Transportation Impacts Report

for the East San Fernando Valley Transit Corridor

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Metro®

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Acronyms and Abbreviations

2008 RCP	2008 Regional Comprehensive Plan
2012 RTP	2012–2035 Regional Transportation Plan/Sustainable Communities Strategy
AA	Alternatives Analysis
AB	Assembly Bill
ATCS	Adaptive Traffic Control System
ATG	Auto Trips Generated
ATSAC	Automated Traffic Surveillance and Control
BRT	Bus Rapid Transit
BTSP	Bicycle Transportation Strategic Plan
CARB	California Air Resources Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CCTV	Closed Circuit Television
CMA	Critical Movement Analysis
CMP	Congestion Management Program
CPA	Community Plan Area
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse Gas
Growth Vision	2004 Compass Blueprint Growth Vision
HCM	Highway Capacity Manual
HOV	High-Occupancy Vehicle
I	Interstate
ICU	Intersection Capacity Utilization
LADOT	Los Angeles Department of Transportation
LA-RIO	Los Angeles River Improvement Overlay
LOS	Level of Service
LRT	Light Rail Transit
LRTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MOL	Metro Orange Line
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MSF	Maintenance and Storage Facility

NEPA	National Environmental Policy Act
OPR	Office of Planning and Research
PAZ	Parking Analysis Zone
RCP	Regional Comprehensive Plan
ROW	Right-of-Way
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SCAG	Southern California Association of Governments
SB	Senate Bill
SOV	Single Occupancy Vehicle
SR	State Route
TIA	Traffic Impact Analysis
TOD	Transit-Oriented Development
TPSS	Traction Power Substation
TSM	Transportation System Management
VMT	Vehicle Miles Traveled
U.S.C.	United States Code

Executive Summary

This report documents the transportation impacts of the proposed East San Fernando Valley Transit Corridor Project.

Specific impact areas that are discussed include existing and future [year 2040] conditions for each Project alternative. The Project alternatives include the following:

- Future Baseline or the "No-Build alternative". The No-Build Alternative represents projected conditions in 2040 without implementation of the Project.

- Transportation Systems Management (TSM). The TSM Alternative enhances the No-Build Alternative and emphasizes transportation systems upgrades, which may include relatively low-cost transit service improvements.

- BRT Alternative – Alternative 1 (Curb-Running BRT). The Curb-Running BRT would incorporate 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line. This alternative would be similar to the Metro Wilshire BRT project and would operate similarly.

- BRT Alternative – Alternative 2 (Median-Running BRT). The Median-Running BRT consists of approximately 6.7 miles operating in a dedicated median-running configuration between San Fernando Road and the Metro Orange Line, and would have operational standards similar to the Metro Orange Line. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink Station and San Fernando Road/Van Nuys Boulevard.

- Rail Alternative – Alternative 3 (Low Floor LRT/Tram). The Low-Floor LRT/Tram would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink Station to the north, to the Van Nuys Metro Orange Line station to the south. The Low-Floor LRT/Tram would operate in a median dedicated guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line station. The Low-Floor LRT/Tram would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink Station, the Low-Floor LRT/Tram would operate in a median dedicated guideway.

- Rail Alternative – Alternative 4 (Light Rail Transit or LRT). Similar to the Low-Floor LRT/Tram, the LRT would be powered by overhead electrical wires. The LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink Station along San Fernando Road south to Van Nuys Boulevard, from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. This includes a segment in exclusive right-of-way through the Antelope Valley Metrolink railroad corridor, a segment with semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street.

A summary of characteristics of the Project alternatives is provided in the table below.

Van Nuys Boulevard Segment - Build Attributes									
Build Alternative	Length Total		Stations Total		Circulation		Parking		Bicycle Facilities
	Van Nuys Blvd.	San Fernando Rd.	Van Nuys Blvd.	San Fernando Rd.	Van Nuys Blvd.	San Fernando Rd.	Van Nuys Blvd.	San Fernando Rd.	
Alternative 1 (Curb-Running BRT)	6.7 miles	2.5 miles	14 BRT	4 BRT	Curblane BRT and RT Only	Mixed-flow	NPAT and NSAT all Curb Segments (early morning to evening)	Permitted	Sharrow Only
Alternative 2 (Median-Running BRT)	6.7 miles	2.5 miles	13 BRT	4 BRT	30 Intersections No Left Turn	Mixed-flow	NPAT and NSAT all Curb Segments	Permitted	None
Alternative 3 (Low-Floor LRT/Tram)	6.7 miles	2.5 miles	24 Rail	4 Rail	30 Intersections No Left Turn	11 Intersections Turn Restrictions	NPAT and NSAT all Curb Segments	NPAT and NSAT all Curb Segments	None
Alternative 4 (LRT)	4.2 miles (Median) + 2.5 miles (Subway)	2.5 miles (rail ROW)	11 Rail (3 are subway)	3 Rail	43 Intersections No Left Turn	No Restrictions	NPAT and NSAT except when LRT underground	Permitted	None

Notes:
NPAT - No Parking Any Time
NSAT - No Stopping Any Time
RT - Right Turn

The impact areas that are discussed in this report include:

- Traffic including highways, roadways, and local intersections
- Parking
- Transit
- Non-motorized transportation

The most prominent impact areas are in regard to parking, non-motorized transportation, loading/unloading, local circulation and access/egress to land uses fronting Van Nuys Boulevard. These are discussed in-depth in Chapter 4. However a brief overview of the significance in the changes in operations in parking and circulation warrant early introduction to these topics to the reader here. Detailed information on all of the attributes associated with each Build Alternative can be found in the Project description.

Traffic

How will vehicular circulation be affected?

Each of the Build Alternatives will affect corridor-wide, local circulation and land use access/egress with differing and increasing levels of restrictiveness.

Under Alternative 1 (Curb-Running BRT), the curbside lane would be reserved at all times for transit buses and bicycles. As noted above, where currently available, parking would be prohibited from 7 a.m. to 7 p.m., resulting in a loss of on-street parking. Parking would be permitted during evening/overnight

hours. All current motor vehicle turns into and out of cross streets and driveways would be maintained under this alternative. No prohibitions on left turns or right turns would be necessary.

Under Alternative 2 Option B (Median-Running BRT), similar to Alternative 3, all curbside parking would be prohibited along the entire extent of Van Nuys Boulevard from the Van Nuys Metro Orange Line Station to San Fernando Road. Although two lanes would be provided the length of Van Nuys Boulevard in each direction, the flow in the curbside lane of traffic would be impeded whenever a right-turning vehicle yields to crossing pedestrians or a local bus is stopped at a bus stop.

A total of 30 intersections would have left turn prohibitions – these are generally secondary roadways along the corridor. At these intersections only right turns from Van Nuys Boulevard or right turns onto Van Nuys Boulevard would be permitted. Otherwise, left turns from Van Nuys Boulevard onto cross streets would be maintained at most of the currently signalized intersections, and prohibited at all unsignalized intersections. The dual left-turn lanes on northbound and southbound Van Nuys Boulevard at Sherman Way and at Roscoe Boulevard would be reduced to single left-turn lanes.

Several left-turns in the Van Nuys Civic Center, between Calvert Street and Hartland Street, would be prohibited to accommodate median bus stop platforms. Because of the distance between signalized intersections, there would not be enough space for left-turn lanes. For similar reasons, the left turn into the retail property on the east side of Van Nuys Boulevard, between Roscoe Boulevard and Chase Street, would be prohibited.

Unless otherwise prohibited, U-turns would be allowed from signalized left-turn lanes on Van Nuys Boulevard. Access to and from minor side streets and private driveways would rely on these U-turn opportunities.

All movements across the median guideway would be prohibited. This includes left turns from Van Nuys Boulevard at unsignalized intersections and private driveways, as well as left turns and through traffic from the side streets or from private driveways. Motorists who desire to make a left turn into an unsignalized cross-street or driveway would need to find a signalized left turn from which to make a U-turn or turn right off of Van Nuys Boulevard and seek a route that would enable them to reach a signalized cross street.

Only right turns into and out of unsignalized cross streets and driveways would be allowed. Left turns into and out of cross streets and driveways would be prohibited.

Under Alternative 3 the (Low-Floor LRT/Tram), similar to Alternative 2, all curbside parking would be prohibited along the entire extent of the Project alignment.

A total of 41 intersections would have left turn prohibitions. At these intersections only right turns from Van Nuys Boulevard or right turns onto Van Nuys Boulevard would be permitted. All other turning prohibitions noted under Alternative 2 remain the same. Additionally, all existing turning movements on San Fernando Road between Wolfskill Street and Van Nuys Boulevard will be maintained where the low-floor LRT/tram would share travel lanes with motor vehicles.

Under Alternative 4 (LRT), curbside parking would be prohibited along the majority of the Project alignment with the exception of when the alignment goes underground between Vose Street and Parthenia Street, and along San Fernando Road as it would be located within an exclusive ROW.

A total of 43 intersections would have left turn prohibitions. AT these intersections only right turns from Van Nuys Boulevard or right turns onto Van Nuys Boulevard would be permitted. All other turning prohibitions noted under Alternative 2 remain the same.

The Project traffic impacts by alternative, as analyzed within the traffic impact analysis are summarized in the table below.

Alternative	Intersections at LOS E or F	Number of Significant Impacts	Typical Mitigations Available	Alternate Mitigation Measures Available
2040 No Build	16	-	N/A	N/A
TSM	16	-	N/A	N/A
Alternative 1 (Curb-Running BRT)	18	16	No	Partially Mitigating
Alternative 2 (Median-Running BRT)	21	24	No	Partially Mitigating
Alternative 3 (Low-Floor LRT/Tram)	27	32	No	Partially Mitigating
Alternative 4 (LRT)	21	20	No	Partially Mitigating

The performance of the Project within and outside of the study area in relation to reductions in daily VMT and VHT, peak hour average vehicle speed, and number of vehicle trip compared to the No-Build Alternative is summarized below. These metrics provide insight into the potential benefits associated with each alternative.

The VMT value provides a combined estimate of both the vehicle trips generated (as versus transit trips, bicycling, walking, etc.) and the length of those vehicle trips. Alternative 4 has the most daily VMT reduction compared to the No-Build Alternative, with a combined within/outside the study area reduction of approximately 54,207 vehicle miles. Approximately 82 percent are to/from outside of the corridor; as the trips within the study area are relatively short and those to/from outside tend to be longer trips. Alternatives 1 and 2 have similar VMT reductions between 36,000 and 37,400, with the majority (approximately 61 percent) from the corridor to outside and the remaining within the study area.

The reason that the BRT alternatives have less reduction within the study area than Alternative 4 is that the BRT alternatives do not serve the markets within study area as well; therefore, the BRT alternatives have fewer transit trips within the study area, which translates into less VMT reduction. However, the advantage of the BRT alternatives is that they require no extra transfer at the MOL as is required with Alternative 4. As a result, the BRT alternatives serve the corridor to outside market better than Alternative 4. Alternative 3 has about daily VMT reduction pf 20,000, but it has a negative VMT reduction, meaning a VMT increase, for the corridor to outside travel market. The travel paths are modified under the rail alternatives resulting in a loss of transit trips in some instances. However, because Alternative 4 has more competitive transit service, it has less transit trip loss and more transit trip gains than Alternative 3, which offsets the transit trip loss and makes the total VMT reduction positive.

The VHT value provides a similar combined value of vehicle trips generated and the time required to complete those trips (incorporating congestion into the measure). Similar to the VMT reduction, Alternative 4 has the most reduction in VHT of 2,840 vehicle-hours per day, among those about 67 percent are from the corridor to outside. This is followed by Alternatives 1 and 2 which have

comparable vehicle-hours reduction with VHT reductions between 1,780 and 1,700. Alternative 3 has a reduction of about 1,100 VHT, with the outside to the corridor market accounting for approximately 43 percent.

Alternative	Daily VMT Reduction	Daily VHT Reduction
OUTSIDE THE STUDY AREA		
TSM	9,353	440
Alternative 1 (Curb-Running BRT)	33,137	1,594
Alternative 2 (Median-Running BRT)	34,733	1,686
Alternative 3 (Low-Floor LRT/Tram)	9,188	704
Alternative 4 (LRT)	44,487	2,495
WITHIN THE STUDY AREA		
TSM	254	11
Alternative 1 (Curb-Running BRT)	2,823	102
Alternative 2 (Median-Running BRT)	2,625	93
Alternative 3 (Low-Floor LRT Tram)	10,819	385
Alternative 4 (LRT)	9,720	343

Would there be increased congestion roadway on corridor intersections as a result of constructing one of the Build Alternatives?

As shown in Chapter 4, there would be increased congestion and significantly impacted intersections under each of the Build Alternatives.

Would there be increased congestion on parallel roadway corridor intersections as a result of constructing one of the Build Alternatives?

As shown in Chapter 4, there would be increased congestion and significantly impacted intersections under each of the Build Alternatives at some intersections due to shifting and/or diverting traffic.

Will there be impacts on traffic during construction?

There will be adverse traffic conditions during the construction of the Build Alternatives, most notably Alternatives 2-4. Construction impacts could include roadway segment closures for extended periods of time and/or the loss of travel lanes on Van Nuys Boulevard.

<u>Transit</u>

How will transit be affected?

Transit riders will benefit with increased transit service frequency and generally improved travel times along the corridor during the peak periods. With the transit improvements, daily boardings and transit trips (an indicator of how many trips are moving from auto to transit versus the No-Build) would increase over the No-Build Alternative for all Project alternatives. For riders traveling through the corridor, the bus alternatives would be the most beneficial as it would avoid the need to transfer; whereas, the rail alternatives force the transfer for continued service, hence the higher overall transit boardings.

Alternative	Daily Transit Boardings	New Daily Transit Trips	Travel Time San Fernando Rd. - MOL (SB AM Peak minutes)
TSM	38,128	466	34.8 (Line 761) 36.3 (Line 233)
Alternative 1 (Curb-Running BRT)	46,644	2,970	27.8 (Line 761X) 29.8 (Line 233X)
Alternative 2 (Median-Running BRT)	46,934	2,969	23.9 (Line 761X) 41.8 (Line 233X)
Alternative 3 (Low-Floor LRT/Tram)	55,145	8,452	27 (LRT/Tram)
Alternative 4 (LRT)	69,221	8,604	18 (LRT) 41.8 (Line 233)

Will there be impacts to transit during construction?

Transit service will be disrupted to varying levels depending on the Build Alternative. Alternative 1 would create the least disruptions while Alternatives 2-4 would create the largest due to the construction of the median guideway. Construction, at a minimum, would cause lane closures and the temporary closure of bus stops which would be temporarily moved outside of the work areas.

Parking

What type of parking and loading/unloading changes will be made along the Project corridor?

For all four Build Alternatives (two BRT and two rail transit) parking as well as loading/unloading along Van Nuys Boulevard will be affected. This is due to the use of the curb lane in Alternative 1 as a full time transit lane during the day and in Alternatives 2-4 to the reduction in travel lanes on Van Nuys Boulevard from three to two, which is necessary to accommodate a median guideway for either the bus or rail Project.

Under Alternative 4, parking would not be affected when the alignment travels underground for approximately two-and-a-half miles. In the City of San Fernando some curbside parking on San Fernando Road would be prohibited to provide for extended bus stop lengths, which would range between 80 feet and 150 feet.

All curbside parking would be prohibited along the alignment on Van Nuys Boulevard and on San Fernando Road under Alternative 3. No parking along San Fernando Road would be affected under Alternative 4 since it would be operating in an exclusive ROW.

On-street parking would remain within the study area on adjacent cross-streets, for all of the Project alternatives. The numbers under the heading "Loss of On-Street Parking" includes only spaces removed from Van Nuys Boulevard, due to construction of the project on that roadway.

Build Alternative	No. of On-Street Spaces	No. of Off-Street Spaces	Loss of On-Street Parking	Loss of Off-Street Parking	Total Number of Spaces Lost	Weekday Shortfall in Blocks	Weekend Shortfall in Blocks	Adjacent Block Capacity
Alternative 1 (Curb-Running BRT)	5,715	19,853	1,140	0	1,140	11	14	Yes
Alternative 2 (Median-Running BRT)	5,715	19,853	1,140	0	1,140	11	14	Yes
Alternative 3 (Low-Floor LRT/Tram)	5,715	19,853	1,155	152	1,307	12	15	Yes
Alternative 4 (LRT)	5,715	19,853	902	528	1,430	11	14	Yes

Where will motorists park and where will deliveries occur?

Parking for land uses along Van Nuys Boulevard will be required to shift from on-street to off-street lots and garages conjoined to the property or on the side streets in the vicinity of the land use in question. Deliveries to businesses and residences will not be able to rely on curbside parking and will either have to use off-street parking facilities, parking on an adjacent street, or alleyways behind the property.

Won't this require people to walk further to and from a land use?

In those cases where a land use does not have off-street parking available, it may be necessary for people and delivery persons to walk farther, as they may have to park at least one block away to find available parking.

Pedestrian and Bicycle

How will pedestrian and bicyclists (non-motorized transportation) be affected?

Pedestrian and bicyclists will be affected under the four Build Alternatives.

Under Alternative 1 all current pedestrian movements across roadways would be maintained including all existing mid-block crossing opportunities.

Bicyclists would share the curb lane with other motorists on Van Nuys Boulevard. The existing Class II bicycle lanes on Van Nuys Boulevard north of Parthenia Street to Beachy would be removed under this alternative. Significant bicycle access impacts would not occur.

Under Alternative 2 all existing signal-controlled crosswalks would be maintained. However, all other pedestrian crossings on Van Nuys Boulevard at unsignalized intersections would be prohibited. Bus patrons would be restrained from directly traveling via jaywalking movements between curbside local bus stops and median BRT bus stops by railings on the backside of median bus stop platforms.

Bicyclists would share the curb lane with other motorists. The existing Class II bicycle lanes on Van Nuys Boulevard north of Parthenia Street would be removed under this alternative. Significant bicycle access impacts would occur.

The Bicycle Plan also calls for parallel bicycle lane facilities, which would provide an alternate corridor where bicyclists could access dedicated lanes. The project would not restrict bicyclists from traveling within the project corridor, however.

From Sherman Way northward, the public right-of-way width of Van Nuys Boulevard is 100 feet. To accommodate two bus lanes and a left-turn lane or bus stop in the median of Van Nuys Boulevard, the sidewalk widths would be narrowed to 10 feet. This is required due to street widening that would occur in some locations under this option. At locations where the sidewalk would be narrowed, the power poles would need to be relocated. In most cases, to satisfy drainage requirements, the entire width of the sidewalk would be reconstructed. At some locations where the sidewalk width is currently less than 10 feet, there would be no sidewalk narrowing. At a curbside bus stop, sidewalks currently less than 10 feet wide would be widened to 10 feet. Although the new sidewalk width would meet the minimum 10-foot-wide accessibility requirements, at some locations with higher pedestrian activity (at the proposed Chase, Roscoe, Blythe, Sherman Way, and Vanowen Stations), the reduction in sidewalk width (from 13 feet to 10 feet) would result in a potentially adverse effect and significant impact to pedestrians.Under Alternative 3 on the segment of San Fernando Road between Wolfskill Street and Van Nuys Boulevard where the low-floor LRT/tram would operate in mixed-flow traffic, pedestrians may continue to cross San Fernando Road at any location where crossings are currently allowed. There will be a pedestrian bridge at the at the Sylmar/San Fernando Metrolink station from the LRT platform to the Metrolink platform. On all other segments where the low-floor LRT/tram operates in semi-exclusive guideway, pedestrian crossings would be permitted only at signal-controlled intersections. Pedestrians would be required to walk to a signalized location to cross San Fernando Road or Van Nuys Boulevard. Low-floor LRT/tram passengers would reach the median station platforms from crosswalks at signalized intersections.

The curb lane would be shared by mixed-flow traffic and bicyclists. Similar to the other alternatives, the existing Class II bicycle lanes on Van Nuys Boulevard north of Parthenia Street would be removed.

Along Van Nuys Boulevard, where the existing sidewalks on each side of Van Nuys Boulevard are approximately 13 feet wide, sidewalks would be narrowed to 10 feet to accommodate the installation of the Low-Floor LRT/Tram guideway and a left-turn lane or tram station in the median of Van Nuys Boulevard, while providing two travel lanes in each direction. This sidewalk narrowing would occur from the Metro Orange Line to El Dorado Avenue in Pacoima, and would require the relocation of utility poles. Although the new sidewalk width would meet the minimum 10-foot-wide accessibility requirements, at some locations with higher pedestrian activity (at the proposed Chase, Roscoe, Blythe, Sherman Way, and Vanowen Stations), the reduction in sidewalk width (from 13 feet to 10 feet) would result in a potentially adverse effect and significant impact to pedestrians.

Under Alternative 4, all current crosswalks at signal-controlled intersections would be maintained. Between the signalized intersections, a fence would be installed to prevent mid-block pedestrian crossings, as is the current practice of Metro on its median-running LRT lines. Pedestrians would be required to walk to a signalized location to cross Van Nuys Boulevard. LRT passengers would reach the median station platforms from crosswalks at signalized intersections. There would be a pedestrian bridge at the at the Sylmar/San Fernando Metrolink station from the LRT platform to the parking lot.

Bicyclists would share the curb lane with motorists on Van Nuys Boulevard. The existing Class II bicycle lanes on Van Nuys Boulevard north of Parthenia Street to Beachy Avenue would be removed, but bike lanes would be provided along the segment where the LRT is underground from Hart Street north to Parthenia Street. Significant bicycle access impacts would occur.

The Bicycle Plan also calls for parallel bicycle lane facilities, which would provide an alternate corridor where bicyclists could access dedicated lanes. The project would not restrict bicyclists from traveling within the project corridor, however

Additionally, the City of Los Angeles recently constructed a bicycle path within Metro's railroad right-of-way parallel to San Fernando Road. The right-of-way is sufficiently wide enough to allow the bicycle path to remain alongside a pair of LRT tracks and tracks for Metrolink and Union Pacific trains. At the point where the LRT crosses the bicycle path, near the intersection of Pinney Street and San Fernando Road, a signalized grade crossing would be provided. The bicycle path would be shifted from the east side of the railroad alignment to the west side of the tracks through the City of San Fernando to reduce the number of bicycle-rail crossings.

Although the new sidewalk width would meet the minimum 10-foot-wide accessibility requirements, at some locations with higher pedestrian activity (at the proposed Vanowen Station), the reduction in sidewalk width (from 13 feet to 10 feet) would result in a potentially adverse effect and significant impact to pedestrians

Will there be impacts to pedestrians and bicyclists during construction?

Pedestrian and bicycle facilities would be affected during construction with potential closure to these facilities. Detours and parallel routes would be established.

Chapter 1
Introduction

1.1 Study Background

What Is the East San Fernando Valley Transit Corridor?

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Draft Environmental Impact Statement (DEIS)/Environmental Impact Report (DEIR) for the East San Fernando Valley Transit Corridor Project (Project). The DEIS/DEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

The DEIS/DEIR and related engineering are being undertaken by Metro, in close coordination with the City of Los Angeles Department of Transportation (LADOT). The DEIS/DEIR will be a combined document complying with the most recent state and federal environmental laws. The Project's public/community outreach component is being undertaken as an integrated parallel effort to the DEIS/EIR.

Prior to the initiation of the DEIS/DEIR, an Alternatives Analysis (AA) was carried out in January 2013 to study the East San Fernando Valley Transit Corridor in order to define, screen, and recommend alternatives for future study.

This study enabled Metro, the City of Los Angeles, and the City of San Fernando to evaluate a range of new public transit service alternatives that can accommodate future population growth and transit demand, while being compatible with existing land uses and future development opportunities. The study considered the Sepulveda Pass Corridor, which is another Measure R project, and the proposed California High Speed Rail project. Both of these projects would potentially be directly served by a future transit project in the study area. The Sepulveda Pass Corridor could eventually link the West Los Angeles area to the east San Fernando Valley and the California High Speed Rail Project via the Project corridor. As part of the January 2013 Alternatives Analysis, most of Sepulveda Boulevard was eliminated as an alignment option. As a result of the Alternatives Analysis, modal recommendations were for BRT and LRT.

As a result of the alternatives screening process and feedback received during the public scoping period, a curb-running BRT, median-running BRT, median-running low-floor LRT/tram, and a median-running LRT, were identified as the four Project Build Alternatives, along with the TSM and No-Build Alternatives to be carried forward for analysis in this DEIS/DEIR.

1.1.1 Study Area

Where Is the Study Area Located?

The East San Fernando Valley Transit Corridor Project area is located in the San Fernando Valley in the County of Los Angeles. Generally, the Project study area extends from the City of San Fernando and the Sylmar/San Fernando Metrolink Station in the north to the Van Nuys Metro Orange Line Station within the City of Los Angeles in the south. The traffic study area was developed in coordination with the Los Angeles Department of Transportation and the City of San Fernando Public

works department. It extends from Sylmar/San Fernando Metrolink Station southward to the intersection of Van Nuys Boulevard at Ventura Boulevard.

The eastern San Fernando Valley includes the two major north-south arterial roadways of Sepulveda and Van Nuys Boulevards, spanning approximately 10 to 12 miles and the major north-west arterial roadway of San Fernando Road.

Several freeways traverse or border the eastern San Fernando Valley. These include the Ventura Freeway US-101, the San Diego Freeway I-405, the Golden State Freeway I-5, the Ronald Reagan Freeway SR-118, and the Foothill Freeway I-210. The Hollywood Freeway SR-170 is located east of the Project area. In addition to Metro local and Metro Rapid bus service, the Metro Orange Line (Orange Line) Bus Rapid Transit service, the Metrolink Ventura Line commuter rail service, Amtrak inter-city rail service, and the Metrolink Antelope Valley Line commuter rail service are the major transit corridors that provide interregional trips in the area.

Land uses in the study area include neighborhood and regional commercial land uses, as well as government and residential land uses. Specifically, land uses in the study area include government services at the Van Nuys Civic Center, retail shopping along the Project corridor, and medium- to high-density residential uses throughout the area. Notable land uses in the eastern San Fernando Valley include: The Village at Sherman Oaks, Panorama Mall, Whiteman Airport, Van Nuys Airport, Mission Community Hospital, Kaiser Permanente Hospital, Van Nuys Auto Row, and several schools, youth centers, and recreational centers.

1.1.2 Alternatives Considered

What Alternatives Are under Consideration?

The following four alternatives, including two Project Build Alternatives (each with two options), a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative
- Transportation Systems Management (TSM) Alternative
- Bus Rapid Transit (BRT) Alternatives -
  - Alternative 1: Curb-Running BRT;
  - Alternative 2: Median-Running BRT;
- Rail Alternatives -
  - Alternative 3: Low-Floor LRT/Tram; and
  - Alternative 4: LRT.

All Project Build Alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink Station on the north to the Van Nuys Metro Orange Line station on the south. There are two exceptions to this:

- Build Alternatives 3 and 4 both include a 2.5-mile segment within Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street.
- Build Alternative 4 includes a 2.5-mile underground segment beneath portions of the Panorama City and Van Nuys neighborhood segments of the Project corridor

1.1.2.1 No-Build Alternative

The No-Build Alternative represents projected conditions in 2040 without implementation of the Project. No new transportation infrastructure would be built within the Project study area, aside from projects that are currently under construction or funded for construction and operation by 2040. These projects include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2012 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Existing infrastructure and future planned and funded projects assumed under the No-Build Alternative include the following:

- Existing Freeways – Interstate 5, and Interstate 105, State Route 118, and U.S. 101;
- Existing Transitway – Metro Orange Line;
- Existing Bus Service – Metro Rapid and Metro Local Bus service;
- Los Angeles Department of Transportation Commuter Express, and DASH;
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities; and
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid Bus system, upgrades to the Metrolink system and the proposed California High Speed Rail project.

This alternative establishes a baseline for comparison to other alternatives in terms of potential environmental effects, including adverse and beneficial environmental effects.

1.1.2.2 TSM Alternative

The Transportation Systems Management Alternative (TSM) includes strategies that increase the efficiency of existing facilities without increasing the number of through lanes on the corridor. The alternative looks to enhance mobility by integrating multiple forms of transportation strategies including pedestrian, bicycle, mass transit and automobile. For this project this would include relatively low-cost, efficient, and transit service improvements and transportation systems upgrades, such as increased bus frequencies traffic signalization improvements, bus stop amenities/improvements, and bus schedule restructuring. Specifically, the TSM Alternative may include enhanced operating hours and increased bus frequencies for the existing Metro Rapid Line 761 and Metro Local Line 233. The alternative may also include pedestrian and bicycle system improvements such as sidewalk improvements, curb ramps, better access to bus stops or the implementation bike lanes, bike share systems and other bike amenities.

Under this alternative, the Metro Rapid Line 761 and Metro Local Line 233 bus routes would retain existing stop locations. This alternative would add 20 additional buses to the existing Metro Local 233 and Metro Rapid 761 bus routes. These buses would be similar to existing Metro 60-foot articulated buses, and each bus would have the capacity to serve up to 75 passengers (57 seats x 1.30 passenger loading standard). Buses would be equipped with transit signal priority equipment to allow for improved operations and on-time performance.

The existing Metro Division 15 maintenance and storage facility (MSF) located in Sun Valley would be able to accommodate the 20 additional buses with the implementation of the TSM Alternative. Operational changes would include reduced headway (elapsed time between buses) times for Metro Rapid Line 761 and Metro Local Line 233, as follows:

- Metro Rapid Line 761 would operate with headways reduced from 10 minutes to 8 minutes during peak hours (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m. on weekdays) and from 17.5 minutes to 12 minutes during off-peak hours.
- Metro Local Line 233 would operate with headways reduced from 12 minutes to 8 minutes during peak hours and from 20 minutes to 16 minutes during off-peak hours.

1.1.2.3 Alternative 1 – (Curb-Running BRT)

Under the Curb-Running BRT Alternative, 6.7 miles of existing curb lanes (i.e., lanes closest to the curb) along Van Nuys Boulevard between San Fernando Road and the Metro Orange Line could be converted to dedicated bus lanes. This alternative would be similar to the Metro Wilshire BRT project. The Curb-Running BRT buses would operate in dedicated curb lanes during an extended period of time beginning in the morning extending throughout the day and ending in the early evening. This would allow for on-street parking and stopping in select locations along the Van Nuys Boulevard corridor during nighttime hours. The existing asphalt lane along Van Nuys Boulevard, Truman Street, and San Fernando Road could be replaced with a concrete lane; similar to what was done for the Wilshire BRT project. The lanes would be dedicated curb-running bus lanes for Metro Rapid Line 761 and Metro Local Line 233, and for other transit lines that operate on short segments of Van Nuys Boulevard.

In addition, this alternative would incorporate 2.5 miles of mixed-flow lanes, where buses would operate in the curb lane along San Fernando Road and Truman Street between Van Nuys Boulevard and Hubbard Avenue for Metro Rapid Line 761. Metro Local Line 233 would continue north on Van Nuys Boulevard to Lakeview Terrace. These improvements would result in an improved Metro Rapid Line 761 (hereafter referred to as 761X) and an improved Metro Local Line 233 (hereafter referred to as 233X).

The route of the BRT Alternative 1 is illustrated on Figure 1-1. From the Sylmar/San Fernando Metrolink Station. The routing of the transit service would proceed as follows in the southbound direction:

- Metro Rapid Line 761X would operate within roadway travel lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, Metro Rapid Line 761X would turn southwest and travel south within a curb-running dedicated bus lane along Van Nuys Boulevard.
- The alternative would continue to be curb- running along Van Nuys Boulevard until reaching the Metro Orange Line Van Nuys station where Metro Rapid Line 761X service would be integrated into mixed-flow traffic.
- Metro Rapid Line 761X would then continue south to Westwood as under existing conditions, though it should be noted that in December 2014 the Metro Rapid Line 761 was re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood and provides peak period freeway express service as part of a Metro demonstration project.

Metro Local Line 233X would operate similar to how it currently operates between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. However, Metro Local Line 233X would operate with improvements over existing service because it would utilize the BRT guideway where its route overlaps with the guideway along Van Nuys Boulevard.

Transit service would not be confined to only the dedicated curb lanes. Buses would still have the option to operate within the remaining mixed-flow lanes to bypass right-turning vehicles, a bicyclist, or another bus at a bus stop.

Figure 1-1: Alternative 1 (Curb-Running BRT)

Source: Metro, 2014.

The BRT Alternative 1 service would operate in dedicated bus lanes, sharing the lanes with bicycles and right turning vehicles. Minor intersections would not be closed under this scenario, as they would be under Build Alternatives 2 through 4. On San Fernando Road and Truman Street, no dedicated bus lanes would be provided. The service would include 18 bus stops.

1.1.2.4 Alternative 2 – Median-Running BRT

Alternative 2 (Median-Running BRT) would provide approximately 6.7 miles of dedicated median-running bus lanes between San Fernando Road and the Metro Orange Line, and would have operational standards similar to the Metro Orange Line. Similar to Alternative 1, this Alternative would also remove the existing asphalt lane and replace it with a concrete lane, similar to what was done for the Wilshire BRT project. The remaining 2.5 miles would operate in mixed-flow traffic between the Sylmar/San Fernando Metrolink Station and San Fernando Road/Van Nuys Boulevard.

The route of the BRT Alternative 2 service is illustrated on Figure 1-2.

Similar to Alternative 1, the Median-Running BRT Alternative (Metro Rapid Line 761X) would operate as follows from the Sylmar/San Fernando Metrolink Station:

- Metro Rapid Line 761X would operate within mixed-flow lanes on Truman Street and San Fernando Road.
- At Van Nuys Boulevard, the route would turn southwest and travel south within the median of Van Nuys Boulevard in a new dedicated guideway.
- Upon reaching the Van Nuys Metro Orange Line Station, the dedicated guideway would end and the Rapid Line 761X service would then be integrated into mixed-flow traffic.
- The route would then continue south to Westwood, similar to the existing route, though it should be noted that in December 2014 the Metro Rapid Line 761 was re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood and provides peak period freeway express service as part of a Metro demonstration project.

Metro Local Line 233 would operate similar to existing conditions between the intersections of Van Nuys and Glenoaks Boulevards to the north and Van Nuys and Ventura Boulevards to the south. Rapid Bus stops that currently serve the 794 and 734 lines on the northern part of the alignment along Truman Street and San Fernando Road would be upgraded and have design enhancements that would be Americans with Disabilities Act (ADA) compliant. These stops would also serve the redirected 761X line:

1. Sylmar/San Fernando Metrolink Station
2. Hubbard Station
3. Maclay Station
4. Paxton Station
5. Van Nuys/San Fernando Station

Along Van Nuys Boulevard, bus stop platforms would be constructed in the median. Seventeen new median bus stops would be included.

Figure 1-2: Alternative 2 (Median-Running BRT)

Source: Metro, 2014.

1.1.2.5 Alternative 3 (Low-Floor LRT/Tram)

Alternative 3 (Low-Floor LRT/Tram) would operate along a 9.2-mile route from the Sylmar/San Fernando Metrolink Station to the north, to the Van Nuys Metro Orange Line Station to the south. The Low-Floor LRT/Tram Alternative would operate in a median dedicated guideway for approximately 6.7 miles along Van Nuys Boulevard between San Fernando Road and the Van Nuys Metro Orange Line Station. The Low-Floor LRT/Tram Alternative would operate in mixed-flow traffic lanes on San Fernando Road between the intersection of San Fernando Road/Van Nuys Boulevard and just north of Wolfskill Street. Between Wolfskill Street and the Sylmar/San Fernando Metrolink Station, the Low-Floor LRT/Tram would operate in a median dedicated guideway. The Low-Floor LRT/Tram would serve the cities of San Fernando and Los Angeles, including the communities of Pacoima, Arleta, Panorama City, and Van Nuys, with 28 stations. The route of the Low-Floor LRT/Tram Alternative is illustrated in Figure 1-3.

The Low-Floor LRT/Tram Alternative would operate using low-floor articulated vehicles that would be electrically powered by overhead wires. This alternative would include supporting facilities, such as traction power substations and an MSF.

Because the Low-Floor LRT/Tram Alternative would fulfill the current functions of the existing Metro Rapid Line 761 and Metro Local Line 233, these bus routes would be modified to maintain service only to areas outside of the project corridor. Thus, Metro Rapid Line 761 (referred to as 761S with reduced service) would operate only between the Metro Orange Line and Westwood, and Metro Local Line 233 (referred to as 233S with reduced service) would operate only between San Fernando Road and Glenoaks Boulevard. It should be noted that in December 2014 the Metro Rapid Line 761 was re-routed to travel from Van Nuys Boulevard to Ventura Boulevard, and then to Reseda Boulevard, while a new Metro Rapid Line 788 travels from Van Nuys Boulevard through the Sepulveda Pass to Westwood and provides peak period freeway express service as part of a Metro demonstration project.

Figure 1-4: Alternative 3 (Low-Floor LRT/Tram)

Source: Metro

1.1.2.6 Rail Alternative– Alternative 4 (LRT)

Similar to the Low-Floor LRT/Tram Alternative, the LRT vehicles under Alternative 4 would be powered by overhead electrical wires. Under this alternative, the LRT would travel in a dedicated guideway from the Sylmar/San Fernando Metrolink Station along San Fernando Road south to Van Nuys Boulevard, from San Fernando Road to the Van Nuys Metro Orange Line Station, over a distance of approximately 9.2 miles. This alternative would include a segment in exclusive right-of-way within the Antelope Valley Metrolink railroad corridor, a segment with semi-exclusive right-of-way in the middle of Van Nuys Boulevard, and an underground segment beneath Van Nuys Boulevard from just north of Parthenia Street to Hart Street. The route of Alternative 4 is illustrated on Figure 1-4.

Alternative 4 would be similar to other street-running LRT lines that currently operate in the Los Angeles area, such as the Metro Blue Line, Metro Gold Line, and Metro Exposition Line. The LRT would travel along the median for most of the route, with a subway of approximately 2.5 miles in length between Vanowen Street and Nordhoff Street. On the surface-running segment, the LRT would operate at prevailing traffic speeds and would be controlled by standard traffic signals.

Stations would be constructed at approximately one-mile intervals along the entire route. There would be 14 stations, three of which would be underground near Sherman Way, the Van Nuys Metrolink station, and Roscoe Boulevard. Entry to the three underground stations would be provided from an entry plaza and portal. The entry portals would provide access to stairs, escalators, and elevators leading to an underground LRT station mezzanine level, which, in turn, would be connected via additional stairs, escalators, and elevators to the underground LRT station platforms.

Similar to the Alternative 3 (Low-Floor LRT/Tram), Alternative 4 would require a number of additional elements to support vehicle operations, including an OCS, TPSS, communications and signaling buildings, and an MSF.

Figure 1-5: Alternative 4 (LRT)

Source: Metro, 2014

1.2 Report Layout

This transportation existing conditions report describes the public transit system, highway and roadway network, parking, pedestrian, and bicycle facilities within the study area that provides a baseline for future evaluation of the Project. These are the following report sections for the DEIS/DEIR:

- **Chapter 2** explains the framework related to federal, state, and local regulations which govern transportation matters along with the methodology to determine the Project impacts.
- **Chapter 3** describes the study area existing conditions.
- **Chapter 4** evaluates the No-Build, TSM, and four Build Alternatives to determine potential impacts to transit, traffic, bicycles, pedestrians, and parking. The existing plus Project and future year scenarios are discussed.
- **Chapter 5** describes the impact determinations, mitigation measures, and overall findings.

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Chapter 2
Regulatory Framework/Methodology

2.1 Regulatory Framework

The federal, state, regional and local regulations that were developed and guide land use and transportation along with the methodologies and significance thresholds applied in evaluating the Project impacts are described in this section.

2.1.1 Federal Regulations

NEPA provides the federal regulatory framework to direct federal agencies, when planning projects or issuing permits, to conduct multidisciplinary reviews to consider the potential impacts on the environment by their proposed actions. For transportation projects, NEPA requires the FTA, Federal Highway Administration (FHWA), and other transportation agencies to consider potential impacts to the social and natural environment. Additionally, agencies must take into account the public transportation needs to determine what is in the best interest of the public. When there is a proposal for a federal action that could affect the quality of the environment, an environmental review document is required. NEPA does not include specific guidance with respect to the evaluation of a project's effects on traffic and transportation systems.

2.1.2 State Regulations

The CEQA Guidelines address transportation impacts and provide general guidance for the evaluation of such impacts. Methodology and quantitative thresholds, however, are deferred to regional and local regulations.

With the introduction of Senate Bill (SB) 743, which was signed into law on September 27, 2013, the transportation impact analysis under CEQA will shift away from auto delay towards consideration of greenhouse gas emission reductions, a focus on multimodal transportation networks, and land use mixes. Alternative metrics are being identified by the Governor's Office of Planning and Research (OPR) with consideration of vehicle miles travel (VMT) and automobile trips generated (ATG) as potential metrics. SB 743 does not prevent counties or cities from continuing existing transportation impact analyses, but with regard to CEQA, an alternative metric will be required. As this Project commenced work prior to the signing of SB 743, this specific analysis is not required as part of this environmental analysis; however, there is a discussion on VMT reductions by alternative.

2.1.3 Local Regulations

2.1.3.1 2.1.3.1 Southern California Association of Governments

The Southern California Association of Governments (SCAG) defines the regional planning principles and serves as the Metropolitan Planning Organization for the region. The SCAG 2012-2035 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), 2008 Regional Comprehensive Plan (RCP), and 2004 Compass Growth Vision Report are tools used for identifying the transportation priorities of the Southern California region.

SCAG Regional Transportation Plan/Sustainable Communities Strategy (2012)

The 2012-2035 RTP/SCS, adopted in the spring of 2012, focuses on maintaining and improving the regional transportation system through a balanced approach to planning that includes system preservation, system operation and management, improved coordination between land use decisions and transportation investments, and strategic expansion of the system to accommodate growth.

As part of the RTP, a SCS was incorporated to address Senate Bill 375 (SB 375). Under SB 375, SCAG is required to develop a SCS with the goal of meeting greenhouse gas (GHG) emission reduction targets set by the California Air Resources Board (CARB) towards reducing automobile and light truck GHG emissions through integrated transportation, land use, housing and environmental planning. The emission targets are a regional eight percent per capita reduction by planning year 2020, and a conditional target of 13 percent by 2035. The targets define the State's enactment of Assembly Bill 32 (AB 32), which set the 2020 GHG reduction into law.

SCAG Regional Comprehensive Plan (2008)

The SCAG RCP provides a framework and guidelines that recommend more integrated resource planning. The RCP promotes the integration of transportation into land use decisions to create "complete streets" that are pedestrian and bicycle-friendly, support transit-oriented development (TOD), and provide for the development of policies that reduce greenhouse gas emissions. Accordingly, local governments should consider the RCP recommendations in their General Plan updates, municipal code amendments, design guidelines, incentive programs and other related actions.

Compass Blueprint Growth Vision (2004)

The Compass Blueprint Growth Vision is a response to current and future land use and transportation issues in Southern California. It has four key principles - to define mobility, livability, prosperity and sustainability goals for the region.

2.1.3.2 Los Angeles County Metropolitan Transportation Authority

Metro is the state-designated planning and programming agency for Los Angeles County and is responsible for providing an efficient and effective transportation system for the region.

Long Range Transportation Plan (2009)

The Metro 2009 LRTP is a 30-year transportation plan for Los Angeles County, and identifies projects that can be implemented through 2040. It is an update from the 2001 LRTP and accounts for changes in growth patterns, technical assumptions, climate change issues, and incorporates Measure R (the 2008 half cent sales tax approved by voters) funded projects.

Short Range Transportation Plan (2014)

The 2014 Short Range Transportation Plan is a ten-year action plan that guides Metro programs and projects through 2024. It was adopted by the Metro Board in July 2014.

Metro Grade Crossing Safety Policy for Light Rail Transit (2010)

The policy is intended to provide a structured process for the evaluation of grade crossings along light rail lines. The policy includes three levels of review: (1) planning-level feasibility study; (2) detailed operational evaluation with assessment of potential impacts to rail operations and safety; and (3) developing consensus regarding the proposed design solution with local constituencies, including other involved agencies and the community, as appropriate.

Congestion Management Program (2010)

County Congestion Management Programs (CMPs) became required within California with the passage of Proposition 111. The Los Angeles County Program has been implemented locally by Metro. A specific system of arterial roadways plus all freeways comprises the CMP system. The Metro CMP requires that the traffic impacts of individual development projects of potentially regional significance be analyzed, and requires that local agencies report on conditions and increases in congestion.

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

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

Metro Bicycle Transportation Strategic Plan (2006)

The Metro Bicycle Transportation Strategic Plan (BTSP), adopted in 2006, replaced the 1996 sub-regional bicycle master plans. The BTSP sets forth regional bicycle planning policies and provides tools that local agencies can use in creating and planning their own bicycle plans and facilities. The BTSP also establishes priorities for improving mobility through the promotion of the use of bicycles on transit, and the completion of gaps in the inter-jurisdictional bikeway network. The Plan's goal is to integrate bicycle use in all transportation planning efforts for existing and future transit-oriented development.

2.1.3.3 Los Angeles County

Los Angeles County General Plan (2014)

The Los Angeles County General Plan provides development guidance for unincorporated areas within the County. The Plan is shaped by sustainability and smart growth principles. The Mobility Element addresses the regional transportation system within Los Angeles County, and defines a need for creating multimodal transportation systems to reduce single occupancy vehicle (SOV). The Element sets in place a methodology for coordination with other transportation planning agencies with regards to infrastructure, capital improvements and programming.

The Los Angeles County Bicycle Master Plan, a component of the Mobility Element, proposes a bicycle system that would make bicycling more accessible to the public by providing approximately 695 miles of new bikeways throughout the County. The Plan is a component of the County General Plan Mobility Element.

2.1.3.4 City of Los Angeles

City of Los Angeles General Plan Framework (Readopted 2001)

The City has developed a Framework Element for the General Plan that defines a city-wide comprehensive long-range growth strategy. This Element establishes the overall policy and direction for the entire General Plan. It is the foundation for all future land use decisions. The Framework supports sustainable growth in areas of higher-intensity commercial corridors and mixed-use districts, centers, as well as industrial districts, especially those in proximity to transportation corridors and transit stations.

City of Los Angeles Bicycle Plan (2011)

The 2010 Bicycle Plan, adopted March 2011, is part of the City of Los Angeles Transportation Element. Providing bicycle facilities will be a priority for the City of Los Angeles. As such, facilities are designated in the Plan on both Van Nuys Boulevard and Sepulveda Boulevard, and along several adjacent and generally east-west roadways within the study area.

City of Los Angeles Mobility Plan 2035 (2015)

Mobility Plan 2035 (Plan) provides a roadmap for achieving a transportation system that balances the needs of all road users. As an update to the City's General Plan Transportation Element, it incorporates Complete Streets principles, the Bicycle Master Plan, a Transit Enhanced Network,and also defines policy foundation for future projects. The plan was approved by the city council on August 11, 2015.

Community Plan Areas

The Project study area encompasses four City of Los Angeles Community Plan Areas (CPAs):

- Sherman Oaks – Studio City – Toluca Lake – Cahuenga Pass Community Plan (1998)
- Van Nuys – North Sherman Oaks Community Plan (1998)
- Mission Hills – Panorama City – North Hills Community Plan (1999)
- Arleta – Pacoima Community Plan (1996)

The Community Plans for these areas define several transportation goals and policies for the development of a public transit system that (1) improves mobility with convenient alternatives to automobile travel; (2) encourages alternative modes of transportation to reduce the use of SOVs in order to reduce overall vehicular trip volumes; and (3) encourages improved bus service to more directly connect residential areas with jobs, shopping, and public facilities, and with other communities in the region.

Los Angeles River Revitalization Master Plan (2007)

The goals of the Master Plan include revitalization of the river, greening area neighborhoods, capturing community opportunities, and creating value. In 2009, the Los Angeles River Improvement Overlay (LA-RIO) was established to implement the urban design goals and principles within the Master Plan. The study area is included in the eastern San Fernando Valley area. The Project will consider the LA-RIO when evaluating the study area corridors since the Plan requires special permit clearance for certain properties within 300 feet of the River.

2.1.3.5 City of San Fernando

City of San Fernando General Plan (1987)

The City of San Fernando addresses land use and transportation within their 1987 General Plan, through close coordination between the Land Use and Housing Elements and the Circulation Element.

San Fernando Corridors Specific Plan (2005)

The San Fernando Corridors Specific Plan describes policies and strategies for revitalizing vital corridors in the City of San Fernando. These corridors include:

- Maclay Avenue
- Truman Street
- San Fernando Road

Streetscape improvements are recommended by the Plan to provide for a more pedestrian orientated environment along these corridors, in addition to other area capital improvement projects.

2.2 Methodology

This section describes the various methodologies used to determine transportation impacts with respect to transit, traffic, parking, and pedestrian and bicycle facilities.

2.2.1 Transit

Future transit ridership is established through an extensive evaluation utilizing the Metro Travel Demand Model. The model was developed by Metro and incorporates inputs from the SCAG Regional Travel Demand Model. The model applies current travel patterns and future transit changes to the network in relation to the Project, in order to develop trips by mode, projected boardings, and travel speeds and times for each Project alternative.

To analyze the effects of the Project alternatives on the transit system as a whole, transit performance measures were derived from the Metro Travel Demand Model and summarized for each alternative. These include the following:

- *Daily linked fixed guideway trips* – This represents a trip from origin to destination on the Metro Rail system. If a person has to make several transfers during a journey, the trip is counted as one linked trip;
- *Daily linked bus trips* – This represents a trip from origin to destination on the countywide bus system. If a person has to make several transfers during a journey, the trip is counted as one linked trip;
- *Daily linked transit trips* – This represents a trip from origin to destination on the countywide transit system (includes regional and municipal bus and rail modes). If a person has to make several transfers during a journey, the trip is counted as one linked trip;
- *Daily linked trips (from all travel modes)* – This represents a trip from origin to destination utilizing any type of travel mode. If a person used multiple modes or transfers (bus to bus) or between modes (car to rail), the trip is counted as one linked trip; and
- *Total transit mode share* – This is the percentage share that transit has in relation to all modes of travel.

2.2.2 Traffic

The traffic analysis incorporates level of service (LOS) methodologies for signalized intersections, per local jurisdictional policies, for the purpose of providing a comprehensive traffic analysis.

The City of Los Angeles utilizes the Circular 212 Critical Movement Analysis (CMA) Planning methodology per LADOT *Traffic Study Policies and Procedures, June 2013*; whereas the City of San Fernando utilizes the Intersection Capacity Utilization (ICU) for signalized intersections.

For CMP intersections, either CMA or ICU are considered acceptable methodologies. The data for these methodologies are provided as V/C (volume-to-capacity ratio values), where 0.000 represents no utilized capacity and 1.000 represents a use of all designed capacity. LOS values range from LOS A (good operating conditions) to LOS F (poor operating conditions).

However, for the purposes of this Project, the City of Los Angeles has accepted the use of the 2010 Highway Capacity Manual (HCM) Operational Analysis Methodology for evaluation of transit projects. This methodology is based on average intersection delay and takes into account operational factors such as signal timing and phasing, and adjustments to lane configurations via seconds of delay that a driver would experience at each signalized location. As such, it provides a better assessment of the traffic conditions as it relates to complexity of a transit project.

A letter value is assigned to define the LOS, ranging from A (free-flow operations) to F (severely congested operations)

Table 2 1 provides the level of service criteria for the HCM methodology applied in this study.

Table 2-1: Level of Service Definitions – Signalized Intersection Analysis

LOS	Definition	Average Stop Delay Per Vehicle (Sec/Veh) (HCM)
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.	d10
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.	>10 - 20
C	LOS C describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.	>20 - 35
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.	>35 – 55
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.	>55 – 80
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a volume-to-capacity ratio greater than 1.0.	>80

The City of Los Angeles utilizes the Automated Traffic and Surveillance and Control (ATSAC) System, which is a computer-based traffic signal control system through which engineers monitor traffic conditions and system performance, select appropriate signal timing (control) strategies, and perform equipment diagnostics and alert functions. If required, the signal timing is either automatically changed by the ATSAC computers or manually changed by the operator using communication lines that connect the ATSAC Center with each traffic signal. ATSAC is installed on all of City of Los Angeles study area intersections.

To supplement the information from electronic detectors, closed-circuit television (CCTV) surveillance equipment has been and continues to be installed at critical locations throughout the City.

The Adaptive Traffic Control System (ATCS) is the latest enhancement to ATSAC and automatically adjusts traffic signal timing in response to current traffic demands by allowing ATCS to simultaneously control all three critical components of traffic signal timing, namely cycle length, phase split and offset. The study area intersections have ATCS capabilities; however, they are not operated as part of the overall traffic signal system.

2.2.2.1 Existing Conditions

Gaining an understanding of existing conditions within the Project study area involved extensive data collection that included compilation of traffic counts and signal timing plans and field work to determine lane geometries, traffic control, transit stop locations near intersections, and on-street parking restrictions.

The Synchro software package was used to build a study area roadway network model to assist in the analysis of signal timing/phasing under the HCM methodology for signalized intersections.

2.2.2.2 Future Conditions

Future baseline (No-Build scenario) volumes were defined through the use of data exported from the Metro Travel Demand Model. As the model includes input from the SCAG regional model on population and employment growth, it provides estimates of future vehicle travel demand on roadways throughout the region.

The future year-2040 conditions were developed by defining growth factors by individual roadway segments, based on a comparison of existing baseline and future baseline volumes from the model. These growth rates were then applied to the study intersections adjacent to the roadway segments. The future baseline conditions volumes were the basis for the analysis of the No-Build Alternative.

Comparisons were then made to each of the Project Build Alternatives, in terms of projected study area intersection operations and LOS. Changes in study area vehicle travel patterns identified by the model, based on corridor lane configurations and trip mode splits (vehicles, transit, etc.) with the Project-related improvements; and transit park-and-ride activity, were analyzed and served as the basis for the analysis of incremental changes in study intersection volumes and operations.

On a corridor level, the Project corridor land uses were collected to assist with the development of trip generation and the development of driveway trip diversion/redistribution. Since each alternative imposes different types and locations of turn restrictions, traffic impacts along the corridor vary. Driveway trip diversions were established for each alternative that would be affected by turn restrictions from the presence of a median guideway or intersection turn prohibitions. The volume projections for the alternatives were developed using the following approach:

- Development of a growth factor for the 28-year period between existing and future conditions for all Project alternatives derived from the Metro Model;
- Development of increased bus volumes along the corridor due to future bus headway improvements for all Project alternatives as developed in the proposed transit operations plan;
- Application of trip generation rates for the increased demand at park-and-ride facilities under the Bus and Rail Alternatives;
- Development of trip generation rates for MSF sites within the Project study area under the Bus and Rail Alternatives;
- Development of corridor trip diversions for local intersections due to turning restrictions implemented under the Alternative 2 and the Rail Alternatives;
- Development of traffic shifts to the parallel corridors of Woodman Avenue and Sepulveda Boulevard, based on Metro Model output using capacity restrictions on travel lanes caused by the Project Build Alternatives.

Background Traffic Growth

Projecting future year-2040 conditions required the analysis of data provided through the Metro Travel Demand Model. The model data included roadway volumes that were specific to each Project alternative. The differences were due to projected auto trip reductions and changes to trip patterns as a result of the alternative.

The existing 2012 volumes were compared to the future 2040 volumes to determine the growth factor over the 28-year period. Because the study area is large and encompasses several subareas, the growth factors were applied to the different subareas to reflect the variances.

Increased Bus Service

The future bus service under the Project TSM and BRT Alternatives would include improved headway times (increased trip frequencies), as compared to the existing and No-Build Alternative conditions. Bus service that supplements the rail service under Alternatives 3 and 4 would include improved headways similar to the TSM Alternative. To account for the increase in buses in the corridor, the number of buses that would traverse the analyzed intersection during the peak hour was calculated and included in the Project build scenario analyses.

Park-and-Ride Trip Generation and Distribution

Vehicle trip generation totals for the three existing park-and-ride lots at the, Metro Orange Line Van Nuys station, the Van Nuys Metrolink station, and the Sylmar/San Fernando Metrolink Station were derived from the model outputs, as both would have Project stops/transfer points for the Project and demand for vehicle trips to and from those park-and-ride locations would increase due to the proposed Project

Corridor Trip Diversions

Under Alternatives 2 and the Rail Alternatives, trips to and from several unsignalized intersections and driveways would be restricted along Van Nuys Boulevard to make way for the dedicated median busway/guideway. The restrictions at cross streets and driveways would prohibit left-turn and through movements consequently diverting trips to alternate routes and increasing the number of U-turn movements in the corridor. The trips were re-assigned to the closest signalized intersections without any left-turn prohibitions, with some of the trips making left-turns and some making U-turns.

Alternate Corridor Analysis

As part of the traffic analysis, an expanded assessment of areawide highway corridors was conducted in order to provide a more comprehensive analysis of the potential effects of the Build Alternatives on adjacent and nearby roadway corridors.

The travel corridors that were included in the expanded analysis were as follows:

- Van Nuys Boulevard – from the MOL to Ventura Boulevard
- Sepulveda Boulevard - from Lassen Street to Ventura Boulevard
- Woodman Avenue – from Lassen Street to Oxnard Street

Travel Speeds

From the Metro Travel Demand Model, average vehicle speeds (based on volumes and roadway segment capacities) and congested time (amount of total delay added to a trip due to congestion) values were estimated. The data was analyzed in approximate one-mile segments, but the distance varies based on the location of major arterials and other major elements of the transportation network. This analysis provides an estimate of the effects on vehicle travel speeds of Project elements such as roadway lane reconfigurations and changes in trip mode splits.

2.2.3 Parking

The parking analysis considered the utilization of existing on-street and off-street parking within a primarily one to two block extent on either side of Van Nuys Boulevard. Additionally, a generalized parking evaluation was conducted on San Fernando Road to understand parking utilization from Van Nuys Boulevard to the Sylmar/San Fernando Metrolink Station.

Parking analysis zones (PAZs) were developed along the length of Van Nuys Boulevard to define blocks of parking areas for both on- and off-street parking. For each PAZ, numbers were assigned to each block face for each side of the roadway. For on-street parking areas that did not have any parking space markings, an average parking space length of 20 feet was used to determine the number of parking spaces.

Parking utilization for the existing on- and off-street parking was conducted for two weekdays (Monday and Friday) and one weekend (Saturday). Existing data on parking violations compiled by LADOT was used to define the peak periods of parking activity. This way the detailed surveys conducted for the parking analysis overlap with the peak commercial and residential activity periods within the Project study area. The analysis was therefore conducted for the worst-case days of Monday and Friday for the weekday analysis and Saturday for the weekend analysis. Monday and Friday data was averaged for the analysis.

The focus of the parking survey was on overall occupancy for the parking study areas, but a second and more important component was the identification of vehicle parking occupancy within individual street segments and parking lots, including whether or not the number of parked vehicles versus available spaces met or exceeded a threshold value of 90 percent. When conducting an assessment of parking on a street segment or off-street facility, an occupancy value of 90 percent generally means few spaces remain available per block curb face or parking facility and is considered to represent the level at which the parking area is perceived to be full. Therefore, the ideal occupancy value for a block or facility should be at 90 percent of the spaces available or lower.

For each Project alternative, the amount of on-street and off-street parking displaced along the alignment was quantified to develop general conclusions regarding the effects of the Project on local parking conditions. For each station, the estimated parking demand was compared to the proposed supply, and the qualitative effects of spillover parking were identified in the vicinity of the station (within an approximate ¼ of a mile walking distance).

The construction and development of new park-and-ride facilities is not being considered as a part of the Project. The increased demand at existing park-and-ride facilities was considered at the following locations:

- Sylmar/San Fernando Metrolink Station
- Van Nuys Amtrak/Metrolink Station
- Metro Orange Line Van Nuys Station

2.2.4 Pedestrian and Bicycle Facilities

Bicycle and pedestrian circulation were evaluated as part of this transportation analysis even though there are no quantitative NEPA, CEQA, or local thresholds to guide the determination of significance of impacts to bicycle and pedestrian circulation.

With respect to bicycle facilities, the planned inclusion of bicycle lanes on Van Nuys Boulevard and San Fernando Road/Truman Street corridors per the 2010 City of Los Angeles Bicycle Plan would be considered as part of the analysis along with the evaluation of roadway cross-sections. In addition, the station design plans would be reviewed for consideration of adequate pedestrian facilities and the feasibility of bicycle facilities.

2.3 Significance Thresholds

The determination of traffic impact significance is guided by the policies and requirements of both NEPA and CEQA. The Project must satisfy both federal and state requirements. As NEPA and CEQA definitions of significance are different, what may be considered significant under CEQA may not apply to NEPA's determination of significance. The NEPA and CEQA definitions of significance and requirements are described below.

2.3.1 Federal

NEPA's determination of significance is based on context and intensity, and not by thresholds of significance. The severity of the impact must be evaluated related to the type, quality and sensitivity of the resource, project location, duration (short- or long-term) and considerations of context. Therefore, all potential impacts will be discussed regardless of thresholds.

2.3.2 State

2.3.2.1 State CEQA Guidelines

The CEQA Guidelines do not describe specific significance thresholds. However, Appendix G of the CEQA Guidelines lists a variety of potentially significant effects. Under CEQA, a project may have a significant effect on transportation or traffic if the project would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

As noted earlier, CEQA defers quantitative significance threshold criteria to the local agency with jurisdiction over the project.

2.3.2.2 Local Jurisdiction Thresholds – First-Stage Impact Analysis

The City of Los Angeles has established thresholds of impact significance for signalized intersections for V/C and delay analysis methodologies as summarized in Table 2-2. Significance thresholds for project-related V/C increases are established per the LADOT *Traffic Study Policies and Procedures, June 2013*. LADOT permits the use of HCM methodology for infrastructure (e.g. LRT, BRT, bicycle lanes) project intersection analysis, which is consistent with other Metro projects, and is noted earlier. The delay-based significance thresholds are equivalent to V/C significance thresholds under the CMA methodology. For example, a V/C change of 0.040 at LOS C is 40 percent of the LOS range; therefore, with a delay range of 15 seconds, 40 percent of that is equal to six seconds. This method applies to the remaining thresholds.

The City of San Fernando applies the same significance thresholds as the City of Los Angeles when evaluating signalized intersections.

Table 2-2: Intersection Significance Thresholds

Level of Service	Final Delay	Project-Related Increase in Delay
C	>20 – 35	Equal to or greater than 6.0 seconds
D	>35 – 55	Equal to or greater than 4.0 seconds
E	>55 – 80	Equal to or greater than 2.5 seconds
F	>80	Equal to or greater than 2.5 seconds

Note: Final delay is the delay in seconds ratio at an intersection, considering impacts from the project, ambient growth, trips from area/cumulative projects, but without proposed traffic impact mitigations.

The CMP guideline for evaluating significant impacts at intersections is based on an increase in project-related traffic volumes. A significant impact occurs if the project-related increase is equal to or greater than 0.02 at LOS F or thereby worsening the operation to LOS F. The CMP allows for consideration of more stringent criteria. As the City of Los Angeles significance thresholds are considered more conservative in comparison, the evaluation of impact significance will utilize these criteria. Employing the delay threshold, if an intersection operates at LOS D and the delay at the intersection increases by four seconds due to project-related traffic, the intersection is considered significantly impacted.

2.3.2.3 Analysis of Travel Performance Measures – Second-Stage Impact Analysis

In addition to the traditional impact analysis required by CEQA and LADOT traffic study guidelines, a comparison of regional travel performance measures was developed, in order to identify the effects that each Project Build Alternative would have on travel patterns across the roadway network within the study area. These measures included evaluating potential queuing concerns, review of Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), vehicle speeds, vehicle trips, and a person-trips analysis by alternative.

Further analysis was conducted on select intersections to identify potential queuing concerns as a result of the turning restrictions under Alternatives 2, 3 and 4. The person-trips totalswere evaluated for each alternative, in order to compare how many new persons were being transported via transit.

The effects of the alternatives with respect to the regional transportation network vary within the study area and to/from the corridor. Vehicle Miles Traveled (VMT) provides a good metric for determining vehicle trip changes across the area roadway network. The person-trips metric provides a metric for evaluating travel capacity across a defined geographic area or corridor.

Reductions to VMT are beneficial since they mean that fewer cumulative vehicle miles are being generated on a daily basis as a result of a particular alternative. Increases in VMT infer that more miles are being traveled, and this can create impacts by indicating that more additional vehicle trips or longer vehicle trips would be generated by a project.

The Person-trips metric measures the capacity of travel across multiple modes within the analysis area. If capacity improvements are provided for one mode but reduced for another mode, and the improved mode can provide more overall capacity (in terms of more vehicles passing through the area in set timeframe, or an increased number of seats due to an increase in number or capacity of passing transit buses, etc.), person-trips are increased.

Both of these measures are discussed as supplemental Project traffic impact and benefits in Section 4.10.

2.4 Recent CEQA Litigation

The *Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council* and subsequent cases (*Madera Oversight Coalition, Inc. v. County of Madera; Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*) have considered the question of what is an appropriate baseline for the impact analyses in CEQA documents. Traditional future-year impact analyses are normally considered by lead agencies for impact determinations on major multi-year project with planned opening dates that are far in the future.

As the proposed Project does not have full funding for any of the Build Alternatives, Project final design and construction would not begin until a future date when the Project becomes financially feasible. The year 2040 was chosen for the definition of future baseline conditions, primarily due to the need to match the future baseline year of the Metro Travel Demand Model, and also partially due to the potential for the Project to be completed and become operational at a later planning horizon year.

In the *Neighbors for Smart Rail* case, the court found that the use of a future baseline was appropriate for the consideration of traffic impacts on the environment. The court further found that existing physical environmental conditions such as current population, development, and traffic patterns, do not necessarily provide a reasonable baseline for the purpose of determining whether traffic and air quality impacts of a Project are significant.

Chapter 3
Affected Environment/Existing Conditions

The regional and study area public transit system, highway and roadway network, parking, pedestrian and bicycle facilities are described in this section. The discussion includes general regional transportation system information, existing year-2012 conditions, and any future planned infrastructure improvement Projects up to the buildout year-2040.

The San Fernando Valley has a vast freeway, arterial, and transit network which connects it to the greater Southern California region. Within the study area, an extensive transportation network provides mobility via major freeways, arterials, and railroad infrastructure that serve the Project corridor and the surrounding communities.

3.1 Transit

3.1.1 Existing Transit Network

The Project study area contains three major transit facilities:

- The Metro Orange Line (MOL) Busway
- The Metrolink Antelope Valley Line
- The Metrolink Ventura County Line (also used by the daily interstate Amtrak Coast Starlight train and the regional service of the Amtrak Pacific Surfliner)

These services are vital to the regional movement of residents and workers into and out of the eastern San Fernando Valley. These core transit services traverse and serve the study area at various geographic locations and local transit links to these services are provided by local and Rapid Bus service. The northern portion of the study area includes the Sylmar/San Fernando Metrolink Station on the Metrolink Antelope Valley Line. The central portion of the study area is served by the Metrolink Ventura County Line and Amtrak Coast Starlight and Pacific Surfliner lines via the Van Nuys Station. The southern portion of the study area is served by the MOL at the Van Nuys Station.

Metro operates approximately 84 miles of rail service and 40 miles of dedicated busways (the MOL and the Metro Silver Line). Regional and local bus services are operated by Metro and municipal bus transit agencies. Metrolink provides over 500 miles of commuter rail service. Amtrak primarily provides intercity rail service between Los Angeles, Santa Barbara/San Luis Obispo, and San Diego.

The Metro Rapid Bus lines that operate in the area provide a core bus network that connects to local bus services. Major bus lines include the MOL and Metro Rapid Bus service on Van Nuys Boulevard and San Fernando Road/Truman Street. Other bus lines that serve the study area include local lines, community circulators (LADOT DASH service), and non-Metro express bus service such as the City of Los Angeles Commuter Express.

The characteristics of Metro and LADOT bus services in the study area are summarized in Table 3-1, and Figure 3-1 illustrates the locations of transit lines within the study area.

Table 3-1: Existing Transit Services in Study Area

Agency	Line	Origin	Destination	Via	Peak Frequency	Daily Boardings
Metro	**North-South Bus Service**					
	94 **	Downtown LA	Sun Valley/San Fernando	San Fernando Rd	15 to 20 minutes	6,301
	224	Universal City	Sylmar	San Fernando Rd	12 minutes	9,948
	230	Studio City	Sylmar	Laurel Canyon Blvd / San Fernando Mission Blvd / Truman St	8 minutes	5,146
	233	Sherman Oaks	Lake View Terrace	Van Nuys Blvd	10 minutes	12,141
	234	Sherman Oaks	Sylmar	Sepulveda Blvd / Ventura Blvd / Magnolia Blvd / Kester Ave / 7th St / MaClay Ave	15 minutes	6,425
	237	Encino	Granada Hills / Sherman Oaks	Van Nuys Blvd / Victory Blvd / Woodley Ave	60 minutes	N/A
	290	Sunland	Sylmar	Foothill Blvd	22 to 40 minutes	1,152
	292	Burbank	Sylmar	Glenoaks Blvd	16 to 40 minutes	2,298
	656 *	Panorama City	Hollywood	Van Nuys Blvd / Burbank Blvd	**	N/A
	734	Sherman Oaks	Sylmar	Sepulveda Blvd / Brand Blvd / Truman St / Hubbard St	10 minutes	3,790
	761	Westwood	Pacoima	Van Nuys Blvd	10 minutes	11,090
	794	Downtown LA	Sylmar	San Fernando Rd / Hill St	10 minutes	5,395
	East-West Bus Service					
	150/240	Universal City	Woodland Hills / Northridge	Ventura Blvd / Van Nuys	15 to 30 minutes	11,638
	152	Woodland Hills	North Hollywood	Roscoe Blvd / Tuxford St / Sunland Blvd / Vineland Ave	8 to 18 minutes	13,150
	154	Tarzana	Burbank	Burbank Blvd / Oxnard St	60 minutes	1,018
	155	Sherman Oaks	Burbank	Riverside Dr / Olive Ave.	30 to 60 minutes	584
	156	Hollywood	Van Nuys	Burbank Blvd / Chandler Blvd / Vineland Ave	23 to 41 minutes	1,883
	158	Sherman Oaks	Chatsworth	Devonshire St / Woodman Ave	30 to 35 minutes	2,286
	162/163	West Hills	Sun Valley	Sherman Way	20 to 22.5 minutes	10,484
	164	West Hills	Burbank	Victory Blvd	10 to 20 minutes	7,851
	165	West Hills	Burbank	Vanowen St	6 minutes	9,023
	166/364	Chatsworth	Sun Valley	Nordhoff St / Osborne St	12 to 30 minutes	6,970
	167	Studio City	Chatsworth	Plummer St / Woodman Ave / Roscoe Ave / Coldwater Canyon Ave	40 to 50 minutes	N/A
	169	West Hills	Sunland	Saticoy Ave / Van Nuys Blvd / Chase St	60 minutes	2,428
	183	Sherman Oaks	Glendale	Magnolia Blvd / San Fernando Rd	26 to 60 minutes	2,300
	353	Woodland Hills	North Hollywood	Roscoe Blvd / Lankershim Blvd	11 to 50 minutes	N/A
	750	Woodland Hills	Universal City	Ventura Blvd / Topanga Canyon Blvd	10 minutes	5,126
	901/Orange	North Hollywood	Warner Center	Metro Orange Line	5 minutes	25,485
LADOT	**East-West Bus Service**					
	DASH	Panorama City/Van Nuys (Circular Loop)		Van Nuys Blvd / Parthenia St / Sherman Way / Hazeltine Ave / Victory Blvd	20 minutes	N/A
	DASH	Van Nuys/Studio City (Circular Loop)		Van Nuys Blvd / Hazeltine Ave / Oxnard St	30 minutes	N/A
	CE 409	Sylmar	Civic Center	Foothill Blvd	20 to 40 minutes	N/A
	CE419	Chatsworth	USC	Devonshire St / Chatsworth St / Sepulveda Blvd / SR-118	15 to 20 minutes	N/A
	CE 549	San Fernando Valley	Pasadena	Burbank Blvd / Lankershim Blvd / Riverside Dr	30 minutes	N/A
	CE 573	Encino/Mission Hills	Westwood/Century City	Balboa Blvd / I-405 / Sepulveda Blvd	15 to 45 minutes	N/A
	CE 574	Sylmar	LAX/El Segundo	Chatsworth St / Sepulveda Blvd / Brand Blvd / Truman St/ Hubbard St	30 to 50 minutes	N/A
	North-South Commuter Train Service					
Metrolink	Antelope Valley	Los Angeles Union Station	Lancaster	Sylmar/San Fernando Metrolink Stations	24 to 60 minutes	5,885
	Ventura	Los Angeles Union Station	East Ventura	Van Nuys	20 to 45 minutes	4,141
	North-South Train Service					
Amtrak	Coast Starlight	Seattle	Los Angeles	Van Nuys	Daily Service	N/A
	Pacific Surfliner	San Luis Obispo	San Diego	Van Nuys	Daily Service	N/A

Source: Metro, 2012; LADOT, 2012; Metrolink, 2011, Amtrak, 2012.
The 300-series Metro lines (limited service) operate during peak periods only.
** This route operates during the late-night service hours only. Therefore, peak period frequency is negligible.*
*** This route operates on San Fernando Road on the weekend only. Therefore, peak period frequency is negligible.*

Figure 3-1: Study Area Transit

Source: Metro, 2012

3.1.2 Passenger Activity

The Van Nuys Boulevard corridor has the seventh highest total transit boardings in the Metro system. Figure 3-2 illustrates existing transit boardings for all bus lines and the MOL within the study area. The corridor is also noted for having a high number of bus to bus transfers, with three transfer locations in the top 30 non-rail transfer locations. The locations include the Van Nuys MOL Station, Van Nuys Boulevard/Roscoe Boulevard, and Van Nuys Boulevard/Sherman Way.

Boardings and alightings in the study area are generally highest along the MOL (7,500 per day) and along Van Nuys Boulevard between Nordhoff Street and the MOL busway. Van Nuys Boulevard north of Nordhoff Street also has higher boardings, especially between Laurel Canyon Boulevard and Glenoaks Boulevard. The San Fernando Road and Truman Street parallel corridors do not have consistently high boardings and alightings across series of corridor stops, as compared to the rest of the study area. On San Fernando Road and Truman Street, high ridership occurs at three transfer/activity locations.

Existing transit boardings on Van Nuys Boulevard are some of the highest in the Metro system, when compared to other higher-density areas of the region. The Van Nuys Boulevard corridor has the second-highest boardings total in the San Fernando Valley (about 24,800 per day), just behind the MOL busway (about 25,500 per day). Local Line 233 has higher boardings than Rapid Line 761, due to the number of stops (supporting shorter trips and higher passengers per mile) served by the local service.

Figure 3-2: Existing Transit Boardings

Source: Metro, 2011

3.1.3 Programmed Transit Improvements

The Sepulveda Pass Corridor and the California High Speed Rail projects have not been defined with respect to the Project study area extents and are therefore not included as part of the future buildout analysis. However, the projects are discussed to provide background context as they would potentially link to the Project thereby providing greater regional connectivity.

The Sepulveda Pass Corridor is in the early planning phase. Based on a systems planning study, several concepts that consider various modes (heavy rail, LRT, and BRT) and configurations (fixed guideways, dedicated guideways, and managed/toll lanes) were developed.

With respect to the California High Speed Rail project, alternatives under consideration include an alignment that would include providing a station at Sylmar/San Fernando Metrolink Station that would keep the alignment close to at-grade as possible.

3.2 Highway and Roads

The existing highway and arterial roadway networks and their respective traffic conditions are described in this section.

3.2.1 Existing Highway Network

An extensive freeway network surrounds and intersects the Van Nuys Boulevard, Sepulveda Boulevard, and San Fernando Road corridors, providing regional access between the San Fernando Valley to the greater Los Angeles region. They include the following:

North-South

- The Golden State Freeway (I-5) bisects the northern portion of the study area
- The Hollywood Freeway (SR-170) parallels the southern half of the study area, to the east
- The San Diego Freeway (I-405) borders the west side of the study area
- The Foothill Freeway (I-210) borders the north side of the study area

East-West

- The Ronald Reagan Freeway (SR-118) bisects the northern portion of the study area
- The Ventura Freeway (US-101) bisects the southern portion of the study area

Van Nuys Boulevard has interchanges with the US-101 freeway and the I-5 freeway. The US-101 interchange is configured as a diamond, with ramps allowing access in all directions. The I-5 interchange provides ramps that allow movements to and from the north and south.

San Fernando Road has an interchange with the SR-118 that allows access in all directions.

3.2.2 Existing Roadway Network

The roadway system in the study area is primarily a grid-system that includes arterial, collectors, and local roads. The arterials within the study area are spaced at half-mile to one-mile distances.

3.2.2.1 Study Area Roadway Classifications

Roadway classifications are characterized by the roadway function, size, and capacity. The City of Los Angeles roadway classifications include freeway, major, secondary, collector, local, and private roadways. The City of San Fernando roadway classifications include major arterial corridor, secondary arterial corridor, pedestrian oriented corridor, local streets, and cul-de-sac streets.

Within the Project corridor, Van Nuys Boulevard is designated as a Major Class II Highway. This type of street is defined as having four full-time through lanes, as well as two lanes that are for parking on a part-time basis and for travel on a part-time basis. This class of street has a median/left-turn lane and 104 feet of right-of-way. Additionally, it has a 12-foot sidewalk/parkway with a 13-foot curb lane.

San Fernando Road traverses the cities of Los Angeles and San Fernando. In San Fernando, this type of street is classified as a pedestrian-oriented corridor. The emphasis of this type of roadway classification is to facilitate the development of a pedestrian friendly streetscape while meeting the demands for local traffic. The use of various traffic-calming techniques helps to balance vehicle and pedestrian use. Los Angeles classified this street as a Major Class II Highway.

Truman Street is classified as a major arterial corridor for its entire length through San Fernando. This type of roadway serves both regional through-traffic and intercity traffic, and generally provides four through travel lanes and a dedicated left-turn lane. This type of roadway will typically have a maximum right-of-way width of 80 feet and a curb-to-curb pavement width of 56 feet.

The operational criteria for these roadway types and the corresponding City of Los Angeles designations are summarized in Table 3-2. Figure 3-3 illustrates the study area roadway classifications.

Table 3-2: Roadway Classifications

Street Classification	Operational Criteria	Study Area Roadways			
		Generally North-South	2011-2013 ADT	Generally East-West	2011-2013 ADT
Major Highway - Class II	• 30,000 to 50,000 ADT • Three travel lanes per direction (peak hour) • System spacing one mile apart on a grid	Van Nuys Boulevard	33,060	Woodman Avenue	24,849
		Sepulveda Boulevard	38,246	Nordoff Street	30,907
		San Fernando Road	25,787	Roscoe Boulevard	46,037
		Laurel Canyon Boulevard	35,016	Sherman Way	40,480
		Arleta Avenue (west of Van Nuys Boulevard)	21,077	Victory Boulevard	44,901
				Burbank Boulevard	18,378
				Ventura Boulevard	34,680
Secondary Highway	• 20,000 to 30,000 ADT • Two travel lanes per direction (peak hour) • System spacing one mile	*Arleta Avenue (east of Van Nuys Boulevard)*	16,426	Saticoy Street	16,081
				Vanowen Street	21,796
		Paxton Street		Oxnard Street	18,498
				Magnolia Boulevard	23,254

Source: LADOT

3.2.2.2 Roadway Characteristics

The key roadway characteristics along the Project corridors – Van Nuys Boulevard and San Fernando Road/Truman Street – are summarized in Table 3-3. The table includes the number of travel lanes in each direction, parking restrictions, general land use, posted speed limit, and approximate ROW width.

Van Nuys Boulevard is classified as Major Highway – Class II (Boulevard II). The majority of the segments on Van Nuys Boulevard have three travel lanes on each direction, which is an operational criteria of Boulevard II. The segment of Van Nuys Boulevard to the north of Woodman Avenue on Van Nuys Boulevard has two travel lanes in each direction, which is below the standard of the Boulevard II classification.

San Fernando Road is classified as a Major Highway – Class II (Boulevard II) within the City of Los Angeles as well. However, the roadway is configured with two travel lanes in each direction, which is below the standard of the Boulevard II classification.

Table 3-3: Roadway Characteristics

Segment	# Lanes		Median	Parking Restrictions		General	Posted	ROW
	NB/ EB	SB/ WB	Type	NB / EB	SB / WB	Land Use	Speed Limit	Width (ft)
VAN NUYS BOULEVARD								
San Fernando Road to Telfair Ave	2	2	2WLTL	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	Commercial	35 mph	100
Telfair Ave to Haddon Ave	2	2	Raised	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	Commercial	35 mph	100
Haddon Ave to Laural Canyon Blvd	2	2	2WLTL	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	2Hrs. 8AM-6PM NP Nightly 10PM-6AM	Commercial	35 mph	100
Laurel Canyon Blvd to 5 Freeway	2	2	2WLTL	NP Nightly 10PM-6AM	NP Nightly 10PM-6AM	Commercial	35 mph	100-108
5 Freeway to Beachy Ave	2	2	2WLTL	Permitted	Permitted	Residential	35 mph	100-108
Beachy Ave to Canterbury Ave	2	2	2WLTL	Permitted	2 Hrs 8PM-6PM	Residential	35 mph	100
Canterbury Ave to Woodman Ave	2	2	2WLTL	NSAT	NP 8AM-6PM, NSAT	Commercial	35 mph	100
Woodman Ave to Parthenia St	2	2	2WLTL	Permitted	Permitted	Commercial	35 mph	100
Parthenia St to Roscoe Blvd	2	3	Raised	NSAT	NSAT	Commercial	35 mph	100-120
Roscoe Blvd to Titus St	3	3	Striped	NP 7AM-9AM & 2:30PM-6PM 2Hrs. 9AM-2:30PM	NP 7AM-9AM & 4PM-6PM 2Hrs. 9AM-4PM	Commercial	35 mph	100
Titus St to Lanark St	3	3	2WLTL	NP 7AM-9AM & 2:30PM-6PM 2Hrs. 9AM-2:30PM	NP 7AM-9AM & 4PM-6PM 1Hr. 9AM-4PM	Commercial	35 mph	100
Lanark St to Lorne St	3	3	2WLTL	2Hrs. 9AM-6PM	NP 7AM-9AM & 4PM-6PM 1Hr. 9AM-4PM	Commercial	35 mph	100
Lorne St to Blythe St	3	3	2WLTL	NSAT	NP 7AM-9AM & 4PM-6PM 1Hr. 9AM-4PM	Commercial	35 mph	100
Blythe St to Arminta St	3	3	2WLTL	NSAT	NP 7AM-9AM & 4PM-6PM 2Hr. 9AM-4PM	Commercial	35 mph	110
Arminta St to Keswick St	3	3	Raised	NSAT	NSAT	Commercial/ Industrial	35 mph	100
Keswick St to Valerio St	3	3	2WLTL	NS 7AM-9AM & 4PM-6PM 2Hrs. 9AM-4PM	NS 7AM-9AM & 4PM-7PM NP 9AM-4PM	Commercial	35 mph	100
Valerio St to Sherman Way *	3	3	2WLTL	NS 7AM-9AM & 4PM-6PM 2Hrs. 9AM-4PM	NS 7AM-9AM & 4PM-7PM NP 9AM-4PM 2Hrs. 8AM-6PM	Commercial	35 mph	100
Sherman Way to Vose St	3	3	2WLTL	1Hr. 8AM-6PM	NSAT	Commercial	35 mph	100
Vose St to Hart St.	3	3	2WLTL	Θ 1Hr. 8AM-6PM	NPAT	Commercial	35 mph	136
Hart St to Vanowen St	3	3	2WLTL	Θ 1Hr. 8AM-6PM Θ 20 Minutes	Θ 2Hrs. 8AM-8PM	Commercial/ Industrial	35 mph	136
Vanowen St to Kittridge St	3	3	2WLTL	Θ 1Hr. 8AM-6PM	Θ 1Hr. 8AM-6PM	Commercial	35 mph	110
Kittridge St to Oxnard St	3	3	2WLTL	Θ 1Hr. 8AM-8PM	Θ 1Hr. 8AM-8PM	Commercial	35 mph	110-160
Oxnard St to Tiara St	3	3	2WLTL	Θ 1Hr. 8AM-8PM	Θ 1Hr. 8AM-8PM	Commercial	35 mph	110-160
Tiara St to Hatteras St	3	3	2WLTL	1Hr. 8AM-6PM	2Hrs. 8AM-6PM	Commercial	35 mph	110-160
Hatteras St to Burbank Blvd	3	3	2WLTL	1Hr. 8Am-8PM	1Hr. 8Am-8PM	Commercial	35 mph	110-160
Burbank Blvd to Chandler Blvd	3	3	Raised	2Hrs. 8Am-6PM	2Hrs. 8Am-6PM	Commercial	35 mph	100
Chandler Blvd to Weddington St	2	2	2WLTL	10 Hrs. 8AM-6PM	2Hrs. 8AM-6PM	Commercial	35 mph	100
Weddington St to Magnolia Blvd	2	2	2WLTL	1Hr. 8AM-6PM	1Hr. 8AM-6PM	Commercial	35 mph	100
Magnolia Blvd to Addison St	2	2	2WLTL	Θ 2Hrs. 8AM-8PM NS 11PM-6AM	Θ 2Hrs. 8AM-8PM	Commercial	35 mph	95
Addison St to Riverside Dr	3	3	2WLTL	NP 7AM-9AM & 4PM-7PM Θ 2Hrs. 9AM-4Pm	NP 7AM-9AM & 4PM-7PM NSAT	Commercial	35 mph	100
Riverside Dr to Kling St	3	2/3	2WLTL	NSAT	NSAT	Commercial	35 mph	100
Kling St to Hortense St	3	2	2WLTL	Θ 2Hrs. 8AM-8PM	Θ 2Hrs. 8AM-8PM	Commercial	30 mph	100
Hortense St to Milbank St	3	2	2WLTL	NPAT	Θ 2Hrs. 8AM-8PM	Commercial	30 mph	100
Milbank St to Moorpark St	3	2	2WLTL	1Hr. 8AM-8PM	2Hrs. 8AM-8PM	Commercial	30 mph	100
Moorpark St to Ventura Blvd	2	2	2WLTL	Red Curb / NP	2Hrs. 8AM-8PM	Commercial	30 mph	100
S of Ventura Blvd	1/2	1	Striped	NS 4PM-6PM Θ 2Hrs. 8AM-4PM & 6PM-8PM	Θ 1Hr. 8AM-8PM	Commercial/ Residential	30 mph	100

Table 3-3: Roadway Characteristics (continued)

Segment	# Lanes		Median	Parking Restrictions		General	Posted	ROW
	NB/ EB	SB/ WB	Type	NB / EB	SB / WB	Land Use	Speed Limit	Width (ft)
SAN FERNANDO ROAD								
Astoria St to Truman St	2	2	Striped	NSAT	NSAT / NR	Commercial	35	75'-80'
Truman St to Hubbard St	2	2	Striped	NR	NR	Commercial	35	80'
Hubbard St to Lazard St	2	2	Striped	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	Commercial	35	80'
Lazard St to Huntington St	2	2	Striped	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	2 Hrs. 7AM to 6PM	Commercial	35	80'
Huntington St to Kalisher St	2	2	Striped	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	Industrial/ Commercial	35	80'
Kalisher St to San Fernando Mission Rd	2	2	Striped	NS 9PM to 3AM NP	NS 9PM to 3AM NP	Commercial	35	80'
San Fernando Mission to Chatsworth Dr	1	1	Striped	NP 2AM to 6AM Θ 2 Hrs.7AM to 6PM	NP 2AM to 6AM Θ 2 Hrs.7AM to 6PM	Commercial	15	80'
Chatsworth Dr to Wolfskill St	2	2	Striped	2Hrs. 7AM to 6PM	2Hrs. 7AM to 6PM	Commercial	30	80'
Wolfskill St to Truman St	2	2	Striped	2Hrs. 7AM to 6PM	2Hrs. 7AM to 6PM	Industrial	30	80'
Truman St to Del Sur St	2	2	Striped	NSAT	NSAT	Industrial	35	75'
Del Sur St to Desmond St	2	2	Striped	NSAT	NSAT / 1Hr. 8AM to 6PM	Industrial	35	75'-60'
Desmond to 118 freeway	2	2		NSAT	NSAT	Industrial	35	75'-70'
118 EB ramps to Weidner St	2	2	Striped	NSAT	1Hr. 8AM to 6PM	Commercial	35	92'-70'
118 WB ramps to 118 EB ramps	2	2	Striped	NSAT	NSAT	Commercial	35	76'-93' #
Weiner St to Pinney St (1blk n/o Van Nuys)	2	2	Striped	NSAT	NP 8AM to 10AM (Tuesday)	Industrial/ Commercial	35	70'-75'
Pinney St to Van Nuys Blvd	2	2	Seeped	NSAT	NP (red curb)	Industrial	35	70'
South of Van Nuys Blvd	2	2	Striped	NSAT	NP 8AM to 10AM (Tuesday)	Industrial	35	75'-70'
TRUMAN STREET								
San Fernando Rd to Wolfskill	2	2	Raised	NP 2AM to 6 AM	N/A	Railroad	35	80'
Wolfskill to Brand Blvd	2	2	Striped	NR	NR	Commercial	35	80'
Brand Blvd to Workman St	2	2	Striped	NSAT	NSAT	Commercial	35	80'
Workman St to Lazard St	2	2	Striped	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	Commercial	35	80'
Lazard St to n/o Hubbard Ave	2	2	Striped	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	NS 9PM to 3AM NP Commercial Vehicles 2AM to 6 AM	Commercial	35	80'
North of Hubbard Ave to San Fernando Rd	2	2	Raised	NSAT	N/A	Commercial	35	80'-90'

Θ - Metered Parking
NP - NP
NR- No Restrictions
NS - No Stopping
NSAT - No Stopping Anytime
NPAT - NP Anytime
2WLTL - Two-way left-turn lane
* Posted sign indicates "lanes end merge left 7AM to 9AM and 4PM to 6PM" along the
# ROW expands into 118 Freeway Intersection

3.2.2.3 Congestion Management Program (CMP)

The CMP for Los Angeles County is administered by Metro. The CMP is intended to address the impact of local growth on the regional transportation system, via a system of arterial and mainline freeway monitoring locations. These locations will be analyzed in the future traffic impact analysis to determine LOS degradations based on Project trips and roadway geometry/lane changes. The overall Project corridors include the following monitoring locations (stations):

Freeway Monitoring Locations

- Freeway locations near to the study area are not likely to be affected by any new trip generation at the Project park-and-ride locations, nor by shifts in traffic that may occur due to roadway configuration changes as part of the Project Build Alternatives.

Arterial Monitoring Intersections

- Ventura Boulevard and Sepulveda Boulevard (CMP Intersection 76)

3.2.2.4 Planned Roadway Improvement Projects

Future planned projects include capital improvements identified in the financially constrained element of Metro's 2009 LRTP and SCAG's 2012 constrained RTP that will be implemented by 2035. This includes the installation of carpool lanes on the I-5 between SR-118 and SR-170, and on the I-405 through the Sepulveda Pass. The Metro Model has been updated to analyze a future baseline year of 2040, but the current RTP is based on the 2035 baseline model.

3.2.3 Study Area Level of Service

A total of 73 signalized intersections on Van Nuys Boulevard, between San Fernando Road and Ventura Boulevard; and San Fernando Road/Truman Street, between Van Nuys Boulevard and the Sylmar/San Fernando Station were included as part of the analysis to examine existing and future LOS operations of the affected environment from a traffic operations perspective. A total of 60 study intersections are located within the City of Los Angeles, which includes one CMP intersection location, while the remaining 13 intersections are located within the City of San Fernando. These intersections represent critical intersections along the corridor since they would be the most likely to incur the greatest amount of delay from the Project.

Although intersections south of Oxnard Street are not directly impacted by any of the Build Alternatives, these intersections are considered part of the overall study area and were therefore evaluated.

3.2.3.1 Data Collection

Weekday traffic counts were conducted in October 2011, May 2012, February 2013, and March 2013. A conservative growth factor of one-percent was applied to the 2011 intersection counts in order to evaluate existing year-2012 conditions. This rate is higher than typical annual rates derived from the Metro Travel Demand Model for the future-year analysis. These counts were performed on a typical weekday during the a.m. and p.m. peak periods (7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 6:00 p.m.) and generally included vehicle, pedestrian, and bicycle volumes.

Appendix A provides the weekday a.m. and p.m. peak-period traffic count summaries used to create the existing conditions analysis. The indicated volumes are collected volumes, excluding factoring to the baseline conditions year.

The figures provided in Appendix B illustrate the approach lane configurations for the study intersections, for the No-Build and the Build Alternatives.

Field work was undertaken to collect information on roadway characteristics including the number of lanes, general cross-sections, posted speed limits, parking restrictions, presence of medians, adjacent land uses, and general traffic conditions. Additionally, signal timing plans were provided by LADOT for the analysis of the study intersections.

Additional data collection was conducted in order to provide supplemental analysis for the Build Alternatives. This included the compilation of additional new traffic counts at major commercial center driveways along the corridor and at unsignalized cross-street intersections near station locations.

These additional counts were conducted in order to analyze Project-related roadway impacts associated with roadway capacity reductions and intersection turn restrictions and partial closures. The analysis of Project conditions including shifts in driveway/local intersection traffic due to Project-related roadway configuration changes is discussed further in Chapter 4.

3.2.3.2 Existing Intersection Level of Service

Under the existing conditions analysis scenario, three of the 73 analyzed intersections are operating at LOS E or F during weekday peak hours based on the applied Highway Capacity Manual (HCM) analysis methodology:

- San Fernando Road/Paxton Street – LOS E during the p.m. peak period
- Van Nuys Blvd & Parthenia St/Vesper Ave – LOS F during the p.m. peak period
- Van Nuys Blvd & Sherman Way – LOS E during the p.m. peak period

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 3-4 summarizes the existing a.m. and p.m. peak hour LOS values at the study intersections. Figure 3-4 provides a summary of LOS values for the entire Project corridor, while Figures 3-3 to 3-7 provide close-in illustrations for four individual sectors of the study area.

Table 3-4: Existing Study Intersection AM/PM Levels of Service

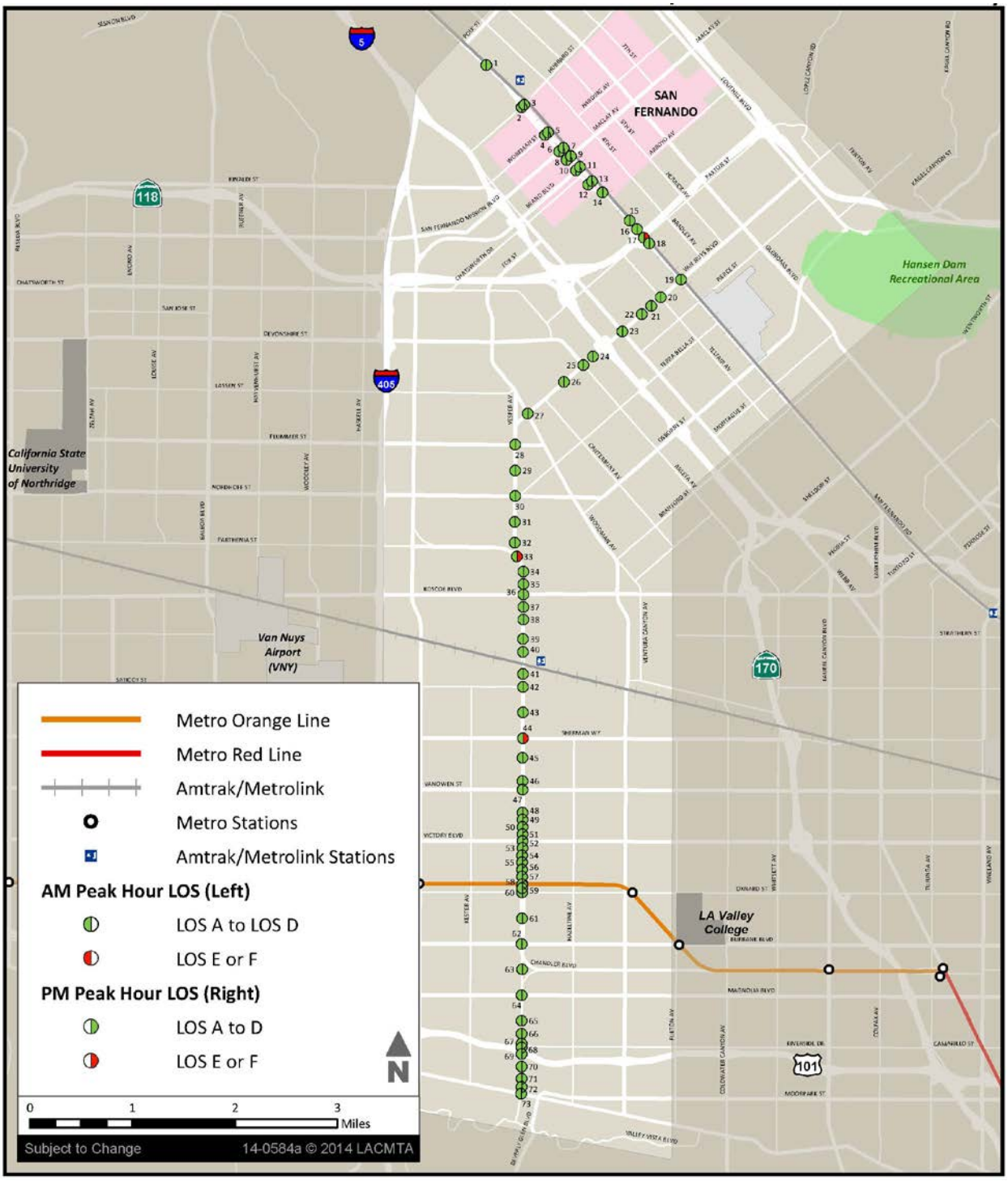
	Study Intersections	Jurisdiction	AM Peak Hour		PM Peak Hour	
			Delay (secs)	LOS	Delay (secs)	LOS
1	San Fernando Rd & Astoria St	Los Angeles	6.1	A	6.2	A
2	San Fernando Rd & Hubbard St	San Fernando	14.1	B	18.0	B
3	Truman St & Hubbard St	San Fernando	16.4	B	17.6	B
4	San Fernando Rd & Workman St	San Fernando	10.1	B	10.6	B
5	Truman St & Workman St	San Fernando	4.7	A	5.0	A
6	San Fernando Rd & San Fernando Mission Blvd	San Fernando	6.6	A	7.7	A
7	Truman St & San Fernando MissionBlvd	San Fernando	11.8	B	9.7	A
8	San Fernando Rd & Maclay Ave	San Fernando	12.9	B	16.1	B
9	Truman St & Maclay Ave	San Fernando	21.8	C	16.0	B
10	San Fernando Rd & Brand Blvd	San Fernando	10.1	B	12.4	B
11	Truman St & Brand Blvd	San Fernando	23.2	C	18.6	B
12	San Fernando Rd & Wolfskill St	San Fernando	6.7	A	7.2	A
13	Truman St & Wolfskill St	San Fernando	11.5	B	9.6	A
14	San Fernando Rd & Truman St	San Fernando	1.1	A	1.1	A
15	San Fernando Rd & Desmond St	Los Angeles	9.5	A	9.0	A
16	San Fernando Rd & SR-118 WB on-off Ramps	Los Angeles	19.7	B	41.9	D
17	San Fernando Rd & Paxton St	Los Angeles	32.7	C	57.6	E
18	San Fernando Rd & SR-118 EB on-off Ramps	Los Angeles	10.0	A	11.3	B
19	San Fernando Rd & Van Nuys Blvd	Los Angeles	34.2	C	41.9	D
20	Telfair Ave & Van Nuys Blvd	Los Angeles	6.0	A	5.3	A
21	Kewen Ave & Van Nuys Blvd	Los Angeles	6.2	A	5.4	A
22	Haddon Ave & Van Nuys Blvd	Los Angeles	7.6	A	8.8	A
23	Laurel Canyon Blvd & Van Nuys Blvd	Los Angeles	37.7	D	40.6	D
24	Bartee Ave & Van Nuys Blvd	Los Angeles	29.7	C	15.5	B
25	Arleta Ave & Van Nuys Blvd	Los Angeles	37.8	D	41.7	D
26	Beachy Ave & Van Nuys Blvd	Los Angeles	11.2	B	11.1	B
27	Woodman Ave & Van Nuys Blvd	Los Angeles	33.5	C	35.0	C

Table 3-4: Existing Study Intersection AM/PM Levels of Service (continued)

	Study Intersections	Jurisdiction	AM Peak Hour		PM Peak Hour	
			Delay (secs)	LOS	Delay (secs)	LOS
28	Van Nuys Blvd & Plummer St	Los Angeles	26.4	C	28.8	C
29	Van Nuys Blvd & Tupper St	Los Angeles	6.9	A	3.4	A
30	Van Nuys Blvd & Nordhoff St	Los Angeles	45.6	D	47.6	D
31	Van Nuys Blvd & Rayen St	Los Angeles	4.8	A	12.4	B
32	Van Nuys Blvd & Parthenia St	Los Angeles	5.4	A	15.2	B
33	Van Nuys Blvd & Parthenia St/Vesper Ave	Los Angeles	24.3	C	80.8	F
34	Van Nuys Blvd & Chase St	Los Angeles	25.1	C	34.9	C
35	Van Nuys Blvd between Chase St & Roscoe Blvd	Los Angeles	2.4	A	8.3	A
36	Van Nuys Blvd & Roscoe Blvd	Los Angeles	48.0	D	46.8	D
37	Van Nuys Blvd & Titus St	Los Angeles	10.0	A	9.8	A
38	Van Nuys Blvd & Lanark St	Los Angeles	23.9	C	26.6	C
39	Van Nuys Blvd & Blythe St	Los Angeles	11.6	B	9.0	A
40	Van Nuys Blvd & Arminta St	Los Angeles	15.5	B	21.5	C
41	Van Nuys Blvd & Keswick St	Los Angeles	10.0	A	9.2	A
42	Van Nuys Blvd & Saticoy St	Los Angeles	36.2	D	31.3	C
43	Van Nuys Blvd & Valerio St	Los Angeles	14.6	B	14.9	B
44	Van Nuys Blvd & Sherman Way	Los Angeles	43.0	D	59.8	E
45	Van Nuys Blvd & Vose St	Los Angeles	10.4	B	14.6	B
46	Van Nuys Blvd & Hartland St	Los Angeles	1.0	A	1.7	A
47	Van Nuys Blvd & Vanowen St	Los Angeles	24.8	C	32.6	C
48	Van Nuys Blvd & Kittridge St	Los Angeles	4.6	A	4.2	A
49	Van Nuys Blvd & Haynes St	Los Angeles	3.6	A	3.1	A
50	Van Nuys Blvd & Hamlin St	Los Angeles	3.3	A	2.4	A
51	Van Nuys Blvd & Gilmore St	Los Angeles	2.6	A	2.6	A
52	Van Nuys Blvd & Victory Blvd	Los Angeles	17.5	B	16.0	B
53	Van Nuys Blvd & Friar St	Los Angeles	1.8	A	2.8	A
54	Van Nuys Blvd & Sylvan St	Los Angeles	3.0	A	4.1	A
55	Van Nuys Blvd & Erwin St	Los Angeles	1.4	A	1.4	A
56	Van Nuys Blvd & Delano St	Los Angeles	2.6	A	3.7	A
57	Van Nuys Blvd & Calvert St	Los Angeles	2.2	A	5.4	A
58	Van Nuys Blvd & Metro Orange Line Busway	Los Angeles	0.6	A	0.6	A
59	Van Nuys Blvd & Aetna St	Los Angeles	2.9	A	3.0	A
60	Van Nuys Blvd & Oxnard St	Los Angeles	21.7	C	21.1	C
61	Van Nuys Blvd & Hatteras St	Los Angeles	2.2	A	2.0	A
62	Van Nuys Blvd & Burbank Blvd	Los Angeles	43.9	D	45.1	D
63	Van Nuys Blvd & Clark St	Los Angeles	7.4	A	2.7	A
64	Van Nuys Blvd & Magnolia Blvd	Los Angeles	30.0	C	32.1	C
65	Van Nuys Blvd & Addison St	Los Angeles	4.4	A	9.9	A
66	Van Nuys Blvd & Huston St	Los Angeles	9.2	A	7.4	A
67	Van Nuys Blvd & Riverside Dr	Los Angeles	8.0	A	9.8	A
68	Van Nuys Blvd & WB 101 On-Off Ramps	Los Angeles	20.5	C	23.2	C
69	Van Nuys Blvd & EB 101 On-Off Ramps	Los Angeles	19.9	B	32.7	C
70	Van Nuys Blvd & Hortense St	Los Angeles	3.7	A	5.9	A
71	Van Nuys Blvd & Milbank St	Los Angeles	3.7	A	6.7	A
72	Van Nuys Blvd & Moorpark St	Los Angeles	26.5	C	29.8	C
73	Van Nuys Blvd & Ventura Blvd	Los Angeles	26.7	C	33.9	C

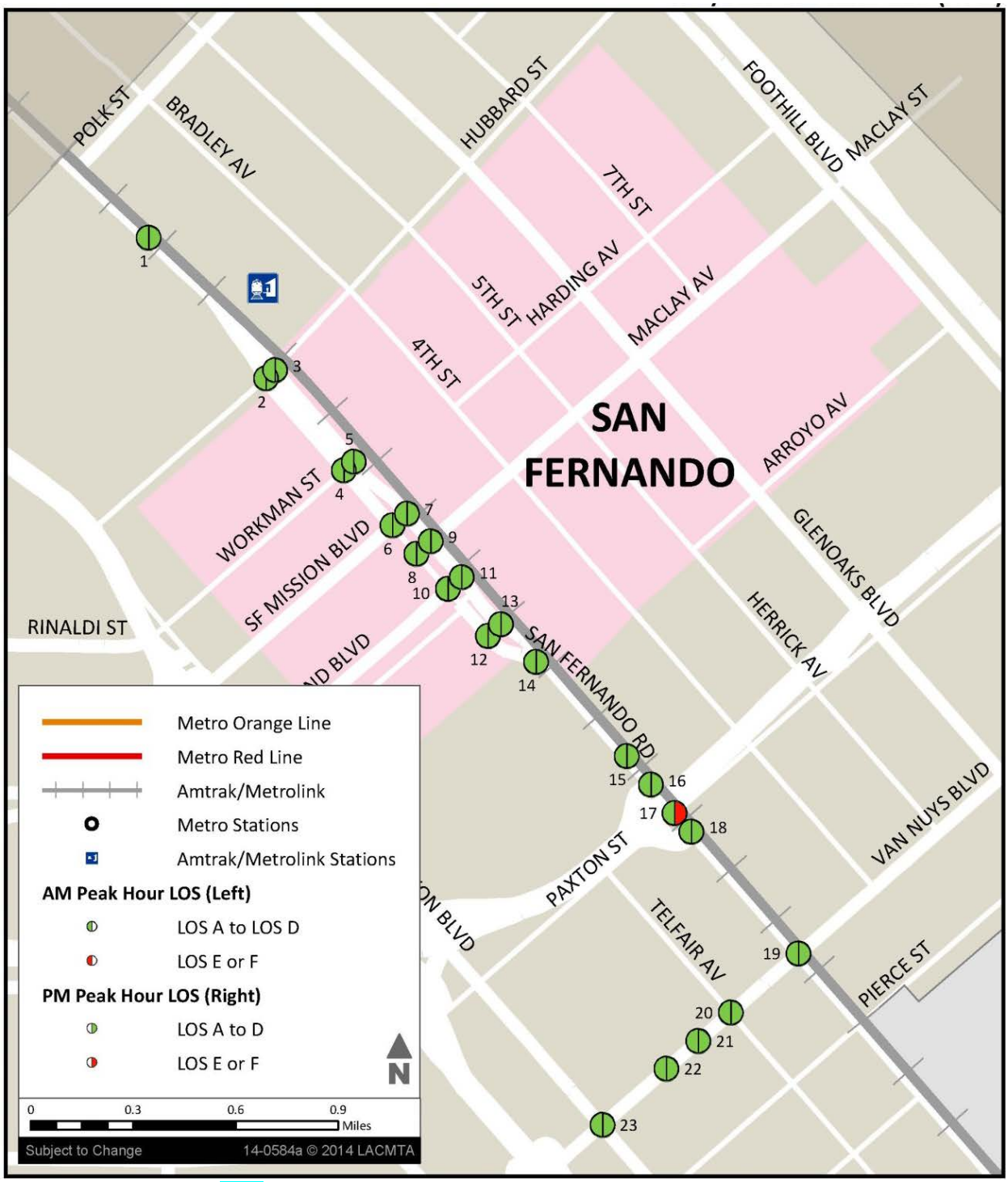
Source: KOA, 2014

Figure 3-3: Existing Study Area AM and PM LOS Map



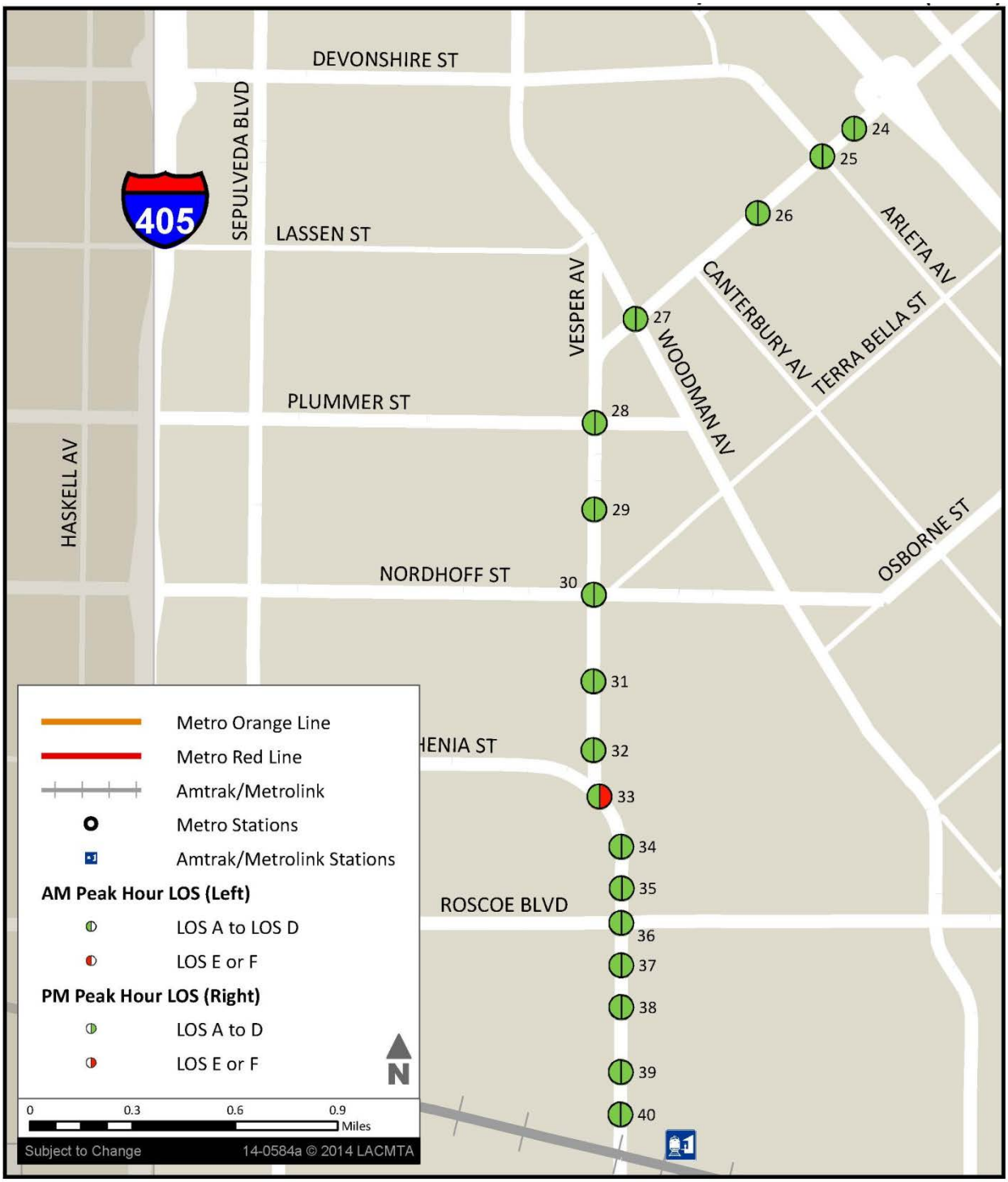
Source: KOA, 2014

Figure 3-4: Existing Study Area AM and PM LOS (#1-23)



Source: LADOT, KOA, 2011

Figure 3-5: Existing Study Area AM and PM LOS (#24-40)



Source: KOA, 2014

Figure 3-6: Existing Study Area AM and PM LOS (#41-60)

Source: KOA, 2014

Figure 3-7: Existing Study Area AM and PM LOS (61-73)

Source: KOA, 2014

Overall Travel Time within the Van Nuys Boulevard Corridor

As shown in the table below, under existing conditions, the maximum passenger/ vehicle travel time is approximately 28 minutes and the maximum bus travel time is approximately 36 minutes. The effects of growth through the future baseline year and the effects of the build alternatives on these times are discussed in later sections of this document.

Mode	Peak Travel Time (min.)
Passenger Vehicle	25.0
Transit Vehicle	31.6

3.2.4 Existing Parking Conditions

The availability of vehicle parking throughout the Project corridor varies widely depending on location. This section provides a general overview of existing off-street and on-street (curb-side) parking throughout the Van Nuys Boulevard corridor.

A parking study was conducted for the Van Nuys Boulevard Project corridor. The parking study area included Van Nuys Boulevard from Oxnard Street to San Fernando Road, as well as street segments and off-street parking areas one to two blocks east and west of Van Nuys Boulevard.

Additional evaluation of parking utilization was conducted along San Fernando Road.

3.2.4.1 Off-Street Parking

Existing off-street parking facilities are generally reserved for businesses and their customers via surface parking lots located directly off of the Van Nuys Boulevard corridor. The overall corridor off-street parking supply, from Oxnard Street to San Fernando Road, includes a total of 19,853 parking spaces.

Transit parking facilities are provided at the Sylmar/San Fernando Metrolink Station (375 parking spaces), Van Nuys Metrolink Station (350 parking spaces), and the MOL Van Nuys (776 parking spaces). Transit facilities located along Van Nuys Boulevard are included in the overall total spaces calculated for the parking study.

The peak parking demand for the off-street spaces occurred during the weekday at 1 p.m. when 45 percent of the spaces were occupied. The peak parking demand for the off-street parking supply is illustrated within the figures in Appendix C1. .

3.2.4.2 On-Street Parking – Van Nuys Boulevard

Curb-side parking availability varies considerably along much of the extent of Van Nuys Boulevard and San Fernando Road/Truman Street. It is generally permitted along most of the corridor and includes metered, passenger/loading zone, unrestricted (with some segments allowing parking throughout the day), and restricted (segments allow parking only during off-peak hours). The general parking characteristics of the corridors are as follows:

- Van Nuys Boulevard Corridor - Parking is generally permitted throughout the corridor. Most segments along the corridor have hourly parking restrictions that may include peak-hour restrictions, and there are metered parking spaces located in the Van Nuys Civic Center.
- San Fernando Road/Truman Street Corridor - Parking is permitted along portions of San Fernando Road and Truman Street.

Specific to Van Nuys Boulevard from Oxnard Street to San Fernando Road, a total of 1,140 on-street parking spaces are provided, with an additional 4,611 on-street spaces provided on adjacent blocks to the east and west of the corridor. These areas serve various businesses and residents with both long-term and short-term parking needs.

The peak parking demand for on-street spaces occurred on Saturday at 12 p.m. when 52 percent of the spaces were occupied. The majority of on-street parking demand occurred in residential areas north of Parthenia Street to Laurel Canyon Boulevard with smaller pockets of high demand scattered throughout the commercial areas.

During the weekday, the peak parking demand for on-street parking spaces occurred on a weekday at 3 p.m. when 42 percent of the spaces were occupied. There was no particular area where parking demand was most concentrated, but instead demand was scattered throughout various blocks in both residential and commercial areas.

Deliveries to some businesses and residences take place from curbside parking areas, which is a second function of the on-street parking areas within the Van Nuys Boulevard corridor.

The on-street weekday and weekend peak parking occupancy patterns are illustrated within the parking analysis zone boundaries within the following figures in Appendix C1. Weekday summaries are provided on Figures C1-1 to C1-3. Friday summaries are provided on Figures C1-4 to C1-6. Weekend summaries are provided on Figures C1-7 to C1-10:

- Figure C1-1: Weekday /Monday Parking Area Demand – 11:00 AM
- Figure C1-2: Weekday /Monday Parking Area Demand – 1:00 PM
- Figure C1-3: Weekday/ Monday Parking Area Demand – 3:00 PM
- Figure C1-4: Weekday/Friday Parking Area Demand – 11:00 AM
- Figure C1-5: Weekday/Friday Parking Area Demand – 1:00 PM
- Figure C1-6: Weekday/Friday Parking Area Demand – 3:00 PM
- Figure C1-7: Weekend/Saturday Parking Area Demand – 12:00 PM
- Figure C1-8: Weekend/Saturday Parking Area Demand – 2:00 PM
- Figure C1-9: Weekend/Saturday Parking Area Demand – 4:00 PM
- Figure C1-10: Weekend/Saturday Parking Area Demand – 6:00 PM

3.2.4.3 On-Street Parking – San Fernando Road Corridor

Within the downtown area of San Fernando, generally between Wolfskill Street on the southeast and Hubbard Street on the northwest, on-street parking is currently provided within pockets of parallel spaces and diagonal spaces.

Based on parking demand monitoring conducted in the San Fernando Road/Truman Street corridor, the highest parking demand generally occurs within downtown San Fernando. There is underutilized

parking supply within both on-street and off-street areas that could accommodate the loss of parking on San Fernando Road.

3.2.5 Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities along the Project alignment are described below.

3.2.5.1 Pedestrian Facilities

The pedestrian circulation system within the Project corridor is generally well developed as the study area is urbanized and there is a consistent street grid pattern in most areas. Sidewalks and crosswalks are provided that serve both adjacent residential and commercial land uses. Sidewalk widths vary throughout the Project alignment corridors from five to 16 feet, but are generally an adequate 10 feet in width. Crosswalks at signalized intersections have pedestrian indications and push-button activation for pedestrian phases.

The current pedestrian activity (measures at crossings, based on data compiled by LADOT) at intersections near several of the proposed station locations are as follows:

- Sylmar/San Fernando Metrolink Station and Hubbard Station – Current area pedestrian activity is average, totaling 117 in the a.m. peak hour and 112 in the p.m. peak-hour. This station would serve as a key transfer point for Project transit users.
- Maclay Station – Current area pedestrian activity is average, totaling 124 crossings in the a.m. peak hour and 108 crossings in the p.m. peak hour.
- Paxton Station – Current area pedestrian activity is relatively low, totaling 66 in the a.m. peak-hour and 125 in the p.m. peak hour.
- Chase Station – Current area pedestrian activity is relatively high, totaling 376 in the a.m. peak hour and 714 in the p.m. peak hour.
- Roscoe Boulevard Station – Current area pedestrian activity is relatively high, totaling 521 in the a.m. peak hour and 988 in the p.m. peak hour.
- Blythe Station – Current area pedestrian activity is high, totaling 1,049 in the a.m. peak hour and 1,237 in the p.m. peak hour (due to its proximity to Panorama High School).
- Van Nuys/Keswick Metrolink Station – Current area pedestrian activity is relatively low, totaling 165 pedestrians in the a.m. peak hour and 159 in the p.m. peak hour. This station would serve as a key transfer point for Project transit users.
- Sherman Way Station – Current area pedestrian activity is relatively high, totaling 375 in the a.m. peak hour and 696 in the p.m. peak hour.
- Vanowen Station – Current area pedestrian activity is high, totaling 471 in the a.m. peak hour and 780 in the p.m. peak hour.
- Victory Station – Current area pedestrian activity is average, totaling 314 in the a.m. peak hour and 440 in the p.m. peak hour.
- Metro Orange Line Van Nuys Station – Current area pedestrian activity is very high, totaling 818 pedestrians in the a.m. peak hour and 594 in the p.m. peak hour (due to Orange Line ridership). This station would serve as a key transfer point for transit riders.

3.2.5.2 Existing Bicycle Facilities

Definition of Typical Bicycle Facilities

Based on the Caltrans Highway Design Manual (2012), bicycle facilities are classified based on the standard typology described below:

- Class I Bikeway (Bicycle Path) – A completely separate ROW for the exclusive use of bicycles and pedestrians, with vehicle and pedestrian cross-flows minimized.
- Class II Bikeway (Bicycle Lane) – A restricted ROW designated for the use of bicycles, with a striped lane on a street or a highway. Vehicle parking along with vehicle and pedestrian cross-flows are usually permitted.
- Class III Bikeway (Bicycle Route) – A shared ROW designated by signs or pavement markings for use by both bicyclists and motor vehicles.

Existing Corridor Bicycle Facilities

Existing bicycle facilities along the Project alignment are as follows:

- Van Nuys Boulevard – A Class II bicycle lane exists between Chandler Boulevard and the MOL. More recently, a Class II bicycle lane has been striped from Parthenia Street to Beachy Avenue.
- San Fernando Road – A Class I bicycle path exists from Roxford Street to Hubbard Street. A multi-use path exists from Hubbard Street to Wolfskill Street/La Rue Street.

Connecting Bicycle Facilities

Several bicycle facilities provide parallel and connecting opportunities for bicyclists in the area. The facilities that interface with the Project corridors are located on the following roadways:

- Plummer Street (Class II) – This east-west bicycle lane intersects Van Nuys Boulevard providing a facility on Plummer Street to the west of the corridor, and transitioning onto Woodman Avenue as a north-south bicycle route to the east of the corridor.
- Parthenia Street (Class II) – This east-west bicycle lane provides a bicycle facility for the western leg of Parthenia Street which eventually merges to Van Nuys Boulevard.
- Metro Orange Line (Class I) – This east-west bicycle path is located within the MOL ROW and intersects Van Nuys Boulevard.
- Chandler Boulevard (Class II) – The east-west bicycle lane has a western terminus at Van Nuys Boulevard and continues east along the roadway.
- Riverside Drive (Class II) – This east-west bicycle lanes has a western terminus at Van Nuys Boulevard and continues east for a short distance where it eventually connects to the north-south bicycle lane on Laurel Canyon Boulevard.

3.2.5.3 Planned Bicycle Facility Projects

Per the 2010 City of Los Angeles Bicycle Plan, new bicycle striped roadway lanes and dedicated paths will be added to the study area. The addition of new bicycle lanes (Class II) on the Van Nuys Boulevard, and the Phase 2 of the San Fernando Bicycle Path (Class I), recently completed along a 2.75-mile segment extending from Wolfskill Street/La Rue Street to Branford Street, have been considered in Project conceptual engineering and implementation planning.

Van Nuys Boulevard is designated by the Bicycle Plan as a segment of the "Backbone Network", and therefore is targeted for future implementation of bicycle lanes, for the entire length of the Project alignment. San Fernando Road is also designated as part of the "Backbone Network" as a bicycle lane, as well as the "Green Bikeway Network" as a bicycle path (separated, but parallel to the roadway) with a future lane designation.

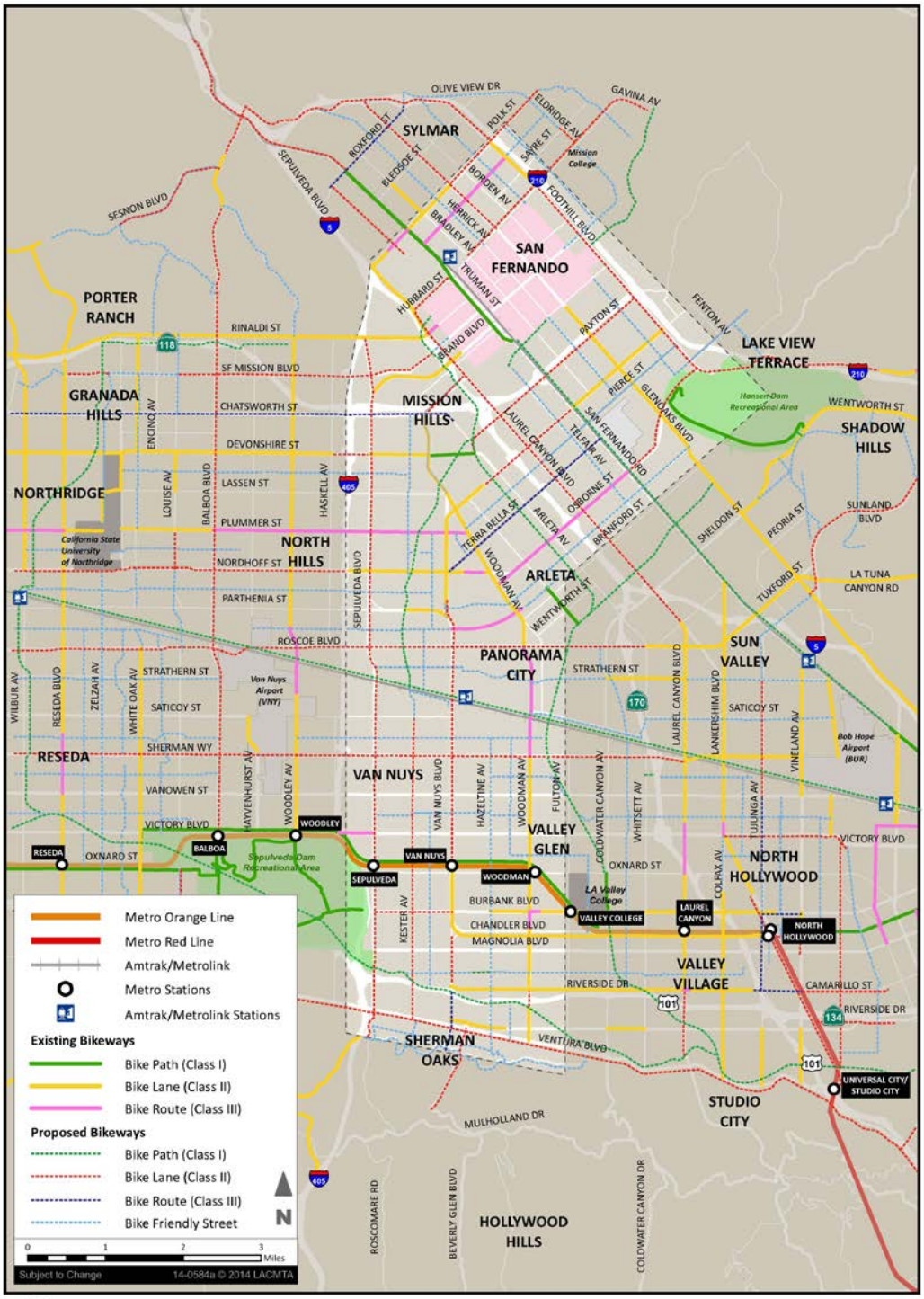
The existing and planned bicycle facilities in the study area are illustrated on Figure 3-8.

3.2.5.4 Project Corridor Bicycle and Transit Project Definitions

Both the City of Los Angeles Bicycle Plan and the City of Los Angeles General Plan Framework Update define major projects for the Van Nuys Boulevard corridor.

As discussed in Section 3.2.5.3, Van Nuys Boulevard is designated by the Bicycle Plan as a segment of the "Backbone Network", which targets striped and signed bicycle lanes for the corridor.

Figure 3-8: Study Area Bicycle Facilities



Source: LADOT, KOA, 2014

Chapter 4
Environmental Consequences/ Environmental Impacts

The future year-2040 conditions analysis is based on the buildout year of both the SCAG regional traffic model and the Metro Travel Demand Model. With the growth in travel demand that will occur by that year, the performance of area roadway and freeway networks will further decline due to increased demands on the design capacity of these networks. Growth in neighboring sub-regions that generate substantial volumes of through traffic within the San Fernando Valley will also impact the study area, including the Santa Clarita Valley to the north, Burbank and Glendale to the east, the Conejo Valley to the west, and the overall Los Angeles Basin to the south (including West Los Angeles and the South Bay).

The projected growth in travel demand on area transit services will result in greater vehicle crowding, service delays, longer travel times, and stresses on the reliability of the system, without any Project-related or other area Project improvements. The East San Fernando Valley Transit Corridor Project has been planned to improve passenger mobility and connectivity to regional activity centers, increase transit service efficiency (speeds and passengers per mile), and potentially make transit service more environmentally beneficial via reductions in vehicle miles traveled and directly related emissions of greenhouse gas.

In order to increase the capacity of the area public transit system, however, there will be a trade-off with roadway vehicle capacity. A majority of the Project-related improvements would be constructed within the public right-of-way along the Van Nuys Boulevard and San Fernando Road/Truman Street corridors.

This section provides a discussion of future traffic conditions and potential significant impacts of the proposed Project Build Alternatives.

4.1 Future Baseline Conditions/ No-Build Alternative

The No-Build Alternative analysis is based on projected conditions in 2040 without implementation of the Project. No new transportation infrastructure would be built within the Project study area, aside from projects that are currently under construction or funded for construction and operation by 2040. This alternative would include highway and transit projects funded by Measure R and specified in the current constrained element of the Metro 2009 Long-Range Transportation Plan (LRTP) and the 2012 SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

The No-Build Alternative considers the following existing transportation infrastructure and future planned projects, as well as annual growth as defined in the methodology discussion within Chapter 2. :[1]

[1] *A transit project that would carry passengers between the San Fernando Valley and West Los Angeles over the Sepulveda Pass has been discussed. However, as the project is not yet defined and is considered to be speculative, it is not included as part of the No-Build Alternative.*

- Existing Freeways – Interstates 5 and 405, State Route 118, and U.S. 101.
- Existing Transitway – Metro Orange Line (BRT).
- Existing Bus Service – Metro Rapid, and LocalBus; Los Angeles Department of Transportation Commuter Express; and DASH.
- Existing and Planned Bicycle Projects – Bicycle facilities on Van Nuys Boulevard and connecting east/west facilities.
- Other Planned Projects – Various freeway and arterial roadway upgrades, expansions to the Metro Rapid Bus system, and upgrades to the Metrolink system. Amtrak service is assumed to remain consistent with existing routes and service frequencies.

This alternative establishes a baseline for comparison with other alternatives in terms of potential environmental effects, including beneficial environmental effects. NEPA and CEQA guidelines require that existing conditions and all Build Alternatives be evaluated against the No-Build Alternative in an EIS/EIR.

4.1.1 Transit

Operational Impacts

Under the No-Build Alternative, the bus service for Rapid Line 761 and Local Line 233 would be identical to existing bus service. Therefore, there would be no direct operational impacts to transit.

The No-Build Alternative, however, would lack the potential transportation benefits that the Build Alternatives would provide, such as increased service frequency and capacity, improved transit access and reliability, and improved connections to the regional transit network. Over time traffic congestion is expected to increase, as analyzed for future baseline conditions, creating additional delay per mile for buses and auto traffic. The No-Build Alternative would not provide a reliable transit alternative to these modes of travel in the Project area.

Construction Impacts

As there would be no construction activity planned under this alternative, no impacts to transit would occur.

4.1.2 Traffic

Operational Impacts – Level of Service

Daily vehicle traffic within the study area is projected to increase over the 28-year period between existing and future baseline conditions during the a.m. and p.m. peak. Roadway links adjacent to each study intersection were examined for potential growth, based on output from the Metro Travel Demand Model. Future growth is influenced heavily by major commute corridors and estimated area development.

Under the future baseline analysis scenario, 16 of the 73 analyzed intersections are operating at LOS E or F during weekday peak hours based on the applied Highway Capacity Manual (HCM) analysis methodology:

- Truman St & Hubbard St – LOS E during the p.m. peak hour.
- Truman St & Maclay Ave – LOS F during both the a.m. and p.m. peak hours.
- Truman St & Brand Ave – LOS F during the a.m. peak hour, and LOS E during the p.m. peak hour.
- San Fernando Rd & Desmond St – LOS F during the p.m. peak hour.
- San Fernando Rd & Paxton St – LOS F during the a.m. peak hour, and LOS E during the p.m. peak hour.
- San Fernando Rd & Van Nuys Blvd – LOS F during the both the a.m. and p.m. peak hours.
- Laurel Canyon Blvd & Van Nuys Blvd – LOS F during both the a.m. and p.m. peak hours.
- Arleta Ave & Van Nuys Blvd – LOS E during both the a.m. and p.m. peak hours.
- Van Nuys Blvd & Nordhoff St – LOS E during both the a.m. and p.m. peak hours.
- Van Nuys Blvd & Chase St – LOS E during the p.m. peak hour.
- Van Nuys Blvd & Saticoy St– LOS F during both the a.m. and p.m. peak hours.
- Van Nuys Blvd & Sherman Way St – LOS E during the a.m. peak hour, and LOS F during the p.m. peak hour.
- Van Nuys Blvd & Vanowen St – LOS E during the a.m. peak hour, and LOS F during the p.m. peak hour.
- Van Nuys Blvd & Oxnard St – LOS E during the p.m. peak hour.
- Van Nuys Blvd & Burbank Blvd– LOS F during both the a.m. and p.m. peak hours.
- Van Nuys Blvd & Magnolia Blvd St – LOS E during the a.m. peak hour, and LOS F during the p.m. peak hour.

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 4-1 summarizes the future baseline a.m. and p.m. peak hour LOS values at the study intersections. Figure 4-1 illustrates these LOS values on a map of the Project study area.

Figure 4-1 provides a summary of LOS values for the entire Project corridor, and Figures 4-2 to 4-6 provide close-in illustrations for four individual sectors of the study area.

Construction Impacts

As there would be no construction activity planned under this alternative, no impacts to traffic would occur. There would be no physical change to the existing environment and therefore there would be no impacts to traffic.

Table 4-1: Future Baseline Study Area AM/PM LOS

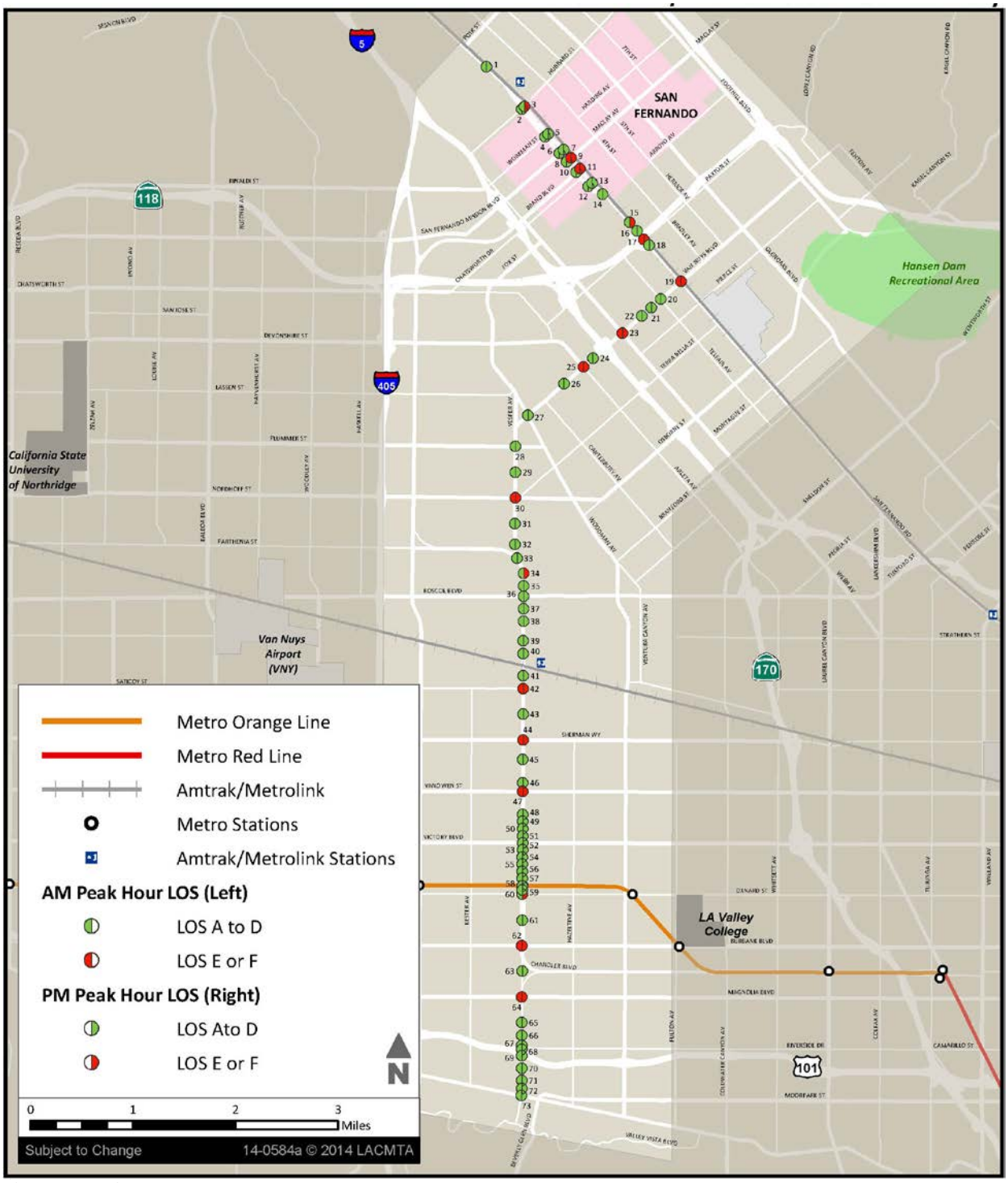
Study Intersections		Jurisdiction	AM Peak Hour		PM Peak Hour	
			Delay (secs)	LOS	Delay (secs)	LOS
1	San Fernando Rd & Astoria St	Los Angeles	4.2	A	4.7	A
2	San Fernando Rd & Hubbard St	San Fernando	22.6	C	45.7	D
3	Truman St & Hubbard St	San Fernando	45.3	D	72.2	E
4	San Fernando Rd & Workman St	San Fernando	8.3	A	11.5	B
5	Truman St & Workman St	San Fernando	4.7	A	8.1	A
6	San Fernando Rd & San Fernando Mission Blvd	San Fernando	8.1	A	51.4	D
7	Truman St & San Fernando MissionBlvd	San Fernando	14.4	B	30.1	C
8	San Fernando Rd & Maclay Ave	San Fernando	12.6	B	19.9	B
9	Truman St & Maclay Ave	San Fernando	87.6	F	122.8	F
10	San Fernando Rd & Brand Blvd	San Fernando	13.5	B	34.8	C
11	Truman St & Brand Blvd	San Fernando	117.3	F	73.0	E
12	San Fernando Rd & Wolfskill St	San Fernando	8.0	A	8.2	A
13	Truman St & Wolfskill St	San Fernando	36.4	D	26.2	C
14	San Fernando Rd & Truman St	San Fernando	1.0	A	1.0	A
15	San Fernando Rd & Desmond St	Los Angeles	31.1	C	196.3	F
16	San Fernando Rd & SR-118 WB on-off Ramps	Los Angeles	35.4	D	42.3	D
17	San Fernando Rd & Paxton St	Los Angeles	99.7	F	76.6	E
18	San Fernando Rd & SR-118 EB on-off Ramps	Los Angeles	47.3	D	27.0	C
19	San Fernando Rd & Van Nuys Blvd	Los Angeles	100.4	F	128.9	F
20	Telfair Ave & Van Nuys Blvd	Los Angeles	11.6	B	12.3	B
21	Kewen Ave & Van Nuys Blvd	Los Angeles	5.9	A	4.8	A
22	Haddon Ave & Van Nuys Blvd	Los Angeles	8.0	A	14.6	B
23	Laurel Canyon Blvd & Van Nuys Blvd	Los Angeles	157.2	F	124.0	F
24	Bartee Ave & Van Nuys Blvd	Los Angeles	17.1	B	11.7	B
25	Arleta Ave & Van Nuys Blvd	Los Angeles	65.2	E	75.1	E
26	Beachy Ave & Van Nuys Blvd	Los Angeles	14.2	B	10.7	B
27	Woodman Ave & Van Nuys Blvd	Los Angeles	40.0	D	50.3	D
28	Van Nuys Blvd & Plummer St	Los Angeles	32.9	C	38.9	D
29	Van Nuys Blvd & Tupper St	Los Angeles	7.5	A	3.5	A
30	Van Nuys Blvd & Nordhoff St	Los Angeles	72.0	E	76.7	E
31	Van Nuys Blvd & Rayen St	Los Angeles	6.1	A	17.5	B
32	Van Nuys Blvd & Parthenia St	Los Angeles	11.9	B	11.9	B
33	Van Nuys Blvd & Parthenia St/Vesper Ave	Los Angeles	25.4	C	49.4	D
34	Van Nuys Blvd & Chase St	Los Angeles	23.7	C	72.2	E
35	Van Nuys Blvd between Chase St & Roscoe Blvd	Los Angeles	3.3	A	11.9	B
36	Van Nuys Blvd & Roscoe Blvd	Los Angeles	52.9	D	53.8	D
37	Van Nuys Blvd & Titus St	Los Angeles	11.9	B	11.4	B
38	Van Nuys Blvd & Lanark St	Los Angeles	29.4	C	33.0	C
39	Van Nuys Blvd & Blythe St	Los Angeles	18.6	B	20.1	C
40	Van Nuys Blvd & Arminta St	Los Angeles	14.6	B	24.8	C

Table 4-1: Future Baseline Study Area AM/PM LOS (continued)

Study Intersections		Jurisdiction	AM Peak Hour		PM Peak Hour	
			Delay (secs)	LOS	Delay (secs)	LOS
41	Van Nuys Blvd & Keswick St	Los Angeles	21.6	C	24.5	C
42	Van Nuys Blvd & Saticoy St	Los Angeles	92.4	F	128.0	F
43	Van Nuys Blvd & Valerio St	Los Angeles	15.5	B	23.6	C
44	Van Nuys Blvd & Sherman Way	Los Angeles	57.5	E	120.3	F
45	Van Nuys Blvd & Vose St	Los Angeles	13.3	B	18.3	B
46	Van Nuys Blvd & Hartland St	Los Angeles	1.2	A	4.0	A
47	Van Nuys Blvd & Vanowen St	Los Angeles	70.4	E	89.3	F
48	Van Nuys Blvd & Kittridge St	Los Angeles	5.4	A	4.9	A
49	Van Nuys Blvd & Haynes St	Los Angeles	4.4	A	3.5	A
50	Van Nuys Blvd & Hamlin St	Los Angeles	4.1	A	2.7	A
51	Van Nuys Blvd & Gilmore St	Los Angeles	3.1	A	2.9	A
52	Van Nuys Blvd & Victory Blvd	Los Angeles	35.2	D	20.7	C
53	Van Nuys Blvd & Friar St	Los Angeles	1.6	A	3.2	A
54	Van Nuys Blvd & Sylvan St	Los Angeles	3.8	A	4.7	A
55	Van Nuys Blvd & Erwin St	Los Angeles	2.0	A	1.5	A
56	Van Nuys Blvd & Delano St	Los Angeles	3.4	A	4.3	A
57	Van Nuys Blvd & Calvert St	Los Angeles	3.8	A	4.1	A
58	Van Nuys Blvd & Metro Orange Line Busway	Los Angeles	1.0	A	0.9	A
59	Van Nuys Blvd & Aetna St	Los Angeles	2.7	A	6.0	A
60	Van Nuys Blvd & Oxnard St	Los Angeles	45.9	D	55.5	E
61	Van Nuys Blvd & Hatteras St	Los Angeles	2.3	A	3.5	A
62	Van Nuys Blvd & Burbank Blvd	Los Angeles	149.9	F	104.9	F
63	Van Nuys Blvd & Clark St	Los Angeles	17.4	B	3.6	A
64	Van Nuys Blvd & Magnolia Blvd	Los Angeles	58.4	E	80.9	F
65	Van Nuys Blvd & Addison St	Los Angeles	5.3	A	14.7	B
66	Van Nuys Blvd & Huston St	Los Angeles	10.8	B	9.7	A
67	Van Nuys Blvd & Riverside Dr	Los Angeles	17.0	B	42.0	D
68	Van Nuys Blvd & WB 101 On-Off Ramps	Los Angeles	22.1	C	24.5	C
69	Van Nuys Blvd & EB 101 On-Off Ramps	Los Angeles	20.6	C	26.3	C
70	Van Nuys Blvd & Hortense St	Los Angeles	4.0	A	6.5	A
71	Van Nuys Blvd & Milbank St	Los Angeles	3.8	A	6.9	A
72	Van Nuys Blvd & Moorpark St	Los Angeles	21.2	C	39.1	D
73	Van Nuys Blvd & Ventura Blvd	Los Angeles	29.0	C	41.0	D

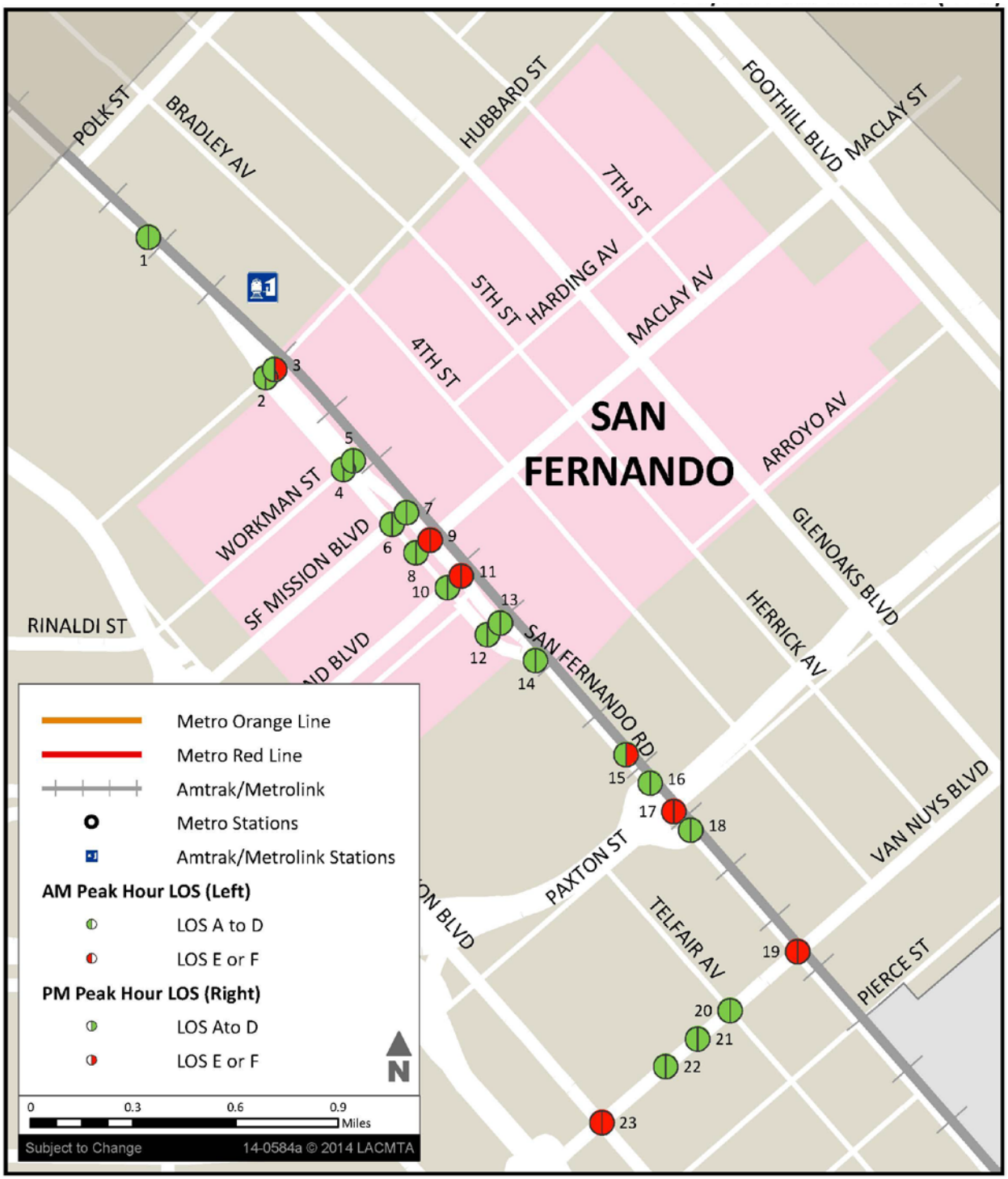
Source: LADOT, KOA, 2014

Figure 4-1: Future Baseline Study Area AM and PM LOS Map



Source: KOA, 2014

Figure 4-2: Future Baseline Study Area AM and PM LOS (#1-23)



Source: KOA, 2014

Figure 4-3: Future Baseline Study Area AM and PM LOS (#24-40)

Source: KOA, 2014

Figure 4-4: Future Baseline Study Area AM and PM LOS (#41-60)

Source: KOA, 2014

Figure 4-5: Future Baseline Study Area AM and PM LOS (#61-73)

Source: KOA, 2014

Operational Impacts – Travel Speeds

From the Metro Travel Demand Model, average vehicle speeds (based on volumes and roadway segment capacities) and congested time (amount of total delay added to a trip due to congestion) values were estimated. The data is provided in approximate one-mile segments, but the distance varies based on the location of major arterials and other major elements of the transportation network.

For the No-Build scenario, this data is summarized in two tables based on travel direction:

- Table 4-2: San Fernando Road eastbound and Van Nuys Boulevard southbound directions of travel, which are the AM peak directions for these two streets
- Table 4-3: Van Nuys Boulevard northbound and San Fernando Road westbound directions of travel, which are the PM peak directions for these two streets

Table 4-2: Estimated Roadway Vehicle Speeds – No-Build Conditions - Van Nuys Southbound / San Fernando Eastbound (AM Peak Direction)

From	To	No Build AM Peak		No Build PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Sylmar Station	Fox	16.69	75.14	33.13	29.96
Fox	Van Nuys	25.45	60.34	32.69	45.04
Foothill	Glenoaks	34.19	72.65	35.08	70.80
Glenoaks	San Fernando	31.50	91.43	35.02	82.23
San Fernando	Arleta	22.71	48.23	30.96	35.35
Arleta	Plummer	19.80	92.50	30.49	62.69
Plummer	Chase	20.18	57.85	31.37	37.34
Chase	Metrolink	14.24	90.10	31.30	40.88
Metrolink	Vanowen	22.65	80.97	34.86	52.15
Vanowen	MOL	25.15	49.39	34.94	34.75
MOL	Magnolia	26.92	32.22	34.79	24.85
Magnolia	Ventura	25.86	32.81	33.43	25.26

Table 4-2 indicates that a.m. peak hour congested speeds for southbound Van Nuys Boulevard and eastbound San Fernando Road, under the No-Build scenario, would range from approximately 14 miles per hour to 34 miles an hour. Congested time in the a.m. peak hour would range from approximately 32 seconds to 92 seconds per segment.

Table 4-2 also indicates that p.m. peak hour congested speeds for these roadway travel directions under this scenario would range from approximately 30 miles per hour to 35 miles an hour. Congested time in the p.m. peak hour would range from approximately 24 seconds to 82 seconds per segment.

Table 4-3: Estimated Roadway Vehicle Speeds – No-Build Conditions – Van Nuys Northbound / San Fernando Westbound (PM Peak Direction)

From	To	No Build AM Peak		No Build PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Ventura	Magnolia	32.88	26.09	27.59	31.12
Magnolia	MOL	35.04	24.68	30.88	28.06
MOL	Vanowen	35.05	34.64	29.70	41.63
Vanowen	Metrolink	34.99	51.96	27.79	65.50
Metrolink	Chase	31.45	40.70	20.55	62.36
Chase	Plummer	32.26	36.31	24.25	48.05
Plummer	Arleta	31.87	60.00	22.76	80.63
Arleta	San Fernando	32.49	34.13	29.25	37.86
San Fernando	Glenoaks	35.03	82.21	34.55	83.36
Glenoaks	Foothill	35.08	70.82	34.70	71.59
Van Nuys	Fox	31.43	46.48	28.09	54.75
Fox	Sylmar Station	32.48	30.42	24.21	45.10

Table 4-3 indicates that a.m. peak hour congested speeds for northbound Van Nuys Boulevard and westbound San Fernando Road, under the No-Build scenario, would range from approximately 31 miles per hour to 35 miles an hour. Congested time in the a.m. peak hour would range from approximately 24 seconds to 82 seconds per segment.

The table also indicates that p.m. peak hour congested speeds for these roadway travel directions under this scenario would range from approximately 20 miles per hour to 34 miles an hour. Congested time in the p.m. peak hour would range from approximately 28 seconds to 83 seconds per segment.

Overall Travel Time within the Van Nuys Boulevard Corridor

Overall passenger and transit vehicle speeds were derived from the Metro Model. As shown on this table, under the Future No-Build conditions, the maximum passenger/ vehicle travel time is approximately 28 minutes and the maximum bus travel time is approximately 36 minutes. The effects of the build alternatives on these times are discussed within each impact section of this document.

Mode	Peak Travel Time (min.)
Passenger Vehicle	27.9
Transit Vehicle	35.7

4.1.3 Parking

The No-Build Alternative would not generate operational or construction parking impacts to on-street, as Project-related construction or major physical improvements within the roadway right-of-way along the Project corridor would not occur.

4.1.4 Pedestrian and Bicycle Facilities

The No-Build Alternative would not generate operational or construction parking impacts to pedestrian and bicycle facilities, as Project-related construction or major physical improvements within the roadway right-of-way along the Project corridor would not occur.

Impacts of the proposed Project Build Alternatives are discussed in the following report sections.

4.2 Transportation Systems Management (TSM) Alternative

The TSM Alternative analyzed under the existing plus Project scenario that incorporates bus service enhancements for Rapid Line 761 and Local Line 233 applied to baseline roadway configurations.

4.2.1 Transit

Existing bus routes Rapid Line 761 and Local Line 233 would retain the current stop locations with enhancements to bus services through increased bus frequencies. The bus headways would be improved as follows:

- Rapid Line 761 – Two-minute peak headway improvement (eight minutes versus 10 minutes); one-and-a-half minute off-peak headway improvement (16 minutes versus 17.5 minutes);
- Local Line 233 – Four-minute peak headway improvement (eight minutes versus 12 minutes); four minute off-peak headway improvement (16 minutes versus 20 minutes).

Implementation of improved transit service under the TSM Alternative would result in an increase of 466 daily transit boardings on Van Nuys Boulevard between the MOL and the Sylmar/San Fernando Metrolink Station, as compared to future no-build/baseline conditions. There would not be any operational impacts to existing bus service under the TSM Alternative.

4.2.2 Traffic

Operational Impacts

As compared to the future baseline (No-Build) conditions scenario, implementation of the TSM Project alternative would not cause study intersection operations to worsen by a measurable amount. There would be minimal changes to baseline traffic conditions, and therefore the significant impact thresholds would not be met.

Under the TSM Alternative analysis scenario, 16 of the 73 analyzed intersections would operate at LOS E or F during weekday peak hours, based on the applied Highway Capacity Manual (HCM)

analysis methodology. Operations and level of service values, and roadway travel speeds, would not change by a measurable amount due to implementation of the TSM Alternative.

Construction Impacts

As there would be no construction activity planned under this alternative, no impacts to traffic would occur. There would be no physical change to the existing environment and therefore there would be no impacts to traffic.

4.2.3 Parking

Operational Impacts

The TSM Alternative would not generate operational or construction impacts to on-street parking, as Project-related construction or major physical improvements within the roadway right-of-way along the Project corridor would not occur.

Construction Impacts

There would not be construction activity associated with this alternative. On-street parking within the Project corridor would not be affected during construction.

4.2.4 Pedestrian and Bicycle Facilities

The TSM Alternative would not generate operational or construction parking impacts to pedestrian and bicycle facilities, as Project-related construction or major physical improvements within the roadway right-of-way along the Project corridor would not occur.

4.3 BRT Alternative – Alternative 1 (Curb-Running BRT)

Alternative 1 analyzed under this scenario incorporates a dedicated bus lane along with bus service improvements such as increased trip frequencies and improved bus stop infrastructure.

4.3.1 Transit

Operational Impacts

Rapid Line 761X and Local Line 233X would retain the current stop locations along the Van Nuys Boulevard portion of the alignment with enhancements to bus services through increased bus frequencies. The bus headways would be improved as follows:

- Rapid Line 761X – Four minute-peak headway improvement (six minutes versus 10 minutes); five-and-a-half minute off-peak headway improvement (12 minutes versus 17.5 minutes);
- Local Line 233X – Four-minute peak headway improvement (eight minutes versus 12 minutes); four minute off-peak headway improvement (16 minutes versus 20 minutes).

Implementation of this Project Build Alternative would result in an increase of 2,970 daily transit trips between the MOL and the Sylmar/San Fernando Metrolink Station, as compared to future No-Build/baseline conditions.

Under Alternative 1, local bus service may benefit from the dedicated curb-adjacent bus lanes, which would be available to both the Project-implemented premium bus service and the existing local service to remain in the operations period.

Construction Impacts

Construction of Alternative 1 would be carried in phases over an 18-month period within separate work zones.

Some curb lane closures within small work areas would be necessary to implement the improvements, bus stops would need to be temporarily closed, and temporary bus stops outside of the work areas would be provided under the traffic management plan (TMP), or the nearest bus stops would serve patrons of the temporarily closed stop(s).

Construction of Alternative 1 would not result in temporary adverse effects to transit service under NEPA or significant impacts under CEQA to transit operations, based on the estimated duration and magnitude of construction.

4.3.2 Traffic

Operational Impacts – Level of Service

Under Alternative 1, 18 of the 73 study intersections would operate at LOS E or F during either one or both of the weekday peak hours. Level of service values at the following intersections would worsen to or within poor conditions during the separately analyzed peak hours under this alternative:

- LOS at 14 study intersections would worsen to/within LOS E or F during the a.m. peak hour
- LOS at 19 study intersections would worsen to/within LOS E or F during the p.m. peak hour

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 4-3 summarizes the future baseline a.m. and p.m. peak hour LOS values at the study intersections. Significant traffic impacts would occur at 16 study intersections along Van Nuys Boulevard.

Table 4-4 provides a summary of LOS values and impact calculations for the entire Project corridor for this scenario. Figure 4-6 illustrates these values within the overall study area, and Figures 4-7 to 4-10 provide close-in illustrations of these values for four individual sectors of the study area.

Benefits of reductions in VMT and increases in corridor passenger trips across the Project Build Alternatives are discussed in Section 4.10.

Table 4-4: Alternative 1 – Study Area AM/PM LOS and Impacts

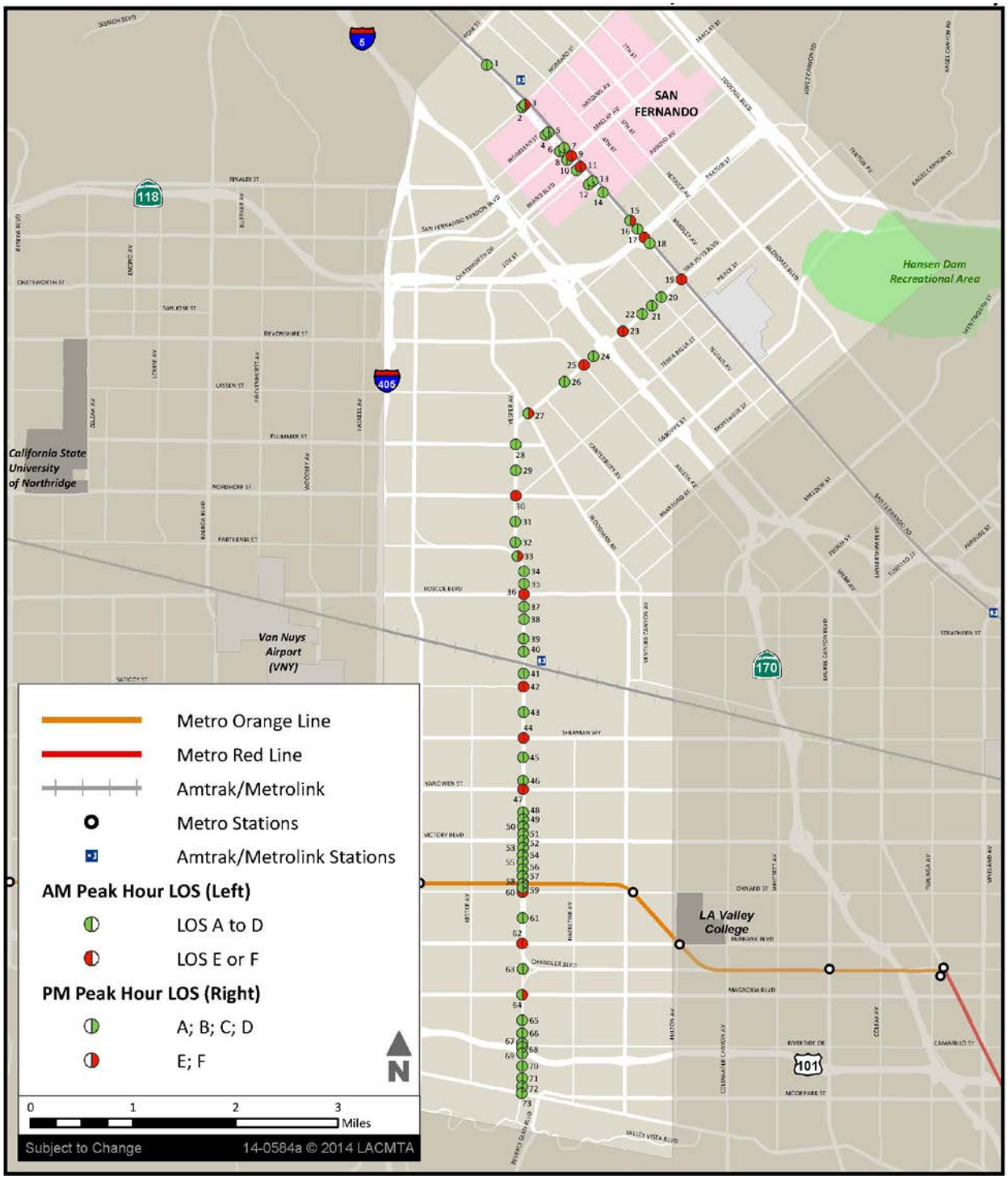
	Study Intersections	Future No Build				Future With Project (Alternative 1)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
1	San Fernando Rd & Astoria St	4.2	A	4.7	A	4.2	A	4.7	A	0.0	0.0	No
2	San Fernando Rd & Hubbard St	22.6	C	45.7	D	22.6	C	45.7	D	0.0	0.0	No
3	Truman St & Hubbard St	45.3	D	72.2	E	45.3	D	72.2	E	0.0	0.0	No
4	San Fernando Rd & Workman St	8.3	A	11.5	B	8.3	A	11.5	B	0.0	0.0	No
5	Truman St & Workman St	4.7	A	8.1	A	4.7	A	8.1	A	0.0	0.0	No
6	San Fernando Rd & San Fernando Mission	8.1	A	51.4	D	8.1	A	51.4	D	0.0	0.0	No
7	Truman St & San Fernando MissionBlvd	14.4	B	30.1	C	14.4	B	30.1	C	0.0	0.0	No
8	San Fernando Rd & Maclay Ave	12.6	B	19.9	B	12.6	B	19.9	B	0.0	0.0	No
9	Truman St & Maclay Ave	87.6	F	>100	F	87.6	F	>100	F	0.0	-	No
10	San Fernando Rd & Brand Blvd	13.5	B	34.8	C	13.5	B	34.8	C	0.0	0.0	No
11	Truman St & Brand Blvd	>100	F	73.0	E	>100	F	73.0	E	-	0.0	No
12	San Fernando Rd & Wolfskill St	8.0	A	8.2	A	8.0	A	8.2	A	0.0	0.0	No
13	Truman St & Wolfskill St	36.4	D	26.2	C	36.4	D	26.2	C	0.0	0.0	No
14	San Fernando Rd & Truman St	1.0	A	1.0	A	1.0	A	1.0	A	0.0	0.0	No
15	San Fernando Rd & Desmond St	31.1	C	>100	F	31.2	C	>100	F	0.1	-	No
16	San Fernando Rd & SR-118 WB on-off Ram	35.4	D	42.3	D	30.7	C	42.3	D	-4.7	0.0	No
17	San Fernando Rd & Paxton St	99.7	F	76.6	E	>100	F	76.7	E	-	0.1	No
18	San Fernando Rd & SR-118 EB on-off Ram	47.3	D	27.0	C	39.5	D	27.0	C	-7.8	0.0	No
19	San Fernando Rd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	No
20	Telfair Ave & Van Nuys Blvd	11.6	B	12.3	B	11.6	B	12.2	B	0.0	-0.1	No
21	Kewen Ave & Van Nuys Blvd	5.9	A	4.8	A	6.6	A	5.4	A	0.7	0.6	No
22	Haddon Ave & Van Nuys Blvd	8.0	A	14.6	B	7.8	A	14.5	B	-0.2	-0.1	No
23	Laurel Canyon Blvd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
24	Bartee Ave & Van Nuys Blvd	17.1	B	11.7	B	17.2	B	5.0	A	0.1	-6.7	No
25	Arleta Ave & Van Nuys Blvd	65.2	E	75.1	E	85.4	F	88.0	F	20.2	12.9	**Yes**
26	Beachy Ave & Van Nuys Blvd	14.2	B	10.7	B	17.1	B	11.3	B	2.9	0.6	No
27	Woodman Ave & Van Nuys Blvd	40.0	D	50.3	D	43.7	D	57.0	E	3.7	6.7	**Yes**
28	Van Nuys Blvd & Plummer St	32.9	C	38.9	D	31.9	C	36.6	D	-1.0	-2.3	No
29	Van Nuys Blvd & Tupper St	7.5	A	3.5	A	7.4	A	4.3	A	-0.1	0.8	No
30	Van Nuys Blvd & Nordhoff St	72.0	E	76.7	E	94.1	F	94.8	F	22.1	18.1	**Yes**
31	Van Nuys Blvd & Rayen St	6.1	A	17.5	B	6.5	A	19.8	B	0.4	2.3	No
32	Van Nuys Blvd & Parthenia St	11.9	B	11.9	B	8.1	A	11.7	B	-3.8	-0.2	No
33	Van Nuys Blvd & Parthenia St/Vesper Ave	25.4	C	49.4	D	32.3	C	59.0	E	6.9	9.6	**Yes**
34	Van Nuys Blvd & Chase St	23.7	C	72.2	E	33.9	C	54.4	D	10.2	-17.8	**Yes**
35	Van Nuys Blvd between Chase St & Roscoe	3.3	A	11.9	B	5.8	A	10.9	B	2.5	-1.0	No
36	Van Nuys Blvd & Roscoe Blvd	52.9	D	53.8	D	57.7	E	57.9	E	4.8	4.1	**Yes**
37	Van Nuys Blvd & Titus St	11.9	B	11.4	B	13.2	B	13.3	B	1.3	1.9	No
38	Van Nuys Blvd & Lanark St	29.4	C	33.0	C	34.0	C	43.5	D	4.6	10.5	**Yes**
39	Van Nuys Blvd & Blythe St	18.6	B	20.1	C	23.7	C	39.0	D	5.1	18.9	**Yes**
40	Van Nuys Blvd & Arminta St	14.6	B	24.8	C	23.7	C	22.7	C	9.1	-2.1	**Yes**

Table 4-4: Alternative 1– Study Area AM/PM LOS and Impacts (continued)

	Study Intersections	Future No Build				Future With Project (Alternative 1)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
41	Van Nuys Blvd & Keswick St	21.6	C	24.5	C	25.8	C	31.6	C	4.2	7.1	**Yes**
42	Van Nuys Blvd & Saticoy St	92.4	F	>100	F	>100	F	>100	F	-	-	**Yes**
43	Van Nuys Blvd & Valerio St	15.5	B	23.6	C	17.7	B	22.8	C	2.2	-0.8	No
44	Van Nuys Blvd & Sherman Way	57.5	E	>100	F	61.0	E	>100	F	3.5	-	**Yes**
45	Van Nuys Blvd & Vose St	13.3	B	18.3	B	12.0	B	21.3	C	-1.3	3.0	No
46	Van Nuys Blvd & Hartland St	1.2	A	4.0	A	4.2	A	6.6	A	3.0	2.6	No
47	Van Nuys Blvd & Vanowen St	70.4	E	89.3	F	88.2	F	>100	F	17.8	-	**Yes**
48	Van Nuys Blvd & Kittridge St	5.4	A	4.9	A	6.3	A	6.1	A	0.9	1.2	No
49	Van Nuys Blvd & Haynes St	4.4	A	3.5	A	5.7	A	4.7	A	1.3	1.2	No
50	Van Nuys Blvd & Hamlin St	4.1	A	2.7	A	5.3	A	4.0	A	1.2	1.3	No
51	Van Nuys Blvd & Gilmore St	3.1	A	2.9	A	4.0	A	3.8	A	0.9	0.9	No
52	Van Nuys Blvd & Victory Blvd	35.2	D	20.7	C	41.6	D	18.4	B	6.4	-2.3	**Yes**
53	Van Nuys Blvd & Friar St	1.6	A	3.2	A	2.2	A	4.2	A	0.6	1.0	No
54	Van Nuys Blvd & Sylvan St	3.8	A	4.7	A	5.2	A	6.1	A	1.4	1.4	No
55	Van Nuys Blvd & Erwin St	2.0	A	1.5	A	2.7	A	2.2	A	0.7	0.7	No
56	Van Nuys Blvd & Delano St	3.4	A	4.3	A	4.5	A	5.7	A	1.1	1.4	No
57	Van Nuys Blvd & Calvert St	3.8	A	4.1	A	4.1	A	7.0	A	0.3	2.9	No
58	Van Nuys Blvd & Metro Orange Line Busway	1.0	A	0.9	A	1.3	A	1.3	A	0.3	0.4	No
59	Van Nuys Blvd & Aetna St	2.7	A	6.0	A	4.2	A	3.2	A	1.5	-2.8	No
60	Van Nuys Blvd & Oxnard St	45.9	D	55.5	E	81.4	F	57.3	E	35.5	1.8	**Yes**
61	Van Nuys Blvd & Hatteras St	2.3	A	3.5	A	6.7	A	6.1	A	4.4	2.6	No
62	Van Nuys Blvd & Burbank Blvd	>100	F	>100	F	>100	F	98.5	F	-	-	No
63	Van Nuys Blvd & Clark St	17.4	B	3.6	A	15.8	B	3.5	A	-1.6	-0.1	No
64	Van Nuys Blvd & Magnolia Blvd	58.4	E	80.9	F	52.0	D	68.1	E	-6.4	-12.8	No
65	Van Nuys Blvd & Addison St	5.3	A	14.7	B	5.5	A	13.0	B	0.2	-1.7	No
66	Van Nuys Blvd & Huston St	10.8	B	9.7	A	10.4	B	9.7	A	-0.4	0.0	No
67	Van Nuys Blvd & Riverside Dr	17.0	B	42.0	D	17.2	B	32.4	C	0.2	-9.6	No
68	Van Nuys Blvd & WB 101 On-Off Ramps	22.1	C	24.5	C	21.8	C	24.7	C	-0.3	0.2	No
69	Van Nuys Blvd & EB 101 On-Off Ramps	20.6	C	26.3	C	18.2	B	27.9	C	-2.4	1.6	No
70	Van Nuys Blvd & Hortense St	4.0	A	6.5	A	4.0	A	6.5	A	0.0	0.0	No
71	Van Nuys Blvd & Milbank St	3.8	A	6.9	A	3.8	A	6.9	A	0.0	0.0	No
72	Van Nuys Blvd & Moorpark St	21.2	C	39.1	D	21.3	C	39.1	D	0.1	0.0	No
73	Van Nuys Blvd & Ventura Blvd	29.0	C	41.0	D	29.2	C	41.0	D	0.2	0.0	No

Source: LADOT, KOA, 2014

Figure 4-6: Alternative 1– Study Area AM/PM LOS Map



, 2014

Figure 4-7: Alternative 1– Study Area AM/PM LOS (#1-23)

, 2014

Figure 4-8: Alternative 1 – Study Area AM/PM LOS (#24-40)

, 2014

Figure 4-9: Alternative 1 – Study Area AM/PM LOS (#41-60)

, 2014

Figure 4-10: Alternative 1 – Study Area AM/PM LOS (#61-73)

, 2014

Operational Impacts – Roadway Speeds

For Alternative 1, this data is summarized in two tables based on travel direction:

- Table 4-5: Data for San Fernando Road eastbound and Van Nuys Boulevard southbound directions of travel, AM conditions, which are the AM peak direction for these two streets
- Table 4-6: Data for Van Nuys Boulevard northbound and San Fernando Road westbound directions of travel, PM conditions, which are the PM peak direction for these two streets

Table 4-5: Estimated Roadway Vehicle Speeds – Alternative 1 – Van Nuys Southbound / San Fernando Eastbound (AM Peak Directional Conditions)

From	To	No Build AM Peak		Alt1 AM Peak		Change, AM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Sylmar Station	Fox	16.69	75.14	16.87	73.90	0.18	-1.24
Fox	Van Nuys	25.45	60.34	25.20	60.94	-0.25	0.60
Foothill	Glenoaks	34.19	72.65	34.13	72.78	-0.06	0.13
Glenoaks	San Fernando	31.50	91.43	31.52	91.37	0.02	-0.06
San Fernando	Arleta	22.71	48.23	22.74	48.19	0.03	-0.03
Arleta	Plummer	19.80	92.50	20.30	90.32	0.50	-2.18
Plummer	Chase	20.18	57.85	21.01	55.08	0.84	-2.77
Chase	Metrolink	14.24	90.10	12.67	101.71	-1.57	11.61
Metrolink	Vanowen	22.65	80.97	23.50	80.87	0.85	-0.10
Vanowen	MOL	25.15	49.39	22.95	53.65	-2.20	4.26
MOL	Magnolia	26.92	32.22	28.00	30.95	1.08	-1.28
Magnolia	Ventura	25.86	32.81	26.55	31.97	0.70	-0.84

Table 4-5 indicates that a.m. peak hour congested speeds for southbound Van Nuys Boulevard and eastbound San Fernando Road would range from approximately 12 miles per hour to 34 miles an hour. The posted speed limit on most segments is 35 mph. At 12 miles per hour motorists are traveling at a congested speed of approximately 34-37 percent of the speed limit. The congested travel time in the a.m. peak hour would range from approximately 30 seconds to 101 seconds per segment.

For most corridor segments, the change in congested speed would range from a two mph decrease to a one mph increase. The changes in congested time would range from a two second decrease to an 10 second increase.

Table 4-6: Estimated Roadway Vehicle Speeds – Alternative 1 – Van Nuys Northbound / San Fernando Westbound (PM Peak Direction)

From	To	No Build PM Peak		Alt1 PM Peak		Change, PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Ventura	Magnolia	27.59	31.12	27.86	30.87	0.26	-0.25
Magnolia	MOL	30.88	28.06	31.55	27.46	0.67	-0.60
MOL	Vanowen	29.70	41.63	28.53	43.11	-1.17	1.49
Vanowen	Metrolink	27.79	65.50	27.71	65.97	-0.08	0.47
Metrolink	Chase	20.55	62.36	17.80	72.37	-2.74	10.01
Chase	Plummer	24.25	48.05	25.02	46.46	0.77	-1.59
Plummer	Arleta	22.76	80.63	23.65	78.06	0.89	-2.57
Arleta	San Fernando	29.25	37.86	29.37	37.76	0.12	-0.10
San Fernando	Glenoaks	34.55	83.36	34.52	83.42	-0.03	0.06
Glenoaks	Foothill	34.70	71.59	34.65	71.69	-0.05	0.10
Van Nuys	Fox	28.09	54.75	28.10	54.21	0.01	-0.53
Fox	Sylmar Station	24.21	45.10	24.18	45.13	-0.03	0.03

Table 4-6 indicates that p.m. peak hour congested speeds for these roadway travel directions under this scenario would range from approximately 17 miles per hour to 34 miles an hour. Congested time in the p.m. peak hour would range from approximately 27 seconds to 83 seconds per segment.

For most corridor segments, the change in congested speed would range from a two mph decrease to a one mph increase. The changes in congested time would range from a two second decrease to an 11 second increase.

Overall Travel Time within the Van Nuys Boulevard Corridor

Overall passenger and transit vehicle speeds were derived from the Metro Model. As shown in the table below, under the curb-running BRT alternative, the maximum passenger vehicle travel time increases from the no-build alternative to just over 28 minutes. However, the maximum transit vehicle travel time decreases to just over 32 minutes, a time savings of three minutes, when compared to the no-build scenario.

Mode	Peak Travel Time (min.)
Passenger Vehicle	28.3
Transit Vehicle	32.2

Construction Impacts

Construction of the Alternative 1 would not significantly impact vehicle travel, based on the estimated duration and magnitude of construction for pavement reconstruction, roadway striping of the bus lane, modifications to roadway signage, and installation of new bus stop infrastructure such as shelters and seating.

The duration of construction within each work zone along the Project corridor is estimated to be less than two weeks for roadway striping, paving, and signing/striping of the bus lanes.

4.3.3 Parking

Operational Impacts

The Van Nuys Boulevard corridor on-street parking supply, from Oxnard Street to San Fernando Road, totals 1,140 vehicle parking spaces. An additional 4,611 on-street spaces are provided on adjacent blocks to the east and west of the corridor.

Under Alternative 1, all on-street parking spaces along Van Nuys Boulevard would be removed to accommodate the transit improvements along the Van Nuys Boulevard corridor. During the late evening and early morning hours, however, the parking prohibition would not apply. On-street parking would be available at those times and the BRT would operate in mixed-flow traffic.

No off-street parking spaces would be removed. No on-street parking on San Fernando Road or Truman Street would be removed.

The Van Nuys Boulevard corridor currently has a weekday peak parking demand of 481 on-street spaces and a Saturday peak parking demand of 589 on-street spaces.

The majority of the parking analysis zones (PAZs), used to define blocks of parking areas for analysis purposes, within the Van Nuys Boulevard parking study area would be able to accommodate the on-street parking demand on Van Nuys Boulevard with the removal of the on-street spaces. However, there are several PAZs that cannot accommodate the additional Van Nuys Boulevard on-street parking demand. There is a shortfall of on-street parking spaces at 11 PAZs on a weekday and 14 PAZs on the weekend. Some of the off-street parking facilities within these PAZs have available parking spaces to accommodate the shortfall of on-street parking spaces.

A parking analysis of PAZs adjacent to the locations with a supply shortfall with the proposed Project was conducted to determine if available on-street and off-street parking supplies within these PAZs would accommodate the additional Van Nuys Boulevard on-street parking demand.

As shown in Table 4-7, the corridor PAZs would be able to accommodate the Van Nuys Boulevard weekday and weekend on-street parking demand within the available on-street spaces and/or off-street parking areas.

Some blocks on either side of Van Nuys Boulevard could encounter localized parking shortfalls at different times of the day during weekdays and/or weekends. In addition there will be instances when deliveries to businesses without off-street truck loading bays or other on-site loading/delivery facilities may have to use other off-street parking facilities, or park on an adjacent street, or in the alleyway behind the property. While this is an inconvenient it does not constitute a significant impact.

A graphical representation of the deficit/supply analysis and adjacent PAZs is illustrated on Figure 4-11 for weekday conditions and on Figure 4-12 for weekend conditions.

The detailed parking analysis tables for this alternative are provided in Appendix F1.

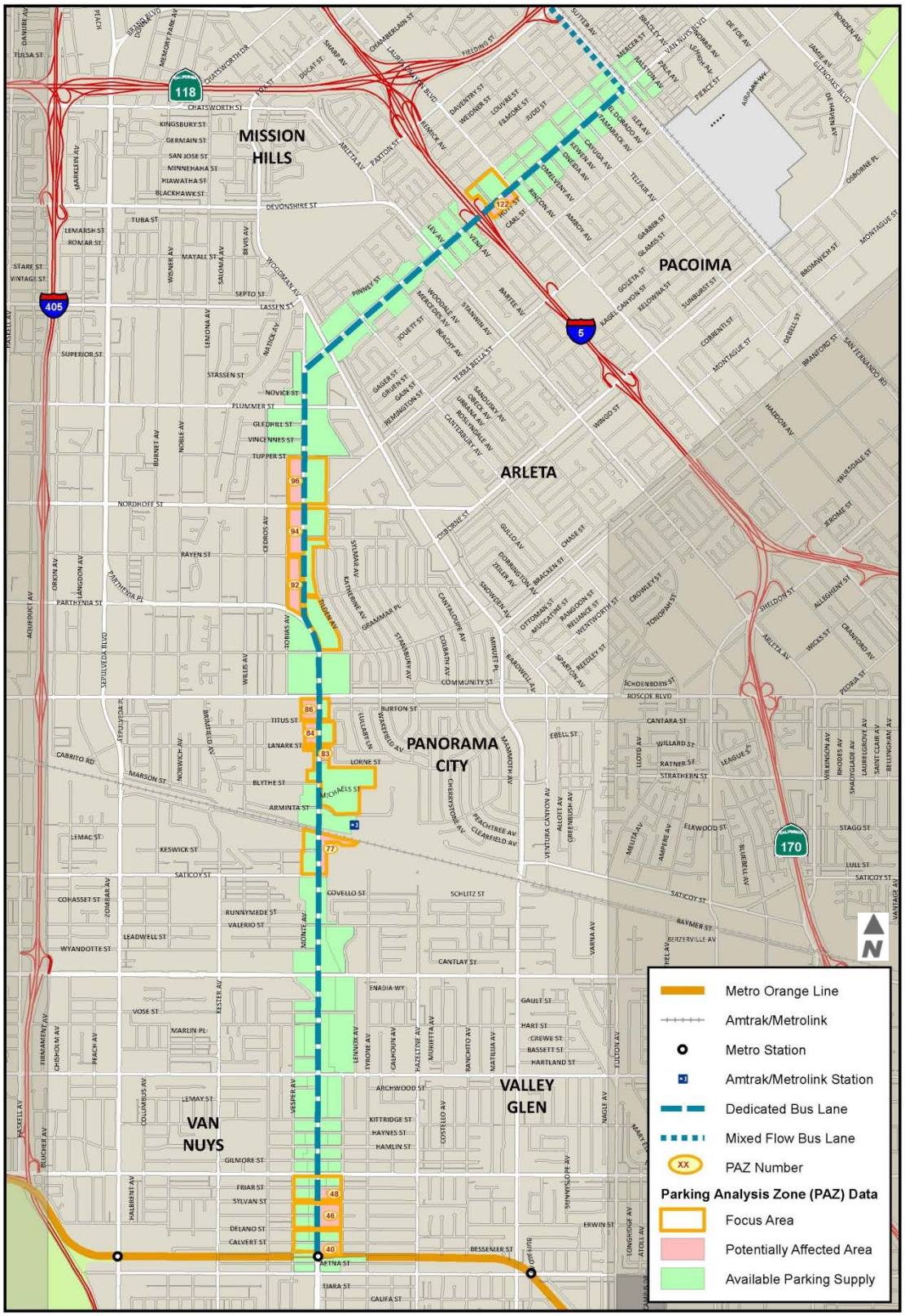
Table 4-7: Alternative 1 - Parking Shortfall and Surplus

PAZ	Alternative 1			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
35	no	n/a	no	n/a
36	no	n/a	no	n/a
37	no	n/a	no	n/a
38	no	n/a	no	n/a
39	no	n/a	no	n/a
40	YES	YES	no	n/a
41	no	n/a	no	n/a
42	no	n/a	no	n/a
43	no	n/a	no	n/a
44	no	n/a	no	n/a
45	no	n/a	no	n/a
46	YES	YES	no	n/a
47	no	n/a	no	n/a
48	YES	YES	no	n/a
49	no	n/a	no	n/a
50	no	n/a	no	n/a
51	no	n/a	no	n/a
52	no	n/a	no	n/a
53	no	n/a	no	n/a
54	no	n/a	no	n/a
55	no	n/a	no	n/a
56	no	n/a	no	n/a
57	no	n/a	no	n/a
58	no	n/a	no	n/a
59	no	n/a	no	n/a
60	no	n/a	no	n/a
61	no	n/a	no	n/a
62	no	n/a	no	n/a
63	no	n/a	no	n/a
64	no	n/a	no	n/a
65	no	n/a	no	n/a
66	no	n/a	no	n/a
67	no	n/a	no	n/a
68	no	n/a	no	n/a
69	no	n/a	no	n/a
70	no	n/a	no	n/a
71	no	n/a	no	n/a
72	no	n/a	no	n/a
73	no	n/a	no	n/a
74	no	n/a	no	n/a
75	no	n/a	no	n/a
76	no	n/a	no	n/a
77	YES	YES	YES	YES
78	no	n/a	no	n/a
79	no	n/a	no	n/a
80	no	n/a	no	n/a
81	no	n/a	no	n/a
82	no	n/a	no	n/a
83	YES	YES	YES	YES
84	YES	YES	no	n/a
85	no	n/a	no	n/a
86	YES	YES	no	n/a
87	no	n/a	no	n/a
88	no	n/a	no	n/a
89	no	n/a	no	n/a
90	no	n/a	no	n/a
91	no	n/a	no	n/a
92	YES	YES	YES	YES
93	no	n/a	YES	YES

PAZ	Alternative 1			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
94	YES	YES	YES	YES
95	no	n/a	no	n/a
96	YES	YES	YES	YES
97	no	n/a	no	n/a
98	no	n/a	no	n/a
99	no	n/a	no	n/a
100	no	n/a	no	n/a
101	no	n/a	YES	YES
102	no	n/a	YES	YES
103	no	n/a	YES	YES
104	no	n/a	no	n/a
105	no	n/a	no	n/a
106	no	n/a	no	n/a
107	no	n/a	no	n/a
108	no	n/a	no	n/a
109	no	n/a	no	n/a
110	no	n/a	YES	YES
111	no	n/a	no	n/a
112	no	n/a	no	n/a
113	no	n/a	no	n/a
114	no	n/a	YES	YES
115	no	n/a	no	n/a
116	no	n/a	no	n/a
117	no	n/a	no	n/a
118	no	n/a	no	n/a
119	no	n/a	no	n/a
120	no	n/a	no	n/a
121	no	n/a	no	n/a
122	YES	YES	YES	YES
123	no	n/a	no	n/a
124	no	n/a	no	n/a
125	no	n/a	no	n/a
126	no	n/a	no	n/a
127	no	n/a	no	n/a
128	no	n/a	no	n/a
129	no	n/a	no	n/a
130	no	n/a	no	n/a
131	no	n/a	no	n/a
132	no	n/a	no	n/a
133	no	n/a	no	n/a
134	no	n/a	no	n/a
135	no	n/a	no	n/a
136	no	n/a	no	n/a
137	no	n/a	no	n/a
138	no	n/a	no	n/a
139	no	n/a	no	n/a
140	no	n/a	YES	YES
141	no	n/a	no	n/a
142	no	n/a	no	n/a
143	no	n/a	no	n/a
144	no	n/a	no	n/a
145	no	n/a	no	n/a
146	no	n/a	no	n/a
147	no	n/a	no	n/a
148	no	n/a	YES	YES
149	no	n/a	no	n/a
150	no	n/a	no	n/a
151	no	n/a	no	n/a

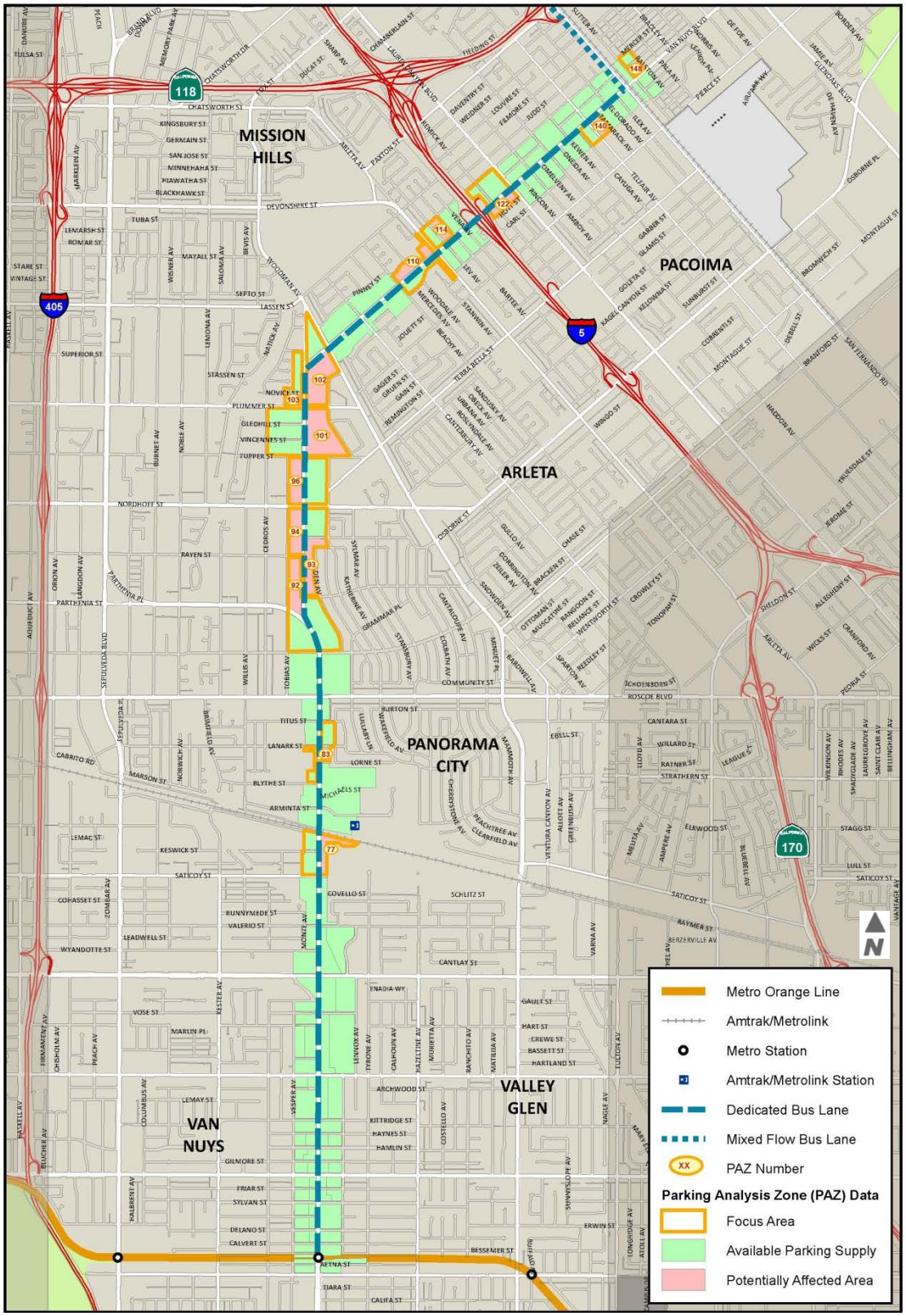
Source: KOA, 2014

Figure 4-11: Alternative 1 - Weekday Potentially Impacted Parking Analysis Zone



Source: KOA, 2013

Figure 4-12: Alternative 1 - Weekend Potentially Impacted Parking Analysis Zone



Source: KOA, 2013

Construction Impacts

At the start of construction within each work area, on-street parking areas would be removed for Project-related roadway signing and striping activities, and the installation of bus stop infrastructure including shelters and seating.

4.3.4 Pedestrian and Bicycle Facilities

Operational Impacts

Existing and planned pedestrian and bicycle facilities would be affected. This alternative would have conflicts with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard under the "Backbone Bikeway Network" would not be feasible. Instead, bicyclists would have to share the proposed curb-lane with buses during the peak-period, under Alternative 1. Within the Pacoima area, some of the striped on-street bicycle lanes called for in the Bicycle Plan have been implemented. These facilities would be removed as part of Project implementation, but bicyclilsts would be able to share the curb lane. This would therefore not create significant bicycle access impacts.

The Bicycle Plan also calls for parallel bicycle lanes on parallel streets such as Woodman Avenue (one-mile to the east of Van Nuys Boulevard) between Ventura Boulevard and the Osborne Street and Nordhoff Street corridors, and Osborne Street from that point to San Fernando Road.

Van Nuys Boulevard corridor is also, however, designated as a Transit Priority Segment within the City of Los Angeles General Plan Framework Element. This creates a conflict between the General Plan and the Bicycle Plan.

Existing pedestrian crossing points at intersections would not be affected by this alternative. There would not be significant impacts to pedestrian access.

Construction Impacts

Existing and planned pedestrian and bicycle facilities would be affected during construction activities for the implementation of this alternative. Closure of these facilities, and establishment of detours to parallel routes, would be implemented as part of traffic control plans to be approved by the City of Los Angeles. Pedestrian routes would be lengthened where minor intersections would be closed as part of construction. Pedestrian detour routes would be provided, but the increased walk distances would not be reduced.

4.4 BRT Alternative – Alternative 2 (Median-Running BRT)

Alternative 2 incorporates a median dedicated busway in addition to bus service improvements for Rapid Line 761X and Local Line 233.

4.4.1 Transit

Operational Impacts

Under Alternative 2, Rapid Line 761X would have 17 new or upgraded bus stops, while Local Line 233 would retain the current local bus stop locations. There would be enhancements to bus service

through increased bus frequencies. The bus headways would be improved similar Alternative 1 (Curb-Running BRT), and are as follows:

- Rapid Line 761X – Four minute-peak headway improvement (six minutes versus 10 minutes); five-and-a-half minute off-peak headway improvement (12 minutes versus 17.5 minutes);
- Local Line 233 – Four-minute peak headway improvement (eight minutes versus 12 minutes); four minute off-peak headway improvement (16 minutes versus 20 minutes).

Local transit speeds for services operating in mixed-flow lanes may decrease because of the proposed traffic lane reductions along the Project corridors and the resulting increases in traffic congestion, where the BRT fixed guideway and station locations would create travel lane reductions. This alternative, however, would result in an increase of 2,969 daily transit trips between the MOL and the Sylmar/San Fernando Metrolink Station, as compared to future no-build/baseline conditions. Transit speeds for Project Build Alternative 2 should increase over local transit services with the provision of dedicated lanes for the service.

Construction Impacts

Some curb lane closures within small work areas will be necessary to implement the improvements, and bus stops would need to be temporarily closed, and temporary bus stops outside of the work areas would be provided under the traffic management plan, or the nearest bus stops would serve patrons of the temporarily closed stop(s).

The duration of construction is estimated to take up to 24 months.

Construction activities could result in temporary lane or street closures, which would increase congestion along the project corridor and increase travel times for buses and other motor vehicles. Due to the magnitude of construction and length of time required to construct the BRT lanes, median stations, and traffic signal modifications, the construction impacts on transit would be adverse under NEPA and significant under CEQA.

4.4.2 Traffic

Operational Impacts

Under Alternative 2, 21 of the 73 study intersections would operate at LOS E or F during either one or both of the weekday peak hours. Operations at the following intersections during the separately analyzed peak hours would worsen to or within poor conditions, versus No-Build conditions.

- LOS at 14 study intersections would worsen to/within LOS E or F during the a.m. peak hour
- LOS at 21 study intersections would worsen to/within LOS E or F during the p.m. peak hour

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 4-4 summarizes the a.m. and p.m. peak hour LOS values for this alternative at the study intersections. Significant traffic impacts would occur at 24 study intersections on Truman Street, San Fernando Road, and Van Nuys Boulevard.

Table 4-8 provides a summary of LOS values and significant impact calculations for the entire Project corridor for this scenario. Figures 4-13 illustrates these values within the overall study area, and Figures 4-14 to 4-17 provide close-in illustrations of these values for four individual sectors of the study area. sa AM/PM LOS (#41-60)

Source: LADOT, KOA, 2014

Figure 4-13: Alternative 2 – Study Area AM/PM LOS (#61-73)

Source: LADOT, KOA, 2014

Operational Impacts – Roadway Speeds

For Alternative 2, this data is summarized in two tables based on travel direction:

- Table 4-9: Data for San Fernando Road eastbound and Van Nuys Boulevard southbound directions of travel, which are the AM peak directions of travel for these two streets
- Table 4-10: Data for Van Nuys Boulevard northbound and San Fernando Road westbound directions of travel, which are the PM peak directions of travel for these two streets

Table 4-8: Estimated Roadway Vehicle Speeds – Alternative 2 – Van Nuys Southbound / San Fernando Eastbound (AM Peak Directional Conditions)

From	To	No Build AM Peak		Alt2 AM Peak		Change, AM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Sylmar Station	Fox	16.69	75.14	16.63	74.51	-0.05	-0.63
Fox	Van Nuys	25.45	60.34	25.94	59.74	0.50	-0.61
Foothill	Glenoaks	34.19	72.65	34.24	72.55	0.05	-0.10
Glenoaks	San Fernando	31.50	91.43	31.42	91.67	-0.08	0.23
San Fernando	Arleta	22.71	48.23	22.80	47.99	0.09	-0.23
Arleta	Plummer	19.80	92.50	20.28	90.43	0.48	-2.07
Plummer	Chase	20.18	57.85	21.10	54.85	0.93	-3.00
Chase	Metrolink	14.24	90.10	12.76	100.93	-1.47	10.83
Metrolink	Vanowen	22.65	80.97	22.04	83.59	-0.60	2.62
Vanowen	MOL	25.15	49.39	23.39	52.34	-1.76	2.95
MOL	Magnolia	26.92	32.22	28.26	30.66	1.34	-1.57
Magnolia	Ventura	25.86	32.81	26.61	31.94	0.76	-0.87

Table 4-9 indicates that a.m. peak hour congested speeds for southbound Van Nuys Boulevard and eastbound San Fernando Road, under the Alternative 2 scenario, would range from approximately 12 miles per hour to 34 miles an hour. Congested time in the a.m. peak hour would range from approximately 30 seconds to 100 seconds per segment.

For most corridor segments, the changes in congested speed would range from a two mph decrease to a one mph increase. The changes in congested time would range from a two second decrease to an 11 second increase.

Table 4-9: Estimated Roadway Vehicle Speeds – Alternative 2 – Van Nuys Northbound / San Fernando Westbound (PM Peak Direction)

From	To	No Build PM Peak		Alt2 PM Peak		Change, PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Ventura	Magnolia	27.59	31.12	27.89	30.85	0.30	-0.27
Magnolia	MOL	30.88	28.06	31.60	27.41	0.72	-0.64
MOL	Vanowen	29.70	41.63	28.65	42.90	-1.06	1.28
Vanowen	Metrolink	27.79	65.50	27.24	66.91	-0.55	1.41
Metrolink	Chase	20.55	62.36	17.85	72.17	-2.70	9.80
Chase	Plummer	24.25	48.05	25.03	46.44	0.78	-1.61
Plummer	Arleta	22.76	80.63	23.67	78.00	0.91	-2.63
Arleta	San Fernando	29.25	37.86	29.30	37.75	0.05	-0.11
San Fernando	Glenoaks	34.55	83.36	34.53	83.40	-0.02	0.04
Glenoaks	Foothill	34.70	71.59	34.68	71.62	-0.02	0.03
Van Nuys	Fox	28.09	54.75	27.91	54.62	-0.18	-0.13
Fox	Sylmar Station	24.21	45.10	23.52	47.43	-0.69	2.33

Table 4-10 indicates that p.m. peak hour congested speeds for these roadway travel directions under this scenario would range from approximately 17 miles per hour to 34 miles an hour. Congested time in the p.m. peak hour would range from approximately 27 seconds to 83 seconds per segment.

For most corridor segments, the changes in congested speed would range from a three mph decrease to a one mph increase. The changes in congested time would range from a three second decrease to a 10 second increase.

Overall Travel Time within the Van Nuys Boulevard Corridor

Overall passenger and transit vehicle speeds were derived from the Metro Model. As shown in the table below, under the median-running BRT alternative, the maximum passenger vehicle travel time increases from the no-build alternative to just over 29 minutes. However, the maximum transit vehicle travel time decreases to just over 29 minutes, a time savings of approximately six minutes, when compared to the no-build scenario. The values match due to final estimated speeds being relatively equal, but the relative changes in speeds due to implementation of this alternative would make vehicle travel slower but transit travel faster.

Mode	Peak Travel Time (min.)
Passenger Vehicle	29.2
Transit Vehicle	29.2

Construction Impacts

Construction of Alternative 2 would significantly impact vehicle travel, based on the estimated duration and magnitude of construction for the median BRT lanes and platforms.

The duration of construction along the Project corridor is estimated to be approximately 24 months.

4.4.3 Parking

Operational Impacts

Under Alternative 2, all 1,140 on-street parking spaces would be removed to accommodate the transit improvements along the Van Nuys Boulevard corridor. No off-street parking spaces would be removed under this build alternative. No on-street parking on San Fernando Road or Truman Street would be affected.

Specific areas along the Van Nuys Boulevard corridor that may encounter parking shortfalls and access issues during the weekday and/or weekend would be similar to Alternative 1. As shown in Appendix G, the adjacent PAZs would be able to accommodate the Van Nuys Boulevard weekday and weekend on-street parking demand within the available on-street spaces and/or off-street parking areas. Therefore, similar to Alternative 1, parking impacts would be minor adverse under NEPA and less than significant under CEQA.

There may be access issues for delivery trucks for smaller businesses (those without truck loading bays or other on-site loading/delivery facilities) since they would not be able to dwell within the roadway during operations. Consequently, they would either have to use off-street parking facilities, or parking on an adjacent street, or alleyways behind the property. This does not constitute a significant impact.

Table 4-10: Alternative 2 Parking Shortfall and Surplus

PAZ	Alternative 2			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
35	no	n/a	no	n/a
36	no	n/a	no	n/a
37	no	n/a	no	n/a
38	no	n/a	no	n/a
39	no	n/a	no	n/a
40	YES	YES	no	n/a
41	no	n/a	no	n/a
42	no	n/a	no	n/a
43	no	n/a	no	n/a
44	no	n/a	no	n/a
45	no	n/a	no	n/a
46	YES	YES	no	n/a
47	no	n/a	no	n/a
48	YES	YES	no	n/a
49	no	n/a	no	n/a
50	no	n/a	no	n/a
51	no	n/a	no	n/a
52	no	n/a	no	n/a
53	no	n/a	no	n/a
54	no	n/a	no	n/a
55	no	n/a	no	n/a
56	no	n/a	no	n/a
57	no	n/a	no	n/a
58	no	n/a	no	n/a
59	no	n/a	no	n/a
60	no	n/a	no	n/a
61	no	n/a	no	n/a
62	no	n/a	no	n/a
63	no	n/a	no	n/a
64	no	n/a	no	n/a
65	no	n/a	no	n/a
66	no	n/a	no	n/a
67	no	n/a	no	n/a
68	no	n/a	no	n/a
69	no	n/a	no	n/a
70	no	n/a	no	n/a
71	no	n/a	no	n/a
72	no	n/a	no	n/a
73	no	n/a	no	n/a
74	no	n/a	no	n/a
75	no	n/a	no	n/a
76	no	n/a	no	n/a
77	YES	YES	YES	YES
78	no	n/a	no	n/a
79	no	n/a	no	n/a
80	no	n/a	no	n/a
81	no	n/a	no	n/a
82	no	n/a	no	n/a
83	YES	YES	YES	YES
84	YES	YES	no	n/a
85	no	n/a	no	n/a
86	YES	YES	no	n/a
87	no	n/a	no	n/a
88	no	n/a	no	n/a
89	no	n/a	no	n/a
90	no	n/a	no	n/a
91	no	n/a	no	n/a
92	YES	YES	YES	YES
93	no	n/a	YES	YES

PAZ	Alternative 2			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
94	YES	YES	YES	YES
95	no	n/a	no	n/a
96	YES	YES	YES	YES
97	no	n/a	no	n/a
98	no	n/a	no	n/a
99	no	n/a	no	n/a
100	no	n/a	no	n/a
101	no	n/a	YES	YES
102	no	n/a	YES	YES
103	no	n/a	YES	YES
104	no	n/a	no	n/a
105	no	n/a	no	n/a
106	no	n/a	no	n/a
107	no	n/a	no	n/a
108	no	n/a	no	n/a
109	no	n/a	no	n/a
110	no	n/a	YES	YES
111	no	n/a	no	n/a
112	no	n/a	no	n/a
113	no	n/a	no	n/a
114	no	n/a	YES	YES
115	no	n/a	no	n/a
116	no	n/a	no	n/a
117	no	n/a	no	n/a
118	no	n/a	no	n/a
119	no	n/a	no	n/a
120	no	n/a	no	n/a
121	no	n/a	no	n/a
122	YES	YES	YES	YES
123	no	n/a	no	n/a
124	no	n/a	no	n/a
125	no	n/a	no	n/a
126	no	n/a	no	n/a
127	no	n/a	no	n/a
128	no	n/a	no	n/a
129	no	n/a	no	n/a
130	no	n/a	no	n/a
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137	no	n/a	no	n/a
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139	no	n/a	no	n/a
140	no	n/a	YES	YES
141	no	n/a	no	n/a
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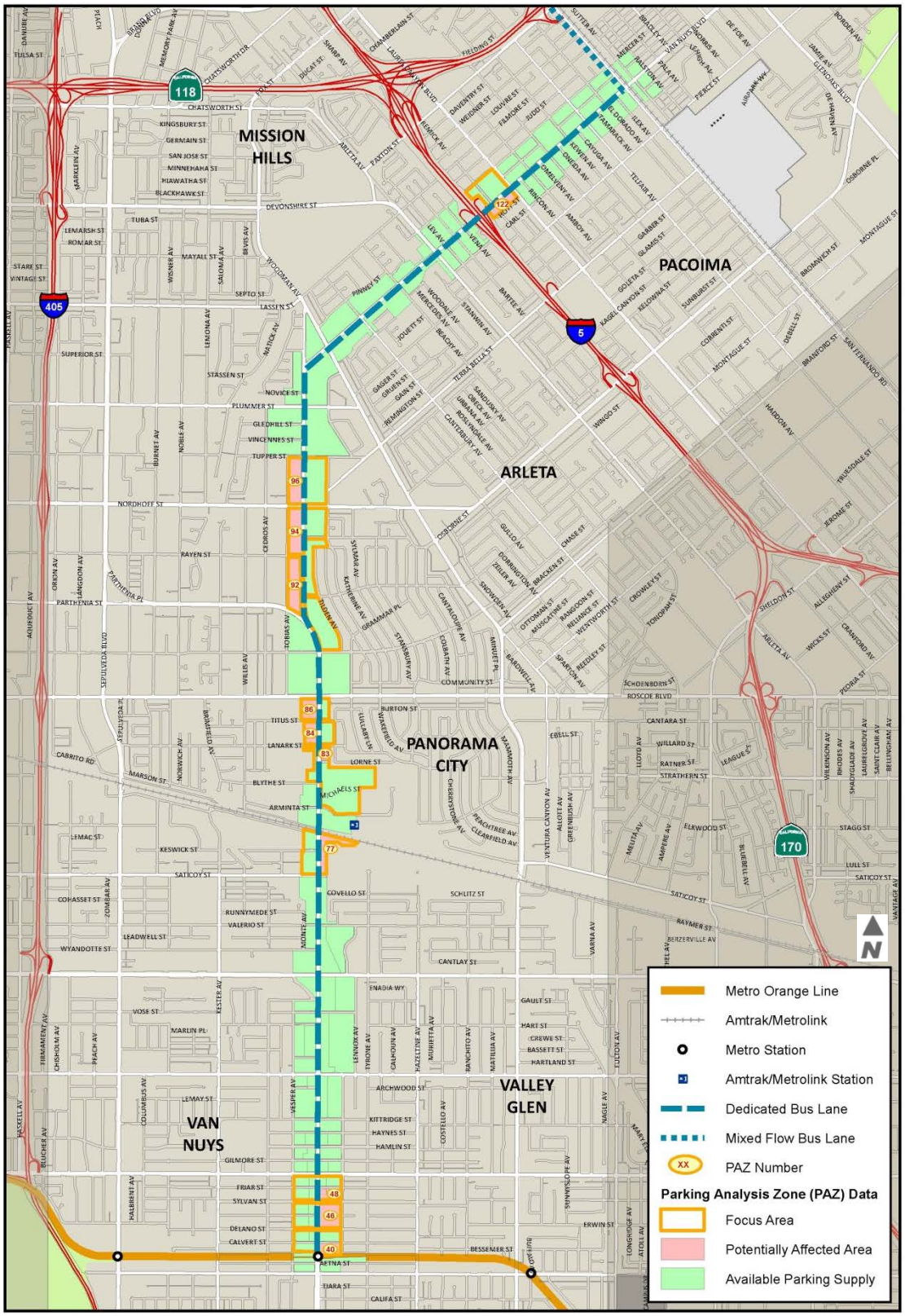
145	no	n/a	no	n/a
146	no	n/a	no	n/a
147	no	n/a	no	n/a
148	no	n/a	YES	YES
149	no	n/a	no	n/a
150	no	n/a	no	n/a
151	no	n/a	no	n/a

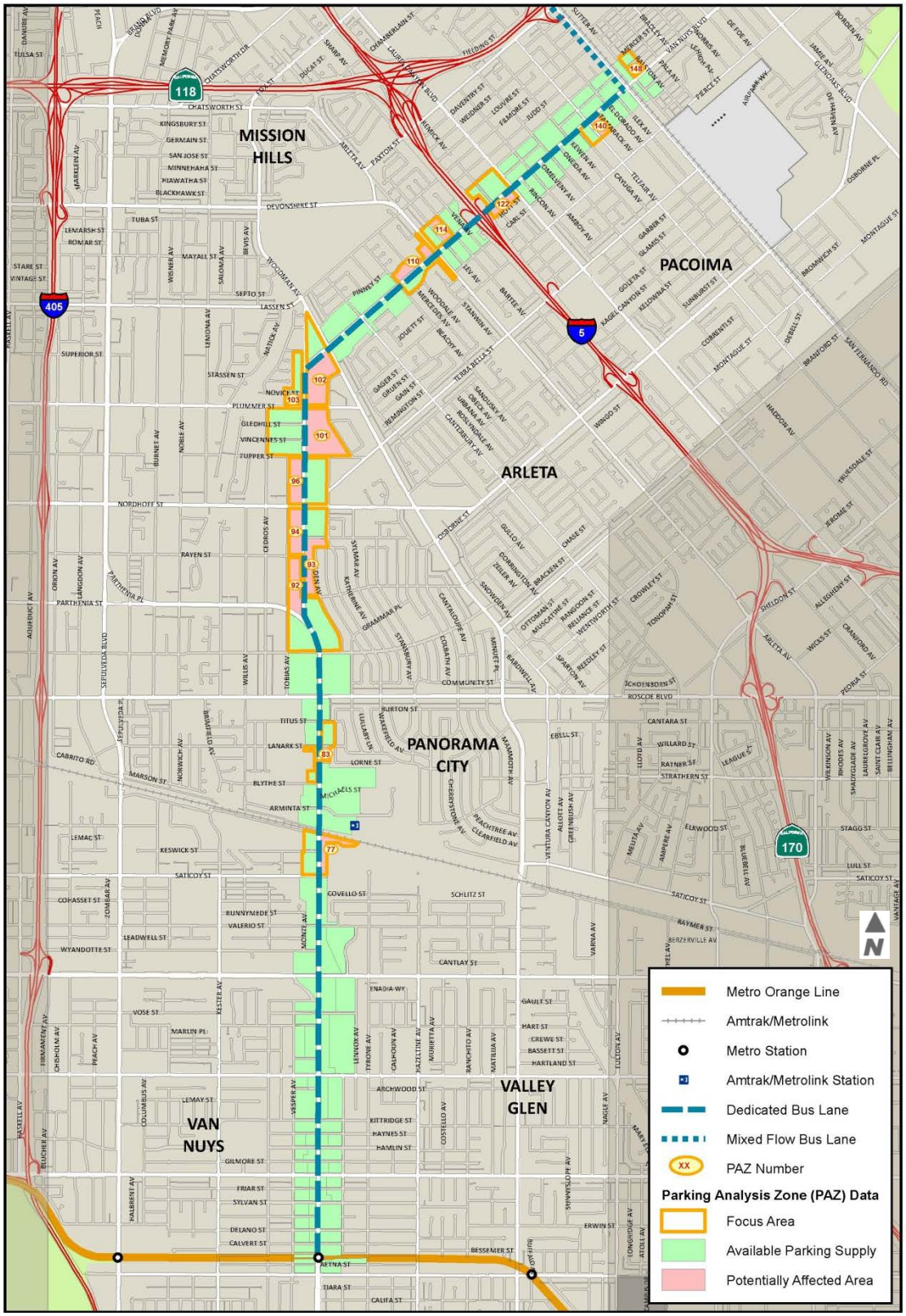
Source: KOA, 2013

Figure 4-14: Alternative 2 Weekday Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Figure 4-15: Alternative 2 Weekend Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Construction Impacts

On-street parking would be removed within work areas for this alternative. Parking prohibitions would be established per traffic control plans to be approved by LADOT.

4.4.4 Pedestrian and Bicycle Facilities

Operational Impacts

Existing and planned pedestrian and bicycle facilities along the corridor would be affected. This alternative would have conflicts with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard under the "Backbone Bikeway Network" would not be feasible due to right-of-way constraints. Within the Pacoima area, some of the striped on-street bicycle lanes called for in the Bicycle Plan have been implemented. These facilities would be removed as part of Project implementation. This would create a significant impact for bicycle access.

The Bicycle Plan also calls for parallel bicycle lane facilities on Woodman Avenue (one-mile to the east of Van Nuys Boulevard) between Ventura Boulevard and the Osborne Street and Nordhoff Street corridors, and Osborne Street from that point to San Fernando Road. These parallel facilities would provide an alternate corridor where bicyclists could access dedicated lanes. The project would not restrict bicyclists from traveling within the project corridor, however.

Van Nuys Boulevard corridor is also, however, designated as a Transit Priority Segment within the City of Los Angeles General Plan Framework Element. This creates a conflict between the General Plan and the Bicycle Plan.

Pedestrian routes would be lengthened where minor intersections would be permanently closed. Pedestrian crossing would be improved where they would remain with enhanced striping design (higher visibility markings) and other safety features as feasible, but the increased walk distances would not be reduced. Pedestrian access would continue to be provided, and therefore significant impacts to such access would not occur.

Construction Impacts

Existing and planned pedestrian and bicycle facilities would be affected during construction activities for the implementation of this alternative. Closure of these facilities, and establishment of detours to parallel routes, would be implemented as part of traffic control plans to be approved by LADOT.

4.5 Rail Alternative – Alternative 3 (Low-Floor LRT/Tram)

Alternative 3 analyzed under the existing plus Project scenario incorporates a median dedicated guideway and mixed-flow operations. Changes to bus service routes would occur.

4.5.1 Transit

Operational Impacts

Alternative 3 would include a total of 28 stations. Metro bus service would be eliminated along the length of the Van Nuys Boulevard portion of the Project alignment. Bus service would be provided

north of San Fernando Road on Van Nuys Boulevard via Local Line 233S, while Rapid Line 761S would operate south of the MOL to Westwood. The transit headways are as follows:

- The Low-Floor LRT/Tram would operate at four-minute peak headways and eight-minute off-peak headways;
- Rapid Line 761S – Six-minute peak headway and 12-minute off-peak headway;
- Local Line 233S – Eight-minute peak headway and 16-minute off-peak headway.

The modified local bus transit lines could remain operating as shorter routes at each end of the Project corridor, or could be restructured (combined with other existing Metro routes, or restructured into a new/combined local DASH route) with periodic new service implementation efforts by Metro.

The transit improvements proposed under Alternative 3 would result in an increase of 8,452 daily transit trips between the MOL and the Sylmar/San Fernando Metrolink Station, as compared to future No-Build/baseline conditions.

Construction Impacts

Construction of Alternative 3 would result in temporary adverse effects and significant impacts to transit operations, based on the estimated duration and magnitude of construction for utility relocation, roadway striping of the bus lane, modifications to roadway signage, and installation of new bus stop infrastructure such as shelters and seating.

The duration of construction is estimated to occur over a period of approximately four years.

4.5.2 Traffic

Operational Impacts

Under Alternative 3, 27 of the 73 study intersections would operate at LOS E or F during either one or both of the weekday peak hours. Operations at the following intersections would worsen to or within poor conditions, versus No-Build conditions, during the separately analyzed peak hours under this alternative:

- LOS at 26 study intersections would worsen to/within LOS E or F during the a.m. peak hour
- LOS at 26 study intersections would worsen to/within LOS E or F during the p.m. peak hour

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 4-4 summarizes the a.m. and p.m. peak hour LOS values for this alternative at the study intersections. Significant traffic impacts would occur at 32 study intersections on Truman Street, San Fernando Road, and Van Nuys Boulevard.

Table 4-12 provides a summary of LOS values and significant impact calculations for the entire Project corridor for this scenario. Figure 4-20 illustrates these values within the overall study area, and Figures 4-21 to 4-24 provide close-in illustrations of these values for four individual sectors of the study area.

Vehicle travel speeds may decrease because of the proposed traffic lane reductions along the Project corridors and the resulting increases in traffic congestion, where the fixed guideway and station locations would necessitate travel lane reductions. Benefits of reductions in VMT and increases in corridor passenger trips across the Project Build Alternatives are discussed in Section 4.10.

Under this alternative, the traffic signal on Van Nuys Boulevard and the Panorama Mall (between Chase Street and Roscoe Boulevard) would be removed. The turn movement would be removed for the proposed Low-Floor LRT/Tram dedicated median, and only through movement would be allowed at this intersection. Therefore, the intersection was not analyzed.

Left turn movements would be permitted at primary intersections and prohibited at secondary intersections due to the installation of the median fixed guideway. At minor intersections, only right turns in and out of the side street would be allowed. Therefore, motorists who desire to make a left-turn where it would be prohibited would need to go to a signalized left-turn lane and make a U-turn or seek an alternative route that would allow them to cross the alignment.

Table 4-11: Alternative 3 – Study Area AM/PM LOS

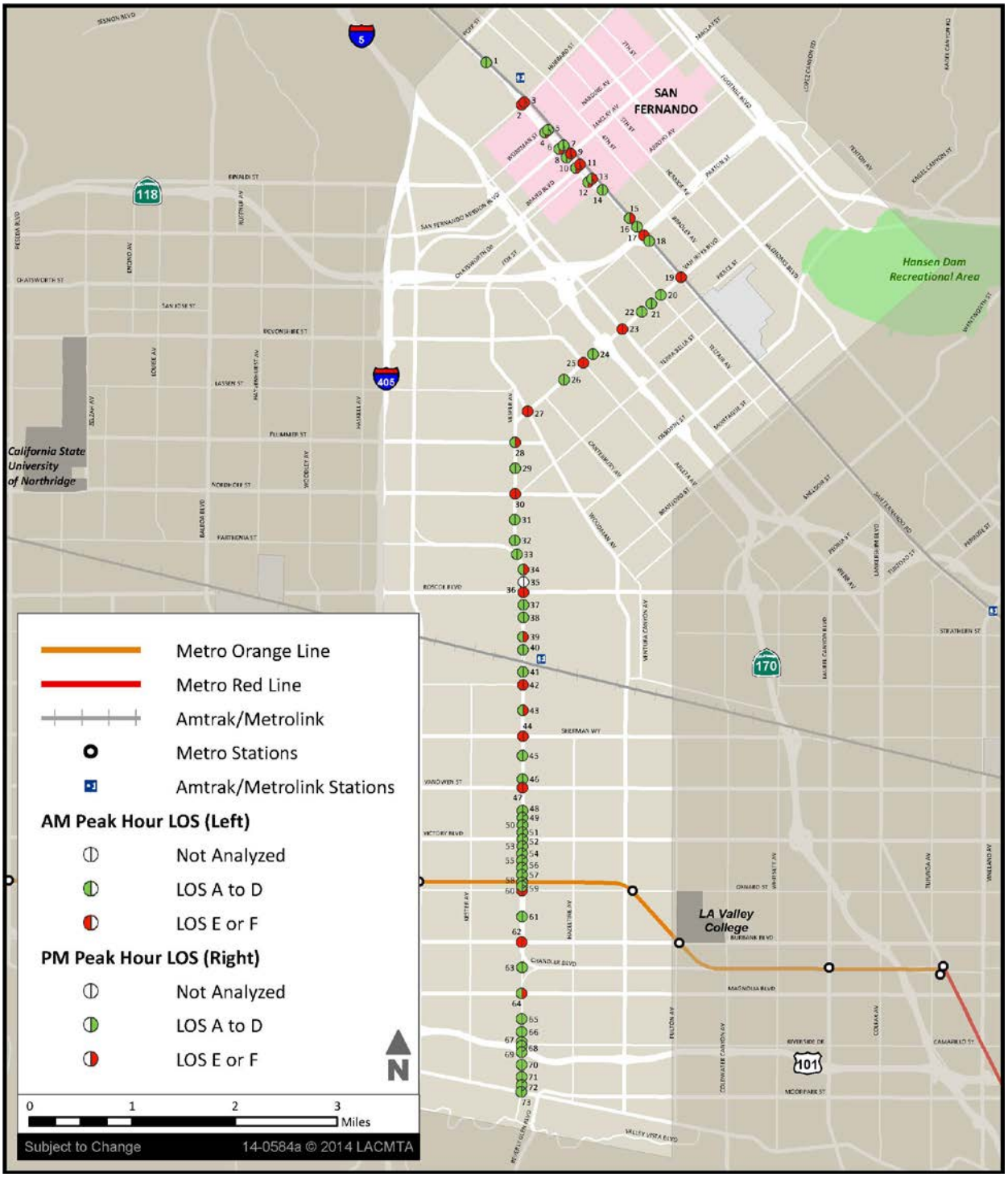
	Study Intersections	Future No Build				Future With Project (Alternative 3)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
1	San Fernando Rd & Astoria St	4.2	A	4.7	A	4.2	A	4.8	A	0.0	0.1	No
2	San Fernando Rd & Hubbard St	22.6	C	45.7	D	65.8	E	>100	F	43.2	-	**Yes**
3	Truman St & Hubbard St	45.3	D	72.2	E	63.0	E	>100	F	17.7	-	**Yes**
4	San Fernando Rd & Workman St	8.3	A	11.5	B	18.6	B	56.8	E	10.3	45.3	**Yes**
5	Truman St & Workman St	4.7	A	8.1	A	5.3	A	14.4	B	0.6	6.3	No
6	San Fernando Rd & San Fernando Mission Blvd	8.1	A	51.4	D	26.7	C	66.8	E	18.6	15.4	**Yes**
7	Truman St & San Fernando MissionBlvd	14.4	B	30.1	C	17.0	B	30.6	C	2.6	0.5	No
8	San Fernando Rd & Maclay Ave	12.6	B	19.9	B	7.1	A	10.1	B	-5.5	-9.8	No
9	Truman St & Maclay Ave	87.6	F	>100	F	88.6	F	>100	F	1.0	-	**Yes**
10	San Fernando Rd & Brand Blvd	13.5	B	34.8	C	13.1	B	59.4	E	-0.4	24.6	**Yes**
11	Truman St & Brand Blvd	>100	F	73.0	E	>100	F	>100	F	-	-	**Yes**
12	San Fernando Rd & Wolfskill St	8.0	A	8.2	A	9.7	A	>100	F	1.7	-	**Yes**
13	Truman St & Wolfskill St	36.4	D	26.2	C	36.0	D	59.4	E	-0.4	33.2	**Yes**
14	San Fernando Rd & Truman St	1.0	A	1.0	A	1.0	A	1.0	A	0.0	0.0	No
15	San Fernando Rd & Desmond St	31.1	C	>100	F	31.4	C	>100	F	0.3	-	No
16	San Fernando Rd & SR-118 WB on-off Ramps	35.4	D	42.3	D	37.4	D	42.1	D	2.0	-0.2	No
17	San Fernando Rd & Paxton St	99.7	F	76.6	E	>100	F	>100	F	-	-	**Yes**
18	San Fernando Rd & SR-118 EB on-off Ramps	47.3	D	27.0	C	52.1	D	25.7	C	4.8	-1.3	**Yes**
19	San Fernando Rd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
20	Telfair Ave & Van Nuys Blvd	11.6	B	12.3	B	12.3	B	15.8	B	0.7	3.5	No
21	Kewen Ave & Van Nuys Blvd	5.9	A	4.8	A	7.0	A	6.0	A	1.1	1.2	No
22	Haddon Ave & Van Nuys Blvd	8.0	A	14.6	B	7.6	A	17.0	B	-0.4	2.4	No
23	Laurel Canyon Blvd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
24	Bartee Ave & Van Nuys Blvd	17.1	B	11.7	B	17.7	B	8.0	A	0.6	-3.7	No
25	Arleta Ave & Van Nuys Blvd	65.2	E	75.1	E	87.3	F	91.6	F	22.1	16.5	**Yes**
26	Beachy Ave & Van Nuys Blvd	14.2	B	10.7	B	44.9	D	15.6	B	30.7	4.9	**Yes**
27	Woodman Ave & Van Nuys Blvd	40.0	D	50.3	D	56.6	E	81.5	F	16.6	31.2	**Yes**
28	Van Nuys Blvd & Plummer St	32.9	C	38.9	D	42.6	D	59.1	E	9.7	20.2	**Yes**
29	Van Nuys Blvd & Tupper St	7.5	A	3.5	A	11.1	B	4.0	A	3.6	0.5	No
30	Van Nuys Blvd & Nordhoff St	72.0	E	76.7	E	>100	F	>100	F	-	-	**Yes**
31	Van Nuys Blvd & Rayen St	6.1	A	17.5	B	8.8	A	42.8	D	2.7	25.3	**Yes**
32	Van Nuys Blvd & Parthenia St	11.9	B	11.9	B	5.5	A	7.3	A	-6.4	-4.6	No
33	Van Nuys Blvd & Parthenia St/Vesper Ave	25.4	C	49.4	D	19.6	B	29.5	C	-5.8	-19.9	No
34	Van Nuys Blvd & Chase St	23.7	C	72.2	E	35.7	D	>100	F	12.0	-	**Yes**
35	Van Nuys Blvd between Chase St & Roscoe Blvd *	3.3	A	11.9	B	-	-	-	-	-	-	-
36	Van Nuys Blvd & Roscoe Blvd	52.9	D	53.8	D	88.4	F	>100	F	35.5	-	**Yes**
37	Van Nuys Blvd & Titus St	11.9	B	11.4	B	13.3	B	13.4	B	1.4	2.0	No
38	Van Nuys Blvd & Lanark St	29.4	C	33.0	C	43.9	D	38.6	D	14.5	5.6	**Yes**
39	Van Nuys Blvd & Blythe St	18.6	B	20.1	C	54.6	D	71.1	E	36.0	51.0	**Yes**
40	Van Nuys Blvd & Arminta St	14.6	B	24.8	C	24.9	C	23.0	C	10.3	-1.8	**Yes**

Table 4-12: Alternative 3 – Study Area AM/PM LOS (continued)

	Study Intersections	Future No Build				Future With Project (Alternative 3)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
41	Van Nuys Blvd & Keswick St	21.6	C	24.5	C	16.7	B	42.9	D	-4.9	18.4	**Yes**
42	Van Nuys Blvd & Saticoy St	92.4	F	>100	F	>100	F	>100	F	-	-	**Yes**
43	Van Nuys Blvd & Valerio St	15.5	B	23.6	C	23.5	C	69.3	E	8.0	45.7	**Yes**
44	Van Nuys Blvd & Sherman Way	57.5	E	>100	F	88.2	F	>100	F	30.7	-	**Yes**
45	Van Nuys Blvd & Vose St	13.3	B	18.3	B	13.4	B	34.4	C	0.1	16.1	**Yes**
46	Van Nuys Blvd & Hartland St	1.2	A	4.0	A	1.5	A	2.9	A	0.3	-1.1	No
47	Van Nuys Blvd & Vanowen St	70.4	E	89.3	F	>100	F	>100	F	-	-	**Yes**
48	Van Nuys Blvd & Kittridge St	5.4	A	4.9	A	6.3	A	8.9	A	0.9	4.0	No
49	Van Nuys Blvd & Haynes St	4.4	A	3.5	A	5.6	A	4.8	A	1.2	1.3	No
50	Van Nuys Blvd & Hamlin St	4.1	A	2.7	A	5.2	A	3.9	A	1.1	1.2	No
51	Van Nuys Blvd & Gilmore St	3.1	A	2.9	A	4.1	A	3.9	A	1.0	1.0	No
52	Van Nuys Blvd & Victory Blvd	35.2	D	20.7	C	33.1	C	19.4	B	-2.1	-1.3	No
53	Van Nuys Blvd & Friar St	1.6	A	3.2	A	2.3	A	4.4	A	0.7	1.2	No
54	Van Nuys Blvd & Sylvan St	3.8	A	4.7	A	5.1	A	6.2	A	1.3	1.5	No
55	Van Nuys Blvd & Erwin St	2.0	A	1.5	A	2.6	A	2.3	A	0.6	0.8	No
56	Van Nuys Blvd & Delano St	3.4	A	4.3	A	4.4	A	5.7	A	1.0	1.4	No
57	Van Nuys Blvd & Calvert St	3.8	A	4.1	A	4.3	A	5.4	A	0.5	1.3	No
58	Van Nuys Blvd & Metro Orange Line Busway	1.0	A	0.9	A	1.5	A	1.5	A	0.5	0.6	No
59	Van Nuys Blvd & Aetna St	2.7	A	6.0	A	1.5	A	3.1	A	-1.2	-2.9	No
60	Van Nuys Blvd & Oxnard St	45.9	D	55.5	E	86.0	F	65.0	E	40.1	9.5	**Yes**
61	Van Nuys Blvd & Hatteras St	2.3	A	3.5	A	2.3	A	2.5	A	0.0	-1.0	No
62	Van Nuys Blvd & Burbank Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
63	Van Nuys Blvd & Clark St	17.4	B	3.6	A	15.9	B	3.8	A	-1.5	0.2	No
64	Van Nuys Blvd & Magnolia Blvd	58.4	E	80.9	F	52.9	D	80.9	F	-5.5	0.0	No
65	Van Nuys Blvd & Addison St	5.3	A	14.7	B	5.4	A	16.4	B	0.1	1.7	No
66	Van Nuys Blvd & Huston St	10.8	B	9.7	A	10.3	B	10.5	B	-0.5	0.8	No
67	Van Nuys Blvd & Riverside Dr	17.0	B	42.0	D	17.0	B	40.7	D	0.0	-1.3	No
68	Van Nuys Blvd & WB 101 On-Off Ramps	22.1	C	24.5	C	21.6	C	25.8	C	-0.5	1.3	No
69	Van Nuys Blvd & EB 101 On-Off Ramps	20.6	C	26.3	C	18.9	B	32.3	C	-1.7	6.0	No
70	Van Nuys Blvd & Hortense St	4.0	A	6.5	A	4.0	A	6.4	A	0.0	-0.1	No
71	Van Nuys Blvd & Milbank St	3.8	A	6.9	A	3.8	A	6.8	A	0.0	-0.1	No
72	Van Nuys Blvd & Moorpark St	21.2	C	39.1	D	21.7	C	38.3	D	0.5	-0.8	No
73	Van Nuys Blvd & Ventura Blvd	29.0	C	41.0	D	29.2	C	41.2	D	0.2	0.2	No

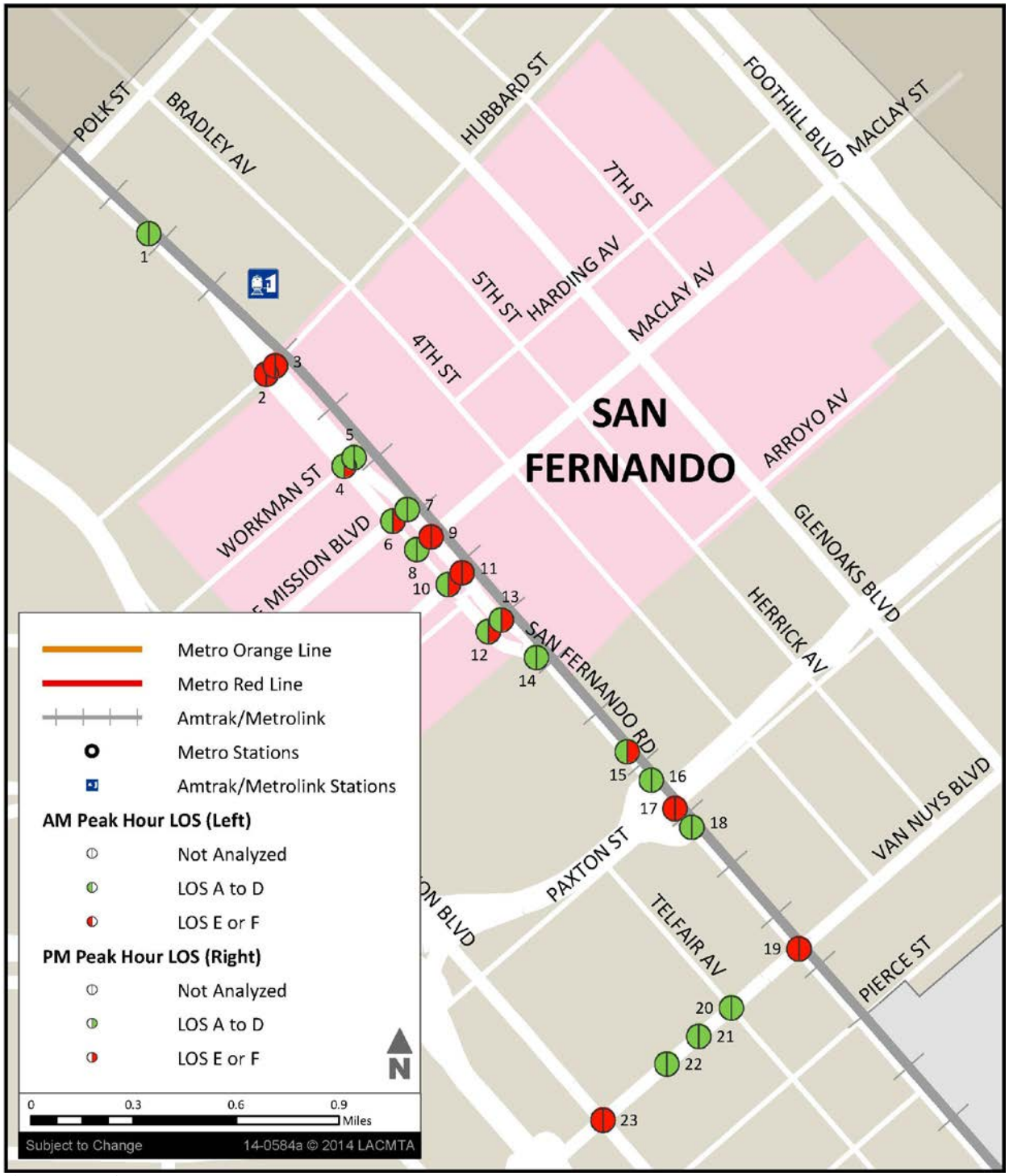
Source: KOA, 2014

Figure 4-16: Alternative 3 – Study Area AM/PM LOS Map



Source: KOA, 2014

Figure 4-17: Alternative 3 – Study Area AM/PM LOS (#1-23)



Source: KOA, 2014

Figure 4-18: Alternative 3 – Study Area AM/PM LOS (#24-40)

Source: KOA, 2014

Figure 4-19: Alternative 3 – Study Area AM/PM LOS (#41-60)

Source: KOA, 2014

Figure 4-20: Alternative 3 – Study Area AM/PM LOS (#61-73)

Source: KOA, 2014

Operational Impacts – Roadway Speeds

For Alternative 3, roadway speed data is summarized in two tables based on travel direction:

- Table 4-8: Data for San Fernando Road eastbound and Van Nuys Boulevard southbound directions of travel, which are the AM peak direction for these two streets
- Table 4-9: Data for Van Nuys Boulevard northbound and San Fernando Road westbound directions of travel, which are the AM peak direction for these two streets

Table 4-8: Estimated Roadway Vehicle Speeds – Alternative 3 – Van Nuys Southbound / San Fernando Eastbound (AM Peak Direction)

From	To	No Build AM Peak		Alt3 AM Peak		Change, AM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Sylmar Station	Fox	16.69	75.14	15.60	84.25	-1.08	9.11
Fox	Van Nuys	25.45	60.34	24.51	63.34	-0.94	3.00
Foothill	Glenoaks	34.19	72.65	34.09	72.87	-0.11	0.23
Glenoaks	San Fernando	31.50	91.43	31.45	91.56	-0.04	0.13
San Fernando	Arleta	22.71	48.23	22.85	47.87	0.14	-0.35
Arleta	Plummer	19.80	92.50	20.29	90.38	0.49	-2.12
Plummer	Chase	20.18	57.85	21.09	54.88	0.92	-2.97
Chase	Metrolink	14.24	90.10	12.72	101.33	-1.52	11.23
Metrolink	Vanowen	22.65	80.97	21.84	84.34	-0.81	3.36
Vanowen	MOL	25.15	49.39	22.89	53.40	-2.26	4.01
MOL	Magnolia	26.92	32.22	28.05	30.90	1.12	-1.33
Magnolia	Ventura	25.86	32.81	26.52	32.10	0.67	-0.71

Table 4-8 indicates that a.m. peak hour congested speeds for southbound Van Nuys Boulevard and eastbound San Fernando Road, under Alternative 3, would range from approximately 12 miles per hour to 34 miles an hour. Congested time in the a.m. peak hour would range from approximately 30 seconds to 101 seconds per segment.

For most corridor segments, the changes in congested speed would range from a two mph decrease to a one mph increase. The changes in congested time would range from a two second decrease to an 11 second increase.

Table 4-9: Estimated Roadway Vehicle Speeds – Alternative 3 – Van Nuys Northbound / San Fernando Westbound (PM Peak Direction)

From	To	No Build PM Peak		Alt3 PM Peak		Change, PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Ventura	Magnolia	27.59	31.12	27.92	30.85	0.33	-0.27
Magnolia	MOL	30.88	28.06	31.28	27.67	0.40	-0.39
MOL	Vanowen	29.70	41.63	28.38	43.28	-1.32	1.65
Vanowen	Metrolink	27.79	65.50	26.87	67.84	-0.91	2.34
Metrolink	Chase	20.55	62.36	17.57	73.40	-2.98	11.03
Chase	Plummer	24.25	48.05	24.71	47.01	0.46	-1.05
Plummer	Arleta	22.76	80.63	23.38	78.89	0.62	-1.73
Arleta	San Fernando	29.25	37.86	27.97	38.94	-1.29	1.08
San Fernando	Glenoaks	34.55	83.36	33.75	85.34	-0.80	1.99
Glenoaks	Foothill	34.70	71.59	33.89	73.29	-0.81	1.70
Van Nuys	Fox	28.09	54.75	28.10	54.14	0.02	-0.61
Fox	Sylmar Station	24.21	45.10	23.39	47.78	-0.83	2.68

Table 4-9 indicates p.m. peak hour congested speeds for these roadway travel directions under this scenario would range from approximately 17 miles per hour to 33 miles an hour. Congested time in the p.m. peak hour would range from approximately 27 seconds to 85 seconds per segment.

For most corridor segments, the changes in congested speed would range from a two mph decrease to a one mph increase. The changes in congested time would range from a two second decrease to an 11 second increase.

Overall Travel Time within the Van Nuys Boulevard Corridor

Overall passenger and transit vehicle speeds were derived from the Metro Model. As shown in the table below, under the low-floor LRT/Tram alternative, the maximum passenger vehicle travel time increases from the no-build alternative to just over 29 minutes. However, the maximum transit vehicle travel time decreases to just over 34 minutes, a time savings of approximately two minutes, when compared to the no-build scenario. For this alternative, the transit vehicle time savings is less than for the curb-running or median-running BRT alternatives.

Mode	Peak Travel Time (min.)
Passenger Vehicle	29.2
Transit Vehicle	34.3

Construction Impacts

Construction of the Alternative 3 would significantly impact vehicle travel, based on the estimated duration and magnitude of construction for relocation of utilities, removal of the existing roadbed, installation of system trackage, signals, power infrastructure, and installation of median rail stations and related infrastructure.

The duration of construction for the completion of Alternative 3 is anticipated to take approximately four years.

4.5.3 Parking

Operational Impacts – Van Nuys Boulevard Corridor

All 1,140 on-street parking spaces on Van Nuys Boulevard in addition to 15 adjacent cross-street spaces would be removed for a total decrease in on-street parking supply of 1,155. Approximately 152 off-street parking spaces would be removed to accommodate the TPSS and the Van Nuys/San Fernando Station. Parking would be removed along San Fernando Road to accommodate the median-running and mixed-flow operations of the Low-Floor LRT/Tram.

Specific areas along the Van Nuys Boulevard corridor that may encounter parking shortfalls and access issues during the weekday and/or weekend are comparable to the other build alternatives, except for an increased potential shortfall near the MOL, and along San Fernando Road.

There may be access issues for delivery trucks for smaller businesses (those without truck loading bays or other on-site loading/delivery facilities) since they would not be able to dwell within the roadway during operations. Consequently, they would either have to use off-street parking facilities, or parking on an adjacent street, or alleyways behind the property. This does not constitute a significant impact.

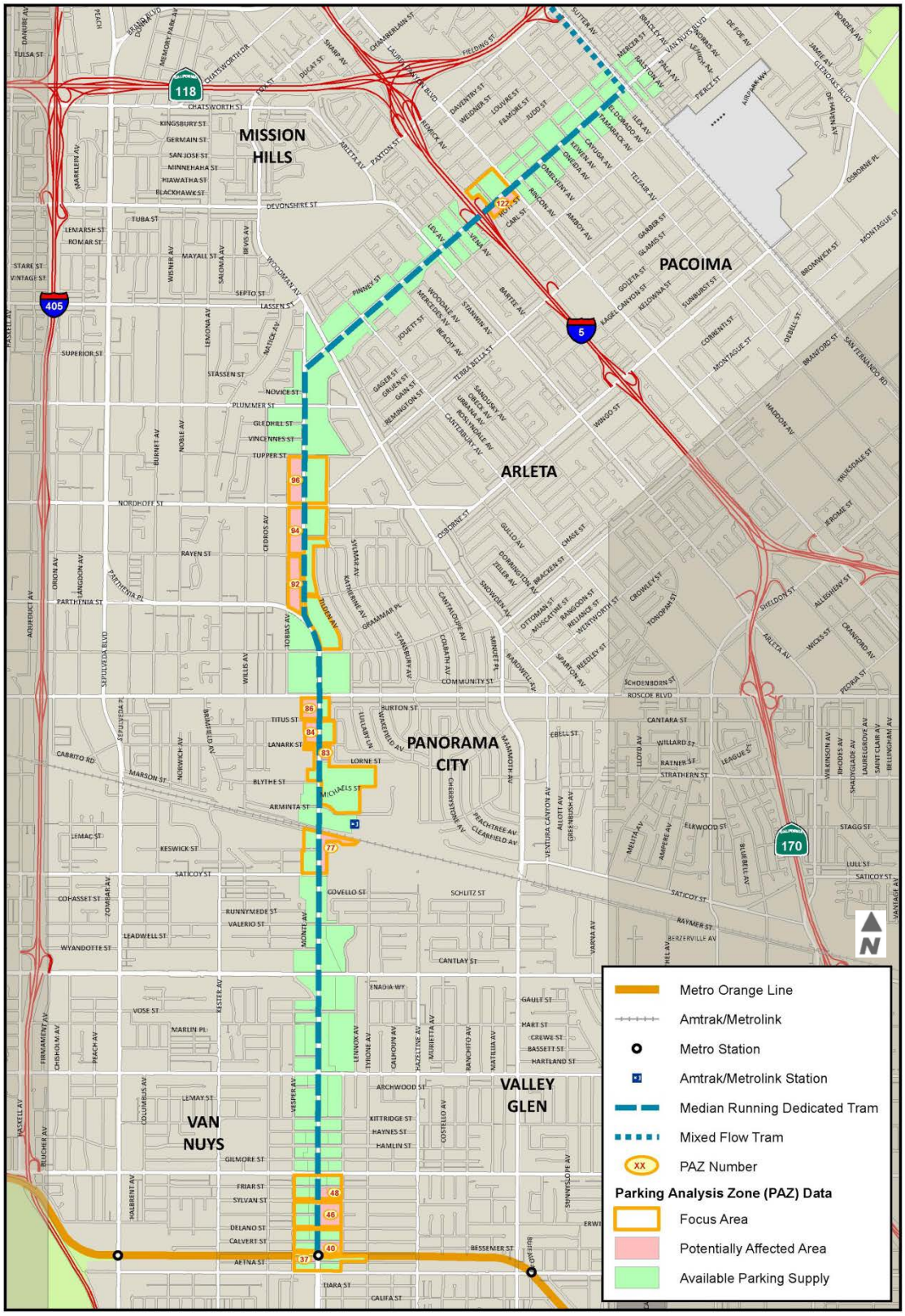
Table 4-12: Alternative 3 Parking Shortfall and Surplus

PAZ	Alternative 3			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
35	no	n/a	no	n/a
36	no	n/a	no	n/a
37	YES	YES	YES	YES
38	no	n/a	no	n/a
39	no	n/a	no	n/a
40	YES	YES	no	n/a
41	no	n/a	no	n/a
42	no	n/a	no	n/a
43	no	n/a	no	n/a
44	no	n/a	no	n/a
45	no	n/a	no	n/a
46	YES	YES	no	n/a
47	no	n/a	no	n/a
48	YES	YES	no	n/a
49	no	n/a	no	n/a
50	no	n/a	no	n/a
51	no	n/a	no	n/a
52	no	n/a	no	n/a
53	no	n/a	no	n/a
54	no	n/a	no	n/a
55	no	n/a	no	n/a
56	no	n/a	no	n/a
57	no	n/a	no	n/a
58	no	n/a	no	n/a
59	no	n/a	no	n/a
60	no	n/a	no	n/a
61	no	n/a	no	n/a
62	no	n/a	no	n/a
63	no	n/a	no	n/a
64	no	n/a	no	n/a
65	no	n/a	no	n/a
66	no	n/a	no	n/a
67	no	n/a	no	n/a
68	no	n/a	no	n/a
69	no	n/a	no	n/a
70	no	n/a	no	n/a
71	no	n/a	no	n/a
72	no	n/a	no	n/a
73	no	n/a	no	n/a
74	no	n/a	no	n/a
75	no	n/a	no	n/a
76	no	n/a	no	n/a
77	YES	YES	YES	YES
78	no	n/a	no	n/a
79	no	n/a	no	n/a
80	no	n/a	no	n/a
81	no	n/a	no	n/a
82	no	n/a	no	n/a
83	YES	YES	YES	YES
84	YES	YES	no	n/a
85	no	n/a	no	n/a
86	YES	YES	no	n/a
87	no	n/a	no	n/a
88	no	n/a	no	n/a
89	no	n/a	no	n/a
90	no	n/a	no	n/a
91	no	n/a	no	n/a
92	YES	YES	YES	YES
93	no	n/a	YES	YES

PAZ	Alternative 3			
	Monday, 3PM		Saturday, 12PM	
	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
94	YES	YES	YES	YES
95	no	n/a	no	n/a
96	YES	YES	YES	YES
97	no	n/a	no	n/a
98	no	n/a	no	n/a
99	no	n/a	no	n/a
100	no	n/a	no	n/a
101	no	n/a	YES	YES
102	no	n/a	YES	YES
103	no	n/a	YES	YES
104	no	n/a	no	n/a
105	no	n/a	no	n/a
106	no	n/a	no	n/a
107	no	n/a	no	n/a
108	no	n/a	no	n/a
109	no	n/a	no	n/a
110	no	n/a	YES	YES
111	no	n/a	no	n/a
112	no	n/a	no	n/a
113	no	n/a	no	n/a
114	no	n/a	YES	YES
115	no	n/a	no	n/a
116	no	n/a	no	n/a
117	no	n/a	no	n/a
118	no	n/a	no	n/a
119	no	n/a	no	n/a
120	no	n/a	no	n/a
121	no	n/a	no	n/a
122	YES	YES	YES	YES
123	no	n/a	no	n/a
124	no	n/a	no	n/a
125	no	n/a	no	n/a
126	no	n/a	no	n/a
127	no	n/a	no	n/a
128	no	n/a	no	n/a
129	no	n/a	no	n/a
130	no	n/a	no	n/a
131	no	n/a	no	n/a
132	no	n/a	no	n/a
133	no	n/a	no	n/a
134	no	n/a	no	n/a
135	no	n/a	no	n/a
136	no	n/a	no	n/a
137	no	n/a	no	n/a
138	no	n/a	no	n/a
139	no	n/a	no	n/a
140	no	n/a	YES	YES
141	no	n/a	no	n/a
142	no	n/a	no	n/a
143	no	n/a	no	n/a
144	no	n/a	no	n/a
145	no	n/a	no	n/a
146	no	n/a	no	n/a
147	no	n/a	no	n/a
148	no	n/a	YES	YES
149	no	n/a	no	n/a
150	no	n/a	no	n/a
151	no	n/a	no	n/a

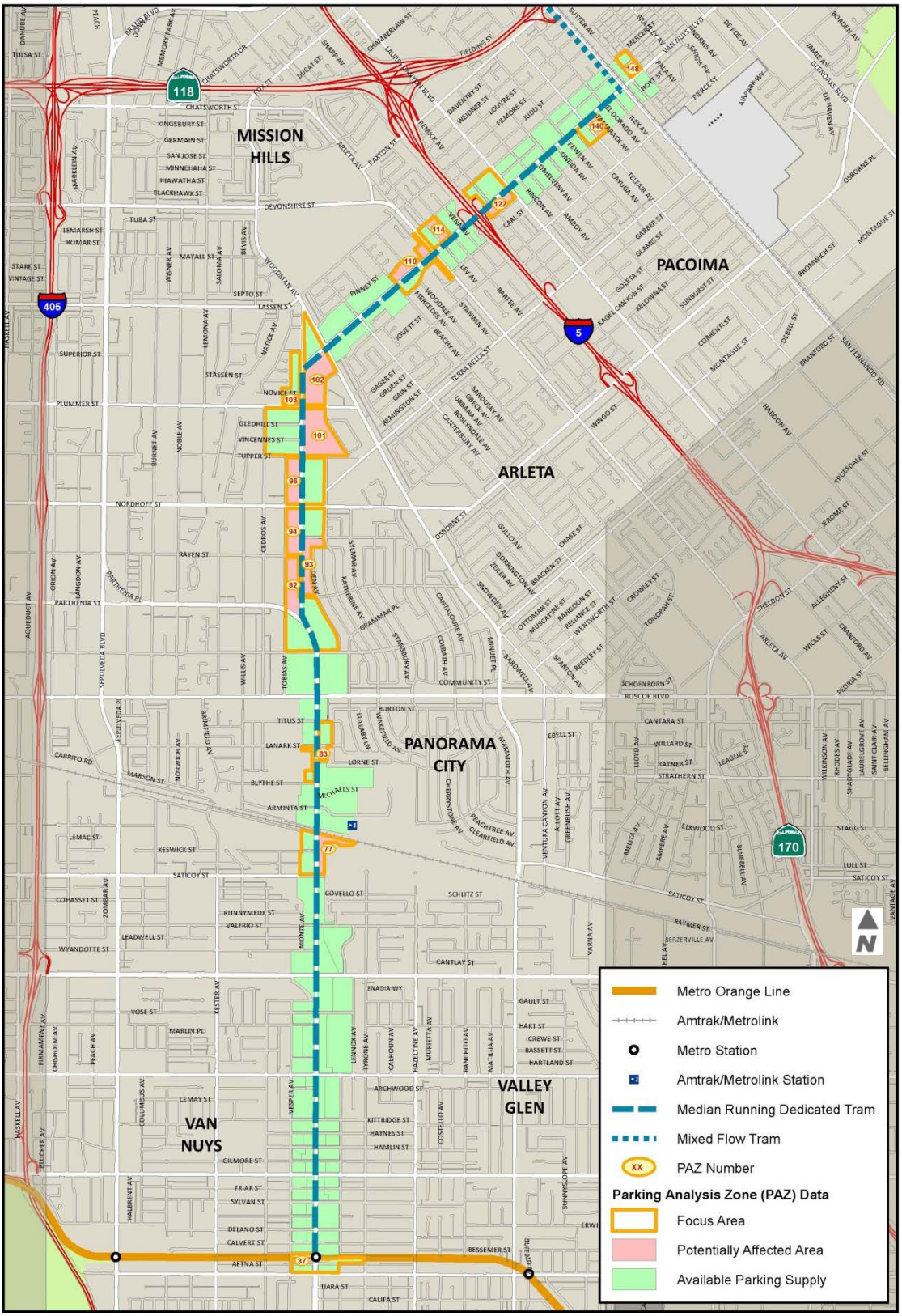
Source: KOA, 2014

Figure 4-21: Alternative 3 Weekday Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Figure 4-22: Alternative 3 Weekend Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Operational Impacts – San Fernando Road/Truman Street Corridor

This alternative would reduce on-street parking areas San Fernando Road, with limited on-street parking areas remaining.

As identified by the existing parking conditions analysis, the highest parking demand generally occurs within downtown San Fernando, within the overall San Fernando Road corridor. On-street and off-street parking is generally sufficient and is not being fully utilized. The displacement of parking by this alternative would generally be shifted to adjacent cross streets and off-street parking areas. No significant parking impacts will occur due to the construction and operation of this alternative.

Construction Impacts

On-street parking would be removed within work areas for this alternative. Parking prohibitions would be established per traffic control plans to be approved by LADOT.

4.5.4 Pedestrian and Bicycle Facilities

Operational Impacts

Existing and planned pedestrian and bicycle facilities would be affected. This alternative would have conflicts with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard under the "Backbone Bikeway Network" would not be feasible. Within the Pacoima area, some of the striped on-street bicycle lanes called for in the Bicycle Plan have been implemented. These facilities would be removed as part of Project implementation. This would create a significant impact for people on bicycles.

The Bicycle Plan also calls for parallel bicycle lanes on Woodman Avenue (one-mile to the east of Van Nuys Boulevard) between Ventura Boulevard and the Osborne Street and Nordhoff Street corridors, and Osborne Street from that point to San Fernando Road.

Van Nuys Boulevard corridor is also, however, designated as a Transit Priority Segment within the City of Los Angeles General Plan Framework Element. This creates a conflict between the General Plan and the Bicycle Plan.

Pedestrian routes would be lengthened where minor intersections would be permanently closed. Pedestrian crossing would be improved where they would remain with enhanced striping design (higher visibility markings) and other safety features as feasible, but the increased walk distances would not be reduced. Significant impacts would not occur for pedestrian access.

Construction Impacts

Existing and planned pedestrian and bicycle facilities would be affected during construction activities for the implementation of this alternative. Closure of these facilities, and establishment of detours to parallel routes, would be implemented as part of traffic control plans to be approved by the City of Los Angeles. Pedestrian routes would be lengthened where minor intersections would be closed as part of construction. Pedestrian detour routes would be provided, but the increased walk distances would not be reduced.

4.6 Rail Alternative – Alternative 4 (LRT)

Alternative 4 would operate in a dedicated guideway and in Metro owned ROW, providing a total of 14 stations.

4.6.1 Transit

Parallel local bus service would continue to be provided by Line 233 at existing curb-side bus stops. The route of Rapid Bus Line 761 will be modified to provide service from the MOL (the southern terminus of the Project) to Westwood. The LRT service would provide service to major stop locations that would be longer distance apart than the local bus stops. Access to local bus service at all bus stops, or the LRT service at selected locations, would improve transit access over No-Build conditions.

Operational Impacts

Local bus operating speeds may decrease because of the proposed traffic lane reductions along the Project corridors and the resulting increases in traffic congestion. The transit improvements proposed under Alternative 4, however, would result in an increase of 8,604 daily transit trips between the MOL and the Sylmar/San Fernando Metrolink Station, as compared to future no-build/baseline conditions. Transit speeds for Project Build Alternative 4 should increase over local transit services with the provision of rail service.

Construction Impacts

Construction of Alternative 4 would result in temporary adverse effects and significant impacts to transit operations, based on the estimated duration and magnitude of construction for relocation of utilities, removal of the existing roadbed, installation of high-floor LRT system trackage, signals, power infrastructure, and installation of median rail stations and related infrastructure.

The duration of construction along the Project corridor is estimated to take up to five years for completion of the at-grade portions and subterranean sections.

4.6.2 Traffic

Operational Impacts

Under Alternative 4, 21 of the 73 study intersections would operate at LOS E or F during either one or both of the weekday peak hours. Operations at the following intersections would worsen to or within poor conditions during the separately analyzed peak hours, versus No-Build conditions, during the analyzed peak hours under this alternative:

- LOS at 13 study intersections would worsen to/within LOS E or F during the a.m. peak hour
- LOS at 21 study intersections would worsen to/within LOS E or F during the p.m. peak hour

LOS E represents near-capacity conditions and LOS F represents over-capacity conditions. Table 4-14 summarizes the a.m. and p.m. peak hour LOS values for this alternative at the study intersections. Significant traffic impacts would occur at 20 study intersections on Truman Street, on San Fernando Road, and along Van Nuys Boulevard.

Table 4-14 provides a summary of LOS values and significant impact calculations for the entire Project corridor for this scenario. Figure 4-27 illustrates these values within the overall study area,

and Figures 4-28 to 4-31 provide close-in illustrations of these values for four individual sectors of the study area.

Vehicle travel speeds may decrease because of the proposed traffic lane reductions along the Project corridor and the resulting increases in traffic congestion, where the fixed guideway and station locations would necessitate travel lane reductions. Benefits of reductions in VMT and increases in passenger trips across the Project Build Alternatives are discussed in Section 4.10.

Under this alternative left turns would be permitted at primary intersections and prohibited at secondary intersections due to the installation of the LRT median fixed guideway. At minor intersections, only right turns in and out of the side street would be allowed. Therefore, motorists who desire to make a left-turn where it would be prohibited would need to go to a signalized left-turn lane and make a U-turn or seek an alternative route that would allow them to cross the alignment. The following study intersections were not analyzed in this scenario since the traffic signals would be removed, and only through movements on Van Nuys Boulevard would be permitted:

- Bartee Avenue & Van Nuys Boulevard (#24)
- Van Nuys Boulevard & Hartland Street (#46)
- Van Nuys Boulevard & Gilmore Street (#51)
- Van Nuys Boulevard & Friar Street (#53)
- Van Nuys Boulevard & Calvert Street (#57)

Table 4-13: Alternative 4 – Study Area AM/PM LOS

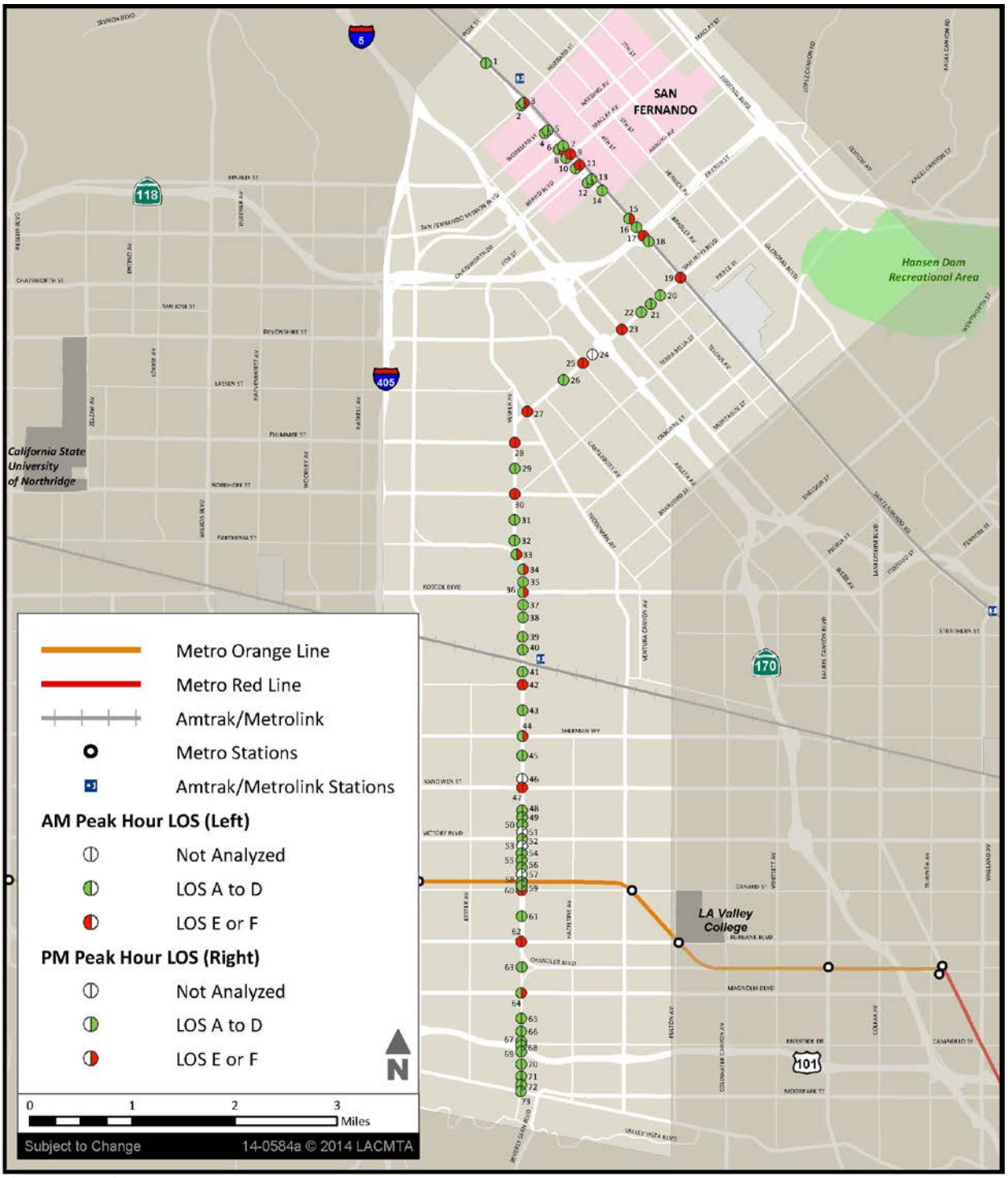
	Study Intersections	Future No Build				Future With Project (Alternative 4)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
1	San Fernando Rd & Astoria St	4.2	A	4.7	A	4.1	A	4.7	A	-0.1	0.0	No
2	San Fernando Rd & Hubbard St	22.6	C	45.7	D	22.7	C	45.5	D	0.1	-0.2	No
3	Truman St & Hubbard St	45.3	D	72.2	E	49.4	D	81.7	F	4.1	9.5	**Yes**
4	San Fernando Rd & Workman St	8.3	A	11.5	B	8.6	A	11.5	B	0.3	0.0	No
5	Truman St & Workman St	4.7	A	8.1	A	4.8	A	8.4	A	0.1	0.3	No
6	San Fernando Rd & San Fernando Mission Blvd	8.1	A	51.4	D	8.4	A	57.8	E	0.3	6.4	**Yes**
7	Truman St & San Fernando MissionBlvd	14.4	B	30.1	C	14.5	B	30.2	C	0.1	0.1	No
8	San Fernando Rd & Maclay Ave	12.6	B	19.9	B	13.2	B	23.7	C	0.6	3.8	No
9	Truman St & Maclay Ave	87.6	F	>100	F	87.5	F	>100	F	-0.1	-	No
10	San Fernando Rd & Brand Blvd	13.5	B	34.8	C	13.4	B	34.6	C	-0.1	-0.2	No
11	Truman St & Brand Blvd	>100	F	73.0	E	>100	F	70.0	E	-	-3.0	No
12	San Fernando Rd & Wolfskill St	8.0	A	8.2	A	7.9	A	8.2	A	-0.1	0.0	No
13	Truman St & Wolfskill St	36.4	D	26.2	C	36.1	D	24.8	C	-0.3	-1.4	No
14	San Fernando Rd & Truman St	1.0	A	1.0	A	1.0	A	1.0	A	0.0	0.0	No
15	San Fernando Rd & Desmond St	31.1	C	>100	F	30.6	C	>100	F	-0.5	-	No
16	San Fernando Rd & SR-118 WB on-off Ramps	35.4	D	42.3	D	26.8	C	38.2	D	-8.6	-4.1	No
17	San Fernando Rd & Paxton St	99.7	F	76.6	E	>100	F	74.9	E	-	-1.7	**Yes**
18	San Fernando Rd & SR-118 EB on-off Ramps	47.3	D	27.0	C	36.8	D	27.1	C	-10.5	0.1	No
19	San Fernando Rd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
20	Telfair Ave & Van Nuys Blvd	11.6	B	12.3	B	15.6	B	27.3	C	4.0	15.0	**Yes**
21	Kewen Ave & Van Nuys Blvd	5.9	A	4.8	A	5.7	A	7.5	A	-0.2	2.7	No
22	Haddon Ave & Van Nuys Blvd	8.0	A	14.6	B	13.1	B	29.1	C	5.1	14.5	**Yes**
23	Laurel Canyon Blvd & Van Nuys Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
24	Bartee Ave & Van Nuys Blvd *	17.1	B	11.7	B	-	-	-	-	-	-	-
25	Arleta Ave & Van Nuys Blvd	65.2	E	75.1	E	>100	F	>100	F	-	-	**Yes**
26	Beachy Ave & Van Nuys Blvd	14.2	B	10.7	B	41.3	D	19.8	B	27.1	9.1	**Yes**
27	Woodman Ave & Van Nuys Blvd	40.0	D	50.3	D	81.0	F	>100	F	41.0	-	**Yes**
28	Van Nuys Blvd & Plummer St	32.9	C	38.9	D	71.9	E	>100	F	39.0	-	**Yes**
29	Van Nuys Blvd & Tupper St	7.5	A	3.5	A	8.9	A	5.0	A	1.4	1.5	No
30	Van Nuys Blvd & Nordhoff St	72.0	E	76.7	E	>100	F	>100	F	-	-	**Yes**
31	Van Nuys Blvd & Rayen St	6.1	A	17.5	B	7.7	A	18.6	B	1.6	1.1	No
32	Van Nuys Blvd & Parthenia St	11.9	B	11.9	B	9.2	A	25.1	C	-2.7	13.2	**Yes**
33	Van Nuys Blvd & Parthenia St/Vesper Ave	25.4	C	49.4	D	23.6	C	84.8	F	-1.8	35.4	**Yes**
34	Van Nuys Blvd & Chase St	23.7	C	72.2	E	37.0	D	68.8	E	13.3	-3.4	**Yes**
35	Van Nuys Blvd between Chase St & Roscoe Blvd	3.3	A	11.9	B	3.2	A	14.0	B	-0.1	2.1	No
36	Van Nuys Blvd & Roscoe Blvd	52.9	D	53.8	D	53.7	D	56.0	E	0.8	2.2	No
37	Van Nuys Blvd & Titus St	11.9	B	11.4	B	12.0	B	11.4	B	0.1	0.0	No
38	Van Nuys Blvd & Lanark St	29.4	C	33.0	C	29.1	C	33.8	C	-0.3	0.8	No
39	Van Nuys Blvd & Blythe St	18.6	B	20.1	C	35.6	D	38.6	D	17.0	18.5	**Yes**
40	Van Nuys Blvd & Arminta St	14.6	B	24.8	C	14.6	B	24.9	C	0.0	0.1	No

Table 4-14: Alternative 4 – Study Area AM/PM LOS (continued)

	Study Intersections	Future No Build				Future With Project (Alternative 4)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
41	Van Nuys Blvd & Keswick St	21.6	C	24.5	C	18.6	B	29.5	C	-3.0	5.0	No
42	Van Nuys Blvd & Saticoy St	92.4	F	>100	F	84.3	F	>100	F	-8.1	-	No
43	Van Nuys Blvd & Valerio St	15.5	B	23.6	C	16.0	B	23.5	C	0.5	-0.1	No
44	Van Nuys Blvd & Sherman Way	57.5	E	>100	F	54.4	D	>100	F	-3.1	-	**Yes**
45	Van Nuys Blvd & Vose St	13.3	B	18.3	B	23.2	C	47.1	D	9.9	28.8	**Yes**
46	Van Nuys Blvd & Hartland St *	1.2	A	4.0	A	-	-	-	-	-	-	-
47	Van Nuys Blvd & Vanowen St	70.4	E	89.3	F	>100	F	>100	F	-	-	**Yes**
48	Van Nuys Blvd & Kittridge St	5.4	A	4.9	A	6.0	A	8.6	A	0.6	3.7	No
49	Van Nuys Blvd & Haynes St	4.4	A	3.5	A	5.7	A	4.7	A	1.3	1.2	No
50	Van Nuys Blvd & Hamlin St	4.1	A	2.7	A	5.4	A	4.2	A	1.3	1.5	No
51	Van Nuys Blvd & Gilmore St *	3.1	A	2.9	A	-	-	-	-	-	-	-
52	Van Nuys Blvd & Victory Blvd	35.2	D	20.7	C	29.3	C	24.9	C	-5.9	4.2	No
53	Van Nuys Blvd & Friar St *	1.6	A	3.2	A	-	-	-	-	-	-	-
54	Van Nuys Blvd & Sylvan St	3.8	A	4.7	A	5.4	A	6.7	A	1.6	2.0	No
55	Van Nuys Blvd & Erwin St	2.0	A	1.5	A	2.4	A	2.2	A	0.4	0.7	No
56	Van Nuys Blvd & Delano St	3.4	A	4.3	A	4.8	A	5.7	A	1.4	1.4	No
57	Van Nuys Blvd & Calvert St *	3.8	A	4.1	A	-	-	-	-	-	-	-
58	Van Nuys Blvd & Metro Orange Line Busway	1.0	A	0.9	A	2.2	A	2.4	A	1.2	1.5	No
59	Van Nuys Blvd & Aetna St	2.7	A	6.0	A	1.8	A	2.2	A	-0.9	-3.8	No
60	Van Nuys Blvd & Oxnard St	45.9	D	55.5	E	89.8	F	63.4	E	43.9	7.9	**Yes**
61	Van Nuys Blvd & Hatteras St	2.3	A	3.5	A	6.7	A	5.9	A	4.4	2.4	No
62	Van Nuys Blvd & Burbank Blvd	>100	F	>100	F	>100	F	91.3	F	-	-	No
63	Van Nuys Blvd & Clark St	17.4	B	3.6	A	15.9	B	3.5	A	-1.5	-0.1	No
64	Van Nuys Blvd & Magnolia Blvd	58.4	E	80.9	F	52.6	D	64.6	E	-5.8	-16.3	No
65	Van Nuys Blvd & Addison St	5.3	A	14.7	B	5.4	A	13.1	B	0.1	-1.6	No
66	Van Nuys Blvd & Huston St	10.8	B	9.7	A	10.4	B	9.6	A	-0.4	-0.1	No
67	Van Nuys Blvd & Riverside Dr	17.0	B	42.0	D	17.0	B	32.6	C	0.0	-9.4	No
68	Van Nuys Blvd & WB 101 On-Off Ramps	22.1	C	24.5	C	21.9	C	24.6	C	-0.2	0.1	No
69	Van Nuys Blvd & EB 101 On-Off Ramps	20.6	C	26.3	C	19.0	B	27.4	C	-1.6	1.1	No
70	Van Nuys Blvd & Hortense St	4.0	A	6.5	A	4.0	A	6.5	A	0.0	0.0	No
71	Van Nuys Blvd & Milbank St	3.8	A	6.9	A	3.8	A	6.9	A	0.0	0.0	No
72	Van Nuys Blvd & Moorpark St	21.2	C	39.1	D	21.3	C	39.1	D	0.1	0.0	No
73	Van Nuys Blvd & Ventura Blvd	29.0	C	41.0	D	28.6	C	41.0	D	-0.4	0.0	No

Source: KOA, 2014

Figure 4-23: Alternative 4 – Study Area AM/PM LOS Map

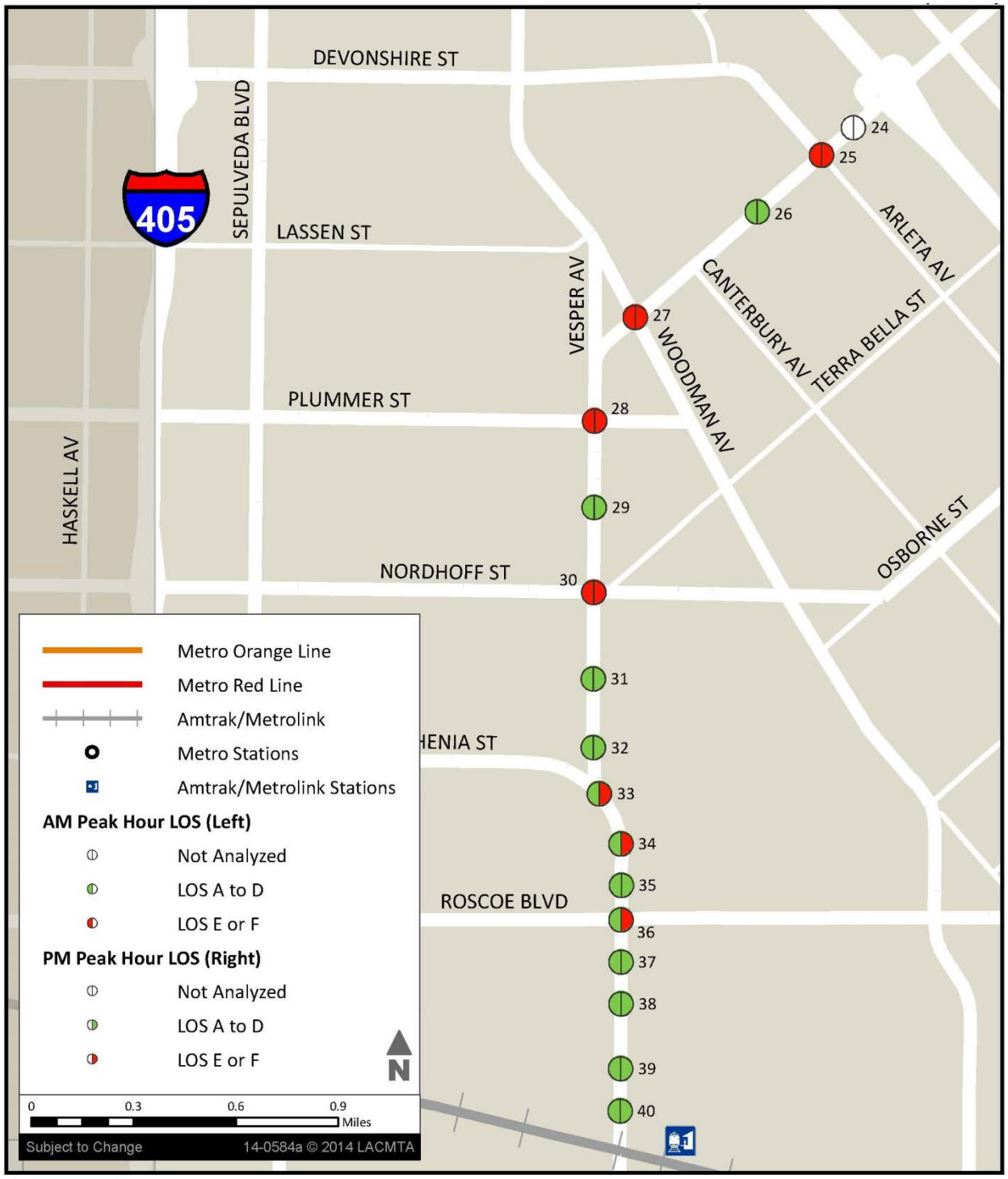


Source: KOA, 2014

Figure 4-24: Alternative 4 – Study Area AM/PM LOS (#1-23)

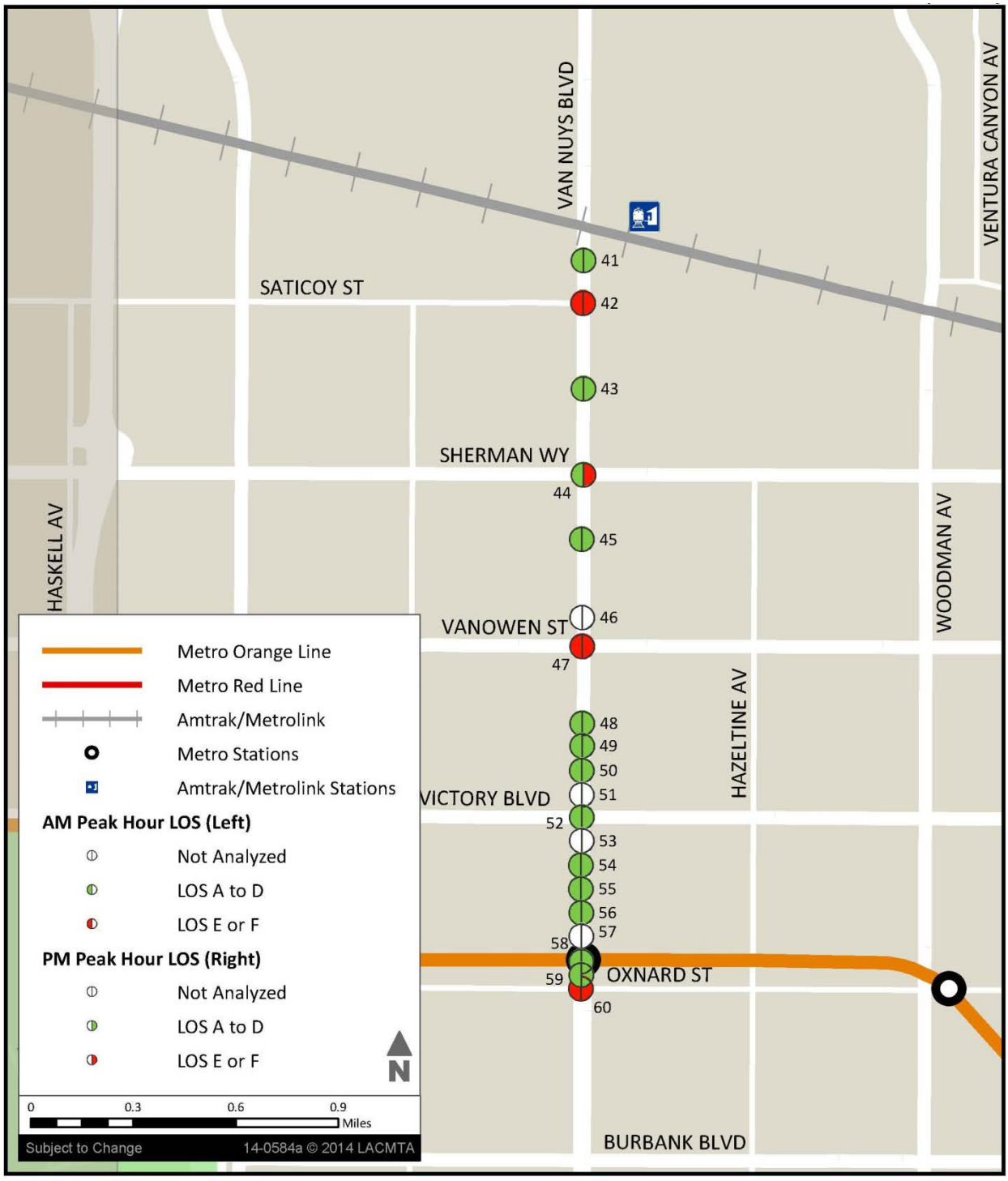
Source: KOA, 2014

Figure 4-25: Alternative 4 – Study Area AM/PM LOS (#24-40)



Source: KOA, 2014

Figure 4-26: Alternative 4 – Study Area AM/PM LOS (#41-60)



Source: KOA, 2014

Figure 4-27: Alternative 4 – Study Area AM/PM LOS (#61-73)

Source: KOA, 2014

Operational Impacts – Roadway Speeds

For Alternative 4, this data is summarized in two tables based on travel direction:

- Table 4-15: Data for San Fernando Road eastbound and Van Nuys Boulevard southbound directions of travel, which are the AM peak direction for these two streets
- Table 4-16: Data for Van Nuys Boulevard northbound and San Fernando Road westbound directions of travel, which are the AM peak direction for these two streets

Table 4-14: Estimated Roadway Vehicle Speeds – Alternative 4 – Van Nuys Southbound / San Fernando Eastbound (AM Peak Direction)

From	To	No Build AM Peak		Alt4 AM Peak		Change, AM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Sylmar Station	Fox	16.69	75.14	16.68	74.44	-0.01	-0.70
Fox	Van Nuys	25.45	60.34	25.98	58.54	0.54	-1.80
Foothill	Glenoaks	34.19	72.65	33.99	73.09	-0.21	0.44
Glenoaks	San Fernando	31.50	91.43	31.12	92.55	-0.38	1.12
San Fernando	Arleta	22.71	48.23	23.13	47.30	0.42	-0.92
Arleta	Plummer	19.80	92.50	19.91	91.96	0.11	-0.54
Plummer	Chase	20.18	57.85	20.44	57.11	0.26	-0.74
Chase	Metrolink	14.24	90.10	15.05	85.41	0.81	-4.69
Metrolink	Vanowen	22.65	80.97	22.19	82.10	-0.45	1.12
Vanowen	MOL	25.15	49.39	22.19	55.49	-2.96	6.10
MOL	Magnolia	26.92	32.22	28.02	30.93	1.10	-1.29
Magnolia	Ventura	25.86	32.81	26.29	32.28	0.44	-0.53

Table 4-15 indicates that a.m. peak hour congested speeds for southbound Van Nuys Boulevard and eastbound San Fernando Road, under Alternative 4, would range from approximately 15 miles per hour to 33 miles an hour. Congested time in the a.m. peak hour would range from approximately 30 seconds to 92 seconds per segment.

Table 4-15: Estimated Roadway Vehicle Speeds – Alternative 4 – Van Nuys Northbound / San Fernando Westbound (PM Peak Direction)

From	To	No Build PM Peak		Alt4 PM Peak		Change, PM Peak	
		Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)	Congested Speed (mph)	Congested Time (in seconds)
Ventura	Magnolia	27.59	31.12	27.78	30.98	0.19	-0.15
Magnolia	MOL	30.88	28.06	31.39	27.60	0.51	-0.45
MOL	Vanowen	29.70	41.63	28.17	43.74	-1.53	2.12
Vanowen	Metrolink	27.79	65.50	27.49	66.13	-0.30	0.63
Metrolink	Chase	20.55	62.36	20.88	61.38	0.33	-0.98
Chase	Plummer	24.25	48.05	24.26	48.03	0.01	-0.03
Plummer	Arleta	22.76	80.63	22.73	80.81	-0.03	0.18
Arleta	San Fernando	29.25	37.86	29.38	37.67	0.12	-0.19
San Fernando	Glenoaks	34.55	83.36	34.53	83.40	-0.02	0.04
Glenoaks	Foothill	34.70	71.59	34.71	71.56	0.01	-0.02
Van Nuys	Fox	28.09	54.75	28.50	53.43	0.42	-1.32
Fox	Sylmar Station	24.21	45.10	24.60	44.12	0.38	-0.98

Table 4-16 indicates that a.m. peak hour congested speeds for northbound Van Nuys Boulevard and westbound San Fernando Road, under Alternative 4, would range from approximately 31 miles per hour to 35 miles an hour. Congested time in the a.m. peak hour would range from approximately 24 seconds to 82 seconds per segment.

Overall Travel Time within the Van Nuys Boulevard Corridor

Overall passenger and transit vehicle speeds were derived from the Metro Model. As shown in the table below, under the LRT alternative, the maximum passenger vehicle travel time increases from the no-build alternative to just over 28 minutes. However, the maximum transit vehicle travel time decreases to just over 25 minutes, a time savings of approximately over ten minutes, when compared to the no-build scenario.

Mode	Peak Travel Time (min.)
Passenger Vehicle	27.7
Transit Vehicle	25.4

Construction Impacts

Construction of Alternative 4 would significantly impact vehicle travel, based on the estimated duration and magnitude of construction for relocation of utilities, removal of the existing roadbed, installation of high-floor LRT system trackage, signals, power infrastructure, installation of median rail stations and related infrastructure, along with potentially 2.5 miles of cut and cover construction for the subway segment of the alignment.

The duration of construction along the Project corridor is estimated to take up to five years for completion of the at-grade portions and subterranean sections.

4.6.3 Parking

Operational Impacts

A total of 902 on-street parking spaces on Van Nuys Boulevard and approximately 528 off-street parking spaces would be removed to accommodate the median guideway, TPSS, the Sherman Way Station, Keswick Street/Metrolink Station, Roscoe Boulevard Station, and Van Nuys/San Fernando Station. Parking supply on San Fernando Road would not be removed since the LRT would operate within an exclusive ROW adjacent to the Metrolink tracks.

Areas along Van Nuys Boulevard corridor that may encounter parking shortfalls and access issues during the weekday and/or weekend would be similar to the other Build Alternatives.

There may be access issues for delivery trucks for smaller businesses (those without truck loading bays or other on-site loading/delivery facilities) since they would not be able to dwell within the roadway during operations. Consequently, they would either have to use off-street parking facilities, or parking on an adjacent street, or alleyways behind the property. This does not constitute a significant impact.

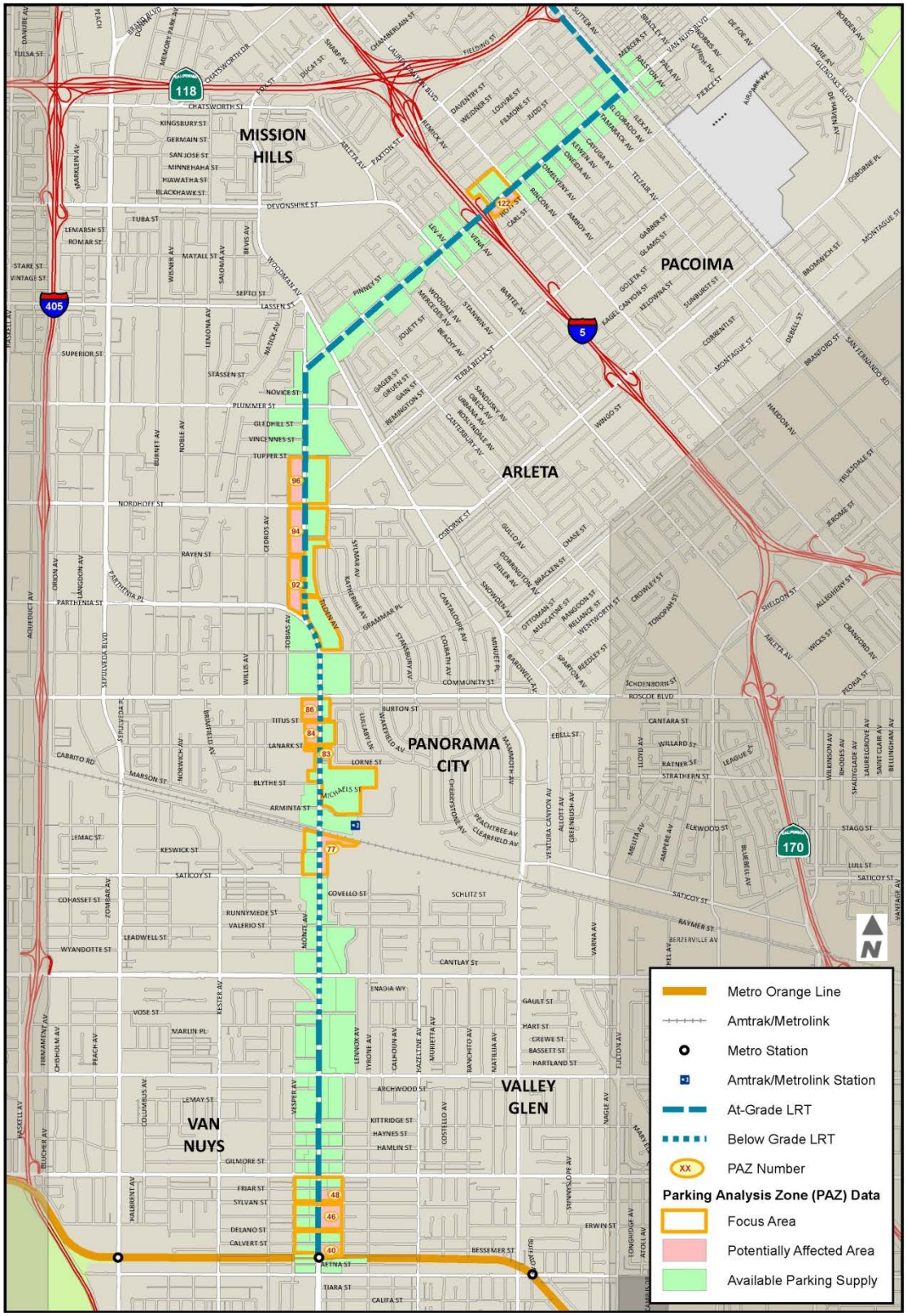
Table 4-16: Alternative 4 Parking Shortfall and Surplus

	Alternative 4			
	Monday, 3PM		Saturday, 12PM	
PAZ	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
35	no	n/a	no	n/a
36	no	n/a	no	n/a
37	no	n/a	no	n/a
38	no	n/a	no	n/a
39	no	n/a	no	n/a
40	YES	YES	no	n/a
41	no	n/a	no	n/a
42	no	n/a	no	n/a
43	no	n/a	no	n/a
44	no	n/a	no	n/a
45	no	n/a	no	n/a
46	YES	YES	no	n/a
47	no	n/a	no	n/a
48	YES	YES	no	n/a
49	no	n/a	no	n/a
50	no	n/a	no	n/a
51	no	n/a	no	n/a
52	no	n/a	no	n/a
53	no	n/a	no	n/a
54	no	n/a	no	n/a
55	no	n/a	no	n/a
56	no	n/a	no	n/a
57	no	n/a	no	n/a
58	no	n/a	no	n/a
59	no	n/a	no	n/a
60	no	n/a	no	n/a
61	no	n/a	no	n/a
62	no	n/a	no	n/a
63	no	n/a	no	n/a
64	no	n/a	no	n/a
65	no	n/a	no	n/a
66	no	n/a	no	n/a
67	no	n/a	no	n/a
68	no	n/a	no	n/a
69	no	n/a	no	n/a
70	no	n/a	no	n/a
71	no	n/a	no	n/a
72	no	n/a	no	n/a
73	no	n/a	no	n/a
74	no	n/a	no	n/a
75	no	n/a	no	n/a
76	no	n/a	no	n/a
77	YES	YES	YES	YES
78	no	n/a	no	n/a
79	no	n/a	no	n/a
80	no	n/a	no	n/a
81	no	n/a	no	n/a
82	no	n/a	no	n/a
83	YES	YES	YES	YES
84	YES	YES	no	n/a
85	no	n/a	no	n/a
86	YES	YES	no	n/a
87	no	n/a	no	n/a
88	no	n/a	no	n/a
89	no	n/a	no	n/a
90	no	n/a	no	n/a
91	no	n/a	no	n/a
92	YES	YES	YES	YES
93	no	n/a	YES	YES

	Alternative 4			
	Monday, 3PM		Saturday, 12PM	
PAZ	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodate Shortfall	On-Street Parking Shortfall	Adjacent PAZ Parking Surplus Accommodates Shortfall
94	YES	YES	YES	YES
95	no	n/a	no	n/a
96	YES	YES	YES	YES
97	no	n/a	no	n/a
98	no	n/a	no	n/a
99	no	n/a	no	n/a
100	no	n/a	no	n/a
101	no	n/a	YES	YES
102	no	n/a	YES	YES
103	no	n/a	YES	YES
104	no	n/a	no	n/a
105	no	n/a	no	n/a
106	no	n/a	no	n/a
107	no	n/a	no	n/a
108	no	n/a	no	n/a
109	no	n/a	no	n/a
110	no	n/a	YES	YES
111	no	n/a	no	n/a
112	no	n/a	no	n/a
113	no	n/a	no	n/a
114	no	n/a	YES	YES
115	no	n/a	no	n/a
116	no	n/a	no	n/a
117	no	n/a	no	n/a
118	no	n/a	no	n/a
119	no	n/a	no	n/a
120	no	n/a	no	n/a
121	no	n/a	no	n/a
122	YES	YES	YES	YES
123	no	n/a	no	n/a
124	no	n/a	no	n/a
125	no	n/a	no	n/a
126	no	n/a	no	n/a
127	no	n/a	no	n/a
128	no	n/a	no	n/a
129	no	n/a	no	n/a
130	no	n/a	no	n/a
131	no	n/a	no	n/a
132	no	n/a	no	n/a
133	no	n/a	no	n/a
134	no	n/a	no	n/a
135	no	n/a	no	n/a
136	no	n/a	no	n/a
137	no	n/a	no	n/a
138	no	n/a	no	n/a
139	no	n/a	no	n/a
140	no	n/a	YES	YES
141	no	n/a	no	n/a
142	no	n/a	no	n/a
143	no	n/a	no	n/a
144	no	n/a	no	n/a
145	no	n/a	no	n/a
146	no	n/a	no	n/a
147	no	n/a	no	n/a
148	no	n/a	YES	YES
149	no	n/a	no	n/a
150	no	n/a	no	n/a
151	no	n/a	no	n/a

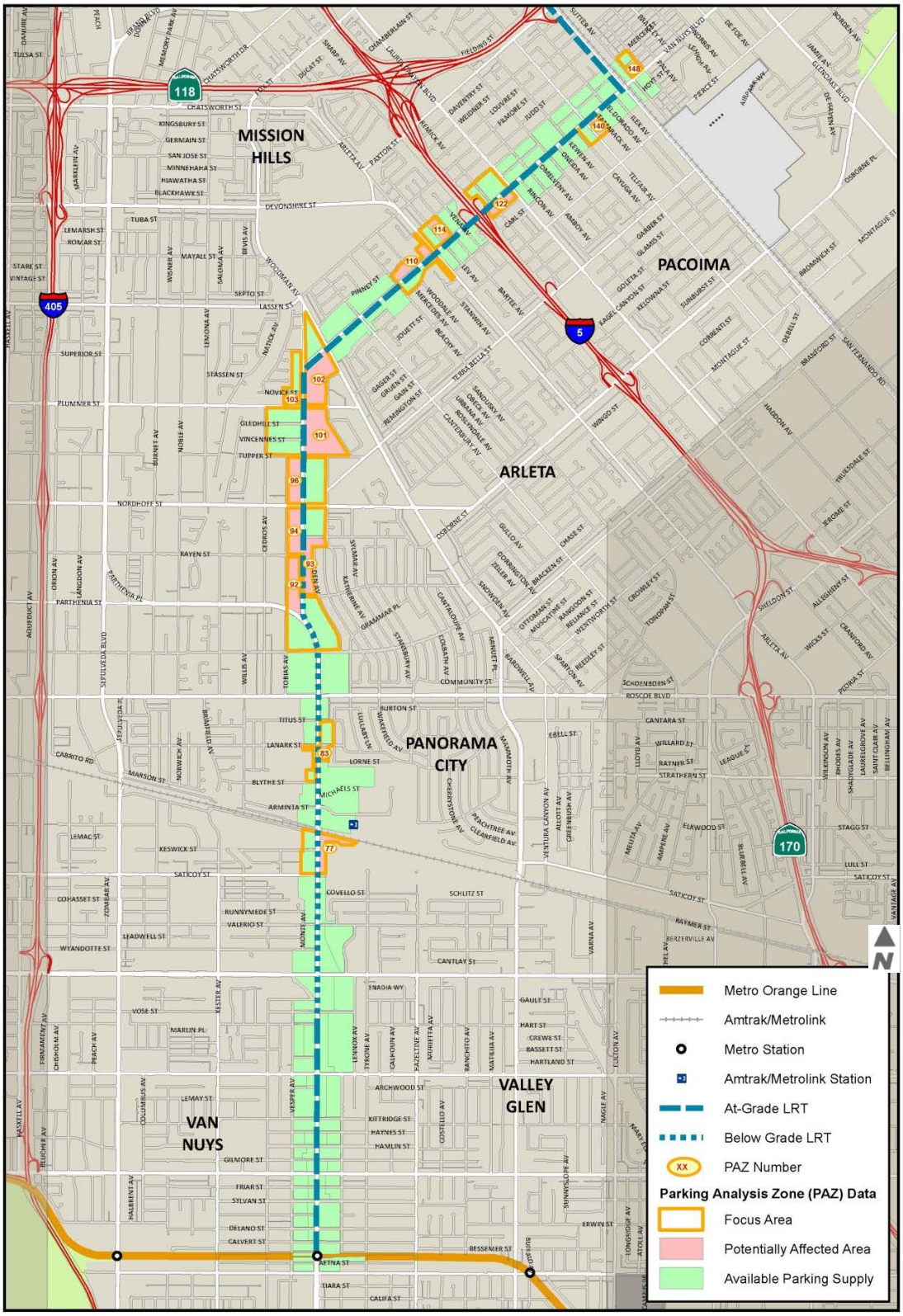
Source: KOA, 2014

Figure 4-28: Alternative 4 Weekday Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Figure 4-29: Alternative 4 Weekend Potentially Impacted Parking Analysis Zone



Source: KOA, 2014

Construction Impacts

On-street parking would be removed within work areas for this alternative. Parking prohibitions would be established per traffic control plans to be approved by LADOT and the City of San Fernando.

As indicated by the results of the parking study for project operations, the corridor PAZs would be able to accommodate the Van Nuys Boulevard weekday and weekend on-street parking demand within the available on-street spaces and/or off-street parking areas. Lane closures and other partial roadway closures due to project construction would not encompass the entire corridor at a single time. Therefore, impacts would be less than those identified for the operation period of this build alternative and would be minor adverse under NEPA and less than significant under CEQA.

4.6.4 Pedestrian and Bicycle Facilities

Operational Impacts

Existing and planned pedestrian and bicycle facilities would be affected. This alternative would have conflicts with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard under the "Backbone Bikeway Network" would not be feasible. Within the Pacoima area, some of the striped on-street bicycle lanes called for in the Bicycle Plan have been implemented. These facilities would be removed as part of Project implementation. Significant impacts would occur to bicycle access.

The Bicycle Plan also calls for parallel bicycle lanes on Woodman Avenue (one-mile to the east of Van Nuys Boulevard) between Ventura Boulevard and the Osborne Street and Nordhoff Street corridors, and Osborne Street from that point to San Fernando Road.

Van Nuys Boulevard corridor is also, however, designated as a Transit Priority Segment within the City of Los Angeles General Plan Framework Element. This creates a conflict between the General Plan and the Bicycle Plan.

Pedestrian routes would be lengthened where minor intersections would be permanently closed. Pedestrian crossing would be improved where they would remain with enhanced striping design (higher visibility markings) and other safety features as feasible, but the increased walk distances would not be reduced. Significant impacts would not occur to pedestrian access.

Construction Impacts

Existing and planned pedestrian and bicycle facilities would be affected during construction activities for the implementation of this alternative. Closure of these facilities, and establishment of detours to parallel routes, would be implemented as part of traffic control plans to be approved by the City of Los Angeles. Pedestrian routes would be lengthened where minor intersections would be closed as part of construction. Pedestrian detour routes would be provided, but the increased walk distances would not be reduced. Similarly, bicycle detour routes would be provided, but increase trip distance would be likely.

4.7 Overall Operational Impacts Summary

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at the analyzed study intersections. A significant impact is typically identified if Project related traffic will cause service levels to deteriorate beyond a threshold limit specified by the City of Los Angeles Department of Transportation. The signalized intersection significant threshold table is summarized in Table 2-2.

Table 4-18 summarizes the significant traffic impacts summary for each of the alternatives that would occur due to Project implementation. The TSM Alternative scenario would not cause significant traffic impacts at any of the analyzed study intersections. Under the four alternatives, Alternative 3(Low-Floor LRT/Tram) would cause the most traffic impacts, and Alternative 1 (Curb-Running BRT) would cause the least number of impacts.

- Alternative 1 (Curb-Running BRT) – Significant traffic impacts would occur at 16 study intersections along Van Nuys Boulevard.
- Alternative 2 (Median-Running BRT) – Significant traffic impacts would occur at 24 study intersections on Truman Street, on San Fernando Road, and along Van Nuys Boulevard.
- Alternative 3 (Low-Floor LRT/Tram) – Significant traffic impacts would occur at 32 study intersections on Truman Street, along San Fernando Road, and along Van Nuys Boulevard.
- Alternative 4 (LRT) – Significant traffic impacts would occur at 20 study intersections on Truman Street, on San Fernando Road, and along Van Nuys Boulevard.

Table 4-17: Significant Traffic Impact Summary

	Study Intersection	Scenario	City	TSM	Alternative 1	Alternative 2	Alternative 3	Alternative 4
1	San Fernando Rd & Astoria St	Future with Project	Los Angeles	No	No	No	No	No
2	San Fernando Rd & Hubbard St	Future with Project	San Fernando	No	No	No	**Yes**	No
3	Truman St & Hubbard St	Future with Project	San Fernando	No	No	**Yes**	**Yes**	**Yes**
4	San Fernando Rd & Workman St	Future with Project	San Fernando	No	No	No	**Yes**	No
5	Truman St & Workman St	Future with Project	San Fernando	No	No	No	No	No
6	San Fernando Rd & San Fernando Mission Blvd	Future with Project	San Fernando	No	No	No	**Yes**	**Yes**
7	Truman St & San Fernando MissionBlvd	Future with Project	San Fernando	No	No	No	No	No
8	San Fernando Rd & Maclay Ave	Future with Project	San Fernando	No	No	No	No	No
9	Truman St & Maclay Ave	Future with Project	San Fernando	No	No	No	**Yes**	No
10	San Fernando Rd & Brand Blvd	Future with Project	San Fernando	No	No	No	**Yes**	No
11	Truman St & Brand Blvd	Future with Project	San Fernando	No	No	No	**Yes**	No
12	San Fernando Rd & Wolfskill St	Future with Project	San Fernando	No	No	**Yes**	**Yes**	No
13	Truman St & Wolfskill St	Future with Project	San Fernando	No	No	No	**Yes**	No
14	San Fernando Rd & Truman St	Future with Project	San Fernando	No	No	No	No	No
15	San Fernando Rd & Desmond St	Future with Project	Los Angeles	No	No	No	No	No
16	San Fernando Rd & SR-118 WB on-off Ramps	Future with Project	Los Angeles	No	No	No	No	No
17	San Fernando Rd & Paxton St	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	**Yes**
18	San Fernando Rd & SR-118 EB on-off Ramps	Future with Project	Los Angeles	No	No	No	**Yes**	No
19	San Fernando Rd & Van Nuys Blvd	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	**Yes**
20	Telfair Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	No	No	No	**Yes**
21	Kewen Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	No	No	No	No
22	Haddon Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	No	No	No	**Yes**
23	Laurel Canyon Blvd & Van Nuys Blvd	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
24	Bartee Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	No	No	No	-
25	Arleta Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
26	Beachy Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	**Yes**

Table 4-18: Significant Traffic Impact Summary (continued)

Study Intersection		Scenario	City	TSM	Alternative 1	Alternative 2	Alternative 3	Alternative 4
27	Woodman Ave & Van Nuys Blvd	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
28	Van Nuys Blvd & Plummer St	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	**Yes**
29	Van Nuys Blvd & Tupper St	Future with Project	Los Angeles	No	No	No	No	No
30	Van Nuys Blvd & Nordhoff St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
31	Van Nuys Blvd & Rayen St	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	No
32	Van Nuys Blvd & Parthenia St	Future with Project	Los Angeles	No	No	**Yes**	No	**Yes**
33	Van Nuys Blvd & Parthenia St/Vesper Ave	Future with Project	Los Angeles	No	**Yes**	No	No	**Yes**
34	Van Nuys Blvd & Chase St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
35	Van Nuys Blvd between Chase St & Roscoe Blvd	Future with Project	Los Angeles	No	No	No	-	No
36	Van Nuys Blvd & Roscoe Blvd	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	No
37	Van Nuys Blvd & Titus St	Future with Project	Los Angeles	No	No	No	No	No
38	Van Nuys Blvd & Lanark St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	No
39	Van Nuys Blvd & Blythe St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
40	Van Nuys Blvd & Arminta St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	No
41	Van Nuys Blvd & Keswick St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	No
42	Van Nuys Blvd & Saticoy St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	No
43	Van Nuys Blvd & Valerio St	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	No
44	Van Nuys Blvd & Sherman Way	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
45	Van Nuys Blvd & Vose St	Future with Project	Los Angeles	No	No	**Yes**	**Yes**	**Yes**
46	Van Nuys Blvd & Hartland St	Future with Project	Los Angeles	No	No	No	No	-
47	Van Nuys Blvd & Vanowen St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
48	Van Nuys Blvd & Kittridge St	Future with Project	Los Angeles	No	No	No	No	No
49	Van Nuys Blvd & Haynes St	Future with Project	Los Angeles	No	No	No	No	No
50	Van Nuys Blvd & Hamlin St	Future with Project	Los Angeles	No	No	No	No	No
51	Van Nuys Blvd & Gilmore St	Future with Project	Los Angeles	No	No	No	No	-

Table 4-18: Significant Traffic Impact Summary (continued)

Study Intersection		Scenario	City	TSM	Alternative 1	Alternative 2	Alternative 3	Alternative 4
52	Van Nuys Blvd & Victory Blvd	Future with Project	Los Angeles	No	**Yes**	No	No	No
53	Van Nuys Blvd & Friar St	Future with Project	Los Angeles	No	No	No	No	-
54	Van Nuys Blvd & Sylvan St	Future with Project	Los Angeles	No	No	No	No	No
55	Van Nuys Blvd & Erwin St	Future with Project	Los Angeles	No	No	No	No	No
56	Van Nuys Blvd & Delano St	Future with Project	Los Angeles	No	No	No	No	No
57	Van Nuys Blvd & Calvert St	Future with Project	Los Angeles	No	No	No	No	-
58	Van Nuys Blvd & Metro Orange Line Busway	Future with Project	Los Angeles	No	No	No	No	No
59	Van Nuys Blvd & Aetna St	Future with Project	Los Angeles	No	No	No	No	No
60	Van Nuys Blvd & Oxnard St	Future with Project	Los Angeles	No	**Yes**	**Yes**	**Yes**	**Yes**
61	Van Nuys Blvd & Hatteras St	Future with Project	Los Angeles	No	No	No	No	No
62	Van Nuys Blvd & Burbank Blvd	Future with Project	Los Angeles	No	No	No	**Yes**	No
63	Van Nuys Blvd & Clark St	Future with Project	Los Angeles	No	No	No	No	No
64	Van Nuys Blvd & Magnolia Blvd	Future with Project	Los Angeles	No	No	No	No	No
65	Van Nuys Blvd & Addison St	Future with Project	Los Angeles	No	No	No	No	No
66	Van Nuys Blvd & Huston St	Future with Project	Los Angeles	No	No	No	No	No
67	Van Nuys Blvd & Riverside Dr	Future with Project	Los Angeles	No	No	No	No	No
68	Van Nuys Blvd & WB 101 On-Off Ramps	Future with Project	Los Angeles	No	No	No	No	No
69	Van Nuys Blvd & EB 101 On-Off Ramps	Future with Project	Los Angeles	No	No	No	No	No
70	Van Nuys Blvd & Hortense St	Future with Project	Los Angeles	No	No	No	No	No
71	Van Nuys Blvd & Milbank St	Future with Project	Los Angeles	No	No	No	No	No
72	Van Nuys Blvd & Moorpark St	Future with Project	Los Angeles	No	No	No	No	No
73	Van Nuys Blvd & Ventura Blvd	Future with Project	Los Angeles	No	No	No	No	No

4.8 Maintenance and Storage Facilities

The addition of traffic to the street system as a result of staffing at each of the three potential maintenance and storage facilities (MSFs) is not projected to cause an increase in intersection delay. The typical arrival and departure times for employees are outside typical weekday peak travel periods since trains are in operation during those times. Employees would travel to and from the Project MSF before the a.m. peak hour and before trains begin morning operations, and also after the p.m. peak hour when trains begin operating at lower frequencies.

Discussion of the need for MSFs for the bus and rail Build Alternatives are provided in the sub-sections below.

4.8.1 TSM and BRT Alternative - Alternatives 3 and 4

Expansion of existing San Fernando Valley MSF sites owned and operated by Metro will not be necessary to accommodate the bus fleet that would provide service for the TSM and BRT alternatives.

4.8.2 Rail Alternative - Alternatives 3 and 4

Rail vehicles being serviced by the three MSF location options for Alternatives 3 and 4 would cross vehicular travel lanes on Van Nuys Boulevard to travel between the MSF site and the median fixed guideway. Movements of the LRT vehicles to and from the final MSF site would result in an increase in adjacent intersection delay. Adequate grade crossing devices (e.g., crossing gates, flashing signals, and pedestrian safety signage) and improvements to the local streets would be needed for traffic management and to prevent conflicts.

4.9 Effects on Parallel Corridors

The effects of changes in vehicular traffic patterns were analyzed on the parallel roadway corridors of Sepulveda Boulevard and Woodman Avenue, due to through-lane reductions within the Project corridor under the Build Alternatives, to determine if additional significant impacts would occur. The changes in roadway lane configuration along Van Nuys Boulevard would potentially affect the vehicle travel patterns and vehicles would then be diverted to other major roadways

A total of 50 signalized intersections were analyzed within these parallel corridors, with 29 of these intersections located on Sepulveda Boulevard and 21 intersections located on Woodman Avenue. The traffic volume shift from the Project corridor to the parallel corridors was defined based on a review of roadway segment volume changes anticipated within the Metro Travel Demand Model. No-Build scenario and Build scenario volumes were compared quantitatively for individual roadway segments/links, and the difference in volumes defined the growth in through volumes that was analyzed.

A discussion is provided below of the analysis within the parallel corridors for each Project build scenario, for study intersections operating at LOS E or F as well as for significant impact determinations. LOS E represents near-capacity conditions and LOS F represents over-capacity conditions.

TSM Alternative

The TSM Alternative analyzed under this scenario for the parallel corridors would not impact the existing roadway configurations on Van Nuys Boulevard and therefore traffic shifts are not anticipated.

Alternative 1 – (Curb-Running BRT)

With the implementation of this alternative, the shifts in traffic to the Sepulveda and Woodman parallel corridors would cause 19 of the 50 study intersections to operate at LOS E or F. In addition, significant traffic impacts would occur at 15 of these intersections.

Table 4-19 summarizes the a.m. and p.m. peak-hour LOS values at these study intersections for this alternative.

Alternative 2 – (Median-Running BRT)

With the implementation of this alternative, the shifts in traffic to the Sepulveda and Woodman parallel corridors would cause 19 of the 50 study intersections to operate at LOS E or F. In addition, significant traffic impacts would occur at 14 of these intersections.

Table 4-20 summarizes the a.m. and p.m. peak-hour LOS values at these study intersections for this alternative.

Alternative 3 – (Low-Floor LRT/Tram)

With the implementation of this alternative, the shifts in traffic to the Sepulveda and Woodman parallel corridors would cause 22 of the 50 study intersections to operate at LOS E or F. In addition, significant traffic impacts would occur at 23 of these intersections.

Table 4-21 summarizes the a.m. and p.m. peak-hour LOS values at these study intersections for this alternative.

Alternative 4 – (LRT)

With the implementation of this Project alternative, the shifts in traffic to the Sepulveda and Woodman parallel corridors would cause 17 of the 50 study intersections to operate at LOS E or F. In addition, significant traffic impacts would occur at six of these intersections.

Table 4-22 summarizes the a.m. and p.m. peak-hour LOS values at these study intersections for this alternative.

Table 4-18: Alternative 1 – Parallel Corridors AM/PM LOS

	Study Intersections	Future No Build				Future With Project (Alternative 1)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
74	Sepulveda Blvd & Lassen St	46.2	D	52.2	D	44.2	D	51.4	D	-2.0	-0.8	No
75	Sepulveda Blvd & Plummer St	51.6	D	53.4	D	53.5	D	53.5	D	1.9	0.1	No
76	Sepulveda Blvd & Tupper St	13.5	B	2.8	A	13.1	B	2.8	A	-0.4	0.0	No
77	Sepulveda Blvd & Nordhoff St	72.9	E	89.7	F	69.5	E	85.0	F	-3.4	-4.7	No
78	Sepulveda Blvd & Rayen St	14.1	B	35.1	D	13.6	B	31.5	C	-0.5	-3.6	No
79	Sepulveda Blvd & Parthenia St	>100	F	63.5	E	99.8	F	61.7	E	-	-1.8	No
80	Sepulveda Blvd & Chase St	13.8	B	15.6	B	8.1	A	66.4	E	-5.7	50.8	**Yes**
81	Sepulveda Blvd & & Roscoe Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
82	Sepulveda Blvd & Lanark St - Sepulveda Pl	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
83	Sepulveda Blvd & Raymer St	6.3	A	54.4	D	5.6	A	56.8	E	-0.7	2.4	No
84	Sepulveda Blvd & Stagg St	2.5	A	4.5	A	2.6	A	4.4	A	0.1	-0.1	No
85	Sepulveda Blvd & Saticoy St	18.7	B	35.4	D	18.7	B	35.7	D	0.0	0.3	No
86	Sepulveda Blvd & Valerio St	5.4	A	4.5	A	5.5	A	4.6	A	0.1	0.1	No
87	Sepulveda Blvd & Sherman Way	51.5	D	58.0	E	53.1	D	61.1	E	1.6	3.1	**Yes**
88	Sepulveda Blvd & Vose St	6.0	A	23.1	C	7.3	A	23.3	C	1.3	0.2	No
89	Sepulveda Blvd & Vanowen St	78.6	E	71.0	E	81.0	F	74.0	E	2.4	3.0	**Yes**
90	Sepulveda Blvd & Victory Blvd	73.4	E	44.5	D	80.0	E	46.2	D	6.6	1.7	**Yes**
91	Sepulveda Blvd & Erwin St	5.3	A	8.0	A	5.7	A	8.1	A	0.4	0.1	No
92	Sepulveda Blvd & Costco Dr	2.9	A	10.2	B	2.9	A	10.3	B	0.0	0.1	No
93	Sepulveda Blvd & Orange Line Busway	14.4	B	11.5	B	12.9	B	11.5	B	-1.5	0.0	No
94	Sepulveda Blvd & Oxnard St	36.2	D	60.0	E	34.0	C	64.1	E	-2.2	4.1	**Yes**
95	Sepulveda Blvd & Hatteras St	13.4	B	23.1	C	12.1	B	23.5	C	-1.3	0.4	No
96	Sepulveda Blvd & Burbank Blvd	>100	F	>100	F	>100	F	>100	F	-	-	No
97	Sepulveda Blvd & Clark St	4.3	A	5.6	A	4.4	A	6.1	A	0.1	0.5	No
98	Sepulveda Blvd & Magnolia Blvd	48.6	D	>100	F	45.0	D	>100	F	-3.6	-	**Yes**
99	Sepulveda Blvd & US-101 WB(NB) off ramp	60.7	E	23.8	C	55.2	E	21.9	C	-5.5	-1.9	No
100	Sepulveda Blvd & Camarillo St	32.6	C	>100	F	34.0	C	>100	F	1.4	-	No
101	Sepulveda Blvd & Galleria Gateway	1.7	A	2.0	A	1.7	A	2.0	A	0.0	0.0	No
102	Sepulveda Blvd & Ventura Blvd	44.3	D	>100	F	45.5	D	>100	F	1.2	-	No
103	Woodman Ave & Plummer St	59.0	E	12.0	B	59.1	E	12.1	B	0.1	0.1	No
104	Woodman Ave & Terra Bella St	32.8	C	29.9	C	33.2	C	29.9	C	0.4	0.0	No
105	Woodman Ave & Nordoff St	46.0	D	32.3	C	44.1	D	31.9	C	-1.9	-0.4	No
107	Woodman Ave & Osborne St	29.3	C	30.1	C	29.7	C	30.1	C	0.4	0.0	No
108	Woodman Ave & Chase St	55.7	E	57.7	E	62.6	E	59.6	E	6.9	1.9	**Yes**
109	Woodman Ave & Branford St	13.6	B	13.6	B	17.3	B	14.0	B	3.7	0.4	No
110	Woodman Ave & Roscoe Blvd	91.1	F	>100	F	92.4	F	>100	F	1.3	-	No
111	Woodman Ave & Lanark St-Cantara St	>100	F	>100	F	>100	F	>100	F	-	-	No
112	Woodman Ave & Willard St	2.1	A	3.2	A	1.2	A	3.2	A	-0.9	0.0	No
113	Woodman Ave & Strathern St	13.8	B	11.9	B	21.8	C	12.2	B	8.0	0.3	**Yes**
114	Woodman Ave & Saticoy St	81.5	F	98.0	F	74.7	E	>100	F	-6.8	-	**Yes**
115	Woodman Ave & Schlitz St-Woodman Pl	2.2	A	1.8	A	2.2	A	1.7	A	0.0	-0.1	No
116	Woodman Ave & Valerio St	33.9	C	42.9	D	35.9	D	46.9	D	2.0	4.0	**Yes**
117	Woodman Ave & Sherman Way	43.9	D	79.8	E	45.1	D	84.6	F	1.2	4.8	**Yes**
118	Woodman Ave & Hart St	5.8	A	6.5	A	5.8	A	6.6	A	0.0	0.1	No
119	Woodman Ave &Vanowen St	45.7	D	53.5	D	49.6	D	57.5	E	3.9	4.0	**Yes**
120	Woodman Ave & Kittridge St	8.7	A	2.1	A	8.8	A	2.1	A	0.1	0.0	No
121	Woodman Ave & Victory Blvd	74.6	E	48.8	D	74.3	E	48.8	D	-0.3	0.0	No
122	Woodman Ave & Erwin St	6.1	A	3.5	A	6.1	A	3.6	A	0.0	0.1	No
123	Woodman Ave & Orange Line Busway	1.3	A	1.2	A	1.3	A	1.2	A	0.0	0.0	No
124	Woodman Ave & Oxnard St	38.1	D	33.2	C	42.4	D	33.3	C	4.3	0.1	**Yes**

Table 4-19: Alternative 2 – Parallel Corridors AM/PM LOS

	Study Intersections	Future No Build				Future With Project (Alternative 2)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
74	Sepulveda Blvd & Lassen St	46.2	D	52.2	D	43.8	D	51.6	D	-2.4	-0.6	No
75	Sepulveda Blvd & Plummer St	51.6	D	53.4	D	51.8	D	53.2	D	0.2	-0.2	No
76	Sepulveda Blvd & Tupper St	13.5	B	2.8	A	13.1	B	2.8	A	-0.4	0.0	No
77	Sepulveda Blvd & Nordhoff St	72.9	E	89.7	F	69.1	E	85.8	F	-3.8	-3.9	No
78	Sepulveda Blvd & Rayen St	14.1	B	35.1	D	13.3	B	31.4	C	-0.8	-3.7	No
79	Sepulveda Blvd & Parthenia St	>100	F	63.5	E	99.5	F	62.0	E	-	-1.5	No
80	Sepulveda Blvd & Chase St	13.8	B	15.6	B	8.1	A	67.9	E	-5.7	52.3	**Yes**
81	Sepulveda Blvd & & Roscoe Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
82	Sepulveda Blvd & Lanark St - Sepulveda Pl	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
83	Sepulveda Blvd & Raymer St	6.3	A	54.4	D	4.4	A	56.1	E	-1.9	1.7	No
84	Sepulveda Blvd & Stagg St	2.5	A	4.5	A	2.6	A	4.4	A	0.1	-0.1	No
85	Sepulveda Blvd & Saticoy St	18.7	B	35.4	D	18.7	B	35.7	D	0.0	0.3	No
86	Sepulveda Blvd & Valerio St	5.4	A	4.5	A	5.5	A	4.6	A	0.1	0.1	No
87	Sepulveda Blvd & Sherman Way	51.5	D	58.0	E	53.1	D	60.9	E	1.6	2.9	**Yes**
88	Sepulveda Blvd & Vose St	6.0	A	23.1	C	7.2	A	23.2	C	1.2	0.1	No
89	Sepulveda Blvd & Vanowen St	78.6	E	71.0	E	81.6	F	70.7	E	3.0	-0.3	**Yes**
90	Sepulveda Blvd & Victory Blvd	73.4	E	44.5	D	77.7	E	47.3	D	4.3	2.8	**Yes**
91	Sepulveda Blvd & Erwin St	5.3	A	8.0	A	5.4	A	8.3	A	0.1	0.3	No
92	Sepulveda Blvd & Costco Dr	2.9	A	10.2	B	2.9	A	10.5	B	0.0	0.3	No
93	Sepulveda Blvd & Orange Line Busway	14.4	B	11.5	B	14.6	B	11.5	B	0.2	0.0	No
94	Sepulveda Blvd & Oxnard St	36.2	D	60.0	E	34.9	C	62.3	E	-1.3	2.3	No
95	Sepulveda Blvd & Hatteras St	13.4	B	23.1	C	12.4	B	23.9	C	-1.0	0.8	No
96	Sepulveda Blvd & Burbank Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
97	Sepulveda Blvd & Clark St	4.3	A	5.6	A	4.4	A	6.0	A	0.1	0.4	No
98	Sepulveda Blvd & Magnolia Blvd	48.6	D	>100	F	44.4	D	>100	F	-4.2	-	**Yes**
99	Sepulveda Blvd & US-101 WB(NB) off ramp	60.7	E	23.8	C	51.9	D	50.6	D	-8.8	26.8	**Yes**
100	Sepulveda Blvd & Camarillo St	32.6	C	>100	F	23.2	C	>100	F	-9.4	-	No
101	Sepulveda Blvd & Galleria Gateway	1.7	A	2.0	A	1.7	A	2.0	A	0.0	0.0	No
102	Sepulveda Blvd & Ventura Blvd	44.3	D	>100	F	44.7	D	>100	F	0.4	-	No
103	Woodman Ave & Plummer St	59.0	E	12.0	B	58.3	E	11.8	B	-0.7	-0.2	No
104	Woodman Ave & Terra Bella St	32.8	C	29.9	C	33.5	C	29.9	C	0.7	0.0	No
105	Woodman Ave & Nordoff St	46.0	D	32.3	C	44.6	D	31.9	C	-1.4	-0.4	No
107	Woodman Ave & Osborne St	29.3	C	30.1	C	29.6	C	30.2	C	0.3	0.1	No
108	Woodman Ave & Chase St	55.7	E	57.7	E	58.5	E	60.1	E	2.8	2.4	**Yes**
109	Woodman Ave & Branford St	13.6	B	13.6	B	14.4	B	14.1	B	0.8	0.5	No
110	Woodman Ave & Roscoe Blvd	91.1	F	>100	F	92.1	F	>100	F	1.0	-	No
111	Woodman Ave & Lanark St-Cantara St	>100	F	>100	F	>100	F	>100	F	-	-	No
112	Woodman Ave & Willard St	2.1	A	3.2	A	2.1	A	3.2	A	0.0	0.0	No
113	Woodman Ave & Strathern St	13.8	B	11.9	B	14.5	B	12.3	B	0.7	0.4	No
114	Woodman Ave & Saticoy St	81.5	F	98.0	F	83.4	F	>100	F	1.9	-	**Yes**
115	Woodman Ave & Schlitz St-Woodman Pl	2.2	A	1.8	A	1.4	A	1.7	A	-0.8	-0.1	No
116	Woodman Ave & Valerio St	33.9	C	42.9	D	43.5	D	46.9	D	9.6	4.0	**Yes**
117	Woodman Ave & Sherman Way	43.9	D	79.8	E	45.3	D	84.6	F	1.4	4.8	**Yes**
118	Woodman Ave & Hart St	5.8	A	6.5	A	5.8	A	6.6	A	0.0	0.1	No
119	Woodman Ave &Vanowen St	45.7	D	53.5	D	50.0	D	57.4	E	4.3	3.9	**Yes**
120	Woodman Ave & Kittridge St	8.7	A	2.1	A	8.8	A	2.1	A	0.1	0.0	No
121	Woodman Ave & Victory Blvd	74.6	E	48.8	D	74.4	E	48.8	D	-0.2	0.0	No
122	Woodman Ave & Erwin St	6.1	A	3.5	A	6.1	A	3.6	A	0.0	0.1	No
123	Woodman Ave & Orange Line Busway	1.3	A	1.2	A	1.3	A	1.2	A	0.0	0.0	No
124	Woodman Ave & Oxnard St	38.1	D	33.2	C	38.4	D	33.1	C	0.3	-0.1	No

Table 4-20: Alternative 3 – Parallel Corridors AM/PM LOS

	Study Intersections	Future No Build				Future With Project (Alternative 3)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
74	Sepulveda Blvd & Lassen St	46.2	D	52.2	D	43.9	D	56.1	E	-2.3	3.9	**Yes**
75	Sepulveda Blvd & Plummer St	51.6	D	53.4	D	51.9	D	56.0	E	0.3	2.6	**Yes**
76	Sepulveda Blvd & Tupper St	13.5	B	2.8	A	13.1	B	2.8	A	-0.4	0.0	No
77	Sepulveda Blvd & Nordhoff St	72.9	E	89.7	F	69.0	E	95.1	F	-3.9	5.4	**Yes**
78	Sepulveda Blvd & Rayen St	14.1	B	35.1	D	13.2	B	34.4	C	-0.9	-0.7	No
79	Sepulveda Blvd & Parthenia St	>100	F	63.5	E	99.4	F	67.5	E	-	4.0	**Yes**
80	Sepulveda Blvd & Chase St	13.8	B	15.6	B	8.1	A	77.3	E	-5.7	61.7	**Yes**
81	Sepulveda Blvd & & Roscoe Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
82	Sepulveda Blvd & Lanark St - Sepulveda Pl	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
83	Sepulveda Blvd & Raymer St	6.3	A	54.4	D	3.0	A	63.8	E	-3.3	9.4	**Yes**
84	Sepulveda Blvd & Stagg St	2.5	A	4.5	A	2.6	A	4.5	A	0.1	0.0	No
85	Sepulveda Blvd & Saticoy St	18.7	B	35.4	D	18.4	B	36.4	D	-0.3	1.0	No
86	Sepulveda Blvd & Valerio St	5.4	A	4.5	A	5.5	A	4.7	A	0.1	0.2	No
87	Sepulveda Blvd & Sherman Way	51.5	D	58.0	E	52.6	D	62.9	E	1.1	4.9	**Yes**
88	Sepulveda Blvd & Vose St	6.0	A	23.1	C	7.2	A	23.5	C	1.2	0.4	No
89	Sepulveda Blvd & Vanowen St	78.6	E	71.0	E	81.1	F	69.6	E	2.5	-1.4	**Yes**
90	Sepulveda Blvd & Victory Blvd	73.4	E	44.5	D	82.3	F	51.0	D	8.9	6.5	**Yes**
91	Sepulveda Blvd & Erwin St	5.3	A	8.0	A	5.7	A	8.5	A	0.4	0.5	No
92	Sepulveda Blvd & Costco Dr	2.9	A	10.2	B	2.9	A	10.6	B	0.0	0.4	No
93	Sepulveda Blvd & Orange Line Busway	14.4	B	11.5	B	15.0	B	12.1	B	0.6	0.6	No
94	Sepulveda Blvd & Oxnard St	36.2	D	60.0	E	32.5	C	82.2	F	-3.7	22.2	**Yes**
95	Sepulveda Blvd & Hatteras St	13.4	B	23.1	C	17.0	B	44.9	D	3.6	21.8	**Yes**
96	Sepulveda Blvd & Burbank Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
97	Sepulveda Blvd & Clark St	4.3	A	5.6	A	4.3	A	5.3	A	0.0	-0.3	No
98	Sepulveda Blvd & Magnolia Blvd	48.6	D	>100	F	43.7	D	>100	F	-4.9	-	**Yes**
99	Sepulveda Blvd & US-101 WB(NB) off ramp	60.7	E	23.8	C	50.2	D	51.2	D	-10.5	27.4	**Yes**
100	Sepulveda Blvd & Camarillo St	32.6	C	>100	F	21.6	C	>100	F	-11.0	-	No
101	Sepulveda Blvd & Galleria Gateway	1.7	A	2.0	A	1.7	A	2.0	A	0.0	0.0	No
102	Sepulveda Blvd & Ventura Blvd	44.3	D	>100	F	44.3	D	>100	F	0.0	-	No
103	Woodman Ave & Plummer St	59.0	E	12.0	B	58.1	E	11.6	B	-0.9	-0.4	No
104	Woodman Ave & Terra Bella St	32.8	C	29.9	C	32.7	C	30.1	C	-0.1	0.2	No
105	Woodman Ave & Nordoff St	46.0	D	32.3	C	44.1	D	32.0	C	-1.9	-0.3	No
107	Woodman Ave & Osborne St	29.3	C	30.1	C	29.2	C	30.2	C	-0.1	0.1	No
108	Woodman Ave & Chase St	55.7	E	57.7	E	57.6	E	60.2	E	1.9	2.5	**Yes**
109	Woodman Ave & Branford St	13.6	B	13.6	B	13.9	B	14.3	B	0.3	0.7	No
110	Woodman Ave & Roscoe Blvd	91.1	F	>100	F	91.2	F	>100	F	0.1	-	**Yes**
111	Woodman Ave & Lanark St-Cantara St	>100	F	>100	F	>100	F	>100	F	-	-	No
112	Woodman Ave & Willard St	2.1	A	3.2	A	2.1	A	3.3	A	0.0	0.1	No
113	Woodman Ave & Strathern St	13.8	B	11.9	B	14.2	B	12.5	B	0.4	0.6	No
114	Woodman Ave & Saticoy St	81.5	F	98.0	F	82.5	F	>100	F	1.0	-	**Yes**
115	Woodman Ave & Schlitz St-Woodman Pl	2.2	A	1.8	A	1.4	A	1.7	A	-0.8	-0.1	No
116	Woodman Ave & Valerio St	33.9	C	42.9	D	43.7	D	45.5	D	9.8	2.6	**Yes**
117	Woodman Ave & Sherman Way	43.9	D	79.8	E	45.5	D	83.0	F	1.6	3.2	**Yes**
118	Woodman Ave & Hart St	5.8	A	6.5	A	5.8	A	6.6	A	0.0	0.1	No
119	Woodman Ave &Vanowen St	45.7	D	53.5	D	47.3	D	56.7	E	1.6	3.2	**Yes**
120	Woodman Ave & Kittridge St	8.7	A	2.1	A	8.8	A	2.1	A	0.1	0.0	No
121	Woodman Ave & Victory Blvd	74.6	E	48.8	D	74.3	E	58.5	E	-0.3	9.7	**Yes**
122	Woodman Ave & Erwin St	6.1	A	3.5	A	6.8	A	3.6	A	0.7	0.1	No
123	Woodman Ave & Orange Line Busway	1.3	A	1.2	A	1.3	A	1.2	A	0.0	0.0	No
124	Woodman Ave & Oxnard St	38.1	D	33.2	C	33.7	C	31.8	C	-4.4	-1.4	No

Table 4-21: Alternative 4 – Parallel Corridors AM/PM LOS

	Study Intersections	Future No Build				Future With Project (Alternative 4)				Change in Delay (secs)		Significant Impact ?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	Delay (secs)	LOS	AM Peak Hour	PM Peak Hour	
74	Sepulveda Blvd & Lassen St	46.2	D	52.2	D	44.5	D	51.9	D	-1.7	-0.3	No
75	Sepulveda Blvd & Plummer St	51.6	D	53.4	D	51.3	D	55.5	E	-0.3	2.1	No
76	Sepulveda Blvd & Tupper St	13.5	B	2.8	A	13.5	B	2.8	A	0.0	0.0	No
77	Sepulveda Blvd & Nordhoff St	72.9	E	89.7	F	72.8	E	89.3	F	-0.1	-0.4	No
78	Sepulveda Blvd & Rayen St	14.1	B	35.1	D	14.2	B	35.0	C	0.1	-0.1	No
79	Sepulveda Blvd & Parthenia St	>100	F	63.5	E	>100	F	63.2	E	-	-0.3	No
80	Sepulveda Blvd & Chase St	13.8	B	15.6	B	13.7	B	13.9	B	-0.1	-1.7	No
81	Sepulveda Blvd & & Roscoe Blvd	>100	F	>100	F	97.4	F	>100	F	-	-	No
82	Sepulveda Blvd & Lanark St - Sepulveda Pl	>100	F	>100	F	>100	F	>100	F	-	-	No
83	Sepulveda Blvd & Raymer St	6.3	A	54.4	D	8.2	A	48.7	D	1.9	-5.7	No
84	Sepulveda Blvd & Stagg St	2.5	A	4.5	A	2.5	A	4.5	A	0.0	0.0	No
85	Sepulveda Blvd & Saticoy St	18.7	B	35.4	D	17.4	B	34.7	C	-1.3	-0.7	No
86	Sepulveda Blvd & Valerio St	5.4	A	4.5	A	5.3	A	4.4	A	-0.1	-0.1	No
87	Sepulveda Blvd & Sherman Way	51.5	D	58.0	E	52.7	D	58.5	E	1.2	0.5	No
88	Sepulveda Blvd & Vose St	6.0	A	23.1	C	7.1	A	22.9	C	1.1	-0.2	No
89	Sepulveda Blvd & Vanowen St	78.6	E	71.0	E	73.8	E	67.5	E	-4.8	-3.5	No
90	Sepulveda Blvd & Victory Blvd	73.4	E	44.5	D	75.9	E	44.7	D	2.5	0.2	**Yes**
91	Sepulveda Blvd & Erwin St	5.3	A	8.0	A	5.5	A	8.0	A	0.2	0.0	No
92	Sepulveda Blvd & Costco Dr	2.9	A	10.2	B	2.9	A	10.3	B	0.0	0.1	No
93	Sepulveda Blvd & Orange Line Busway	14.4	B	11.5	B	14.6	B	11.5	B	0.2	0.0	No
94	Sepulveda Blvd & Oxnard St	36.2	D	60.0	E	33.2	C	61.6	E	-3.0	1.6	No
95	Sepulveda Blvd & Hatteras St	13.4	B	23.1	C	12.0	B	23.6	C	-1.4	0.5	No
96	Sepulveda Blvd & Burbank Blvd	>100	F	>100	F	>100	F	>100	F	-	-	**Yes**
97	Sepulveda Blvd & Clark St	4.3	A	5.6	A	4.4	A	6.0	A	0.1	0.4	No
98	Sepulveda Blvd & Magnolia Blvd	48.6	D	>100	F	44.8	D	>100	F	-3.8	-	**Yes**
99	Sepulveda Blvd & US-101 WB(NB) off ramp	60.7	E	23.8	C	58.2	E	30.0	C	-2.5	6.2	**Yes**
100	Sepulveda Blvd & Camarillo St	32.6	C	>100	F	33.9	C	>100	F	1.3	-	No
101	Sepulveda Blvd & Galleria Gateway	1.7	A	2.0	A	1.7	A	2.0	A	0.0	0.0	No
102	Sepulveda Blvd & Ventura Blvd	44.3	D	>100	F	45.3	D	>100	F	1.0	-	No
103	Woodman Ave & Plummer St	59.0	E	12.0	B	66.8	E	14.7	B	7.8	2.7	**Yes**
104	Woodman Ave & Terra Bella St	32.8	C	29.9	C	32.8	C	29.9	C	0.0	0.0	No
105	Woodman Ave & Nordoff St	46.0	D	32.3	C	46.8	D	30.4	C	0.8	-1.9	No
107	Woodman Ave & Osborne St	29.3	C	30.1	C	29.3	C	30.1	C	0.0	0.0	No
108	Woodman Ave & Chase St	55.7	E	57.7	E	55.7	E	57.7	E	0.0	0.0	No
109	Woodman Ave & Branford St	13.6	B	13.6	B	13.6	B	13.6	B	0.0	0.0	No
110	Woodman Ave & Roscoe Blvd	91.1	F	>100	F	91.1	F	>100	F	0.0	-	No
111	Woodman Ave & Lanark St-Cantara St	>100	F	>100	F	>100	F	>100	F	-	-	No
112	Woodman Ave & Willard St	2.1	A	3.2	A	2.1	A	3.2	A	0.0	0.0	No
113	Woodman Ave & Strathern St	13.8	B	11.9	B	13.8	B	11.9	B	0.0	0.0	No
114	Woodman Ave & Saticoy St	81.5	F	98.0	F	81.5	F	98.0	F	0.0	0.0	No
115	Woodman Ave & Schlitz St-Woodman Pl	2.2	A	1.8	A	1.4	A	1.8	A	-0.8	0.0	No
116	Woodman Ave & Valerio St	33.9	C	42.9	D	41.3	D	42.5	D	7.4	-0.4	**Yes**
117	Woodman Ave & Sherman Way	43.9	D	79.8	E	43.4	D	79.9	E	-0.5	0.1	No
118	Woodman Ave & Hart St	5.8	A	6.5	A	5.8	A	6.5	A	0.0	0.0	No
119	Woodman Ave &Vanowen St	45.7	D	53.5	D	44.8	D	52.6	D	-0.9	-0.9	No
120	Woodman Ave & Kittridge St	8.7	A	2.1	A	8.8	A	2.1	A	0.1	0.0	No
121	Woodman Ave & Victory Blvd	74.6	E	48.8	D	75.8	E	48.7	D	1.2	-0.1	No
122	Woodman Ave & Erwin St	6.1	A	3.5	A	6.8	A	3.5	A	0.7	0.0	No
123	Woodman Ave & Orange Line Busway	1.3	A	1.2	A	1.3	A	1.2	A	0.0	0.0	No
124	Woodman Ave & Oxnard St	38.1	D	33.2	C	38.0	D	33.2	C	-0.1	0.0	No

4.10 Supplemental Impact Analysis

4.10.1 Regional Transportation Performance

The effects of the Build Alternatives with respect to the regional transportation network vary within the study area and to/from the corridor. In measuring the performance, VMT provides a good metric for determining potential changes to the surrounding network. Reductions to VMT are beneficial since they mean that fewer miles are being traveled on a daily basis as a result of a particular alternative; whereas, increases to VMT infer that more miles are being traveled and are more likely to create impacts.

Ridership

One measure that provides an understanding of Project performance across the analyzed alternatives is transit ridership. Table 4-23 provides a summary of projected ridership for each alternative, based on the analysis conducted using the Metro Travel Demand model. The data within the table indicates the following weekday passenger transit trip increases between the MOL and the San Fernando/Sylmar Metrolink Station under the Project Build Alternatives, versus the No-Build Alternative:

- TSM – An increase of approximately 466.
- Alternative 1 – An increase of approximately 2,970.
- Alternative 2 – An increase of approximately 2,969.
- Alternative 3 – An increase of approximately 8,452.
- Alternative 4 – An increase of approximately 8,604.

The Alternative 4 MSF sub-options have similar ridership patterns, as only the yard configuration/location changes across the three potential treatments for that Project element.

Vehicle Miles and Vehicle Hours Traveled Measures

Table 4-23 also summarizes the effect of each of the Project Build Alternatives on study area and Project corridor vehicle miles traveled (VMT) and vehicle hours traveled (VHT). The VMT value provides a combined estimate of both the vehicle trips generated (as versus transit trips, bicycling, walking, etc.) and the length of those vehicle trips. The VHT value provides a similar combined value of vehicle trips generated and the time required to complete those trips (incorporating congestion into the measure). Each of the numbers provided represents a comparison to the No-Build Alternative.

The data indicates that many of the Project Build Alternatives would have a beneficial effect on the Project area by reducing VMT and VHT. The additional transit trips would reduce the number of trips by auto, in general, due to mode preference changes by commuters. The following alternatives would have VMT and VHT benefits:

- TSM Alternative – A VMT reduction of 9,607 and VHT reduction of 451
- Alternative 1 – A VMT reduction of 35,960 and a VHT reductions of 1,696
- Alternative 2 –A VMT reduction of 37,158 and a VHT reductions of 1,779
- Alternative 3 – A VMT reduction of 20,007 and a VHT reductions of 1,089
- Alternative 4 – A VMT reduction of 54,207 and a VHT reductions of 2,838

Table 4-22: Ridership and VMT/VHT Summary

Build Alternative	New Transit Trips	VMT Reduction	VHT Reduction
TSM	466	9,607	451
BRT Alt - Option A (Curb Running)	2,970	35,960	1,696
BRT Alt - Option B (Median Running)	2,969	37,358	1,779
Rail Alt - Option A (Low Floor LRT/Tram)	8,452	20,007	1,089
Rail Alt - Option B (LRT)	8,604	54,207	2,838

Overall findings of Project Build Alternative impacts are discussed within the next report section.

Chapter 5
Mitigation Measures

5.1 Overall Findings

The Project Build Alternatives would result in potentially adverse unavoidable and significant impacts related to intersection operations, parking, pedestrian travel, and bicycle travel. The Build Alternatives would have beneficial effects on both a region-wide (multi-county) and a Project area level. The proposed Project would therefore have a beneficial effect under NEPA and a less than significant impact under CEQA.

NEPA Findings

- The TSM Alternative would create potentially adverse transportation effects during construction and no adverse effects under operations. The No-Build alternative would not create any adverse transportation impacts.
- The Build Alternatives would have potential adverse transportation effects during construction, potential adverse effects during the operations period, and beneficial regional effects under the operations period.

CEQA Determinations

- The TSM Alternative would not create significant transportation impacts during construction or operations. The No-Build Alternative would not create any significant transportation impacts.
- The Build Alternatives would result in significant transportation impacts during construction, and locally significant impacts but regionally insignificant impacts under the operations period.

Existing local bus transit operating speeds would decrease because of the proposed traffic lane reductions along the Project corridor and the resulting increases in traffic congestion. However, the benefits from the VHT and VMT reduction as a result of mode shift from automobiles to transit service in the build alternatives would partially outweigh the increased levels of vehicle congestion. Regional benefits would be nominal due to the very large urbanized area.

However, from an overall study area perspective, all Build Alternatives would have a benefit when compared to both the No-Build and TSM Alternatives, by increasing levels of transit service and ridership. As such, the Project operations period would have a regionally beneficial effect under NEPA and a regionally less than significant impact under CEQA.

5.2 Operational Period Mitigation Measures

5.2.1 Transit Service and Access

Project Alternatives 2, 3 and 4 would create delay, at varying magnitudes, for existing local transit lines. Under Alternative 1, local bus service would benefit from the dedicated curb-adjacent bus lanes, which would be available to both the Project-implemented premium bus service and the existing local service to remain in the operations period.

Under Alternative 2, local bus service would remain in mixed flow service with existing curb-side bus stops. Local bus service will experience some delays, however, due to the reduction in travel lanes in the operations period.

Under Alternative 3, Metro local bus service on Van Nuys Boulevard would be removed as part of the service improvement to implement the low-floor LRT/Tram technology. For some existing local bus riders, walk times would increase to travel to and from local transit access points.

Under Alternative 4, local bus service would remain in mixed flow service with existing curb-side bus stops. Local bus service will experience some delays, however, due to the reduction in travel lanes in the operations period.

There are not any feasible measures available to mitigate the anticipated increased delays in local bus service under Alternatives 2 and 4. There are also not any feasible mitigation measures to reduce the increased walking distance for some local bus service patrons, due to the implementation of the fixed guideway and related partial intersection closures.

5.2.2 Traffic

Implementation of the proposed Project, under any of the Build Alternatives, would result in significant local traffic impacts during operation. The Project would have unavoidable adverse transportation effects during operation that cannot be addressed through typical mitigation measures where vehicular capacity is added.

Physical mitigation measures, such as lane configuration changes that would increase capacity of the roadways or restrictions in allowable turning movements, were considered infeasible for both the Project alignment and parallel corridor roadways due to ROW constraints or secondary effects to upstream and downstream locations.

Since the remaining adversely affected intersections could not be mitigated, local roadway impacts would be adverse and unavoidable under NEPA and significant and unavoidable under CEQA. Regional impacts, due to benefits provided by the proposed Project, would not be potentially adverse and would be insignificant.

Movements of the LRT vehicles to and from the final MSF site would result in an increase in adjacent intersection delay. With adequate grade crossing devices (e.g., crossing gates, flashing signals, and pedestrian safety signage) and improvements to the local streets for traffic/conflict management, and as train crossing would only be made by vehicles entering service or going out of service and not at a regular frequency during peak periods, significant impacts would not be potentially adverse and would be insignificant.

5.2.3 Pedestrian and Bicycle Circulation

Existing and planned pedestrian and bicycle facilities would be affected under all Build Alternatives. The proposed Project will have conflicts with the City of Los Angeles Bicycle Plan, as designated bicycle lanes on Van Nuys Boulevard under the "Backbone Bikeway Network" would not be feasible with the implementation of any of the alternatives. Some pedestrian travel paths to and from the project corridor will lengthen, with the partial closure of some minor intersections where pedestrian crossing will no longer be possible.

Significant impacts were not defined for pedestrian access during the project operations period, as access will remain but will be reconfigured.

Within the Pacoima area, some of the striped on-street bicycle lanes called for in the Bicycle Plan have been implemented. These facilities would be removed as part of Project implementation under the Build Alternatives. This would cause significant impacts to bicycle access.

The Bicycle Plan also calls for parallel bicycle lanes on Woodman Avenue (one-mile to the east of Van Nuys Boulevard) between Ventura Boulevard and the Osborne Street and Nordhoff Street corridors. It also calls for parallel bicycle lanes on Osborne Street from that point to San Fernando Road.

The Van Nuys Boulevard corridor is also, however, designated as a Transit Priority Segment within the City of Los Angeles General Plan Framework Element. This creates a conflict between the General Plan and the Bicycle Plan.

General mitigation measures for potential impacts to pedestrian facilities during the operations period are as follows:

- Additional visual enhancement to the existing crosswalks at each proposed station location would be implemented to further improve pedestrian circulation.
- Metro would prepare a community linkages study that would document preferred pedestrian access to each station, general pedestrian circulation in the immediate vicinity of the station, and potential sites for connections to nearby bus services. The purpose of this study would include ensuring sufficient circulation, access, and information important to users of the transit system. The results of the study would be implemented through coordination between Metro and the local jurisdictions of the City of Los Angeles and the City of San Fernando.

General mitigation measures for potential impacts to bicycle facilities during the operations period are as follows:

- Metro should assist the City of Los Angeles in the implementation of bicycle lanes on these parallel roadways, as mitigation for the conflict in the Bicycle Plan on Van Nuys Boulevard that would be caused by implementation of the Project Build Alternatives.

5.2.4 Parking

On-street parking would be removed within most segments of the corridor, under all of the Project Build Alternatives. Parking impacts were removed from the CEQA checklist. The parking study has shown, however, that supply is available within the focused analysis areas. Parking would be available within the Van Nuys Boulevard corridor on cross-streets and within off-street parking areas. Parking would also be available within the San Fernando Road corridor within on-street parking areas and area parking lots. There would not be significant impacts of the parking removal. Specific mitigation measures are therefore not recommended.

5.3 Construction Period Mitigation Measures

The Project Build Alternatives would create adverse transportation effects during construction that would be addressed through mitigation measures. The proposed Project Build Alternatives would result in locally significant impacts during construction. The measures defined within the sections below would partially mitigate these impacts but significant and unavoidable impacts would remain.

5.3.1 Overall Mitigation - Traffic Management Plans

As the proposed Project Build Alternatives would be constructed almost exclusively within the public right-of-way of existing roadway corridors, the primary reviewer of final construction plans, work area configurations, and temporary traffic controls, signage, and lane striping would be LADOT. Metro would be required to create Traffic Management Plans (TMPs) for construction areas that would define work areas and all other elements of construction. Approval of these TMPs by LAODT and implementation by Metro would reduce construction-period impacts but significance of impacts during construction will remain. For the roadways within the boundary of City of San Fernando, coordination with and approval from that jurisdiction is needed as well.

The measures discussed here would address adverse effects and significant impacts to flow and access for various travel modes during the construction period. The entire Project corridor will not be affected, as work areas will be established within finite areas and in most cases construction operations will move to a separate work area once a major construction phase is completed.

Potential issues associated with various travel modes during the construction period are discussed in the sub-sections below.

5.3.2 Transit Service and Access

Metro would coordinate with local transit agencies in advance to communicate closures, communicate information on any changes to bus service that would result from the Project Build Alternatives, and develop detours as appropriate. Bus stops within work areas would need to be relocated, with warning signs posted in advance of the closure, and warnings and alternate stop notifications posted during the extent of the closure.

The traffic management plan, once approved by LADOT and implemented by the proposed Project construction contractor(s), would partially mitigate temporary disruptions to transit service.

Combined, the TMPs would partially offset adverse effects and significant impacts to transit operations and access during the construction period. Significant impacts could remain, and additional mitigation measures are not feasible, and therefore the impacts would be significant and unavoidable.

5.3.3 Traffic

- To facilitate the flow of traffic in and around the construction zones and ensure impacts are minimized to the extent feasible, the following measures are proposed: Schedule a majority of construction-related travel (i.e., deliveries, hauling, and worker trips) during the off-peak hours;
- Develop detour routes to facilitate traffic movement through construction zones without significantly increasing cut-through traffic in adjacent residential areas;
- Where feasible, temporarily restripe roadways including turning lanes, through lanes, and parking lanes at the affected intersections to maximize the vehicular capacity at those locations affected by construction closures;
- Where feasible, temporarily remove on-street parking to maximize the vehicular capacity at those locations affected by construction closures. In these areas where street parking is temporarily removed in front of businesses, the contractor shall provide wayfinding to other

nearby parking lots or temporary lots, with any temporary parking secured well in advance of parking being removed in the affected area;

- Where feasible, place station traffic control officers at major intersections during peak hours to minimize delays related to construction activities;
- Assign a Construction Relations team inclusive of a manager, senior officers, and social media strategist to develop and implement the Metro Board's adopted Construction Relations model. The team will conduct the outreach program to inform the general public about the construction process, planned roadway closures, and anticipated mitigations through community briefings in public meeting spaces and use of signage (banners, etc.);
- Develop and implement a program with business owners to minimize effects to businesses during construction activities, including but not limited to signage, Eat, Shop, Play, and promotional programs;
- Consult and seek input on the designation and identification of haul routes and hours of operation for trucks with the local jurisdictions and Caltrans. The selected routes should minimize noise, vibration, and other effects;
- To the extent practical, maintain traffic lanes in both directions, particularly during the morning and afternoon peak hours;
- Maintain access to adjacent businesses via existing or temporary driveways throughout the construction period; and
- Coordinate potential road closures and detour routes with local school districts.

Combined, these measures would partially address adverse effects and significant impacts to traffic flow during the construction period. Significant impacts could remain, and additional mitigation measures are not feasible, and therefore the impacts would be significant and unavoidable.

5.3.4 Pedestrian and Bicycle Access

Existing and planned pedestrian and bicycle facilities would be affected during construction activities for the implementation of this alternative. Closure of these facilities, and establishment of detours to parallel routes, would be implemented as part of TMPs to be approved by LADOT.

Mitigation measures for potential impacts to pedestrian and bicycle impacts during the construction period are as follows:

- Provision of bicycle detour signs, as appropriate, to route bicyclists away from detour areas with minimal-width travel lanes and onto parallel roadways.
- Provision of sidewalk closure and pedestrian route detour signs, as appropriate, to safely provide alternate routes around work areas where sidewalks would be closed for safety reasons or for specific construction work within the sidewalk area.

These measures would partially address adverse effects and significant impacts to bicycle and pedestrian access during the construction period. Significant impacts could remain, and additional mitigation measures are not feasible, and therefore the impacts would be significant and unavoidable.

5.3.5 Parking

On-street parking would be removed within most segments of the corridor during the construction period, under all of the Project Build Alternatives. Parking impacts were removed from the CEQA checklist. The parking study has shown that supply is available within the focused analysis areas. There would not be significant adverse effects of the parking removal during construction, under NEPA. Specific mitigation measures are therefore not recommended.