APPENDIX I

Traffic Analysis
Crain & Associates

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FEDERAL EXPRESSED

December 9, 2004

Mr. James L. Brock
Environmental Planning Associates, Inc.
12100 Wilshire Boulevard, Suite 660
Los Angeles, California 90025

RE: Sierra Canyon High School Traffic Study Transmittal

Dear Mr. Brock,

Enclosed is a copy of the traffic study for the proposed Sierra Canyon High School. This study was conducted prior knowing the timing of the completion of the Rinaldi Street connection between east of De Soto Avenue and the bridge over the 118 Freeway. The study includes analysis of intersections "With Rinaldi Street Connected" and "Without Rinaldi Street Connected" because the roadway completion was presumed to be 2007. However, construction of the roadway in now underway and completion is currently projected to be summer 2005. Even if delayed, the road will be in place prior to the earliest project occupancy of September 2006. Therefore, it is appropriate that the balance of the environmental document not include the now erroneous "Without Rinaldi" scenario.

Sincerely,

Liz Culhane

Liz Culhane
Senior Traffic Engineer

LC:lc
C15393
enclosures

DRAFT

TRAFFIC ANALYSIS FOR A PROPOSED SIERRA CANYON HIGH SCHOOL IN THE CHATSWORTH COMMUNITY

Prepared for:

THE TAYLOR GROUP

Prepared by:

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September 2004

EXECUTIVE SUMMARY

Currently there is a Sierra Canyon Elementary/Secondary School with a maximum enrollment of 700 students located west of De Soto Avenue on the north side of Rinaldi Street between Variel Avenue and Independence Avenue. In order to provide continued education for their students, the project under consideration is the construction of a private 550-student high school (Sierra Canyon High School). The site is located northeast of De Soto Avenue and Rinaldi Street in the Chatsworth Community of the west San Fernando Valley in the City of Los Angeles. A portion of the land where the school will be built currently has a single family home, pool and gazebos on the lot.

Access to the school site will be provided by two driveways on the north side of the proposed extension of Rinaldi Street east of De Soto Avenue. Along the project frontage, Rinaldi Street is proposed for two lanes of vehicle travel in each direction, a bike lane in each direction and parking on both sides of the street. Left turn ingress and egress is proposed at the easterly project driveway.

Porter Ranch will be constructing Rinaldi Street from its current terminus west of Mason Avenue to De Soto Avenue. This may or may not be completed at the time that the school is fully operational. The traffic study conducted for the project evaluates potential traffic impacts with and without the Rinaldi Street connection completed.

Parking for the school project, as currently planned, is to be provided by four surface parking lots distributed throughout the school site with a total of 236 parking spaces. Each of the parking lots will be interconnected with internal private roadways. The gymnasium will be constructed over a portion of one of the parking lots. Both of the school entrances will be controlled by access gates. The east gate will be the main entrance and will provide a manned gate house to assist visitors to the school.

Based on trip generation rates specified by the Institute of Transportation Engineers (ITE) and Los Angeles Department of Transportation (LADOT), the proposed school

after it is completed, could generate an estimated 984 daily trips, with 506 peak hour trips in the morning and 231 peak hour trips during the afternoon prior to further reductions achievable through the project's Transportation Demand Management (TDM) Program. It should be emphasized that actual trip generation due to the proposed project during the peak periods analyzed is expected to be less than the above estimates, when the school's rideshare program is considered.

As discussed in this report, project-related traffic is expected to significantly impact the following five study intersections prior to mitigation with the construction completion of the Rinaldi Street connection.

- De Soto Avenue and Rinaldi Street (AM and PM Peak Hour)
- De Soto Avenue and Tulsa Street (AM and PM Peak Hour)
- Chatsworth Street and De Soto Avenue (AM and PM Peak Hour)
- Devonshire Street and De Soto Avenue (AM and PM Peak Hour)
- Chatsworth Street and Mason Avenue (AM and PM Peak Hour)

It is anticipated that the project will be completed subsequent to the completion of the Rinaldi Street connection. However, if the roadway is not constructed when Sierra Canyon High School reaches full enrollment two additional significant impacts occur as shown below.

- Ronald Reagan Freeway WB Ramps and De Soto Avenue (AM Peak Hour)
- Ronald Reagan Freeway EB Ramps and De Soto Avenue (AM Peak Hour)

In order to reduce the impacts of the proposed project to less than significant levels, the following mitigation measures are recommended:

- Transportation Demand Management Program -- Sierra Canyon High School should implement an aggressive Transportation Demand Management (TDM) program to reduce trips to and from the site. Such a program would encourage ridesharing of students to school where appropriate and feasible. Additionally, the TDM program would only allow the

high school's junior and senior students to drive when accompanied by one other student (minimum two-student carpools), and will provide assistance in matching students for the formation of carpools. These carpools would reduce trips by bringing more than one student per vehicle to the site. A TDM Plan incorporating these and other measures could be effective in reducing project trip generation. A draft plan for a TDM program for the Sierra Canyon High School is contained in Appendix A of this report.

- Contribution to Automated Traffic Control System (ATCS) -- The project will share mitigation with the Porter Ranch development by contribution to the ATCS system thereby increasing capacity along De Soto Avenue at Rinaldi Street, Chatsworth Street and Devonshire Street.

- Tulsa Street at De Soto Avenue -- Restripe this intersection to change the current left/right shared lane to a single left-turn lane and single right-turn lane. In addition, it is recommended that the existing southbound left-turn prohibition on De Soto Avenue at Tulsa Street during the morning peak hours be extended to the 3:00 PM to 6:00 PM time period.

- New Traffic Signal at Chatsworth Street and Mason Avenue -- The Porter Ranch Specific Plan traffic mitigation includes the installation of a new traffic signal at Chatsworth Street and Mason Avenue. The installation of the signal will reduce the impact by the School to a level of insignificance. It is recommended that Porter Ranch and Sierra Canyon High School develop an agreement to implement this signal be installed prior to maximum enrollment of the school.

Implementation of the above noted improvements mitigate all of the traffic impacts to a level of insignificance with or without the completion of the Rinaldi Street connection.

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INTRODUCTION

The Sierra Canyon School plans to construct a new high school with a maximum enrollment of 550 students in grades nine through twelve to complement their existing elementary and secondary school. The new high school will be built on 4.29 acres on two adjacent sites to the north of the proposed extension of Rinaldi Street and east of De Soto Avenue after dedication for the extension of Rinaldi Street. The first site (at the northeasterly end of the entire site) currently has a single family home building, gazebos and a pool. The site will be developed with an education building, lunch facilities, student interaction areas, east gate main entrance with gate house and parking. The existing structures will remain with the home converted to the administrative building. The second site will be utilized for the proposed gymnasium with a stage, bleachers, basketball court and parking below. The proposed location of the school site is an irregularly shaped parcel northeast of De Soto Avenue and future Rinaldi Street, as shown on Figure 1, Site Vicinity Map.

The Sierra Canyon School has retained Crain & Associates to conduct a traffic study to assess the impact of the proposed development on the surrounding street system. This report presents the results of an analysis of existing conditions as well as projected traffic conditions following completion and occupancy of the project. As requested by the Los Angeles Department of Transportation, this analysis incorporates a detailed evaluation of existing and future traffic conditions at the following eight intersections and one local street segment.

Study Intersections:

1. Ronald Reagan Freeway (SR-118) Westbound Ramps and De Soto Avenue
2. Ronald Reagan Freeway (SR-118) Eastbound Ramps and De Soto Avenue
3. Rinaldi Street and De Soto Avenue
4. Tulsa Street and De Soto Avenue
5. Chatsworth Street and De Soto Avenue

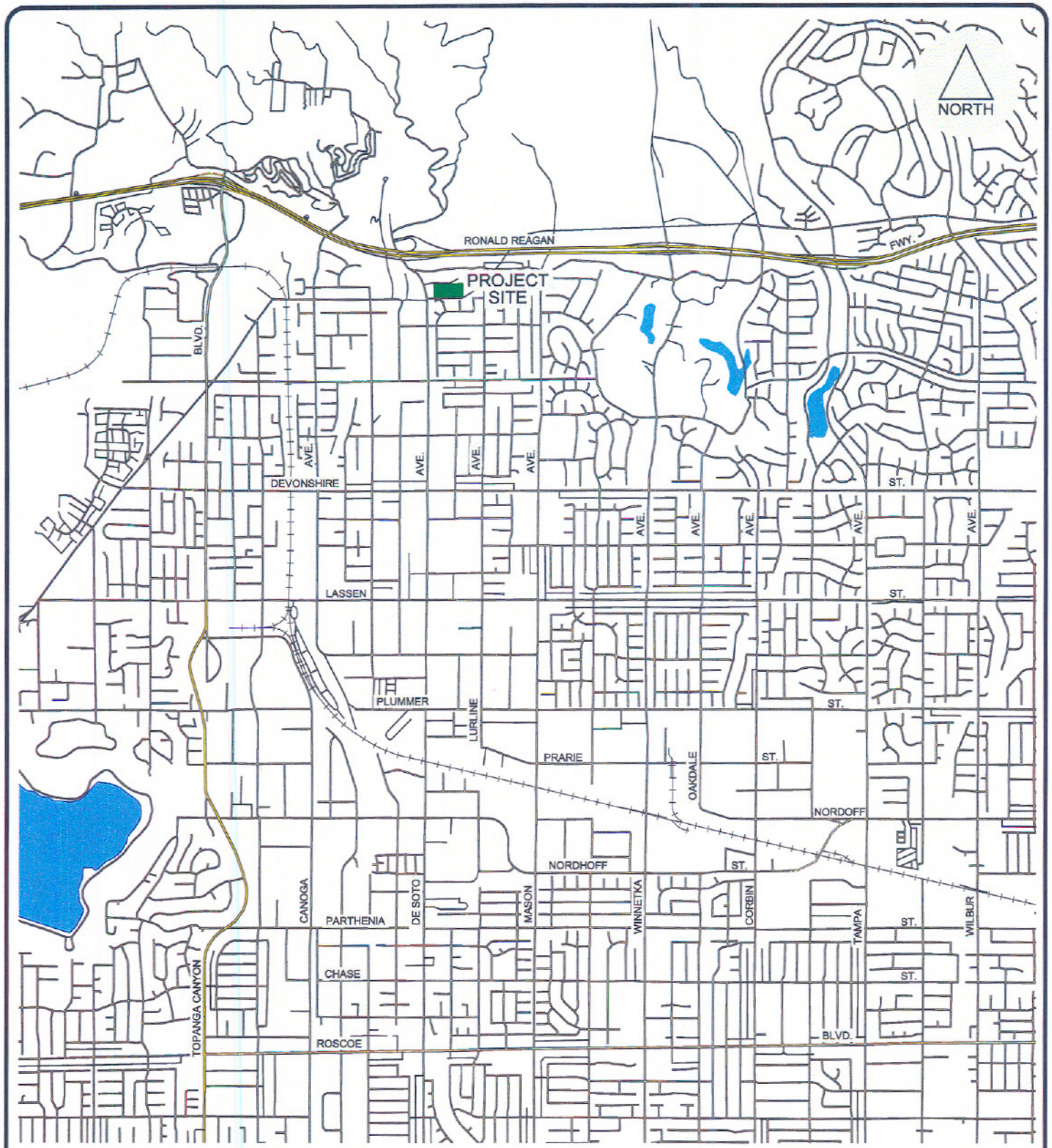

FIGURE 1

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FN: SIERRA CANYON HIGH SCHOOL\SITEVICINITY

SITE VICINITY MAP

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Study Intersections (cont.)

6. Devonshire Street and De Soto Avenue
7. Chatsworth Street and Mason Avenue
8. Devonshire Street and Mason Avenue

Study Street Segment

1. Tulsa Street west of Lurline Avenue

In addition to these selected study intersections and street segment, two additional nearby intersections exhibiting the potential to be significantly impacted by the project are listed in the Los Angeles County Congestion Management Plan (CMP) as monitoring locations. These CMP intersections are listed below and were examined to determine whether the proposed project met traffic impact analysis criteria for each location.

- Devonshire Street and Topanga Canyon Boulevard
- Topanga Canyon Boulevard and 118 Freeway Westbound Ramps

Neither of the CMP locations met the criteria for potential impacts. As a result, they did not need to be examined in detail in order to assess precise project impacts. The results of this supplemental CMP analysis are summarized in Appendix B of this report.

An evaluation of potential traffic impacts by the project to the nearby Ronald Reagan Freeway was also conducted. Existing and future (2025) without and with project conditions are evaluated in the report.

The locations examined in this report are those intersections and street segment within the area immediately surrounding the project site expected to be most directly impacted by the proposed project's traffic generation.

PROJECT DESCRIPTION

The project under consideration is the construction of a new private high school with a maximum enrollment of 550 students. The high school will provide continuation opportunities for students already attending the existing Sierra Canyon elementary and secondary school. The new high school would be located northeast of De Soto Avenue and the proposed extension of Rinaldi Street. The location of the proposed project is divided into two sites with a total of 4.29 acres of land after dedication for the extension of Rinaldi Street. Currently there exists a single family home, pool and gazebos on the first site. The structure on the first site would be converted to the administrative building and be further developed with a two story 45,953 square foot education building, lunch facilities, student interaction areas, parking and the east gate main entrance with gate house. The second site may temporarily house four classrooms and will be the site for the two-story 23,110 square foot proposed gymnasium with a stage, four classrooms, locker room and parking. The west gate is located on the second site along the western boundary of the project. Equestrian activities will be accommodated along the western boundaries of the project site as deemed appropriate. The proposed uses for both sites are shown in Figure 2, Project Site Plan.

Parking for the high school project will be provided on site with four surface parking lots and a total of 236 parking stalls. Access to the parking lots will be provided by two driveways along the proposed extension of Rinaldi Street. The main entrance will be at the eastern end of the site with a manned gate house. Left turns in and out of the project are proposed at this driveway. The secondary entrance will be along the western boundary of the site and will be controlled by access gates. Two student drop-off areas will be provided on site and will accessible from both gates. All parking will be interconnected by internal private roadways.

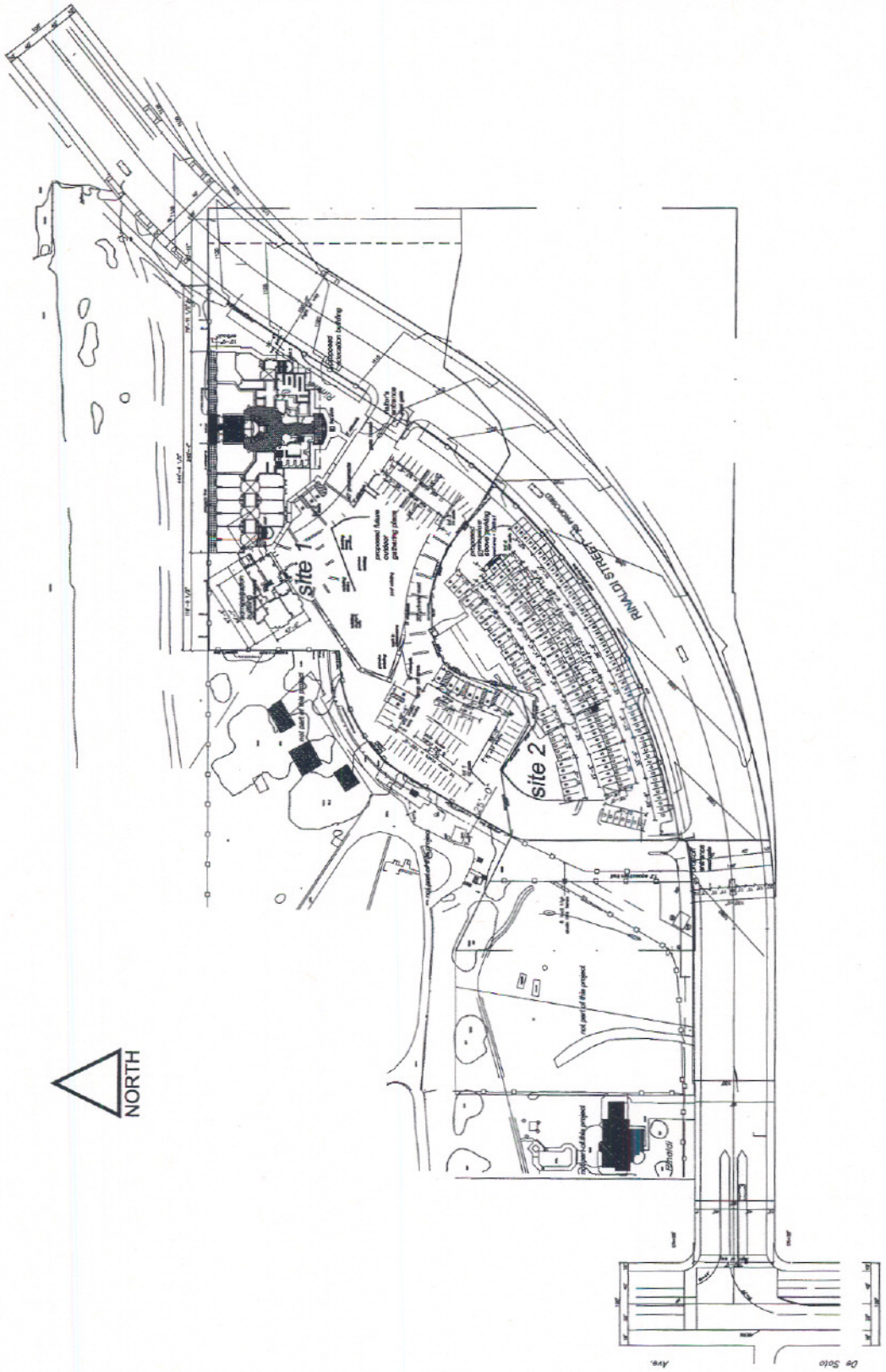

FIGURE 2

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FN: SIERRA CANYON HIGH SCHOOL\SITE PLAN

PROJECT SITE PLAN

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ENVIRONMENTAL SETTING

The site of the proposed project is located in the Chatsworth area of the west San Fernando Valley in the City of Los Angeles. The school site is situated on the north side of the proposed extension of Rinaldi Street east of De Soto Avenue. The project study area is primarily residential in nature. The elementary and secondary Sierra Canyon School is west of De Soto Avenue and other schools are south of the project site. Development along De Soto Avenue south of the project site is a mixture of commercial and retail land uses. De Soto Avenue is a heavily-used commuter roadway and the close proximity of the Ronald Reagan Freeway north of the site increases the traffic load on this facility. Intensifying nearby single-family residential development also creates increased travel demands into, out of and through the area.

Freeways and Highways

One freeway and one state highway serves the project area. The facilities, described below, provide regional access for the project and the surrounding vicinity.

The Ronald Reagan Freeway (SR-118) is an east-west oriented freeway located approximately one half mile north of the project site. The Ronald Reagan Freeway provides eight mixed mode travel lanes and one rideshare lane in each direction. Full interchanges are provided at De Soto Avenue north of the project site. This freeway originates as a freeway west of the project in Ventura County at State Route 23 through Moorpark and Simi Valley continuing through the San Fernando Valley with full interchanges at the San Diego (I-405) and Golden State Freeway (I-5). State Route 118 terminates at the Foothill Freeway (I-210) in the Lake View Terrace community of east San Fernando Valley.

Topanga Canyon Boulevard (SR-27) is a north-south highway located approximately two miles west of the project site. Topanga Canyon Boulevard provides two to three lanes of

travel in each direction and is signalized at major intersections. Topanga Canyon Boulevard runs from immediately north of the Ronald Reagan Freeway south through the San Fernando Valley and foothills to the coastline where it intersects with Pacific Coast Highway (SR-1). Full interchanges are provided at the Ronald Reagan Freeway and Ventura Freeway (US Hwy-101).

Streets

Rinaldi Street is designated as a major highway by the City of Los Angeles. Currently, Rinaldi Street originates at Canoga Avenue but terminates west of De Soto Avenue. A small segment of Rinaldi Street originates east of De Soto Avenue but terminates again. Rinaldi Street proceeds again easterly from west of Mason Avenue to the Golden State Freeway. Rinaldi Street will be constructed from its current terminus east of De Soto Avenue to Mason Avenue to serve Porter Ranch. The Rinaldi Street extension will be constructed on 104 feet of right-of-way and is expected to be completed between 2007 and 2009.

De Soto Avenue is designated as a major highway and is located east of the project site. De Soto Avenue is continuous from Ventura Boulevard to the Ronald Reagan Freeway. Full east and westbound interchanges are provided at the Ventura and Ronald Reagan Freeways. De Soto Avenue is approximately 80 feet wide in the vicinity of the project with two lanes in each direction and left-turn channnelization at most intersections. De Soto Avenue expands to three lanes in each direction south of the project with peak hour commuter lanes.

Chatsworth Street is a secondary highway with a variable roadway width of approximately 66 to 74 feet. The street is discontinuous from east of Northridge Road to west of Corbin Avenue. This roadway extends easterly past Sepulveda Boulevard to Arleta Avenue. Two through lanes in each direction and left-turn channelization are generally provided on Chatsworth Street at major intersections.

Devonshire Street, an east-west major highway, is a continuous facility across the northern part of the west San Fernando Valley. It is approximately 1.1 miles south of the Ronald Reagan Freeway. Devonshire Street is an 80-foot-wide roadway with two traffic lanes in each direction and left-turn channelization at most locations.

Mason Avenue is a north-south secondary highway and will extend northerly through the Porter Ranch Specific Plan area as a modified secondary highway. A freeway overpass for the street is already in place. South of the Ronald Reagan Freeway, Mason Avenue is generally a two-lane roadway with left-turn channelization.

Lurline Avenue is a north-south collector street which extends from south of Plummer Street to north of Tulsa Street on a roadway of varying width. One lane in each direction is provided on this roadway but the roadway is only partially improved between Nash Street and Tulsa Street. Current plans do not connect the terminus of Lurline Avenue to the Rinaldi Street extension.

Tulsa Street is an east-west local street which extends from Mason Avenue to De Soto Avenue. One lane in each direction is provided on this unchannelized residential roadway.

Existing Traffic Volumes

Traffic volume count data was obtained from recent counts performed by Crain & Associates. These counts represent traffic volumes for average mid-week conditions with school in session during weeks containing no holidays. The manual intersection counts and daily street segment count are included in Appendix D.

The Ronald Reagan Freeway is one of the most important traffic facilities in the San Fernando Valley. Near De Soto Avenue, the Ronald Reagan Freeway carries in excess

of 150,000 vehicles per day (VPD), with peak hour traffic volumes approaching 16,000 vehicles per hour (VPH).

De Soto Avenue at Rinaldi Street carries approximately 43,000 VPD. Directional peak hour volumes on De Soto Avenue at this location are approximately 1,700 VPH northbound and 2,600 VPH southbound during the morning and 2,900 VPH northbound and 1,600 VPH southbound in the afternoon.

Chatsworth Street at De Soto Avenue carries approximately 8,100 VPD. Directional peak hour volumes on Chatsworth Street are approximately 400 VPH westbound and 470 VPH eastbound during the morning and 360 VPH westbound and 420 VPH southbound in the afternoon.

Devonshire Street at De Soto Avenue carries approximately 20,300 VPD. Directional peak hour volumes on Devonshire Street are approximately 1,200 VPH westbound and 1,100 VPH eastbound during the morning and 900 VPH westbound and 1,100 VPH eastbound in the afternoon.

Mason Avenue at Chatsworth Street carries more than 14,000 VPD. Peak hour volumes are over 400 VPH northbound and 1,100 VPH southbound during the morning peak hour and 1,100 VPH northbound and 520 VPH southbound during the evening peak hour.

Tulsa Street west of Lurline Avenue carries approximately 1,040 VPD. Directional peak hour volumes on Tulsa Street are approximately 50 VPH westbound and 70 VPH eastbound during the morning and 55 VPH westbound and 35 VPH eastbound in the afternoon.

Existing morning and afternoon peak hour traffic volumes at the study intersections are shown on Figures 3(a) and (b).

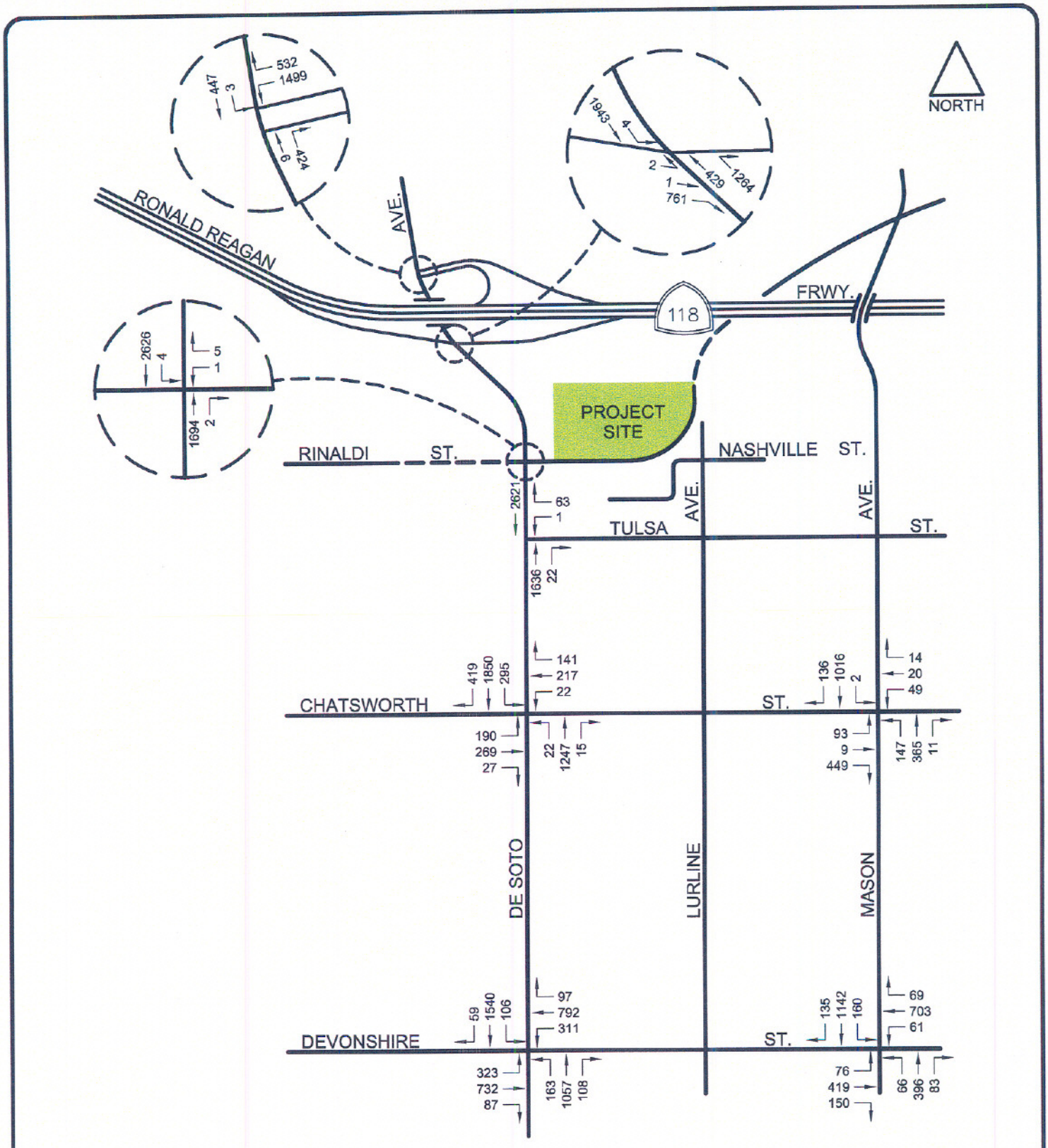

FIGURE 3(a)

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FN: SIERRA CANYON HIGH SCHOOL\AM2004EX

EXISTING (2004) TRAFFIC VOLUMES
AM PEAK HOUR

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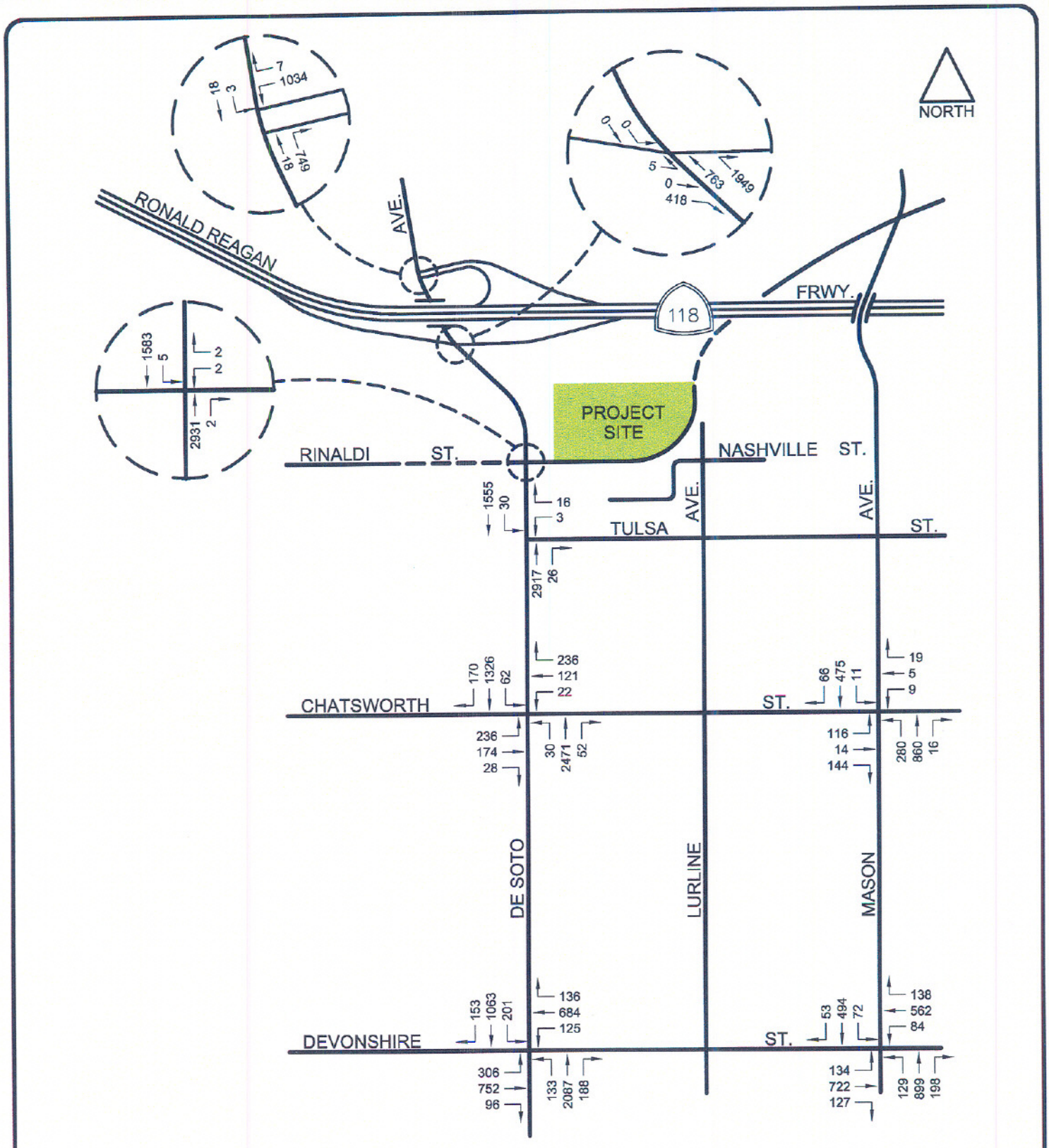

FIGURE 3(b)

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STICK

EXISTING (2004) TRAFFIC VOLUMES
PM PEAK HOUR

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Public Transit

The Southern California Metrolink provides rail service to the area. The Los Angeles County Metropolitan Transportation Authority (MTA) and Simi Valley have developed a system of bus routes serving the project area. Current bus route information indicates that several lines provide service within walking distance (less than two miles) of the proposed project that could be used by students or employees traveling to and from the proposed facilities.

Although none of the transit lines provide "front door" service to the project, several lines serve adjacent areas along Devonshire Street, De Soto Avenue south of Devonshire Street and Mason Avenue. It is likely that bus service will be routed along Rinaldi Street along the project frontage once the roadway construction is completed. When transfer opportunities to these other routes are considered, much of the Los Angeles Metropolitan area can be conveniently accessed via public transportation to and from the proposed project site. However, due to the lack of multiple routes accessing the site and the absence of any "local" routes with stops nearby, transit use to/from the project site was not expected to figure prominently in project travel patterns.

The bus lines which provide the closest service to the proposed project site are listed and described below:

Line 243 -- This north-south route serves the communities of Chatsworth, Canoga Park, Woodland Hills, Winnetka, and Northridge. The route operates primarily along De Soto Avenue, Ventura Boulevard and Porter Ranch Drive. Service is provided Monday through Friday from 5:30 AM to 8:30 PM with headways ranging from 15 minutes to one hour. This line stops at the Chatsworth Transportation Center.

Line 158 -- This route travels along Woodman Avenue in the east San Fernando Valley and travels along Devonshire Street in the project vicinity. The route provides services between Sherman Oaks, Van Nuys, Panorama City, Pacoima, Granada Hills, Northridge and Chatsworth. The line operates Monday through Friday from 5:30 AM to 9:15 PM. Saturday, Sunday and holiday limited service is available. Headways are at 15-minute intervals during peak time periods. This line stops at the Chatsworth Transportation Center.

Line 167 -- This line operates through the communities of Chatsworth, Northridge, Panorama City, North Hollywood and Studio City. In the project vicinity, the line operates along Plummer Street and De Soto Avenue. This line stops at the Chatsworth Transportation Center. The line operates Monday through Friday from 5:30 AM to 7:00 PM with 8-minute headways during peak periods.

Dash Chatsworth -- This line is operated by the Los Angeles Department of Transportation (LADOT). It is a circular route which operates from major destinations such as the Northridge Fashion Center, Chatsworth High and Junior High Schools, and the Chatsworth Metrolink Station. In the project vicinity, the line operates along De Soto Avenue to Devonshire Street.

Simi Valley Route C -- Route C is operated by the City of Simi Valley. Service is provided between Simi Valley and the Chatsworth Metrolink Station Monday through Friday from 5:30 AM to 7:00 PM.

In addition to the bus services in the study area, Metrolink's Ventura Line provides service in the communities of Moorpark, Simi Valley, Chatsworth, Van Nuys, Burbank and Glendale before going to Union Station in Downtown Los Angeles. The Chatsworth stop is located west of Canoga Avenue between Lassen Street and Devonshire Street.

As indicated by the above information, the proposed development is not directly served by public transit. It is anticipated that service lines will be extended into the project area as the Porter Ranch project developments progress. Thus, it is likely that trips generated by the proposed development will utilize local transit service as a travel mode once existing routes are modified or new routes are added. However, the evaluation of potential project generated traffic impacts was determined based on the assumption that all trips within the study area would be auto-dependent prior to implementation of TDM programs. This assumption was made in order to produce a worst case analysis.

Analysis of Existing Traffic Conditions

An analysis of current traffic conditions was conducted on the streets and highways serving the project area. Detailed traffic analyses of existing conditions were performed at the following eight intersections:

1. Ronald Reagan Freeway (SR-118) Westbound Ramps and De Soto Avenue
2. Ronald Reagan Freeway (SR-118) Eastbound Ramps and De Soto Avenue
3. Rinaldi Street and De Soto Avenue
4. Tulsa Street and De Soto Avenue
5. Chatsworth Street and De Soto Avenue
6. Devonshire Street and De Soto Avenue
7. Chatsworth Street and Mason Avenue
8. Devonshire Street and Mason Avenue

The intersections of De Soto Avenue/SR-118 Westbound Freeway Ramps, De Soto Avenue/SR-118 Eastbound Freeway Ramps, De Soto Avenue/Tulsa Street and Chatsworth Street/Mason Avenue are currently not signalized. In addition to the eight intersections specifically selected for study, two additional intersections in the project vicinity are listed in the Los Angeles CMP as monitoring locations. These intersections,

listed below, require analysis if the project results in 50 or more peak-hour trips through the intersection. These intersections are discussed in Appendix B of this report.

- Devonshire Street and Topanga Canyon Boulevard
- SR-118 Freeway Westbound Ramps and Topanga Canyon Boulevard

The traffic analysis was performed through the use of established traffic engineering techniques. The new traffic counts described earlier were utilized so as to reflect any recent changes in traffic demand patterns. Other data pertaining to intersection geometrics, parking-related curb restrictions, traffic control and signal operations were obtained through field surveys of the study locations.

The methodology used in this study for the analysis and evaluation of traffic operations at each study intersection is based on procedures outlined in Circular Number 212 of the Transportation Research Board.[1] In the discussion of Critical Movement Analysis (CMA) for signalized intersections, procedures have been developed for determining operating characteristics of an intersection in terms of the "Level of Service" (LOS) provided for different levels of traffic volume and other variables, such as the number of signal phases. A reduced capacity of 1,200 vehicles per hour (VPH) was applied to the unsignalized intersections. The term "Level of Service" describes the quality of traffic flow. Levels of Service A to C operate quite well. Level D typically is the level for which a metropolitan area street system is designed. Level E represents volumes at or near the capacity of the highway which might result in stoppages of momentary duration and fairly unstable flow. Level F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages of long duration.

A determination of the LOS at an intersection, where traffic volumes are known or have been projected, can be obtained through a summation of the critical movement volumes

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[1] Interim Materials on Highway Capacity, Circular Number 212, Transportation Research Board, Washington, D. C., 1980.

at that intersection. Once the sum of critical movement volumes has been obtained, the values indicated in Table 1 can be used to determine the applicable LOS.

Table 1
Critical Movement Volume Ranges*
For Determining Levels of Service

Level of Service	Maximum Sum of Critical Volumes (VPH) Two Phase	Three Phase	Four or More Phases
A	900	855	825
B	1,050	1,000	965
C	1,200	1,140	1,100
D	1,350	1,275	1,225
E	1,500	1,425	1,375
F	----------Not Applicable----------		

* For planning applications only, i.e., not appropriate for operations and design applications.

"Capacity" represents the maximum total hourly movement volume of vehicles in the critical lanes which has a reasonable expectation of passing through an intersection under prevailing roadway and traffic conditions. For planning purposes, capacity equates to the maximum value of LOS E, as indicated in Table 1. The (CMA) indices used in this study were calculated by dividing the sum of critical movement volumes by the appropriate capacity value for the type of signal control present or proposed at the study intersections. Thus, the LOS corresponding to a range of CMA values is shown in Table 2.

Table 2
Level of Service
As a Function of CMA Values

Level of Service	Description of Operating Characteristics	Range of CMA Values
A	Uncongested operations; all vehicles clear in a single cycle.	< 0.60
B	Same as above.	0.60 - 0.70
C	Light congestion; occasional backups on critical approaches.	0.70 - 0.80
D	Congestion on critical approaches, but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing lines formed.	0.80 - 0.90
E	Severe congestion with some long-standing lines on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements.	0.90 - 1.00
F	Forced flow with stoppages of long duration.	> 1.00

By applying this analysis procedure to the study intersections, the CMA values and the corresponding LOS for existing traffic conditions were calculated. This study examined both morning and afternoon traffic conditions. The time periods analyzed included the AM peak hour of adjacent street traffic (typically 7:00 - 10:00 AM), which contains the peak arrival time for students of the school, and the afternoon peak period from 3:00 to 6:00 PM. The LOS for the existing (2004) AM and PM peak-hour conditions, are shown in Table 3. (The CMA calculation worksheets for existing conditions are contained in Appendix E of this report.)

Recent field observation of the study intersections found the calculated service levels to be a fairly accurate representation of actual traffic conditions. The intersections that operate at or near capacity are typically the result of heavy turning movement volumes and/or high commuter through volumes requiring multi-phase traffic signal operation.

Table 3
Critical Movement Analysis and Levels of Service Summary
Existing (2004) Traffic Conditions

Intersection	AM Peak Hour CMA	AM Peak Hour LOS	PM Peak Hour CMA	PM Peak Hour LOS
1. SR-118 WB Ramps & De Soto Ave.	0.874	D	0.492	A
2. SR-118 EB Ramps & De Soto Ave.	0.812	D	0.322	A
3. Rinaldi St. & De Soto Ave.	0.875	D	0.981	E
4. Tulsa St. & De Soto Ave.	1.145	F	1.256	F
5. Chatsworth St. & De Soto Ave.	0.950	E	0.921	E
6. Devonshire St. & De Soto Ave.	0.876	D	1.003	F
7. Chatsworth St. & Mason Ave.	0.962	E	0.810	D
8. Devonshire St. & Mason Ave.	0.691	B	0.658	B

Analysis of Existing Freeway Conditions

An examination was also made of freeway conditions on the Ronald Reagan Freeway within the project vicinity. Two freeway segments were selected for this analysis. These segments include the Ronald Reagan Freeway east and west of De Soto Avenue.

Current traffic volumes on these freeway segments were obtained from the most current Caltrans published data.[1] The freeway traffic volumes from year 2002 were growth-factored by two percent per year, consistent with the procedures outlined in the Los Angeles County Congestion Management Program (CMP) Transportation Impact Analysis.[2] Existing freeway geometrics (e.g., number of mainline travel lanes) for each of the segments analyzed were determined from CMP data, aerial photographs, and field surveys. Segment peak hour traffic capacities were computed for each direction using established Highway Capacity Manual (HCM) methodology. As detailed in procedures

[1] 2002 Traffic Volumes on California State Highways Website, State of California Department of Transportation, Sacramento, California.

[2] 2002 Los Angeles County Congestion Management Program (CMP), Metropolitan Transportation Authority (MTA), June 2002.

discussed in the HCM Chapter 3, each mainline travel was assumed to have a capacity of 2,000 vehicles per hour (VPH). High-occupancy vehicle (HOV) lanes were assumed to add 1,600 VPH to the mainline capacity. The total directional capabilities were then computed and used in conjunction with the previously determined peak hour directional freeway segment volumes to calculate the existing (2004) freeway levels of services in the project vicinity. The level of service definitions for the freeway segments are provided in Table 4.

Table 4
Freeway Mainline Level of Service Definitions

D/C Ratio	LOS	D/C Ratio	LOS*
0.00 - 0.35	A	>1.00 - 1.25	F(0)
>0.35 - 0.54	B	>1.25 - 1.35	F(1)
>0.54 - 0.77	C	>1.35 - 1.45	F(2)
>0.77 - 0.93	D	>1.45	F(3)
>0.93 - 1.00	E		

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

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

Table 5 details the four existing (2004) study freeway segment volumes with the corresponding levels of service. As shown in Table 5, the Ronald Reagan Freeway is currently operating within capacity.

Table 5
Existing (2004) Ronald Reagan (SR-118) Freeway Conditions

Fwy Segment	Peak Period	Dir.	No. Lanes	Capacity	Daily Volume	Peak Hour	D/C Ratio	LOS
1. West of De Soto Ave.	AM	EB	5*	9,600	130,050	7,262	0.756	C
		WB	5*	9,600		5,259	0.548	C
	PM	EB	5*	9,600		6,193	0.645	C
		WB	5*	9,600		7,271	0.757	C
2. East of De Soto Ave.	AM	EB	5*	9,600	155,020	8,198	0.854	D
		WB	5*	9,600		5,936	0.618	C
	PM	EB	5*	9,600		6,991	0.728	C
		WB	5*	9,600		8,207	0.855	D

* Includes HOV Lane

PROJECT TRAFFIC

The following section describes the methodology used to determine the trip generation, distribution and assignment of the proposed school project.

Traffic Generation

Following pre-study project meetings and discussions with LADOT staff, project trip generation was computed using data documented in the 6th edition Trip Generation manual, published by the Institute of Transportation Engineers (ITE) and LADOT studies. This data, for Land Use 530 "High School" is used for the daily trip generation, Land Use 521 "Private School " for the AM peak hour (no data available for daily rates), and trip generation rates based upon LADOT studies for the PM peak hour is summarized in Table 6 below.

Table 6
Project Trip Generation Rates

Private School - (trips per student)

Daily:	T = 1.79 (S)
AM Peak Hour:	T = 0.92 (S); I/B = 60%, O/B = 40%
PM School Peak:	T = 0.42 (S); I/B = 40%, O/B = 60%

Where:

T = trip ends	I/B = inbound percentages
S = students	O/B = outbound percentages

On the basis of the above traffic generation rates and assumptions, projections of the amount of new traffic to be generated by the proposed site were derived, as shown in Table 7. The project is expected to generate 984 daily vehicles trips, with 506 (304 inbound and 202 outbound) vehicle trips during the AM peak hour and 231 (88 inbound, 143 outbound) vehicle trips during the school PM peak hour.

Table 7
Project Traffic Generation

	Daily	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
Proposed Uses					
Sierra Canyon School: 550-student high school	984	304	202	88	143

The above traffic generation was used in this report to determine project traffic effects. This trip generation estimate will provide a "worst case" project traffic impact analysis for several reasons.

Private schools draw students from much larger regions than public schools; however, private schools also exercise a great deal of control over the trip-making activities associated with their students. Mandatory carpooling and shuttle/bus programs to reduce vehicle trips are not uncommon features, and in some cases are prerequisites for admission. These programs substantially reduce trips produced by such schools. Sierra Canyon School already has some programs of this type in place which have resulted in substantial trip reductions, and is proposing to introduce some of these programs catered to the new high school. A draft TDM program for the school is contained in Appendix A to this report. Implementation of the programs contained in the draft TDM program could reduce the site's trip generation daily and during its peak hours substantially.

Trip Distribution

Determination of the geographic distribution of generated trips was the next step in the process. The primary factor affecting trip distribution is the relative distribution of the school population which would utilize the proposed project and the origin/destination points of the single family residents. The distribution for the school was based upon the current enrollment at the elementary and secondary Sierra Canyon School. It is likely