CHAPTER 3
TRANSPORTATION SETTING IMPACTS AND MITIGATION

CHAPTER 3 - TRANSPORTATION SETTING, IMPACTS, AND MITIGATION

This section describes the study area's transportation-related environmental setting, impacts and mitigation measures. Setting information is provided for existing year 2000 conditions and future information is provided for the forecast year of 2020. The analysis will identify the significance of the project's impacts on the transportation system by 2020 assuming the implementation of other major funded and committed transit or highway improvements over the next 20 years.

The five scenarios discussed in this section include No Build, Transportation System Management (TSM), Bus Rapid Transit (BRT), BRT including the Oxnard/Lankershim On-Street Alignment, and the Minimum Operable Segment (MOS). Section 3-3.2.4 also discusses potential weekend service on the Lankershim/Oxnard On-Street Alignment The section ~~will~~ further describes the effects of the No Build and each of the three project alternatives on the transportation systems within the corridor in terms of transportation supply and demand. These effects are presented for the highway, transit, and parking systems.

General as well as local impacts on the transportation system are presented in this Chapter. General impacts include effects of the project on systemwide (County and Valley) transportation performance indicators and on the Valley's predominant travel corridors; whereas, local impacts deal with specific traffic access, circulation, intersection and parking impacts along the East-West Corridor and near the proposed stations.

3-1 EXISTING CONDITIONS

3-1.1 Highway System

3-1.1.1 Freeway System

Five freeways serve this area, some as major intra-state travel routes and are among the busiest in the nation. Three freeways, I-405 (San Diego Freeway), US 101 (Ventura/Hollywood Freeway), and I-5 (Golden State Freeway), connect the Valley directly with the Los Angeles Basin through the Santa Monica Mountains. The Ventura Freeway and SR 118 (Ronald Reagan Freeway) facilitate east-west travel between Los Angeles County and Ventura County and connect the San Fernando Valley with points east through the San Gabriel Valley via I-210 (Foothill Freeway). The SR 134 Freeway is an east-west route linking the Valley to Glendale and Pasadena. Table 3-1 briefly describes the general characteristics of the Valley's major freeways.

The Ventura Freeway, the primary freeway paralleling the East-West Transit Corridor, is generally a 10-lane freeway. The freeway is congested in both directions for much of the day and

Table 3-1 : Existing Traffic Characteristics for the San Fernando Valley Freeway System			
Freeway	**Alignment**	**Multi-Use Lanes + HOV**	**Range of Volume (ADT)**
I-5	Northwest-Southeast	8	155,000-266,000
I-405	North-South	8 + 2	118,000-269,000
Rte. 170	North-South	8 + 2	103,000-174,000
Rte. 118	East-West	8 + 2	100,000-200,000
Rte. 134	East-West	8 + 2	182,000-213,000
US 101	East-West	10	196,000-322,000

Source: 1997 Traffic Volumes on the California State Highway System, Caltrans, 1997.

is one of the busiest and most congested freeways in Southern California. The peak-hour congestion patterns persist for 3 to 4 hours in each of the peak periods on a daily basis. In addition, the freeway also experiences congestion patterns during the off-peak periods. The freeway corridor serves a large number of activity centers and provides connections to Hollywood and downtown Los Angeles. The Ventura Freeway is used by local traffic, as well as for long-distance commuters.

During the AM and PM peak hours, many of the freeways and arterial facilities in the Valley are operating at or near capacity in the peak direction of travel. Most of the freeways are experiencing average operating speeds of under 30 miles per hour in the peak direction of travel (toward the Los Angeles CBD).

In the ~~Draft~~ adopted 2001 Long Range Transportation Plan (LRTP)~~ currently being prepared by MTA~~, a major corridor study is included for the US 101 freeway in the San Fernando Valley, which will examine strategies for improving conditions on this corridor. At this point, no funding of HOV lanes on US 101 is included in the LRTP. (A 1996 Caltrans cost estimate for constructing HOV lanes on US 101 between downtown Los Angeles to the Ventura County line was ~~$1,102 billion~~ $1.1 billion (in 1995 dollars). Depending upon the results of this study and the financial resources available at that time, possible enhancements for the US 101 corridor would be considered again. It should also be noted that no HOV improvements for US 101 in the Valley are included in the ~~Draft~~ 2001 RTP ~~that is currently being prepared~~ adopted by SCAG.

In 1993, US 101 was widened in the Valley with the thought that the additional lane in each direction would be an HOV lane. Because of local opposition, however, the lanes were opened to traffic as mixed flow lanes instead. Due to right-of-way constraints, any effort now to include HOV lanes on US 101 would involve extensive real estate acquisitions, including substantial commercial and residential takings. Numerous bridges and interchanges would also have to be modified. Caltrans has a policy that HOV lanes should be developed as additional facilities and the conversion of existing mixed flow lanes to HOV use is not considered a feasible alternative. Despite its recent widening projects, US 101 is currently operating at capacity in both directions during peak hours. This freeway is projected to be one of Southern California's most congested facilities in the future, operating at 50 to 60 percent over capacity by the year 2020.

Increased freeway congestion on US 101 would result in no travel time advantage to commuter express buses on freeways. This increase in congestion and lack of planned capacity improvements further strengthens the need for transit improvements and the potential for ridership on the transit corridor as it parallels this freeway. To the extent that ~~future~~ HOV lanes will be implemented in the Valley in the near future, they ~~will~~ are more likely to be oriented more toward north-south trips ~~(e.g. I-405/vRoute 14/I-5/Route 170 to Route 134 connection and Route 118 to I-405 connection)~~ (e.g., I-5 between SR 170 and SR 14) than east-west trips within the Valley.

3-1.1.2 Arterial System

a. Volumes

The entire corridor study area is within the jurisdiction of the City of Los Angeles. The arterial and local street system conforms predominantly to an east-west/north-south grid system. Table 3-2 lists the key east-west arterials within the study area, their functional classifications, and range of daily traffic volumes.

Table 3-2: Existing Characteristics of East-West Arterials in the San Fernando Valley

Arterial Location	Operational Classification	Range of Volume (ADT)
Saticoy Street	Secondary	12,000 – 28,000
Sherman Way	Major	44,000 – 70,000
Vanowen Street	Secondary	24,000 – 33,000
Victory Boulevard	Major	32,000 – 40,000
Oxnard Street	Secondary	14,000 – 28,000
Chandler Boulevard	Secondary	9,000-15,000
Burbank Boulevard	~~Secondary~~ Major	7,000 – 55,000
Ventura Boulevard	Major	33,000 – 46,000

Source: LADOT, Electronic Traffic Count Database (1994-1996); except Chandler Boulevard, Meyer, Mohaddes Associates, Inc. Traffic Counts (2000).

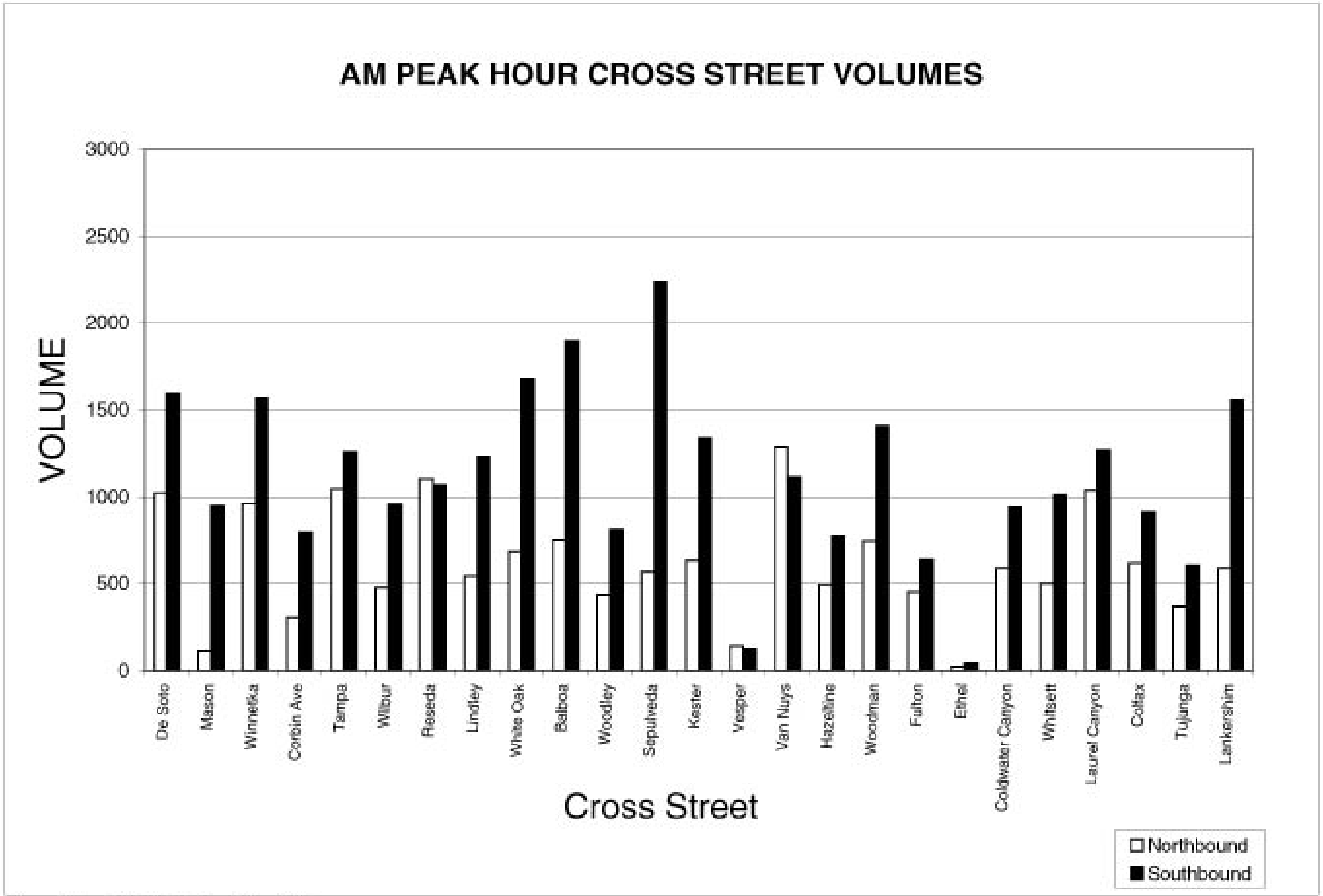
Of the arterials listed in this table, ~~O~~only ~~two~~ three major arterials, Sherman Way, ~~and~~ Victory Boulevard, and Ventura Boulevard, and one secondary arterial, Vanowen Street, are continuous throughout the entire length of the study corridor. Other east-west arterials are mostly continuous in the East Valley (east of the I-405 Freeway) and become discontinuous in the west side of the Valley. This is due to a number of natural and/or constructed barriers, including the I-405 Freeway, the Van Nuys Airport, the Sepulveda Basin Recreation Area, and the Ventura Freeway. These obstructions, together with traffic from the freeway system, force east-west travel on a limited number of congested highway corridors in the study area. Sherman Way, which is located in the middle section of the Valley, carries by far the highest daily traffic volumes.

For the purposes of this study, it is also important to evaluate patterns and magnitude of traffic volumes carried by the north-south streets which cross the east-west corridor. Figure 3-1 and Figure 3-2 show AM and PM traffic volumes by direction that are carried on the north-south arterials at the locations where they cross the east-west transit corridor. As seen on these figures, arterial traffic volumes are highly directional during the peak hours, reflecting Valley's major patterns of commute traffic, with southbound the predominant direction in the AM and the northbound in the PM peak. Generally, traffic volumes are higher during the PM peak compared to the AM and tend to be higher in the West Valley than the East Valley during both peaks. In the AM peak, Sepulveda Boulevard carries the highest north- south volumes, at around 2,800 two-way vehicles per hour, but during the PM peak, De Soto Avenue has the highest at around 3,500 vehicles per hour.

b. Intersection Levels of Service

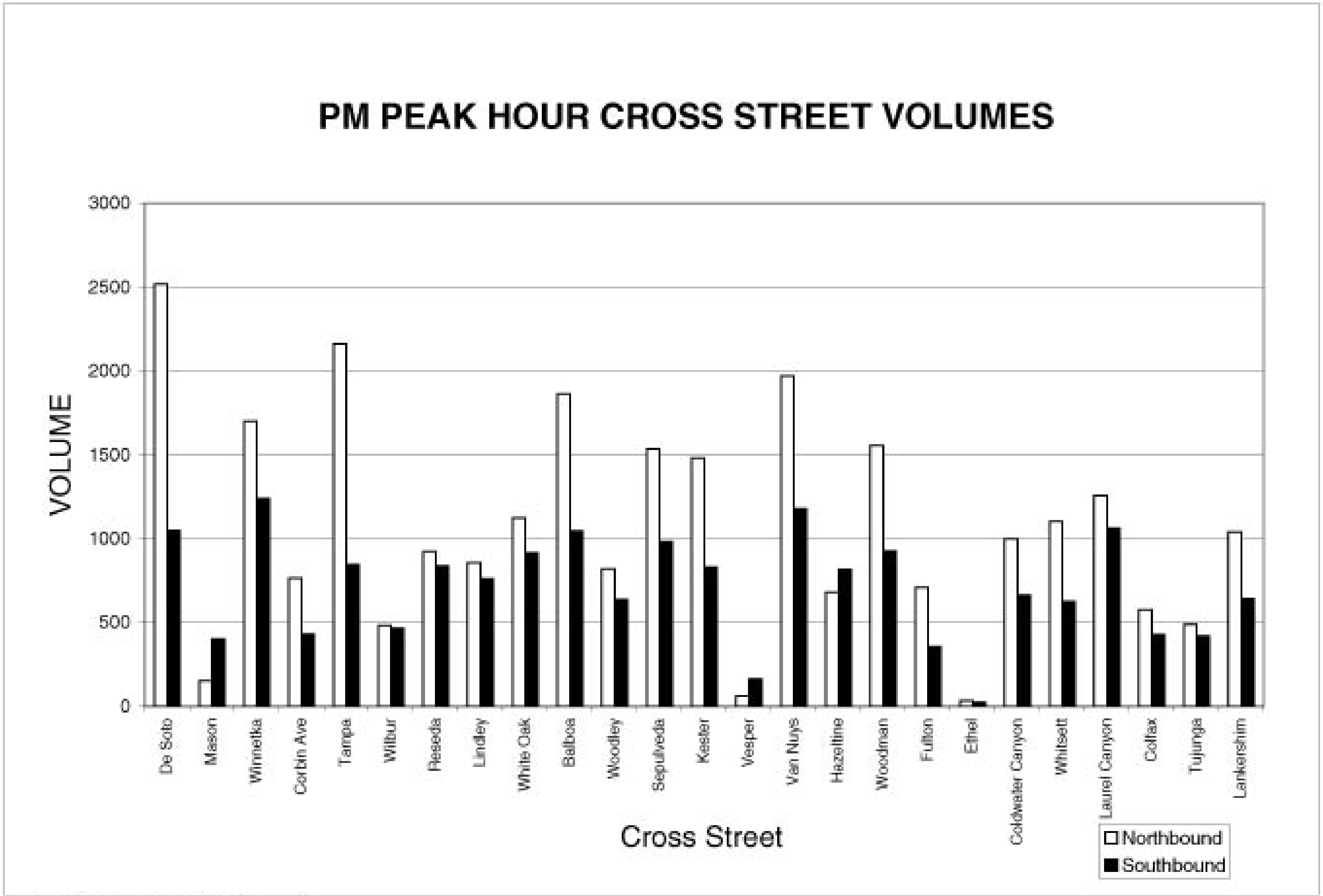
A total of fifty-three intersections within the immediate vicinity of the transit corridor were selected for detailed level of service analysis in this study. These intersections were chosen in consultation with the City of Los Angeles Department of Transportation (LADOT) and represent intersections that are directly along the BRT alignment, or would potentially be affected by a nearby BRT crossing, or are on a major access route to a park-and-ride station. The selection of intersections was made based on proximity to the BRT alignment, potential travel pattern orientation, access routes and expected level of auto access activity at each station. These intersections are illustrated on Figure 3-3. Most are existing intersections; however, five of these locations are not currently signalized intersections and represent future BRT crossing locations which would be signalized, as part of the project.

Detailed AM and PM peak period turning movement ground counts were compiled at the existing study intersections, from a combination of existing recent data available in LADOT computerized data files and new data collected during July/August of 2000, and were summarized per LADOT specified formats. The summertime counts were increased by an average of five percent to reflect fall conditions. Current conditions at each study intersection were analyzed using the Operational Analysis Methodology of the 1997 Highway Capacity Manual (HCM). The Operations Analysis Methodology results in a rating of conditions at an intersection based on the average number of seconds of delay experienced by motorists traveling through the intersection. Level of service ranges from Level A, free flow conditions, to Level F (jammed conditions), with Level E representing capacity. Detailed signal timing and phasing information was obtained from LADOT and used as inputs to the intersection analysis.



Source: Meyer Mohaddes Associates, 2000.

Figure 3-1: Morning Peak Hour Cross Street Volumes



Source: Meyer Mohaddes Associates, 2000.

Figure 3-2: Afternoon Peak Hour Cross Street Volumes

Source: Meyer Mohaddes Associates, 2000.

Figure 3-3: Base Map

The results of the intersection operating conditions analysis, with levels of service and average delay for each peak period, are included in Appendix I. The majority of the study intersections along the Burbank-Chandler corridor are currently operating at relatively good levels of service, as compared to some of the other corridors in the Valley. Among the 48 existing study intersections, 44 are presently operating at acceptable LOS D or better. Only four intersections are currently operating at LOS E or F during the morning and/or evening peak periods, as listed in Table 3-3. All four are located near Warner Center on Victory Boulevard, which is one of the more heavily traveled east-west corridors in the Valley.

Table 3-3: LOS E/F Intersections – Existing Conditions

Intersections	LOS E		LOS F	
	AM	PM	AM	PM
Owensmouth Ave/Victory Blvd		X		
Variel Ave/Victory Blvd			X	
De Soto Ave/Victory Blvd		X		
Winnetka Ave/Victory Blvd				X

Source: Meyer, Mohaddes Associates, Inc., 2000.

3-1.2 Existing Transit Services

The San Fernando Valley has an extensive transit system. Public transportation in the Valley is provided in three forms:

- Traditional transit service (fixed-route bus service with scheduled stops)
- Non-traditional transit service (special shuttle systems and demand-responsive services)
- Rail service (commuter and intercity rail)

Currently there are four major transit operators providing fixed-route bus service in the San Fernando Valley. They are:

- Los Angeles County Metropolitan Transportation Authority (MTA)
- City of Los Angeles Department of Transportation (LADOT Commuter Express/DASH)
- Antelope Valley Transit Authority (AVTA)
- Santa Clarita Transit (SCT)

Table 3-4 provides a general summary of MTA transit service serving the Valley.

Table 3-4: MTA Transit Service Characteristics			
MTA Route	**Type of Service**	**Service Area**	**Days in Operation**
90	Local Fixed Route	Foothill Blvd./Pennsylvania Ave./Glendale Ave.	Daily
91	Local Fixed Route	Foothill Blvd./La Crescenta Ave./Glendale Ave.	Daily
92	Local Fixed Route	Glenoaks Blvd./Brand Blvd. via Glendale Blvd.	Daily
93	Local Fixed Route	Glenoaks Blvd./Brand Blvd. via Allesandro St.	Daily
94	Local Fixed Route	Los Angeles/San Fernando/Sylmar Juvenile Hall	Daily
96	Local Fixed Route	Los Angeles/Burbank/Sherman Oaks via Los Angeles Zoo	Daily
150	Local Fixed Route	Canoga Park - Warner Center Ventura Boulevard University City	Daily
152	Local Fixed Route	Fallbrook Ave./Roscoe Blvd./Vineland Ave./Burbank Trans. Center	Daily
154	Local Fixed Route	Tampa Ave./Ventura Blvd./Burbank Blvd./Oxnard St.	Mon – Sat
156	Local Fixed Route	Panorama City/Van Nuys/North Hollywood/Hollywood/Los Angeles City College	Daily
158	Local Fixed Route	Devonshire St./Woodman Ave.	Daily
161	Local Fixed Route	Westlake Village/Agoura Hills/Calabasas/Canoga Park	Daily
163	Local Fixed Route	Sherman Way/Hollywood Way/Hollywood	Daily
164	Local Fixed Route	Victory Blvd./Warner Center/Burbank Trans. Center	Daily
165	Local Fixed Route	Vanowen St./Burbank Trans. Center	Daily
166	Local Fixed Route	Nordhoff St./Lankershim Blvd./Chatsworth Trans. Center	Daily
167	Local Fixed Route	Plummer St./Coldwater Canyon Ave./Chatsworth Trans. Center	Daily
168	Local Fixed Route	Lassen St.	Mon – Sat
169	Local Fixed Route	Saticoy St./Sunland Blvd.	Daily
230	Local Fixed Route	Laurel Canyon Blvd.	Daily
233	Local Fixed Route	Lakeview Terrace/Van Nuys Blvd./Sherman Oaks	Daily
234	Local Fixed Route	Sepulveda Blvd./Brand Blvd./Sayre St.	Daily
236	Local Fixed Route	Balboa Blvd./Woodley Ave.	Daily
239	Local Fixed Route	White Oak Ave./Zelzah Ave./Rinaldi St.	Daily
240	Local Fixed Route	Northridge - Reseda Boulevard Ventura Boulevard University City	Daily
243	Local Fixed Route	Chatsworth Metrolink Station/DeSoto Ave./Ventura Blvd./Winnetka Ave.	Mon – Fri
245	Local Fixed Route	Chatsworth Station/Topanga Canyon Blvd./Mulholland Dr./Valley Circle Blvd.	Daily
394	Limited Stop	San Fernando Rd. Limited Sylmar/San Fernando Metrolink Station	Mon – Fri
410	Express	San Fernando/Burbank/Glendale/Glenoaks Blvd./Los Angeles Express	Mon – Fri
418	Express	Canoga Park/Van Nuys/Sun Valley/Los Angeles Express	Mon – Fri
426	Express	San Fernando Valley/Sherman Way/Mid-Wilshire Express	Mon – Fri
561	Express	Sylmar/San Fernando Station/Van Nuys Blvd. - Limited San Diego Freeway Express - Getty Center Drive – UCLA - LAX City Bus Center - Aviation/I-105 Station	Daily
750	Metro Rapid Route	Ventura Blvd from Universal City to Warner Center	Daily

Source: Meyer, Mohaddes Associates, Inc., 2000.

The MTA currently operates 34 fixed bus routes that serve the San Fernando Valley. Six local, one limited stop and two peak only express lines serve Downtown Los Angeles. These are MTA local Routes 90, 91, 92, 93, 94, and 96, limited stop Route 394 and express routes 410 and 418.

One local line serves Hollywood: 156. There are 13 local and one new Metro Rapid east-west MTA routes in the Valley. They are Routes 150, 152, 154, 158, 161, 163, 164, 165, 166, 167, 168, 169 and Metro Rapid Route750. There are eight local north-south routes: MTA Routes 230, 233, 234, 236, 239, 240, 243, and 245. Finally, one all-day express Route 561 serves Westwood, LAX and the Aviation Green Line Station and there is one peak period express Route 426 serving the mid-Wilshire area.

MTA recently implemented the Metro Rapid Bus service along Ventura Boulevard between Warner Center and Universal City. The bus operates frequent service every 3 to 10 minutes during peak hours. There are fewer stops along the route, and they are located at major intersections for convenient transfers with other transit services. Moreover, each bus is equipped with special sensors that keep traffic lights green when Metro Rapid is approaching. The combination of fewer stops and less time waiting at red lights means fewer delays and shorter travel times.

LADOT operates a total of nine commuter express lines in the Valley: one all-day express route (573) and eight peak-period express lines (409, 413, 419, 422, 423, 549, 574 and 575), and four local DASH routes (Warner Center, Panorama City/Van Nuys, Northridge and Van Nuys/Studio City). Table 3-5 provides a general summary of LADOT transit service serving the Valley.

Table 3-5: LADOT Transit Service Characteristics

Route	Type of Service	Service Areas	Days in Operation
CE 409	Commuter	Sylmar-Sunland-Downtown LA	Mon – Fri
CE 413	Commuter	Van Nuys-North Hollywood-Downtown LA	Mon – Fri
CE 419	Commuter	Chatsworth-Granada Hills-Downtown LA	Mon – Fri
CE 422	Commuter	Warner Center-Van Nuys-Downtown LA	Mon – Fri
CE 423	Commuter	Woodland Hills-Encino-Downtown LA	Mon – Fri
CE 549	Commuter	Sherman Oaks-North Hollywood-Pasadena	Mon – Fri
CE 573	All day Express	Van Nuys-Encino-Century City	Mon – Fri
CE 574	Commuter	Sylmar-Encino-El Segundo	Mon – Fri
CE 575	Commuter	Simi Valley-Warner Center	Mon – Fri
DASH Warner Center	Local Circulator	Warner Center-Woodland Hills	Mon – Sat
DASH Van Nuys/ Studio City	Local Circulator	Van Nuys-Studio City	Mon – Sat
DASH Van Nuys/ Panorama City	Local Circulator	Van Nuys-Panorama City	Mon – Sat
DASH Northridge	Local Circulator	Northridge	Mon – Sat

Source: LADOT 2000

The AVTA operates one peak period express line (Route 787) from Antelope Valley to the San Fernando Valley. Santa Clarita Transit operates buses from Santa Clarita Valley to West San Fernando Valley (Warner Center Routes 791/796) and to Central San Fernando Valley (Van Nuys Routes 793/798). Table 3-6 provides a general summary of AVTA and SCT transit services serving the Valley.

Table 3-6: Antelope Valley and Santa Clarita Transit Service Characteristics			
Route	**Type of Service**	**Destinations**	**Days in Operation**
AVTA 787	Commuter	Sherman Oaks-Sherman Oaks-Palmdale/Lancaster	Mon – Fri
SCT 791	Commuter	Santa Clarita-Chatsworth-Warner Center	Mon – Fri
SCT 793	Commuter	Santa Clarita-Van Nuys-Sherman Oaks	Mon – Fri
SCT 796	Commuter	Santa Clarita-Chatsworth-Warner Center	Mon – Fri
SCT 798	Commuter	Santa Clarita-Van Nuys-Sherman Oaks	Mon – Fri

Source: Antelope Valley Transit Authority and Santa Clarita Transit 2000

The other transit options in the San Fernando Valley are a mixture of Metrolink rail station shuttles and dial-a-ride services. There are two circulator/Metrolink shuttles operated by the Burbank-Glendale-Pasadena Airport and the Burbank Media District Transportation Management Organization (TMO), as well as a Downtown Area Shuttle operated by Burbank. The Smart Shuttle program, a cooperative effort between LADOT and MTA provides dial-a-ride services in the West San Fernando Valley communities of Chatsworth, Northridge, West Hills, Reseda, Woodland Hills, and Encino/Tarzana and in the Northeast San Fernando communities of Sun Valley, Arleta, Pacoima, Panorama City, San Fernando, and Van Nuys. ~~The City of Los Angeles 12th Council District Transportation Management Association (TMA) operates a free taxi service with a 5-mile radius of the Chatsworth Metrolink station.~~

Regional commuter rail service is provided by the Southern California Regional Rail Authority (SCRRA) Metrolink and intercity rail service is provided by Amtrak. Table 3-7 provides a general summary of Amtrak and Metrolink services serving the Valley. Amtrak operates the Pacific Surfliner service between San Luis Obispo and San Diego, with stops at Chatsworth, Van Nuys and the Burbank Airport. The 19 trains are operated by rail or coach with daily, Monday through Friday, or Saturday, Sunday and Holidays service. Certain routes will operate on a limited schedule.

Table 3-7: Amtrak and Metrolink Rail Service Characteristics			
Route	**Type of Service**	**Stations Served**	**Days in Operation**
Amtrak Pacific Surfliner	Rail/Coach	Chatsworth-Van Nuys-Burbank Airport	Daily
Metrolink Ventura County Line	Rail	Chatsworth-Northridge-Van Nuys-Burbank Airport-Burbank RITC	Mon – Fri
Metrolink Antelope Valley Line	Rail	Sylmar-Burbank RITC-<u>Sun Valley</u>	Mon – Sat

Source: Amtrak and Metrolink 2000.

Two Metrolink lines serve the Valley. The Ventura County Line has 18 trains that serve the Valley: 100 through 117. This line serves the Chatsworth, Northridge, Van Nuys, Burbank Airport, and Burbank <u>Regional Intermodal Transportation Center (</u>RITC<u>)</u> stations. The Antelope

Valley Line has 22 trips: Lines 200 through 221. This line serves the Burbank RITC, Sun Valley, and Sylmar/San Fernando stations.
The Metro Red Line operates from Union Station through Downtown Los Angeles to Wilshire and Western. A branch of the Red Line also turns north at Vermont Avenue serving Hollywood, Universal City and North Hollywood. Trains opera te from 5:00 AM to 11:15 PM daily. Headways vary from 5 to 10 minutes.

3-1.3 Major Intermodal Hubs

Intermodal hubs provide convenient access for travelers by incorporating rail, bus, and air travel within the San Fernando Valley. The following is a brief description of the transit hubs in the study area.

Warner Center in Woodland Hills is comprised of major commercial employers (Blue Cross, Kaiser Permanente), retail and entertainment centers (Promenade Mall, Topanga Canyon Mall), and residential areas. This area is served by MTA, LADOT, ~~and~~ Santa Clara Transit, and the Ventura County Transportation Commission's Conejo Corridor Bus Service. A proposed on-street transit center on Owensmouth Avenue is currently in the design stage, to be known as the Warner Center Transit Hub.

The Chatsworth Metrolink station has become a transport hub for the far west San Fernando Valley including the Chatsworth, Northridge and Canoga Park areas. This station is served by Amtrak, Metrolink, MTA, and LADOT, Santa Clarita, and Simi Valley Transit Route C, with bicycle racks and parking for hundreds of autos ~~and bicycle racks~~. There is a travel agency, ~~bike store, and a~~ snack bar, day care center, and the Chatsworth Chamber of Commerce in the main station building. ~~, as well as the area City Councilperson's office, the Chatsworth Chamber of Commerce and a day-care center~~

The Northridge Metrolink Station is located in the northwestern part of the San Fernando Valley. It is served by MTA, Metrolink, LADOT, and the California State University Northridge Shuttle. Limited free parking is provided for rail patrons only.

The Burbank Regional Intermodal Transportation Center (RITC) serves as the City's transportation hub. It is served by Metrolink trains and several bus lines/shuttles including Burbank Local Transit, Glendale Bee Line, LADOT, MTA, and Santa Clarita Transit. Free overnight parking is available in a well-lit and patrolled environment. The RITC is fully accessible, and includes restrooms, public telephones, and vendor services.

The Burbank Airport Amtrak Station is located one block south of the Airport Terminal Building. A truly intermodal facility, the Burbank Airport Amtrak station serves airport travelers, motorists, Amtrak and Metrolink passengers, pedestrians and MTA transit bus riders, with shuttle service between the facility and Burbank Airport. Limited unattended parking is available, as well as long-term parking at the airport.

The Glendale Metrolink Station is located in the southeastern part of the San Fernando Valley. It is served by MTA, Metrolink, LADOT, Glendale Beeline, Glendale Metrolink Express, employee shuttles for Kaiser Permanente and Paramount Studios, Amtrak, and Greyhound. Limited free parking is provided for rail patrons only.

The Van Nuys Amtrak/Metrolink Station is located in the central San Fernando Valley, ~~area including~~ which includes the Van Nuys and Panorama City areas. It is served by Amtrak, Metrolink, LADOT, and MTA. LADOT Dash Panorama City/Van Nuys serves this station. Limited free parking is available for rail patrons only.

The North Hollywood Red Line Station is located in the eastern portion of the San Fernando Valley area, serving the North Hollywood, Valley Village, Studio City, Burbank, and Toluca Lake areas. The Universal City Station is located a few miles away in the Universal City/North Hollywood area. This station offers convenient access to the Universal Citywalk and Universal Studios. Both are served by the newly opened Metro Red Line and MTA bus service.

3-1.4 Bicycle and Pedestrian Access

The City of Los Angeles Bicycle Plan was approved by the City Council in August 1996. This Plan serves as a blueprint in the development of a citywide bicycle transportation system. It seeks to promote bicycle usage for recreational, personal, and commute purposes through further development of bicycle riding facilities, improvement of existing facilities, and implementation of appropriate support programs. The primary goal is to create a transportation system which is accessible, safe, and convenient for bicycle travel, while also increasing bicycle mode-split.

A network of bike routes, bike lanes, and bike paths exist along San Fernando Valley roadway and recreational facilities. The bike paths (Class I) and bike lanes (Class II) are designated in the Bicycle Plan Citywide Bikeways to serve regional open spaces and parks, transit centers, and/or major economic activity centers. Signed bike routes (Class III) provide access from residential areas to Bicycle Plan Citywide Bikeways or link residential areas to local schools, shopping districts and/or community parks.

In the San Fernando Valley, bike paths, bike lanes, and bike routes are planned along Chandler Boulevard, Victory Boulevard, and De Soto Avenue near the BRT alignment. Initial segments of the bike paths have been implemented in the Sepulveda Dam Recreation Area, west of the I-405. Bicycle parking facilities can be found at the Chatsworth, Van Nuys, Sylmar/San Fernando, North Hollywood, and Universal City Metrolink stations; and Sepulveda Dam Recreation Area.

Significant pedestrian activity exists in high-density residential, retail and employment areas in the San Fernando Valley, particularly in the Warner Center area, Van Nuys government/commercial areas, and the North Hollywood Metro Red Line Station area. In the heavily Orthodox Jewish neighborhood along the Chandler Boulevard segment of the corridor, a significant amount of walking activity also occurs.

3-2 FUTURE CONDITIONS AND AREAWIDE MOBILITY IMPACTS OF THE PROJECT

The impacts of east-west corridor project on the overall operating conditions of the transportation system can be measured by comparing several key travel statistics and system operating parameters for each of the alternatives against those of the No Build Alternative. Travel statistics and performance indicators for each alternative can also be compared with other alternatives to identify relative traffic impacts, or effectiveness of each in improving traffic conditions. Transportation impacts of each east-west corridor transit alternative will be more pronounced locally in the San Fernando Valley area. However, the transit alternatives will also have broader impacts on travel conditions and patterns throughout Los Angeles County. Table 3-8 summarizes these key statistics and performance indicators on a Countywide basis. The following sections discuss the findings from analyzing some of the most significant mobility and performance indicator statistics.

3-2.1 Impacts of Future Growth

The first two columns in Table 3-8 compare mobility statistics for 1998 and 2020 No Build conditions. This comparison highlights the growth in travel and the resultant change in mobility conditions that are expected to take place by 2020. Countywide daily total trips, transit trips and vehicle trips are all expected to increase by about 19 percent. This will result in a 44 percent increase in overall Countywide travel mileage and 102 percent in total travel time, as represented by vehicle miles of travel (VMT) and vehicle hours of travel (VHT) respectively. As a result of the significant increases in VMT and VHT, average travel speeds on all roadways in the network (arterials and freeways) are expected to drop by nearly 29 percent from over 35 miles per hour in 1998 to about 25 miles per hour in 2020.

3-2.2 Countywide Impacts

Table 3-8 provides a comparison of the countywide transportation indicators for the ~~project~~ build and TSM alternatives in addition to the No Build Alternative. Results are not provided for the MOS or Lankershim/Oxnard On-Street Alignment, however, because at a countywide level, these would not be expected to exhibit significant differences from the No Build and the lower- or upper-bound assumptions of the BRT Alternative. (Refinements to the BRT Alternative made during Preliminary Engineering, including the range of signal delay assumptions, are described in Chapter 2.) Results from the MOS analysis show that daily transit ridership is projected to be about 1,500 trips less than the lower bound of the BRT Alternative. The BRT On-Street Alternative has only 700 fewer daily transit trips than the ~~full~~ lower-bound of the BRT Alternative. From a countywide perspective, with over 1.2 million daily transit trips, the differences in ridership between these alternatives is relatively small. Therefore, it can be assumed that the countywide performance indicators for the MOS and Lankershim/Oxnard On-Street Alignment will be very similar to those of the lower bound of the BRT Alternative. The differences between lower and upper bounds of the BRT alternative are small in terms of effects on countywide indicators, as shown in Table 3-8. At the Valley-wide level, however, the differences between the alternatives are more pronounced (as discussed later in Section 3-2.3).

Table 3-8: San Fernando Valley Transit Corridor Comparison of Countywide Transportation Indicators

Statistics	Base 1998	2020 No Build Compared to 1998 Base	Valley TSM Compared to No Build	BRT Compared to No Build	
				Lower Bound	Upper Bound
Daily Person Trips	29,398,621	35,021,200	35,021,176	35,021,617	35,021,614
% Difference		19.13%			
Daily Transit Trips*	1,007,955	1,204,032	1,212,924	1,219,154	1,216,495
Difference		196,077	8,892	15,122	12,463
% Difference		19.5%	0.74%	1.26%	1.04%
Daily Transit Boardings	1,509,007	1,824,729	1,836,380	1,850,726	1,843,414
Difference		315,722	11,651	25,997	18,685
% Difference		20.9%	0.64%	1.42%	1.02%
Daily Bus Boardings	1,361,263	1,573,710	1,590,379	1,596,147	1,591,835
Difference		212,447	16,669	22,437	18,125
% Difference		15.6%	1.06%	1.43%	1.15%
Total Transit Mode Share	3.43%	3.44%	3.46%	3.48%	3.47%
% Difference		0.01%	0.02%	0.04%	0.03%
Daily Vehicle Trips*	21,628,654	25,712,159	25,705,314	25,700,964	25,703,081
Difference		4,083,505	-6,845	-11,195	-9,078
% Difference		18.9%	-0.03%	-0.04%	-0.04%
Daily Auto VMT	295,591,360	425,828,070	425,414,770	425,342,700	425,376,630
Difference		130,236,710	-413,300	-485,370	-451,440
% Difference		44.1%	-0.09%	-0.11%	-0.11%
Note: Including school trips by school bus.					

Source: Meyer, Mohaddes Associates, Inc., 2000 and 2001.

3-2.2.2 Total Transit Trips and Transit Boardings

Enhancements in bus service in the TSM Alternative are expected to result in an increase of 8,900 transit trips per day (0.74 percent) over No Build. Operation of the east-west BRT project further increases total daily Countywide transit trips. The lower bound of the BRT Alternative would generate 15,100 additional daily transit trips (1.26 percent). The upper bound of the BRT alternative would add 12,500 daily trips (1.04 percent). Unlike "transit trips", "transit boardings" also account for transfers between transit modes. The projected total Countywide transit boardings follow a similar trend to transit trips and result in a range of 0.64 (TSM) to 1.42 (BRT lower bound) percent increase in transit boardings over the No Build Alternative.

3-2.2.3 Bus Boardings

The BRT and TSM Alternatives would increase transit boardings. The TSM Alternative would add 16,700 (1.06 percent) while the lower and upper bounds of the BRT Alternative would add from 22,400 (1.43 percent) to 18,100 (1.15 percent) transit boardings respectively, over No Build.

3-2.2.4 Transit Mode Shares

As seen in Table 3-8, by 2020, the share of daily trips made via transit, is expected to be 1.2 million, or 3.44 percent out of a total of 35 million daily trips made by all modes of travel. Countywide transit mode shares are expected to increase by 0.02 - 0.04 percent for the various transit alternatives compared to the No Build. The TSM Alternative transit mode split is forecast to be 3.46 percent and the lower bound of the BRT Alternative is 3.48 percent. The upper bound of the BRT Alternative has a 3.47 percent transit mode split.

3-2.2.5 Vehicle Trips

Table 3-8 shows the total number of daily vehicle trips on the system for each alternative. The implementation of enhanced transit service shifts some trips from the auto mode to transit. The actual number of reduced vehicle trips ranges from a low of 6,800 for the TSM Alternative to a high of 11,100 for the lower bound of the BRT Alternative, or a decrease of 0.03 to 0.04 percent. The upper bound of the BRT Alternative eliminates 9,000 vehicle trips, a 0.04 percent reduction.

3-2.2.6 Vehicle Miles of Travel (VMT)

VMT is a measure of the total amount of travel in miles, as it includes the total mileage traveled by all vehicles on the entire highway system during a certain period. A decrease in VMT indicates a decrease in total number and/or overall length of trips, which translate into lower emissions. The TSM Alternative experiences a small change (0.04 percent) in VMT compared to the No Build. Both ~~T~~the upper and lower bounds of the BRT Alternative ~~shows~~ show a 0.11 percent reduction in VMT.

3-2.3 Valleywide Impacts

The above figures were all comparisons of the Countywide statistics. The degradation of Valley-wide mobility indicators between 1998 and 2020 is slightly less severe compared to the County. VMT will increase by 26 percent and VHT by nearly 46 percent, while travel speeds are expected to drop by 13.6 percent from an average of 34 miles per hour in 1998 to 29.5 miles per hour in 2020.

Table 3-9 summarizes the more localized Valley-wide impacts of the transit alternatives. As stated before, impacts of the alternatives are more pronounced in the Valley compared to the County, and are more relevant to this impact analysis. The impacts of the BRT On-Street Alignment Alternative would be expected to fall between the BRT and MOS Alternatives. Note that the signal delay assumptions used for the Lankershim/Oxnard and MOS variations are similar to those used for the lower bound of the BRT Alternative. If upper-bound signal delay assumptions were applied to these alignment variations, they would exhibit a range in statistics similar to the range between the lower and upper bounds of the BRT Alternative.

It can be seen that here that all Build alternatives perform better than the No Build, both in terms of VMT and VHT. VMT will decrease by 0.13 percent for the TSM Alternative, 0.24 percent for the lower bound of the BRT Alternative, 0.18 percent for the upper bound of the BRT Alternative, and 0.19 percent for the MOS Alternative.

Table 3-9: Statistics for San Fernando Valley (RSAs 12 and 13)

Valley Statistics	Base 1998	2020 No Build Compared to 1998 Base	Valley TSM Compared to No Build	BRT Compared to No Build		MOS Compared to No Build*
				Lower Bound	Upper Bound	
Daily Auto VMT	18,892,238	23,810,537	23,779,436	23,753,054	23,768,780	23,764,709
Difference		4,918,299	-31,101	-57,483	-41,751	-45,827
% Difference		26.0%	-0.13%	-0.24%	-0.18%	-0.19%
Daily Auto VHT	553,592	807,425	804,841	802,765	804,343	804,198
Difference		253,833	-2,584	-4,660	-3,032	-3,228
% Difference		45.9%	-0.32%	-0.58%	-0.38%	-0.40%
Daily Avg. Speed	34.13	29.49	29.55	29.59	29.55	29.55
Difference		-4.64	0.06	0.10	0.06	0.06
% Difference		-13.6%	0.19%	0.34%	0.20%	0.21%

Note: *The signal delay assumptions used for the MOS are similar to those used for the lower-bound BRT Alternative. If upper-bound signal delay assumptions were applied, the MOS would exhibit a range is statistics similar to the BRT Alternative.

Source: Meyer ~~Mohaddess~~, Mohaddes Associates, Inc., 2000 and 2001.

VHT statistics follow the same trend as VMT, with relatively small decreases (0.32 percent) for the TSM Alternative, ~~(~~0.58 percent~~)~~ for the lower bound of the BRT Alternative, ~~(~~0.38 percent~~)~~ for the upper bound of the BRT Alternative, and ~~(~~0.40 percent~~)~~ for the MOS Alternative. Average travel speeds in the Valley are expected to increase as a result of the project alternatives compared to the No Build. This increase ranges form a low of 0.19 percent for the TSM Alternative to a high as 0.34 percent for the lower bound of the BRT Alternative. The increase in average speed for the upper bound of the BRT alternative is 0.20 percent, and for the MOS Alternative is 0.21 percent. These statistics highlight the overall beneficial effects of implementation of transit system improvements throughout the Valley in general, and specifically a more focused transit service such as the BRT along the east-west corridor.

3-3 STUDY AREA TRAFFIC IMPACTS

The implementation of the Bus Rapid Transit service would affect local traffic conditions in the San Fernando Valley community in several ways. First, it is anticipated that operations of the transit service connecting North Hollywood and Warner Center to one another and the LA Basin would divert trips from the automobile to transit. This would result in a reduction in traffic volume along freeways and regional arterials within the corridor. These regional and valley-wide effects were quantified and discussed in previous sections of this Chapter.

However, localized increases in traffic along the corridor and near the station areas, especially those with parking or bus loading/unloading facilities, or those expected to be major points for access by park-and-ride and kiss-and-ride patrons, could be anticipated. These increases in traffic volumes could have an effect on traffic flow at critical intersections within the corridor and actions may be needed to mitigate these potential impacts. Finally, the transit priority system expected to be implemented along the east-west corridor could result in some impacts in terms of additional delays to motorists using streets which cross the corridor. This section of the report addresses traffic impacts on the transportation system in the immediate east-west corridor area.

3-3.1 General Discussion of Areas of Impact

The operation of the San Fernando Valley BRT may impact traffic and circulation along the corridor due to circulation issues resulting from cross traffic conflicts with the at-grade operation of the BRT. This evaluation category considers the following issues related to the interface of the transit alternatives with surface street traffic:

- number of at-grade arterials that intersect the BRT corridor
- transit vehicle conflicts with mixed-flow traffic
- magnitude of traffic at station area and park-and-ride facilities
- transit priority treatment at signalized intersections
- bus interface/access and issues relating to station access for parking

3-3.1.1 At-Grade Major and Secondary Arterial Crossings with BRT

The impacts associated with the BRT Alternative are directly associated with the number of at-grade crossings and the level of disruption caused by traffic signal priority given to the transit corridor facility while diminishing the cross traffic efficiency.

The BRT corridor crosses a total of 25 major and secondary arterials, and a few collector and residential streets along its path. The BRT will operate within the ~~SP~~ MTA ROW that generally parallels east-west arterials such as Chandler/Oxnard/Victory, and therefore will not directly ~~impact~~ affect traffic along these arterials. However, the BRT will affect north-south cross streets, necessitating special treatment and coordination of the signalization system along the route.

The MOS would generally operate along a similar east-west alignment, but instead of utilizing the ROW for the entire route, the service operates only a portion of its trip on the transitway (between Balboa/Victory and Woodman/Oxnard). Along this middle segment, there would be only a total of eight at-grade crossings along the MOS route. West of Balboa, buses will operate on Victory Boulevard and east of Woodman, they will run on Oxnard Street. This alternative will not directly impact cross street traffic along the west and east segments. However, as with the BRT Alternative, the MOS will require special treatment and coordination of the adjacent signal system along the mid-segment route.

The Lankershim/Oxnard On-Street Alignment would not use the right-of-way along Chandler Boulevard, east of Woodman Avenue, and the buses would run in mixed-flow along Oxnard Street and Lankershim Boulevard to reach the North Hollywood Red Line station. This would eliminate BRT crossings at five locations along Chandler Boulevard and the diagonal crossing of the Fulton/Burbank intersection. The buses running on Oxnard Street and Lankershim Boulevard would ~~take advantage of the~~ <u>use a</u> transit signal priority system~~ already planned by LADOT,~~ <u>similar to that on Ventura Boulevard,</u> so they would not cause any additional impacts or delays to other traffic.

The partial and full traffic signal prioritization proposed for the transit corridor may possibly increase delay for motorists crossing the corridor on the cross streets. Such impacts and delays can be minimized using the latest signal timing/synchronization technologies and vehicle detection capabilities; nonetheless, it would still result in increased delays from vehicles unable to clear an intersection due to the shorter signal phase for cross traffic movement. This would especially be the case for locations where new traffic signals will be installed, and places where left and right turns across the transitway from parallel streets would be controlled by separate signal phases in the future. The coordination of signals at closely spaced intervals between a parallel street and the transit corridor would also take on additional complexities that will need to be addressed. These specific impacts will be quantified in later sections of this chapter.

3-3.1.2 Transit Vehicle Conflicts with Mixed-flow Traffic

This category of potential impacts deals with the interface of the San Fernando Valley corridor's transit vehicles or buses relative to vehicular traffic, when the BRT buses will be sharing the road with mixed-flow traffic. The BRT provides rapid transit service between the North Hollywood Red Line Station and the Warner Center. The total length of this route is 14.2 miles, operating primarily along an exclusive right-of-way, but in mixed-flow traffic along Variel, Oxnard and Erwin Streets in Warner Center. Consequently, its impacts relative to mixed traffic along the east-west arterials would be kept to a minimum. The MOS, however, would operate on Victory Boulevard between Balboa Boulevard and Warner Center. Victory Boulevard can be characterized as a six-lane major highway with on-street parking and left-turn pockets. The other area where mixed-flow operation may be an issue with the MOS is on Oxnard Street and Lankershim Boulevard between Woodman <u>Avenue</u> and North Hollywood. The Lankershim/ Oxnard On-Street Alignment similarly affects this segment. Oxnard Street can be characterized as a four lane secondary arterial with on-street parking and left-turn pockets. The impacts of the additional buses operating in mixed-flow traffic are quantified in Section 3-3.2.

3-3.1.3 Magnitude of Traffic Attracted to Station Areas and Park-and-Ride Facilities

The BRT Alternative proposes thirteen stations, including the North Hollywood Metro Station and the Warner Center Transit Hub. It is expected that the proposed BRT stations would generate additional traffic created by transit patrons driving their vehicles to access the planned stations, especially those stations with park-and-ride facilities. Ridership projections for the lower bound of the BRT Alternative indicate that daily transit boardings for this corridor would be on the order of 24,700 daily riders, with 15,000 new daily transit riders systemwide by 2020. Ridership projections for the upper bound scenario indicate that daily transit boardings for this corridor would be on the order of 18,600 daily riders, with 9,000 new daily transit riders systemwide by 2020.

Availability of park-and-ride lots, as well as the size of the parking areas, also heavily influences access-related impacts on adjacent streets around the stations. The BRT Alternative proposes six park-and-ride lots (four new ones) located at the following stations: North Hollywood Red Line station (~~850~~ 915 existing spaces), Van Nuys Boulevard (~~1060~~ 981 spaces), Sepulveda Boulevard (~~1200~~ 1,210 spaces), Balboa Boulevard (~~240~~ 285 spaces, ~~90~~ 135 new and 150 existing spaces), Reseda Boulevard (~~400~~ 534 spaces), and Pierce College ~~at Mason Avenue~~ (~~350~~ 100 to 389 spaces). It is expected that these streets intersecting with the BRT route would be more affected (in terms of traffic entering and exiting from parking facilities) than those without parking facilities. These impacts will be discussed in subsequent sections of this chapter.

The MOS Alternative eliminates the park-and-ride station at Reseda Boulevard, but the traffic impacts around the other station areas are anticipated to be similar to those of the BRT Alternative.

The Lankershim/Oxnard On-Street Alignment Alternative has the same number and location of park-and-ride stations as the BRT Alternative, since no park-and-ride lots had been planned along the Chandler Boulevard portion of the alignment. The station access impacts will therefore be very similar to the BRT Alternative.

In addition to the traffic generated by patrons using park-and-ride facilities at the stations, kiss-and-ride patrons would create their own share of traffic around stations. Although the traffic associated with kiss-and-ride patrons (those dropped off by another driver) may not be new traffic on the transportation network, the traffic created by kiss-and-ride patrons may be new in the station areas and could affect mobility.

3-3.1.4 Transit Priority Treatment at Signalized Intersections

Priority treatment of buses at intersections holds the potential for reducing a significant source of delay in bus operations. This is accomplished through preferential bus signal priority, which in effect keeps buses from being delayed in general traffic, while helping maintain bus schedules. However, such an operational mechanism may negatively affect cross street traffic movement. See Section 2-2.3.5 for a description of transit priority at signalized intersections.

The LADOT currently has the necessary hardware and software to implement a transit priority treatment at signalized intersection to address this issue. The use of loop detectors embedded in the pavement in advance of traffic signals~~, or newly emerging visual recognition technologies placed above intersections on signal mastarms,~~ will now allow traffic signals controllers to detect a bus as a distinct object separate from a car or truck. This allows the signal processor sufficient warning to adjust the signal phases on cross streets so that the bus may receive a green indication when it reaches the cross street. In certain cases this will occur by lengthening the green phase for the transitway and the parallel street, and other cases it may occur by shortening the green phase on the north/south streets.

The proper placement of advance detection devices will avoid abrupt changes in a signal cycle, (e.g., the green phase not truncated prior to a minimum specified time). It is important to locate the detectors far enough in advance of the cross street, so that the bus traveling at a planned speed will arrive at the cross street and expect a green signal indication. However, it may not be feasible in every instance to provide the same level of priority treatment for buses traveling in both directions, especially if headways become too short. If such a condition prevails, then the peak direction of passenger demand would be assigned a higher level of priority treatment, where at each cross street the transitway will also be signalized and the buses have their own signal indications.

The bus signals and adjacent intersections will have to be integrated to create one consolidated signalized intersection that will control both automobiles and buses and accommodate transit priority treatment. New signals need to be installed where the transit signal may be off-set from the nearest traffic signal by more than 100 feet. This would constitute a separate signal that would be interconnected to the adjacent traffic signal.

In those portions of the corridor where the transitway is adjacent to and runs parallel to an arterial street, buses will receive a green signal indication ~~simultaneously~~ concurrently with the parallel street. The stop bar for traffic approaching the transit crossing will be located before the transit crossing so that there will not be any traffic stopped between the transitway and the adjacent street's traffic signals. A brief clearance interval may be required in the north/south signal phase to ensure that no vehicles are stopped on the transitway crossing, or between the transit crossing and the adjacent east/west streets. Turn movements from the adjacent east/west street will also require separate signal phases with red arrows to reduce the potential for left or right turns across the transitway when a transit vehicle is moving in conjunction with the through traffic on the parallel arterial. Consideration will be given to the use of pre-signals and queue cutters to prevent traffic from stopping on or blocking the busway.

3-3.1.5 Access to Stations

In order to assess potential traffic impacts around stations, it was necessary to first determine the number of persons and their mode of access to each station, so this could be converted to auto trips in station areas.

Existing mode of access information was obtained from MTA for the El Monte Busway and Harbor Freeway Transitway to assist in validating model forecasts. In general, the majority of patrons on a busway reach the busway stations via transit (i.e., transfer to the busway service) or walk to the facility. The national average for auto access to exclusive busways ranges from 15 to 20 percent of total trips. Data from other transit agencies that operate a similar bus system to the BRT, such as the ones in Miami (Florida), Ottawa (Canada), Adeline (Australia), and Curitiba (Brazil) was also used in order to facilitate a better understanding and representation of model output.

Table 3-10 provides a summary of the daily mode of access for the BRT and MOS Alternatives, as well as park-and-ride lot capacities and demand for the entire corridor. The park-and ride capacity also influences the mode split. Park-and-ride capacity and demand are discussed in a later section of this chapter. For the lower bound of the BRT Alternative, 81 percent of the patrons arrive via transit or walking modes, with 19 percent via automobile. For the upper bound of the BRT Alternative and the MOS, the same percentages hold, but the absolute numbers of trips are reduced due to the lower ridership. It can be expected that the Lankershim/Oxnard On-Street Alignment would have similar mode of access characteristics.

Table 3-10: BRT and MOS Ridership and Mode of Access Description

		Daily	Mode of Access		Auto Split		Total Lot	Total Lot
Alternatives		Ridership	Transit/Walk/Other	Auto	PNR[1]	KNR[2]	Capacity*	Demand
BRT	Lower Bound	24,662	19,911	4,744	3,297	1,447	~~4,100~~ 4,025-4,314	3,685
	Upper Bound	18,598	14,994	4,054	2,897	1,157	4,025-4,314	3,285
MOS		22,012	17,760	4,242	2,948	1,294	~~4,100~~ 3,491-3,780	3,336
Note: *Modified based on Preliminary Engineering in Volume 3.								

Source: Meyer ~~Mohaddess~~, Mohaddes Associates, Inc., 2000 and 2001.

3-3.2 Intersection Traffic Impacts

3-3.2.1 Traffic Forecast Methodology

Traffic conditions for the horizon year of 2020 were forecast and evaluated for the No Build Alternative and for each of the project alternatives. The No Build Alternative, in effect, represents the projected horizon year traffic volumes in the study area in the absence of any improvements along the East-West San Fernando Valley Corridor project.

Traffic volume forecasts for 2020 No Build conditions and each of the project alternatives were developed using the LACMTA travel demand forecast model. The model was updated and refined specifically for use in this study. The model was re-calibrated specifically for this study to 2000 conditions and then used to forecast travel characteristics in 2020.

The No Build transit network reflects the transit service levels anticipated by the MTA to exist in 2020, without the East-West Corridor project.

To estimate the more localized traffic impacts associated with each project alternative, intersection traffic volume projections for each scenario were developed using the following process:

[1] PNR = Park-and Ride
[2] KNR = Kiss-and-Ride

1. Development of future base traffic volumes reflecting 2000-2020 background traffic growth, and changes due to auto trip reduction and other shifts in traffic as a direct result of the East-West BRT Corridor transit service.

2. Development of additional peak hour auto access trips to stations related to park-and-ride and kiss-and-ride (drop-off) trips.

3. Development of additional BRT vehicle volumes at intersections along the corridor using the assumed BRT headways for each project alternative.

The above process was employed because the projected 2020 vehicle trips produced directly by the highway assignment module of the MTA Model do not explicitly include the transit vehicles themselves nor the auto portion of transit-access (park-and-ride or kiss-and-ride) trips. Use of this methodology, allowed for a "true" impact analysis, which reflects both macro-level reductions and/or shifts in background traffic due to the transit service, as well as the micro-level additional local impacts created by station-access traffic and additional buses.

To develop the "base" traffic volumes for the first step, a growth-factoring process was used. Traffic growth factors were calculated for the study area arterials by comparing traffic volume results from the MTA model for the No Build and for each of the project alternatives. These results included AM and PM peak link volumes at key intersections along the east-west corridor for the base year 1998 and forecast year 2020.

Due to a noticeable difference in traffic growth patterns, the traffic volumes for intersections were grouped in two sub-sections. East San Fernando Valley encompassed the area east of Woodley Avenue to Lankershim Boulevard. West San Fernando Valley encompassed the area just west of Woodley Avenue to the Canoga Park/Warner Center area.

A summary of these growth factors, which are shown in Table 3-11, were then applied to the existing 2000 traffic counts to develop future background (base) volumes at each of the study intersections for each alternative. Detailed results of the growth factors for both regions can be found in the Appendix of this report.

Table 3-11: Growth Percentages for Base Traffic Volumes

Location	2020 No Build		2020 TSM		2020 BRT				2020 MOS	
					Lower Bound		Upper Bound			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
West Valley Average	25.0%	29.3%	24.0%	29.0%	24.8%	29.1%	24.9%	29.2%	24.9%	28.7%
East Valley Average	34.7%	35.0%	34.1%	35.0%	33.0%	34.8%	33.0%	34.9%	34.0%	34.3%

Source: Meyer, Mohaddes Associates, Inc., 2000 and 2001.

Depending upon the alternative, traffic at the West Valley intersections is anticipated to grow by between 25 and 29 percent during both the AM and PM peaks. The East Valley will experience greater growth than the West Valley with the growth for both peak periods in the 33 to 35 percent range. These percentages are generally consistent with the growth rates in Valley-wide VMT, as discussed in earlier sections.

In the second step of the forecasting process, the projected base intersection volumes for each of the scenarios, except for the TSM Alternative, were adjusted by adding the station access auto traffic, which includes park-and-ride, kiss-and-ride auto traffic, and bus and shuttle traffic consisting of feeder and line haul buses. The estimated vehicle trip generation for each of the project alternatives will be described in more detail in the subsequent sections, which discuss the impacts of each alternative. The estimated trip distributions were developed based on the location of the transportation system and the most likely routes to the stations and were reviewed and adjusted for local conditions through observations of traffic patterns and volumes.

❑ Impact Thresholds

Intersection capacity analyses were performed for the fifty-three critical intersections within the San Fernando Valley Corridor study area for No-Build conditions and for each of the project alternatives. The threshold to determine when a project impact is adverse under NEPA (significant under CEQA), adopted by the MTA in consultation with LADOT, is as follows:
"An intersection is considered to be adversely affected if project traffic is projected to cause a deterioration in level of service to E and/or worse, or results in an increase in the average vehicle delay of 5.0 seconds or more at an intersection projected to operate at LOS E or worse under No Build conditions."

This impact threshold was developed for use with the Highway Capacity Manual (HCM) operations analysis methodology, which is based on average delay at intersections, rather than the change in volume-to-capacity (V/C) ratio, which is typically used by LADOT for development project traffic impact studies. The delay-based methodology was the preferable approach for this type of project to reflect the impact of traffic operations changes, such as additional clearance time or signal phases at intersections, due to the BRT operation, rather than just the changes in traffic volumes.

The seconds of delay in the impact threshold criteria were derived from the relative change in the V/C ratio from the comparable Critical Movement Analysis (CMA) methodology thresholds. That is, the traditional impact threshold of 0.02 change in V/C at LOS E (which has a range of V/C's of 0.10) is 20 percent of the range for that LOS. This is equivalent to the 5.0 second change at LOS E (which has a 25 second range, from 55 to 80 seconds) using the 1997 HCM methodology as shown in Table 3-12.

This methodology is used to evaluate the impacts of project-related traffic, as well as the effects of transit operations on signalized intersections. Mitigation of impacts based on these guidelines (e.g. reduction of delay by 5.0 seconds or more) would likely require traffic signal modifications and/or physical improvements, such as additional through or turn lanes at intersections, new traffic signals and possible road widenings.

Table 3-12: LOS Criteria for Signalized Intersections	
Level of Service	**Control Delay Per Vehicle (sec)**
A	≤10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Source: 1997 Highway Capacity Manual.

3-3.2.2 Traffic Impacts of Alternatives

a. No Build Alternative

The No Build Alternative presents projected operating conditions of study intersections in 2020 without the development of a transit project along the East-West Corridor. The study assumed traffic signal operating specifications (cycle lengths, phases, etc.) to be generally the same as those of today. The growth factors (over 2000 conditions), as shown in Table 3-11, were applied to existing peak hour turning movements at the study area intersections to develop estimated 2020 No-Build traffic volumes for AM and PM peak hours.

Table 3-13 summarizes the results of these analyses. Results of intersection operating conditions for each of the alternatives, with levels of service and average delay for each peak period, are included in Appendix I. Review of this table shows that 13 intersections are expected to operate at level of service (LOS) E or F during one or more peak hours. This compares to four intersections currently (2000 conditions) operating at LOS E or worse.

Table 3-13: LOS E/F Intersections - No Build Alternative						
Intersections	**LOS E**		**LOS F**		**Increase or (Decrease) in Delay Compared to ~~No Build~~ Existing (seconds)**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**
Owensmouth/Victory			X	X	54.0	52.6
Canoga/Victory	X			X	49.5	64.7
Variel/Victory			X		50.8	17.9
De Soto/Victory	X			X	18.4	82.5
Mason/Victory				X	3.6	44.7
Winnetka/Victory			X	X	61.0	93.6
Tampa/Topham		X			~~6.6~~ 4.3[1]	~~56.4~~ 89.0[1]
Balboa/Victory			X	X	52.0	70.6

Table 3-13: LOS E/F Intersections - No Build Alternative						
Intersections	**LOS E**		**LOS F**		**Increase or (Decrease) in Delay Compared to ~~No Build~~ Existing (seconds)**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**
405 ramp/Victory	X				43.4	13.6
Sepulveda/Victory			X	X	79.6	74.3
Sepulveda/Oxnard		X			7.8	39.1
Van Nuys/Oxnard		X			11.7	28.8
Laurel Canyon/Oxnard	X	X			29.7	21.4
Note: (1) Existing and No Build lane configurations corrected to reflect single lane approaches on Topham Street.						

Source: Meyer, Mohaddes Associates, Inc., 2000.

b. TSM Alternative

The TSM Alternative assumes an improved bus transit system throughout the Valley, mostly through increases in service frequency on existing bus lines. In contrast to the BRT Alternative, this alternative does not have transit stations to which automobile trips are attracted in large numbers. Passengers using this improved bus service are assumed to access the buses through conventional bus stops and existing or unofficial park-and-ride facilities. Therefore, this alternative does not have the impacts of the additional station access vehicle trips. However, it accounts for the reduction of vehicle trips from the highway system as a result of any potential auto trips diverted to the improved bus services. To develop traffic volume forecasts for this alternative, growth factors presented in Table 3-9 corresponding to the TSM Alternative were used. No other trips were added, nor adjustments made, to intersection traffic signal operations for this alternative.

A review of Table 3-14 shows 13 intersections projected to operate at LOS E or worse during the peak hours. These are the same 13 intersections that operate at LOS E and F under the No Build Alternative. However, due to the overall reduction of traffic volumes as a result of increased transit ridership, all intersections are expected to operate slightly better than the No Build Alternative and there will be no adverse effect under NEPA (significant effect under CEQA) on intersections according to the defined thresholds. As discussed previously, this alternative forecasts the positive operational effects of the increased bus services and transit ridership on the highway system.

Table 3-14: LOS E/F and Affected Intersections – TSM Alternative							
Intersections	**LOS E**		**LOS F**		**Impact**	**Increase or(Decrease) in Delay Compared to No Build (seconds)**	
	AM	**PM**	**AM**	**PM**		**AM**	**PM**
Owensmouth/Victory			X	X	No	(2.7)	(0.9)
Canoga/Victory	X			X	No	(2.5)	(0.4)

Table 3-14: LOS E/F and Affected Intersections – TSM Alternative							
Intersections	LOS E		LOS F		Impact	Increase or(Decrease) in Delay Compared to No Build (seconds)	
	AM	PM	AM	PM		AM	PM
Variel/Victory			X		No	(3.3)	(0.6)
De Soto/Victory	X			X	No	(1.6)	(1.7)
Mason/Victory				X	No	(0.3)	(1.4)
Winnetka/Victory			X	X	No	(5.0)	0.8
Tampa/Topham		X			No	(0.3)	(2.4)
Balboa/Victory			X	X	No	(2.0)	(1.1)
405 ramp/Victory	X				No	(0.6)	0.1
Sepulveda/Victory			X	X	No	(1.5)	0.1
Sepulveda/Oxnard		X			No	(0.3)	0.2
Van Nuys/Oxnard		X			No	(0.2)	0.0
Laurel Cyn./Oxnard	X	X			No	0.2	0.0

Source: Meyer Mohades Associates, Inc., 2000.

c. BRT Alternative

As described in detail in the project description, this alternative assumes operation of buses within the exclusive Burbank/Chandler ROW between Variel Avenue in the West Valley to the North Hollywood Metro Red Line station. West of Variel, the buses would operate on street, potentially along Oxnard and Erwin streets, to the Warner Center Transit Hub on Owensmouth Avenue. Bus volumes in the peak hour were assumed to be 24 buses per hour per direction between Reseda Boulevard and North Hollywood and 18 buses per hour per direction between Reseda Boulevard and Warner Center.

Auto access trips for each BRT station were developed from mode of access data derived from the MTA model. Daily ridership, park-and-ride and kiss-and-ride trips were calculated for each station and assigned to the roadway network. Daily trip generation for both the lower and upper bounds of the BRT Alternative for each station is summarized in Table 3-15. The total number of spaces in proposed park-and-ride lots has been modified slightly from those presented in the Draft EIS/EIR as a result of the refinements during the Preliminary Engineering phase. Traffic impact analysis is not expected to change substantially due to the revised park-and-ride assumptions. Therefore, parking space numbers referenced in this section are consistent with the original Draft EIS/EIR.

As noted earlier, the growth factors that were developed for the upper bound of the BRT Alternative are very similar to the growth factors for the lower bound of the alternative. Slightly more background traffic is projected for the upper bound of the BRT Alternative, but the largest variance was only 0.1 percent. This increase is offset by the decrease in auto trips to each station since the overall ridership decreases with the upper bound of the BRT Alternative. The station auto access trips are typically what cause the traffic impacts at nearby intersections. Therefore, because the background traffic is virtually the same for the two BRT alternatives, and the lower bound of the BRT alternative has higher station auto access trips, the lower bound of the BRT Alternative represents the worst-case BRT Alternative. Because of this, the changes in traffic impacts between the two BRT Alternatives are negligible. As a result, only the lower bound of the BRT Alternative is reported, and the results for the lower bound of the BRT Alternative can be assumed to be virtually the same for the upper bound BRT Alternative.

Table 3-15: Auto Trip Generation - BRT Alternatives

	BRT 28.8-Minute Alternative			**BRT 40-Minute Alternative**		
Station	**Total Auto Access**	**Park-and-Ride**	**Kiss-and-Ride**	**Total Auto Access**	**Park-and-Ride**	**Kiss-and-Ride**
Victory/Owensmouth	**96**	0	96	**47**	0	47
Victory/De Soto	**51**	0	51	**33**	0	33
Victory/Winnetka	**387**	350	37	**268**	230	39
Topham/Tampa	**43**	0	43	**31**	0	31
Oxnard/Reseda	**532**	400	132	**448**	333	115
Victory/Balboa	**241**	171	70	**198**	140	57
Victory/Woodley	**37**	0	37	**36**	0	36
Oxnard/Sepulveda	**1,022**	926	96	**988**	901	87
Oxnard/Van Nuys	**1,216**	989	227	**1,023**	830	193
Oxnard/Woodman	**70**	0	70	**48**	0	48
Burbank/Fulton	**53**	0	53	**46**	0	46
Chandler/Laurel Canyon	**73**	0	73	**68**	0	68
Chandler/Lankershim	**924**	462	462	**820**	462	358
Totals	**4,744**	3,297	1,447	**4,054**	2,897	1,157

Source: Meyer ~~Mohades~~, Mohaddes Associates, Inc., 2000 and 2001.

Station access traffic was distributed to the roadway system for each station area based on travel demand model trip distribution characteristics and probable travel patterns based on major origin-destination patterns. The resulting station access traffic volume turning movements at study area intersections were added to the 2020 background traffic volumes specifically developed for the BRT Alternatives using the arterial growth factors discussed in previous sections.

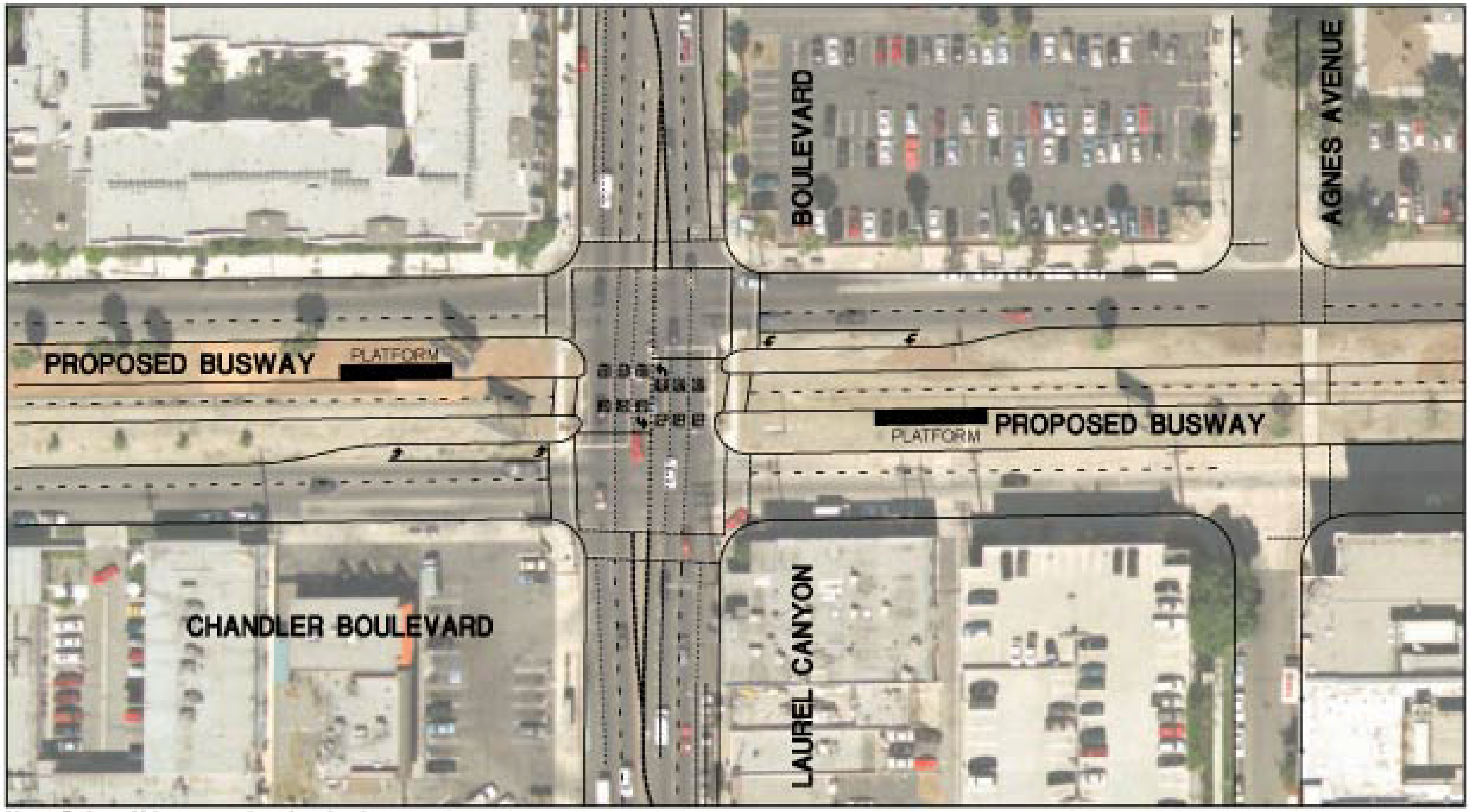
Detailed discussions were held with Los Angeles Department of Transportation staff to identify the likely traffic signal operational characteristics and scenarios for the implementation of the BRT system. Issues such as signal priority, cycle and phasing modifications, additional protective phasing for turns, loss time and other operational details were discussed. Based on these discussions, and directions from LADOT, specific signal timing as well as geometric modifications were assumed at study intersections which are along and/or immediately adjacent to the BRT alignment. These include items such as:

- Additional clearance time for north south streets to clear traffic across the BRT alignment, when the stop bars are moved back behind the BRT facility.
- Additional left turn phases and left turn lanes (where one does not currently exist) on parallel street to stop the left turning vehicles from turning across the BRT alignment.
- Additional right turn phases and right turn lanes (where one does not currently exist) on parallel street to stop the right turning vehicles from turning across the BRT alignment.
- Additional left turn lanes and phases along Chandler Boulevard intersections in the segment where the BRT will be running along the median.
- Other modifications to adjacent signals to account for BRT signal priority treatments.
- Widening of intersections into the MTA ROW for necessary turn lanes.

The above operational and physical modifications were made where necessary and assumed to be part of the project for the BRT Alternative and are reflected in intersection levels of service calculations for this alternative. Figure 3-4 through Figure 3-10 illustrate the conceptual intersection improvements assumed at typical intersections along the BRT corridor.

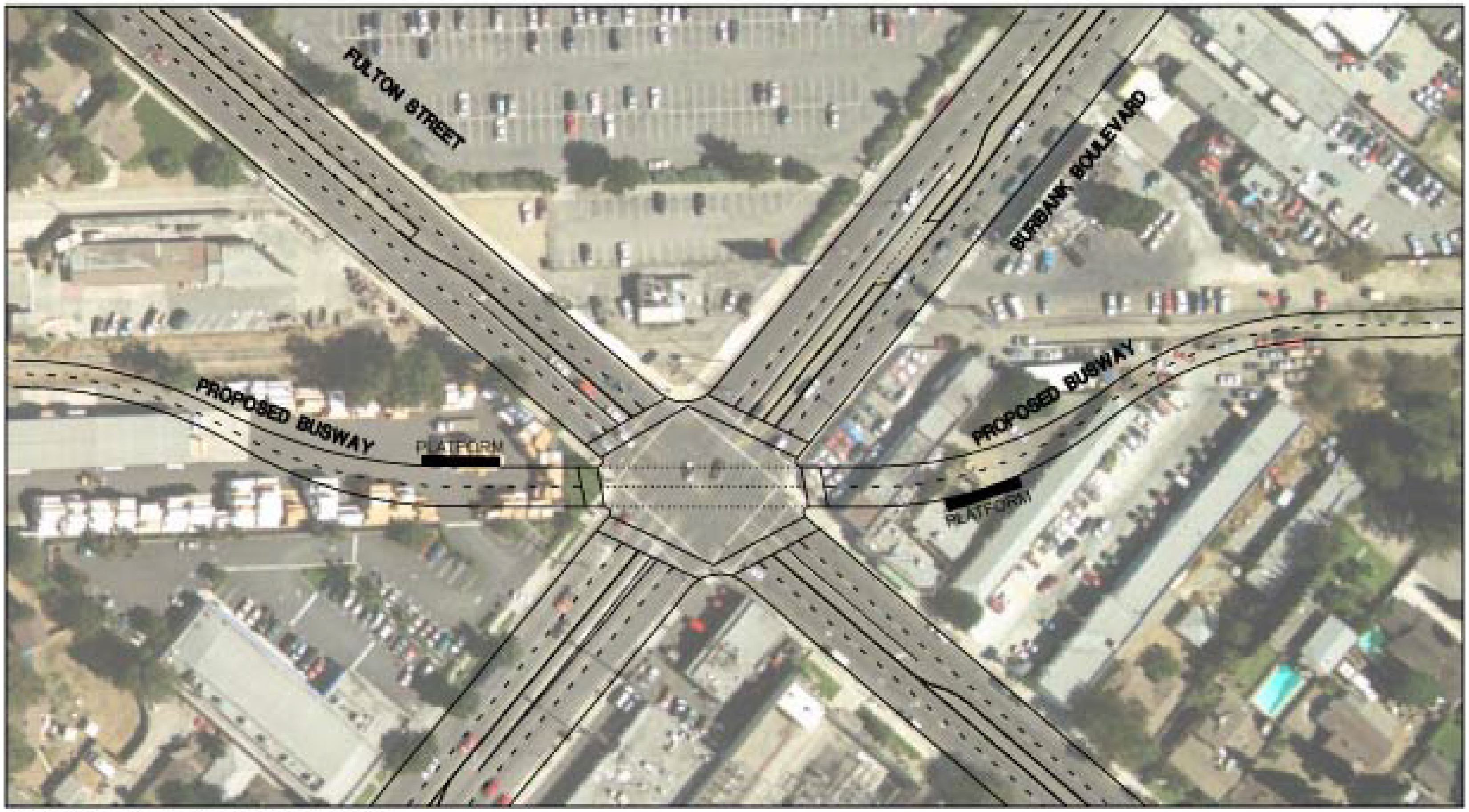
Intersection capacity analyses were performed for the resultant total volumes for this alternative. Table 3-16 summarizes the results of the intersection capacity analyses of study intersections, using Level of Service E as the basis for intersections with unacceptable levels of service.

For the BRT Alternative, 17 intersections are projected to operate at LOS E or worse during the peak hours, an increase of four intersections over the No Build Alternative. Based on a comparison to No-Build conditions, using the impact criteria, it can be seen that the BRT Alternative can be expected to have an adverse effect under NEPA (significant effect under CEQA) at eight intersections. Mitigation for these eight intersections will be discussed in Section 3-3.4. Table 3-16 indicates the 17 intersections projected to operate at LOS E or F and which are affected by the BRT Alternative.



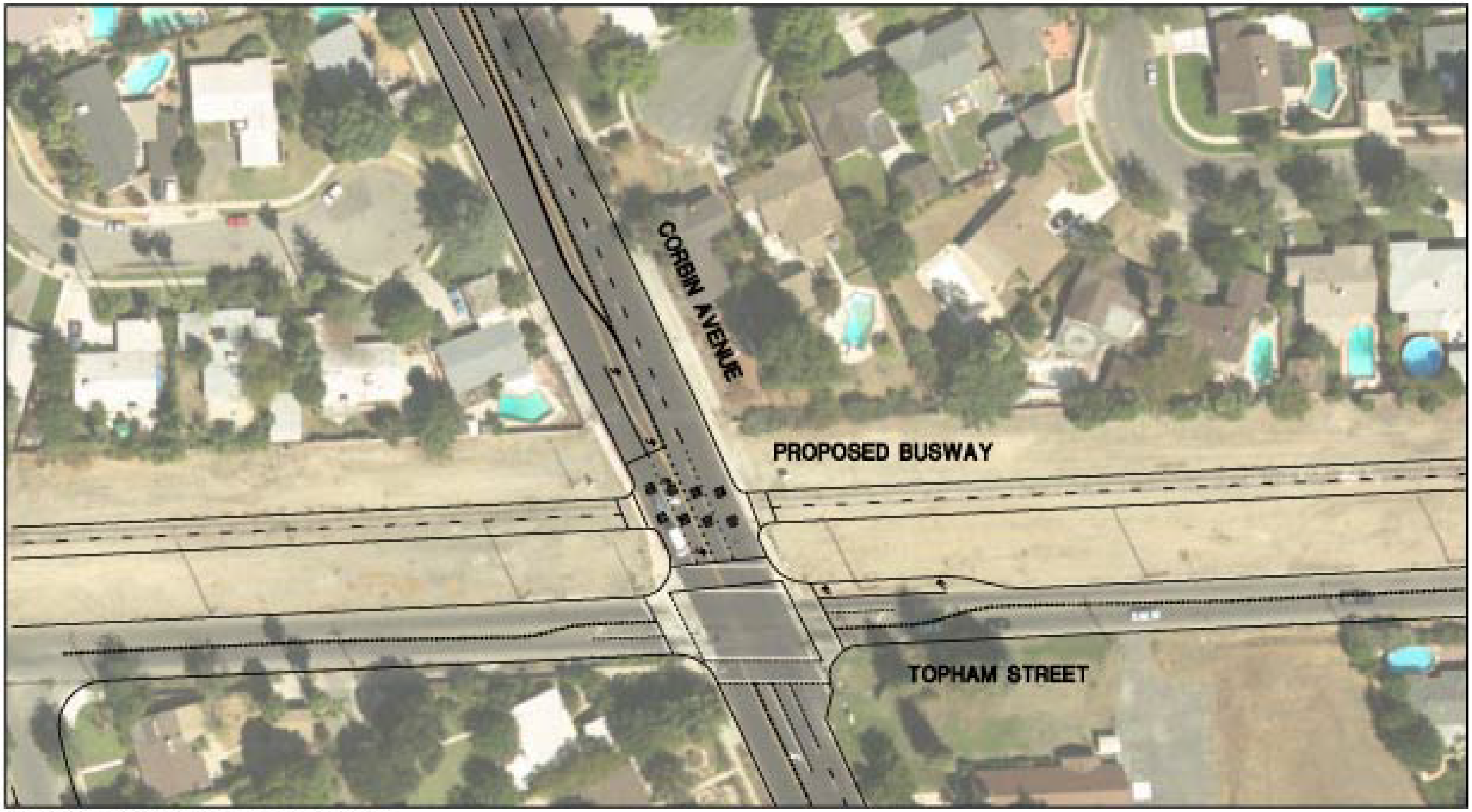
Note: Refer to Volume 3 engineering drawings.

Figure 3-4: Conceptual Intersection Improvements: Laurel Canyon Boulevard at Chandler Boulevard



Note: Refer to Volume 3 engineering drawings.

Figure 3-5: Conceptual Intersection Improvements: Fulton Street at Burbank Boulevard

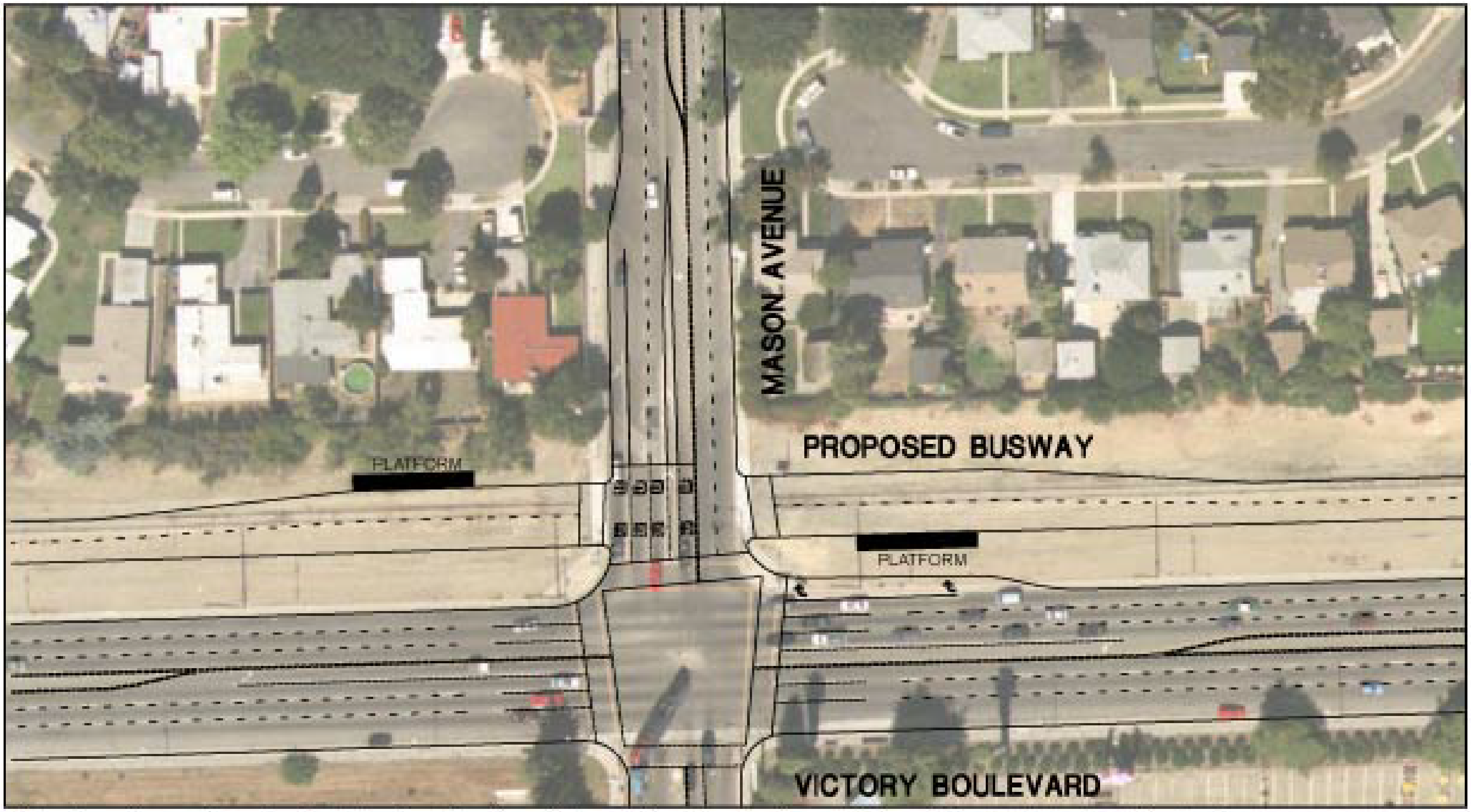


Note: Refer to Volume 3 engineering drawings.

Figure 3-6: Conceptual Intersection Improvements: Corbin Avenue at Topham Street

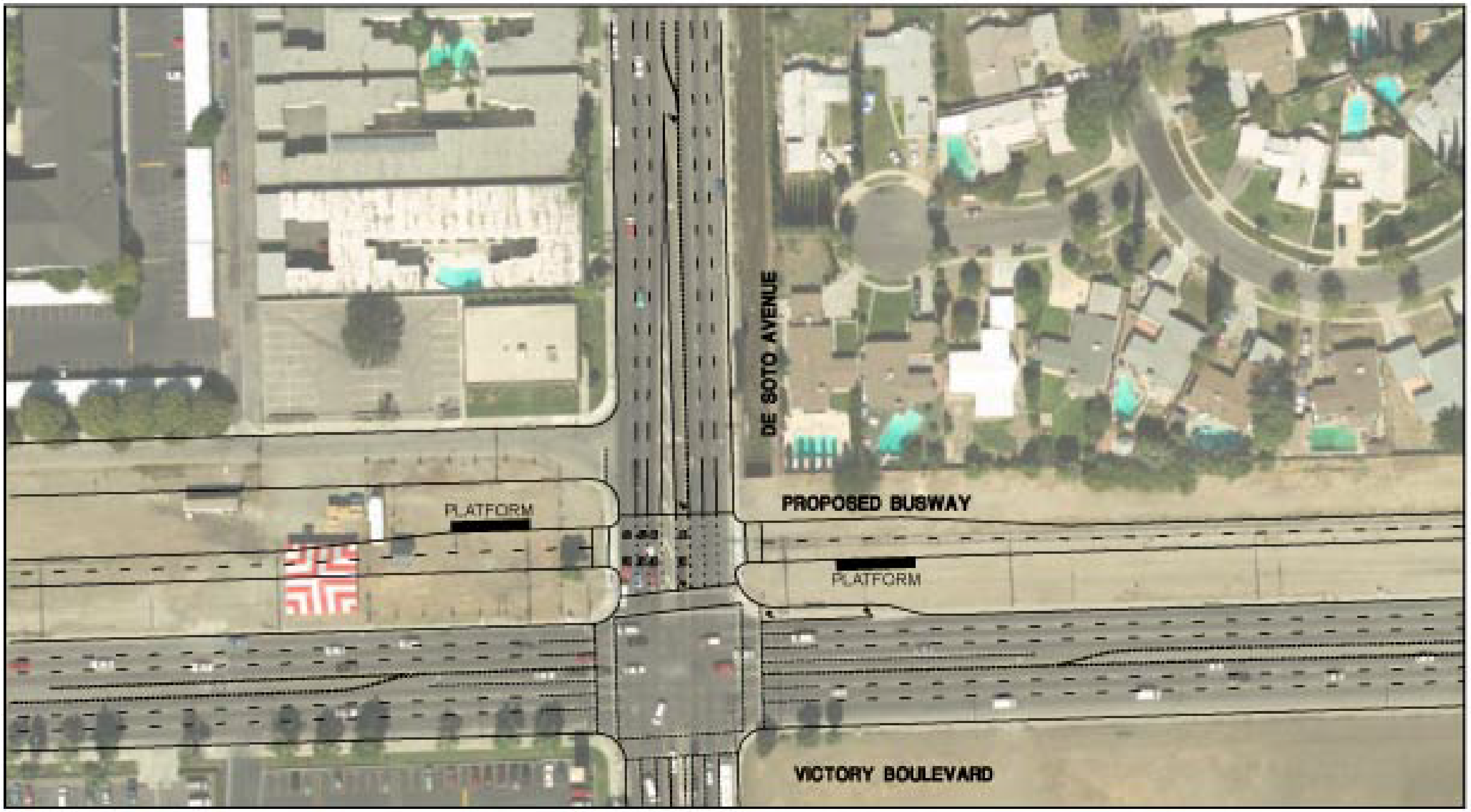
*Note: Winnetka Avenue is an option for the location of the Pierce College station. Figure applies only if Mason Avenue is selected as the station location.
**Note: Refer to Volume 3 engineering drawings.

Figure 3-7: Conceptual Intersection Improvements: Winnetka Avenue



*Note: Mason Avenue is an option for the location of the Pierce College station. Figure applies only if this option is selected as the station location.
**Note: Refer to Volume 3 engineering drawings.

Figure 3-8: Conceptual Intersection Improvements: Mason Avenue at Victory Boulevard



Note: Refer to Volume 3 engineering drawings.

Figure 3-9: Conceptual Intersection Improvements: De Soto Avenue at Victory Boulevard

Note: Refer to Volume 3 engineering drawings.

Figure 3-10: Conceptual Intersection Improvements: Variel Avenue at Victory Boulevard

Table 3-16: LOS E/F and Affected intersections – BRT Alternative

Intersections	LOS E		LOS F		Impact	Increase or (Decrease) in Delay Compared to No Build (seconds)	
	AM	PM	AM	PM		AM	PM
Owensmouth/Victory			X	X	No	(0.7)	0.3
Canoga/Victory	X			X	No	1.7	1.1
Variel/Victory			X		No	2.2	0.3
De Soto/Victory	X			X	Yes	1.4	11.7
Mason/Victory		X			No	11.0	(16.5)
Winnetka/Victory			X	X	Yes	4.3	2.6
Tampa/Topham			X	X	Yes	~~11.9~~ 77.4[1]	~~57.2~~ 146.5[1]
Balboa/Victory			X	X	No	1.8	4.1
Haskell/Victory				X	Yes	3.3	83.7
405 ramp/Victory	X				No	(0.4)	12.7
Sepulveda/Victory			X	X	Yes	169.2	6.0
Sepulveda/Oxnard				X	Yes	6.7	51.0
Van Nuys/Oxnard		X			No	(0.3)	(0.5)
Woodman/Oxnard		X			Yes	11.8	6.4
Laurel Canyon/Oxnard	X	X			No	0.6	0.5
Laurel Canyon/Chandler	X				Yes	22.6	3.1
Lankershim/Burbank		X			Yes	14.8	12.1

Note: (1) Lane configuration corrected to reflect single-lane approach on Topham Street and split phase with BRT.

Source: Meyer, Mohaddes Associates, Inc., 2000.

As seen in Table 3-16 most of the affected intersections are concentrated along Victory Boulevard, Sepulveda Boulevard and near the North Hollywood Metro Red Line Station. In summary, when the BRT Alternative is compared to No Build, 36 of the 53 study intersections improve in operating conditions; 17 intersections worsen in operating conditions but would not experience an adverse effect under NEPA (significant effect under CEQA); and eight intersections would experience an adverse impact under NEPA (significant impact under CEQA).

Intersection of Fulton and Burbank

The BRT alignment would cut diagonally across the Fulton/Burbank intersection. There were initial concerns that this geometry would impact traffic circulation and the addition of a BRT alignment through the intersection would require the lengthening of the signal timing and phasing. A grade separation was also included in initial discussions for concerns that heavy local traffic could impede transit performance.

However, traffic impact analysis has shown that a grade separation is not necessary as the BRT alignment and operation will not significantly affect intersection traffic circulation. Moreover, buses operating along the transitway will have signal priority at this intersection.

This intersection would not be affected by the MOS or BRT On-Street Alignment alternatives.

d. MOS

As described in detail in the project description, this alternative assumes operation of buses within the exclusive Burbank/Chandler ROW only between Balboa Boulevard in the west and Woodman Avenue in the east. West of Balboa Boulevard, the buses would operate on Victory Boulevard in mixed traffic to the Warner Center Transit Hub at Owensmouth Avenue. East of Woodman, the buses would travel along Oxnard Street in mixed traffic, then along Lankershim to the North Hollywood Metro Red Line Station.

For this alternative, MOS bus volumes in the peak hour were assumed to be less than the full BRT, at 18 buses per direction between Reseda Boulevard and North Hollywood and 12 buses per hour per direction between Reseda Boulevard and Warner Center.

Again, auto access trips for each BRT station were developed from mode of access data derived from the MTA model. Daily ridership park-and-ride and kiss-and-ride trips were calculated for each station and assigned to the roadway network. Daily trip generation for each station is summarized in Table 3-17.

Table 3-17: Auto Trip Generation - MOS Alternative

Station	Total Auto Access	Park-and-Ride	Kiss-and-Ride
Victory/Owensmouth	38	0	38
Victory/De Soto	39	0	39
Victory/Winnetka	366	292	74
Topham/Tampa	10	0	10
Oxnard/Reseda	446	319	127
Victory/Balboa	110	77	33
Victory/Woodley	38	0	38
Oxnard/Sepulveda	1,037	937	100
Oxnard/Van Nuys	1,071	861	210
Oxnard/Woodman	89	0	89
Burbank/Fulton	16	0	16
Chandler/Laurel Canyon	54	0	54
Chandler/Lankershim	930	462	468
Totals	4,242	2,948	1,294

Source: Meyer, Mohaddes Associates, Inc., 2000.

Station access traffic was distributed to the roadway system for each station area based on travel demand model trip distribution characteristics and probable travel patterns based on major origin-destination patterns. The resulting station access traffic volume turning movements at study area intersections were added to the 2020 background traffic volumes specifically developed for the MOS alternative using the arterial growth factors discussed in previous sections.

Based on the differences between the MOS and Full BRT, appropriate modifications were made to signal operational and physical geometric assumptions for this alternative based on discussions with LADOT. Bus volumes were added to mixed flow traffic volumes at study intersections along Victory Boulevard, Oxnard Street and Lankershim Boulevard, where BRT vehicles would be operating on-street under this alternative.

The above operational and physical modifications were made and assumed to be part of the project for the MOS scenario and are reflected in intersection levels of service calculations for this alternative.

For the MOS, a review of Table 3-18 shows 14 intersections are projected to operate at LOS E or worse during the peak hours. Based on a comparison to No-Build conditions, using the impact criteria, it can be seen that the MOS can be expected to have an adverse effect under NEPA (significant effect under CEQA) at two intersections. Mitigation efforts for both intersections will be discussed in Section 3-3.4. The 14 intersections operating at LOS E or F are as follows:

Table 3-18: LOS E/F and Adversely Affected Intersections – MOS Alternative

Intersections	LOS E		LOS F		Impact	Increase or (Decrease) in Delay Compared to No Build (seconds)	
	AM	PM	AM	PM		AM	PM
Owensmouth/Victory			X	X	No	2.8	3.4
Canoga/Victory	X			X	No	2.4	(0.2)
Variel/Victory			X		No	0.9	0.1
De Soto/Victory	X			X	No	2.9	0.4
Mason/Victory				X	No	0.2	(1.4)
Winnetka/Victory			X	X	Yes	4.5	2.0
Tampa/Topham		X			No	0.1	(2.1)
Balboa/Victory			X	X	No	1.7	2.8
405 ramp/Victory	X				No	4.3	14.8
Sepulveda/Victory			X	X	Yes	6.8	2.2
Sepulveda/Oxnard		X			No	0.1	(1.9)
Van Nuys/Oxnard		X			No	(0.1)	(0.5)
Laurel Canyon/Oxnard	X	X			No	0.8	(0.4)
Lankershim/Burbank		X			Yes	16.3	11.2

Source: Meyer, Mohaddes Associates, Inc., 2000.

Both of the intersections for which there would be an adverse impact under NEPA (significant impact under CEQA) for the MOS were also affected by the BRT Alternative. One of the two affected intersections, one is located on Victory Boulevard and the other is in the North Hollywood Metro Red Line Station area.

In summary, compared to No Build, with the MOS, 39 of the 53 study intersections improve in operating conditions; 14 intersections worsen in operating conditions but would not experience an adverse effect under NEPA (significant effect under CEQA); and two intersections would experience an adverse effect under NEPA (significant effect under CEQA).

3-3.2.3 Comparison of Overall Intersection Delay

Table 3-19 presents a summary of total weighted average delay expected at all 52 study intersections for the various scenarios.

Table 3-19: Comparison of Overall Weighted Average Delay for all Study Intersections (seconds/vehicle)

	1998	2020 No Build	TSM	BRT	BRT MOS
AM Average Delay	20.26	40.51	39.72	52.69	52.72
PM Average Delay	26.04	55.32	55.02	63.98	56.80

Source: Meyer, Mohaddes Associates, Inc., 2000.

The overall average delay was calculated by adding the total seconds of delay for all vehicles across all 52 study intersections and dividing by the grand total of peak hour traffic volumes going through all 52 intersections for each peak hour. This statistic is a reasonable indicator of the amount of weighted average vehicular delay that will be experienced by all motorists going through all of the study intersections, under each scenario. As can be seen in this table, currently (2000 conditions), the overall average delays are 20 and 26 seconds per vehicle for AM and PM peak, respectively. This is a reflection of more congested condition in the PM peak hour with about 30 percent higher average delay than the AM. As expected, conditions are projected to worsen by 2020, when AM and PM average delays will increase by 100 to 112 percent, respectively. The TSM Alternative will result in a slight reduction in overall delay compared to the No Build, by less than one second in each case. This is a reflection of the overall slight reduction in auto trips under the TSM alternative. The lower and upper bound of the BRT, ~~BRT MOS, and BRT~~ Lankershim/Oxnard On-Street Alignment, and MOS ~~alternatives~~ however, will introduce additional delays due to several reasons:

- reductions in available green time to cross streets at the existing signals
- delays to turning movements
- delays at new mid-block BRT crossings where traffic previously did not stop
- increased congestion due to additional auto trips attracted to park and ride stations

This additional average delay (for all 52 study intersections) compared to the No Build, ranges from about 1.5 seconds for the MOS in the PM peak to just over 12 seconds for the lower bound of the BRT Alternative in the AM peak. It should be noted that even though the overall average intersection delay increases by more than the 5.0 second threshold of significance, most of the intersections will still be operating at better than LOS E, and so the number of intersections identified as impacted is small. The Lankershim/Oxnard On-Street Alignment and the upper bound of the BRT Alternative would result in weighted average delays between those of the BRT and MOS.

3-3.2.4 Lankershim/Oxnard Weekend Service Impact Analysis

The option that would operate Metro Rapid Bus service on the Lankershim/Oxnard alignment, east of Buffalo Avenue, on weekends, in lieu of the Chandler Boulevard railroad alignment, is described in Chapter 2. On weekends, the BRT Alternative would operate similar to Metro Rapid Bus service, east of Buffalo Avenue where they would then re-enter the BRT alignment. Three bus stations along Oxnard Street would be served. There would be no bus service along the Chandler Boulevard BRT alignment on weekends; only on weekdays.

a. Impacts on Transit Service

Buses operating along Lankershim Boulevard and Oxnard Street would not have the benefit of a dedicated lane. Traveling in mixed flow with automobile traffic, they would be expected to travel at slower speeds, thus lengthening the travel time across the Valley. This would reduce the potential ridership and increase transit operating costs. The analysis of weekday ridership conducted with the MTA travel forecasting model concluded that the Lankershim/Oxnard Alternative would have about five percent fewer riders than the Full BRT Alternative. No comparable ridership forecasting tool is available for weekend days, but some of the key determinants in ridership forecasting are travel time and land use density along the corridors. The increased travel time on the Lankershim/Oxnard alignment was estimated to be 5.5 minutes. It is likely that the same level of ridership differential would be experienced on weekends as was forecast for the weekdays. Traffic volumes and congestion on Lankershim Boulevard are actually higher at times on weekends than during the weekday peak hours, indicating that buses could experience more delays on Lankershim on weekends than on weekdays. The opposite is true on Oxnard Street. It is less congested on weekends than on weekdays.

b. Traffic Impacts

Buses would be added to traffic volumes on Lankershim Boulevard and Oxnard Street between the hours of 5 AM and 12 AM, Saturdays and Sundays. They would operate at about 7.5-minute headways during daylight hours. During most hours of the day, the addition of buses to the mixed flow traffic would not result in any noticeable increase in congestion. During the mid-day on Saturdays, however, the addition of buses on Lankershim Boulevard could cause increases in average vehicle delay at some signalized intersections which would exceed the 5 second threshold of significance. Table 3-19a illustrates how the mid-day Saturday traffic volumes at four intersections along Lankershim Boulevard and Oxnard Street compare to the weekday peak hour volumes. On Lankershim Boulevard, the Saturday mid-day volumes are higher than weekday PM peak hour volumes. On Oxnard Street, the Saturday volumes are lower that the weekday peak hour volumes.

Since there were no impacts identified for the Lankershim/Oxnard Alternative on Oxnard Street on weekdays, it would not be expected that there would be any impacts on weekends, when the volumes are lower. On Lankershim Boulevard, a significant impact was identified at the Lankershim/Burbank intersection in the PM peak hour. Since mid-day Saturday volumes are higher than the weekday PM peak on Lankershim, it is expected that the Lankershim/Oxnard Weekend Alternative will have a significant impact on the Lankershim/Burbank intersection.

[Note: Table 3-19a below is a new addition to the Final EIS/EIR and did not appear in the Draft EIS/EIR. It is labeled Table 3-19a to distinguish it from the table numbers in the Draft EIS/EIR. Other new tables added to the Final EIS/EIR are treated in the same way.]

Table 3-19a: Weekend to Weekday Comparison of Traffic Volumes at Intersections

Location	Time Period	Total Volume
1. Lankershim Blvd. at S. Chandler Blvd	AM	2216
	PM	2240
	Sat-Midday	2333
	Difference	+4%
2. Lankershim Blvd at Oxnard St	AM	3261
	PM	3836
	Sat-Midday	5000
	Difference	+30%
3. Laurel Canyon Blvd at Oxnard St	AM	4070
	PM	4038
	Sat-Midday	3117
	Difference	-23%
4. Fulton Ave at Oxnard St	AM	3166
	PM	3247
	Sat-Midday	1734
	Difference	-47%
Note: % Difference compares the Saturday Midday volume with highest of the AM Peak and PM Peak weekday volume		

Source: Meyer, Mohaddes Associates, Inc., 2001.

3-3.2.5 Other Traffic-Related Issues

This section provides a brief description of some of the other major traffic issues associated with the BRT corridor and station area.

a. North Hollywood Station

The North Hollywood Metro Red Line Station serves as the eastern end of the BRT alignment. During the development of the Draft EIS/ EIR, ~~T~~three alternatives for the terminus of the BRT were considered, offering different paths from the transitway to the Metro Station. They were shown earlier on Figure 2-6 and Figure 2-7. In Alternative 1, the BRT travels along South

Chandler, North Chandler, Lankershim and Fair. The service would serve the Metro station drop off area just off Fair Avenue. In Alternative 2, the bus would operate along South Chandler and North Chandler. A new bus bay would be located on MTA ROW between South and North Chandler, west of Lankershim. There is a potential for a future second portal to the Metro Station near the northwest corner of Lankershim and North Chandler. In the near term, pedestrians would cross Lankershim at South Chandler. BRT service in Alternative 3 would operate along South Chandler, Lankershim, Cumpston, Tujunga, and North Chandler. Bus drop off has been proposed on the northbound side of Lankershim.

~~Although no alternative has been selected,~~ During the Preliminary Engineering phase, a variation of Alternative 2 called Alternative 2c was developed and selected as the preferred option. Alternative 2c is preferred because the plan includes a potential second portal into the Red Line Station that facilitates pedestrian circulation around the area. Also, buses along this route would maneuver around fewer streets, and therefore, incur the least amount of travel time. Finally, it would avoid Lankershim; any additional bus movement along this heavily congested arterial, especially during peak periods, could further impact mobility in this area. Alternative 2c is described in greater detail in Section 2-2.3.

LADOT and MTA have indicated that further investigation into potential future local developments in the station area (e.g., potential joint development and additional parking) is needed to determine traffic growth and ridership. This additional analysis could also refine the design of the left turn from South Chandler into the bus bay.

b. Variel Avenue and Erwin Street in the Warner Center Area

~~The BRT Alternative dedicated transitway ends at Variel Avenue as its western terminus. Once buses exit the transitway, there are a couple of routes that they take to/from the Warner Center Transit Hub. The BRT has the option of utilizing either Erwin Street or Oxnard Street. Further study will be necessary at the time of project operations to determine the best alignment and potential impacts of a BRT service in local mixed-flow traffic in the Warner Center area.~~

~~The circulation of buses between the transitway terminus and the Warner Center Transit Hub is a service planning issue.~~ The BRT would exit the MTA ROW at Variel Avenue at a signalized intersection. Buses would then head south on Variel Avenue to Oxnard Street, west on Oxnard Street to Owensmouth Avenue, and north on Owensmouth Avenue to the Warner Center Transit Hub (see Figure 2-26). Buses would then return to the MTA ROW by heading north on Owensmouth Avenue to Erwin Street, east on Erwin Street to Variel Avenue, and north on Variel Avenue to the right-of-way. The exact routine of buses will be ~~determined~~ refined by MTA service planning staff ~~and will depend upon which specific routes are realigned to use the transitway~~ before operation of the BRT commences.

The BRT project will not physically alter the roadways or bus stops in Warner Center, other than potentially installing distinctive signs or shelters, so there will be no impact of the BRT project on the streets in Warner Center.

c. Impacts Upon Residential Communities Adjacent to the Transitway

The Orthodox Jewish community and other residents surrounding Chandler Boulevard have expressed concerns about the relationship of the BRT busway with the pedestrian crossings along the Chandler Boulevard median. Members of several synagogues on Chandler Boulevard walk to the temple and cross the right-of-way, especially on the weekly sabbath and certain Jewish holidays. In accordance with Jewish religious doctrines, the operation of mechanical devices, including pedestrian crossing activators, is forbidden on the sabbath and Jewish holidays.

~~Generally~~ <u>Normally</u>, a pedestrian needing to cross the street would press the crossing pedestrian push button so as to activate the "walk" phase or allow and add extra "walk" time to complete the crossing by foot. LADOT typically sets signals to maximize auto crossing; pedestrians need to activate the pedestrian crossing phase. The automatic activation of pedestrian crossings during the Sabbath and Jewish holidays would provide adequate pedestrian crossing time; however, it would result in less vehicular time during the complete signal cycle phase.

Residential land uses surround much of the BRT transitway corridor on either side of the route. Various densities of residential neighborhoods and communities, ranging from single-family to high-density multiple-family dwellings, as well as commercial and industrial uses, line much of the right-of-way. As the number of drivers seeking to access BRT services increases, a percentage of these trips may attempt to find convenient detours around points of arterial congestion to reach stations, especially ones with park-and-ride lots. Some may use streets through residential neighborhoods. The locations with the largest parking supplies are at the Sepulveda and Van Nuys stations. The Van Nuys station is primarily surrounded by commercial, industrial and government lands uses. The parking lot at the Sepulveda station was designed with access points on Sepulveda Boulevard and a dedicated access road on Victory Boulevard near the San Diego Freeway interchange. This access plan will reduce the potential for use of the residential streets north of the station by BRT patrons. <u>See Section 2-2.3.6 for a description of traffic calming measures at this station.</u>

Neither the Full BRT, the Lankershim/Oxnard On-Street Alignment, nor the MOS is expected to result in a significant amount of traffic intrusion into residential neighborhoods, but such intrusion is difficult to forecast in advance. The diversion to alternate routes by BRT-oriented traffic can be caused by traffic congestion created by another development. For that reason, <u>MTA/</u>LADOT should monitor conditions in neighborhoods near BRT stations.

3-3.3 Mitigation Measures

3-3.3.1 General Strategies for Refinement in Preliminary Engineering

The traffic signals along the BRT alignment have been incorporated into the City of Los Angeles Automated Traffic Surveillance and Control (ATSAC) system. As part of the Preliminary Engineering and Design Build phases of the project, modifications to the signal timing and phasing plans will be refined with LADOT, so that the signal system can give priority to the

BRT buses, while minimizing impacts on arterial street traffic. Some of the considerations that will go into the detailed signal design effort include:

- Evaluation of impacts on cross traffic when considering signal preferential/priority treatment for BRT buses (utilizing bus detection system to lengthen a signal phase to allow arriving bus to proceed through the intersection unimpeded).

- Coordination of signal phasing and timing to coincide with arriving buses and stops at adjacent station platforms (e.g., red phase occurs during the time needed for passenger boarding and fare collection).

- ~~Consideration of signal priority that can give buses a head start over the rest of the traffic (a queue jump) in areas of mixed-flow traffic. This can be accomplished by adding a signal phase that advances to a green light for the BRT bus lane prior to the other traffic lane.~~

- <u>Transit priority treatment similar to that on Ventura Boulevard for Metro Rapid Bus.</u>

3-3.3.2 Intersection Improvements

As stated previously, an intersection is considered to experience an adverse effect under NEPA (significant effect under CEQA) if the project causes a deterioration in level of service to E or worse, and/or results in an increase in the average vehicle delay of 5.0 seconds or more at an intersection projected to operate at LOS E or worse under No-Build conditions. Using these criteria results in need for mitigation measures to be implemented at two to eight intersections, depending on the alternative considered.

The approach used to develop mitigation measures at the intersections was to first consider operational improvements and second to consider physical improvements. Operational improvements included signal timing and phasing changes. The cycle lengths for the study intersections were adjusted and the green times for each approach fine-tuned to satisfy the forecast traffic demands, including BRT buses. If that approach did not mitigate the impacts, physical improvements to the intersection were then developed. Typical recommendations include signalization, additional turn lanes, road widening, and additional through lanes.

The following conceptual physical intersection improvements were developed to mitigate the residual significant traffic impacts along the BRT corridor. Table 3-20 shows the initial LOS and delay before mitigation and the mitigated results. With the implementation of these measures, no significant traffic impacts remain unmitigated.

Table 3-20: Mitigated Intersection Level of Service and Delay – BRT Alternative

BRT Alternative										
Intersections	AM Peak No Build		AM Peak BRT		Change (seconds)	Impact Y/N	Mitigated BRT		Change (seconds)	Impact Y/N
	LOS	Delay	LOS	Delay			LOS	Delay		
Winnetka Ave/Victory Blvd	F	123.4	F	164.7	41.3	Y	E	63.2	-60.2	N
Sepulveda Blvd/Victory Blvd	F	121.9	F	291.1	169.2	Y	F	125.1	3.2	N
Laurel Cyn Blvd/Chandler Blvd	D	47.0	E	69.6	22.6	Y	D	42.2	-4.8	N
Intersections	PM Peak No Build		PM Peak BRT		Change (seconds)	Impact Y/N	Mitigated BRT		Change (seconds)	Impact Y/N
	LOS	Delay	LOS	Delay			LOS	Delay		
De Soto Ave/Victory Blvd	F	159.0	F	170.7	11.7	Y	F	162.1	3.1	N
Tampa Av/Topham St	~~E~~ F	~~75.0~~ 125.9	F	~~132.2~~ 272.4	~~57.2~~ 146.5	Y	~~E~~ F	~~75.4~~ 117.8	~~0.4~~ –8.1	N
Haskell Ave/Victory Blvd	D	49.7	F	133.4	83.7	Y	D	49.6	-0.1	N
Sepulveda Blvd/Victory Blvd	F	121.0	F	127.0	6.0	Y	F	124.2	3.2	N
Sepulveda Blvd/Oxnard St	E	71.7	F	122.7	51.0	Y	E	71.3	-0.4	N
Woodman Ave/Oxnard St	D	52.2	E	58.6	6.4	Y	E	56.9	4.7	N
Lankershim Blvd/Burbank Blvd	D	55.0	E	67.1	12.1	Y	D	51.6	-3.4	N
MOS Alternative										
Intersections	AM Peak No Build		AM Peak MOS		Change (seconds)	Impact Y/N	Mitigated MOS		Change (seconds)	Impact Y/N
	LOS	Delay	LOS	Delay			LOS	Delay		
Winnetka Ave/Victory Blvd	F	123.4	F	164.9	41.5	Y	F	97.9	-25.5	N
Sepulveda Blvd/Victory Blvd	F	121.9	F	128.7	6.8	Y	F	126.6	4.7	N
Intersections	PM Peak No Build		PM Peak MOS		Change (seconds)	Impact Y/N	Mitigated MOS		Change (seconds)	Impact Y/N
	LOS	Delay	LOS	Delay			LOS	Delay		
Lankershim Blvd/Burbank Blvd	D	55.0	E	66.2	11.2	Y	D	51.1	-3.9	N

Source: Meyer, Mohaddes Associates, Inc., 2000.

a. BRT Alternative

As discussed in earlier sections, the traffic impacts for the lower bound of the BRT Alternative can be assumed similar to those of the upper bound of the BRT Alternative. The resulting mitigation measures should also be the same. The following measures shall be implemented to reduce the impacts of the BRT Alternative:

De Soto Avenue and Victory Boulevard

- Add a second left-turn lane on eastbound approach of Victory Boulevard; ~~may~~ will require widening into the MTA ROW.

Winnetka Avenue and Victory Boulevard

- Add northbound protected left-turn ~~and~~ phase to traffic signal.

Tampa Avenue and Topham Street

- ~~One additional through lane on eastbound Topham Street; may require widening.~~
- ~~Restriction of eastbound left turns on Topham Street during peak hours.~~
- Provide protected left-turn lane and phasing on Topham Street.

Laurel Canyon Boulevard and Chandler Boulevard

- Add protected left turns in all directions to traffic signal and widen into the MTA ROW.

Lankershim Boulevard and Burbank Boulevard

- Add ~~a second~~ left-turn lanes ~~on eastbound approach of Burbank Boulevard~~ in each direction; ~~may~~ will require widening within existing City right-of-way.

The following intersections were also determined to be significantly affected under NEPA (significantly affected under CEQA) during the initial model runs. Recalibration of the signal timing enabled significant reduction in delay to the point where the intersections were no longer affected. The recommended mitigation measure is to retime the following signals:

- **Haskell Street and Victory Boulevard**
- **Sepulveda Boulevard and Victory Boulevard**
- **Sepulveda Boulevard and Oxnard Street**
- **Woodman Avenue and Oxnard Street**

b. MOS

The following measures shall be implemented to reduce the impacts of the MOS Alternative:

Winnetka Avenue and Victory Boulevard

- Add northbound protected left-turn phase to traffic signal.

Lankershim Boulevard and Burbank Boulevard

- Add ~~Second~~ left-turn lanes ~~on eastbound approach of Burbank Boulvard~~ in each direction; ~~may~~ will require widening within existing City right-of-way.

The following intersection was also determined to be significantly affected under NEPA (significantly affected under CEQA) during the initial model runs. Recalibration of the signal timing enabled significant reduction in delay to the point where the intersections were no longer affected. The recommended mitigation measure is to retime the following signal:

- **Sepulveda Boulevard and Victory Boulevard**

c. Lankershim/Oxnard On-Street Alignment

The following measures shall be implemented to reduce the impacts of the Lankershim/Oxnard On-Street Alignment:

De Soto Avenue and Victory Boulevard

- Add a second left-turn lane on eastbound approach of Victory Boulevard; ~~may~~ will require widening into the MTA ROW.

Winnetka Avenue and Victory Boulevard

- Add northbound protected left-turn phase to traffic signal.

Tampa Avenue and Topham Street

- One additional through lane on eastbound Topham Street; ~~may~~ will require widening into the MTA ROW.
- ~~Restriction of eastbound left turns on Topham Street during peak hours.~~

Lankershim Boulevard and Burbank Boulevard

- Add ~~a second~~ left-turn lanes ~~on eastbound approach of Burbank Boulevard~~ in each direction; ~~may~~ will require widening within existing City right-of-way.

The following intersections were also determined to be adversely affected under NEPA (significantly affected under CEQA) during the initial model runs. Recalibration of the signal timing enabled substantial reduction in delay to the point where the intersections were no longer affected. The recommended mitigation measure is to retime the following signals:

- **Haskell Street and Victory Boulevard**
- **Sepulveda Boulevard and Victory Boulevard**
- **Sepulveda Boulevard and Oxnard Street**
- **Woodman Avenue and Oxnard Street**

d. Lankershim/Oxnard Weekend Service

The following measure shall be implemented to reduce the impacts of the Lankershim/Oxnard Weekend Alternative:

Lankershim Boulevard and Burbank Boulevard

- Add a second left-turn lane on eastbound approach of Burbank Boulevard; may require widening within existing City right-of-way. (This measure would be implemented for the Full BRT anyway).

3-4 PARKING

This section includes a discussion of the on-street and off-street parking conditions along the east-west corridor. Off-street parking includes the proposed park-and-ride facilities at some of the BRT stations. Potential impacts from spillover parking in the adjacent neighborhoods, along with the proposed mitigation measures, will be discussed.

3-4.1 Existing On-Street Parking Conditions

The BRT is expected to operate within its own exclusive ROW using the Southern Pacific railroad alignment along the ~~14.2~~ approximately 14-mile route. The loss of on-street parking is expected to be negligible due to the BRT corridor configuration.

For the MOS, the buses will be operating along Victory Boulevard, Lankershim Avenue, and Oxnard Boulevard. Both streets currently have on-street parking, but there are no plans to eliminate parking as a result of the MOS service, with the potential exception of a few spaces in the vicinity of a station on Oxnard Street. The MOS alignment is therefore, not anticipated to have any significant impact on the on-street parking.

The BRT Lankershim Oxnard On-Street Alignment will utilize Oxnard Street, as would the MOS Alternative, and could result in the loss of a few spaces near the station on Oxnard Street. This would not cause an adverse impact under NEPA (significant impact under CEQA).

3-4.2 Existing Off-Street Parking Conditions

Park-and-Ride facilities are proposed at six locations along BRT. Approximately 4,100 parking spaces will be available, including ~~240~~ 150 existing spaces at the Balboa/Victory station and ~~850~~ 915 at the North Hollywood Red Line Station. Table 3-21 below provides a breakdown of proposed parking spaces by the respective station. The total number of spaces in proposed park-and-ride lots has been modified slightly from that presented in the Draft EIS/EIR as a result of refinements during the Preliminary Engineering phase. Parking impact analysis is not expected to change substantially due to the revised park-and-ride assumptions. Therefore, parking space numbers referenced in this section are consistent with the original Draft EIS/EIR assumptions.

The Lankershim/Oxnard Weekend Service Option would not adversely affect on-street parking since the buses will operate similar to Metro Rapid Buses in mixed flow travel lanes.

Table 3-21: Parking Spaces for the BRT Alternative

Station	MTA Property[3]
North Hollywood Station	850[1]
Van Nuys/Oxnard	1060
Sepulveda/Oxnard	1200
Balboa/Victory	240[2]
Reseda/Oxnard	400
~~Mason/Victory (~~Pierce College~~)~~	350
TOTALS	4100

Notes:
(1) Existing park-and-ride lot at the Red Line Station.
(2) 150 spaces are located in an existing LADOT park-and-ride lot.
(3) Parking numbers consistent with Draft EIS/EIR. Analysis would not change substantially if revised Preliminary Engineering numbers were used.

Source: Meyer, Mohaddes Associates, Inc., 2000.

3-4.3 Parking Impacts

BRT stations are expected to generate additional traffic created by transit patrons accessing the stations. Not all transit patrons are expected to drive their vehicles to the planned stations. Rather, some patrons will walk to the nearest station (maximum walking distance is assumed to be ½ mile). Some will transfer from other transit modes trying to utilize the BRT line; some will park their vehicles and ride the bus—especially at those stations with park-and-ride facilities—while others will simply be dropped off at kiss-and-ride areas, or arrive via bicycles.

To a certain degree, the existence and size of the parking facilities primarily influence access impacts (in terms of entering and exiting parking facilities) around the stations from adjacent streets. Table 3-22, Table 3-22a, and Table 3-23 provide~~s~~ ~~a~~ breakdowns of the total daily ridership (adjusted), mode of access (transit/walk or auto), the split between auto-based trips (park-and-ride vs. kiss-and-ride drop-offs), the demand at individual lots, and lot capacity at the respective stations with parking facilities for the lower and upper bounds of the BRT Alternative and MOS.

The parking demand analysis reflected in Table 3-22 illustrates that the proposed supply of parking will exceed demand at all but three stations. The North Hollywood Red Line Station parking lot at Chandler/Lankershim currently reaches capacity and is forecast to remain at capacity with the BRT project. The BRT project is not expected to result in an adverse impact under NEPA (significant impact under CEQA) on parking demand at this station.

Table 3-22: BRT Ridership and Mode of Access Analysis—Lower Bound of the BRT Alternative

Station Name	Total Daily	Mode of Access		Auto Access		Total Lot Capacity*	Total Lot Demand
		Transit/Walk/ Other	Auto	Park-and-Ride	Kiss-and-Ride		
Chandler/Lankershim	7,081	6,157	924	462	462	850	850
Chandler/Laurel Canyon	1,051	978	73	0	73	0	0
Burbank/Fulton	763	710	53	0	53	0	0
Oxnard/Woodman	1,002	932	70	0	70	0	0
Oxnard/Van Nuys	4,247	3,031	1,216	989	227	1,060	989
Oxnard/Sepulveda	2,301	1,280	1,022	926	96	1,200	926
Victory/Woodley	526	490	37	0	37	0	0
Victory/Balboa	1,169	935	241	171	70	~~240*~~ 150	171
Oxnard/Reseda	2,295	1,756	532	400	132	400	400
Topham/Tampa	611	569	43	0	43	0	0
~~Victory/Mason~~ Pierce College	1,017	621	387	350	37	350	350
Victory/De Soto	907	856	51	0	51	0	0
Victory/Owensmouth	1,693	1,597	96	0	96	0	0
Totals	24,662	19,911	4,744	3,297	1,447	4,100	3,685

Note: Parking numbers consistent with Draft EIS/EIR. Analysis would not change substantially if revised Preliminary Engineering numbers were used.

Source: Meyer, Mohaddes Associates, Inc., 2000.

At the Oxnard/Reseda and ~~Victory/Mason~~ Pierce College stations, the parking demand is forecast to equal the proposed supply for the BRT Alternative. These are the two stations where the potential for spillover parking in adjacent neighborhoods or into adjacent parking areas at Pierce College is anticipated. The spillover into adjacent parts of the Pierce College parking lot would not cause an adverse impact under NEPA (significant impact under CEQA) because there is a significant amount of available parking in that lot during the daytime. If the lot at Oxnard/Reseda does become fully occupied, a small number of BRT patrons may seek to park on residential streets. This situation should be monitored by LADOT and mitigation measures implemented if it should cause inconvenience to residents.

At stations that do not provide parking, there is also the potential that some BRT patrons may attempt to park on nearby residential streets. Parking was not provided at these stations, however to reduce the potential of traffic impacts in the neighborhoods. The parking situation in neighborhoods around stations with no parking should be monitored by LADOT and mitigation measures implemented if it should cause inconvenience to residents.

Table 3-22a shows the mode of access information for the upper bound of the BRT Alternative. The total ridership for this alternative is less that for the lower bound of the BRT Alternative, and the mode of access numbers reflect that information. The parking demand at the Reseda and Pierce College stations decreases to less than the lot capacity.

[Note: Table 3-22a below is a new addition to the Final EIS/EIR and did not appear in the Draft EIS/EIR. It is labeled Table 3-22a to distinguish it from the table numbers in the Draft EIS/EIR. Other new tables added to the Final EIS/EIR are treated in the same way.]

Table 3-22a: BRT Ridership and Mode of Access Analysis — Upper Bound of the BRT Alternative

Station Name	Total Daily	Mode of Access		Auto Access		Total Lot Capacity*	Total Lot Demand
		Transit/Walk/ Other	Auto	Park-and-Ride	Kiss-and-Ride		
Chandler/Lankershim	4,181	3,838	820	462	358	850	850
Chandler/Laurel Canyon	912	849	68	0	68	0	0
Burbank/Fulton	522	486	46	0	46	0	0
Oxnard/Woodman	1,053	980	48	0	48	0	0
Oxnard/Van Nuys	4,129	2,979	1,023	830	193	1,060	830
Oxnard/Sepulveda	1,768	844	988	901	87	1,200	901
Victory/Woodley	594	552	36	0	36	0	0
Victory/Balboa	679	543	198	140	57	150	140
Oxnard/Reseda	1,917	1,466	448	333	115	400	333
Topham/Tampa	521	485	31	0	31	0	0
Pierce College	747	487	268	230	39	350	230
Victory/De Soto	651	614	33	0	33	0	0
Victory/Owensmouth	924	872	47	0	47	0	0
Totals	18,598	14,994	4,054	2,897	1,157	4,100	3,285
Note: Parking numbers consistent with Draft EIS/EIR. Analysis would not change substantially if revised Preliminary Engineering numbers were used.							

Source: Meyer, Mohaddes Associates, Inc., 2001.

As shown in Table 3-23, with the MOS Alternative, the parking demand at the Reseda and Mason stations decreases to less than the lot capacity.

The parking demand for the Lankershim/Oxnard On-Street Alignment will be very similar to that of the Full BRT, so the potential for parking impacts in neighborhoods adjacent to the Reseda station and stations with no parking should be monitored by LADOT to determine if spillover parking is occurring.

Table 3-23: MOS Ridership and Mode of Access Analysis							
Station Name	**Total Daily**	**Mode of Access**		**Auto Access**		**Lot Capacity**	**Lot Demand**
		Transit/Walk /Other	**Auto**	**Park-and-Ride**	**Kiss-and-Ride**		
Chandler/Lankershim	7,176	6,234	930	462	468	850	850
Oxnard/Laurel Canyon	777	723	54	0	54	0	0
Oxnard/Fulton	235	218	16	0	16	0	0
Oxnard/Woodman	1,275	1,186	89	0	89	0	0
Oxnard/Van Nuys	3,864	2,794	1,071	861	210	1,060	861
Oxnard/Sepulveda	2,362	1,329	1,037	937	100	1,200	937
Victory/Woodley	543	505	38	0	38	0	0
Victory/Balboa	548	438	110	77	33	~~240*~~ 150	77
Oxnard/Reseda	2,138	1,692	446	319	127	400	319
Topham/Tampa	144	134	10	0	10	0	0
Victory/Mason	1,599	1,233	366	292	74	350	292
Victory/De Soto	682	643	39	0	39	0	0
Victory/Owensmouth	669	632	38	0	38	0	0
Totals	22,012	19,911	4,242	2,948	1,294	4,100	3,336

Notes:
~~* existing carpool lot~~
It should be noted that demand for the North Hollywood Station for combined Metro Redline rail and SFV- BRT riders is actually 1671 vehicles for park-and-riders. The difference (between this latent demand and the capacity of the parking lot at North Hollywood Station # 18589) is 821 vehicles, of which 25% retention is assumed over the lot capacity (105 cars) that will park on nearby residential streets. The remaining 616 vehicles were manually reassigned to the BRT Oxnard/ Sepulveda Station, which has an off-ramp from the southbound San Diego Freeway - for Metro Redline bound patrons from the northerly portions of the Valley.

Source: Meyer, Mohaddes Associates, Inc., 2000.

3-4.4 Parking Mitigation Measures

Parking provisions and controls can directly affect the volume of traffic on residential streets, particularly where these streets are used for parking by commuters, shoppers, and other non-related traffic attracted by nearby non-residential destinations. Parking controls may be the only effective traffic management device in a neighborhood if the problem traffic and parking is comprised predominantly of outsiders who use the streets for parking. MTA, working with LADOT, will develop parking management studies and strategies including monitoring the demand for parking in residential neighborhoods adjacent to BRT stations both before and after the start of BRT operations, providing additional parking and planned park-and-ride lots, and developing techniques to redistribute parking around the various facilities.

The following mitigation measures shall be considered in the areas adjacent to the Reseda and Pierce College park-and-ride lots and adjacent to stations with no parking, if the measures described above do not reduce spillover parking and LADOT determines that spillover parking is causing a significant impact. Four basic control approaches exist to deal with outsider parking in neighborhoods:

- Ban on on-street parking;
- Time-limited parking;
- Resident permit parking; and
- Non-resident permits for registered car-poolers who work in the zone.

Additionally, the following approaches may be considered in situations where parking supply is low or non-existent and/or parking demand is high.

- Negotiate with local property owners to allow leasing of all day parking spaces.
- Consider parking controls in neighborhoods where parking spillover from park-and-ride facilities have become problematic.
- Institute parking controls in communities affected by general spillover of parking at stations without parking facilities.