellman Ave. /Gladstone St.	11.1 sec.	B	11.1 sec.	B			12.0 sec.	B	*	No
16. Lone Hill Ave./Gladstone St.	0.757	C	0.764	C			0.919	E	0.155	**Yes**
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.290	A	0.293	A			0.344	A	0.051	No
18. Lone Hill Ave./Arrow Hwy.	0.502	A	0.508	A			0.647	B	0.139	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.696	B	0.703	C			0.720	C	0.017	No
20. Arrow Hwy./North Village Ct.	0.595	A	0.601	B			0.626	B	0.025	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.714	C	0.721	C			0.761	C	0.040	**Yes**

** Unsignalized, partially-controlled intersection. For this location, the table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E or F due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

As can be seen by the bold text in the right-most column of Table 7, the Project would create significant traffic impacts at two study intersections in the Saturday mid-day future peak period without related project traffic. The intersection of Arrow Highway/Bonita Avenue-SR57 northbound ramps would also be significantly impacted by Project traffic in the weekday p.m. peak period. The intersection of Lone Hill Avenue/Gladstone Street, however, would be significantly impacted by Project traffic only in the Saturday mid-day peak period.

In summary, during this future scenario with ambient growth and Project traffic, the Project would significantly impact four study intersections during the weekday pm. peak hour, and two intersections during the Saturday mid-day peak hour. One study intersection would be significantly impacted in both the weekday p.m. peak and Saturday mid-day peak hours. Therefore, there would be a total of five locations significantly impacted by Project traffic in one or more of the peak periods examined for this scenario.

The following sections of this report discuss traffic from area related projects, and the impacts created by the Project after the addition of traffic (and related degradation of intersection LOS) from these related projects.

C. Traffic Signal Warrant Analysis

For the study intersections that are unsignalized and have only partial stop-sign control, LOS is computed by average seconds of delay per vehicle. Analysis of signal warrants provides information on the potential need for a traffic signal due to the effects of Project traffic. The remaining study intersections are analyzed primarily by the difference in volume-to-capacity ratios between "without Project" and "with Project" scenarios. Such ratios cannot be calculated for intersections with partial stop-sign control.

Three of the standard signal warrant analyses defined by the Manual of Uniform Traffic Control Devices (taken from Caltrans standards which they now supercede), were utilized to analye p.m. peak operations. The analysis is based on operations of the intersection during the future period with ambient growth and Project traffic, but without traffic from area related projects. The results are summarized below:

Table 8 – Signal Warrant Summary – Growth + Project

Location	Analysis Results		
	Warrant 1 (Vehicle-Hours)	Warrant 2 (Approach Volume)	Warrant 3 (Total Volume)
FUTURE AMBIENT GROWTH ONLY			
Lone Hill Ave./Kenoma St.	Succeed	Fail	Succeed
Willow St./Gladstone St.	Fail	Fail	Succeed
Valley Center Ave./Gladstone St.	Fail	Fail	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed
FUTURE AMBIENT GROWTH PLUS PROJECT			
Lone Hill Ave./Kenoma St.	Fail	Fail	Succeed
Willow St./Gladstone St.	Fail	Fail	Succeed
Valley Center Ave./Gladstone St.	Fail	Fail	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed

As can be seen by the summary provided in Table 8, the pattern of signal warrant results is the same with and without Project traffic, minus one location (Lone Hill/Kenoma St). All three warrants should succeed in order for a new traffic signal to be justified. Project traffic does not create any warrants for new traffic signals under this analysis. Significant impacts at unsignalized study intersections were determined by LOS changes resulting in E or F, and the analysis of traffic signal warrants for conditions with and without the Project. Such recommendations are discussed further in Section 8 of this report.

6. Future (2005) Growth + Related Projects Conditions

This section documents the future (2005) traffic conditions in the study area with ambient growth and additional traffic from related projects, but without construction of the proposed Project.

A. Related Projects

An area of influence, defined by a two-mile radius from the project site, was utilized in order to capture specific locations of other approved and pending projects. The size of this radius is beyond the 1.5-mile radius required in the Los Angeles County traffic study guidelines. The basis for this list was from the previous Project traffic study. Based on updated information provided by the City of San Dimas and the City of Glendora, there are a total of 24 related projects that will contribute measurable traffic volumes to the study area within the Project Year (2005) timeframe.

Information on the related projects included in this study for future period analysis, and the trip generation of each, is provided in Table 9. Additional pending projects are being tracked by both cities, but it was determined by the cities on a case-by-case basis that they would not affect local roadways before the Project Year (2005) timeframe. These projects were not listed in Table 9.

Trip generation totals for these projects were taken from information from recent traffic studies provided by the City of San Dimas or the City of Glendora. If this information was not available, ITE trip generation rates were utilized for weekday or Saturday trip generation based on the planned intensity of each project. ~~The peak-hour trip generation rates for each of the related projects were based on ITE's *Trip Generation Manual*.~~ Where third-party sources were utilized, they are noted in the footnotes of the table. For purposes of analysis, the related area projects were separated into zones that could be included in the TRAFFIX model used in the preparation of this analysis. The related project traffic was added to the surrounding street system using roughly the same distribution and assignment methodology applied for Project trips.

The Gold Line light rail project, and related generation at the planned rail stations near the downtown areas of both Glendora and San Dimas, was not included in the cumulative projects list. This project, under current projections, would not be operational until 2009, which is well after build-out of the Costco project. The eastern terminus of the line within that timeframe could be Irwindale or Claremont, depending upon the final alternative selected during the environmental review process. The project and its operations are not considered reasonably foreseeable and to identify impacts would be entirely speculative because a) light rail service may or may not be established across the Lone Hill and Gladstone crossings, depending on the light rail project alternative chosen, and b) no information currently exists concerning proposed operating frequencies.

Figure 18 illustrates the locations of the related projects. Figure 19 illustrates the related projects trip assignment by turning movement during the weekday a.m. peak hour. Figure 20 illustrates the trip assignment by turning movement during the weekday p.m. peak hour. Figure 21 illustrates the trip assignment by turning movement during the Saturday mid-day peak hour.

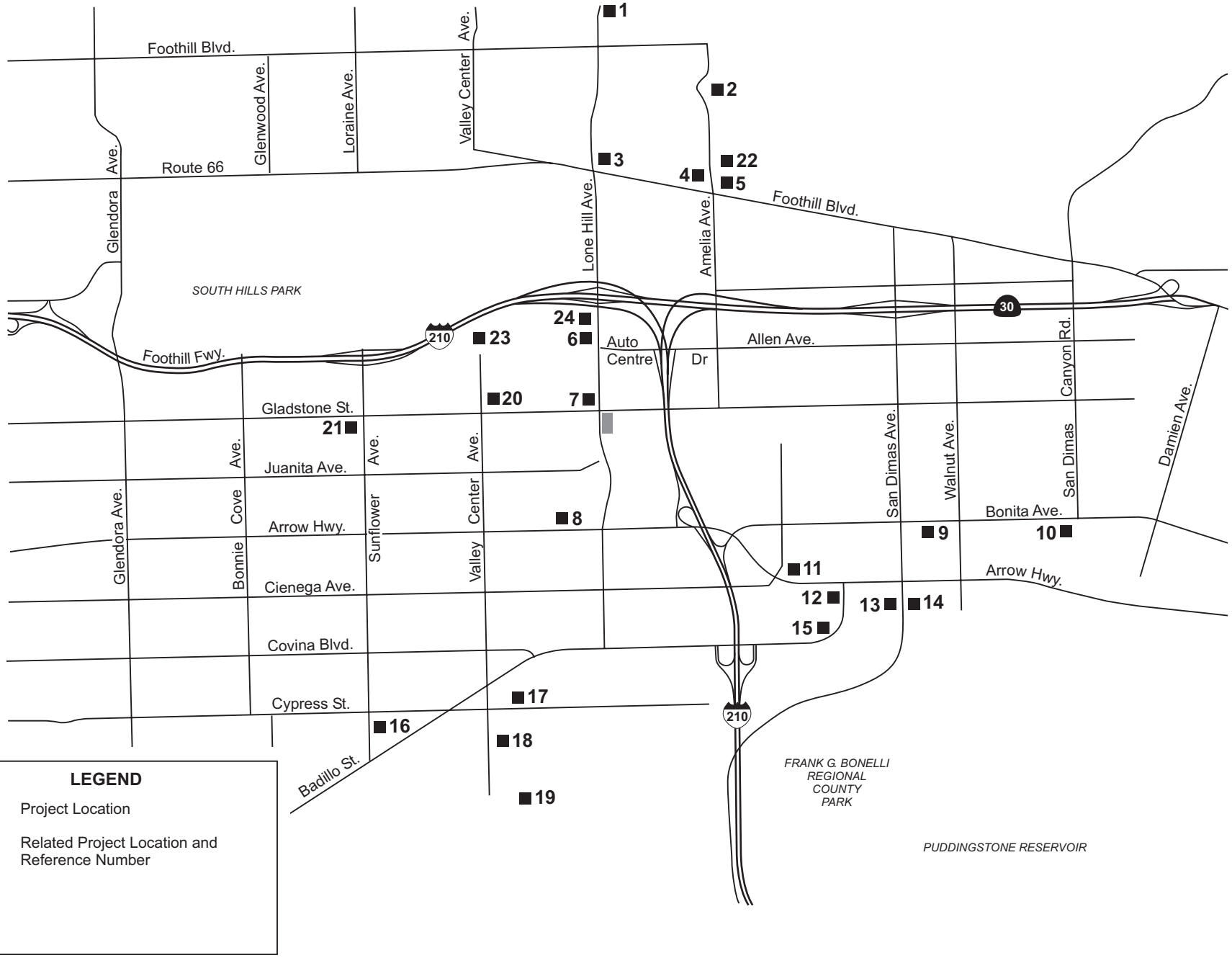
Table 9 - Related Area Projects

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
1	Glendora	Tract 46684 (Gard Ranch)	Under Constr.	27 dwelling units	27.000	Units	258	20	5	15	27	17	10	25	14	12
2	Glendora	Amelia Avenue and Wildwood Ranch Road	Zoning Application	76 hillside dwelling units	76.000	Units	727	57	14	43	77	49	28	71	39	33
3	Glendora	Lone Hill, North of Foothill	Under Constr.	67 hillside dwelling units	109.000	Units	1,043	82	20	61	110	70	40	102	55	47
4	Glendora	Amelia and Foothill	Under Constr.	22 SF dwelling units	22.000	Units	211	17	4	12	22	14	8	21	11	10
5	Glendora	NE corner of Amelia & Route 66	Under Constr.	65 SF dwelling units	65.000	Units	622	49	12	37	66	42	24	61	33	28
6	Glendora	Lone Hill and Auto Centre	Pending Approval	12-purnp service station	12.000	Pump	2,023	147	75	72	175	89	86	175	89	86
7	Glendora	NW corner of Lone Hill and Gladstone	Under Constr.	40,000 sq. ft. auto dealer	40.000	KSF	1,500	88	64	24	112	45	67	119	61	58
8	San Dimas	1255 and 1256 West Arrow	Under Constr.	28,118 sq.ft. Kaiser office	28.118	KSF	1,016	68	55	14	103	28	75	102	58	44
9	San Dimas	120 East Bonita Avenue	Under Construction	13,013 sq.ft. drive-thru pharmacy	13.013	KSF	1,147	35	20	15	135	66	69	135	66	69
10	San Dimas	742 East Bonita Avenue	Under Constr.	Church, 45,600 sq.ft. expans.	45.600	KSF	415	33	18	15	30	16	14	148	110	39

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
11	San Dimas	NE corner of Arrow and Eucla	Approved	Hotel (assumed size at 100 rooms)	100.000	Units	563	45	17	28	47	25	22	76	34	42
12-a	San Dimas	328 West Arrow Highway	Pending Approval	Multi use facility w/auto repair	20.000	KSF	676	59	38	21	68	34	34	68	34	34
12-b				614 self-storage units	614.000	Units	172	92	54	38	160	81	78	246	123	123
13	San Dimas	SW corner of Arrow & San Dimas	Pending Approval	Mixed-Use Project	40.000	KSF	1,717	41	25	16	150	72	78	199	103	95
14	San Dimas	SE corner of Arrow & San Dimas	Pending Approval	16 industrial buildings	172.000	KSF	1,199	158	139	19	169	21	148	24	11	13
15	San Dimas	320 West Covina Blvd.	Pending Approval	new industrial building	23.691	KSF	165	22	19	3	23	3	20	3	2	2
16	Covina	21000 Block East Cypress	Pending Approval	Construct 25 condos	25.000	Units	208	17	4	12	21	12	9	12	6	5
17	San Dimas	1335 West Cypress Street	Under Constr.	26,061 sq.ft. medical office	26.061	KSF	942	63	51	13	95	26	70	95	54	41
18	San Dimas	1160 South Valley Center	Approved	Subdivide 22 lots into 19 residential lots	19.000	Units	182	14	4	11	19	12	7	18	10	8
19	San Dimas	Baptist Bible College	Pending Approval	106 new single family homes	106.000	Units	1,014	80	20	60	107	69	39	100	54	46
20	Glendora	NEC Valley Center/ Gladstone	Application	Free-standing discount store	276.000	KSF	12,961	508	259	249	1,054	517	538	1,355	691	664

Project	City	Address	Status	Details	Intensity	Basis	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out	Sat Trips	Sat In	Sat Out
21A	Glendora	SWC Gladstone & Sunflower	Approved	Sunflower Library	15.000	KSF	810	16	11	4	106	51	55	101	54	48
21B				New soccer fields	3.000	Fields	214	4	2	2	62	43	19	86	41	45
22	Glendora	NEC Amelia & Route 66	Approved	9,000 sq.ft. office building	9.000	KSF	99	14	12	2	13	2	11	4	2	2
23	Glendora	Louie Pompei Sports Park, Valley Center near I-210	Approved	Add'l acres *	3.600	acres	6	0	0	0	0	0	0	6	3	2
				Ball fields **	9.000	Fields	729	0	0	0	243	122	122	481	241	241
				Soccer fields	3.000	Fields	214	4	2	2	62	43	19	86	41	45
24	Glendora	Lone Hill and Auto Centre	Application	Expansion of existing dealership	40.000	KSF	1,500	88	65	24	112	45	67	119	61	58
TOTALS:							**32,332**	**1,821**	1,011	810	**3,368**	1,614	1,755	**4,037**	2,100	1,937

** For City Park uses, ITE does not provide rates outside of daily rates per acre. This rate was therefore factored into peak numbers utilizing the ratios of peak and daily rates in the County Park category.*
*** Trip generation for ball fields taken from Field Usage Appendix of the South Weymouth Naval Air Station Open Space and Recreation Plan (re-use of base); Daylor Cosulting Group, Inc.; January, 2002.*



Katz, Okitsu & Associates
Traffic Engineers and Transportation Planners

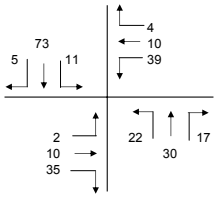
Costco Commercial Complex, San Dimas, CA., Traffic Study

Figure 18

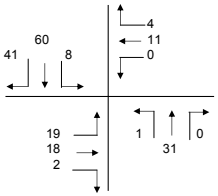
Locations of Related Projects

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

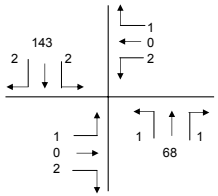
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



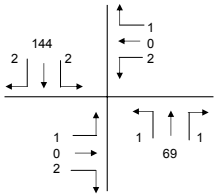
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



Intersection 5
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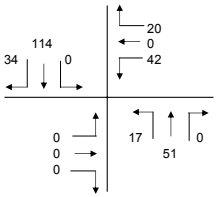
E/W SR 210 WB Ramps



Intersection 6
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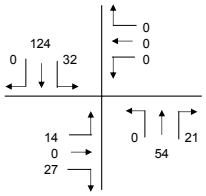
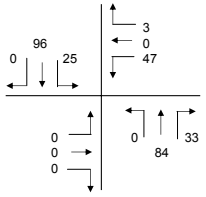
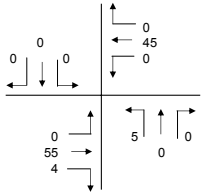
E/W SR 210 EB Ramps



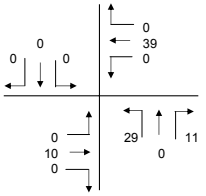
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



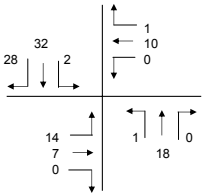
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



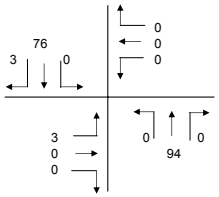
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



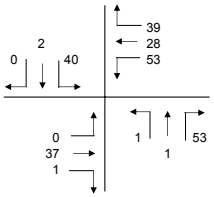
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



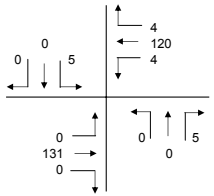
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.



Intersection 13
N/S Willow St.
E/W Gladstone St.



Intersection 14
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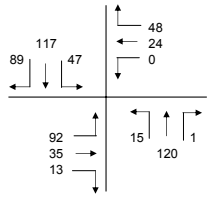
E/W Gladstone St.



Intersection 15
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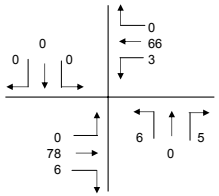
E/W Gladstone St.



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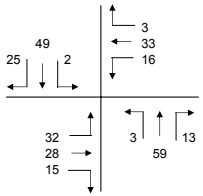
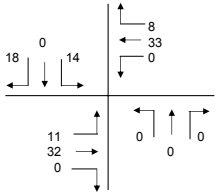
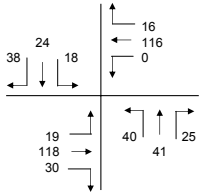
E/W Gladstone St.



Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



Intersection 19
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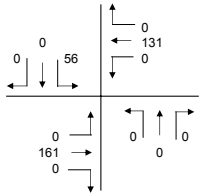
E/W Arrow Hwy.



Intersection 20
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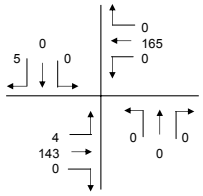
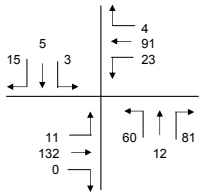
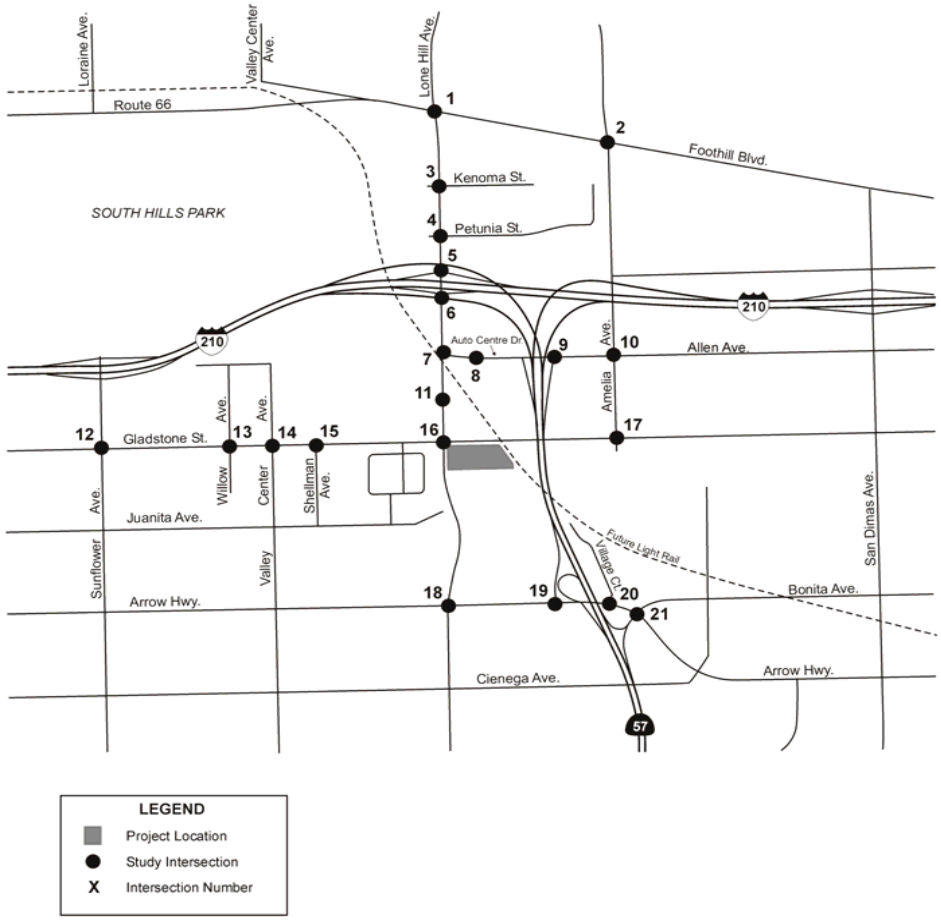
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Traffic Engineers and Transportation Planners

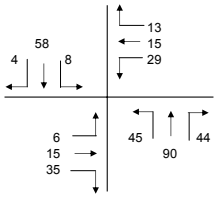
Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 19

Weekday AM Peak Hour Related Project Trips

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

Intersection 1
N/S Lone Hill Ave.
E/W Route 66



Intersection 2
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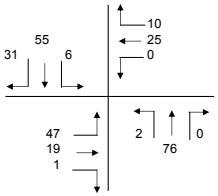
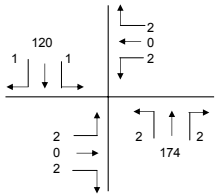
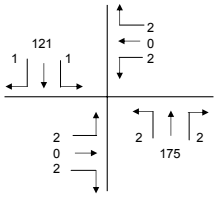
E/W Route 66/Foothill Blvd.



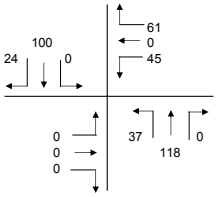
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



Intersection 6
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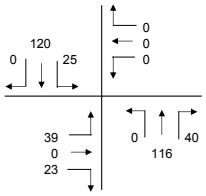
E/W SR 210 EB Ramps



Intersection 7
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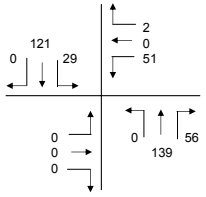
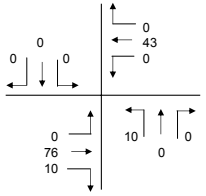
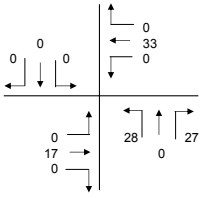
E/W Auto Centre Dr.



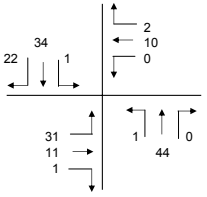
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



Intersection 11
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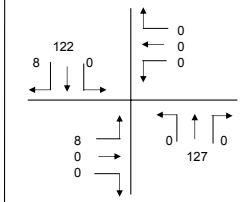
E/W Glendora Marketplace Dwy.



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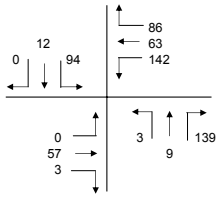
E/W Gladstone St.



Intersection 13
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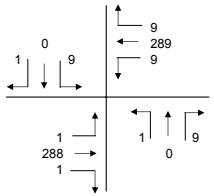
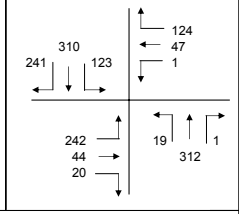
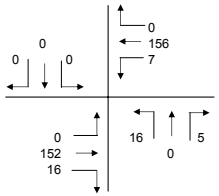
E/W Gladstone St.



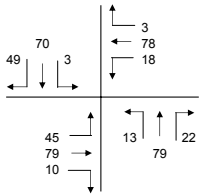
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



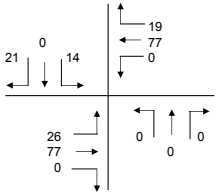
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



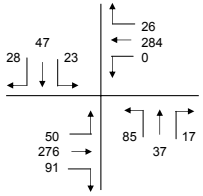
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



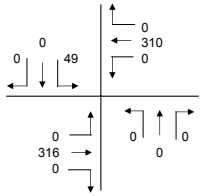
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



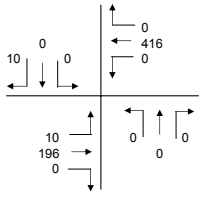
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



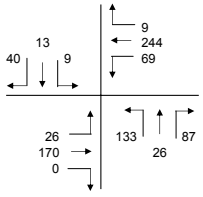
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



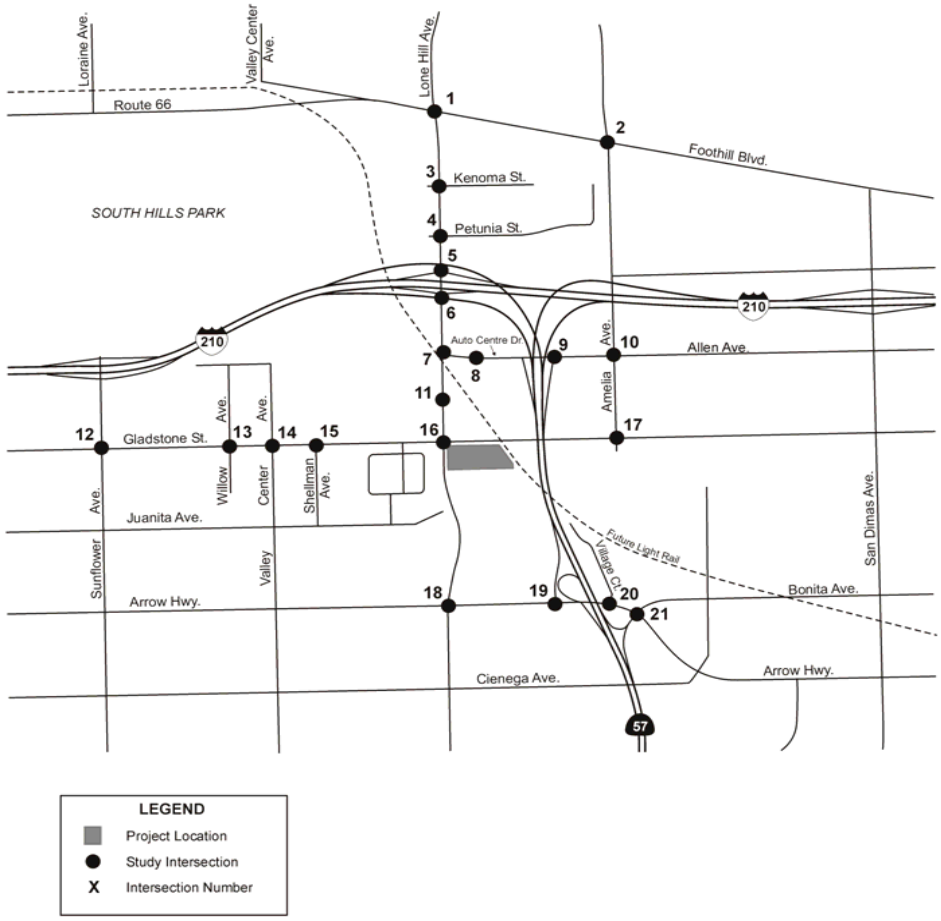


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Figure 20

Weekday PM Peak Hour Related Project Trips

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

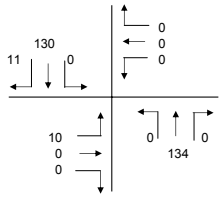
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

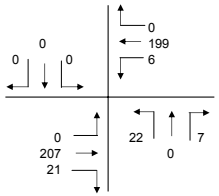
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

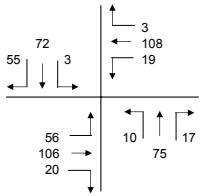
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



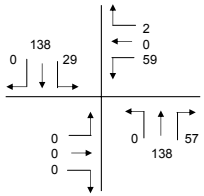
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.

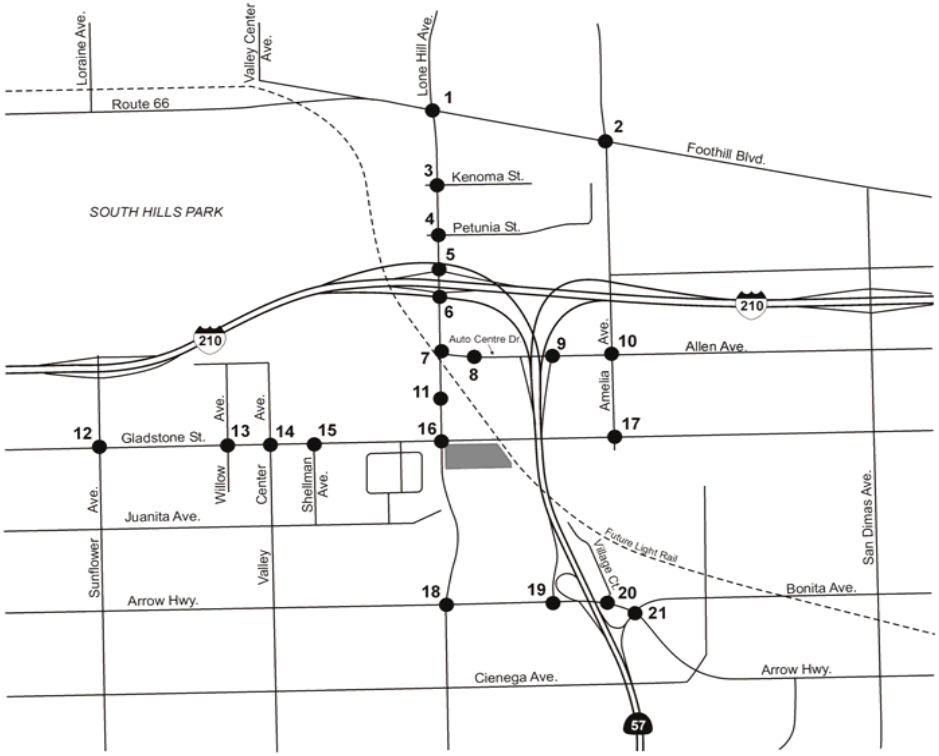


Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

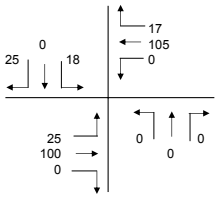
Not Analyzed for Saturday

Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.

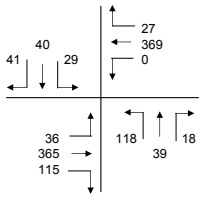




Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



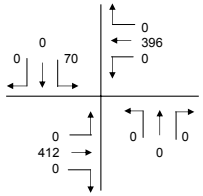
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



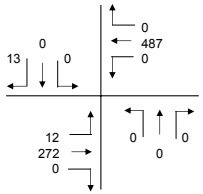
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



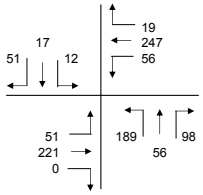
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



N

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Figure 21

Saturday Peak Hour Related Project Trips

B. Peak-Hour Intersection Level of Service

The traffic analysis for this scenario analyzed the total volumes created by both ambient growth and related projects traffic. Table 10 summarizes the LOS of the study area intersections under this scenario.

Table 10 - Intersection Performance - Future (2005) Ambient Growth + Related Projects Conditions

	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.~~801~~ 735	~~D~~ C	~~1.015~~ 0.830	F D		
2. Amelia Ave./Route 66	0.507	A	0.504	A		
3. Lone Hill Ave./Kenoma St. *	48.6 sec.	E	>100 s.	F		
4. Lone Hill Ave./Petunia St.	0.496	A	0.565	A		
5. Lone Hill Ave./SR-210 Wb ramps	0.929	E	1.352	F		
6. Lone Hill Ave./SR-210 Eb ramps	0.654	B	0.797	C		
7. Lone Hill Ave./Auto Centre Dr.	0.540	A	0.841	D	0.728	C
8. Walmart Dwy./Auto Centre Dr.	0.336	A	0.489	A		
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.425	A	0.604	B		
10. Amelia Ave./Auto Centre Dr.-Allen	0.366	A	0.437	A		
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.299	A	0.454	A	0.507	A
12. Sunflower St./Gladstone St.	0.459	A	0.624	B		
13. Willow St./Gladstone St.	11.8 sec.	B	20.4 sec.	C		
14. Valley Center Ave./Gladstone St.	19.1 sec.	B	>100 s.	F		
15. Shellman Ave. /Gladstone St. *	12.4 sec.	B	21.4 sec.	C	18.1 sec.	B
16. Lone Hill Ave./Gladstone St.	0.429	A	0.606	B	0.875	D
17. Amelia Ave.-Pearlanna/Gladstone St.	0.405	A	0.501	A	0.412	A
18. Lone Hill Ave./Arrow Hwy.	0.585	A	0.741	C	0.694	B
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.577	A	0.665	B	0.810	D
20. Arrow Hwy./North Village Ct.	0.412	A	0.581	A	0.718	C
21. Arrow Hwy./Bonita-SR57 sbd. ramps	0.799	C	1.109	F	0.948	E

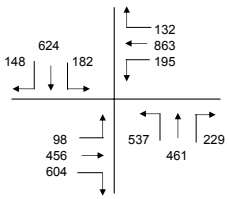
** Unsignalized intersection. Table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

~~Bold text in Table 10 indicates where related projects traffic would worsen LOS values, versus future ambient growth conditions.~~ The addition of traffic from related projects worsens the LOS at two ~~three~~ study intersections in the a.m. peak period, at 11 intersections in the weekday p.m. peak period, and at six intersections in the Saturday mid-day peak period.

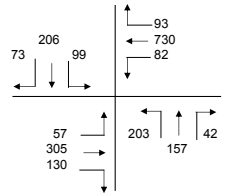
Figure 22 illustrates the a.m. peak hour traffic volumes and service levels for this scenario. Figure 23 illustrates the volumes and service levels for the p.m. peak hour. Figure 24 illustrates the volumes and service levels for the Saturday mid-day peak hour. The traffic analysis worksheets for this scenario are provided in Appendix F of this report.

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

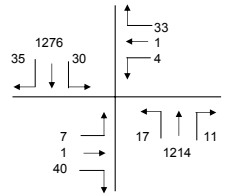
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



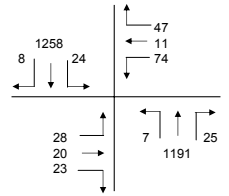
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



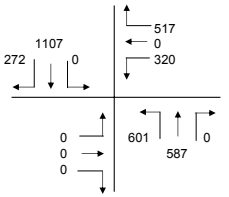
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



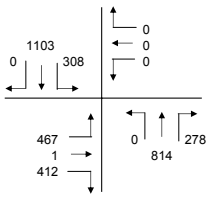
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



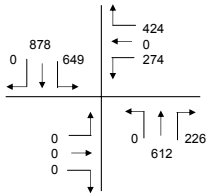
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



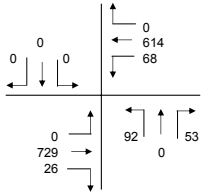
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



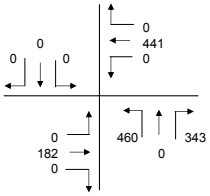
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



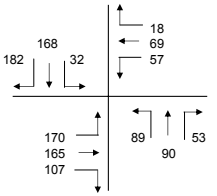
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



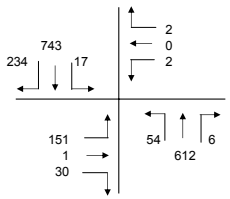
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



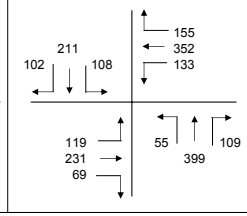
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



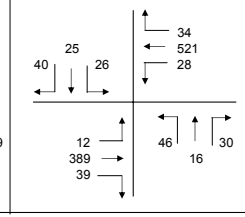
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



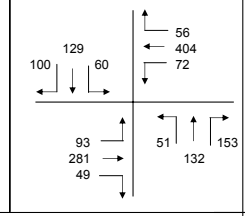
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



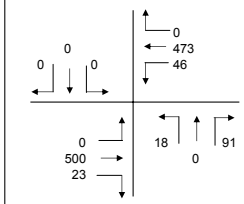
Intersection 13
N/S Willow St.
E/W Gladstone St.



Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



Intersection 16
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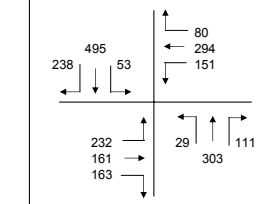
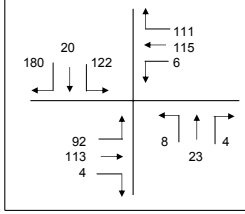
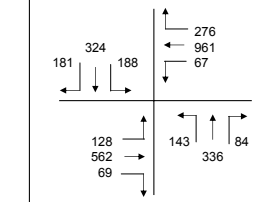
E/W Gladstone St.



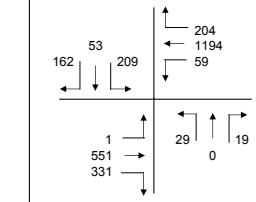
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



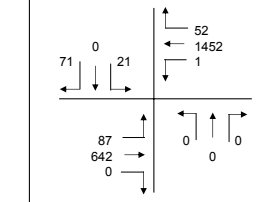
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



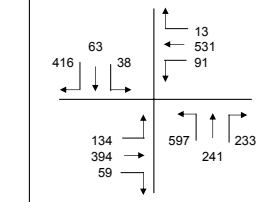
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



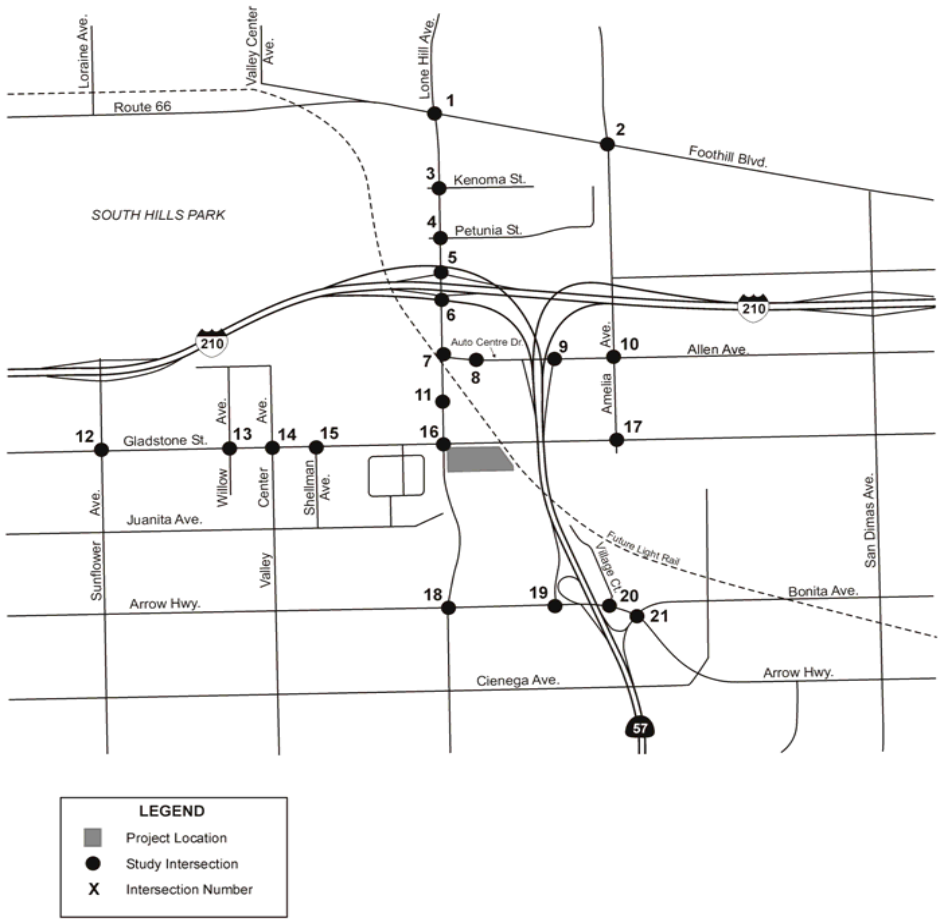


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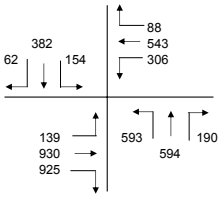
Figure 22

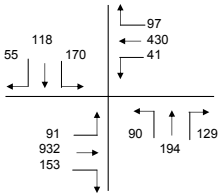
Future (Year 2005) Growth Plus Related Projects - Weekday AM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

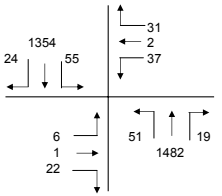
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



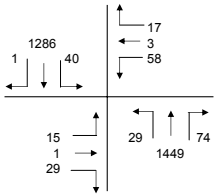
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



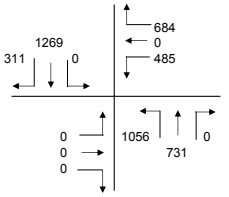
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



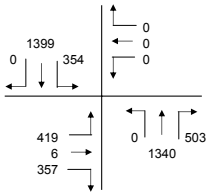
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



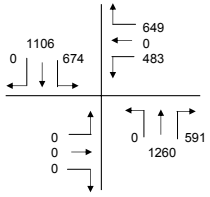
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



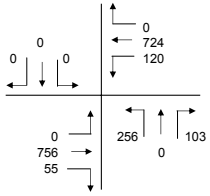
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



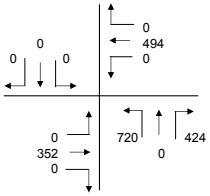
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



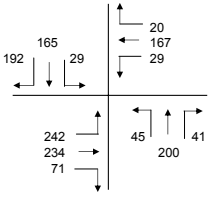
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



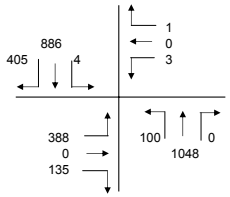
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



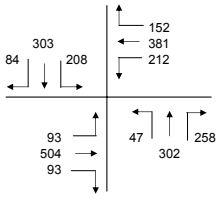
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



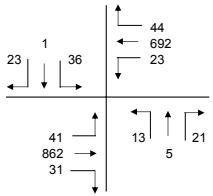
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



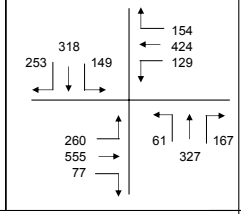
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



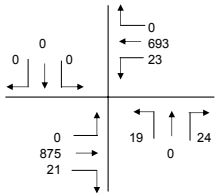
Intersection 13
N/S Willow St.
E/W Gladstone St.



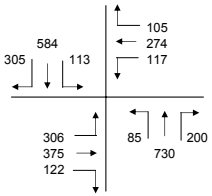
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



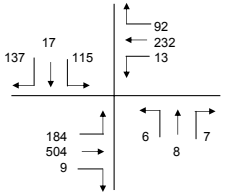
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



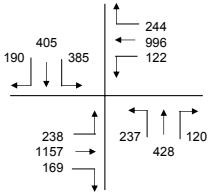
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



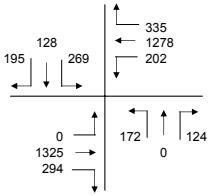
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



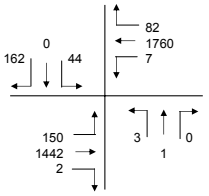
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



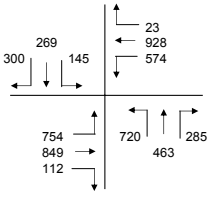
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.

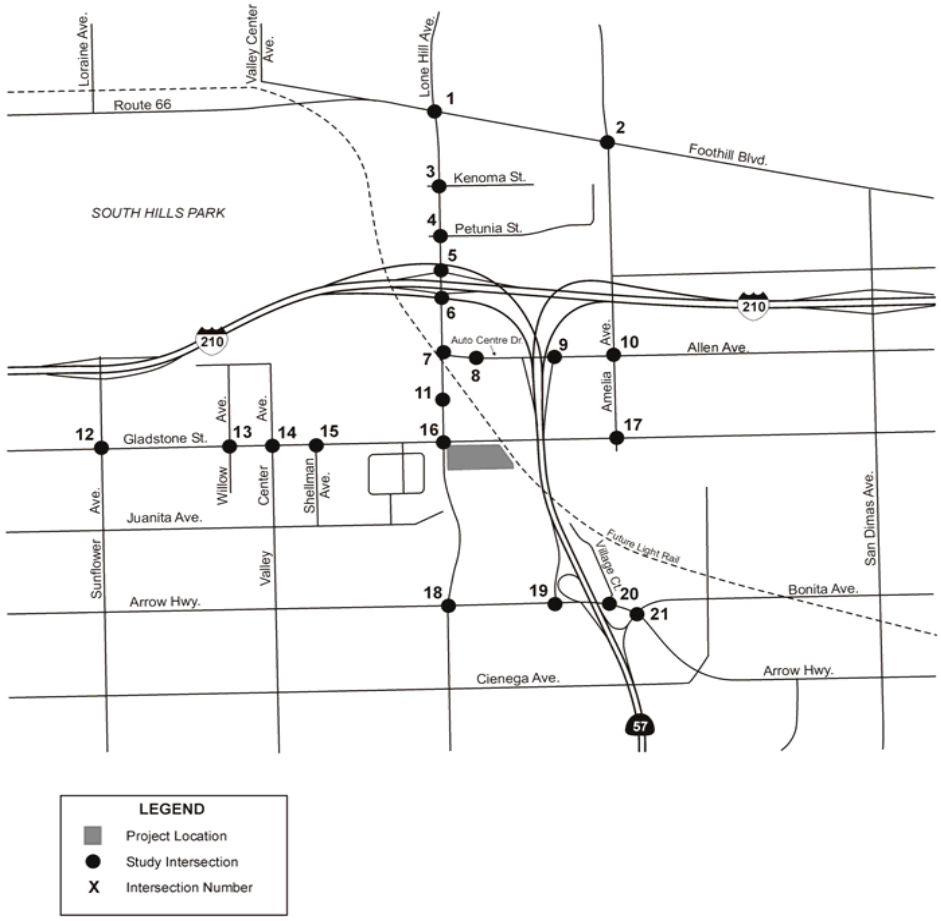


Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





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Costco Commercial Complex, San Dimas, CA - Traffic Study

Figure 23

Future (Year 2005) Growth Plus Related Projects - Weekday PM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

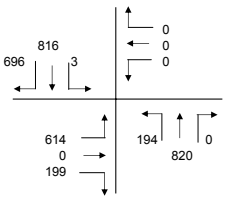
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

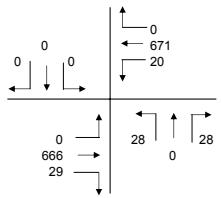
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

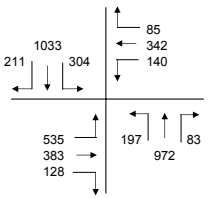
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



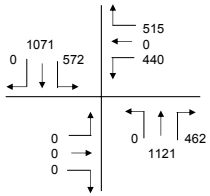
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.

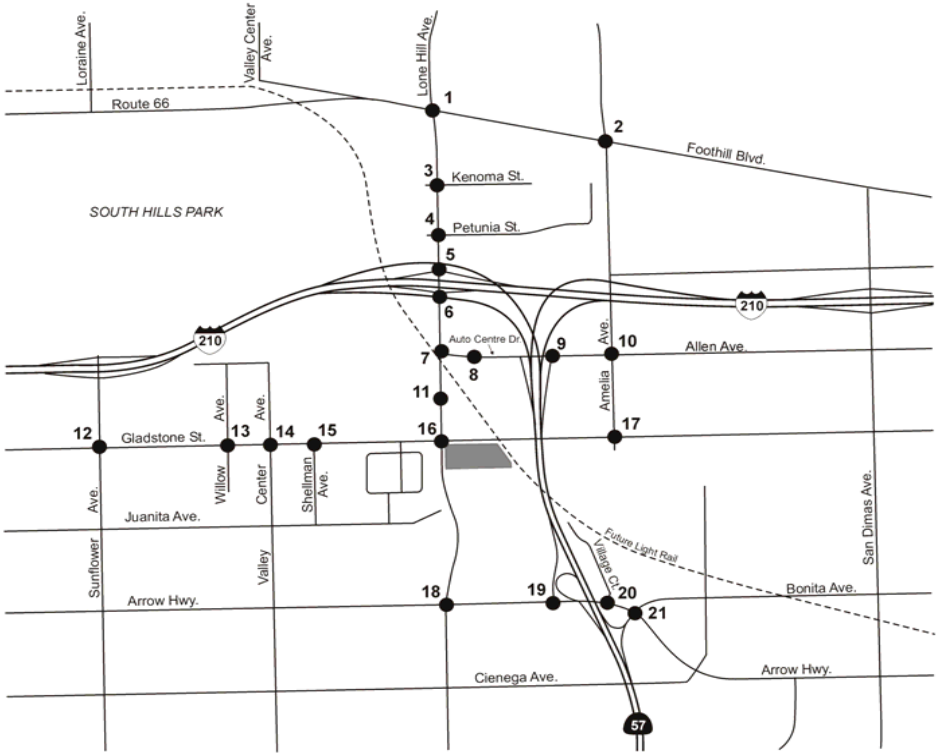


Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

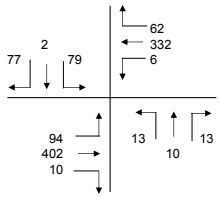
Not Analyzed for Saturday

Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.

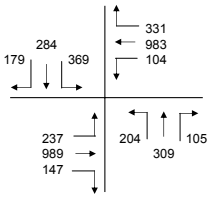




Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



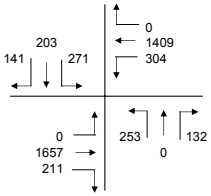
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



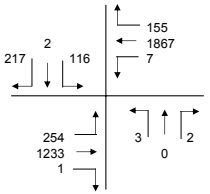
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



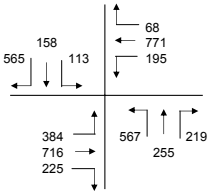
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



N

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Figure 24

Future (Year 2005) Growth Plus Related Projects - Saturday Peak Hour Traffic Volumes

7. Future (2005) Growth + Related Projects + Project Conditions

A. Analysis of Future Growth + Related Projects + Project Conditions

This section documents the future traffic conditions in the project study area under ambient growth conditions with traffic from both area related projects and the proposed Project. Table 11 summarizes the intersection operations and LOS values under this analysis scenario.

Table 11 - Summary of Intersection Performance – Future (2005) Growth + Related Projects + Project Conditions

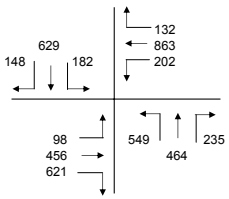
	Weekday AM Peak		Weekday PM Peak		Saturday Mid-Day Peak	
Intersection Location	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**
1. Lone Hill Ave./Route 66	0.~~819~~ 741	~~D~~ C	~~1.049~~ 0.854	~~F~~ D		
2. Amelia Ave./Route 66	0.512	A	0.525	A		
3. Lone Hill Ave./Kenoma St. *	52.5 sec.	F	~~<~~ >100 sec.	F		
4. Lone Hill Ave./Petunia St.	0.505	A	0.592	A		
5. Lone Hill Ave./SR-210 Wb ramps	0.948	E	1.397	F		
6. Lone Hill Ave./SR-210 Eb ramps	0.663	B	0.820	D		
7. Lone Hill Ave./Auto Centre Dr.	0.566	A	0.906	E	0.842	D
8. Walmart Dwy./Auto Centre Dr.	0.345	A	0.515	A		
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.448	A	0.648	B		
10. Amelia Ave./Auto Centre Dr.-Allen	0.377	A	0.454	A		
11. Lone Hill Ave./Gl. Marketplace Dwy.	0.335	A	0.528	A	0.636	B
12. Sunflower St./Gladstone St.	0.466	A	0.645	B		
13. Willow St./Gladstone St. *	12.1 sec.	B	23.5 sec.	B		
14. Valley Center Ave./Gladstone St. *	20.1 sec.	C	~~<~~ >100 sec.	F		
15. Shellman Ave. /Gladstone St. *	12.7 sec.	B	23.5 sec.	C	21.4 sec.	C
16. Lone Hill Ave./Gladstone St.	0.471	A	0.702	C	1.029	F
17. Amelia Ave.-Pearlanna/Gladstone St.	0.418	A	0.519	A	0.462	A
18. Lone Hill Ave./Arrow Hwy.	0.607	B	0.790	C	0.781	C
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.590	A	0.679	B	0.827	D
20. Arrow Hwy./North Village Ct.	0.418	A	0.595	A	0.743	C
21. Arrow Hwy./Bonita-SR57 nbd. ramps	0.811	D	1.119	F	0.988	E

** Unsignalized, partially-controlled intersection. Table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion.*

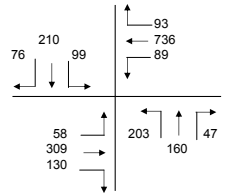
~~The bold text within Table 11 indicates that three~~ Three intersections would have worsened LOS values due to Project traffic in the a.m. peak period. This is also true for four intersections in the p.m. peak and four in the Saturday peak. Figures 25, 26, and 27 provide peak-hour traffic volumes for this scenario. Appendix G contains the worksheets used for the analysis of this scenario.

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

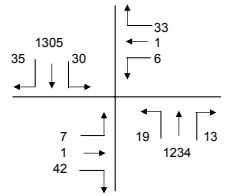
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



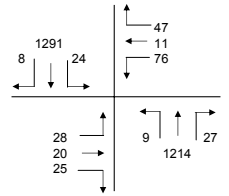
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



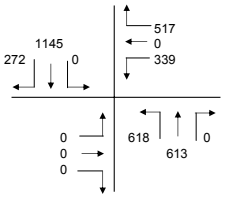
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



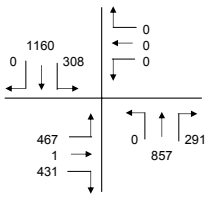
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



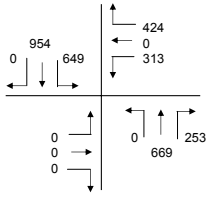
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



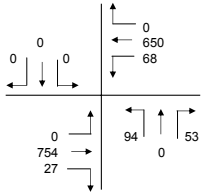
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



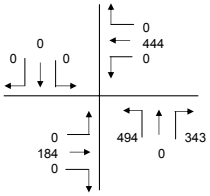
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



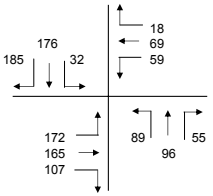
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



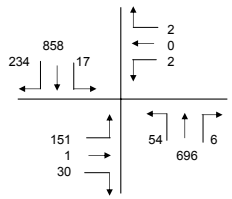
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



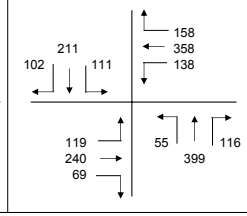
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



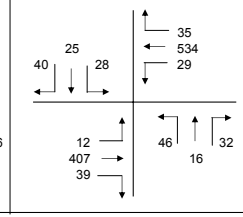
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



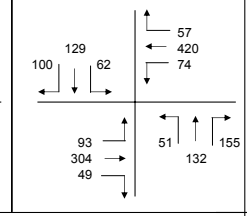
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



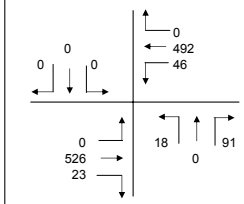
Intersection 13
N/S Willow St.
E/W Gladstone St.



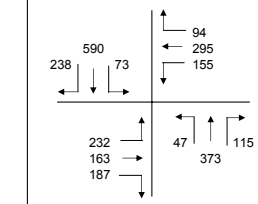
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



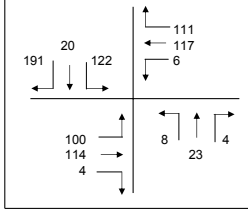
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



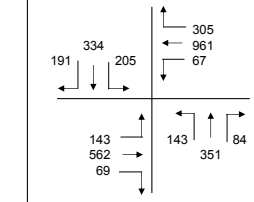
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



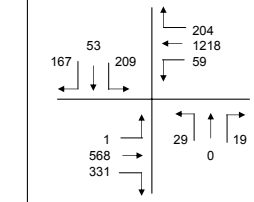
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



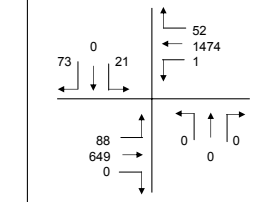
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



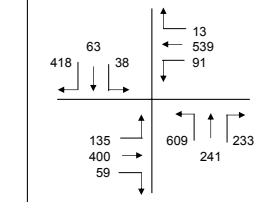
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



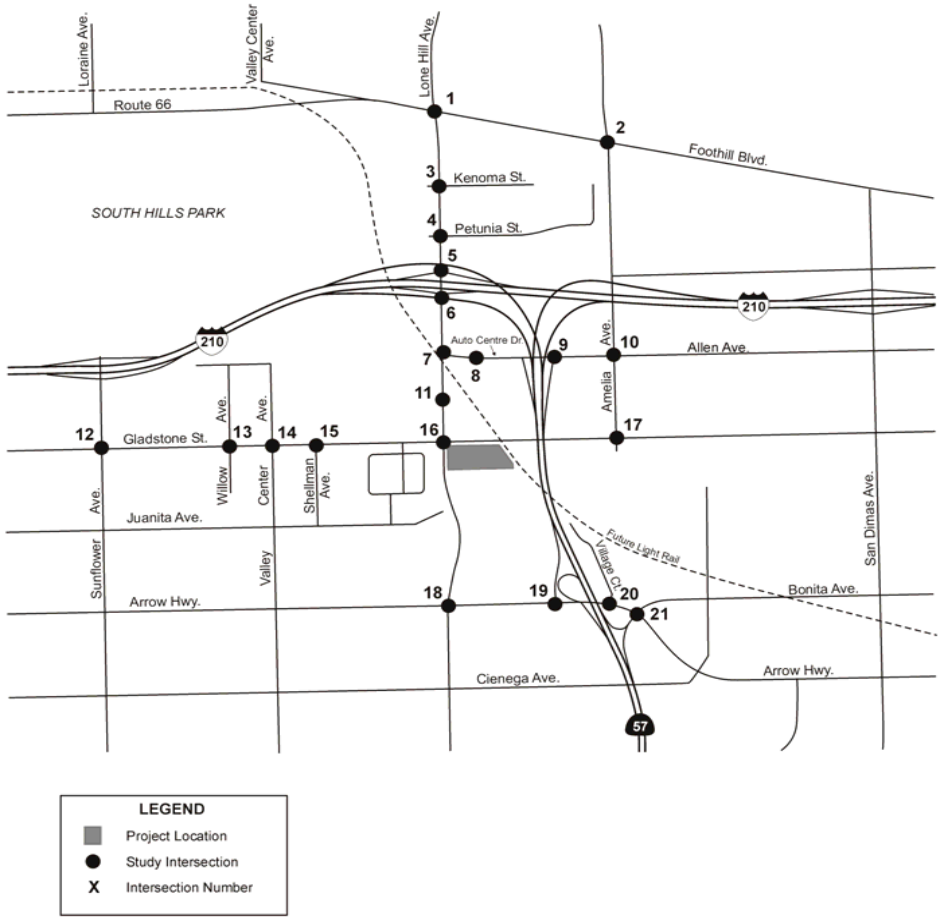


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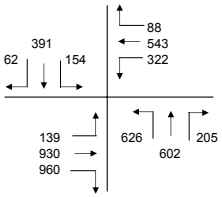
Figure 25

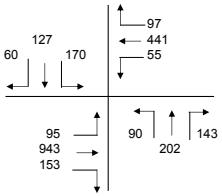
Future (Year 2005) Growth Plus Related Projects Plus Project Weekday AM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

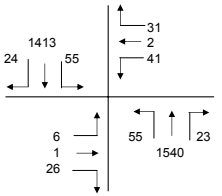
Intersection 1
N/S Lone Hill Ave.
E/W Route 66



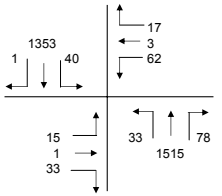
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.



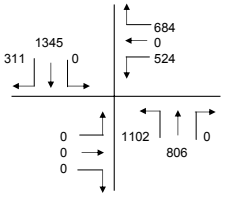
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.



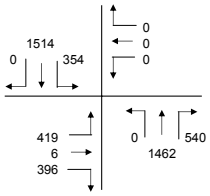
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.



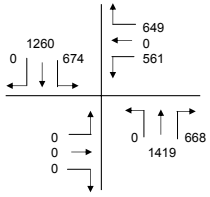
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps



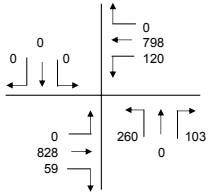
Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps



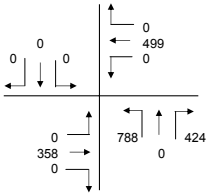
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



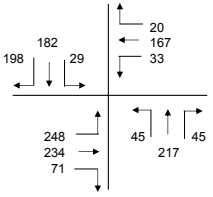
Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.



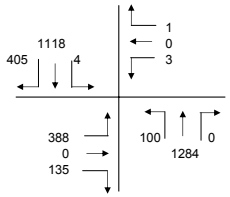
Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.



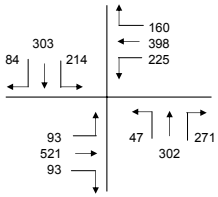
Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.



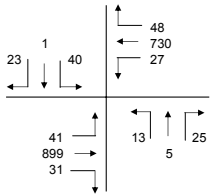
Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



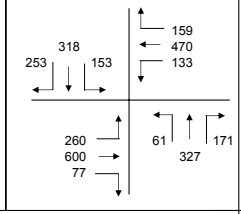
Intersection 12
N/S Sunflower St.
E/W Gladstone St.



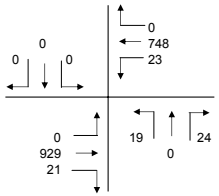
Intersection 13
N/S Willow St.
E/W Gladstone St.



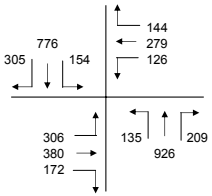
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.



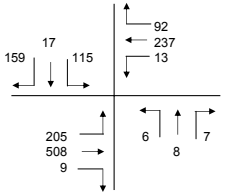
Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



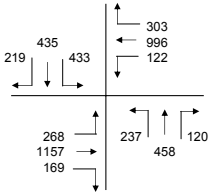
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



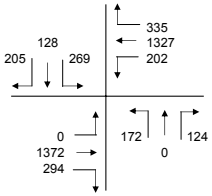
Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



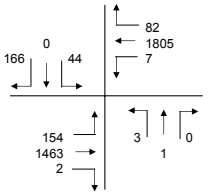
Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



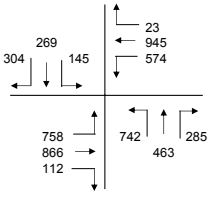
Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.



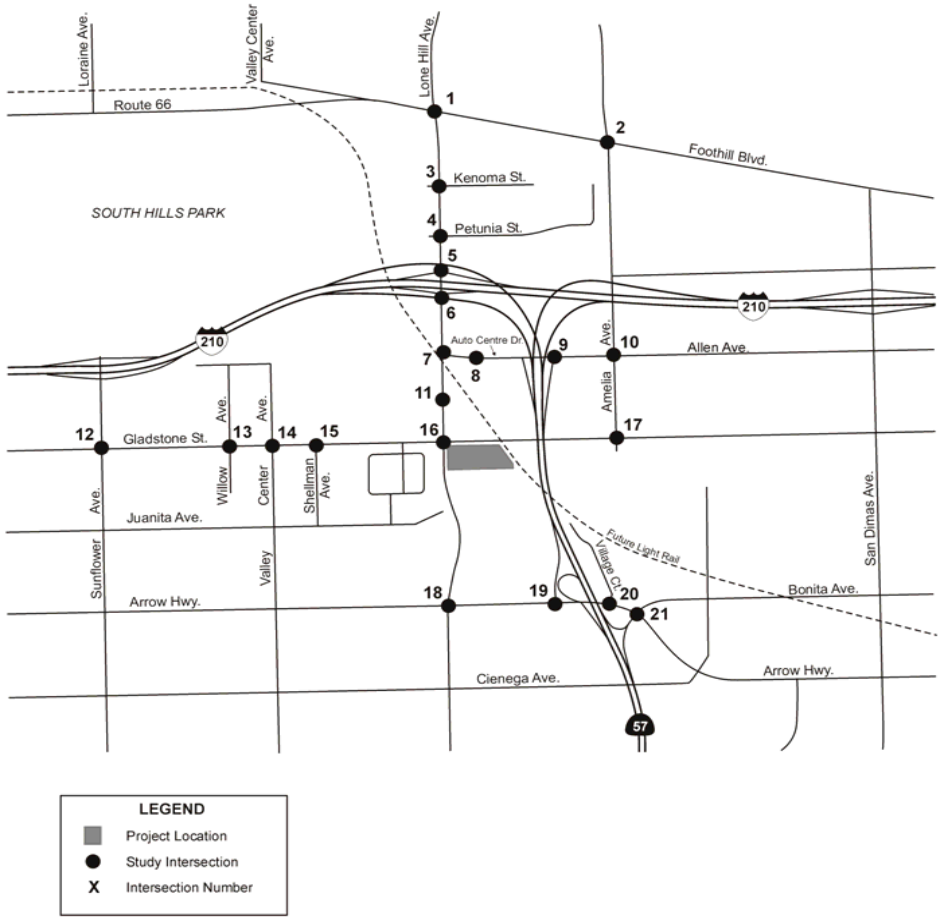


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Figure 26

Future (Year 2005) Growth Plus Related Projects Plus Project Weekday PM Peak Hour Traffic Volumes

Traffic Count - Graphic Conversion: Copyright: Digital Media Productions, 2004

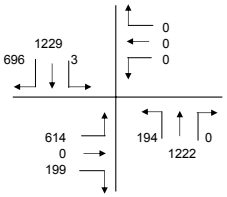
Intersection 1
N/S Lone Hill Ave.
E/W Route 66

Not Analyzed for Saturday

Intersection 6
N/S Lone Hill Ave.
E/W SR 210 EB Ramps

Not Analyzed for Saturday

Intersection 11
N/S Lone Hill Ave.
E/W Glendora Marketplace Dwy.



Intersection 12
N/S Sunflower St.
E/W Gladstone St.

Not Analyzed for Saturday

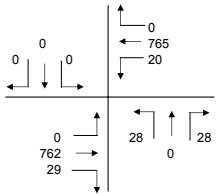
Intersection 13
N/S Willow St.
E/W Gladstone St.

Not Analyzed for Saturday

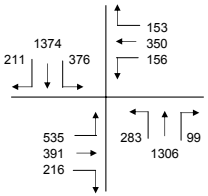
Intersection 14
N/S Valley Center Ave.
E/W Gladstone St.

Not Analyzed for Saturday

Intersection 15
N/S Shellman Ave.
E/W Gladstone St.



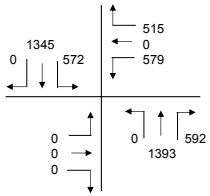
Intersection 16
N/S Lone Hill Ave.
E/W Gladstone St.



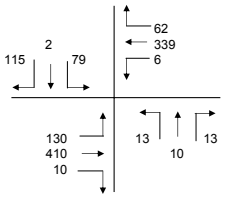
Intersection 2
N/S Amelia Ave.
E/W Route 66/Foothill Blvd.

Not Analyzed for Saturday

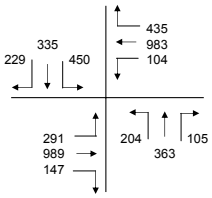
Intersection 7
N/S Lone Hill Ave.
E/W Auto Centre Dr.



Intersection 17
N/S Amelia Ave./Pearlanna Dr.
E/W Gladstone St.



Intersection 18
N/S Lone Hill Ave.
E/W Arrow Hwy.



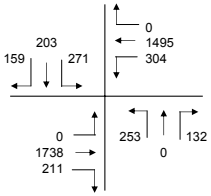
Intersection 3
N/S Lone Hill Ave.
E/W Kenoma St.

Not Analyzed for Saturday

Intersection 8
N/S Walmart Dwy.
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 19
N/S SR 57 SB Off Ramp
E/W Arrow Hwy.



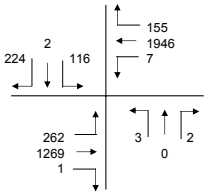
Intersection 4
N/S Lone Hill Ave.
E/W Petunia St.

Not Analyzed for Saturday

Intersection 9
N/S SR 57 NB Off Ramp
E/W Auto Centre Dr.

Not Analyzed for Saturday

Intersection 20
N/S North Village Ct.
E/W Arrow Hwy.



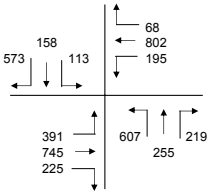
Intersection 5
N/S Lone Hill Ave.
E/W SR 210 WB Ramps

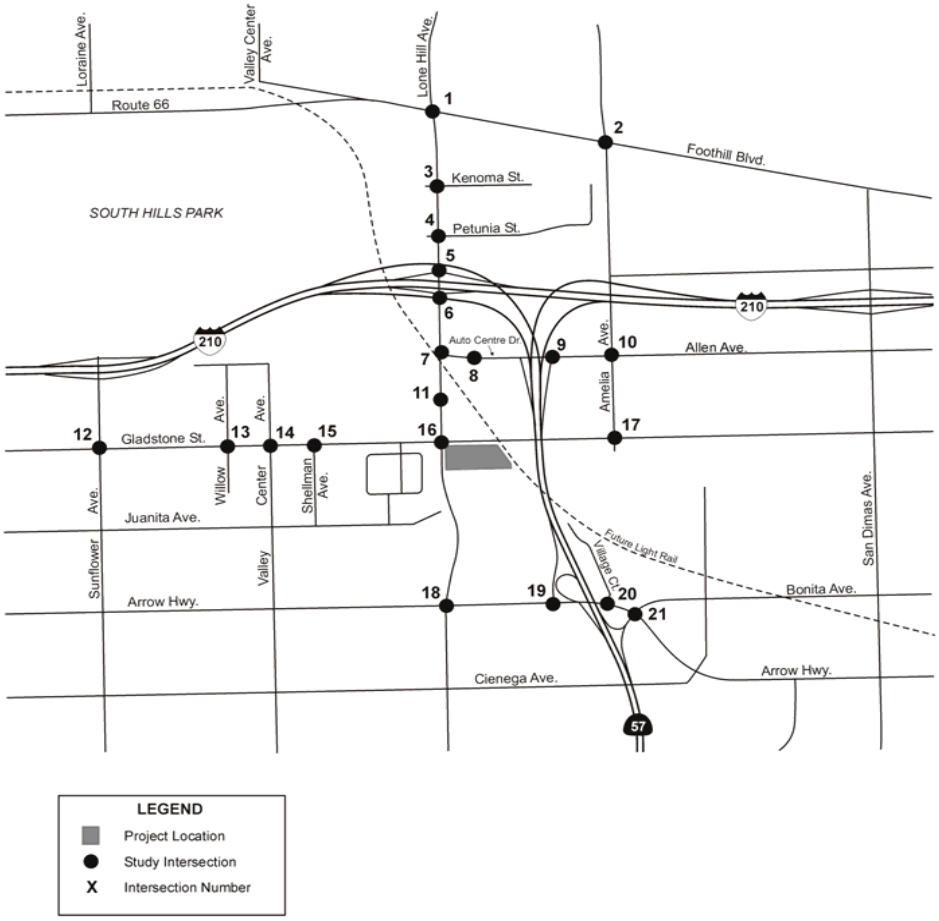
Not Analyzed for Saturday

Intersection 10
N/S Amelia Ave.
E/W Auto Centre Dr./Allen Ave.

Not Analyzed for Saturday

Intersection 21
N/S Bonita Ave.
E/W Arrow Hwy.





N

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Figure 27

Future (Year 2005) Growth Plus Related Projects Plus Project Saturday Peak Hour Traffic Volumes

B. Determination of Significant Impacts

As in the analysis of significant impacts in the future ambient growth + Project scenario, traffic study guidelines developed by the County of Los Angeles Public Works Department were used to determine the locations of such impacts amongst the study intersections. The County's Traffic Impact Analysis Report Guidelines defines the following project-related increases in v/c (or ICU value) at an intersection as significant:

Pre-Project LOS & v/c*	Project Related v/c increase
C: 0.71– 0.80	Equal to or greater than 0.04
D: 0.81 – 0.90	Equal to or greater than 0.02
E: 0.91 or more	Equal to or greater than 0.01

Using these standards, this section examined significant Project traffic impacts in the future ambient growth + related projects + Project scenario. The difference in ICU value, was utilized to determine significant traffic impacts at the study intersections for the weekday a.m. peak, weekday p.m. peak, and Saturday mid-day peak periods. The significant impacts within each time period are summarized in a separate table.

A separate analysis of significant impacts, without traffic from related projects, was discussed within Section 5 of this report. Recommended mitigation measures for all significant impacts are discussed in Section 8 of this report.

Los Angeles County guidelines for significant traffic impacts in this study do not quantify significant impact standards for partially-controlled unsignalized intersections. A common example of control at such an intersection would be stop signs at the two minor legs and free flow movements for the two major legs. LOS at these intersections is determined by average seconds of delay per vehicle, rather than the volume-to-capacity (v/c) ratios utilized in the significant impact standards. To complete the analysis at these locations, traffic signal warrants are discussed later in this report section. Significant impacts at unsignalized study intersections were determined by LOS changes resulting in E or F, and the analysis of traffic signal warrants for conditions with and without the Project.

Table 12 – Significant Impacts – Ambient Growth + Related Projects + Project – AM Peak

[numbers modified in first row of table, text in "Diff." and "Signif?" columns modified]

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)		Future + Related Projects (Year 2005)		Future + Related + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS		
1. Lone Hill Ave./Route 66	0.693	B	0.700	C	0.735	C	0.741	C	0.006	No
2. Amelia Ave./Route 66	0.454	A	0.459	A	0.507	A	0.512	A	0.005	No
3. Lone Hill Ave./Kenoma St. *	31.1 sec.	D	32.1 sec.	D	48.6 sec.	E	52.5 sec.	F	**	**Yes**
4. Lone Hill Ave./Petunia St.	0.465	A	0.470	A	0.496	A	0.505	A	0.009	No
5. Lone Hill Ave./SR-210 Wb on and off ramps	0.874	D	0.882	D	0.929	E	0.948	E	0.019	**Yes**
6. Lone Hill Ave./SR-210 Eb on and off ramps	0.608	B	0.614	B	0.654	B	0.663	B	0.009	No
7. Lone Hill Ave./Auto Centre Dr.	0.490	A	0.495	A	0.540	A	0.566	A	0.026	No
8. Walmart Dwy./Auto Centre Dr.	0.311	A	0.314	A	0.336	A	0.345	A	0.009	No
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.391	A	0.395	A	0.425	A	0.448	A	0.023	No
10. Amelia Ave./Auto Centre Dr.-Allen Ave.	0.348	A	0.352	A	0.366	A	0.377	A	0.011	No
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.271	A	0.274	A	0.299	A	0.335	A	0.036	No
12. Sunflower St./Gladstone St.	0.392	A	0.396	A	0.459	A	0.466	A	0.007	No
13. Willow St./Gladstone St.	10.0 sec.	B	10.1 sec.	B	11.8 sec.	B	12.1 sec.	B	*	No
14. Valley Center Ave./Gladstone St.	10.5 sec.	B	10.5 sec.	B	19.1 sec.	B	20.1 sec.	C	*	No
15. Shellman Ave. /Gladstone St.	11.1 sec.	B	11.1 sec.	B	12.4 sec.	B	12.7 sec.	B	*	No
16. Lone Hill Ave./Gladstone St.	0.378	A	0.381	A	0.429	A	0.471	A	0.042	No
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.349	A	0.352	A	0.405	A	0.418	A	0.013	No
18. Lone Hill Ave./Arrow Hwy.	0.496	A	0.501	A	0.585	A	0.607	B	0.022	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.494	A	0.499	A	0.577	A	0.590	A	0.013	No
20. Arrow Hwy./North Village Ct.	0.368	A	0.372	A	0.412	A	0.418	A	0.006	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.717	C	0.724	C	0.799	C	0.811	D	0.012	No

** Unsignalized, partially-controlled intersection. Table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E or F due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

*** This intersection met measures of significance for this scenario and analysis period, based on LOS degradation from E to F due to Project traffic.*

As can be seen by the text in the right-most column of Table 12, the Project would create significant traffic impacts at ~~one~~ two study intersections in the weekday a.m. peak period. The LOS change from E to F at the intersection of Lone Hill Avenue/Kenoma Street was considered to be significant.

Table 13 – Significant Impacts – Ambient Growth + Related Projects + Project – PM Peak

[numbers modified in first row of table, text in "Diff." and "Signif?" columns modified]

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)		Future + Related Projects (Year 2005)		Future + Related + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS		
1. Lone Hill Ave./Route 66	0.758	C	0.766	C	0.830	D	0.854	D	0.024	**Yes**
2. Amelia Ave./Route 66	0.489	A	0.494	A	0.504	A	0.525	A	0.021	No
3. Lone Hill Ave./Kenoma St.	> 100 sec.	F	> 100 sec.	F	> 100 sec.	F	> 100 sec.	F	**	**Yes**
4. Lone Hill Ave./Petunia St.	0.494	A	0.499	A	0.565	A	0.592	A	0.027	No
5. Lone Hill Ave./SR-210 Wb on and off ramps	1.257	F	1.270	F	1.352	F	1.397	F	0.045	**Yes**
6. Lone Hill Ave./SR-210 Eb on and off ramps	0.725	C	0.732	C	0.797	C	0.820	D	0.023	No
7. Lone Hill Ave./Auto Centre Dr.	0.769	C	0.777	C	0.841	D	0.906	E	0.065	**Yes**
8. Walmart Dwy./Auto Centre Dr.	0.451	A	0.456	A	0.489	A	0.515	A	0.026	No
9. SR-57 Nb off-ramp at Auto Centre Dr.	0.571	A	0.576	A	0.604	B	0.648	B	0.044	No
10. Amelia Ave./Auto Centre Dr.-Allen Ave.	0.378	A	0.378	A	0.437	A	0.454	A	0.017	No
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.408	A	0.412	A	0.454	A	0.528	A	0.074	No
12. Sunflower St./Gladstone St.	0.408	A	0.412	A	0.624	B	0.645	B	0.021	No
13. Willow St./Gladstone St.	11.4 sec.	B	11.5 sec.	B	20.4 sec.	C	23.5 sec.	C	***	**Yes**
14. Valley Center Ave./Gladstone St.	13.5 sec.	B	13.6 sec.	B	> 100 sec.	F	> 100 sec.	F	***	**Yes**
15. Shellman Ave. /Gladstone St.	12.2 sec.	B	12.3 sec.	B	21.4 sec.	C	23.5 sec.	C	*	No
16. Lone Hill Ave./Gladstone St.	0.514	A	0.519	A	0.606	B	0.702	C	0.096	No
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.427	A	0.431	A	0.501	A	0.519	A	0.018	No
18. Lone Hill Ave./Arrow Hwy.	0.563	A	0.568	A	0.741	C	0.790	C	0.049	**Yes**
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.591	A	0.597	A	0.665	B	0.679	B	0.014	No
20. Arrow Hwy./North Village Ct.	0.477	A	0.481	A	0.581	A	0.595	A	0.014	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.938	E	0.948	E	1.109	F	1.119	F	0.010	**Yes**

** Unsignalized, partially-controlled intersection. Table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E orF due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

*** Project traffic would worsen operations at this intersection within the LOS F range. A fair-share contribution is recommended for future signalization of this intersection.*

**** Analysis of p.m. peak period traffic signal warrants indicates that these intersections meet these warrants, with or without the Project. A fair-share contribution is recommended for future signalization of these intersections.*

As can be seen by the bold text in the right-most column of Table 13, the Project would create significant traffic impacts at ~~five~~ eight study intersections in the weekday p.m. peak period. Signal warrant analysis of the Willow St./Gladstone St. and Valley Center Ave./Gladstone St. intersections indicates that signal warrants are met, with or without Project traffic. Project traffic would worsen conditions at these locations, which is considered significant. Analysis of signal warrants at all unsignalized study intersections for this scenario is discussed later in this report section.

Table 14 – Significant Impacts – Ambient Growth + Related Projects +Project – Saturday Mid-Day Peak

[numbers modified in first row of table, text in "Diff." and "Signif?" columns modified]

Intersection	Existing Conditions (Year 2004)		Future with Ambient Growth (Year 2005)		Future + Related Projects (Year 2005)		Future + Related + Project (Year 2005)		Diff.	Signif?
	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS		
7. Lone Hill Ave./Auto Centre Dr.	0.657	B	0.663	B	0.728	C	0.842	D	0.114	**Yes**
11. Lone Hill Ave./Glendora Marketplace Dwy.	0.484	A	0.489	A	0.507	A	0.636	B	0.129	No
15. Shellman Ave. /Gladstone St.	11.1 sec.	B	11.1 sec.	B	18.1 sec.	C	21.4 sec.	C	*	No
16. Lone Hill Ave./Gladstone St.	0.757	C	0.764	C	0.875	D	1.029	F	0.154	**Yes**
17. Amelia Ave.-Pearlanna Dr./Gladstone St.	0.290	A	0.293	A	0.412	A	0.462	A	0.050	No
18. Lone Hill Ave./Arrow Hwy.	0.502	A	0.508	A	0.694	B	0.781	C	0.087	No
19. Arrow Hwy./Sb SR-57 Off-Ramp	0.696	B	0.703	C	0.810	D	0.827	D	0.017	No
20. Arrow Hwy./North Village Ct.	0.595	A	0.601	B	0.718	C	0.743	C	0.025	No
21. Arrow Hwy./Bonita Ave.-SR57 Nbd. Ramps	0.714	C	0.721	C	0.948	E	0.988	E	0.040	**Yes**

** Unsignalized, partially-controlled intersection. Table shows level of service based on the delay output of the Highway Capacity Manual method. Where delay values in excess of 100 seconds resulted, specific values are not provided as the HCM method becomes unstable at these levels of congestion. As Los Angeles County Guidelines do not identify significant impact thresholds for unsignalized intersections, significance was determined based on degradation to or within LOS E or F due to Project traffic and/or the need for a traffic signal based on a traffic signal warrant analysis.*

As can be seen by the text in the right-most column of Table 14, the Project would create significant traffic impacts at ~~two~~ three study intersections in the Saturday mid-day peak period. The Arrow Hwy./Bonita-SR57 northbound ramps intersection, and the Lone Hill/Auto Centre Drive intersection, would be significantly impacted by the Project in both the p.m. peak and Saturday mid-day peak periods. The significant impact at the intersection of Lone Hill Avenue/Gladstone Street is unique to the Saturday mid-day peak period.

In summary, significant Project impacts would occur at ~~one~~ two study intersections in the weekday a.m. peak period, at ~~five~~ eight study intersections in the weekday p.m. peak period, and at ~~two~~ three study intersection in the Saturday mid-day peak period. ~~One~~ Two of these intersections would be impacted in both the a.m. peak and p.m. peak periods, and ~~one~~ two intersections would be impacted in both the p.m. peak and Saturday mid-day periods. Therefore, a total of ~~six~~ nine study intersections would be significantly impacted in one or more peak periods by Project traffic.

In comparison to the earlier analysis of Project impacts without related project traffic in Section 5 of this report, the number of overall impacts includes one additional intersection for a total of six impacted intersections. The significant impact at the intersection of Lone Hill Avenue/Arrow Highway is unique to the analysis of significant impacts *with* traffic from area related projects.

Recommended mitigation measures for these significant impacts, and the feasibility of each measure, is discussed in the next section of this report. The section also discusses the status of Project traffic significance after implementation, if the measures were implemented.

C. Traffic Signal Warrant Analysis

For the study intersections that are unsignalized and have only partial stop-sign control, analysis of signal warrants provides information on the potential need for a traffic signal due to the effects of Project traffic. The remaining study intersections are analyzed primarily by the difference in volume-to-capacity ratios between "without Project" and "with Project" scenarios. Such ratios cannot be calculated for intersections with partial stop-sign control.

The three peak-hour signal warrant analyses defined by the Manual of Uniform Traffic Control Devices (taken from Caltrans standards which they now supercede), were utilized to analye p.m. peak and Saturday mid-day operations. The analysis is based on operations of the intersection during the future period with ambient growth and Project traffic, but without traffic from area related projects. The results are summarized in Table 15.

Table 15 – Signal Warrant Summary – Growth + Related Projects + Project – PM Peak

Location	Analysis Results		
	Warrant 1 (Vehicle-Hours)	Warrant 2 (Approach Volume)	Warrant 3 (Total Volume)
FUTURE AMBIENT GROWTH ONLY			
Lone Hill Ave./Kenoma St.	Succeed	Fail	Succeed
Willow St./Gladstone St.	Succeed	Succeed	Succeed
Valley Center Ave./Gladstone St.	Succeed	Succeed	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed
FUTURE GROWTH PLUS PROJECT			
Lone Hill Ave./Kenoma St.	Succeed	Fail	Succeed
Willow St./Gladstone St.	Succeed	Succeed	Succeed
Valley Center Ave./Gladstone St.	Succeed	Succeed	Succeed
Shellman Ave./Gladstone St.	Fail	Fail	Succeed

As can be seen by the summary provided in Table 15, the pattern of signal warrant results is the same with and without Project traffic. At the two intersections where all signal warrants are met (Willow/Gladstone and Valley Center/Gladstone), they are met whether or not Project traffic is included. This implies that traffic from both ambient growth and related area projects creates high enough volumes to cause the warrants to succeed. The Project itself does not cause the warrants to succeed.

Where signal warrants are met at an intersection in the future period, without or without Project traffic, it is recommended that a fair-share contribution be paid by the Project developer to the City of San Dimas or the City of Glendora (based on the jurisdiction relative to the intersection location) for future signalization of each intersection. This situation applies to the intersections of Willow Street/Gladstone Street and Valley Center Avenue/Gladstone Street:

In Section 5 of this report, Table 8 provided a summary of a similar signal warrant analysis, but *without* related project traffic volumes. In that analysis, it was shown that signal warrants were not met at any of the unsignalized study intersections for conditions without related projects, with or without Project traffic ~~did not succeed as a result of Project traffic. On the whole, Project traffic does not create any warrants for new traffic signals at any of the unsignalized study intersections.~~

8. Mitigation Measures and Project Recommendations

The addition of Project traffic to either future growth conditions or to future growth + related projects conditions at the study intersections result in a similar pattern of significant impacts. The Project will impact the following ~~six~~ nine study intersections during one or more of the Project study time periods (weekday a.m. peak, weekday p.m. peak, or Saturday mid-day peak):

- Lone Hill Avenue/Route 66
- Lone Hill Avenue/Kenoma Street
- Lone Hill Avenue/SR-210 Westbound Ramps
- Lone Hill Avenue/Auto Centre Drive
- Willow Street/Gladstone Street
- Valley Center Avenue/Gladstone Street
- Lone Hill Avenue/Gladstone Street
- Lone Hill Avenue/Arrow Highway
- Arrow Highway/Bonita Avenue – SR57 Northbound Ramps

The first ~~three~~ six intersections in the list above are located entirely within the jurisdictions of the City of Glendora and/or Caltrans. The ~~fourth~~ seventh intersection is on the border of the City of San Dimas and the City of Glendora. The last intersection is located within the jurisdiction of the City of San Dimas and Caltrans. Discussion within this report section regarding potential improvements at intersections partially or fully controlled by Glendora and/or Caltrans is done with the knowledge that the lead agency for this Project (City of San Dimas) would not have control over implementation of the improvements outside of its jurisdiction.

A. Summary of Potential Mitigation Measures

Summaries of the proposed mitigation measures for signalized study intersections are provided in Table 16 (a.m. peak period), Table 17 (p.m. peak period), and Table 18 (Saturday mid-day peak period). Mitigation measures must remove significant impact during all time periods, in order to be successful. In the analysis summarized within this report section, intersection operations and LOS are based on traffic conditions *with* area related projects and the proposed Project. Information on overall feasibility of the considered mitigation measures is discussed later in this report section.

Table 16 – Mitigation Measure Effects on Weekday AM Peak Conditions

Study Intersection	Future w/Project V/C & LOS	Significant before Mitigation?	Proposed Mitigation	Post-Mitigation V/C & LOS	Significant after Mitigation?
1. Lone Hill/ Route 66	~~0.819 – D~~ 0.741 – C	No	~~Eastbound right turn overlap phase~~ Second eastbound right turn lane	0.741 – C	No
5. Lone Hill/ SR-210 wb	**0.948 – E**	**YES**	Second northbound left turn lane	0.755 – C	No
7. Lone Hill/ Auto Centre	0.566 – A	No	Second left, change of shared lane to right turn – wbd. approach	0.545 – A	No
16. Lone Hill/ Gladstone	0.471 – A	No	Second nbd. and second sbd. left turn lanes	0.456 – A	No
18. Lone Hill/ Arrow-SR57	0.607 – B	No	No feasible mitigation exists at this location	0.607 – B	No
21. Arrow/ Bonita-SR57	0.811 – D	No	Addition of nbd. left turn lane	0.657 – B	No

Proposed mitigations would remove the significant traffic impact caused by Project traffic in the weekday a.m. peak period.

Table 17 – Mitigation Measure Effects on Weekday PM Peak Conditions

Study Intersection	Future w/Project V/C & LOS	Significant Before Mitigation?	Proposed Mitigation	Post-Mitigation V/C & LOS	Significant After Mitigation?
1. Lone Hill/ Route 66	~~1.049 – F~~ 0.854 – D	**YES**	~~Eastbound right turn overlap phase~~ Second eastbound right turn lane	~~0.854 – D~~ 0.740 – C	No
5. Lone Hill/ SR-210 wb	**1.397 – F**	**YES**	Second northbound left turn lane	1.052 – F	No
7. Lone Hill/ Auto Centre	**0.906 – E**	**YES**	Second left, change of shared lane to right turn – wbd. approach	0.804 – D	No
16. Lone Hill/ Gladstone	0.702 – C	No	Second nbd. and second sbd. left turn lanes	0.654 – B	No
18. Lone Hill/ Arrow	**0.790 – C**	**YES**	No feasible mitigation exists at this location	**0.790 – C**	**YES**
21. Arrow/ Bonita-SR57	**1.119 – F**	**YES**	Addition of nbd. left turn lane	**0.965 – E**	No

Proposed mitigations would remove four significant traffic impacts caused by Project traffic in the weekday p.m. peak period. One significant impact, at the intersection of Lone Hill Avenue/Arrow Highway would not be removed due to the infeasibility of potential mitigation measures. Feasibility of the proposed mitigation measures is discussed in more detail later in this report section.

Table 18 – Mitigation Measure Effects on Saturday Mid-Day Peak Conditions

Study Intersection	Future w/Project V/C & LOS	Significant Before Mitigation ?	Proposed Mitigation	Post-Mitigation V/C & LOS	Significant After Mitigation ?
1. Lone Hill/ Route 66	[not analyzed in this scenario]				
5. Lone Hill/ SR-210 wb	[not analyzed in this scenario]				
7. Lone Hill/ Auto Centre	0.842 – D	No	Second left, change of shared lane to right turn – wbd. approach	0.795 – C	No
16. Lone Hill/ Gladstone	**1.029 – F**	**YES**	Second nbd. and second sbd. left turn lanes	0.912 – E	No
18. Lone Hill/ Arrow	0.827 – D	No	No feasible mitigation exists at this location	0.827 – D	No
21. Arrow/ Bonita-SR57	0.988 – E	**YES**	Addition of nbd. left turn lane	0.835 – D	No

Proposed study intersection mitigations would remove two significant traffic impacts from the Project in the Saturday mid-day peak period. No significant impacts would remain for this period of the intersection analyzed.

B. General Feasibility of Mitigation Measures

Lone Hill Avenue/Route 66

Implementation of ~~an~~ a second eastbound right turn lane ~~overlap phase~~ would require roadway widening and potential purchase of additional right-ofway. Such widening could negatively affect the operations of the on-site parking area of the existing business at the southwest corner of the intersection. ~~would not involve lane restriping or any widening of the intersection approaches. This would, however, affect the northbound U-turn movement. At this approach, northbound U-turns onto southbound Lone Hill Avenue would need to be prohibited. An examination of access points to the commercial centers at the southwest and southeast corners of the intersection show that both centers have additional access points further west and further east of the intersection. Full access is provided at these locations. Therefore, prohibition of the northbound U-turn movement would not negatively affect access to nearby properties.~~

It is recommended that a fair-share contribution be provided for the implementation of this improvement. The *City of Glendora Route 66 Corridor Specific Plan Amendment Traffic Impact Study* (RBF Consulting, October 2003) does not recommend any improvements to this intersection before the year 2020, although it identifies significant impacts at this location due to planned area development. The Specific Plan Study ~~acknowledges~~ states that widening of the intersection approaches at critical movement locations would be infeasible. ~~The proposed improvement discussed in this report would not require any roadway widening or purchase of additional right-of-way.~~

It is acknowledged that this study intersection is within the City of Glendora. Implementation of these improvements is beyond the control of the lead agency (City of San Dimas) for this Project.

Lone Hill Avenue/I-210 Westbound Ramps

The addition of a second northbound left turn lane at this intersection would involve the partial or full reconstruction of the freeway bridge support structure at this location. The bridge is constructed with concrete berms on the sides and a single row of concrete support columns in the middle (Lone Hill centerline). The related intersection approach lanes are location primarily underneath the freeway overhead structure. Further complicating such construction would be the parallel southbound left turn lane for the intersection of Lone Hill Avenue and the I-210 eastbound ramps. ~~This improvement is therefore considered infeasible for purposes of this analysis.~~

It is recommended that a fair-share contribution be provided for future improvements to this interchange. The Glendora Specific Plan Traffic Study also identifies needed improvements to this intersection, including the addition of two northbound left turn lanes, widening of the on-ramp, an additional southbound through lane, and a widening of the off-ramp to a total of four lanes. The intersection, and the freeway bridge, are under the control of Caltrans. Coordination with Caltrans regarding the feasibility, constructability, and programming of improvements at this intersection will also be required. Acceptance of such improvements by Caltrans, or a potential timeframe for implementation, would be unknown until engineering studies were undertaken.

Lone Hill Avenue/Auto Centre Drive

A modification to the westbound approach of this intersection was approved by the City of Glendora on December 5, 2003. This modification would change the center approach lane from a shared left/right turn lane to a left turn-only lane. Cursory analysis of this modification indicated that during peak periods, a degradation of LOS by at least one letter grade would result. This modification includes the provision of on-street parking along the east side of Lone Hill Avenue, necessitating the approach reconfiguration. Operations at the intersection would worsen in order to provide these parking areas.

Existing conditions at this intersection were documented in the field by Katz, Okitsu & Associates, and such fieldwork was conducted before this modification was implemented. Also, traffic counts utilized for this location were conducted before the modification was implemented. With or without the improvement planned by the City of Glendora, the westbound intersection approach would have three lanes. With the proposed mitigation measure, this approach would need to be widened to four lanes.

Recommendations for future improvements to this intersection within The Glendora Specific Plan Traffic Study match the mitigation recommendations within this report. It is therefore recommended that a fair-share contribution be provided for the construction of this planned improvement. The improvement would require widening of the westbound intersection approach, and could potentially require the acquisition of additional right-of-way. ~~This improvement is therefore considered infeasible for purposes of this analysis.~~ Such an improvement could negatively affect the operation of the auto sales lot at the northeast corner of the intersection.

It is acknowledged that this study intersection is within the City of Glendora. Implementation of these improvements is beyond the control of the lead agency (City of San Dimas) for this Project.

Lone Hill Avenue/Gladstone Street

The recommended mitigation measures at this intersection include an additional northbound left turn lane and an additional southbound left turn lane. These improvements would require roadway widening, but match conceptual drawings developed by Crain & Associates in December, 2003. These drawings, consisting of a number of implementation options, all contain these same improvements and document dedications required at the Project site for the related roadway widenings. As roadway dedications could take place for the implementation of this improvement, it is considered feasible for purposes of this analysis.

Lone Hill Avenue/Arrow Highway

This intersection is controlled by a traffic signal with protected left turn phasing at all approaches, and ~~a~~ two southbound left turn lanes. Mitigation of Project impacts at this study intersection (which occur in the p.m. peak period only) would involve either an additional northbound left turn lane, an additional southbound through lane, an additional eastbound left turn lane, or an additional westbound through lane. No additional roadway width exists at any of these locations that could be used for approach restriping. An alternative mitigation measure was analyzed for this location, based on recommendations from the City of San Dimas. This measure would provide a northbound left/thru lane northbound/southbound split signal phasing and would not require roadway widening and additional right-of-way. It was found that this mitigation measure would not improve intersection operations to the extent needed for removal of the significant p.m. peak-hour project impact at this location.

Therefore, no mitigation is recommended at this location, due to the infeasibility of widening any of the intersection approaches. Such widenings would likely require purchase of additional roadway right-of-way, and could affect parking lot layouts and existing structures at adjacent commercial centers.

Arrow Highway/Bonita Avenue – SR57 Northbound Ramps

The recommended mitigation measure at this location would involve the reconfiguration ~~and possible widening~~ of the SR-57 northbound off-ramp at this location. The receiving lanes of this approach lead to the SR-57 northbound on-ramp. A wide raised median exists between the approach lanes and the receiving lanes. This width could potentially be utilized to provide all or some of the width required for the improvement. Widening of the northbound approach beyond this area would require reconstruction of berms on each side of the approach that provide the grade differential between the SR-57 (higher in elevation) and the intersection (lower in elevation). Planning-level analysis of such an improvement indicates that the need for widening would be unlikely. The alignment of the centerline of the northbound approach of this intersection (the SR-57 ramps) to the southbound approach (Bonita Avenue) with such an improvement would be slightly off-center. The final centerline alignment, and potential need for partial reconstruction of the off-ramp to accommodate this alignment, would need to be determined by an engineering study. Acceptance of such an improvement by Caltrans, or a potential timeframe for implementation, would be unknown until engineering studies were undertaken.

It is recommended that a fair-share contribution be provided for such an improvement to this intersection and the connecting SR-57 freeway ramps. ~~As the improvement could require a full reconstruction of the freeway ramps, it is considered infeasible for purposes of this analysis.~~

D. Impacts at Unsignalized Study Intersections

It has been determined that the Project does not cause traffic signal warrants to succeed at any of the unsignalized study intersections. Where LOS at an unsignalized intersection will be worsened to LOS E or F due to Project traffic, or where signal warrants are met in the future

period (with or without the Project), it is recommended that a fair-share contribution be paid by the Project developer to the City of San Dimas or the City of Glendora (based on jurisdiction relative to the intersection location) for the future signalization of each intersection.

Based on future base volumes (with related projects), traffic signal warrants would be met at the intersections of Willow St./Gladstone St and Valley Center Ave./Gladstone St. Project traffic would also cause a worsening of LOS from E to F at the intersection of Lone Hill Avenue/Kenoma Street in the a.m. peak period.

As these intersections are within the City of Glendora, implementation of these future signalization improvements cannot be assured. Implementation of these improvements is beyond the control of the lead agency (City of San Dimas) for this Project.

E. ~~D.~~ Lone Hill Avenue Traffic Operations

The discussion below summarizes the analysis of signal timing and coordination issues along Lone Hill Avenue after development of the proposed Project. This analysis assumes the installation of a new traffic signal at the western Project driveway (access to/from Lone Hill Avenue). There would then be four traffic signals on Lone Hill Avenue within close proximity to each other:

- Lone Hill Avenue/West Project Access Dwy.
- Lone Hill Avenue/Gladstone Street (approx. 500 feet to the north)
- Lone Hill Avenue/Glendora Marketplace Access Dwy. (approx. 650 feet to the north)
- Lone Hill Avenue/Auto Centre Drive (approx. 670 feet to the north)

The analysis of this corridor was conducted utilizing the SYNCHRO program by Trafficware. This analysis does not represent a detailed coordination plan, but represents a planning-level analysis of potential future operations within this four-intersection corridor.

The first scenario was defined as Project Year (2005) conditions without coordination with the proposed Costco driveway signal on Lone Hill Avenue. This scenario assumed coordination of the traffic signals of Lone Hill/Auto Centre, Lone Hill/Glendora Marketplace, and Lone Hill/Gladstone. Optimal signal timing and optimized coordination were assumed across all approaches and across all included signals.

The second scenario was defined as Project Year (2005) conditions with coordination of the proposed Costco driveway traffic signal on Lone Hill with the traffic signals of Lone Hill/Auto Centre, Lone Hill/Glendora Marketplace, and Lone Hill/Gladstone. Optimal signal timing and optimized coordination were assumed across all approaches and across all included signals.

It was assumed for this analysis that the intersection of Lone Hill Avenue with the proposed main Costco driveway would be signalized. Analysis of this intersection without signalization but with Project traffic indicates that a poor level of service would result.

The overall analysis of these four intersections included an examination of approximate expected queue lengths at the intersection approaches. During the weekday p.m. peak period, it is estimated from this analysis that no significant effect on operations would occur with inclusion of the proposed Costco driveway signal in a Lone Hill Avenue coordination plan. In both the weekday p.m. peak and Saturday mid-day analysis periods, average delay at the examined intersections would not change significantly with or without coordination with the

Costco driveway traffic signal. The optimal signal cycle length of the Coscto driveway traffic signal would closely match the signal cycle length required for coordination with an optimized Lone Hill/Gladstone intersection.

It is estimated that during the Saturday mid-day peak, occasional queues would develop on northbound Lone Hill Avenue from the Gladstone intersection that would block the Costco driveway intersection. Similarly, occasional southbound queues would develop on Lone Hill Avenue from the Costco driveway intersection that could partially block the Lone Hill/Gladstone intersection.

Without coordination of at least the Lone Hill/Gladstone traffic signal with the Costco driveway signal, blockages at the Lone Hill/Gladstone intersection due to the southbound queues at the Costco driveway intersection are anticipated during peak periods. With coordination, however, queues on Lone Hill between the Costco driveway and the Gladstone intersection would be reduced.

The final coordination plan should be based on an assessment of traffic operations at these intersections, which should be conducted after the opening of the Project.

The Synchro program output files are provided in Appendix H of this report.

9. Conclusions and Recommendations

The proposed uses for the Project site consist of the following:

- A Costco warehouse/retail facility (149,710 sq.ft.)
- A Costco gas station with 12 fueling positions
- A fast-food restaurant with a drive-thru (3,500 sq.ft.)
- A quality restaurant (7,000 sq.ft.)
- Two retail spaces (8,000 sq.ft. each)
- Two major retail spaces (45,000 sq.ft.)

There are no significant existing site uses in operation. A majority of the existing site uses have either been abandoned or demolished.

The proposed Project will have a net trip generation of 12,123 daily trips, 362 weekday a.m. peak trips, 853 weekday p.m. peak trips, and 1,488 Saturday mid-day peak trips. These totals include credits for pass-by trips for each major proposed use.

The following mitigation measures are recommended for the study intersections. It is noted where mitigation measures were deemed infeasible and related traffic impacts would not be mitigated. Where an improvement was deemed physically infeasible (due to right-of-way or structure constraints) as a Project-related mitigation, it was recommended that fair-share contributions be made toward future long-term improvements at that location.

Location	Recommended Improvement	Feasibility
Lone Hill/Route 66	Additional e~~E~~astbound right turn lane ~~overlap phase~~	Feasible
Lone Hill/SR-210 wb	Second northbound left turn lane	Infeasible
Lone Hill/Auto Centre	Second left, shared lane to right turn – wbd. appr.	Infeasible
Lone Hill/Gladstone	Second nbd. and second sbd. left turn lanes	Feasible
Lone Hill/Arrow	No feasible mitigation exists at this location	Infeasible
Arrow/Bonita-SR57	Addition of northbound ~~nbd.~~ left turn lane	~~Infeasible~~ Feasible

** Significant project impacts at these study intersection cannot be mitigated. Impacts would remain if project constructed.*

Where LOS at an unsignalized intersection would be worsened to LOS E or F due to Project traffic, or where signal warrants are met in the future period (with or without the Project), it is recommended that a fair-share contribution be paid by the Project developer to the City of San Dimas or the City of Glendora (based on jurisdiction relative to the intersection location) for the future signalization of each intersection.

Based on future base volumes (with related projects), traffic signal warrants would be met at the intersections of Willow St./Gladstone St and Valley Center Ave./Gladstone St. Project traffic would also cause a worsening of LOS from E to F at the intersection of Lone Hill Avenue/Kenoma Street in the a.m. peak period.

As discussed in Section 10 of this report, there is no CMP-related impact to the I-210 freeway from Project traffic. ~~Mitigations for significant Project traffic impacts at the intersection of Bonita Avenue/Arrow Highway were deemed infeasible, unless a fair-share contribution could~~

~~be made toward a regional-based improvement. If the impacts cannot be mitigated at this location, construction of the Project would result in a significant unavoidable impact on the CMP arterial system.~~

10. Congestion Management Plan Conformance

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program (CMP). The CMP requires that traffic studies document impacts to all CMP monitoring stations on roadway or freeway segments where the proposed project will add 150 or more peak hour trips. The nearest CMP routes to the Project site are the I-210 (Foothill) Freeway and Arrow Higway east of I-210.

This project will add a maximum of 36 trips to the I-210 during the weekday a.m. peak period, and a maximum of 86 trips during the weekday p.m. peak period. These volumes are bi-directional. Saturday volumes were not examined in this exercise, as a limited study area was used for the Saturday mid-day analysis period in this report.

The significant impact threshold for CMP facilities is an increase of 2% or more in volume/capacity (V/C) ratios causing or worsening LOS F. V/C is comparable to the demand/capacity ratio, or D/C, used in the CMP for the analysis of freeway Level of Service. The capacity of the I-210 near the Project study area is defined by the CMP as 8,000 vehicles in either the eastbound or westbound direction (16,000 vehicles would be the bi-directional capacity).

As data within the CMP is more than two years old, volumes from Caltrans Annual Average Daily Traffic (AADT) reports were utilized to define the existing demand on the facility. The 1% annual growth factor utilized for ambient growth factoring in this study was also applied to these I-210 traffic volumes. Caltrans defines the peak-hour, bi-directional volume on the I-10 as 13,700 vehicles. This volume is an average of counts taken in 2002 by Caltrans, at a point to the east of Sunflower Avenue.

Applying the 1% ambient growth rate utilized in this report, existing (2004) volume on the I-210 east of Sunflower Avenue would be 13,974 vehicles. Comparing this number to the bi-directional capacity of 16,000 this segment of the I-210 operates at a D/C of 0.87, or LOS D.

The Project will add a maximum of 86 vehicles to the I-210 freeway east of Sunflower Avenue in the peak hour. The Project's maximum weekday impact would be based upon this volume. This is a volume increase of 0.62% (86/13,974 * 100), under the maximum allowable increase.

There is CMP-defined Project impact to the I-210 freeway. Impacts to Arrow Highway would occur at the Arrow Highway/Bonita Avenue intersection during the p.m. peak and Saturday mid-day periods. A mitigation was identified for this location, but it was deemed infeasible as a required mitigation measure of the Project developer. Unless this impact could be mitigated with a future regionally-funded improvement, the impact to the CMP facility would remain unmitigated.

TECHNICAL APPENDICES
APPENDIX A – APPENDIX H

Available for Review at City of San Dimas City Hall