APPENDIX E

TRAFFIC REPORT

DRAFT

TRAFFIC ANALYSIS FOR A PROPOSED RETAIL/COMMERCIAL DEVELOPMENT AT 11711 SAN VICENTE BOULEVARD

Prepared for:

BRENTWOOD PARK, LTD

Prepared by:

Crain & Associates
2007 Sawtelle Boulevard, Suite 4
Los Angeles, California 90025
(310) 473-6508

Revised July 2000

EXECUTIVE SUMMARY

The project under consideration is the development of a three-story, approximately 54,313 square foot retail project located on the northwest corner of San Vicente Boulevard and Barrington Avenue in the Brentwood-Pacific Palisades District of Los Angeles. The site is presently separated into two parts by Gorham Avenue, which is proposed to be vacated. The vacated portion of Gorham Avenue and the two existing properties will be combined to form the project site. Current land uses on the site, a 4,520 square foot flower market, a 2,950 square foot pharmacy, a 1,028 square foot restaurant/coffee shop and a 630 square foot ice cream parlor, will be removed, but may be relocated back into the finished project.

The study shows that vacating the portion of Gorham Avenue adjacent to the site can simplify traffic flow and decrease congestion. Further, through the development of the project, the median island on San Vicente Boulevard at (existing) Gorham Avenue will be redesigned to further improve traffic conditions while enhancing intersection and pedestrian safety.

Parking for the project, as currently planned, is to be provided by a new multi-level, approximately 266-space subterranean parking structure. Access to the structure will be provided via a single driveway along San Vicente Boulevard near the western limits of the project. Left-turn driveway access from eastbound San Vicente Boulevard into the new project driveway would be allowed via a modification of the raised median island and traffic signal at Gorham Avenue and San Vicente Boulevard in much the same manner they are currently allowed to the east leg of Gorham Avenue. Westbound left-turns from San Vicente Boulevard to westbound Gorham Avenue would continue to be allowed through provision of a left-turn pocket in the San Vicente Boulevard median. Eastbound Gorham Avenue traffic would continue to be allowed to make both left and

right turns at San Vicente Boulevard. Exiting traffic from the project site would be restricted to right-turns-only to San Vicente Boulevard at the driveway, but would be permitted to make both left and U-turns at the reconstructed Gorham Avenue intersection. This scenario would prevent the need for U-turns at Barrington Avenue and San Vicente Boulevard for inbound project traffic, and is the preferred access scenario. Other project access options involving right-turn-in/right-turn-out driveway operations or parking structure access from Barrington Avenue or from the alley north of the site were also evaluated but are not detailed in this report as a result of significant access constraints or operational issues. Service access will be provided from the alley, although parking structure access options from the alley are not feasible due to geometric difficulties, lack of left-turn queueing space, conflicting traffic volumes, limited weaving maneuver distances, and grade differences.

Based on trip generation rates specified by the City of Los Angeles Department of Transportation (LADOT), the project, after it is completed, could generate an estimated net new 2,312 daily trips, with 54 net peak hour trips in the morning and 212 net trips in the afternoon. As discussed later in this report, most of the project traffic is likely to already be traveling on the study area street system, with origins or destinations at nearby residential or commercial locations. Based on these trips generation rates, project-related traffic is expected to significantly impact the following three intersections during the peak hours indicated, prior to mitigation.

<u>AM Peak Hour Impacts</u>

- San Vicente Boulevard and Barrington Avenue

<u>PM Peak Hour Impacts</u>

- San Vicente Boulevard and Barrington Avenue
- San Vicente Boulevard and Montana Avenue

- Montana Avenue and Barrington Avenue

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

- Adaptive Traffic Control System (ATCS) Upgrades -- The project will fund the design and implementation of a 53-intersection ATCS upgrade to the existing West Los Angeles Automated Traffic Surveillance and Control (ATSAC) system. The new ATCS enhances an intersection's capacity by adjusting its signal timing in real time while monitoring the traffic flow from adjacent ATCS intersections. At intersections anticipated for ATCS implementation, a three percent capacity reduction was taken on top of the existing seven percent reduction from ATSAC, as discussed with LADOT.

  Funding for the ATCS upgrade may be guaranteed through a combination of cash payment and letter of credit, prior to the issuance of any building permit. If, prior to the construction of the ATCS upgrade, the Los Angeles Department of Transportation (LADOT) were to accept traffic mitigation measures involving ATCS from other development projects impacting one or more of the same 53 intersections, a partial reimbursement to the project applicant will be considered by the LADOT staff.

- Montana Avenue and Barrington Avenue -- This intersection is included within the 53-intersection ATCS upgrade area, to which the project will fund the design and implementation.

- San Vicente Boulevard and Montana Avenue -- This intersection is included within the 53-intersection ATCS upgrade area, of which the project will fund the design and implementation.

- o San Vicente Boulevard and Barrington Avenue -- Widen Barrington Avenue adjacent to the project frontage. Restripe the intersection to install an exclusive southbound right-turn lane on Barrington Avenue, in addition to one through lane and one left-turn lane. Additionally, participate in the City proposed widening of the east side of Barrington Avenue by 12 feet on the northbound approach and restripe this approach to install a left-turn lane, one through lane, and right-turn lane. Modify the median islands on San Vicente Boulevard to improve pedestrian crossings. This intersection is also included within the 53-intersection ATCS upgrade area, of which the project will fund the design and implementation.

In addition to these mitigation improvements, the project should realign the southern approach of Gorham Avenue at San Vicente Boulevard in order to provide a more right-angle intersection. While technically not necessary to mitigate any project impacts, this improvement should take place as part of the Gorham Avenue vacation and subsequent modification of San Vicente Boulevard at this location, in order to provide a more acceptable right-angle intersection and to enhance project site access. The current four-leg intersection will be converted to a "T" intersection. As part of this improvement, north-eastbound Gorham Avenue should provide one left-turn lane, and one right-turn lane to enhance intersection operations. Further, as a site access condition, the project should reconstruct the median island on San Vicente Boulevard near the project site (at Gorham Avenue) to retain eastbound left turns into the project site. This configuration would further improve traffic flow and enhance pedestrian safety in the project area by eliminating the potential for high U-turn volumes on San Vicente Boulevard at Barrington Avenue.

By constructing the project access improvements and mitigation measures described above, project traffic impacts will be mitigated to levels of insignificance at all study intersections. In fact, the project mitigation package will add more capacity to the study area street system than would be used by the project, and future traffic conditions can be expected to improve over projected future Without Project conditions once the project is constructed with the above described measures.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

The developer, Brentwood Park, Ltd., plans to develop an approximately 54,313 square foot retail/commercial project on the northwest corner of San Vicente Boulevard and Barrington Avenue. The proposed project site is currently divided into two parcels by Gorham Street, which is proposed to be vacated and incorporated into the developed area of the site. The northern portion of the site is presently occupied by a 4,520 square foot flower shop and a 2,950 square foot pharmacy. The southern parcel is developed with a 1,028 square foot restaurant/coffee shop and a 630 square foot ice cream parlor. The location of the project is shown on Figure 1, Site Vicinity Map. Brentwood Park, Ltd. 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 and projected future 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 11 intersections.

- Sunset Boulevard and Barrington Avenue
- San Vicente Boulevard and Bundy Drive (West)
- San Vicente Boulevard and Bundy Drive (East)
- San Vicente Boulevard and Montana Avenue
- San Vicente Boulevard and Gorham Avenue
- San Vicente Boulevard and Barrington Avenue
- Montana Avenue and Bundy Drive
- Montana Avenue and Barrington Avenue
- Barrington Avenue and Gorham Avenue

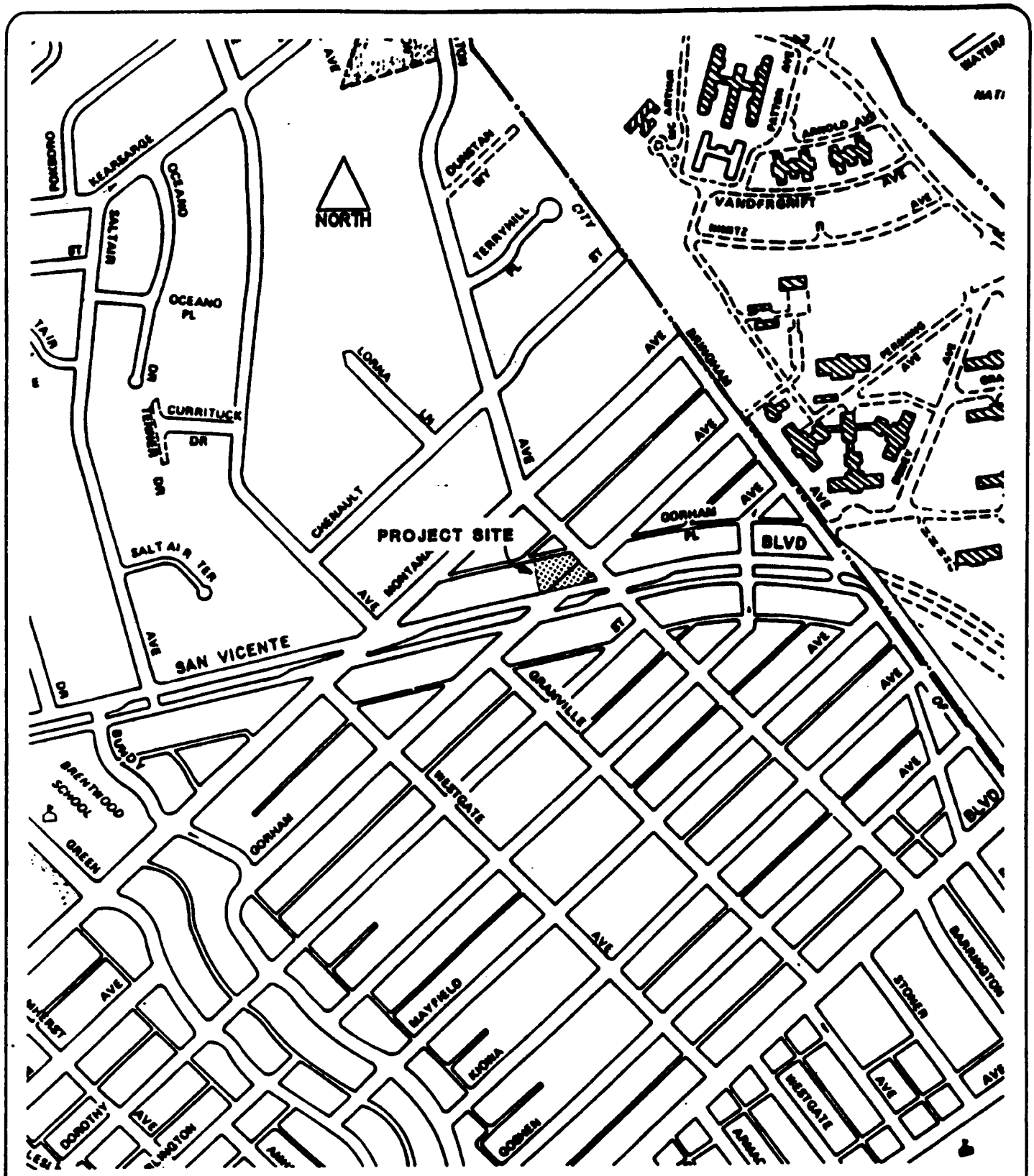

FIGURE 1

SITE VICINITY MAP

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

- Wilshire Boulevard and Barrington Avenue
- Wilshire Boulevard and San Vicente Boulevard/Federal Avenue

These locations are intersections within the area immediately surrounding the project site. As such, they include the intersections expected to be most directly impacted by the proposed project's traffic generation.

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

- Wilshire Boulevard and Sepulveda Boulevard
- Wilshire Boulevard and 26th Street
- Santa Monica Boulevard and Bundy Drive
- Santa Monica Boulevard and Cloverfield Avenue

None of the CMP locations meet the criteria for potential impacts, and as a result, were not examined in detail in order to assess precise project impacts. However, the results of the supplemental CMP intersection assessment are summarized in the Appendix of this report.

PROJECT DESCRIPTION

The project under consideration is the development of an approximately 54,313 square foot retail/ commercial center, including an approximately 1,650 square foot open air balcony on the second floor of the structure, which could potentially be utilized as outdoor seating. This area was included in the project's square footage calculations per the recommendation of the City's Department of Building and Safety. The site is on the northwest corner of San Vicente Boulevard and Barrington Avenue, located in the Brentwood-Pacific Palisades District of the City of Los Angeles. The project is planned for development on two separate sites currently divided by Gorham Avenue. The northern portion is bounded by San Vicente Boulevard, Gorham Avenue, Barrington Avenue, and the alley north of Gorham Avenue. The southern portion is bounded by San Vicente Boulevard, Barrington Avenue and Gorham Avenue. The current land uses on the site, a 4,520 square foot flower shop and 2,950 square foot pharmacy on the northern part, and a 1,028 square foot specialty coffee shop and 630 square foot ice cream parlor on the southern part, will be removed to construct the proposed project. The existing tenants may be relocated into the finished project.

Parking for the project will be provided by a multi-level, approximately 266-space subterranean structure (see Figure 2, Site Plan). This amount of parking is sufficient to meet the requirements of the Westwood-West Los Angeles-Brentwood-Pacific Palisades Interim Control Ordinance (WWLA ICO), which is in effect for the project site. The WWLA ICO parking requirements are more stringent than those outlined in the San Vicente Scenic Corridor Specific Plan. Access to the parking structure will be provided by a single commercial driveway along San Vicente Boulevard. This driveway will be restricted to right-turn-out operations, but all other moves will be permitted. Service access to the site will be provided from the alley along the north side of the project.

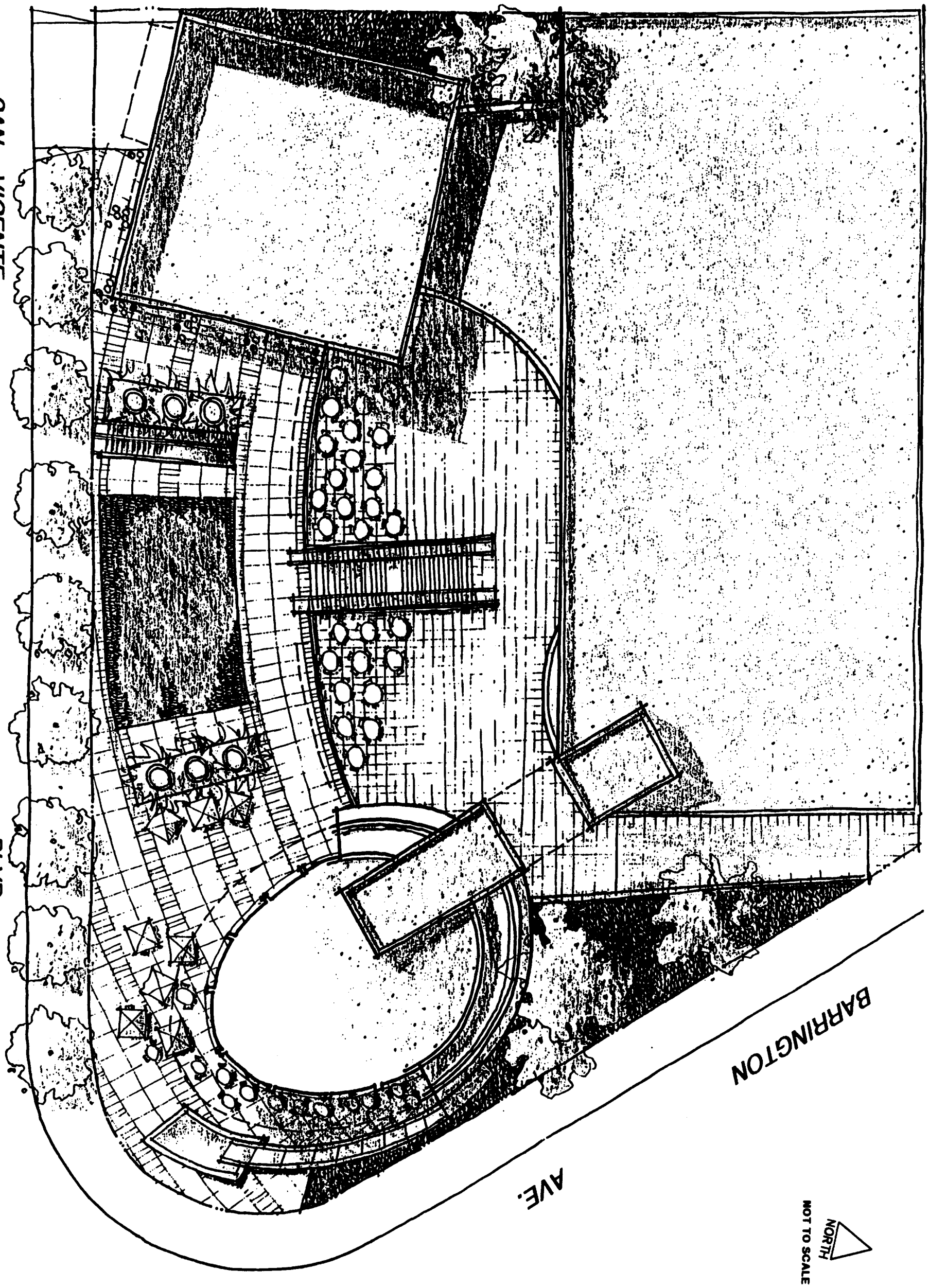

FIGURE 2

7/7/2000

FN BARRSANV\FIG2

CONCEPTUAL PROJECT SITE PLAN

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

ENVIRONMENTAL SETTING

The site of the proposed project is located in the Brentwood-Pacific Palisades District on the west side of the City of Los Angeles, and is situated on the north side of San Vicente Boulevard, west of Barrington Avenue. The project study area is primarily residential in nature, although development along San Vicente Boulevard in the immediate vicinity of the project site is predominately a mixture of commercial and retail land uses. Currently, pedestrian volumes near the project are among the highest on the Westside. Intensifying nearby multi-family residential development also creates increased travel demands into, out of and through the area.

Freeways

Two freeways serve the project area. The facilities, described below, provide regional access for the project and the surrounding vicinity.

The San Diego Freeway (I-405) is a north-south oriented freeway located approximately three-quarters of a mile east of the project site. This facility typically provides four mainline travel lanes per direction, although additional auxiliary lanes are present in the project area between some sets of on- and off-ramps. The San Diego Freeway provides a Westside service alternative route to the Golden State Freeway (I-5) which travels through Downtown Los Angeles approximately 13 miles to the east. Access to the project area surface street network is provided by full sets of on- and off-ramps at Sunset Boulevard, Wilshire Boulevard and Santa Monica Boulevard. Access to a partial interchange at Montana Avenue/Waterford Street is blocked by the Veterans Administration facilities.

The Santa Monica Freeway (I-10) is the primary east-west freeway in this portion of the Los Angeles Basin. This facility, located approximately two miles south of the project, provides a continuous route from Santa Monica through Downtown Los Angeles and

continues eastward through San Bernardino and Riverside Counties. The Santa Monica Freeway also provides four mainline travel lanes in each direction, with auxiliary lanes between some ramp locations. Westbound off- and eastbound on-ramps are provided at Bundy Drive, south of the project site. The Santa Monica Freeway also provides a full interchange with the San Diego Freeway.

Streets and Highways

San Vicente Boulevard is an east-west oriented divided Major Highway in the project vicinity. Near the project site, this four-lane facility varies between 100 and 120 feet wide, including the raised, landscaped median island, and provides left-turn channelization at major cross streets. One-hour metered parking is permitted between 8 AM and 6 PM on the westbound side of San Vicente Boulevard, and between 9 AM and 6 PM on the eastbound side. "No Stopping" prohibitions exist between 7 AM and 9 AM for eastbound travel on this facility.

Wilshire Boulevard is designated a Major Highway and has been developed to a width of 76 to 80 feet in the vicinity of the proposed project. Typically, during most periods of the day, this street provides two through traffic lanes in each direction with left-turn channelization at intersections. West of San Vicente Boulevard, during the day (8 AM to 4 PM), two-hour metered on-street parking is allowed on both sides of the street, and parking is generally prohibited during the peak hours. East of San Vicente Boulevard, Wilshire Boulevard is improved to at least 80 feet wide and provides six lanes to accommodate the high traffic demands through Westwood Village and near the San Diego Freeway. Wilshire Boulevard is improved at Sepulveda Boulevard to approximately 130 feet wide, and provides four through lanes per direction and left-turn channelization, with dual left-turn lanes accommodating the westbound left-turn traffic. Parking is prohibited at all times along this section, and dual left-turn lanes have been installed along Wilshire Boulevard at some of the most critical intersections.

Barrington Avenue, near the project area, is designated a Secondary Highway. This north-south roadway provides a single travel lane in each direction and varies in width throughout its length, but is approximately 40 feet wide at the project site near San Vicente Boulevard. Left-turn channelization is provided at Wilshire Boulevard and Santa Monica Boulevard. Parking is permitted along most sections of Barrington Avenue.

Bundy Drive has been designated a Secondary Highway from south of Wilshire Boulevard to north of Pico Boulevard, and a collector street for a portion of its length between Wilshire Boulevard and Sunset Boulevard. Bundy Drive is primarily 40 feet in width north of Wilshire Boulevard, but flares to 58 feet north of Montana Avenue and to 54 feet north of Santa Monica Boulevard. Throughout most of the study area, Bundy Drive is striped to provide a single through lane in each direction. Parking is generally allowed on both sides of Bundy Drive throughout the study area.

Montana Avenue is designated a Secondary Highway west of San Vicente Boulevard and becomes a local street to the east of San Vicente Boulevard. Montana Avenue is 56 feet wide and provides two lanes per direction east of Bundy Drive and 44 feet wide with one lane per direction west of Bundy Drive. Right-turns-on-red are prohibited from Montana Avenue at San Vicente Boulevard and for westbound Montana Avenue at Barrington Avenue. Parking is unrestricted along much of Montana Avenue.

Gorham Avenue is an east-west oriented local street in the project vicinity, providing primarily residential access along much of its length. Gorham Avenue is less than one mile in length, servicing the area between Bringham Avenue, east of Barrington Avenue to Wellesley Avenue near the City's boundary with the City of Santa Monica, although it is discontinuous between Bundy Drive and Gretna Green Way. In the project vicinity, Gorham Avenue is approximately 40 feet wide, and is striped to provide a single travel lane in each direction. Parking is generally allowed along both sides of the street, with

some of this parking being metered along those portions of Gorham Avenue that travel through commercial areas.

Federal Avenue is a variable width collector street near the project. At Wilshire Boulevard, where it becomes San Vicente Boulevard, Federal Avenue is 98 feet wide, and provides two southbound lanes and one through lane northbound, as well as one left-only and one right-only lane. Federal Avenue narrows to 60 feet at Texas Avenue, where it is striped to allow two travel lanes per direction. South of Texas Avenue, Federal Avenue narrows to 40 feet, and provides one lane per direction. Left-turn lanes are provided at Ohio Avenue and at Santa Monica Boulevard. Parking is permitted along most of Federal Avenue.

Sunset Boulevard is an east-west scenic Major Highway in the study area. Through much of the Westside, Sunset Boulevard is a 50-foot wide roadway, providing two travel lanes per direction, with left-turn channelization at important intersections. Near the San Diego Freeway, Sunset Boulevard widens to approximately 90 feet, to provide additional through and turn lanes to accommodate traffic to and from the freeway ramps. Parking is prohibited along both sides of Sunset Boulevard.

Existing Traffic Volumes

Traffic volume count data were obtained from recent counts performed by The Traffic Solution. These counts represent traffic volumes for average mid-week conditions for weeks containing no holidays. The counts were conducted in late 1998 and were assumed to be representative of current traffic conditions. The existing (1999) traffic volumes during the AM and PM peak periods for the study intersections are summarized on the following pages and are shown on Figures 3(a) and 3(b).

The San Diego Freeway is one of the most important traffic facilities on the Westside. Near Wilshire Boulevard, the San Diego Freeway carries in excess of 300,000 vehicles

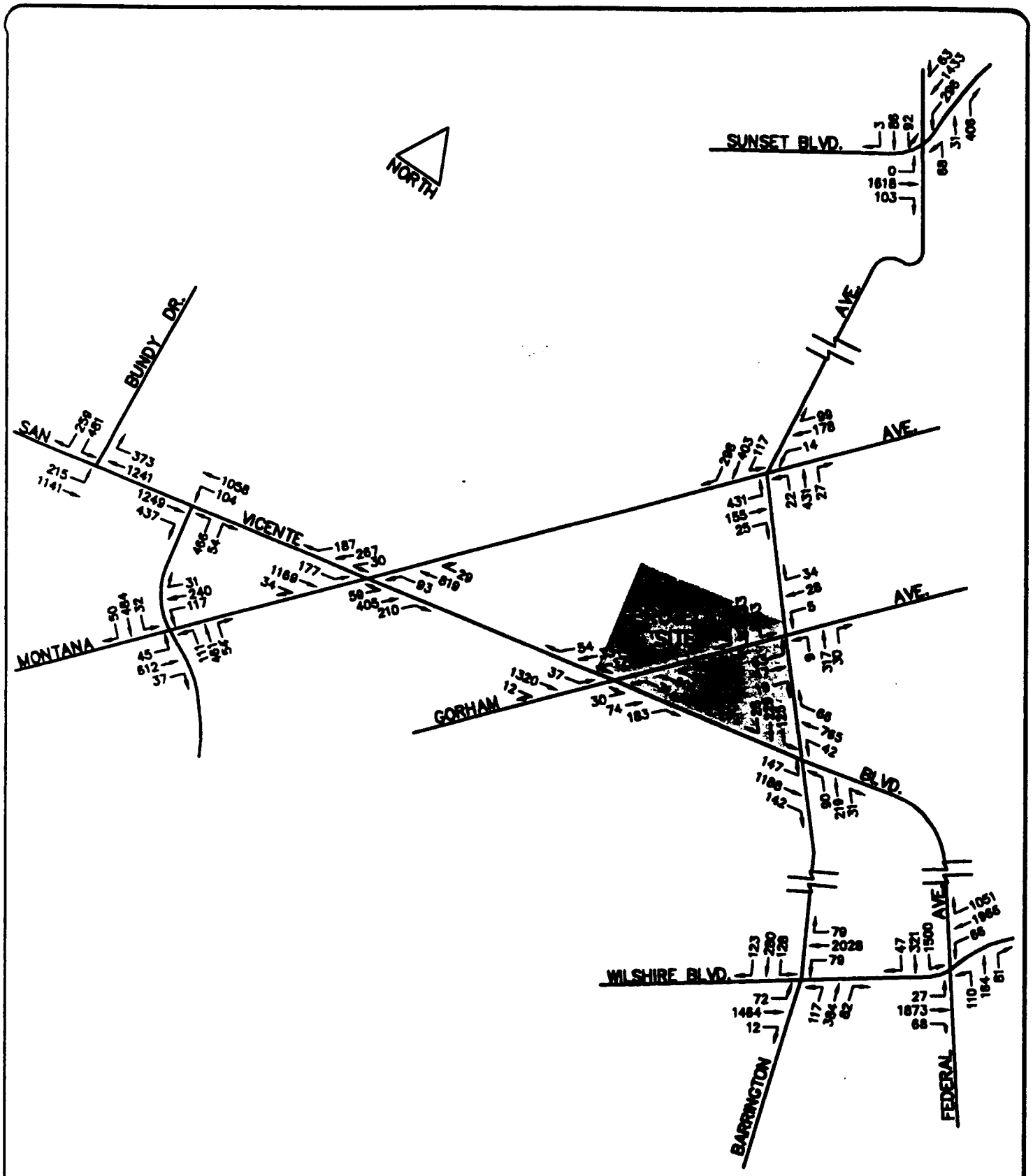

FIGURE 3(a)

3/19/1999

FN: BARRSANV\AM1999

EXISTING (1999) TRAFFIC VOLUMES
AM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

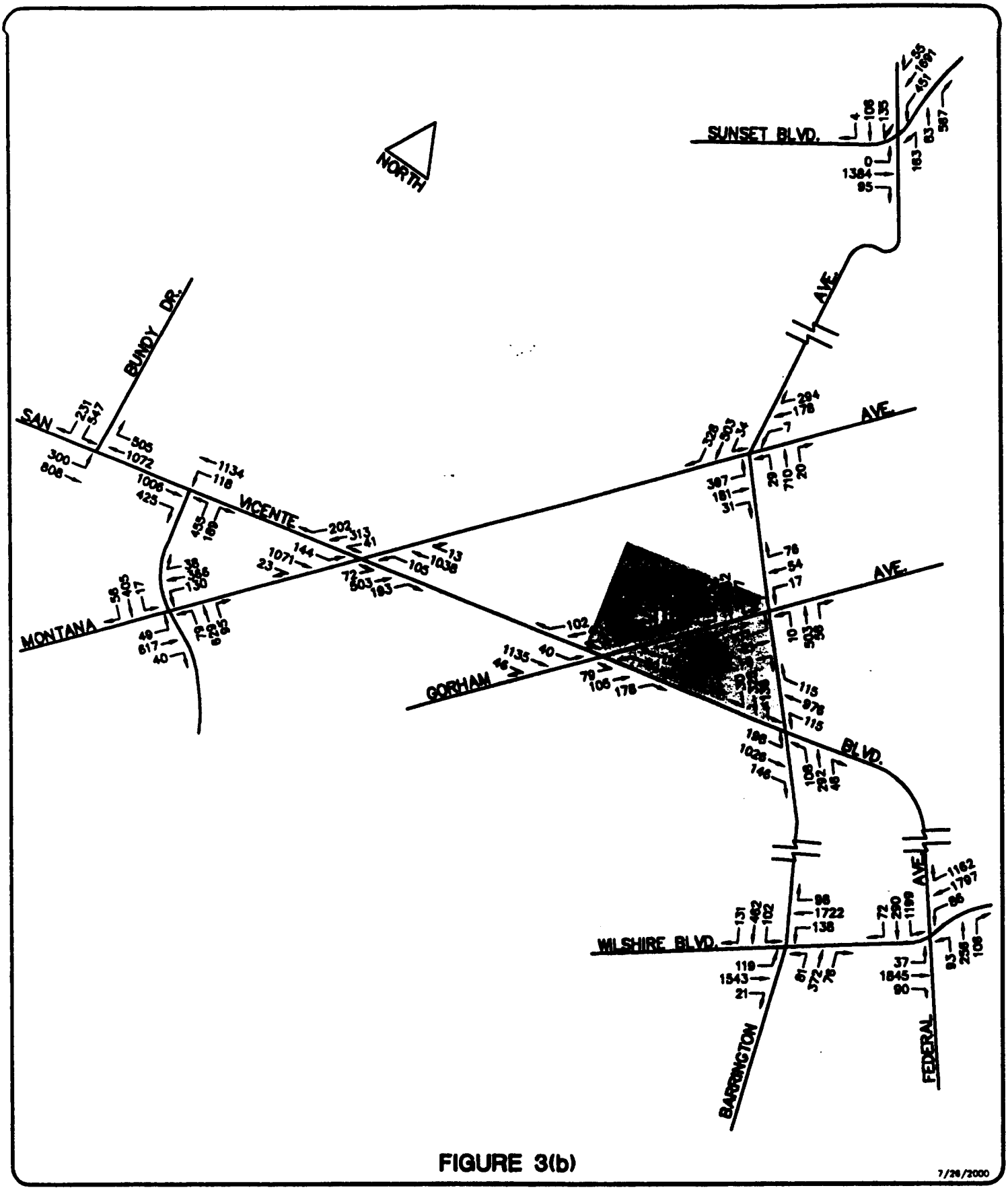

FIGURE 3(b)

7/26/2000

I:\: BARRSANV\PM1999

EXISTING (1999) TRAFFIC VOLUMES
PM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

per day (VPD), with peak hour volumes approximately 21,000 vehicles per hour (VPH). At the interchange with the Santa Monica Freeway, daily volumes are approximately 316,000 VPD, while peak hour traffic volumes approach 22,000 VPH.

The Santa Monica Freeway is another major traffic carrying facility. Near Bundy Drive, the Santa Monica Freeway carries more than 190,000 VPD, with the volumes increasing to approximately 230,000 VPD at the interchange with the San Diego Freeway. Peak hour volumes approach 15,000 VPH at Bundy Drive, and exceed 17,000 VPH at the San Diego Freeway interchange.

San Vicente Boulevard at Barrington Avenue carries approximately 35,000 VPD. Directional peak hour volumes on San Vicente at this location are approximately 1,500 VPH eastbound and 900 VPH westbound during the morning and 1,100 VPH westbound and 1,300 VPH eastbound in the afternoon.

Wilshire Boulevard is one of the most heavily traveled east-west streets in the area. Near Barrington Avenue, Wilshire Boulevard carries approximately 49,000 VPD. Directional peak hour traffic volumes along this section of Wilshire Boulevard are approximately 1,500 VPH eastbound and 2,200 VPH westbound during the morning and approximately 2,000 VPH westbound and 1,700 VPH eastbound in the afternoon.

Barrington Avenue at San Vicente Boulevard carries approximately 12,000 VPD. Directional peak hour traffic volumes are approximately 300 VPH southbound and 350 VPH northbound during the AM peak hour and approximately 500 VPH southbound and 400 VPH northbound during the PM peak hour.

Bundy Drive at San Vicente Boulevard carries daily traffic volumes in excess of 28,500 VPD. Directional peak hour volumes in the project vicinity are approximately 900 VPH northbound and 1,200 VPH southbound during the morning peak hour and

approximately 1,150 VPH northbound and 1,200 VPH southbound during the evening peak hour.

Montana Avenue at San Vicente Boulevard exhibits daily traffic volumes in excess of 17,000 VPD. Directional peak hour traffic volumes at San Vicente Boulevard are approximately 700 VPH eastbound and 500 VPH westbound during the AM peak hour and approximately 800 VPH eastbound and 550 VPH westbound during the PM peak hour.

Gorham Avenue currently carries an estimated 6,000 VPD along the segment between San Vicente Boulevard and Barrington Avenue. Peak hour directional volumes at this location are approximately 100 VPH eastbound and 300 VPH westbound in the morning, and 350 VPH eastbound and 150 VPH westbound in the afternoon peak hour.

Federal Avenue, south of Wilshire Boulevard handles daily traffic volumes of approximately 13,000 VPD. Peak directional traffic is approximately 600 VPH northbound and 500 VPH southbound during the AM peak hour and approximately 350 VPH northbound and 500 VPH southbound during the PM peak hour.

Sunset Boulevard, near Barrington Avenue, carries nearly 60,000 VPD, with peak hour directional volumes of 1,700 VPH eastbound and 1,800 VPH westbound in the AM and 2,200 VPH westbound and 1,500 VPH eastbound in the PM peak hour.

Public Transit

The Los Angeles County Metropolitan Transportation Authority (MTA) as well as the Santa Monica Municipal Bus Lines (SMMBL) have developed a system of bus routes serving the project area. MTA and SMMBL bus routes are within reasonable walking distance of the proposed project and could be used by patrons or employees traveling to and from the proposed facilities. These routes are described below.

MTA Lines 22 and 322 -- These lines operate along San Vicente Boulevard, providing service between Santa Monica and Downtown Los Angeles. Headways along this route are approximately 10 minutes during peak periods of the weekday schedule. Line 322 provides limited-stop service during the AM and PM peak periods.

In addition to the MTA bus routes, the Santa Monica Municipal Bus Lines also operate bus routes in the project vicinity. Some of these routes offer connections to the MTA lines.

SMMBL Route 3 -- This route originates at UCLA and provides service along Wilshire Boulevard, San Vicente Boulevard and Montana Avenue in the project area. Route 3 continues west on Montana Avenue to Lincoln Boulevard, turning south to serve Santa Monica, Venice, and Los Angeles International Airport. Bus headways in the project vicinity are approximately every ten minutes between 6:30 AM and 5:00 PM. Headways increase to a half hour between 6:35 PM to 11:30 PM.

Although these lines are the only ones that provide "front door" service to the project, several additional lines serve the adjacent areas along Sunset Boulevard, Bundy Drive and Wilshire Boulevard. When transfer opportunities to these routes are considered, much of the Los Angeles Metropolitan area can be conveniently accessed via public transportation to and from the proposed project site.

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 11 intersections:

- Sunset Boulevard and Barrington Avenue
- San Vicente Boulevard and Bundy Drive (West)

- San Vicente Boulevard and Bundy Drive (East)
- San Vicente Boulevard and Montana Avenue
- San Vicente Boulevard and Gorham Avenue
- San Vicente Boulevard and Barrington Avenue
- Montana Avenue and Bundy Drive
- Montana Avenue and Barrington Avenue
- Barrington Avenue and Gorham Avenue
- Wilshire Boulevard and Barrington Avenue
- Wilshire Boulevard and San Vicente Boulevard/Federal Avenue

In addition to the 11 intersections specifically selected for study, four 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 the Appendix of this report.

- Wilshire Boulevard and Sepulveda Boulevard
- Wilshire Boulevard and 26th Street
- Santa Monica Boulevard and Bundy Drive
- Santa Monica Boulevard and Cloverfield Avenue

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 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 for signalized intersections, procedures have been developed for determining operating characteristics of an intersection in terms of the "Level of Service" provided for different levels of traffic volume and other variables, such as the number of signal phases. 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 Level of Service at an intersection, where traffic volumes are known or have been projected, can be obtained through a summation of the critical movement volumes 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 Level of Service.

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

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 Level of Service E, as indicated in Table 1. The Critical Movement Analysis (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 Level of Service 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 Critical Movement Analysis (CMA) values and the corresponding Levels of Service (LOS) for existing traffic conditions were calculated. Those values, for existing (1999) AM and PM peak hour conditions, are shown in Table 3.

Table 3
Critical Movement Analysis Summary
Existing (1999) Conditions

Intersection	AM Peak Hour CMA	AM Peak Hour LOS	PM Peak Hour CMA	PM Peak Hour LOS
Sunset Boulevard & Barrington Avenue	1.057	F	1.170	F
San Vicente Boulevard & Bundy Drive (West)	0.702	C	0.728	C
San Vicente Boulevard & Bundy Drive (East)	0.623	B	0.592	A
San Vicente Boulevard & Montana Avenue	0.625	B	0.733	C
San Vicente Boulevard & Gorham Avenue	0.527	A	0.675	B
San Vicente Boulevard & Barrington Avenue	0.628	B	0.820	D
Montana Avenue & Bundy Drive	0.922	E	1.034	F
Montana Avenue & Barrington Avenue	0.713	C	0.919	E
Barrington Avenue & Gorham Avenue	0.311	A	0.533	A
Wilshire Boulevard & Barrington Avenue	0.659	B	0.665	B
Wilshire Boulevard & San Vicente Boulevard/ Federal Avenue	0.931	E	0.931	E

Recent field observation of the study intersections found the calculated service levels to be fairly typical of West Los Angeles traffic conditions, with some locations operating at or near capacity during both the morning and afternoon peak hours.

PROJECT TRAFFIC

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

Traffic Generation

As recommended by LADOT staff, project trip generation was computed using rates noted in the West Los Angeles Traffic Improvement and Mitigation Specific Plan Ordinance (TIMP). Although the project as proposed contains a variety of commercial uses, LADOT recommended the calculation of trip generation based on the assumption that the entire project would be leased as retail space, which provides a "worst case" project trip generation scenario. Trip generation for the project was based on the TIMP "Shopping Center" rates, rather than "Specialty Retail" or "Other Retail" uses. This was done in order to account for the interactive use of all components of the project, as opposed to individual or "stand alone" shops. Use of this rate is also assumed to intrinsically include up to 20 percent, or about 10,960 square feet, of restaurant area, as well as some office use. Trip generation rates provided in the TIMP are given for PM peak hour conditions only; daily and AM peak hour trip generation rates, as well as inbound/outbound traffic splits were derived via a comparison to rates noted in the 6th Edition Trip Generation manual published by the Institute of Transportation Engineers (ITE). Daily and morning trip rates were developed by computing the ITE ratio for "Daily vs. PM", and "AM vs. PM", then applying these factors to the TIMP PM peak hour rates. Trip generation rates for the existing site uses to be removed were calculated in the same manner. However, the TIMP uses a sliding scale for retail trip generation, based on the overall size of the development. As a result, the proposed project and the existing retail uses exhibit different trip rates. The rates used for this study are shown in Table 4.

Table 4
Project Trip Generation Rate

Proposed Project (trips per 1,000 sq. ft.)

Daily:	T = 90.28(A)
AM Peak Hour:	T = 2.18(A); I/B = 61%, O/B = 39%
PM Peak Hour:	T = 8.23(A); I/B = 48%, O/B = 52%

Existing Uses (trips per 1,000 sq. ft.)

Daily:	T = 114.88(A)
AM Peak Hour:	T = 3.01(A); I/B = 61%, O/B = 39%
PM Peak Hour:	T = 10.16(A); I/B = 48%, O/B = 52%

A = building area in 1,000s of square feet; I/B = inbound trips;
T = trip ends; O/B = outbound trips

In addition to the basic trip generation rates listed in Table 4, LADOT allows a 40 percent reduction in trip generation for the project to account for "pass-by" trips to the project. Pass-by trips are trips that currently exist on the street system that will use the new project facilities as a stop along an already-planned trip. (Note: the pass-by reductions were not applied to the three project-adjacent intersections of San Vicente Boulevard at Barrington Avenue and at Gorham Avenue, or at Barrington Avenue at Gorham Avenue, per LADOT policy). 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 5. These trip generation levels were used in the following analysis to determine project traffic effects.

Table 5
Project Traffic Generation

Proposed Uses	Daily	AM Peak Hour Inbound	AM Peak Hour Outbound	PM Peak Hour Inbound	PM Peak Hour Outbound
54,313 sq. ft. Retail	4,904	72	46	215	232
Less 40% Pass-By	(1,962)	(29)	(18)	(86)	(93)
Net Trips - Proposed Uses	2,942	43	28	129	139
Existing Uses (to be removed)					
9,128 sq. ft. Retail	1,048	17	11	45	48
Less 40% Pass-By	(418)	(7)	(4)	(18)	(19)
Net Existing Trips Removed	630	10	7	27	29
Net Site Generation Increase	2,312	33	21	102	110

Trip Distribution

Determination of the geographic distribution of generated trips was the next step in the process. A primary factor affecting trip distribution is the relative distribution of jobs and population which would attract and generate prospective employees and patrons of the proposed project. LADOT recommended a regional distribution for project-related trips based on travel pattern data from the Los Angeles County CMP and observed vehicular turning movements. The percentage split of trips, by direction, is shown in Table 6.

Table 6
Directional Project Trip Distribution

Direction	Percentage of Trips
West	25%
North	20%
South	35%
East	20%
Total:	100%

Traffic Assignment

The assignment of project traffic to the street and highway systems was accomplished in two steps. Using the directional distribution percentages for the surface streets developed previously, the number of trips in each direction was calculated. The second step was to assign these trips to specific routes serving the project area. The results of the traffic assignment provide the necessary level of detail to conduct the traffic analysis. A trip percentage distribution is shown in Figure 4, Project Percentage Distribution. The results of the traffic assignments are shown in Figures 5(a) and 5(b), Net Project Traffic, which estimate the project AM and PM peak hour traffic on the nearby street system. These figures show net increases on the area roadway system due to the project, and include reductions for removal of the traffic generated by the existing site uses and the effects of the previously discussed "pass-by" phenomenon. Project traffic was assigned to the future street system assuming Gorham Avenue had been vacated, as described in a later section of this report. The traffic assignment also indicated that the four CMP intersections previously identified do not meet the criteria set forth in the CMP for required analysis. Therefore, these locations were not analyzed in detail, although project volumes through the four intersections, and a discussion of the CMP analysis criteria, are included in the Appendix.

Access and Parking

Access at the existing northern portion of the project is provided by two driveways along Gorham Avenue. These driveways allow access to the two existing surface-level parking lots. The easternmost driveway provides access to the surface parking lot used by patrons of the flower shop, and the specialty coffee shop and ice cream parlor on the southern portion of the project. The southern parcel, south of Gorham Avenue, does not currently provide off-street parking.

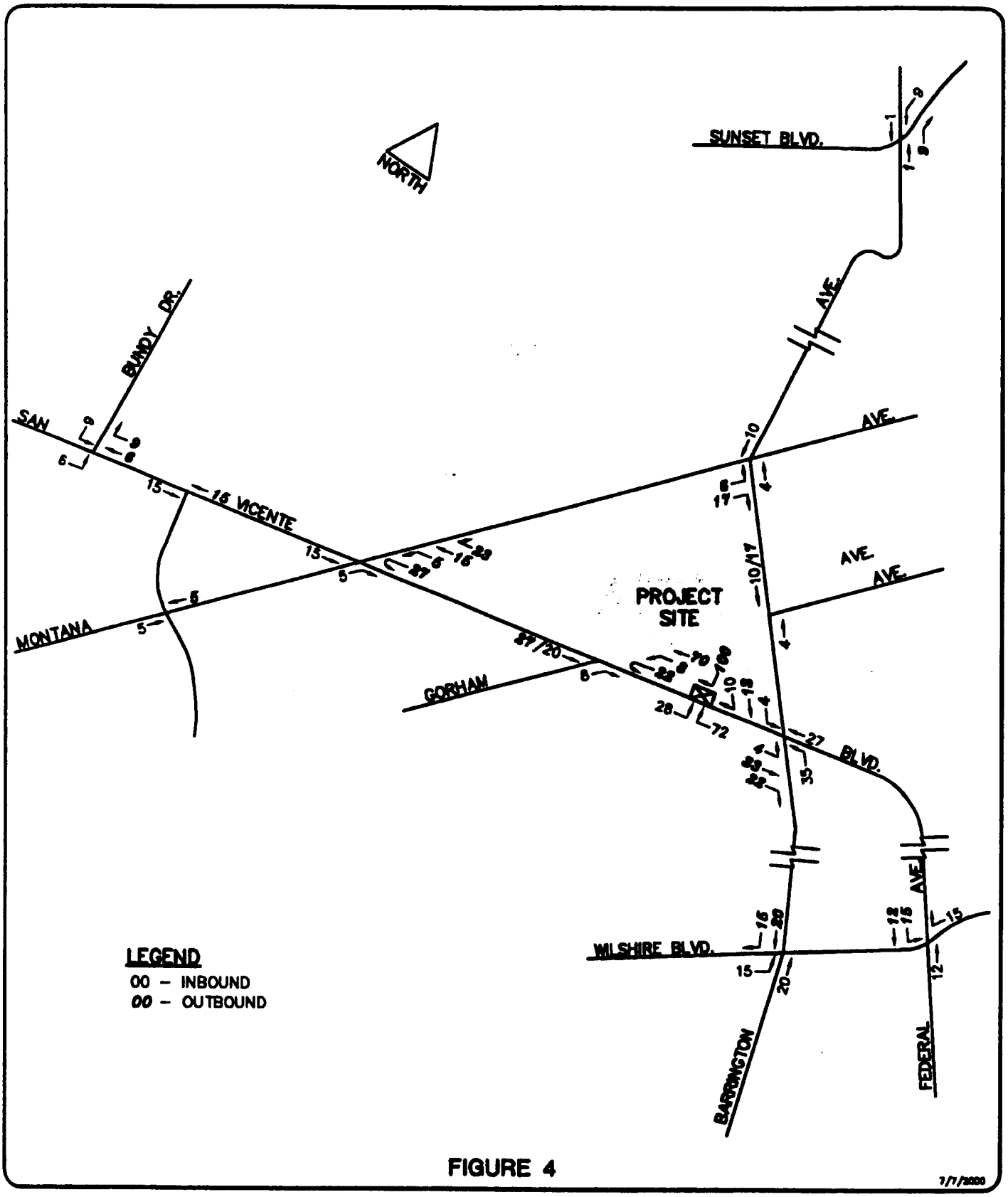

FIGURE 4

7/7/2000

P:\ BARRAN\PR\TRAFF

PROJECT TRAFFIC DISTRIBUTION PERCENTAGES

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

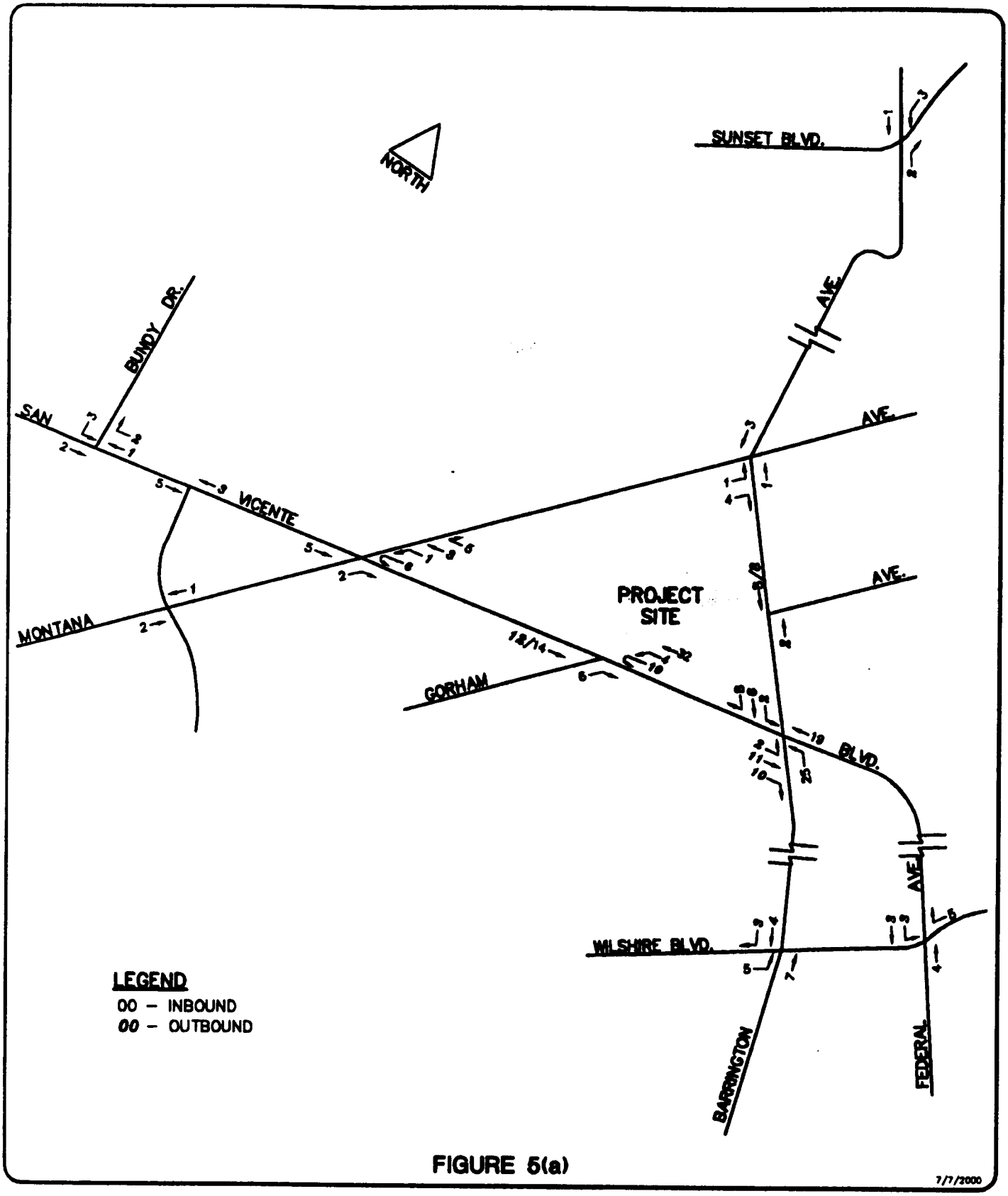

FIGURE 5(a)

7/7/2000

FN: BARRSANV\NETRAFAN

NET PROJECT TRAFFIC VOLUMES
AM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-0606
Transportation Planning · Traffic Engineering

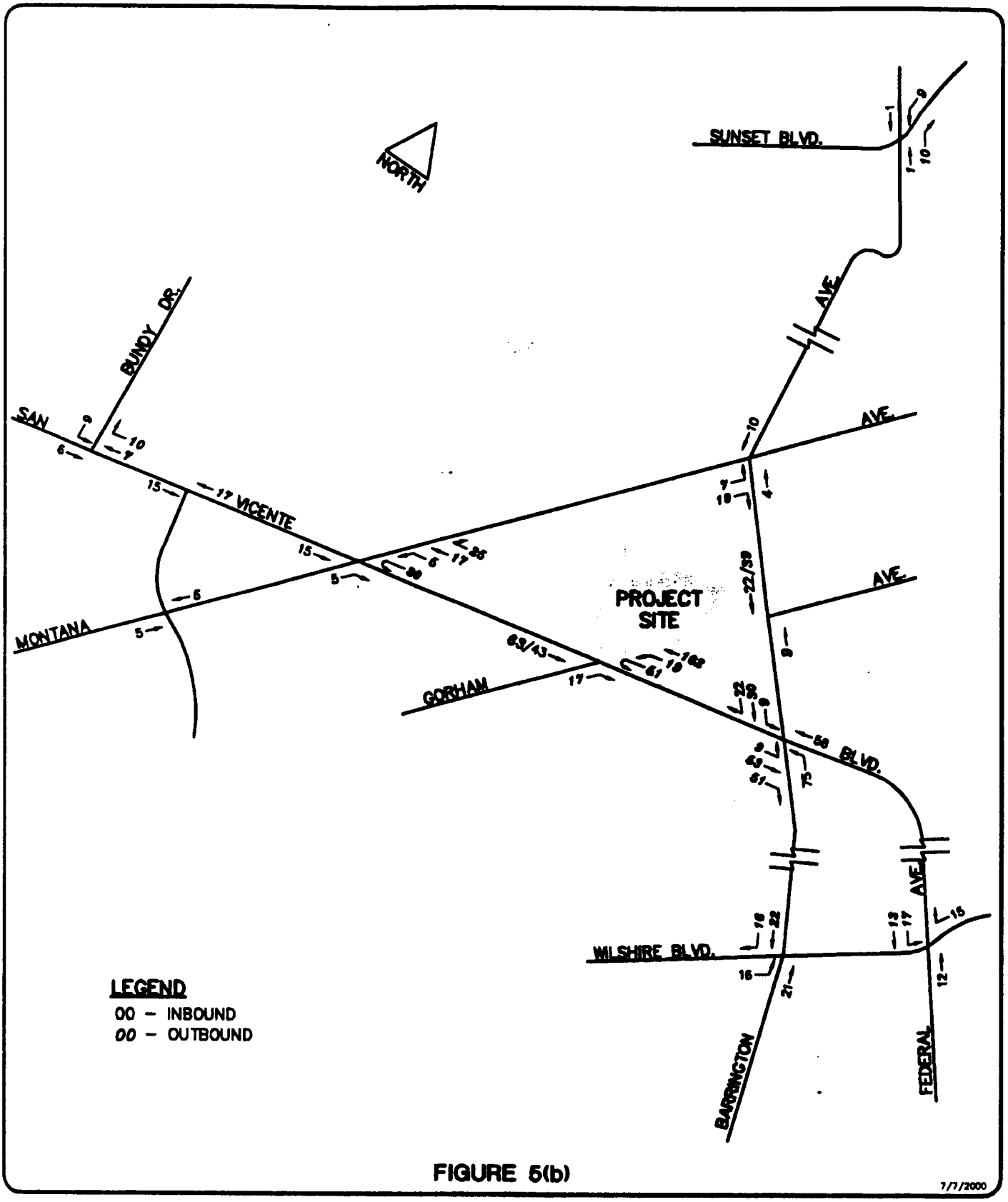

FIGURE 5(b)

7/7/2000

FN: BARRSANVM\NETRAFFPM

NET PROJECT TRAFFIC VOLUMES
PM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

The western driveway on Gorham Avenue provides access to the surface parking lot utilized by the pharmacy. The existing Gorham Avenue driveways provide full-service access. However, directly to the west of the project, the San Vicente Boulevard driveways provide "right-in/right-out" access only due to the raised median island on San Vicente Boulevard.

Current plans for the project call for the vacation of Gorham Avenue between Barrington Avenue and San Vicente Boulevard, and the consolidation of the two separate sites into one project. Access to the proposed subterranean parking structure will be provided by a single commercial driveway on San Vicente Boulevard, at the westernmost portion of the project. Following the vacation of Gorham Avenue, the preferred intersection improvement approach is to maintain the traffic signal, not unify the raised median on San Vicente Boulevard, and allow left-turns into the project driveway from eastbound San Vicente Boulevard. Westbound left turns to Gorham Avenue from San Vicente Boulevard would also be allowed. Outbound project driveway traffic would be restricted to right-turns-only, although it will be possible to allow exiting project traffic to turn left onto eastbound San Vicente Boulevard by making a U-turn at the reconstructed Gorham Avenue left-turn pocket. The project driveway volumes shown in Figures 6(a) and 6(b) assume this move to be allowed, based on previous discussions with LADOT staff. As discussed previously, eastbound left-turn traffic (across the San Vicente Boulevard median into the project driveway) was also assumed. By vacating the street and redesigning the Gorham Avenue/San Vicente Boulevard intersection, development of the project will decrease congestion at this intersection and enhance pedestrian safety.

An additional alternative would be to modify the traffic signal at Gorham Avenue/San Vicente Boulevard, and extend the raised median island on San Vicente Boulevard to form an extended island. Northbound Gorham Avenue traffic would be restricted to

right-turns-only, although westbound San Vicente Boulevard traffic would continue to be allowed to turn left onto westbound Gorham Avenue. Under this scenario, project driveway traffic would be restricted to "right-in/right-out" operations, and all eastbound traffic on San Vicente Boulevard or northbound on Gorham Avenue would be required to make a U-turn at San Vicente Boulevard and Barrington Avenue in order to enter the site from westbound San Vicente Boulevard. However, due to current congestion levels at this intersection, the addition of project U-turn traffic would further hamper operations at this location. Also, project traffic volumes making left turns into the site from San Vicente Boulevard are not expected to be significant, as shown in Figures 6(a) and 6(b). Because of these considerations, this alternative access scenario was not examined in detail.

On-street parking in the vicinity surrounding the proposed project has heavy demand. San Vicente Boulevard provides one-hour metered parking from 8 AM to 6 PM on the north side, and from 9 AM to 6 PM on the south side. Most side streets in the area provide one to two hour parking, some of which is metered. Parking demand along San Vicente Boulevard and adjacent sections of the side streets is primarily business-oriented. However, further north and south of the San Vicente Corridor, on-street parking becomes primarily residential in nature. The proposed project is not expected to significantly impact on-street parking after completion due to the on-site parking garage.

Pedestrian access is provided by sidewalks on all sides of the block to be occupied by the project, as well as on both sides of all streets in the project vicinity. Crosswalks and pedestrian signals are provided at San Vicente Boulevard and Barrington Avenue and at San Vicente Boulevard and Gorham Avenue. Project traffic volumes are not anticipated to cause any significant impacts with residential or commercial pedestrian traffic in the project vicinity. In fact, with the development of the project, pedestrian safety will be

enhanced by the redesign of the existing crosswalks at San Vicente Boulevard and Gorham Avenue, which reduces the points of conflict with vehicular traffic.

Parking for the project will be provided within a multi-level subterranean parking structure containing approximately 266 parking spaces. The TIMP ordinance does not address parking requirements for developments. Parking for the project would thus be designated by the most restrictive parking requirements in force for the project area. Ordinances and specific plans with jurisdiction over the project site include the City of Los Angeles Municipal Code (LAMC), the San Vicente Corridor Specific Plan, and the Westwood/West Los Angeles Interim Traffic Control Ordinance (WWLA ITCO, No. 170389). All of these documents specify parking requirements for the proposed uses of the site. The LAMC requires four off-street parking spaces for each 1,000 square feet of retail area, while the WWLA ITCO requires three spaces per 1,000 square feet for retail. The San Vicente Corridor Specific Plan parking rates for retail developments require the project to provide one off-street parking space for every 300 square feet of development. Thus, the most restrictive parking requirements are contained in the LAMC, at four spaces per 1,000 square feet. For the proposed 54,313 square foot project, this rate would require approximately 217 parking spaces, well below the 266 provided.

Alternately, preliminary development proposals have also indicated that some of the retail space, perhaps as much as one-quarter, could contain restaurant use. All of the applicable parking codes for the site indicate that requirements for restaurants contained in shopping centers are substantially higher than for retail space; 10 spaces per 1,000 square feet. Using the LAMC retail parking ratio plus the indicated restaurant code requirements, a maximum of approximately 46,213 square feet of retail (85 percent of the project) and 8,100 square feet of restaurant space could be developed and accommodated by the proposed 266-space parking structure. This project configuration would require approximately 185 retail spaces and 81 restaurant spaces, for a total of 266 spaces.

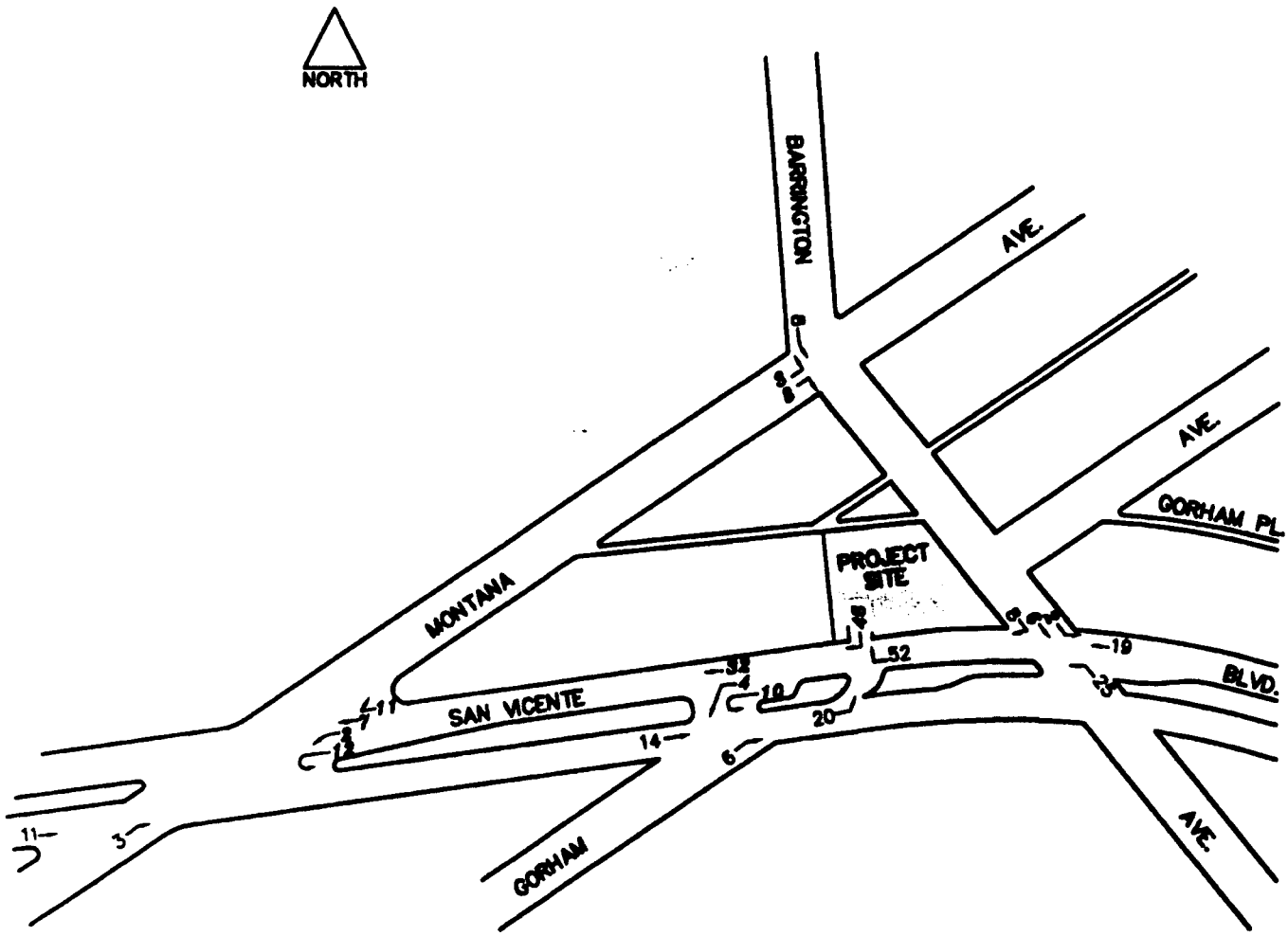

FIGURE 6(a)

7/7/2000

Fn: BARRSANV/AMPR.DRWY

PROJECT DRIVEWAY VOLUMES
AM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

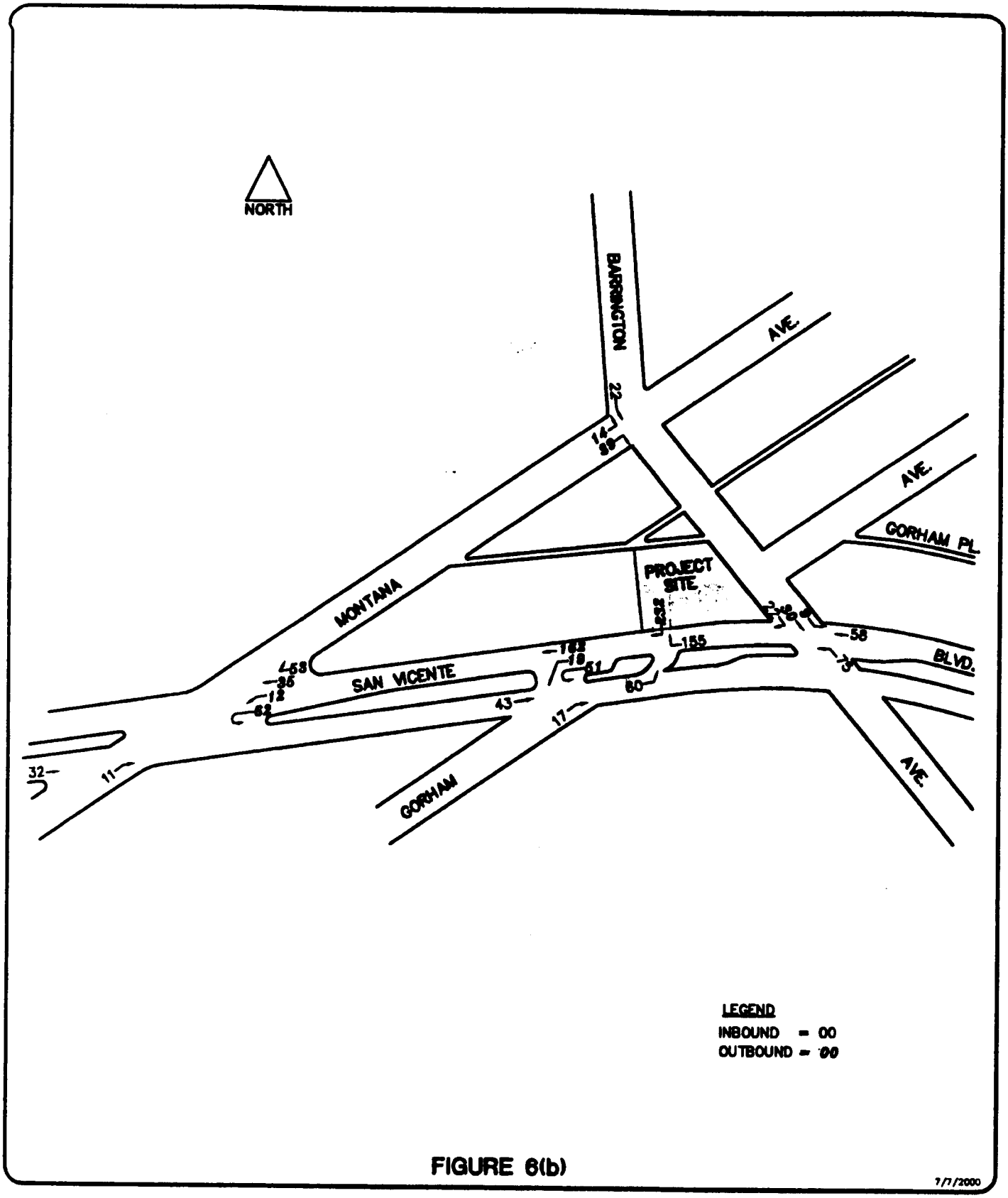

FIGURE 6(b)

7/7/2000

FN: BARRSANV/PMPR.DRWG

PROJECT DRIVEWAY VOLUMES
PM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

FUTURE TRAFFIC CONDITIONS

Other projects under development could add substantial amounts of traffic to the project area. For this reason, the analysis of future traffic conditions has been expanded to include potential traffic from yet undeveloped or unoccupied projects. Briefly, the methodology for estimating future traffic volumes was as follows: First, current traffic volumes were determined by traffic counts (as described in a preceding section). Next, a traffic growth factor of 1.0 percent compounded annually was applied to develop a year 2004 "baseline" figure. Traffic expected to be generated from "related projects" was then added to the baseline traffic volumes to form the basis for a 2004 no-project condition. Finally, project traffic, calculated previously, was analyzed as an incremental addition to the 2004 no-project condition to determine project impacts.

Traffic Growth

Based on an analysis of the trends in traffic growth in the Los Angeles area over the last several years, an annual traffic growth factor of 1.0 percent was selected by LADOT as an approximate traffic growth factor for the project vicinity. This growth factor was used to account for increases in traffic resulting from projects not yet proposed or outside of the study area. This growth factor, compounded annually, was applied to the 1999 traffic volumes to develop an estimate of 2004 baseline volumes.

Related Projects

In addition to the use of the 1.0 percent annual growth rate, listings of potential related projects located in the study area were obtained from the City of Los Angeles and City of Santa Monica Planning Departments, LADOT and field surveys. From a review of these lists, it was determined that traffic from seven projects within the study area could

produce additional traffic at the study intersections. These related projects are listed and described in Table 7 and their locations are shown in Figure 7. Traffic expected to be generated from these related projects was determined by applying the trip generation rates in Table 8, while the estimates of related projects traffic are in Table 9. To determine the 2004 "null" or no-project traffic condition, the related projects traffic was combined with the 1999 peak hour traffic increased by 1.0 percent per year. This estimated traffic growth, when added to the existing peak hour traffic volumes, forms the basis for "benchmark" values used to determine project traffic impacts on the street system, although future traffic conditions in the study area might be substantially less than estimated via this methodology. The reasons for lower traffic volumes include: some projects will implement traffic reduction programs and existing businesses will implement or strengthen in-place programs; no discount was taken for expected trip-end linkages between future generators; not all projects are expected to be built as proposed; in the future, trip-making rates are expected to be less in West Los Angeles due to better linkage between housing and jobs; and transit usage is expected to increase.

Table 7
Related Projects Descriptions

Map No.	Description	Location
1	450-student private school (Archer School)	11725 Sunset Blvd., between Barrington Ave. & Westgate Ave.
2	122,7742 sf Office 6,000 sf Retail	NEC Wilshire Blvd. & Barrington Ave.
3	330,000 sf Office Previous Uses (Removed): 41,000 sf Office 6,000 sf Specialty Retail 16-fuel-pump Gas Station	12233 W. Olympic Blvd.
4	Westwood Marketplace	SWC Weyburn Ave. & Gayley Ave.
5	Village Center Westwood	Glendon Ave. at Weyburn Ave.
6	187 Condominiums	10807 - 853 Wilshire Blvd.
7	UCLA LRDP	UCLA Main & Southwest

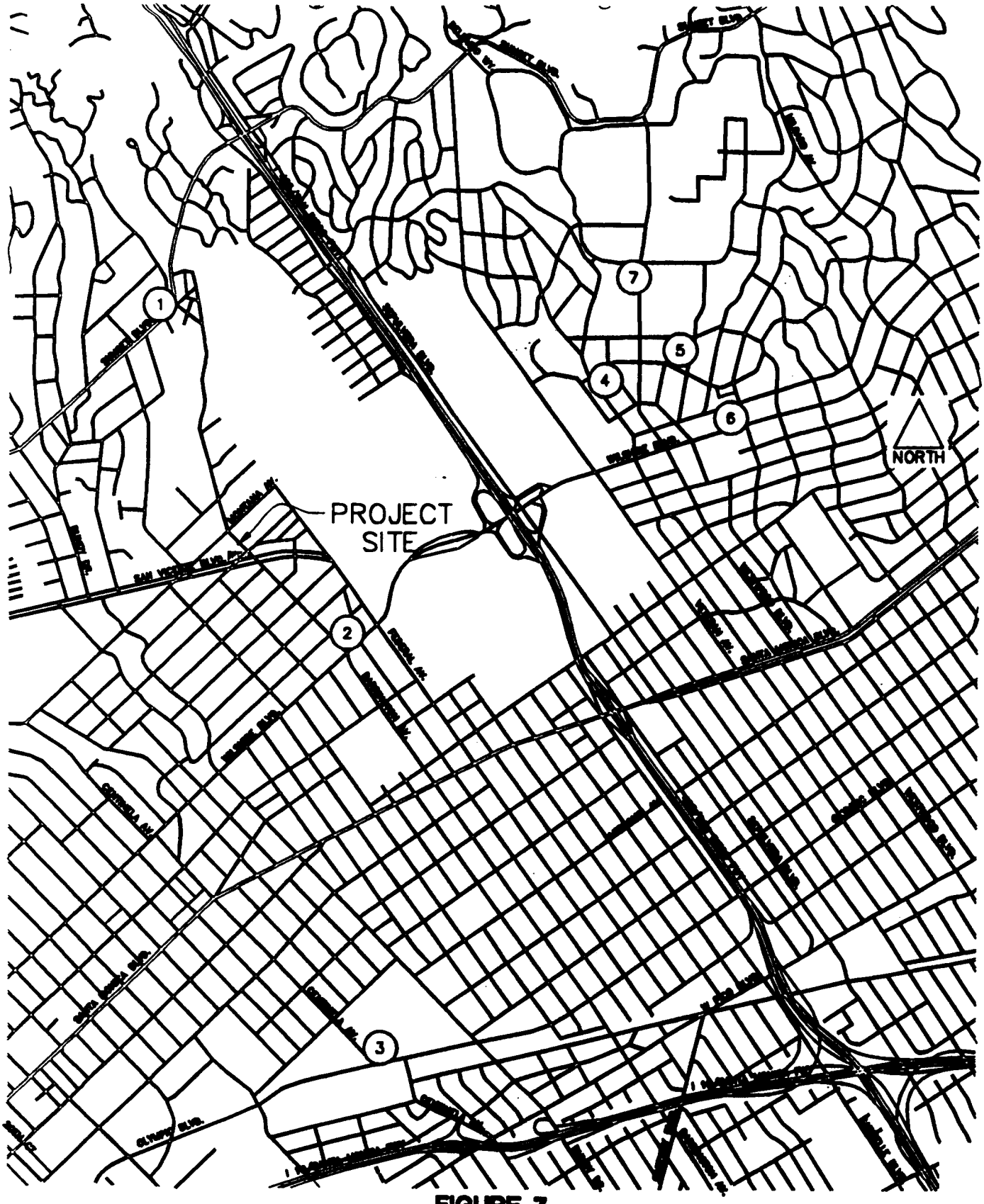

FIGURE 7

1/3/2000

:FN BARRSANV\RELPROJ

RELATED PROJECTS LOCATIONS

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-0606
Transportation Planning · Traffic Engineering

Table 8
ITE Trip Generation Rates and Equations
for Related Projects†

Office - (per ksf)

Daily:	Ln(T) = 7.68 Ln(A) + 3.654
AM Peak Hour:	Ln(T) = 7.67 Ln(A) + 1.558; I/B = 88%, O/B = 12%
PM Peak Hour:	Ln(T) = 1.21(A) + 79.295; I/B = 17%, O/B = 83%

Retail - (per ksf)

Daily:	Ln(T) = 0.643 Ln(A) + 3.654
AM Peak Hour:	Ln(T) = 0.596 Ln(A) + 1.558; I/B = 61%, O/B = 39%
PM Peak Hour:	Ln(T) = 0.660 Ln(A) + 3.403; I/B = 48%, O/B = 52%

Gas Station - (per fueling station)

Daily:	168.56(P)
AM Peak Hour:	12.27(P); I/B = 51%, O/B = 49%
PM Peak Hour:	14.56(P); I/B = 51%, O/B = 49%

Specialty Retail - (per ksf)

Daily:	T = 40.67(A)
AM Peak Hour:	T = 6.41(A); I/B = 48%, O/B = 52%
PM Peak Hour:	T = 4.93(A); I/B = 57%, O/B = 43%

Condominiums - (per unit)

Daily:	Ln(T) = 0.850 Ln(U) + 2.564
AM Peak Hour:	Ln(T) = 0.790 Ln(U) + 0.298; I/B = 17%, O/B = 83%
PM Peak Hour:	Ln(T) = 0.827 Ln(U) + 0.309; I/B = 67%, O/B = 33%

T	= trip ends	A	= building area in 1,000's of square feet
P	= fueling station	U	= dwelling units
I/B	= inbound	O/B	= outbound

† Source: ITE Trip Generation, 6th Edition, 1997.

Table 9
Related Projects Trip Generation

Map No.	Descriptions	Daily Traffic	AM Peak Hour Inbound	AM Peak Hour Outbound	PM Peak Hour Inbound	PM Peak Hour Outbound
1	450-student private school (Archer School) [1]	728	122	70	44	55
2	122,742 sf Office	1,150	167	23	38	189
	6,000 sf Retail	120	8	5	47	51
	Total	1,670	175	28	85	240
3	330,000 sf Office	3,320	425	58	76	373
	Previous Uses (Removed):					
	41,000 sf Office	(670)	(81)	(11)	(21)	(104)
	6,000 sf Specialty Retail	(240)	(18)	(20)	(17)	(13)
	16-fuel-pump Gas Station	(2,700)	(100)	(96)	(119)	(114)
	Total	(290)	226	(69)	(81)	142
4	Westwood Marketplace[2]	7,020	47	42	140	112
5	Village Center Westwood[3]	12,556	120	39	604	460
6	187 Condominiums	1,110	14	70	69	34
7	UCLA LRDP[4]	4,118	148	169	213	198
	Related Project Totals	26,912	852	349	1,074	1,241
				1,201		2,315

[1] Source: Traffic Analysis for a Proposed 450-student Private School Development at 11725 Sunset Boulevard, Crain & Associates, November, 1996.

[2] PM trip generation based on proposed Westwood Marketplace, Crain & Associates, March 1999.

[3] Source: Traffic Analysis of the Proposed Village Center Westwood Mixed-Use Commercial and Residential Development, Crain & Associates, February 1997.

[4] Source: UCLA Long-Range Development Plan, Crain & Associates, 1990.

Highway System Improvements

Two highway improvements in the project area were identified in the City of Los Angeles Five-Year Capital Improvements Program (1997/98 - 2001/2002). These improvements are targeted along Barrington Avenue north and south of its intersection with San Vicente Boulevard, and along Sunset Boulevard near Barrington Avenue. The improvements to Barrington Avenue, from north of Gorham Avenue to Darlington Avenue, would widen Barrington Avenue to provide left-turn lanes and two through lanes in both the north and southbound direction at San Vicente Boulevard. The northernmost portion of this improvement is adjacent to the project site. The San Vicente Boulevard/Barrington Avenue improvements are slated to begin construction in 1999 or later. However, despite projections that it should be "in place" by the 2004 study year, this improvement was not assumed due to the possibility of unforeseen delays, and the fact it is currently not totally funded.

Sunset Boulevard between Barrington Avenue and Granville Avenue is also proposed to be improved. The CIP improvement at this location calls for Sunset Boulevard to be widened by approximately 10 to 18 feet on the south side, to provide for dual left-turn lanes for westbound Sunset Boulevard traffic at Barrington Avenue. Left and right-turn lanes will also be provided for eastbound traffic at this intersection, and two through lanes per direction will be maintained. However, the recently-approved Archer School project near the northwest corner of Sunset Boulevard and Barrington Avenue has completed an improvement project to this intersection which essentially supersedes the CIP improvement. The Archer School intersection improvement was not completed at the time the "existing" traffic data was collected and is not included in the analysis of current conditions. However, the Archer School improvement to the Sunset Boulevard and Barrington Avenue intersection was assumed for future year 2004 conditions.

Other non-CIP roadway improvements beyond those projects described above have also occurred in the study area. A restriping and resurfacing project has recently been completed on San Vicente Boulevard/Federal Avenue at Wilshire Boulevard. This improvement added an additional northbound through lane to the intersection, and while not "in place" for the existing 1999 traffic analysis scenario, it was assumed as a future condition.

In addition to the above programmed improvements, discussions with LADOT staff indicated that most traffic signals in the project vicinity are linked to the City's Automated Traffic Surveillance and Control (ATSAC) system, and the remaining locations will be improved with ATSAC by the future study year. The ATSAC system monitors the traffic demand at intersections within the system, and optimally adjusts signal timing accordingly. LADOT policy states that an approximate seven percent increase in intersection capacity occurs at intersections where ATSAC has been installed, versus locations which have not been upgraded.

Analysis of Future Traffic Conditions (With and Without Project)

The analysis of future conditions in the project area was performed using the same critical lane analysis procedures described previously in this report. For future project conditions, the roadway system was considered to not have been improved or changed from the existing conditions, with the exceptions of the Sunset Boulevard/Barrington Avenue improvement, the San Vicente Boulevard/Wilshire Boulevard restriping, and completion of the ATSAC system in the study area. The results of this "no improvement" analysis point to locations where improvements should be made in order to provide sufficient roadway capacity to accommodate both project traffic and anticipated future traffic volumes.

The proposed project includes the unique situation of the vacation of a short portion of an existing public street; Gorham Avenue between San Vicente Boulevard and

Barrington Avenue. Although this portion of Gorham Avenue primarily provides access to the existing uses on the two adjacent, project-related properties as described previously, it is also used as a "cut-through" route by area traffic to avoid the congested intersection at San Vicente Boulevard and Barrington Avenue. Closure of this section of Gorham Avenue will result in some redistribution of traffic in the immediate vicinity of the project.

Gorham Avenue currently serves approximately 200 AM and 300 PM peak hour trips. The proposed vacation and closure of Gorham Avenue would require this traffic to divert to other streets in the area to complete their trips. In order to gauge the magnitude of the impacts of this diversion of Gorham Avenue traffic, the with project analysis incorporates the diverted traffic volumes with project volumes in order to determine project impacts.

Gorham Avenue traffic volumes and turning movements at the five intersections directly effected by the street closure were evaluated. These intersections are: San Vicente Boulevard at Montana Avenue, Gorham Avenue, and Barrington Avenue, and Barrington Avenue at Montana Avenue and at Gorham Avenue. The future traffic volumes at these intersections, were reassigned to nearby travel routes assuming that Gorham Avenue was no longer available as a travel facility. The net change to future volumes at the five intersections noted above incorporating the Gorham Avenue closure and project volumes are shown in Figures 8(a) and 8(b). The redistributed traffic flows were based on discussions with and were approved by the Los Angeles Department of Transportation.

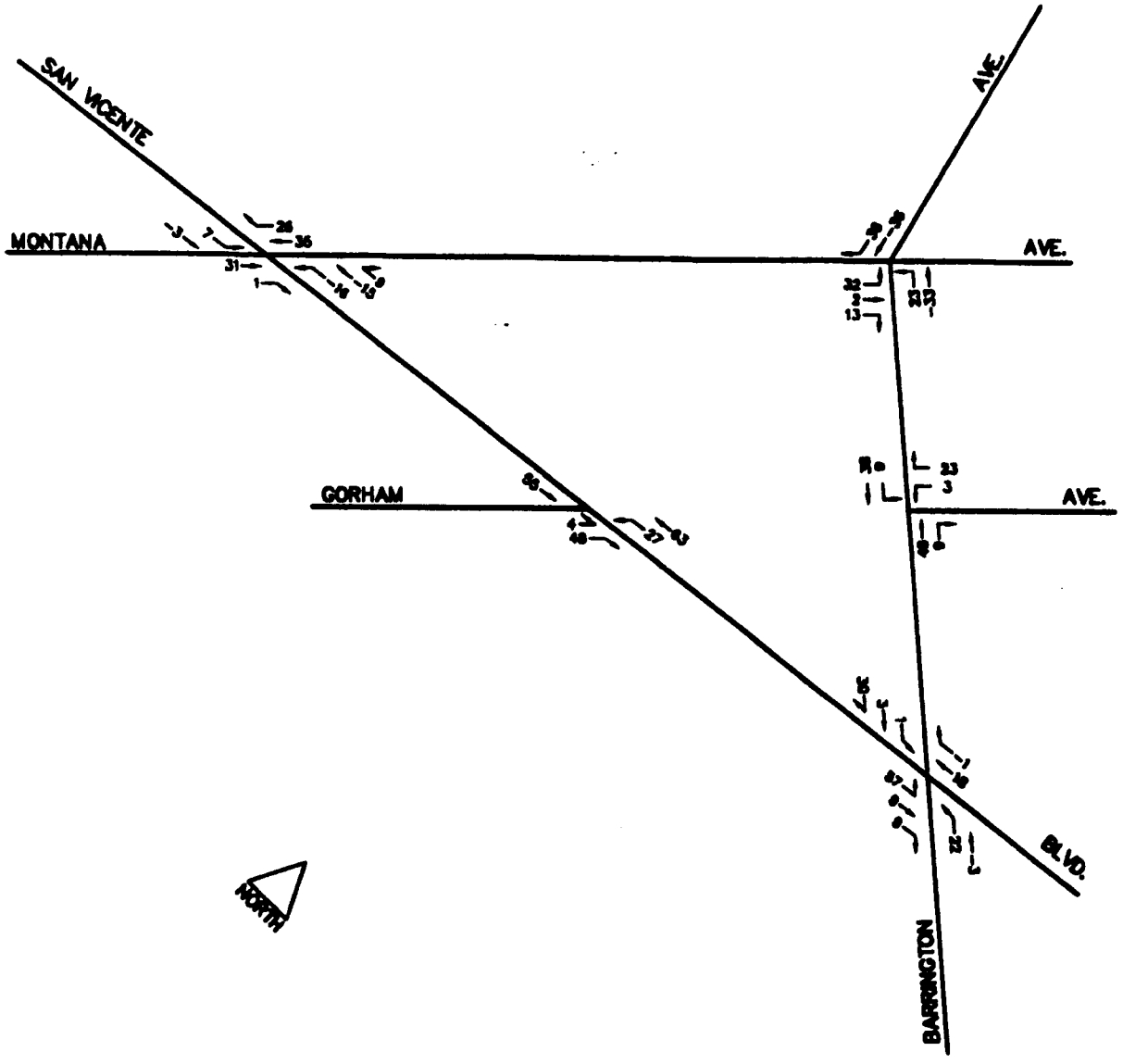

FIGURE 8(a)

7/7/2000

:FN BARRSANV\AMCLSPRJ

NET PROJECT VOLUMES
WITH GORHAM CLOSURE CONDITIONS
AM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

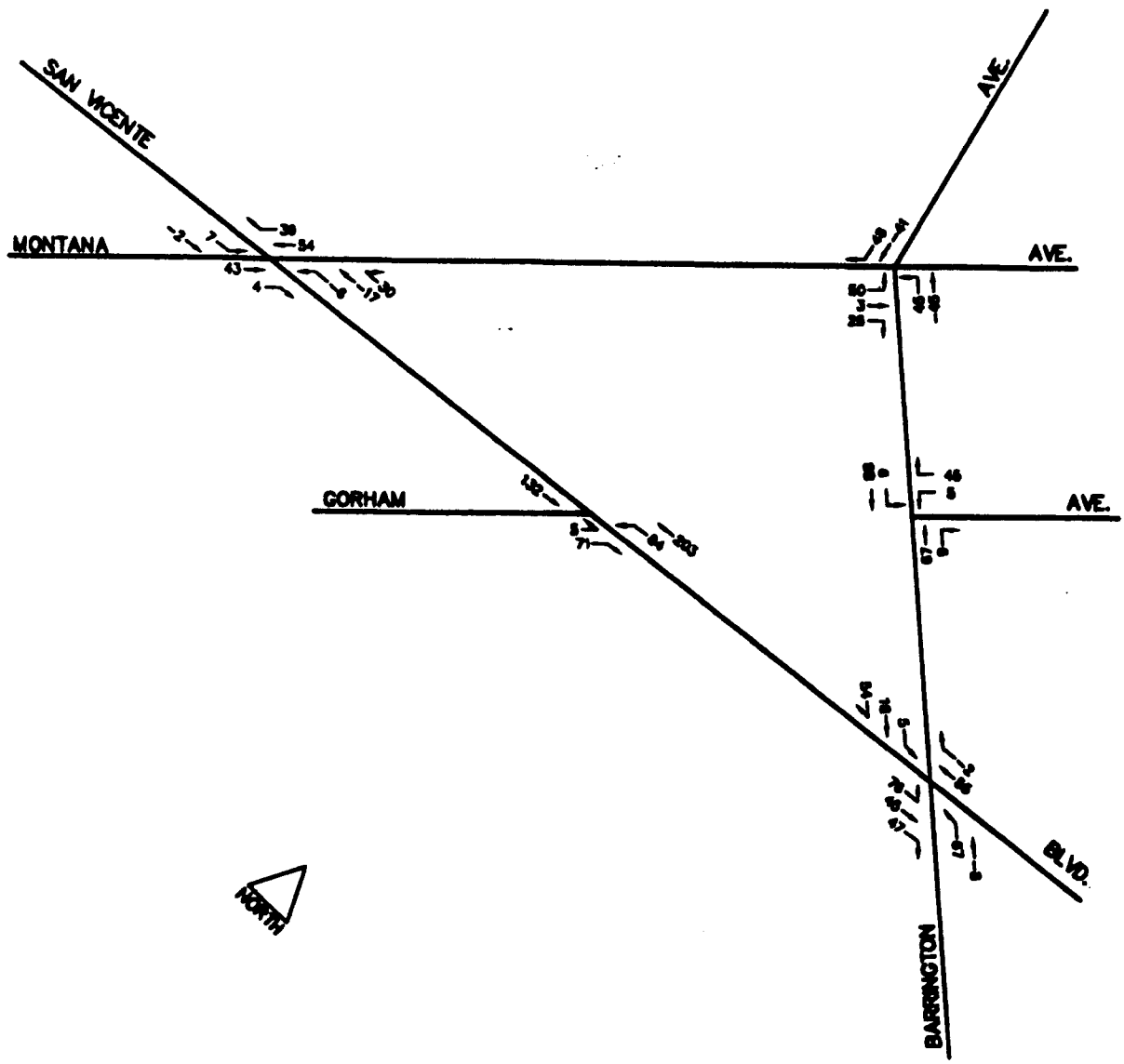

FIGURE 8(b)

7/7/2000

:FN BARRSANV\PMCLSPRJ

NET PROJECT VOLUMES
WITH GORHAM CLOSURE CONDITIONS
PM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

The projected future "Without Project" traffic volumes at the 11 study intersections, not including the Gorham Avenue traffic redistribution effects, are shown in Figures 9(a) and 9(b) for AM and PM peak hour conditions, respectively. The volumes include ambient growth and the related project volumes discussed previously.

"With Project" traffic volumes at the study intersections, including the addition of the project trips calculated earlier in this report plus the Gorham Avenue traffic redistributions shown previously in Figure 8(a) and 8(b) are shown in Figures 10(a) and 10(b). The results of the Critical Movement Analysis of future traffic conditions at the study intersections are summarized in Table 10.

The table shows that intersection traffic conditions in the immediate project vicinity along San Vicente Boulevard will likely range between Level of Service A and Level of Service C during the AM peak hour, and Level of Service C to Level of Service D during the PM peak hour, for both "Without Project" and "With Project" cases. As stated previously, future travel demand might actually be less than is indicated in Table 10.

The Gorham Avenue closure could result in changes to traffic volumes at five of the nearby study intersections during one or both of the peak hours. The overall effects of the Gorham Avenue closure are not expected to significantly deteriorate the operating conditions at most locations, due to the availability of other nearby routes. It is important to keep in mind that the removal of this portion of Gorham Avenue is expected to result in safer and less confusing traffic flow around the project site due to the removal of a key congestion point; the unsignalized intersection of Gorham Avenue and Barrington Avenue. Further, many vehicles currently utilizing Gorham Avenue between San Vicente Boulevard and Barrington Avenue are accessing existing uses at the project site. These trips will likely no longer exist on the area roadway system once the current uses are removed, helping to offset potential project-related traffic increases.

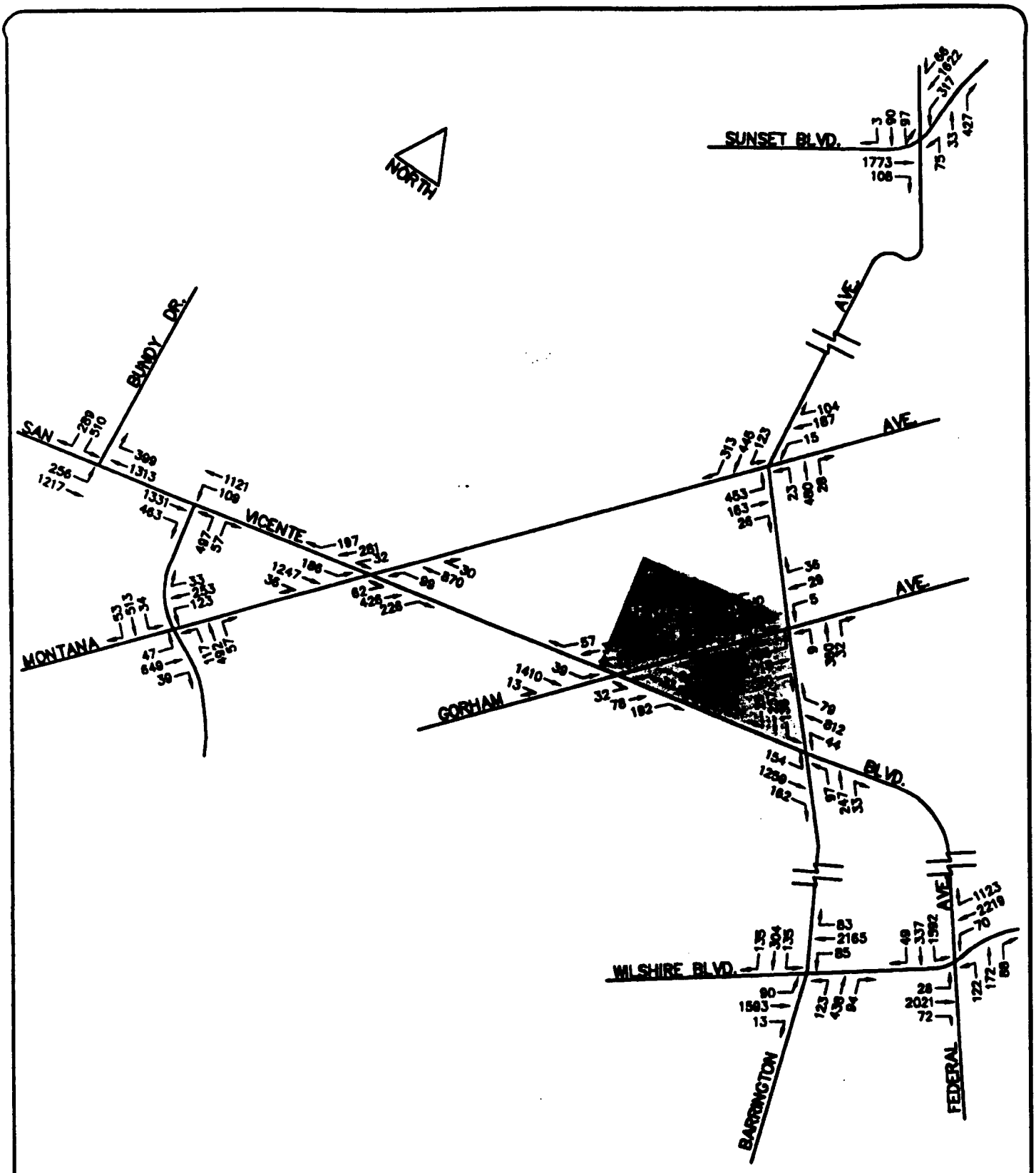

FIGURE 9(a)

7/6/2000

FN: BARRSANY\AM2004NO

FUTURE (2004) TRAFFIC VOLUMES WITHOUT PROJECT AM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

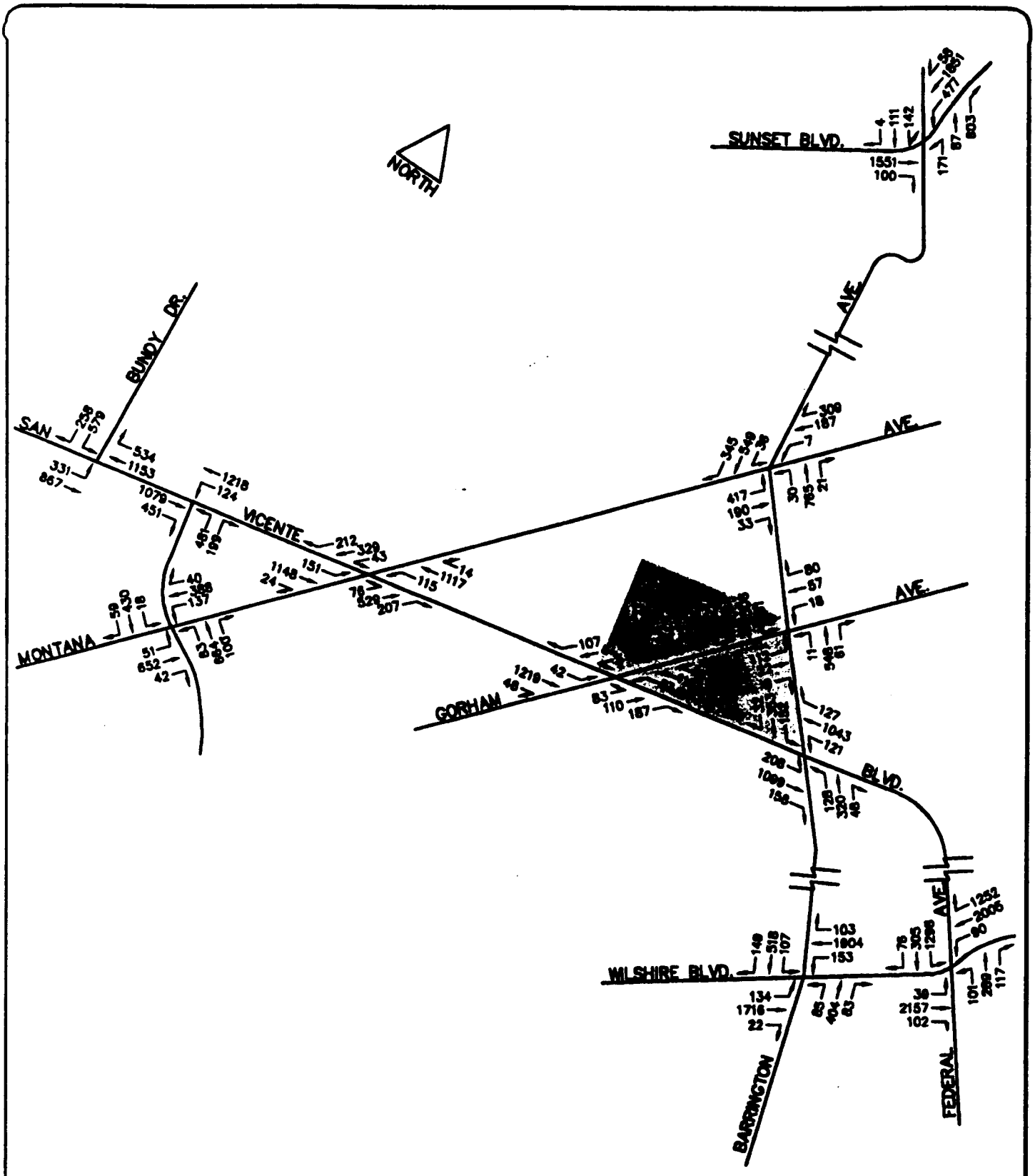

FIGURE 9(b)

7/26/2000

PN: BARRSANV\PM2004W0

FUTURE (2004) TRAFFIC VOLUMES WITHOUT PROJECT PM PEAK HOUR

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

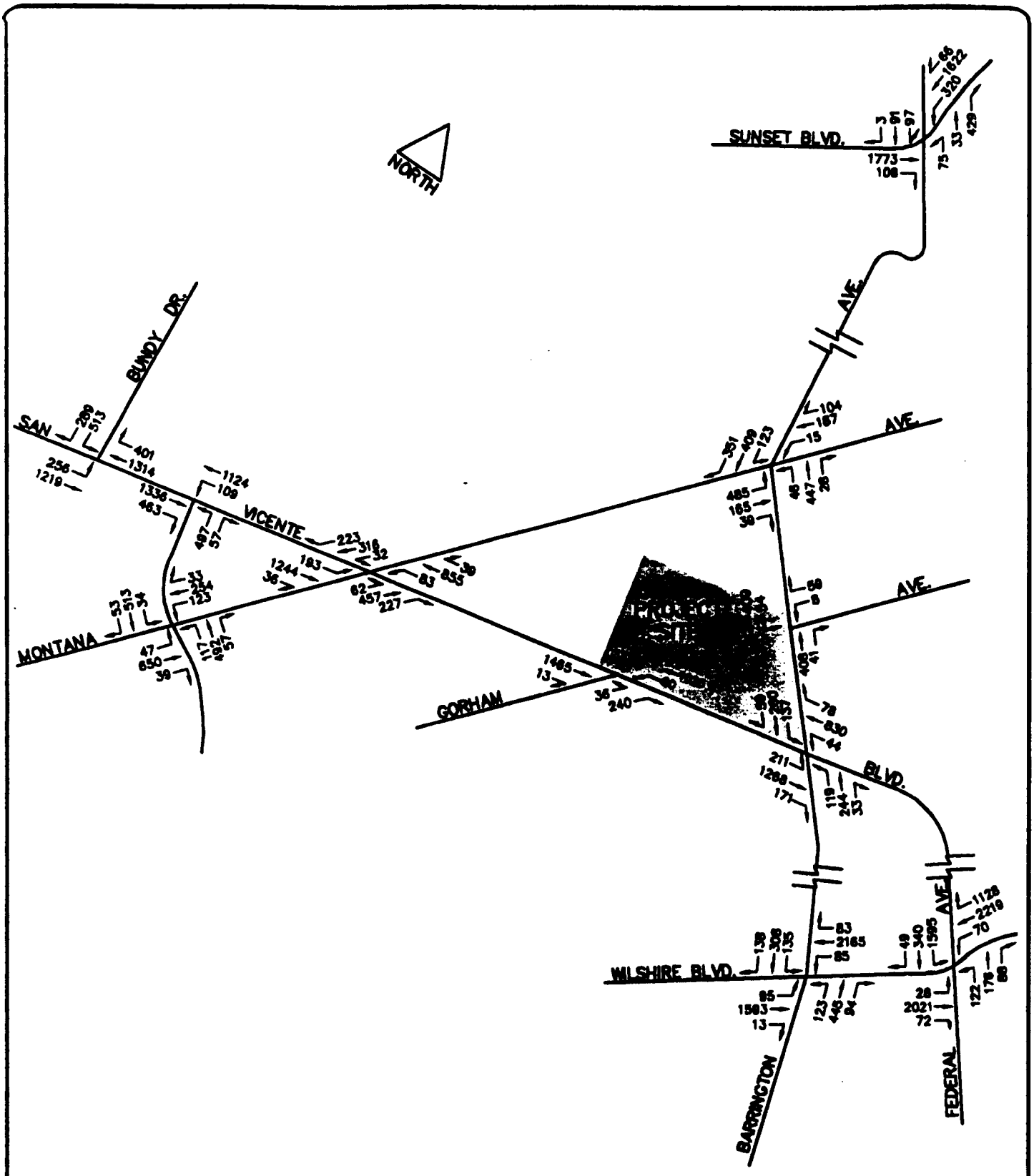

FIGURE 10(a)

7/6/2000

Fh: BARRSANY\AM2004WP

FUTURE (2004) TRAFFIC VOLUMES WITH PROJECT AM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

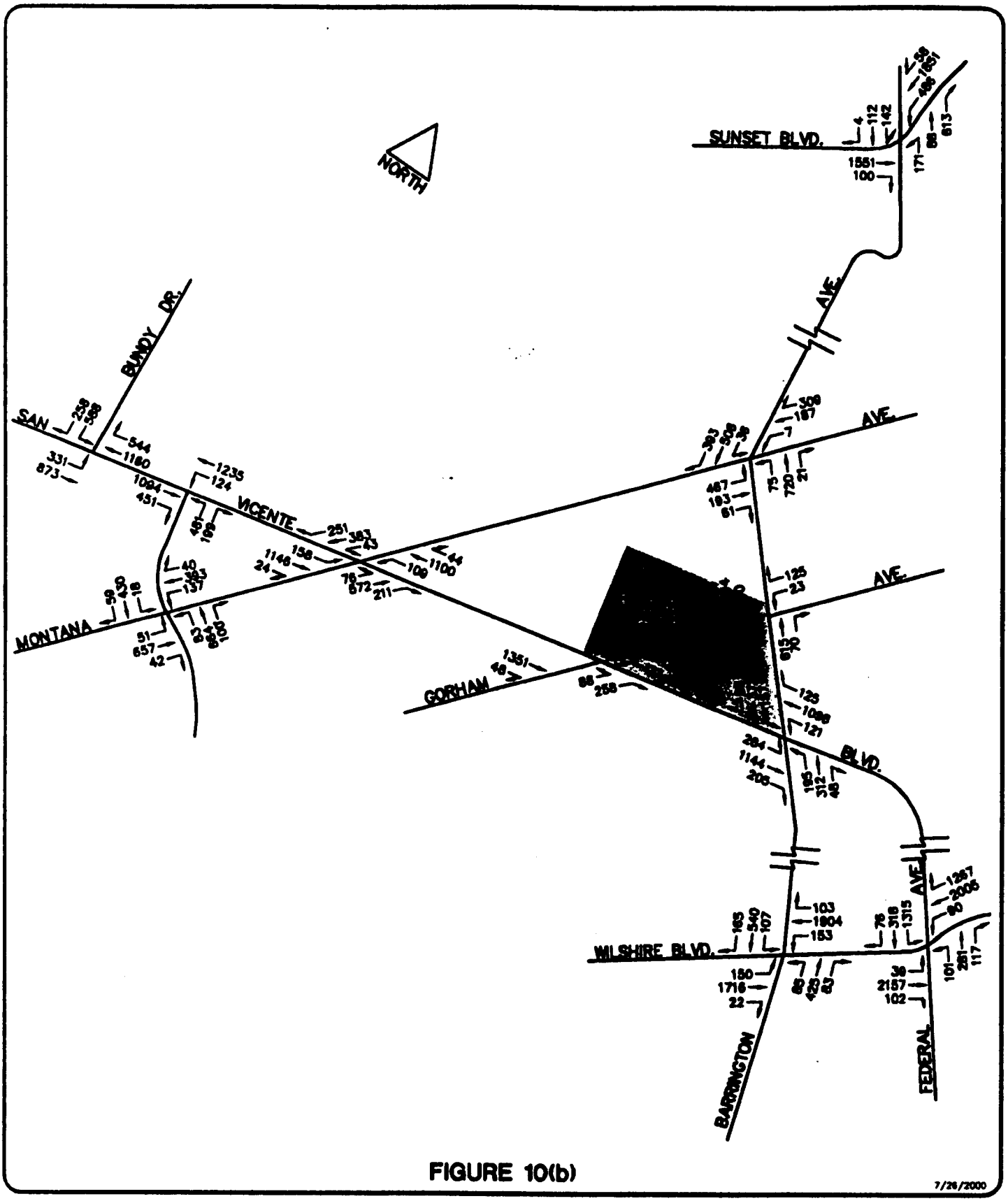

FIGURE 10(b)

7/26/2000

FN: BARRSAN\PM2004P

FUTURE (2004) TRAFFIC VOLUMES WITH PROJECT PM PEAK HOUR

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

Also, as noted previously, several alternative routes are available through the study area that bypass the intersections adjacent to the project area altogether. This factor, which would further reduce traffic volumes in the study area, was not a consideration in the "worst case" traffic reassignment performed as part of this analysis. Additionally, as the cumulative projects are developed, they will be required by the City to implement traffic mitigation measures to address any significant impacts caused by their traffic. These measures, which are not assumed as part of this analysis, will improve capacity and/or reduce congestion on the future street system. Therefore, due to this and other reasons cited previously in the "Related Projects" section of this report, actual future conditions along this portion of the San Vicente Boulevard Corridor, and at all study intersections, are likely to be much better than projected.

As a benchmark for determining the effect of developments on nearby street systems in the project vicinity, the TIMP defines a significant impact as an increase in the CMA value due to project-related traffic of 0.010 or more at an intersection operating at LOS E or F, 0.020 at LOS D, or 0.040 at LOS C.

As shown in Table 10, the project is expected to significantly impact one of the 11 study intersections during the AM peak hour and three of the 11 study intersections during the PM peak hour, prior to the implementation of the mitigation measures described in the following section.

Table 10
Summary of Critical Movement Analysis
Future (2004) Traffic Conditions - Without and With Project
(Including Gorham Avenue Traffic Diversions)

	AM Peak Hour				
	Without Project		With Project Plus Gorham Avenue Closure		
Intersection	CMA	LOS	CMA	LOS	Impact
Sunset Blvd. & Barrington Ave.	0.942	E	0.944	E	+0.002
San Vicente Blvd. & Bundy Dr. (West)	0.766	C	0.769	C	+0.003
San Vicente Blvd. & Bundy Dr. (East)	0.668	B	0.670	B	+0.002
San Vicente Blvd. & Montana Ave.	0.669	B	0.687	B	+0.018
San Vicente Blvd. & Gorham Ave.	0.561	A	0.439	A	-0.122
San Vicente Blvd. & Barrington Ave.	0.683	B	0.743	C	+0.060*
Montana Ave. & Bundy Dr.	0.980	E	0.981	E	+0.001
Montana Ave. & Barrington Ave.	0.770	C	0.785	C	+0.015
Barrington Ave. & Gorham Ave.	0.338	A	0.287	A	-0.051
Wilshire Blvd. & Barrington Ave.	0.725	C	0.731	C	+0.006
Wilshire Blvd. & San Vicente Blvd./ Federal Ave.	0.964	E	0.965	E	+0.001

	PM Peak Hour				
	Without Project		With Project Plus Gorham Avenue Closure		
Intersection	CMA	LOS	CMA	LOS	Impact
Sunset Blvd. & Barrington Ave.	1.053	F	1.060	F	+0.007
San Vicente Blvd. & Bundy Dr. (West)	0.790	C	0.796	C	+0.006
San Vicente Blvd. & Bundy Dr. (East)	0.635	B	0.639	B	+0.004
San Vicente Blvd. & Montana Ave.	0.788	C	0.816	D	+0.028*
San Vicente Blvd. & Gorham Ave.	0.727	C	0.615	B	-0.112
San Vicente Blvd. & Barrington Ave.	0.897	D	1.014	F	+0.117*
Montana Ave. & Bundy Dr.	1.095	F	1.098	F	+0.003
Montana Ave. & Barrington Ave.	0.982	E	1.015	F	+0.033*
Barrington Ave. & Gorham Ave.	0.578	A	0.499	A	-0.079
Wilshire Blvd. & Barrington Ave.	0.745	C	0.767	C	+0.022
Wilshire Blvd. & San Vicente Blvd./ Federal Ave.	0.950	E	0.958	E	+0.008

* Denotes significant impact, prior to mitigation.

MITIGATION MEASURES

In order to mitigate project traffic impacts, improvements are recommended for implementation at the three impacted intersections identified in the previous section, as well as throughout West Los Angeles. Project mitigation and improvement measures should include the following:

- Adaptive Traffic Control System (ATCS) Upgrades -- The project will fund the design and implementation of a 53-intersection ATCS upgrade to the existing West Los Angeles Automated Traffic Surveillance and Control (ATSAC) system. The new ATCS enhances an intersection's capacity by adjusting its signal timing in real time while monitoring the traffic flow from adjacent ATCS intersections. At intersections anticipated for ATCS implementation, a three percent capacity reduction was taken on top of the existing seven percent reduction from ATSAC, as discussed with the Los Angeles Department of Transportation (LADOT).

  Funding for the ATCS upgrade may be guaranteed through a combination of cash payment and letter of credit, prior to the issuance of any building permit. If, prior to the construction of the ATCS upgrade, the Los Angeles Department of Transportation were to accept traffic mitigation measures involving ATCS from other development projects impacting one or more of the same 53 intersections, a partial reimbursement to the project applicant will be considered by the LADOT staff.

- Montana Avenue and Barrington Avenue -- This intersection is included within the 53-intersection ATCS upgrade area, to which the project will fund the design and implementation.

- San Vicente Boulevard and Montana Avenue -- This intersection is included within the 53-intersection ATCS upgrade area, of which the project will fund the design and implementation.

- San Vicente Boulevard and Barrington Avenue -- Widen Barrington Avenue adjacent to the project frontage. Restripe the intersection to install an exclusive southbound right-turn lane on Barrington Avenue, in addition to one through lane and one left-turn lane. Additionally, participate in the City proposed widening of the east side of Barrington Avenue by 12 feet on the northbound approach and restripe this approach to install a left-turn lane, one through lane, and right-turn lane. Modify the median islands on San Vicente Boulevard to improve pedestrian crossings. This intersection is also included within the 53-intersection ATCS upgrade area, of which the project will fund the design and implementation.

Completion of the above mitigation measures will reduce the impacts of the proposed project to less than significant levels, as well as improve overall traffic circulation in the vicinity of the project.

In addition to these mitigation improvements, the project should realign the southern approach of Gorham Avenue at San Vicente Boulevard in order to provide a more right-angle intersection. While technically not required to mitigate any project traffic impacts, this improvement should take place as part of the Gorham Avenue vacation and subsequent modification of San Vicente Boulevard at this location. The current four-leg intersection will be converted to a "T" intersection and Gorham Avenue will be realigned to meet San Vicente Boulevard at more of a "right angle." North-eastbound Gorham Avenue should be restriped to provide one left-turn lane and one right-turn lane, to enhance intersection operations. Additionally, as a site access enhancement feature, the project should reconstruct the median island on San Vicente Boulevard

near the project site (at Gorham Avenue) to retain eastbound left turns into the project site, as well as westbound left-turns to Gorham Avenue. This configuration would further improve traffic flow and enhance pedestrian safety in the project area by eliminating the potential for high U-turn volumes at the already critical intersection of San Vicente Boulevard at Barrington Avenue.

The above measures are recommended as a result of the project vehicular traffic impact analysis contained in this report. To determine the quantitative effect of these mitigation measures on the significantly impacted study intersections, an additional analysis was performed. Once in place, these mitigation measures will reduce the traffic impacts of the proposed project on the surrounding street system to levels of insignificance. The results of this analysis are presented in Table 11.

Table 11
Summary of Project Impacts
With Mitigation

	Future (2004) AM Peak Hour Traffic Conditions							
	Without Project		With Project			With Mitigation		
	CMA	LOS	CMA	LOS	Impact	CMA	LOS	Impact
San Vicente Blvd. & Montana Ave.	0.669	B	0.687	B	+0.018	0.657	B	-0.012
San Vicente Blvd. & Barrington Ave.	0.683	B	0.743	C	+0.060*	0.607	B	-0.076
Montana Ave. & Barrington Ave.	0.770	C	0.785	C	+0.015	0.755	C	-0.015
	Future (2004) PM Peak Hour Traffic Conditions							
	Without Project		With Project			With Mitigation		
	CMA	LOS	CMA	LOS	Impact	CMA	LOS	Impact
San Vicente Blvd. & Montana Ave.	0.788	C	0.816	D	+0.028*	0.786	C	-0.002
San Vicente Blvd. & Barrington Ave.	0.897	D	1.014	F	+0.117*	0.882	D	-0.015
Montana Ave. & Barrington Ave.	0.982	E	1.015	F	+0.033*	0.985	E	+0.003

* Denotes significant impacts prior to mitigation.

As the results show, not only are project impacts mitigated to less than significant levels at all intersections with the implementation of the recommended measures, but future traffic conditions are expected to be better at most locations than if no project were built, particularly during the critical PM peak hour. This indicates that the project mitigation package provides more capacity than is utilized by the proposed project. This results in improved traffic conditions in the study area.

APPENDIX

CMP Intersection Analysis

As detailed in the preceding report, 11 intersections in the immediate vicinity of the proposed project were examined in detail to determine the potential traffic-related impacts of the proposed project. These locations were selected by LADOT as the most likely intersections to be affected by the project following its completion. None of the study intersections are designated by the Los Angeles County Congestion Management Plan (CMP) as monitoring locations. However, four other intersections in the project vicinity are listed in the CMP as monitoring locations:

- Wilshire Boulevard and Sepulveda Boulevard
- Wilshire Boulevard and 26th Street
- Santa Monica Boulevard and Bundy Drive
- Santa Monica Boulevard and Cloverfield Avenue

The CMP dictates that any CMP intersections "where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic)" [3] must be analyzed. A review of the project traffic volumes shown previously in Figures 5(a) and 5(b) shows that project traffic is expected to be substantially less than the 50 trip threshold at each of these locations during both the AM and PM peak hours. As such, the CMP indicates that no further analysis at these locations is required.

---

[3] 1994 Congestion Management Program for Los Angeles County, Appendix D.

CMA CALCULATION SHEETS

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	296	1433	63	0
EASTBOUND	0	1618	103	0
NORTHBOUND	68	31	258	148
SOUTHBOUND	92	86	3	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	1	0	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	296	N/A	748	748	N/A	N/A
EASTBOUND	N/A	860	N/A	860	N/A	N/A
NORTHBOUND	68	N/A	31	N/A	258	N/A
SOUTHBOUND	92	N/A	N/A	89	N/A	N/A

EAST-WEST CRITICAL VOLUMES	1156
NORTH-SOUTH CRITICAL VOLUMES	350
THE SUM OF CRITICAL VOLUMES	1506
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	1.057
LEVEL OF SERVICE	F

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	317	1622	66	0
EASTBOUND	0	1773	48	60
NORTHBOUND	75	33	269	158
SOUTHBOUND	97	90	3	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	1	0	0	1	1	0	3
SOUTHBOUND	1	0	0	0	0	1	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	317	N/A	844	844	N/A	N/A
EASTBOUND	0	N/A	886	N/A	48	N/A
NORTHBOUND	75	N/A	N/A	151	151	N/A
SOUTHBOUND	79	N/A	N/A	N/A	N/A	111

EAST-WEST CRITICAL VOLUMES 1203
NORTH-SOUTH CRITICAL VOLUMES 230

THE SUM OF CRITICAL VOLUMES 1433

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.942

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	320	1622	66	0
EASTBOUND	0	1773	48	60
NORTHBOUND	75	33	269	160
SOUTHBOUND	97	91	3	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	1	0	0	1	1	0	3
SOUTHBOUND	1	0	0	0	0	1	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	320	N/A	844	844	N/A	N/A
EASTBOUND	0	N/A	886	N/A	48	N/A
NORTHBOUND	75	N/A	N/A	151	151	N/A
SOUTHBOUND	79	N/A	N/A	N/A	N/A	111

EAST-WEST CRITICAL VOLUMES 1206
NORTH-SOUTH CRITICAL VOLUMES 230

THE SUM OF CRITICAL VOLUMES 1436

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.944

LEVEL OF SERVICE ..... E

---
* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	451	1691	55	0
EASTBOUND	0	1384	95	0
NORTHBOUND	163	83	341	226
SOUTHBOUND	135	106	4	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	1	0	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	451	N/A	873	873	N/A	N/A
EASTBOUND	N/A	740	N/A	740	N/A	N/A
NORTHBOUND	163	N/A	83	N/A	341	N/A
SOUTHBOUND	135	N/A	N/A	110	N/A	N/A

EAST-WEST CRITICAL VOLUMES 1191
NORTH-SOUTH CRITICAL VOLUMES 476

THE SUM OF CRITICAL VOLUMES 1667

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 1.170

LEVEL OF SERVICE ..... F

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	477	1851	58	0
EASTBOUND	0	1551	14	86
NORTHBOUND	171	87	365	238
SOUTHBOUND	142	111	4	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	1	0	0	1	1	0	3
SOUTHBOUND	1	0	0	0	0	1	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	477	N/A	954	954	N/A	N/A
EASTBOUND	0	N/A	776	N/A	14	N/A
NORTHBOUND	171	N/A	N/A	226	226	N/A
SOUTHBOUND	96	N/A	N/A	N/A	N/A	161

EAST-WEST CRITICAL VOLUMES 1253
NORTH-SOUTH CRITICAL VOLUMES 332

THE SUM OF CRITICAL VOLUMES 1585

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.053

LEVEL OF SERVICE ..... F

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 1, SUNSET BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	486	1851	58	0
EASTBOUND	0	1551	14	86
NORTHBOUND	171	88	370	243
SOUTHBOUND	142	112	4	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	1	1	0	0	3
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	1	0	0	1	1	0	3
SOUTHBOUND	1	0	0	0	0	1	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	486	N/A	954	954	N/A	N/A
EASTBOUND	0	N/A	776	N/A	14	N/A
NORTHBOUND	171	N/A	N/A	229	229	N/A
SOUTHBOUND	96	N/A	N/A	N/A	N/A	162

EAST-WEST CRITICAL VOLUMES 1262
NORTH-SOUTH CRITICAL VOLUMES 333

THE SUM OF CRITICAL VOLUMES 1595

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.060

LEVEL OF SERVICE ..... F

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	0	1241	108	265
EASTBOUND	215	1141	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	481	0	151	108

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	620	N/A	108	N/A
EASTBOUND	215	N/A	380	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	265	N/A	N/A	N/A	151	N/A

EAST-WEST CRITICAL VOLUMES 835
NORTH-SOUTH CRITICAL VOLUMES 265

THE SUM OF CRITICAL VOLUMES 1100

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.702

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	0	1313	119	280
EASTBOUND	256	1217	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	510	0	161	128

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	656	N/A	119	N/A
EASTBOUND	256	N/A	406	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	280	N/A	N/A	N/A	161	N/A

EAST-WEST CRITICAL VOLUMES 912
NORTH-SOUTH CRITICAL VOLUMES 280

THE SUM OF CRITICAL VOLUMES 1192

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.766

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	0	1314	119	282
EASTBOUND	256	1219	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	513	0	161	128

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	657	N/A	119	N/A
EASTBOUND	256	N/A	406	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	282	N/A	N/A	N/A	161	N/A

EAST-WEST CRITICAL VOLUMES 913
NORTH-SOUTH CRITICAL VOLUMES 282

THE SUM OF CRITICAL VOLUMES 1195

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.769

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	0	1072	204	301
EASTBOUND	300	808	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	547	0	81	150

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	536	N/A	204	N/A
EASTBOUND	300	N/A	269	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	301	N/A	N/A	N/A	81	N/A

EAST-WEST CRITICAL VOLUMES 836
NORTH-SOUTH CRITICAL VOLUMES 301

THE SUM OF CRITICAL VOLUMES 1137

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.728

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	0	1153	216	318
EASTBOUND	331	867	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	579	0	92	166

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	576	N/A	216	N/A
EASTBOUND	331	N/A	289	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	318	N/A	N/A	N/A	92	N/A

EAST-WEST CRITICAL VOLUMES 907
NORTH-SOUTH CRITICAL VOLUMES 318

THE SUM OF CRITICAL VOLUMES 1225

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.790

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 2, SAN VICENTE BOULEVARD AND BUNDY DRIVE (WEST)
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	0	1160	221	323
EASTBOUND	331	873	0	0
NORTHBOUND	0	0	0	0
SOUTHBOUND	588	0	92	166

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	2	0	1	0	3
EASTBOUND	1	0	3	0	0	0	4
NORTHBOUND	0	0	0	0	0	0	0
SOUTHBOUND	2	0	0	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	580	N/A	221	N/A
EASTBOUND	331	N/A	291	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A
SOUTHBOUND	323	N/A	N/A	N/A	92	N/A

EAST-WEST CRITICAL VOLUMES 911
NORTH-SOUTH CRITICAL VOLUMES 323

THE SUM OF CRITICAL VOLUMES 1234

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.796

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	104	1058	0	0
EASTBOUND	0	1249	177	260
NORTHBOUND	466	0	54	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	104	N/A	353	N/A	N/A	N/A
EASTBOUND	N/A	N/A	624	N/A	177	N/A
NORTHBOUND	260	N/A	N/A	N/A	N/A	260
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 728
NORTH-SOUTH CRITICAL VOLUMES 260

THE SUM OF CRITICAL VOLUMES 988

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.623

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS **	
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	109	1121	0	0
EASTBOUND	0	1331	186	277
NORTHBOUND	497	0	57	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	109	N/A	374	N/A	N/A	N/A
EASTBOUND	N/A	N/A	666	N/A	186	N/A
NORTHBOUND	277	N/A	N/A	N/A	N/A	277
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 775
NORTH-SOUTH CRITICAL VOLUMES 277

THE SUM OF CRITICAL VOLUMES 1052

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.668

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	109	1124	0	0
EASTBOUND	0	1336	186	277
NORTHBOUND	497	0	57	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	109	N/A	375	N/A	N/A	N/A
EASTBOUND	N/A	N/A	668	N/A	186	N/A
NORTHBOUND	277	N/A	N/A	N/A	N/A	277
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 777
NORTH-SOUTH CRITICAL VOLUMES 277

THE SUM OF CRITICAL VOLUMES 1054

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.670

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	118	1134	0	0
EASTBOUND	0	1006	103	322
NORTHBOUND	455	0	189	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	118	N/A	378	N/A	N/A	N/A
EASTBOUND	N/A	N/A	503	N/A	103	N/A
NORTHBOUND	322	N/A	N/A	N/A	N/A	322
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 621
NORTH-SOUTH CRITICAL VOLUMES 322

THE SUM OF CRITICAL VOLUMES 943

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.592

LEVEL OF SERVICE ..... A

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	124	1218	0	0
EASTBOUND	0	1079	111	340
NORTHBOUND	481	0	199	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	124	N/A	406	N/A	N/A	N/A
EASTBOUND	N/A	N/A	540	N/A	111	N/A
NORTHBOUND	340	N/A	N/A	N/A	N/A	340
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 664
NORTH-SOUTH CRITICAL VOLUMES 340

THE SUM OF CRITICAL VOLUMES 1004

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.635

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 3, SAN VICENTE BOULEVARD AND BUNDY DRIVE (EAST)
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	124	1235	0	0
EASTBOUND	0	1094	111	340
NORTHBOUND	481	0	199	0
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	3	0	0	0	4
EASTBOUND	0	0	2	0	1	0	3
NORTHBOUND	1	0	0	0	0	1	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	124	N/A	412	N/A	N/A	N/A
EASTBOUND	N/A	N/A	547	N/A	111	N/A
NORTHBOUND	340	N/A	N/A	N/A	N/A	340
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 671
NORTH-SOUTH CRITICAL VOLUMES 340

THE SUM OF CRITICAL VOLUMES 1011

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.639

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	93	819	29	0
EASTBOUND	177	1169	34	0
NORTHBOUND	59	405	210	0
SOUTHBOUND	30	267	187	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	93	N/A	410	N/A	29	N/A
EASTBOUND	177	N/A	401	401	N/A	N/A
NORTHBOUND	N/A	300	N/A	374	N/A	N/A
SOUTHBOUND	N/A	211	N/A	273	N/A	N/A

EAST-WEST CRITICAL VOLUMES 587
NORTH-SOUTH CRITICAL VOLUMES 404

THE SUM OF CRITICAL VOLUMES 991

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.625

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	99	870	30	0
EASTBOUND	186	1247	36	0
NORTHBOUND	62	426	226	0
SOUTHBOUND	32	281	197	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	99	N/A	435	N/A	30	N/A
EASTBOUND	186	N/A	428	428	N/A	N/A
NORTHBOUND	N/A	314	N/A	400	N/A	N/A
SOUTHBOUND	N/A	219	N/A	291	N/A	N/A

EAST-WEST CRITICAL VOLUMES	621
NORTH-SOUTH CRITICAL VOLUMES	432
THE SUM OF CRITICAL VOLUMES	1053
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	0.669
LEVEL OF SERVICE	B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	83	855	39	0
EASTBOUND	193	1244	36	0
NORTHBOUND	62	457	227	0
SOUTHBOUND	32	316	223	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	83	N/A	428	N/A	39	N/A
EASTBOUND	193	N/A	427	427	N/A	N/A
NORTHBOUND	N/A	320	N/A	426	N/A	N/A
SOUTHBOUND	N/A	247	N/A	324	N/A	N/A

EAST-WEST CRITICAL VOLUMES	621
NORTH-SOUTH CRITICAL VOLUMES	458
THE SUM OF CRITICAL VOLUMES	1079
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	0.687
LEVEL OF SERVICE	B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	83	855	39	0
EASTBOUND	193	1244	36	0
NORTHBOUND	62	457	227	0
SOUTHBOUND	32	316	223	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	83	N/A	428	N/A	39	N/A
EASTBOUND	193	N/A	427	427	N/A	N/A
NORTHBOUND	N/A	320	N/A	426	N/A	N/A
SOUTHBOUND	N/A	247	N/A	324	N/A	N/A

EAST-WEST CRITICAL VOLUMES 621
NORTH-SOUTH CRITICAL VOLUMES 458

THE SUM OF CRITICAL VOLUMES 1079

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.657

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL4
07-26-2000, 11:43 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	105	1038	13	0
EASTBOUND	144	1071	0	23
NORTHBOUND	72	503	193	0
SOUTHBOUND	41	313	202	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	105	N/A	519	N/A	13	N/A
EASTBOUND	144	N/A	536	N/A	0	N/A
NORTHBOUND	N/A	327	N/A	440	N/A	N/A
SOUTHBOUND	N/A	227	N/A	329	N/A	N/A

EAST-WEST CRITICAL VOLUMES 663
NORTH-SOUTH CRITICAL VOLUMES 481

THE SUM OF CRITICAL VOLUMES 1144

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.733

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	115	1117	14	0
EASTBOUND	151	1148	0	24
NORTHBOUND	76	529	207	0
SOUTHBOUND	43	329	212	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	115	N/A	558	N/A	14	N/A
EASTBOUND	151	N/A	574	N/A	0	N/A
NORTHBOUND	N/A	341	N/A	471	N/A	N/A
SOUTHBOUND	N/A	234	N/A	350	N/A	N/A

EAST-WEST CRITICAL VOLUMES 709
NORTH-SOUTH CRITICAL VOLUMES 514

THE SUM OF CRITICAL VOLUMES 1223

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.788

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	109	1100	44	0
EASTBOUND	158	1146	0	24
NORTHBOUND	76	572	211	0
SOUTHBOUND	43	383	251	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	109	N/A	550	N/A	44	N/A
EASTBOUND	158	N/A	573	N/A	0	N/A
NORTHBOUND	N/A	347	N/A	512	N/A	N/A
SOUTHBOUND	N/A	276	N/A	401	N/A	N/A

EAST-WEST CRITICAL VOLUMES	708
NORTH-SOUTH CRITICAL VOLUMES	555
THE SUM OF CRITICAL VOLUMES	1263
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	0.816
LEVEL OF SERVICE	D

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 4, SAN VICENTE BOULEVARD AND MONTANA AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	109	1100	44	0
EASTBOUND	158	1146	0	24
NORTHBOUND	76	572	211	0
SOUTHBOUND	43	383	251	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	109	N/A	550	N/A	44	N/A
EASTBOUND	158	N/A	573	N/A	0	N/A
NORTHBOUND	N/A	347	N/A	512	N/A	N/A
SOUTHBOUND	N/A	276	N/A	401	N/A	N/A

EAST-WEST CRITICAL VOLUMES 708
NORTH-SOUTH CRITICAL VOLUMES 555

THE SUM OF CRITICAL VOLUMES 1263

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.786

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL8
07-26-2000, 11:43 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	31	906	15	0
EASTBOUND	37	1320	12	0
NORTHBOUND	30	74	183	0
SOUTHBOUND	17	33	54	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	1	1	0	0	3
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	398	N/A	554	N/A	N/A
EASTBOUND	N/A	368	501	501	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	287
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	104

EAST-WEST CRITICAL VOLUMES 591
NORTH-SOUTH CRITICAL VOLUMES 304

THE SUM OF CRITICAL VOLUMES 895

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.527

LEVEL OF SERVICE ..... A

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	33	962	16	0
EASTBOUND	39	1410	13	0
NORTHBOUND	32	78	192	0
SOUTHBOUND	18	35	57	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	1	1	0	0	3
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	423	N/A	588	N/A	N/A
EASTBOUND	N/A	386	538	538	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	302
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	110

EAST-WEST CRITICAL VOLUMES 627
NORTH-SOUTH CRITICAL VOLUMES 320

THE SUM OF CRITICAL VOLUMES 947

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.561

LEVEL OF SERVICE ..... A

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	60	1025	0	0
EASTBOUND	0	1465	13	0
NORTHBOUND	36	0	210	30
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	0	0	3
EASTBOUND	0	0	2	1	0	0	3
NORTHBOUND	1	0	0	0	1	0	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	60	N/A	512	N/A	N/A	N/A
EASTBOUND	N/A	N/A	493	493	N/A	N/A
NORTHBOUND	36	N/A	N/A	N/A	210	N/A
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 553
NORTH-SOUTH CRITICAL VOLUMES 210

THE SUM OF CRITICAL VOLUMES 763

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.439

LEVEL OF SERVICE ..... A

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	50	1100	12	0
EASTBOUND	40	1135	46	0
NORTHBOUND	79	105	178	0
SOUTHBOUND	3	40	102	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	458	N/A	704	N/A	N/A
EASTBOUND	N/A	519	N/A	702	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	362
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	145

EAST-WEST CRITICAL VOLUMES 752
NORTH-SOUTH CRITICAL VOLUMES 365

THE SUM OF CRITICAL VOLUMES 1117

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.675

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	53	1187	13	0
EASTBOUND	42	1219	48	0
NORTHBOUND	83	110	187	0
SOUTHBOUND	3	42	107	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	494	N/A	759	N/A	N/A
EASTBOUND	N/A	550	N/A	760	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	380
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	152

EAST-WEST CRITICAL VOLUMES 813
NORTH-SOUTH CRITICAL VOLUMES 383

THE SUM OF CRITICAL VOLUMES 1196

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.727

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 5, SAN VICENTE BOULEVARD AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	137	1390	0	0
EASTBOUND	0	1351	48	0
NORTHBOUND	88	0	190	68
SOUTHBOUND	0	0	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	0	0	3
EASTBOUND	0	0	1	1	0	0	2
NORTHBOUND	1	0	0	0	1	0	2
SOUTHBOUND	0	0	0	0	0	0	0

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	137	N/A	695	N/A	N/A	N/A
EASTBOUND	N/A	N/A	700	700	N/A	N/A
NORTHBOUND	88	N/A	N/A	N/A	190	N/A
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 837
NORTH-SOUTH CRITICAL VOLUMES 190

THE SUM OF CRITICAL VOLUMES 1027

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.615

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	42	765	4	62
EASTBOUND	147	1188	142	0
NORTHBOUND	90	219	31	0
SOUTHBOUND	125	229	28	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	42	N/A	382	N/A	4	N/A
EASTBOUND	147	N/A	443	443	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	340
SOUTHBOUND	N/A	175	N/A	206	N/A	N/A

EAST-WEST CRITICAL VOLUMES 529
NORTH-SOUTH CRITICAL VOLUMES 465

THE SUM OF CRITICAL VOLUMES 994

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.628

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	44	812	11	68
EASTBOUND	154	1259	162	0
NORTHBOUND	97	247	33	0
SOUTHBOUND	136	257	29	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	44	N/A	406	N/A	11	N/A
EASTBOUND	154	N/A	474	474	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	377
SOUTHBOUND	N/A	184	N/A	238	N/A	N/A

EAST-WEST CRITICAL VOLUMES 560
NORTH-SOUTH CRITICAL VOLUMES 513

THE SUM OF CRITICAL VOLUMES 1073

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.683

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED
WESTBOUND	44	830	10	68
EASTBOUND	211	1268	171	0
NORTHBOUND	119	244	33	0
SOUTHBOUND	137	260	59	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	44	N/A	415	N/A	10	N/A
EASTBOUND	211	N/A	480	480	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	396
SOUTHBOUND	N/A	202	N/A	254	N/A	N/A

EAST-WEST CRITICAL VOLUMES	626
NORTH-SOUTH CRITICAL VOLUMES	533
THE SUM OF CRITICAL VOLUMES	1159
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	0.743
LEVEL OF SERVICE	C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	44	830	10	68
EASTBOUND	211	1268	171	0
NORTHBOUND	119	244	0	33
SOUTHBOUND	137	260	0	59

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	1	0	1	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	44	N/A	415	N/A	10	N/A
EASTBOUND	211	N/A	480	480	N/A	N/A
NORTHBOUND	119	N/A	244	N/A	0	N/A
SOUTHBOUND	137	N/A	260	N/A	0	N/A

EAST-WEST CRITICAL VOLUMES 626
NORTH-SOUTH CRITICAL VOLUMES 381

THE SUM OF CRITICAL VOLUMES 1007

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.607

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL4
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	115	976	47	68
EASTBOUND	198	1026	1	145
NORTHBOUND	108	292	46	0
SOUTHBOUND	136	325	30	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	115	N/A	488	N/A	47	N/A
EASTBOUND	198	N/A	513	N/A	1	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	446
SOUTHBOUND	N/A	199	N/A	292	N/A	N/A

EAST-WEST CRITICAL VOLUMES 686
NORTH-SOUTH CRITICAL VOLUMES 582

THE SUM OF CRITICAL VOLUMES 1268

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.820

LEVEL OF SERVICE ..... D

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	121	1043	51	76
EASTBOUND	208	1099	0	158
NORTHBOUND	128	320	48	0
SOUTHBOUND	152	353	32	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	121	N/A	522	N/A	51	N/A
EASTBOUND	208	N/A	550	N/A	0	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	496
SOUTHBOUND	N/A	205	N/A	332	N/A	N/A

EAST-WEST CRITICAL VOLUMES	730
NORTH-SOUTH CRITICAL VOLUMES	648
THE SUM OF CRITICAL VOLUMES	1378
NUMBER OF CRITICAL CLEARANCE INTERVALS	3
CMA VALUE	0.897
LEVEL OF SERVICE	D

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	121	1098	47	78
EASTBOUND	284	1144	34	171
NORTHBOUND	195	312	48	0
SOUTHBOUND	157	371	86	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	121	N/A	549	N/A	47	N/A
EASTBOUND	284	N/A	572	N/A	34	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	555
SOUTHBOUND	N/A	244	N/A	370	N/A	N/A

EAST-WEST CRITICAL VOLUMES 833
NORTH-SOUTH CRITICAL VOLUMES 712

THE SUM OF CRITICAL VOLUMES 1545

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 1.014

LEVEL OF SERVICE ..... F

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 6, SAN VICENTE BOULEVARD AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS **	
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	121	1098	0	125
EASTBOUND	284	1144	107	98
NORTHBOUND	195	312	0	48
SOUTHBOUND	157	371	0	86

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	0	1	0	4
EASTBOUND	1	0	2	0	1	0	4
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	1	0	1	0	1	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	121	N/A	549	N/A	0	N/A
EASTBOUND	284	N/A	572	N/A	107	N/A
NORTHBOUND	195	N/A	312	N/A	0	N/A
SOUTHBOUND	157	N/A	371	N/A	0	N/A

EAST-WEST CRITICAL VOLUMES 833
NORTH-SOUTH CRITICAL VOLUMES 566

THE SUM OF CRITICAL VOLUMES 1399

NUMBER OF CRITICAL CLEARANCE INTERVALS 3

CMA VALUE 0.882

LEVEL OF SERVICE ..... D

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL8
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	117	240	31	0
EASTBOUND	45	612	37	0
NORTHBOUND	111	461	54	0
SOUTHBOUND	32	484	50	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	117	N/A	N/A	271	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	694
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	626
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	566

EAST-WEST CRITICAL VOLUMES 811
NORTH-SOUTH CRITICAL VOLUMES 677

THE SUM OF CRITICAL VOLUMES 1488

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.922

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	123	253	33	0
EASTBOUND	47	649	39	0
NORTHBOUND	117	492	57	0
SOUTHBOUND	34	513	53	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	123	N/A	N/A	286	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	735
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	666
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	600

EAST-WEST CRITICAL VOLUMES	858
NORTH-SOUTH CRITICAL VOLUMES	717
THE SUM OF CRITICAL VOLUMES	1575
NUMBER OF CRITICAL CLEARANCE INTERVALS	2
CMA VALUE	0.980
LEVEL OF SERVICE	E

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	123	254	33	0
EASTBOUND	47	650	39	0
NORTHBOUND	117	492	57	0
SOUTHBOUND	34	513	53	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	123	N/A	N/A	287	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	736
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	666
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	600

EAST-WEST CRITICAL VOLUMES 859
NORTH-SOUTH CRITICAL VOLUMES 717

THE SUM OF CRITICAL VOLUMES 1576

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.981

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	130	366	38	0
EASTBOUND	49	617	40	0
NORTHBOUND	79	629	95	0
SOUTHBOUND	17	405	56	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	N/A	404	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	706
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	803
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	478

EAST-WEST CRITICAL VOLUMES 836
NORTH-SOUTH CRITICAL VOLUMES 820

THE SUM OF CRITICAL VOLUMES 1656

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 1.034

LEVEL OF SERVICE ..... F

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	137	388	40	0
EASTBOUND	51	652	42	0
NORTHBOUND	83	664	100	0
SOUTHBOUND	18	430	59	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	137	N/A	N/A	428	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	745
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	847
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	507

EAST-WEST CRITICAL VOLUMES	882
NORTH-SOUTH CRITICAL VOLUMES	865
THE SUM OF CRITICAL VOLUMES	1747
NUMBER OF CRITICAL CLEARANCE INTERVALS	2
CMA VALUE	1.095
LEVEL OF SERVICE	F

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 7, MONTANA AVENUE AND BUNDY DRIVE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	137	393	40	0
EASTBOUND	51	657	42	0
NORTHBOUND	83	664	100	0
SOUTHBOUND	18	430	59	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	0	0	0	0	1	1

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	137	N/A	N/A	433	N/A	N/A
EASTBOUND	N/A	N/A	N/A	N/A	N/A	750
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	847
SOUTHBOUND	N/A	N/A	N/A	N/A	N/A	507

EAST-WEST CRITICAL VOLUMES	887
NORTH-SOUTH CRITICAL VOLUMES	865
THE SUM OF CRITICAL VOLUMES	1752
NUMBER OF CRITICAL CLEARANCE INTERVALS	2
CMA VALUE	1.098
LEVEL OF SERVICE	F

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	14	178	99	0
EASTBOUND	431	155	25	0
NORTHBOUND	22	431	27	0
SOUTHBOUND	117	403	298	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	146	N/A	146	N/A	N/A
EASTBOUND	431	N/A	N/A	180	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	480
SOUTHBOUND	N/A	334	N/A	484	N/A	N/A

EAST-WEST CRITICAL VOLUMES 577
NORTH-SOUTH CRITICAL VOLUMES 597

THE SUM OF CRITICAL VOLUMES 1174

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.713

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	15	187	104	0
EASTBOUND	453	163	26	0
NORTHBOUND	23	480	28	0
SOUTHBOUND	123	445	313	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	153	N/A	153	N/A	N/A
EASTBOUND	453	N/A	N/A	189	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	531
SOUTHBOUND	N/A	346	N/A	535	N/A	N/A

EAST-WEST CRITICAL VOLUMES 606
NORTH-SOUTH CRITICAL VOLUMES 654

THE SUM OF CRITICAL VOLUMES 1260

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.770

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	15	187	104	0
EASTBOUND	485	165	39	0
NORTHBOUND	46	447	28	0
SOUTHBOUND	123	409	351	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	153	N/A	153	N/A	N/A
EASTBOUND	485	N/A	N/A	204	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	521
SOUTHBOUND	N/A	357	N/A	526	N/A	N/A

EAST-WEST CRITICAL VOLUMES	638
NORTH-SOUTH CRITICAL VOLUMES	644
THE SUM OF CRITICAL VOLUMES	1282
NUMBER OF CRITICAL CLEARANCE INTERVALS	2
CMA VALUE	0.785
LEVEL OF SERVICE	C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	15	187	104	0
EASTBOUND	485	165	39	0
NORTHBOUND	46	447	28	0
SOUTHBOUND	123	409	351	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	153	N/A	153	N/A	N/A
EASTBOUND	485	N/A	N/A	204	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	521
SOUTHBOUND	N/A	357	N/A	526	N/A	N/A

EAST-WEST CRITICAL VOLUMES 638
NORTH-SOUTH CRITICAL VOLUMES 644

THE SUM OF CRITICAL VOLUMES 1282

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.755

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL4
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	7	178	294	0
EASTBOUND	397	181	31	0
NORTHBOUND	29	710	20	0
SOUTHBOUND	34	503	328	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	185	N/A	N/A	294	N/A
EASTBOUND	397	N/A	N/A	212	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	759
SOUTHBOUND	N/A	387	N/A	478	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 793

THE SUM OF CRITICAL VOLUMES 1484

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.919

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	7	187	309	0
EASTBOUND	417	190	33	0
NORTHBOUND	30	765	21	0
SOUTHBOUND	36	549	345	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	194	N/A	N/A	309	N/A
EASTBOUND	417	N/A	N/A	223	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	816
SOUTHBOUND	N/A	412	N/A	518	N/A	N/A

EAST-WEST CRITICAL VOLUMES 726
NORTH-SOUTH CRITICAL VOLUMES 852

THE SUM OF CRITICAL VOLUMES 1578

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.982

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	7	187	309	0
EASTBOUND	467	193	61	0
NORTHBOUND	75	720	21	0
SOUTHBOUND	36	508	393	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	194	N/A	N/A	309	N/A
EASTBOUND	467	N/A	N/A	254	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	816
SOUTHBOUND	N/A	420	N/A	517	N/A	N/A

EAST-WEST CRITICAL VOLUMES 776
NORTH-SOUTH CRITICAL VOLUMES 852

THE SUM OF CRITICAL VOLUMES 1628

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 1.015

LEVEL OF SERVICE ..... F

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 8, MONTANA AVENUE AND BARRINGTON AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT + MITIGATION

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	7	187	309	0
EASTBOUND	467	193	61	0
NORTHBOUND	75	720	21	0
SOUTHBOUND	36	508	393	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	1	0	1	0	0	2
EASTBOUND	0	1	0	1	0	0	2
NORTHBOUND	0	0	0	0	0	1	1
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	194	N/A	N/A	309	N/A
EASTBOUND	467	N/A	N/A	254	N/A	N/A
NORTHBOUND	N/A	N/A	N/A	N/A	N/A	816
SOUTHBOUND	N/A	420	N/A	517	N/A	N/A

EAST-WEST CRITICAL VOLUMES 776
NORTH-SOUTH CRITICAL VOLUMES 852

THE SUM OF CRITICAL VOLUMES 1628

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.985

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATCS Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL8
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	5	28	34	0
EASTBOUND	63	17	19	0
NORTHBOUND	9	317	30	0
SOUTHBOUND	43	333	59	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	67
EASTBOUND	N/A	N/A	N/A	N/A	N/A	99
NORTHBOUND	N/A	174	N/A	182	N/A	N/A
SOUTHBOUND	N/A	202	N/A	234	N/A	N/A

EAST-WEST CRITICAL VOLUMES 130
NORTH-SOUTH CRITICAL VOLUMES 243

THE SUM OF CRITICAL VOLUMES 373

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.311

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	5	29	36	0
EASTBOUND	66	18	20	0
NORTHBOUND	9	360	32	0
SOUTHBOUND	45	371	62	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	70
EASTBOUND	N/A	N/A	N/A	N/A	N/A	104
NORTHBOUND	N/A	195	N/A	206	N/A	N/A
SOUTHBOUND	N/A	217	N/A	260	N/A	N/A

EAST-WEST CRITICAL VOLUMES 136
NORTH-SOUTH CRITICAL VOLUMES 269

THE SUM OF CRITICAL VOLUMES 405

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.338

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	8	0	59	0
EASTBOUND	0	0	0	0
NORTHBOUND	0	408	41	0
SOUTHBOUND	54	409	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	0	0
NORTHBOUND	0	0	1	1	0	0	2
SOUTHBOUND	0	1	1	0	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	67
EASTBOUND	N/A	N/A	N/A	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	224	224	N/A	N/A
SOUTHBOUND	N/A	198	265	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 67
NORTH-SOUTH CRITICAL VOLUMES 278

THE SUM OF CRITICAL VOLUMES 345

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.287

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	17	54	76	0
EASTBOUND	107	21	9	0
NORTHBOUND	10	503	58	0
SOUTHBOUND	77	462	75	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	147
EASTBOUND	N/A	N/A	N/A	N/A	N/A	137
NORTHBOUND	N/A	277	N/A	294	N/A	N/A
SOUTHBOUND	N/A	238	N/A	376	N/A	N/A

EAST-WEST CRITICAL VOLUMES 254
NORTH-SOUTH CRITICAL VOLUMES 386

THE SUM OF CRITICAL VOLUMES 640

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.533

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	18	57	80	0
EASTBOUND	112	22	9	0
NORTHBOUND	11	548	61	0
SOUTHBOUND	81	506	79	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	1	1
NORTHBOUND	0	1	0	1	0	0	2
SOUTHBOUND	0	1	0	1	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	155
EASTBOUND	N/A	N/A	N/A	N/A	N/A	143
NORTHBOUND	N/A	299	N/A	320	N/A	N/A
SOUTHBOUND	N/A	250	N/A	416	N/A	N/A

EAST-WEST CRITICAL VOLUMES 267
NORTH-SOUTH CRITICAL VOLUMES 427

THE SUM OF CRITICAL VOLUMES 694

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.578

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION: 9, BARRINGTON AVENUE AND GORHAM AVENUE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	23	0	125	0
EASTBOUND	0	0	0	0
NORTHBOUND	0	615	70	0
SOUTHBOUND	90	594	0	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	0	0	0	0	0	1	1
EASTBOUND	0	0	0	0	0	0	0
NORTHBOUND	0	0	1	1	0	0	2
SOUTHBOUND	0	1	1	0	0	0	2

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	N/A	N/A	N/A	N/A	N/A	148
EASTBOUND	N/A	N/A	N/A	N/A	N/A	N/A
NORTHBOUND	N/A	N/A	342	342	N/A	N/A
SOUTHBOUND	N/A	233	451	N/A	N/A	N/A

EAST-WEST CRITICAL VOLUMES 148
NORTH-SOUTH CRITICAL VOLUMES 451

THE SUM OF CRITICAL VOLUMES 599

NUMBER OF CRITICAL CLEARANCE INTERVALS 9

CMA VALUE 0.499

LEVEL OF SERVICE ..... A

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	79	2028	79	0
EASTBOUND	72	1464	12	0
NORTHBOUND	117	384	0	82
SOUTHBOUND	128	280	123	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	79	N/A	702	702	N/A	N/A
EASTBOUND	72	N/A	492	492	N/A	N/A
NORTHBOUND	117	N/A	192	N/A	0	N/A
SOUTHBOUND	128	N/A	202	202	N/A	N/A

EAST-WEST CRITICAL VOLUMES 774
NORTH-SOUTH CRITICAL VOLUMES 320

THE SUM OF CRITICAL VOLUMES 1094

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.659

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	85	2165	83	0
EASTBOUND	90	1593	13	0
NORTHBOUND	123	438	0	94
SOUTHBOUND	135	304	135	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	85	N/A	749	749	N/A	N/A
EASTBOUND	90	N/A	535	535	N/A	N/A
NORTHBOUND	123	N/A	219	N/A	0	N/A
SOUTHBOUND	135	N/A	220	220	N/A	N/A

EAST-WEST CRITICAL VOLUMES 839
NORTH-SOUTH CRITICAL VOLUMES 354

THE SUM OF CRITICAL VOLUMES 1193

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.725

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	85	2165	83	0
EASTBOUND	95	1593	13	0
NORTHBOUND	123	445	0	94
SOUTHBOUND	135	308	138	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	85	N/A	749	749	N/A	N/A
EASTBOUND	95	N/A	535	535	N/A	N/A
NORTHBOUND	123	N/A	222	N/A	0	N/A
SOUTHBOUND	135	N/A	223	223	N/A	N/A

EAST-WEST CRITICAL VOLUMES 844
NORTH-SOUTH CRITICAL VOLUMES 357

THE SUM OF CRITICAL VOLUMES 1201

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.731

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	138	1722	98	0
EASTBOUND	119	1543	21	0
NORTHBOUND	81	372	0	76
SOUTHBOUND	102	462	131	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	607	607	N/A	N/A
EASTBOUND	119	N/A	521	521	N/A	N/A
NORTHBOUND	81	N/A	186	N/A	0	N/A
SOUTHBOUND	102	N/A	296	296	N/A	N/A

EAST-WEST CRITICAL VOLUMES 726
NORTH-SOUTH CRITICAL VOLUMES 377

THE SUM OF CRITICAL VOLUMES 1103

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.665

LEVEL OF SERVICE ..... B

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	153	1904	103	0
EASTBOUND	134	1716	22	0
NORTHBOUND	85	404	0	83
SOUTHBOUND	107	518	149	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	153	N/A	669	669	N/A	N/A
EASTBOUND	134	N/A	579	579	N/A	N/A
NORTHBOUND	85	N/A	202	N/A	0	N/A
SOUTHBOUND	107	N/A	334	334	N/A	N/A

EAST-WEST CRITICAL VOLUMES 803
NORTH-SOUTH CRITICAL VOLUMES 419

THE SUM OF CRITICAL VOLUMES 1222

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.745

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:10, BARRINGTON AVENUE AND WILSHIRE BOULEVARD
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	153	1904	103	0
EASTBOUND	150	1716	22	0
NORTHBOUND	85	425	0	83
SOUTHBOUND	107	540	165	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	0	0	4
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	153	N/A	669	669	N/A	N/A
EASTBOUND	150	N/A	579	579	N/A	N/A
NORTHBOUND	85	N/A	212	N/A	0	N/A
SOUTHBOUND	107	N/A	352	352	N/A	N/A

EAST-WEST CRITICAL VOLUMES 819
NORTH-SOUTH CRITICAL VOLUMES 437
THE SUM OF CRITICAL VOLUMES 1256

NUMBER OF CRITICAL CLEARANCE INTERVALS 2

CMA VALUE 0.767

LEVEL OF SERVICE C

---

* Includes CMA value decreased due to ATSAC Implementation.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	66	1966	0	1051
EASTBOUND	27	1873	68	0
NORTHBOUND	110	164	81	0
SOUTHBOUND	1500	321	47	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	66	N/A	655	N/A	0	N/A
EASTBOUND	27	N/A	647	647	N/A	N/A
NORTHBOUND	110	N/A	164	N/A	81	N/A
SOUTHBOUND	550	N/A	N/A	368	N/A	N/A

EAST-WEST CRITICAL VOLUMES 713
NORTH-SOUTH CRITICAL VOLUMES 714

THE SUM OF CRITICAL VOLUMES 1427

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.931

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation. Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL1
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	70	2219	0	1123
EASTBOUND	28	2021	72	0
NORTHBOUND	122	172	88	0
SOUTHBOUND	1592	337	49	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	70	N/A	740	N/A	0	N/A
EASTBOUND	28	N/A	698	698	N/A	N/A
NORTHBOUND	122	N/A	86	N/A	88	N/A
SOUTHBOUND	584	N/A	N/A	386	N/A	N/A

EAST-WEST CRITICAL VOLUMES 768
NORTH-SOUTH CRITICAL VOLUMES 706

THE SUM OF CRITICAL VOLUMES 1474

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.964

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation. Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL2
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: KML PERIOD: AM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	70	2219	0	1128
EASTBOUND	28	2021	72	0
NORTHBOUND	122	176	88	0
SOUTHBOUND	1595	340	49	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	70	N/A	740	N/A	0	N/A
EASTBOUND	28	N/A	698	698	N/A	N/A
NORTHBOUND	122	N/A	88	N/A	88	N/A
SOUTHBOUND	585	N/A	N/A	389	N/A	N/A

EAST-WEST CRITICAL VOLUMES 768
NORTH-SOUTH CRITICAL VOLUMES 707

THE SUM OF CRITICAL VOLUMES 1475

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.965

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.
Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL3
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: EXISTING (1999)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	86	1797	0	1162
EASTBOUND	37	1845	90	0
NORTHBOUND	93	256	106	0
SOUTHBOUND	1199	290	72	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	1	0	1	0	3
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	86	N/A	599	N/A	0	N/A
EASTBOUND	37	N/A	645	645	N/A	N/A
NORTHBOUND	93	N/A	256	N/A	106	N/A
SOUTHBOUND	440	N/A	N/A	362	N/A	N/A

EAST-WEST CRITICAL VOLUMES 731
NORTH-SOUTH CRITICAL VOLUMES 696

THE SUM OF CRITICAL VOLUMES 1427

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.931

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.
Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL5
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: RRH PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITHOUT PROJECT

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	90	2005	0	1252
EASTBOUND	39	2157	102	0
NORTHBOUND	101	269	117	0
SOUTHBOUND	1298	305	76	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	90	N/A	668	N/A	0	N/A
EASTBOUND	39	N/A	753	753	N/A	N/A
NORTHBOUND	101	N/A	134	N/A	117	N/A
SOUTHBOUND	476	N/A	N/A	381	N/A	N/A

EAST-WEST CRITICAL VOLUMES 843
NORTH-SOUTH CRITICAL VOLUMES 610

THE SUM OF CRITICAL VOLUMES 1453

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.950

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.
Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL6
07-26-2000, 9:14 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:11, WILSHIRE BOULEVARD AND SAN VICENTE BOULEVARD/FEDERAL AVE
DATE: 07-26-2000 INITIALS: KML PERIOD: PM PEAK HOUR
CASE: FUTURE (2004) WITH PROJECT

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	90	2005	0	1267
EASTBOUND	39	2157	102	0
NORTHBOUND	101	281	117	0
SOUTHBOUND	1315	318	76	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	1	0	2	1	1	0	5
EASTBOUND	1	0	2	1	0	0	4
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	1	0	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	90	N/A	668	N/A	0	N/A
EASTBOUND	39	N/A	753	753	N/A	N/A
NORTHBOUND	101	N/A	140	N/A	117	N/A
SOUTHBOUND	482	N/A	N/A	394	N/A	N/A

EAST-WEST CRITICAL VOLUMES 843
NORTH-SOUTH CRITICAL VOLUMES 622

THE SUM OF CRITICAL VOLUMES 1465

NUMBER OF CRITICAL CLEARANCE INTERVALS 3*

CMA VALUE 0.958

LEVEL OF SERVICE ..... E

---

* Includes CMA value decreased due to ATSAC Implementation.
Northbound and Southbound approaches have opposed signal phases.

K:\ICAP5\BARSAN99\REVISED\TOTAL RL7
07-26-2000, 9:14 AM