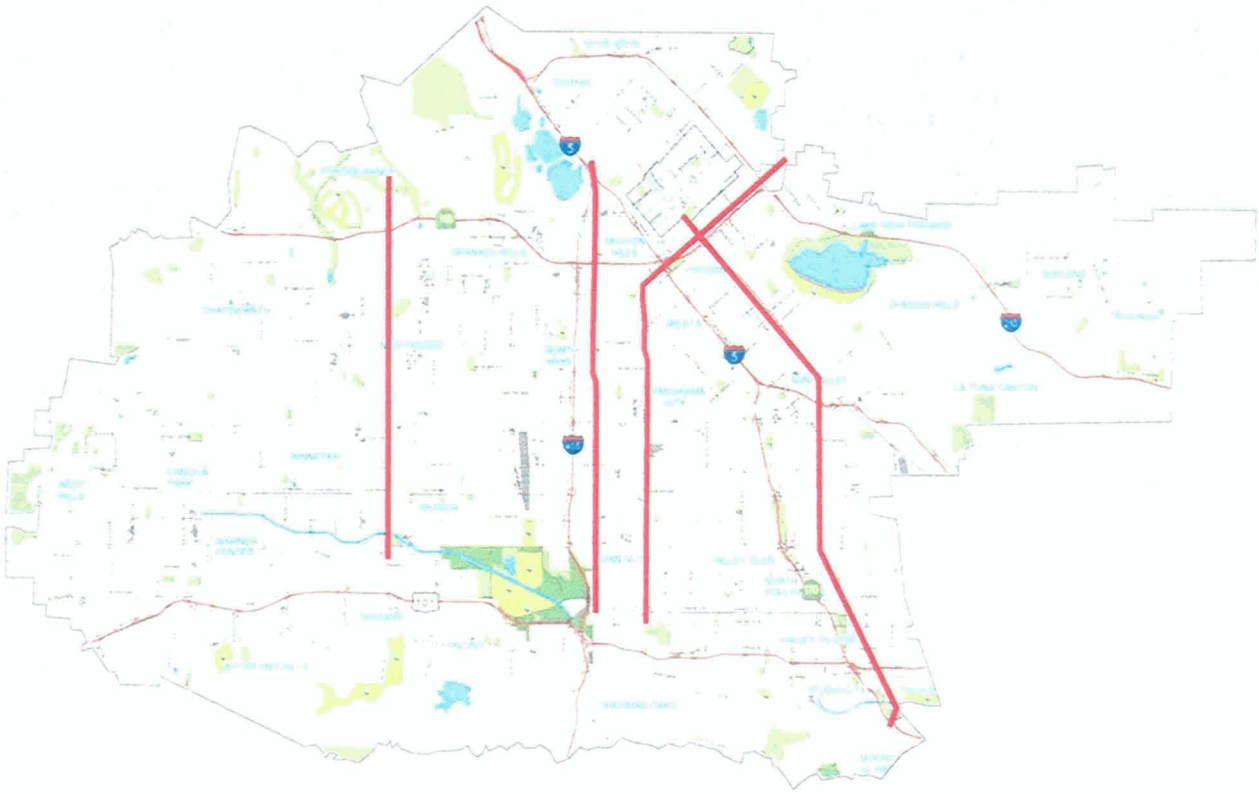
San Fernando Valley
North-South Transit Corridors Project



TASK 3 DELIVERABLES REPORT:

IMPACT AND BENEFIT ANALYSIS

LADOT

JUNE 2008

Metro

CITY OF LOS ANGELES
CALIFORNIA

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June 3, 2008

Mr. Walter Davis, Transportation Project Manager
San Fernando Valley/North County Planning Team
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012

Re: SAN FERNANDO VALLEY NORTH-SOUTH TRANSIT CORRIDORS PROJECT - DELIVERABLE FOR TASK 3

Dear Mr. Davis,

Enclosed please find a report summarizing LADOT's work for Task 3 (Impact and Benefit Analysis). In addition to deliverables for Task 3, this report includes all deliverables for the Lankershim Blvd./San Fernando Rd. Corridor from Tasks 1 and 2. It also includes conceptual engineering drawings for potential capital improvements. We have begun work on Task 4 (Public Outreach) by meeting with representatives from affected council offices. We have also submitted Quarterly Report 3 to Metro showing that $264,262.50 was spent up to the third quarter of the fiscal year, leaving a balance of $635,737.50.

As previously discussed, LADOT was unable to produce Tasks 1 and 2 for the Lankershim/San Fernando Corridor due to the delay in deployment of Metro Rapid bus service. With Metro approval, Tasks 1, 2 and 3 for the Lankershim/San Fernando corridor have been completed and included in this report based on travel time samples generated by multiple corridor runs.

Potential improvements identified in Task 3 include: bus lanes, signal timing changes, bus stop re-locations, street widenings, and other transportation and bus stop enhancements. Bus speed improvements and bus travel time savings due to the potential improvements have been detailed in the report. Additionally, the impacts of bus lanes on mixed flow traffic and air emissions are described.

We will continue work on Task 4 (Public Outreach) by meeting with affected parties and refining potential improvements where necessary. Upon agreement of a package of improvements, the next step will be to complete Task 5 (Study Recommendations and Approval

from City Council, Mayor and Metro Board). At this point, Metro and LADOT will work together to determine how to complete any necessary environmental work.

We look forward to continuing our work for you on this important project. If you have any questions, please feel free to call me at 213-972-8623, or Jason Rondou at 213-972-8604.

Susan L. Bok
Supervising Transportation Planner

Enc.

SUMMARY

SAN FERNANDO VALLEY
NORTH-SOUTH TRANSIT CORRIDORS PROJECT

TASK 3: IMPACT AND BENEFIT ANALYSIS

JUNE 2008

SUMMARY OF COMPLETED WORK

In accordance with project milestones in the Scope of Work for the San Fernando Valley North-South Transit Corridors Bus Speed Improvement Project, the Los Angeles Department of Transportation (LADOT) has completed **Task 3: Impact and Benefit Analysis**. Based on the potential improvements previously described in the Tasks 1 and 2 deliverables, bus travel time savings were estimated on a segment-by-segment basis. Additionally, major signalized intersections along the study corridors were modeled to determine impacts on intersection delay, level of service (LOS), and potential change in air emissions due to the conversion of a mixed use lane to a bus lane or due to the installation of an additional lane to be designated for buses.

With the LACMTA goal of increasing average corridor bus speeds by 10-15%, LADOT has quantified expected travel time savings for potential improvements discussed in Tasks 1 and 2, as well as quantified bus travel time savings for potential bus lane designations, then converted those travel time savings into bus speed improvement percentages.

Based on the findings of the bus speed analyses, LADOT has assessed the feasibility of implementing packages of potential improvements, including bus lanes, to improve average bus speeds in each transit corridor. At locations where bus speeds are currently low and/or bus lanes can be installed without creating significant impacts, bus lanes have been studied.

LADOT has also reviewed the transit corridor improvements recommended in LACMTA's 2003 *San Fernando Valley North-South Transit Corridor Regionally Significant Transportation Investment Study (RSTIS)* and incorporated them into this deliverable where feasible. In many instances, the RSTIS improvements complement or overlap those recommended separately in this study. In addition to improvements geared toward improving bus speeds, the RSTIS recommends station design standards (consistent with those for Metro Rapid bus stops) and on-street station enhancements such as landscaping and street furniture. Since these types of transit and pedestrian enhancements improve the experience of transit riders and create more attractive transit corridors, we have included them in our list of potential improvements for each corridor. These enhancements range from landscaped median islands to decorative crosswalks, bus shelters, security lighting, trash receptacles and other pedestrian amenities.

METHODOLOGY

Bus speeds and travel time savings estimates for potential improvements were calculated based on findings from the Wilshire Bus Rapid Transit studies conducted by LADOT and LACMTA, including the 2004-2007 bus lane demonstration project in West LA. A factor of 15% improvement in bus travel time was used for bus lanes.

LADOT examined the feasibility of creating new bus lanes in segments where bus speeds are poor and would benefit significantly from bus lanes OR where bus lanes would have minimal impacts on traffic and residential on-street parking. Where bus lanes would significantly improve poor bus speeds, LADOT analyzed the feasibility of converting mixed flow lanes to bus lanes, removing peak period on-street parking, and/or widening the street to create new bus lanes. In some cases, a combination of these measures was necessary.

LADOT modeled Highway Capacity Manual (HCM) level of service (LOS) and delay impacts for mixed flow traffic at major intersections in corridor segments where bus lanes are proposed. Existing conditions were simulated based on existing intersection geometry, signal timing and traffic demand. Future simulations for these intersections were performed with either the addition of a new bus and right-turn only lane or conversion of a mixed flow lane into a bus and right-turn only lane.

Using the HCM LOS and delay simulations, order-of-magnitude air emissions from changes in traffic delay were also estimated.

BUS SPEED LEVEL OF SERVICE

The FTA's suggested LOS criteria for bus speeds on arterials with 1-3 bus stops per mile, similar to Metro Rapid Service:

LOS A	21.2 mph or higher	< 2.8min/mile	Excellent – Free Flow
LOS B	16.2 – 21.1 mph	2.8 – 3.7 min/mile	Very Good
LOS C	11.0 – 16.1 mph	3.8 – 5.5 min/mile	Good
LOS D	7.9 – 10.9 mph	5.6 – 7.6 min/mile	Fair- Some Delay
LOS E	6.0 – 7.8 mph	7.7 – 10.0 min/mile	Poor - Delay Worsens
LOS F	< 6.0 mph	> 10 min/mile	Very Poor – Stop and Go

BUS LANE OPERATIONS

- Bus lanes would operate between 7-9 AM (AM peak period) and 4-7 PM (PM peak period) Monday through Friday.
- Right turns would be permitted in bus lanes, with non-transit vehicles allowed to enter the bus lanes approximately 100 feet before or after making a right turn into or out of a cross street, driveway or other legal access point.
- Bicycles would be allowed in bus lanes, and bus lane signage would designate "Bikes OK."

PROS AND CONS OF BUS LANES

While bus lanes are relatively easy to install and can significantly improve bus speed and travel time on congested roadways, they are not always necessary or appropriate, particularly when buses are already operating at satisfactory levels of service in normal traffic conditions. In fact, bus lanes present their own set of problems with respect to traffic operations, enforcement and community impacts. The following bus lane issues have been documented in international case studies and/or been observed directly by LADOT:

- IMPACTS ON TRAFFIC AND AIR EMISSIONS. When bus lanes are created by converting mixed flow lanes to bus lanes, there will be impacts on mixed flow traffic and related air emissions. Loss of one lane of mixed flow traffic can have a disproportionate impact on remaining mixed flow capacity. This results in increased congestion and traffic diversion.

- IMPACTS ON PARKING AND PEDESTRIANS. When bus lanes are created by removing on-street parking, the loss of parking impacts dense residential areas and commercial areas with limited off-street parking. Removal of on-street parking also eliminates any visual or psychological buffer between moving traffic and pedestrians. If buses are moving speedily along a bus lane, as intended, the unintended result may be an unfriendly pedestrian environment.

- ENFORCEMENT PROBLEMS. Bus lane violations by motorists are common, especially in heavy traffic congestion. Use of police officers to enforce bus lane exclusivity is costly and cannot provide the consistent enforcement needed to modify motorists' behavior. To remedy this, the City of London is successfully utilizing bus-mounted cameras to photograph the license plates of bus lane violators (similar to red light photo enforcement programs.) If Los Angeles continues to install bus lanes, it may be advisable to pursue these types of alternative enforcement measure.

- CIRCULATION AND ACCESS PROBLEMS. Curbside bus lanes must accommodate not only buses but also vehicles turning in and out of side streets, alleys and driveways. In heavy congestion, these vehicles can end up blocking the bus lane while attempting to enter mixed flow traffic lanes. This can create a traffic safety hazard for motorists and impede bus movement in the bus lane. Vehicles may also have difficulty crossing bus lanes to enter driveways. Curbside bus lanes must also accommodate right-turning vehicles. This can create merging problems as right-turners into the bus lane try to enter mixed flow lanes. Right-turners out of the bus lane may block bus movement while waiting for pedestrians or cross-street traffic at intersections. There can also be enforcement confusion in short blocks where right-turning vehicles are entering and exiting the bus lanes over short distances.

- MIXED RESULTS FROM DEMONSTRATION PROJECT. Los Angeles removed a one-mile stretch of bus lanes on Wilshire Blvd. in West Los Angeles in 2007 after a three-year test period. Although the bus lanes benefited bus speeds, they

impacted traffic congestion, parking and circulation and access and were not well-received by the community.

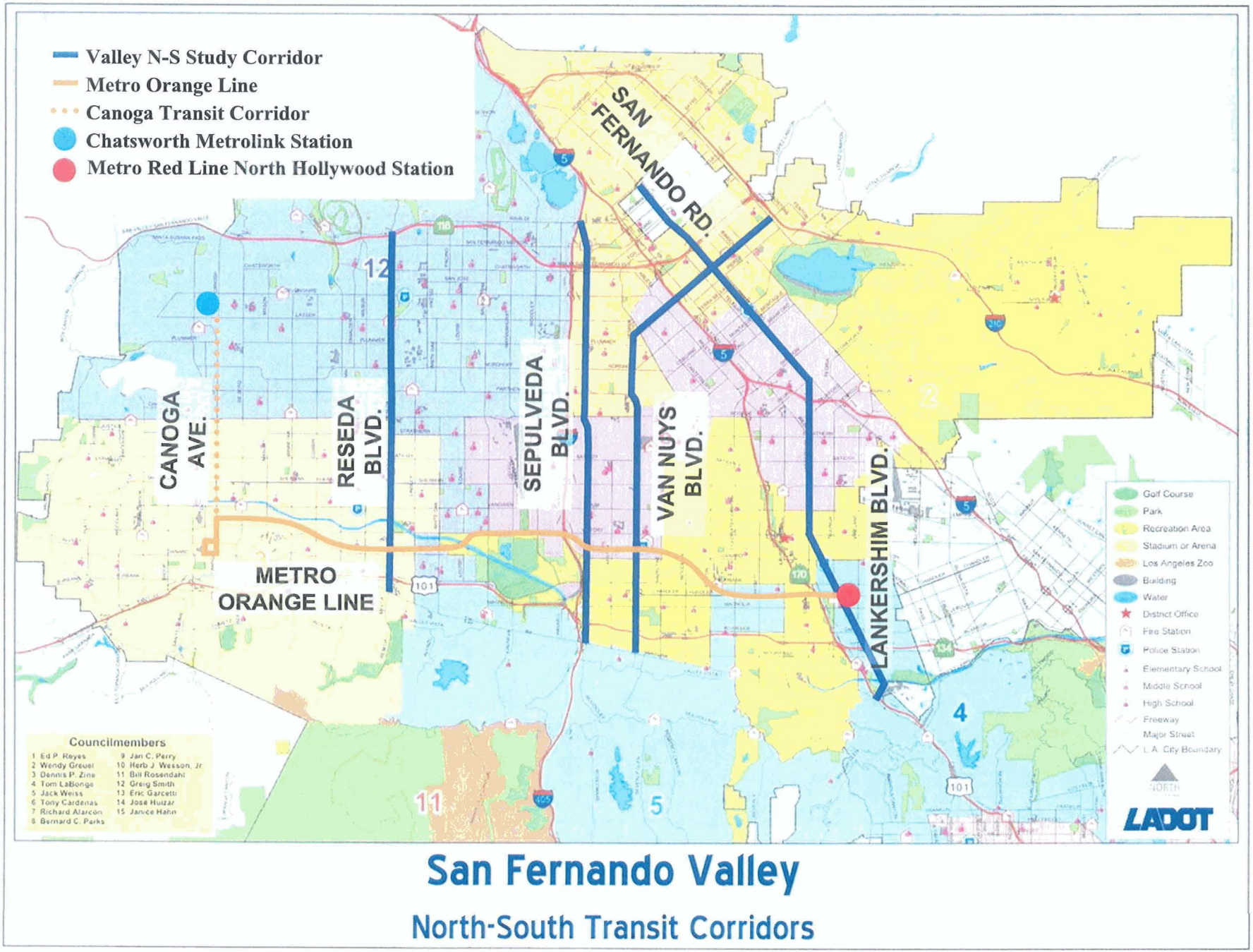
Given these issues, bus lanes should not be regarded as a Bus Rapid Transit "easy fix." They should be utilized only when and where they are truly needed to alleviate bus speed delay.

BUS LANE CRITERIA

The following bus lane criteria were used by LADOT in its analysis of the Wilshire Bus Lanes Project. They are derived from the USDOT's "Operational Design Guidelines for High Occupancy Vehicle Lanes on Arterial Roadways" (1994), the Journal of Public Transportation Vol. 5, No. 2 (2002), and SCAG's warrant criteria for arterial bus lanes (1991):

- Bus lanes at least 10 km (6.2 miles) in length
- Serving many communities and business centers
- Travel time savings of at least 8-10 minutes
- Heavy bus corridor with at least 30-40 buses in the peak hour and 300 buses per day

These criteria have not yet been applied to the potential bus lanes described in this study but may be considered in further evaluation, especially for bus lanes that are not expected to provide bus speed improvements.



San Fernando Valley

North-South Transit Corridors

RESEDA

RESEDA CORRIDOR

EXECUTIVE SUMMARY

The Reseda Corridor consists of Reseda Blvd. between Ventura Blvd. and the SR-118 Freeway, a distance of 6 miles in the San Fernando Valley. Bus speeds currently operate at Good (LOS C) to Very Good (LOS B) levels of service, per FTA's bus speed level of service criteria. Currently, 10-12 Metro buses per hour serve the corridor in each direction during peak periods. The improvements discussed in this report would increase peak period bus speeds by 5-9% and reduce peak period bus travel times by 1-2 minutes. There would be no significant impacts on traffic delay or mobile air emissions from these improvements. However, approximately 422 on-street peak period parking spaces would be lost to accommodate 5.2 miles of bus lanes. If a southbound mixed flow lane were converted to a bus lane between Erwin St. and the US 101 Freeway ramps to avoid parking impacts, there would be significant traffic delay and air emission impacts in that 1.5-mile segment. In addition, some existing bike lanes would need to be absorbed into peak period bus lanes, but bikes are allowed in bus lanes.

EXISTING CONDITIONS

Currently, 10-12 Metro buses per hour serve the corridor in each direction during peak periods. Northbound bus speeds range between 14.0-17.4 mph, depending on time of day. Southbound bus speeds range between 14.8-15.3 mph. These bus speeds are rated LOS C (Good) to LOS B (Very Good) per FTA's bus speed level of service criteria. Northbound bus travel times range between 20.5 and 25.5 minutes, depending on time of day. Southbound bus travel times range between 19. and 20.9 minutes.

Bus speed delays occur primarily between Erwin St. and Ventura Blvd. (southbound) and at the Metro Orange Line Busway, Sherman Way and Roscoe Blvd. (northbound and southbound.)

POTENTIAL IMPROVEMENTS

- **Investigate Signal Timing Changes** at selected locations. Possibly increase signal cycle length up to 120 seconds and optimize signal cycle lengths.

- **Peak Period Bus Lanes:**
  - Northbound between Clark St. and Topham St. (0.75 miles)
  - Northbound and southbound between Roscoe Blvd. and Plummer St. (1.5 miles)
  - Southbound between Erwin St. and US 101 Freeway ramps (1.5 miles)

- **Bus Queue Jump Signal** at Sherman Way for southbound buses

- **Bus Stop Relocations** at US 101 Freeway ramps and Sherman Way (southbound)

- **Increase Mixed Flow Capacity** at Roscoe Blvd by widening for SB RT Pocket.
- **Landscaped Median Islands** at selected locations
- **Transit Enhancements** at selected major intersections

BENEFITS

The improvements would increase peak period northbound bus speeds by 5.2-6.0% and peak period southbound bus speeds by 8.8-9.2%. Bus speed levels of service would remain at LOS B (Very Good) and LOS C (Good.)

Bus travel times would be reduced by 1-2 minutes in the peak periods. Northbound bus travel times would be reduced from 20.5 to 19.3 minutes in the AM peak, from 22.3 to 22.0 minutes midday, and from 25.5 to 24.2 minutes in the PM peak. Southbound bus travel times would be reduced from 19.7 to 18.0 minutes in the AM peak, from 20.9 to 20.6 minutes midday, and from 20.4 to 18.8 minutes in the PM peak.

IMPACTS

The improvements would have a generally positive impact on mixed flow traffic delay and air emissions, if Reseda Blvd. were widened at the Metro Orange Line Busway and peak period parking were removed to accommodate the bus lanes as proposed. However, if a southbound mixed flow lane were converted to a bus lane between Erwin St. and the US 101 Freeway ramps to avoid parking impacts, there would be a significant impact on both mixed flow traffic delay and air emissions in that segment. For example, traffic delay at the Metro Orange Line Busway would increase as much as 140%, and mobile air emissions would increase by as much as 124%.

Existing bike lanes would need to be absorbed into the northbound bus lane between Clark St. and Topham St. and the southbound bus lane between Erwin St. and the 101 Freeway ramps, but bikes are allowed by right in bus lanes. Bus lane signage would state "Bikes OK."

Up to 422 on-street parking spaces would have to be removed during the AM and PM peak periods to accommodate the bus lanes as proposed. Most of these parking spaces serve commercial areas; approximately 30% serve residential areas. Parking losses would need to be mitigated. Commercial areas generally have off-street parking available for customers and employees.

RESEDA CORRIDOR NORTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Burbank Blvd. to Metro Orange Line Busway
    - Signals currently not optimized for northbound progression (heavy east-west traffic volumes on major cross streets and at US 101 Freeway ramps)
    - Bus delay increases through US 101 Freeway interchange and at Metro Orange Line Busway crossing
- Sherman Way
    - Delays for north-south bus and traffic movement. During the midday, signals operate at 90 second cycle lengths.
- Roscoe Blvd.
    - Delays for north-south bus and traffic movement. Significant portion of cycle time dedicated to turning movements.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - Convert signals from Ventura Blvd. to Erwin Blvd. up to 120 second cycle length.
    - Convert signals from Sherman Way to Saticoy St. up to 120 second cycle length.
    - Optimize signal cycle lengths between Saticoy St. and Parthenia St., especially Roscoe Blvd. Optimization of Roscoe Blvd. signal for Reseda Blvd. would result in greater northbound speeds through this segment.
- Northbound Peak Period Bus Lanes
    - Clark St. to Topham St. (Metro Orange Line Busway) (0.75 miles) Bus lane would benefit bus speeds. Restripe and combine the existing bike lane into a new northbound bus lane. Possible northbound queue jumper lane at the ramps. Requires street widening between Oxnard St. and Topham St. Requires removal of approximately 43 peak period parking spaces.

- Roscoe Blvd. to Plummer St. (1.5 miles) Requires re-striping at Roscoe Blvd. and removal of approximately 147 peak period parking spaces.

- Increase Mixed Flow Capacity

  - Restripe northbound approach to Roscoe Blvd. to provide additional left turn pocket.

- Landscaped Median Islands

  - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)

- Transit Enhancements

  - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 10-12 northbound Metro buses per hour serve the Reseda Corridor during peak periods. Northbound buses operate at an average speed of 17.37 mph (LOS B – Very Good) in the AM peak, 15.96 mph (LOS C) midday, and 13.98 mph (LOS C - Good) in the PM peak. Northbound bus travel times are 20.5 minutes in the AM peak, 22.3 minutes midday and 25.5 minutes in the PM peak.

With the non-bus lane improvements, northbound bus travel time savings are estimated to be 38 seconds in the AM peak, 17 seconds midday, and 35 seconds in the PM peak. This translates into bus speeds improving from 17.37 mph to 17.92 mph (3.2%) in the AM peak, 15.96 mph to 16.16 mph midday (1.3%), and from 13.98 mph to 14.31 mph (2.4%) in the PM peak.

Total bus travel time savings increase with the addition of a peak period bus lane from Clark St. to Topham St. (Metro Orange Line Busway.) An additional 32 seconds in the AM peak and 40 seconds in the PM peak would be saved with this bus lane. The additional savings are estimated to bring average bus speeds in the corridor up to 18.41 mph (LOS B) in the AM peak, 16.16 mph (LOS B) midday, and 14.71 mph (LOS C) in the PM peak. This yields total bus speed increases of 6.0% in the AM peak, 1.3% midday, and 5.2% in the PM peak.

Even with all of the improvements, northbound bus speed increases do not meet LACMTA's 10-15% goal. Northbound bus speed level of service would remain at LOS B (Very Good) in the AM peak, LOS B (Very Good) midday, and LOS C (Good) in the PM peak. Northbound bus travel times would be reduced from 20.5 minutes to 19.3 minutes in the AM peak, from 22.3 minutes to 22.0 minutes midday, and from 25.5 minutes to 24.2 minutes in the PM peak.

BUS LANE FEASIBILITY ANALYSIS

Reseda Blvd. is a designated Major Class II Highway with a roadway width of 70-80 feet in most locations, two travel lanes in each direction, a median left turn lane and full-time parking lanes. Converting mixed flow lanes to bus lanes in segments of Reseda Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new peak period bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There are two segments along northbound Reseda Blvd. where bus speeds are poor and would benefit from the installation of a bus lane: 1) Clark St. to the US 101 Freeway ramps; and 2) Hatteras St. to Topham St., which includes the crossing of the Metro Orange Line Busway. Bus speed level of service through these segments generally ranges between LOS C and LOS F during AM, midday and PM peak periods.

With the removal of peak period on-street parking, a peak period northbound bus lane could be created from north of Clark St. to Burbank Blvd. approaching the US 101 Freeway ramps. From north of Burbank Blvd. to Topham St., traffic and bike lanes could be re-striped to continue the northbound bus lane without affecting mixed flow capacity. The existing bike lane on northbound Reseda Blvd. would be absorbed into the bus lane, and bicycles would be allowed by right in the bus lane.

There are two parallel streets close to the Busway: Oxnard St. to the south and Topham St. to the north. The multiple phases required for the operation of the signals at these two cross streets plus the Busway create delays for buses and mixed flow traffic on Reseda Blvd. Bus speeds would likely improve significantly with the installation of a bus lane, especially in the PM peak period. However, installation of a northbound peak period bus lane would require removal of peak period parking near a dense residential area, especially south of Oxnard St. Between Oxnard St. and Topham St., where the Metro Orange Line Busway crosses Reseda Blvd., there is also insufficient roadway width to create a bus lane, and widening of Reseda Blvd. would be necessary. There appears to be adequate room to widen the east side of the street at the Busway to accommodate a bus lane.

The remainder of northbound Reseda Blvd. operates at Good to Excellent bus speed level of service (LOS A to LOS C) and therefore is not in need of a bus lane to improve bus speeds. However, there is a 1.5-mile commercial segment of Reseda Blvd. between Roscoe Blvd. and Plummer St. where a northbound peak period bus lane could be created. By re-striping the 22-foot curb lane between Roscoe Blvd. and Chase St. and restricting peak period parking in the commercial area between Chase St. and Plummer St., a bus lane could be installed. The peak period parking restrictions would have a minimal impact on residential uses, since this area is mostly commercial. A bus lane in this segment would help maintain existing bus speed levels of service over time.

BUS LANE IMPACTS

1. There would be little or no impact on mixed flow traffic or air emissions resulting from the creation of northbound peak period bus lanes between Clark St. and Topham St. and between Roscoe Blvd. and Plummer St., as described above. With the exception of the short stretch between Oxnard St. and Topham St., where widening would be required, there is adequate roadway width in the two candidate segments to create an additional lane, if peak period parking were removed. However, an existing bike lane would need to be absorbed into the new bus lane between Clark St. and Topham St.

The tables below show traffic delay and air emission modeling results for two sample intersections within these segments with these improvements. The modeling indicates that traffic delay at the Metro Orange Line Busway (MOL) and Roscoe Blvd. would either remain the same or improve:

Intersection Traffic Delay

Intersection	Existing	New Bus Lane	% Change
Roscoe Blvd (AM)	109 sec (F)	61.5 sec (E)	-43.6%
Roscoe Blvd (PM)	160.7 sec (F)	135.4 sec (F)	-15.7%
MOL Busway (AM)	33.6 sec (C)	33.6 sec (C)	0%
MOL Busway (PM)	47.0 sec (D)	47.0 (D)	0%

2. Air emissions impacts, however, are mixed:

Air Emissions Impact

Intersection	New Bus Lane
Roscoe Blvd (AM)	-13.9%
Roscoe Blvd (PM)	-12.0%
MOL Busway (AM)	+1.3%
MOL Busway (PM)	+1.6%

3. Installation of the northbound peak period bus lanes as described would impact on-street parking, eliminating approximately 190 peak period parking spaces:

- 43 peak period spaces between Clark St. and Topham St., a residential area
- 147 peak period spaces between Roscoe Blvd. and Plummer St., a commercial area (approximate 20% utilization rate)

It should be noted that only the bus lane between Clark St. and Topham St. is expected to improve bus speeds. The bus lane segment between Roscoe Blvd. and Plummer St. is operating at satisfactory bus speeds (LOS A-C), and the bus lane would help preserve those levels of service.

Parking losses in residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities. Commercial areas generally have off-street parking available for customers and employees.

RESEDA CORRIDOR SOUTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Erwin St to Ventura Blvd.
    - Signals not optimized for northbound progression (heavy east-west traffic volumes on major cross streets and at US 101 Freeway ramps)
    - Metro Local bus stop obstructs right turn movements onto westbound US 101 Freeway ramp
- Sherman Way
    - Delays for north-south bus and traffic movement. During the midday, signals operate at 90 second cycle lengths.
    - Right turn pocket combined with Metro Local bus stop impedes southbound traffic
- Roscoe Blvd.
    - Delays for north-south bus and traffic movement. Significant portion of cycle time dedicated to turning movements.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - Convert signals from Erwin St to Ventura Blvd. up to 120 second cycle length.
    - At Sherman Way, convert midday cycle lengths up to 120 seconds.
    - Optimize signal cycle lengths between Saticoy St. and Parthenia St., especially Roscoe Blvd to favor Reseda. Optimization of Roscoe Blvd. signal for Reseda Blvd. would result in greater southbound speeds through this segment.
- Southbound Peak Period Bus Lane Segments
    - Plummer St. to Roscoe Blvd. (1.5 miles) requires re-striping at Roscoe Blvd. and removal of approximately 147 peak period parking spaces.
    - Erwin St. to US 101 Freeway ramps (0.7 miles) Bus lane would benefit bus speeds. Requires either: 1) conversion of a mixed flow lane to a bus lane; or 2) re-striping or widening between Topham St. and Oxnard St., removal of 65-

85 peak period parking spaces in a residential area, and combining an existing bike lane into the new bus lane.

- Bus Queue Jump Signal
    - Add a queue jump signal at Sherman Way for southbound buses *(Source: 2003 RSTIS)*
- Bus Stop Relocations
    - Relocate US 101 Freeway bus stop to the north and create right turn pocket for westbound on-ramp.
    - Relocate Sherman Way stop from nearside to farside and combine with existing Metro Rapid stop.
- Increase Mixed Flow Capacity
    - At Roscoe Blvd., widen to add a southbound right turn only lane and an additional northbound left turn lane, providing added roadway capacity for north-south traffic. Requires right-of-way acquisition.
- Landscaped Median Islands
    - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)
- Transit Station Enhancements
    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 10-12 southbound Metro buses per hour serve the Reseda Corridor during peak periods. Southbound buses operate at an average speed of 15.32 mph (LOS C - Good) in the AM peak, 14.41 mph (LOS C – Good) midday, and 14.80 mph (LOS C - Good) in the PM peak. Southbound bus travel times are 19.7 minutes in the AM peak, 20.9 minutes midday and 20.4 minutes in the PM peak.

With the non-bus lane improvements, southbound bus travel time savings are estimated to be 43 seconds in the AM peak, 19 seconds midday, and 45 seconds in the PM peak. This translates into corridor bus speeds improving from 15.32 mph to 15.90 mph (3.8%) in the AM peak, 14.41 mph to 14.64 mph (1.6%) midday, and from 14.80 mph to 15.37 mph (3.9%) in the PM peak.

Total bus travel time savings increase with the addition of peak period bus lanes at Roscoe Blvd. and from Erwin St. to the US 101 Freeway ramps. An additional 57

seconds in the AM peak and 51 seconds in the PM peak would be saved with these two bus lane segments. The additional savings are estimated to bring average bus speeds in the corridor up to 16.73 mph (LOS B) in the AM peak and 16.06 mph (LOS C) in the PM peak. This yields total bus speed increases of 9.2% in the AM peak, 1.6% midday, and 8.8% in the PM peak.

Even with all of the improvements, southbound bus speed increases do not meet LACMTA's 10-15% goal. Southbound bus speed level of service would improve from LOS C (Good) to LOS B (Very Good) in the AM peak period while remaining at LOS C (Good) midday and in the PM peak period. Southbound bus travel times would be reduced from 19.7 minutes to 18.0 minutes in the AM peak, from 20.9 minutes to 20.6 minutes midday, and from 20.4 minutes to 18.8 minutes in the PM peak.

BUS LANE FEASIBILITY ANALYSIS

Reseda Blvd. is a designated Major Class II Highway with a roadway width of 70-80 feet in most locations, two travel lanes in each direction, a median left turn lane and full-time parking lanes. Converting mixed flow lanes to bus lanes in segments of Reseda Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new peak period bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There are two segments along Reseda Blvd. where bus speeds would benefit from a southbound peak period bus lane: 1) the approach to and departure from Roscoe Blvd., where bus speed level of service is at LOS F for AM, midday, and PM peaks; and 2) from Erwin St. to the US 101 Freeway ramps, which includes the crossing of the Metro Orange Line Busway, where bus speed levels of service range between LOS C and LOS F.

Reseda Blvd. just north of Roscoe Blvd. has a 22-foot curb lane for approximately 230 feet, where a southbound peak period bus lane segment could be created without disrupting mixed flow traffic or on-street parking. Any extension of the bus lane further north toward Plummer St., however, would require peak period parking removal. The curb lane south of Roscoe Blvd. is 24 feet wide and is currently being used as a de facto bus lane for Metro Local and Metro Rapid bus stops.

A southbound peak period bus lane in the segment from Erwin St. to the US 101 Freeway ramps (including the Metro Orange Line Busway crossing) would significantly improve southbound bus speeds. However, installation of a southbound peak period bus lane would require either 1) conversion of a mixed flow lane to a peak period bus lane; or 2) restriction of peak period parking adjacent to a residential area, re-striping or widening between Oxnard St. and Topham St., where the Metro Orange Line Busway crosses Reseda Blvd., and combining an existing bike lane into the new bus lane.

Through the US 101 Freeway ramps, southbound bus speeds are the worst, and a peak period bus lane would provide the greatest benefit for buses. However, due to extremely

high freeway-bound right turn volumes and lack of sufficient roadway width, bus lanes could not be created either from a mixed flow lane conversion or re-striping. Street widening would be necessary for the creation of an additional lane, but the structural limitations of the freeway overpass preclude the feasibility of this option.

The remainder of southbound Reseda Blvd. in the study corridor operates at Good to Excellent bus speed level of service (LOS A to C) and therefore is not in need of a bus lane to improve bus speeds. However, there is a 1.5-mile segment of Reseda Blvd. between Plummer St. and Roscoe Blvd. where a southbound peak period bus lane could be created by restricting peak period parking between Plummer St. and Chase St. and re-striping the 22-foot curb lane between Chase St. and Roscoe Blvd. The peak period parking restrictions would have a minimal impact on residential uses, since this area is mostly commercial. A bus lane in this segment would help maintain existing satisfactory bus speeds over time.

BUS LANE IMPACTS

1. If mixed flow lanes are not converted to bus lanes, there would be no impact on traffic delay or air emissions resulting from the creation of the southbound peak period bus lanes between Plummer St. and Roscoe Blvd. and between Erwin St. and the US 101 Freeway ramps. With the exception of the short segments of Reseda between Oxnard St. and Topham St., where re-striping or widening would be required, there is adequate roadway width in the two candidate segments to create an additional lane, if peak period parking were restricted. Traffic congestion and resultant air emissions would remain the same or improve in the short term with the addition of the new bus lane segments since roadway capacity would be increased. However, an existing bike lane would need to be eliminated to allow the new bus lane between Calvert St. and the US 101 Freeway ramps.

The tables below show traffic delay and air emission modeling results for two sample intersections within these segments with these potential improvements. The modeling indicates that traffic delay in the AM and PM peak period at the Metro Orange Line Busway (MOL) and Roscoe Blvd. would either remain the same or improve:

Intersection Traffic Delay

Intersection	Existing	New Bus Lane	% Change
Roscoe Blvd (AM)	109 sec (F)	61.5 sec (E)	-43.6%
Roscoe Blvd (PM)	160.7 sec (F)	135.4 sec (F)	-15.7%
MOL Busway (AM)	33.6 sec (C)	33.6 sec (C)	0%
MOL Busway (PM)	47.0 sec (D)	47.0 sec (D)	0%

2. Air emission impacts are mixed:

Air Emissions Impact

Intersection	New Bus Lane
Roscoe Blvd (AM)	-13.9%
Roscoe Blvd (PM)	-12.0%
MOL Busway (AM)	+1.6%
MOL Busway (PM)	+1.6%

However, if a mixed flow lane were converted to a southbound peak period bus lane between Erwin St. and the US 101 Freeway ramps, in order to avoid potential street widening between Oxnard St. and Topham St. and removal of peak period parking in a residential area, there would be impacts on traffic delay and air emissions. The tables below show traffic delay and air emission modeling results with conversion of a mixed flow lane to a peak period bus lane for a sample intersection within the segment. The modeling indicates that traffic delay at the Metro Orange Line Busway (MOL) would increase:

Intersection Traffic Delay

Intersection	Existing	Bus Lane Conversion	% Change
MOL Busway (AM)	33.6 sec (C)	80.6 sec (F)	+139.9%
MOL Busway (PM)	47.0 sec (D)	97.0 sec (F)	+106.4%

Air emissions would also increase as a result of the increase in traffic delay:

Intersection	Bus Lane Conversion
MOL Busway (AM)	+119.7%
MOL Busway (PM)	+123.9%

For reference, a mode shift of 10% from single occupant vehicle to transit would yield a reduced impact on traffic delay and air emissions.

3. If mixed flow lanes were not converted to bus lanes, installation of the southbound peak period bus lanes would impact on-street parking, eliminating up to 232 peak period parking spaces:

- 147 peak period spaces between Roscoe Blvd. and Plummer St., a commercial area (approximate 20% utilization rate)

- 65-85 peak period spaces between Erwin St. and the US 101 Freeway ramps, a residential area

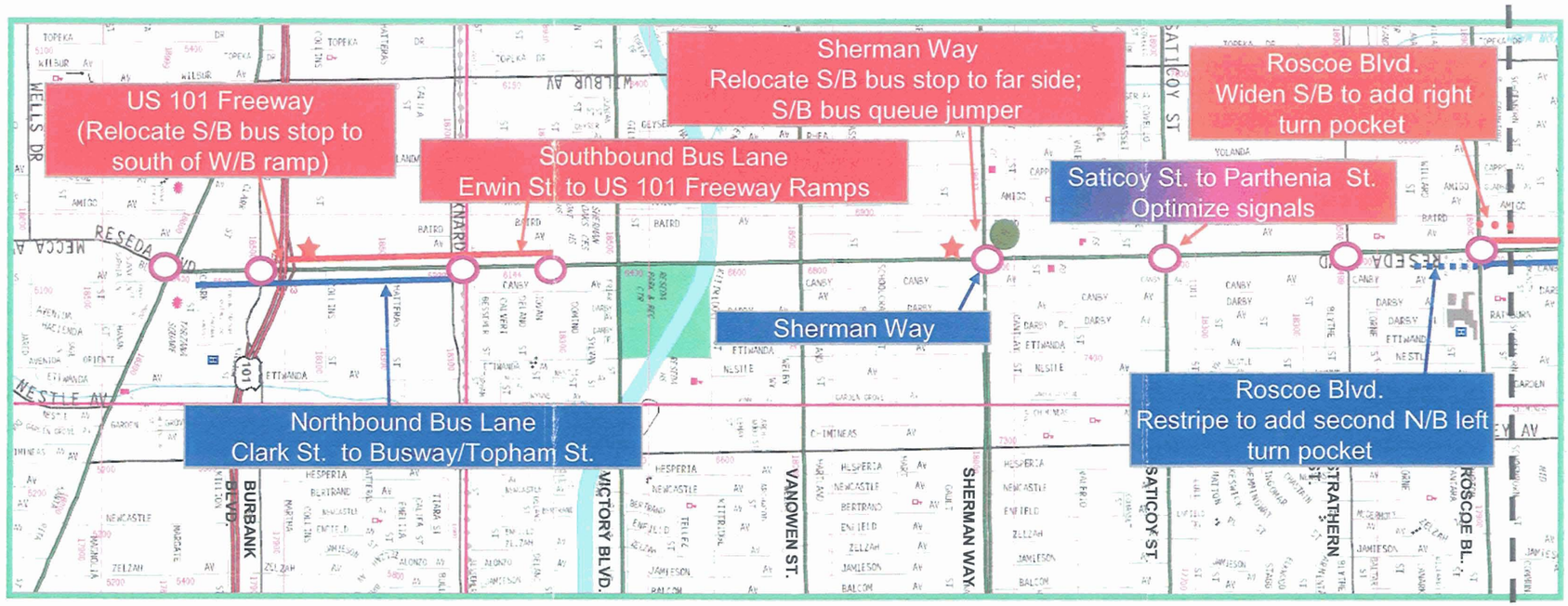
It should be noted that only the bus lane between Erwin St. and the US 101 Freeway ramps is expected to improve bus speeds. The bus lane segment between Plummer St. and Roscoe Blvd. is operating at satisfactory bus speeds (LOS A-C), and the bus lane would help preserve that.

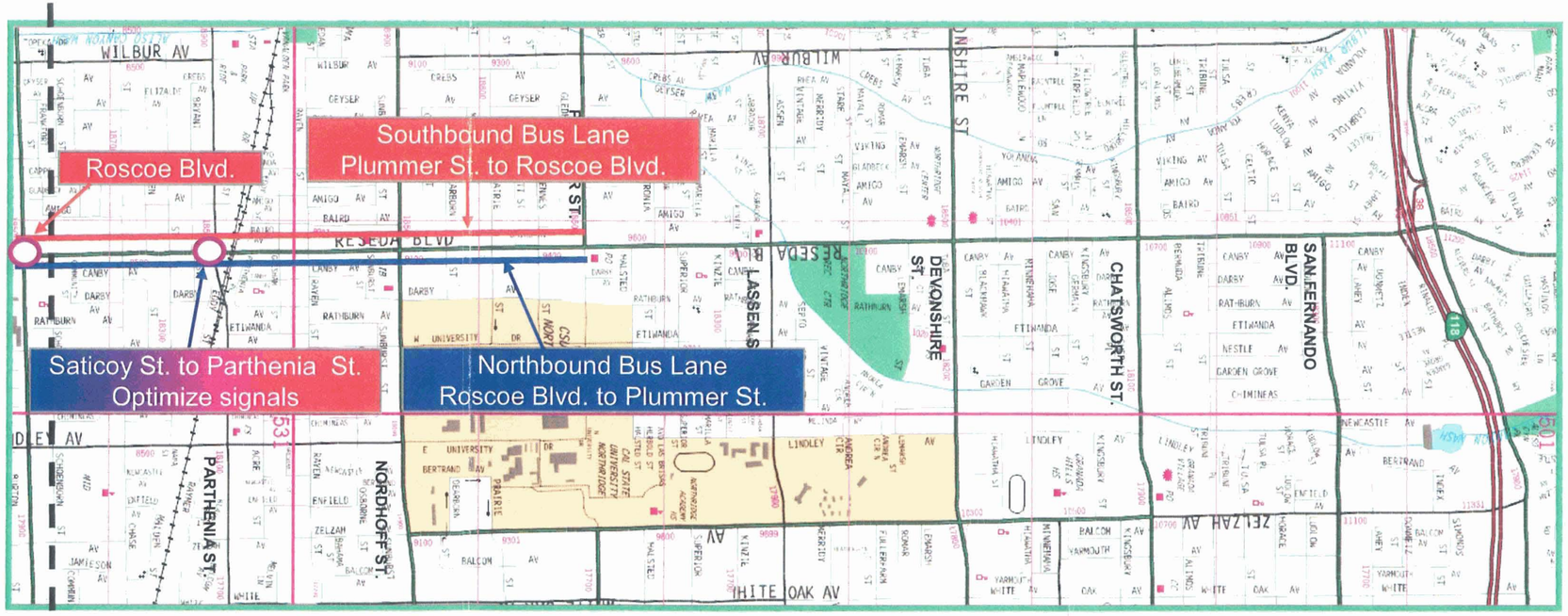
Parking losses in residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities. Commercial areas generally have off-street parking available for customers and employees.

RESEDA CORRIDOR POTENTIAL IMPROVEMENTS

Potential Improvements

- **Optimize Signal Cycle Length**
- **Southbound Bus Lane**
- **Northbound Bus Lane**
- **Southbound: Restripe to Add Mixed Flow Lane**
- **Northbound: Restripe to Add Mixed Flow Lane**
- **Southbound: Widen to Add Mixed Flow Capacity**
- **Northbound: Widen to Add Mixed Flow Capacity**
- **Bus Queue Jump Signal**
- **Relocate Southbound Bus Stop**
- **Relocate Northbound Bus Stop**





RESEDA CORRIDOR NORTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	1824	1591		YOLANDA	VENTURA	**#1 VENTURA BLVD to METRO ORANGE LINE BUSWAY** *(Includes Freeway Ramps)* Two N/B lanes with bike lanes. Signals not optimized for progression with varying cycle lengths.	107	11.6	C	158	7.9	E	156	8.0	D	Improve progression by converting all signals to 120 sec. cycle lengths.	Potential for adding additonal N/B lane between Clark St. and Busway by re-striping and removing bike lane. If bus lane were implemented, there is a potential for a queue jumper at the T-intersection for the E/B off-ramps and for the W/B intersection.									
				Adusted 30 sec. for Dwell			*77*	*16.1*	C	*128*	*9.7*	D	*126*	*9.9*	D												
2	300	**312**	120 / (60/40)	VENTURA	CLARK		13	16.2	B	19	10.7	D	24	8.4	D												
3	935	**925**	100 / (65/35)	CLARK	BURBANK		67	9.5	D	51	12.6	C	46	13.9	C					6		6		10		7
4	295	302 - 202	80 / (65/35)	BURBANK	101 FWY E/B		12	17.1	B	15	13.8	C	10	20.0	B					6		6	AM and PM PEAK	2		2
5	70	70 - 270	120 / (60/40)	101 FWY E/B	101 FWY W/B		37	1.3	F	36	1.3	F	50	1.0	F					3				6		7
6	1495	1483 - 1383	120 / (65/35)	101 FWY W/B	HATTERAS		24	43.0	A	25	40.0	A	23	44.7	A									4		3
7	1224	**1140**	120 / (65/35)	HATTERAS	BUSWAY		72	11.5	C	110	7.6	E	141	5.9	F									11		21
				Adusted 30 sec. for Dwell			*42*	*19.7*	B	*80*	*10.4*	D	*111*	*7.5*	E											
8	1111	**1234**	120 / (60/40)	BUSWAY	ERWIN	Segment includes Topham St.	29	26.0	A	29	25.9	A	33	23.0	A											
9	825	991	90 / (60/40)	ERWIN	VICTORY		24	23.5	A	23	25.0	A	34	16.6	B											
10	1483	1319	90 / (55/35)	VICTORY	KITTRIDGE		74	13.7	C	76	13.3	C	78	13.0	C											
				Adusted 30 sec. for Dwell			*44*	*23.1*	A	*46*	*21.9*	A	*48*	*21.1*	A											
11	1552	1353		KITTRIDGE	VANOWEN		73	14.5	C	95	11.1	C	101	10.5	D											
				Adusted 30 sec. for Dwell			*43*	*24.5*	A	*65*	*16.2*	B	*71*	*15.0*	C											
12	1094	1368	90 / (49/51)	VANOWEN	HART		30	24.5	A	39	19.2	B	48	15.5	C											
13	1511	1287	90 / (30/70)	HART	SHERMAN		78	13.2	C	97	10.7	D	101	10.2	D					2	5	2				
				Adusted 30 sec. for Dwell		Short blocks causing congestion	*48*	*21.6*	A	*67*	*15.5*	C	*71*	*14.5*	C						3					
14	477	675	120 (50/50)	SHERMAN	WYANDOTTE		19	17.6	B	21	15.3	C	23	13.9	C						3					
15	665	644	50 / (47/53)	WYANDOTTE	VALERIO		18	25.4	A	22	20.5	B	29	15.6	C						3					
16	1499	1375	90 / (60/40)	VALERIO	SATICOY		58	17.6	B	70	14.6	C	71	14.5	C						3					
				Adusted 30 sec. for Dwell			*28*	*36.3*	A	*40*	*25.4*	A	*41*	*25.1*	A	Travel Time Savings due to Reseda Southbound improvements.											
17	1144	1309	90 / (60/40)	SATICOY	INGOMAR		23	33.3	A	25	30.6	A	25	31.1	A					6		6				
18	1323	1331	90 / (60/40)	INGOMAR	STRATHERN		34	26.4	A	30	30.2	A	35	25.6	A					6		6				
19	3376	1848	90 / (60/40)	STRATHERN	ROSCOE		95	24.2	A	102	22.5	A	106	21.8	A					3		3				
				Adusted 30 sec. for Dwell			*65*	*35.3*	A	*72*	*31.8*	A	*76*	*30.4*	A											
20	1190	1457	120 / (50/50)	ROSCOE	CHASE		40	20.5	B	32	25.5	A	48	16.8	B					6		6				
21	1320	1316	90 / (60/40)	CHASE	PARENTHIA		58	15.6	C	30	29.8	A	83	10.8	D											
22	1315	1320	120 / (50/50)	PARENTHIA	RAYEN		35	25.3	A	30	29.7	A	41	21.7	A											
23	485	490	90 / (60/40)	RAYEN	MID BLOCK		12	28.6	A	12	28.6	A	14	24.2	A								AM and PM PEAK			
24	1035	850	90 / (70/30)	MID BLOCK	NORDHOFF	4-way protected double left takes time from through movement.	84	8.4	D	81	8.7	D	83	8.5	D											
				Adusted 30 sec. for Dwell			*54*	*13.1*	C	*51*	*13.8*	C	*53*	*13.3*	C											
25	1120	1315	120 / (65/35)	NORDHOFF	PRARIE		39	19.4	B	49	15.6	C	50	15.4	C											
26	1323	1325	90 / (55/45)	PRARIE	PLUMMER		41	22.2	A	60	15.1	C	41	22.2	A											
27	1323	1320	90 / (55/45)	PLUMMER	SUPERIOR		35	26.1	A			F	35	26.1	A											
			90 / (60/40)	SUPERIOR																						
TOT	31314						1229	17.4		1338	16.0		1527	14.0					Sum of TT Savings (sec.)	38	17	35		32		40
						Adjusted Travel Time and Speed	*.989*	*21.6*		*1098*	*19.4*		*1287*	*16.6*												

Bus Speed Improvement	AM	Midday	PM
Existing Bus Speeds (MPH)	17.37	15.96	13.98
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	17.92	16.16	14.31
B. Bus Speeds with BusLane Segments (MPH)	17.83	N/A	14.36
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Lane Segments (MPH)	18.41	16.16	14.71
	(LOS B)	(LOS B)	(LOS C)
% Improvement	6.0%	1.3%	5.2%

Bus Lane Types	
	Bus Lane that Improves Bus Speeds
	Bus Lane that Preserves Bus Speeds

Bus Speed Level of Service (LOS) Criteria	
LOS	Bus Speed Range
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

RESEDA CORRIDOR SOUTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	1323	1320	90 / (60/40)	SUPERIOR	PLUMMER		31	29.3	A	31	28.7	A	45	20.0	B											
2	1323	1325	90 / (55/45)	PLUMMER	PRARIE		29	30.8	A	39	23.4	A	49	18.3	B											
3	1120	1315	90 / (55/45)	PRARIE	NORDHOFF		35	22.1	A	38	20.0	B	37	20.8	B											
4	1020	850	120 / (65/35)	NORDHOFF	MID BLOCK		29	24.1	A	30	22.9	A	34	20.3	B								AM and PM PEAK			
5	1315	490	90 / (70/30)	MID BLOCK	RAYEN		58	15.5	C	60	15.0	C	64	14.1	C											
6	1320	1320	90 / (60/40)	RAYEN	PARENTHIA		39	23.0	A	48	18.9	B	51	17.6	B											
7	1190	1316	120 / (50/50)	PARENTHIA	CHASE	**#4 ROSCOE BLVD. VICINITY**	34	24.0	A	36	22.5	A	42	19.3	B											
8	460	1457	90 / (60/40)	CHASE	ROSCOE	Two through lanes on V.N. Blvd. 22ft. wide curb lane. Roscoe Blvd. on 120 sec. cycle length with 4 way protected LT taking a significant portion of the time. Roscoe Blvd. recieves more green time than VN Blvd..	59	5.3	F	59	5.3	F	70	4.5	F	With possible road modifications, optimize timing to experience greater speeds through the segment.	Widen to add RT pocket at Roscoe Blvd. 13 foot sidewalks on north leg. Land aqusition to widen for additional LT pocket for N/B traffic would help save time for turning movement.			8	2	10		9		11
			Adusted 30 sec. for Dwell				*29*	*10.7*	D	*29*	10.8	D	*40*	*7.8*	E											
9	249	1848	120 / (50/50)	ROSCOE	STRATHERN		44	3.9	F	43	4.0	F	44	3.9	F					3		3		7		7
10	1323	1331	90 / (60/40)	STRATHERN	INGOMAR		29	30.8	A	32	28.5	A	30	29.6	A					6		6				
11	1556	1309	90 / (60/40)	INGOMAR	SATICOY		77	13.9	C	65	16.4	B	69	15.3	C					6		6				
			Adusted 30 sec. for Dwell				*47*	*22.8*	A	*35*	30.6	A	*39*	*27.0*	A											
12	1087	1375	90 / (60/40)	SATICOY	VALERIO	**#3 SHERMAN WAY**	31	24.1	A	29	25.9	A	35	21.4	A	Convert to 120 sec. cycle midday. Reduce midday LT movements, add time to N/S movements. Add Bus Q-Jump at Sherman.		Relocate Metro Local Bus stop from nearside to farside with existing Metro Rapid stop (130' of red curb.) If needed, remove parking spaces beyond existing red curb.			3					
13	665	644	90 / (60/40)	VALERIO	WYANDOTTE	Sherman Way green time slightly favored (40/38). Midday 90sec. 50% ratio E/W and N/S. 4 prot. LT receive more green time compared to AM/PM. Short RT pocket exists for S/B. Local has potential of blocking RT impeding through movement	16	27.7	A	22	20.4	B	27	16.9	B						3					
14	842	675	50 / (47/53)	WYANDOTTE	SHERMAN		51	11.2	C	90	6.3	E	62	9.2	D					5	8	5				
			Adusted 30 sec. for Dwell				*21*	*27.2*	A	*60*	9.5	D	*32*	*17.9*	B											
15	1146	1287	120 / (50/50)	SHERMAN	HART		32	24.5	A	34	22.9	A	38	20.8	B						3					
16	1523	1368	90 / (30/70)	HART	VANOWEN		85	12.2	C	86	12.0	C	86	12.1	C											
			Adusted 30 sec. for Dwell				*55*	*18.8*	B	*56*	18.4	B	*56*	*18.6*	B											
17	1123	1353	90 / (49/51)	VANOWEN	KITTRIDGE		27	28.8	A	24	32.2	A	23	32.8	A											
18	1483	1319		KITTRIDGE	VICTORY		93	10.9	C	67	15.2	C	77	13.2	C											
			Adusted 30 sec. for Dwell				*63*	*16.1*		*37*	27.6	A	*47*	*21.7*	A											
19	825	991	90 / (55/35)	VICTORY	ERWIN		36	15.4	C	29	19.7	B	28	19.9	B											
20	1111	1234	90 / (60/40)	ERWIN	BUSWAY		97	7.8	E	64	11.8	C	63	12.0	C											
21	1224	1140	120 / (60/40)	BUSWAY	HATTERAS	**#2 METRO ORANGELINE BUSWAY to VENTURA BLVD.**	98	8.5	D	92	9.1	D	92	9.0	D	Convert to 120 sec. cycle midday. Reduce midday LT movements, add time to N/S movements.	There is enough ROW to create a bus lane if peak-hour parking and the bike lane were removed (bikes are permitted in bus lanes.) However, this is a dense residential area, so parking restrictions may not be feasible. At Oxnard Blvd, if RT movement is an issue obstructing the buses, widening at the NW corner may be feasible, as the land is currently a Metro Park and Ride lot for the Busway. There also may be sufficient ROW to restripe and add a S/B double left turn pocket, if needed. Relocate Metro Local Bus stop further south past on-ramp and create RT pocket for the W/B on-ramps, if possible.						AM and PM PEAK	15		9
			Adusted 30 sec. for Dwell				*68*	*12.3*	C	*62*	13.5	C	*62*	*13.4*	C									15		14
22	1495	1483	120 / (65/35)	HATTERAS	101 FWY W/B	Two S/B through lanes + bike lane. 90 sec. cycle length at Erwin St. while remaining segment is at 120. S/B Metro Local stop obstructing RT movement	79	12.9	C	99	10.3	D	70	14.6	C									12		11
23	70	70	120 / (60/40)	101 FWY W/B	101 FWY E/B		12	3.9	F	17	2.8	F	15	3.2	F					3		3				
24	295	302	120 / (65/35)	101 FWY E/B	BURBANK		8	25.5	A	7	29.2	A	7	27.9	A					6		6				
25	935	925	80 / (65/35)	BURBANK	CLARK		26	24.4	A	30	21.3	A	31	20.3	B					6		6				
26	500	312	100 / (65/35)	CLARK	VENTURA		26	13.0	C	86	4.0	F	31	10.8	D											
			Adusted 10 sec. for Dwell				*16*	*21.1*	B	*56*	6.1	E	*21*	*15.9*	C											
TOT	26523						1180	15.3		1255	14.4		1222	14.8					Sum of TT Savings (sec.)	43	19	45		57		51
						Adjusted Travel Time and Speed	*990*	*18.3*		*1065*	*17.0*		*1032*	*17.5*												

Bus Speed Improvements	AM	Midday	PM
Existing Bus Speeds (MPH)	15.32	14.41	14.80
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	15.90	14.64	15.37
B. Bus Speeds with Bus Lane (MPH)	16.09	N/A	15.45
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Lane (MPH)	16.73	14.64	16.06
	(LOS B)	(LOS C)	(LOS C)
% Improvement	9.2%	1.5%	8.8%

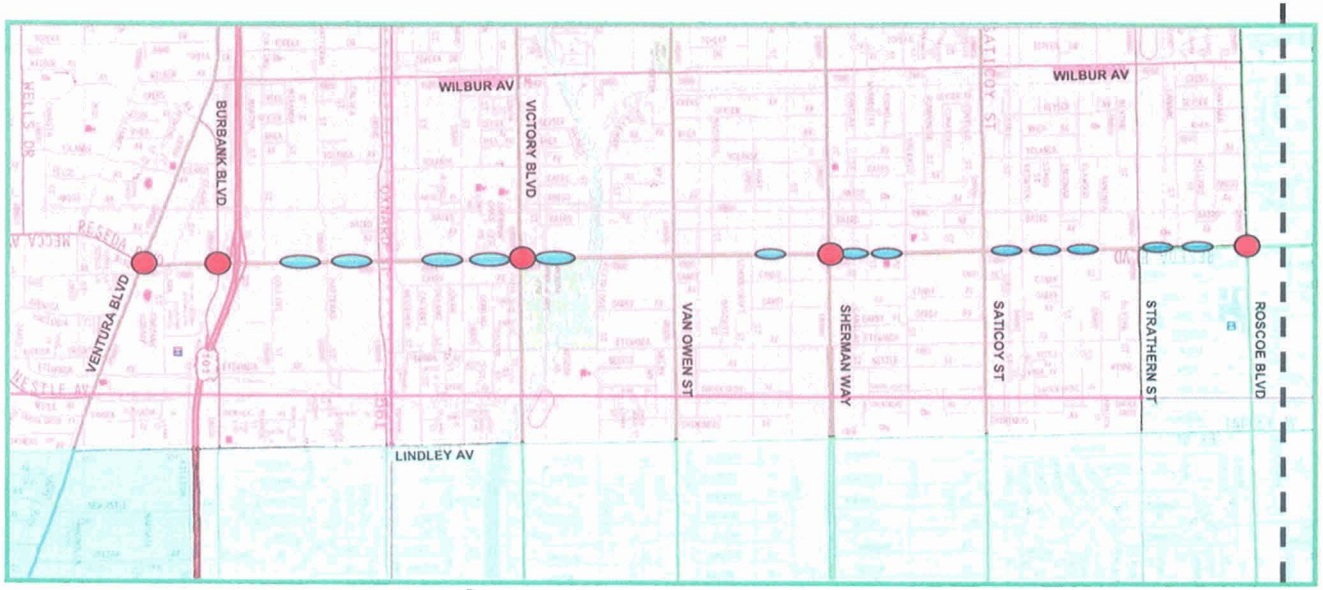
Bus Speed Level of Service (LOS) Criteria	
LOS	**Bus Speed Range**
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

Bus Lane Types

Bus Lane that Improves Bus Speeds

Bus Lane that Preserves Bus Speeds

RESEDA CORRIDOR TRANSIT/PEDESTRIAN ENHANCEMENTS



- Potential Median Island Location (subject to traffic analysis)
- Potential Transit Enhancement Location
  - Decorative X-Walk
  - Bus Shelter
  - Bus Stop Security Lighting
  - Additional Pedestrian Amenities
- Match Line

CD-3 Dennis P. Zine

CD-12 Greig Smith

CD-5 Jack Weis

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

BUS STOP ENHANCEMENTS

BEFORE

AFTER

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

ENHANCED CROSSWALK

BEFORE

AFTER

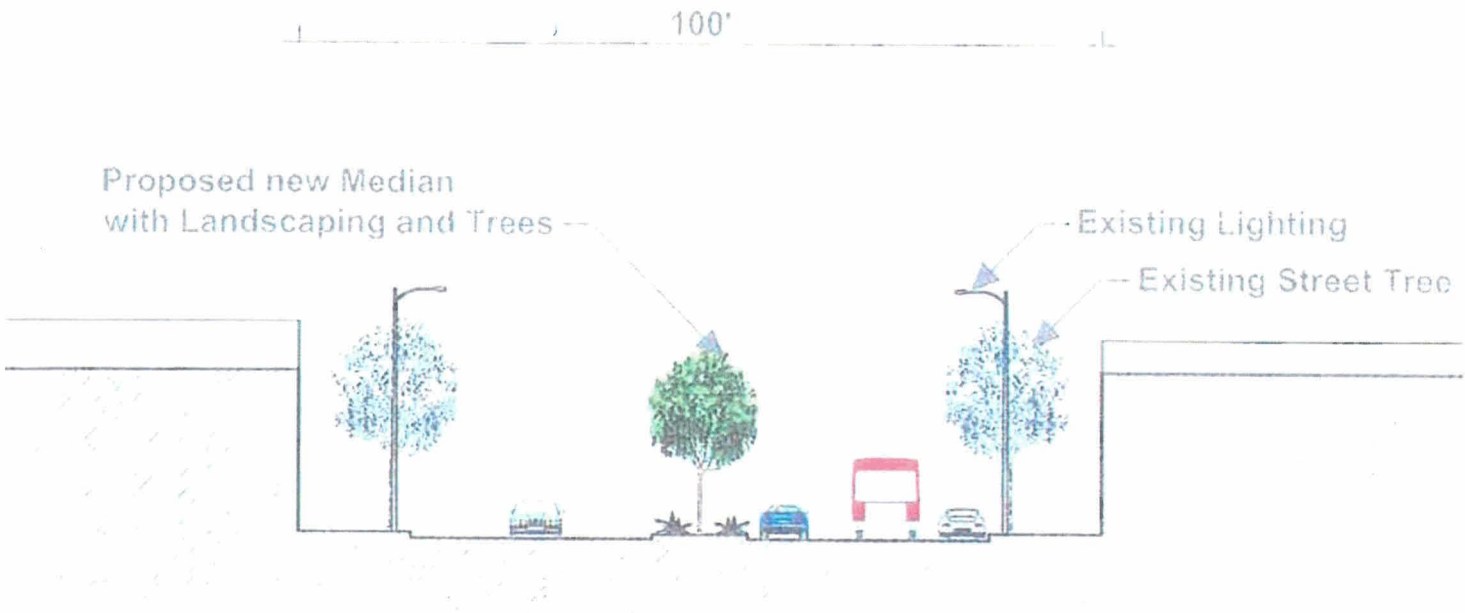
TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

NEW MEDIAN ISLAND

BEFORE

AFTER

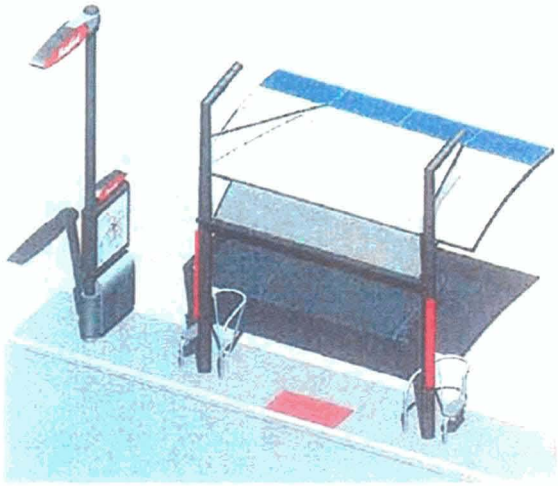
Artist Rendering of Intersection of Reseda Blvd and Sherman Way
Showing Stations and Accessibility Enhancements



source: Gruen Associates

source: Gruen Associates

Figure 4-28. Typical Sidewalk along Reseda Boulevard



source: Suisman Urban Design

Figure 4-15. Renderings of Typical Metro Rapid Bus Station Design

source: Gruen Associates

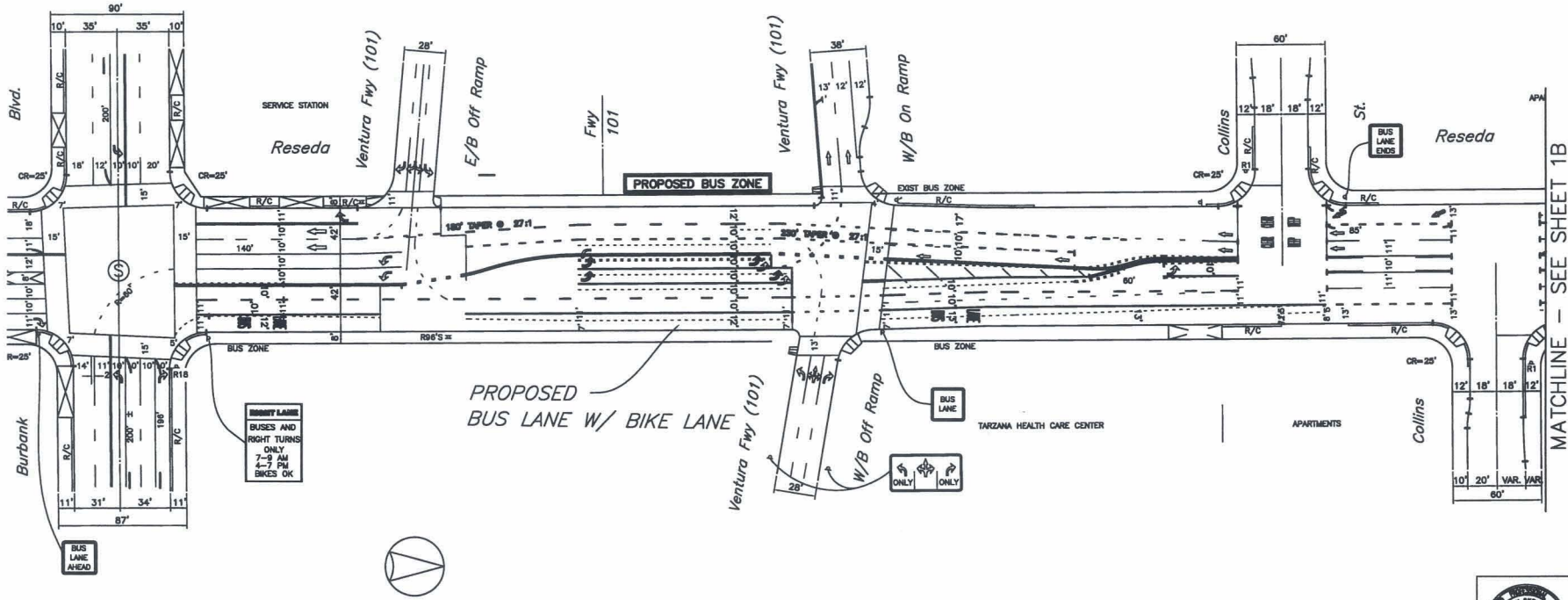
source: Viacom Decaux

Advertising / Neighborhood Kiosk

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

RESEDA BOULEVARD FROM BURBANK TO METRO ORANGE LINE BUSWAY

PROPOSED ADDITIONAL NB & SB BUS LANE W/ BIKES OK
7–9 AM & 4–7 PM



RESEDA TRANSIT CORRIDOR

TRANSIT SYSTEM

LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 1 OF 4	

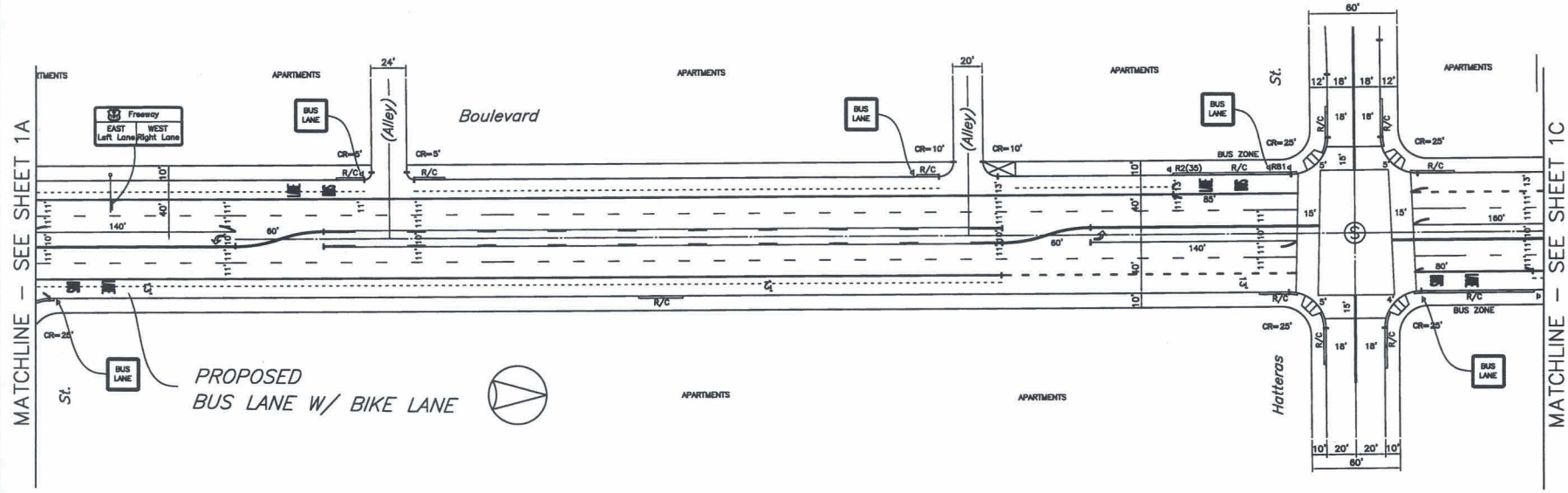
NOT TO SCALE

1A

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

RESEDA BOULEVARD FROM BURBANK TO METRO ORANGE LINE BUSWAY

PROPOSED ADDITIONAL NB & SB BUS LANE W/ BIKES OK
7–9 AM & 4–7 PM



RESEDA TRANSIT CORRIDOR

TRANSIT SYSTEM

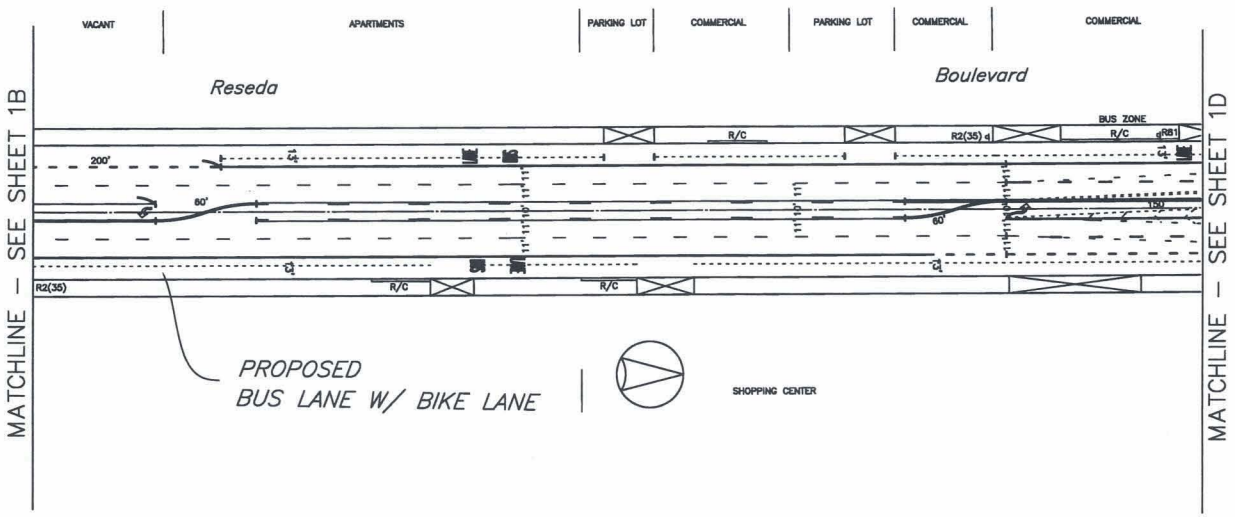
LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 2 OF 4	

1B

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

RESEDA BOULEVARD FROM BURBANK TO METRO ORANGE LINE BUSWAY

PROPOSED ADDITIONAL NB & SB BUS LANE W/ BIKES OK
7–9 AM & 4–7 PM



NOT TO SCALE

TRANSIT SYSTEM

LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 3 OF 4	

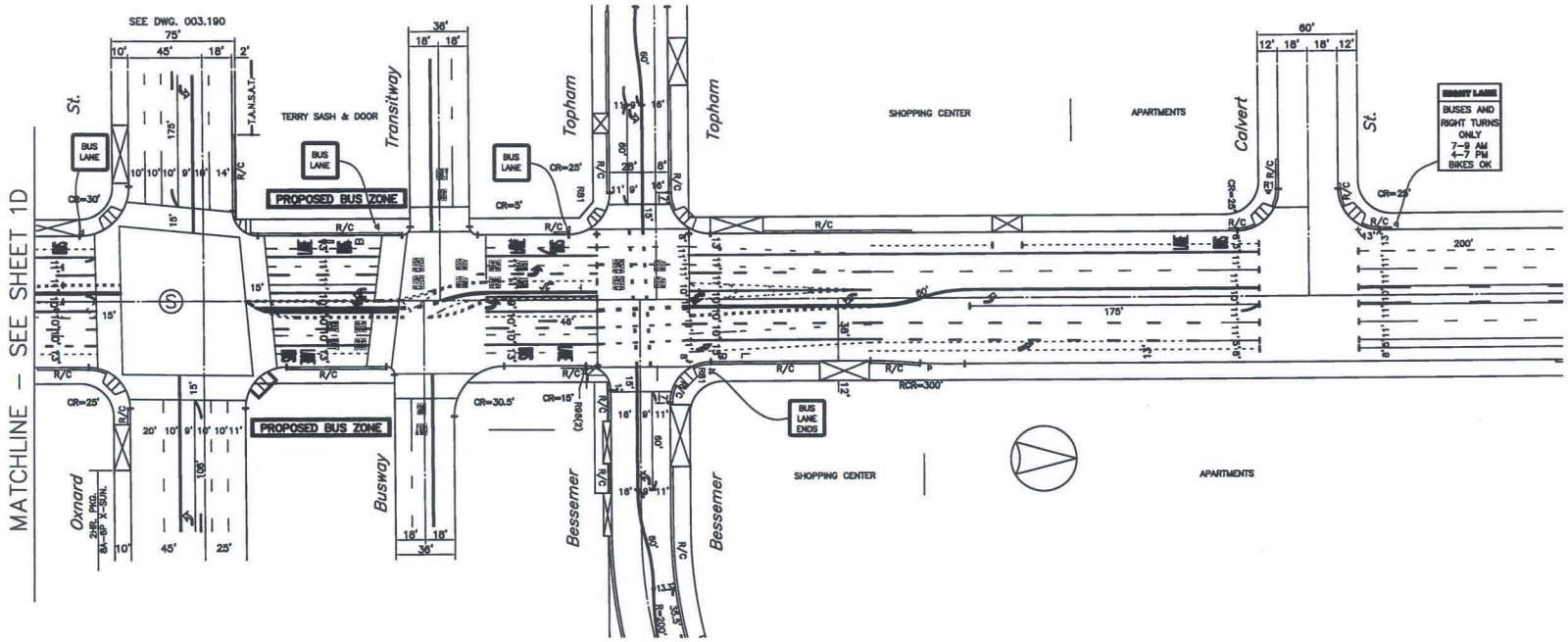
RESEDA TRANSIT CORRIDOR

1C

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

RESEDA BOULEVARD FROM BURBANK TO METRO ORANGE LINE BUSWAY

PROPOSED ADDITIONAL NB & SB BUS LANE W/ BIKES OK
7–9 AM & 4–7 PM



NOT TO SCALE

TRANSIT SYSTEM

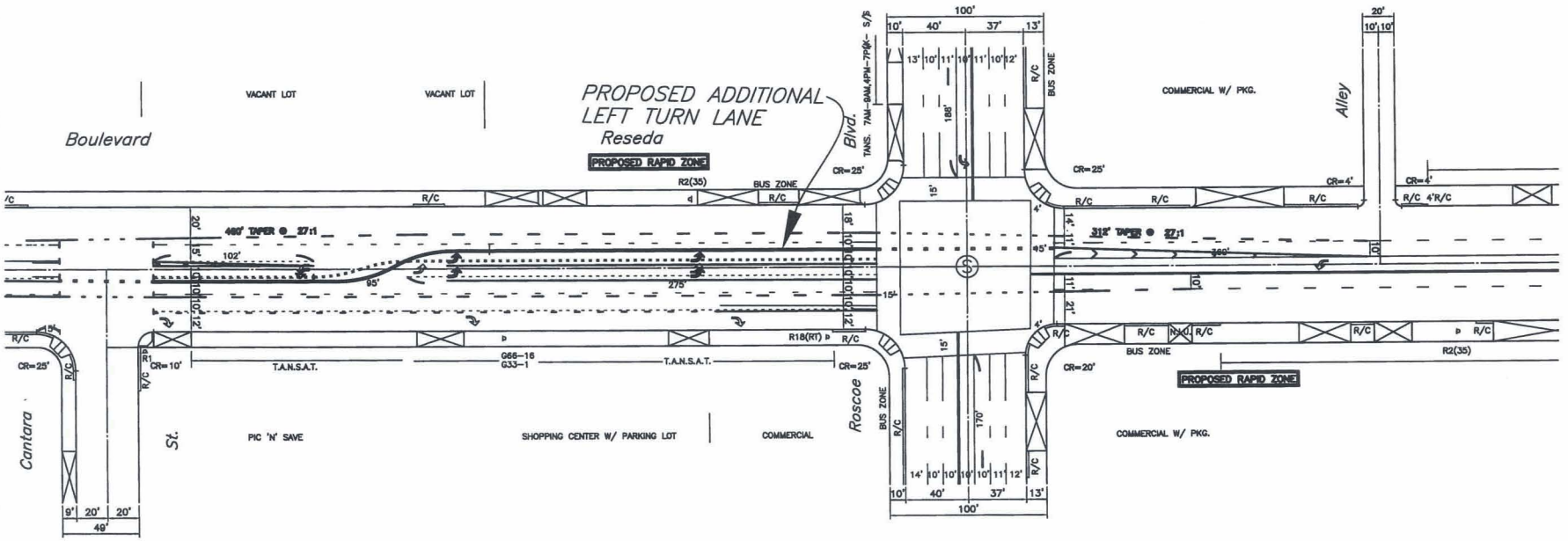
LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 4 OF 4	

RESEDA TRANSIT CORRIDOR

1D

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

RESEDA BLVD AND ROSCOE BLVD – ADDITION OF 2ND NB LEFT POCKET



NOT TO SCALE

TRANSIT SYSTEM

LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE		

RESEDA TRANSIT CORRIDOR

3

SEPULVEDA

SEPULVEDA CORRIDOR

EXECUTIVE SUMMARY

The Sepulveda Corridor consists of Sepulveda Blvd. between Ventura Blvd. and the SR-118 Freeway, a distance of 7½ miles in the San Fernando Valley. Bus speeds currently operate at Good (LOS C) to Very Good (LOS B) levels of service, per FTA's bus speed level of service criteria. Currently 12-15 Metro buses per hour serve the corridor in each direction during peak periods. The improvements discussed in this report would increase peak period bus speeds by 8-9% and reduce peak period bus travel times by 3-4 minutes. However, installation of the bus lanes as proposed would also have significant impacts on traffic delay, mobile air emissions and on-street parking. Up to 300 southbound parking spaces would be lost in the AM peak period and 300 northbound spaces lost in the PM peak period for a total of 600 spaces. Traffic delay and air emissions in the 2.25-mile stretch between Clark St. and Sherman Way would increase significantly.

EXISTING CONDITIONS

Currently 12-15 Metro buses per hour serve the corridor in each direction during peak periods. Northbound bus speeds range between 13.0-17.5 mph, depending on time of day. Southbound bus speeds range between 14.4-16.7 mph. These bus speeds are rated LOS C (Good) to LOS B (Very Good), per FTA's bus speed level of service criteria. Northbound bus travel times range between 25.7-34.7 minutes, depending on time of day. Southbound bus travel times range between 24.9-28.9 minutes.

Bus speed delays occur primarily between Burbank Blvd. and the Metro Orange Busway and at Victory Blvd., Sherman Way, Roscoe Blvd. and the SR-118 Freeway ramps.

POTENTIAL IMPROVEMENTS

- **Investigate Signal Timing Changes** at selected locations. Possibly increase signal cycle length up to 120 seconds; optimize signal cycle lengths; establish nearside transit priority for southbound buses approaching Oxnard St.

- **Peak Period Bus Lanes:**
  - Southbound AM and northbound PM between Clark St. and Sherman Way (2.25 miles)
  - Northbound and southbound between Rayen St. and Chatsworth St. (2.3 miles)

- **Bus Queue Jump Signal** at Victory Blvd. for southbound buses.

- **Bus Stop Relocation** at Victory Blvd. (northbound.)

- **Increase Mixed Flow Capacity** by Widening or Lane Re-striping
  - Burbank Blvd.

- Victory Blvd.
- Sherman Way
- Roscoe Blvd.

- **Landscaped Median Islands** at selected locations

- **Transit Enhancements** at selected major intersections.

BENEFITS

The improvements would increase PM peak period northbound bus speeds by 9.1% and AM peak period southbound bus speeds by 8.4%. At other times of the day, bus speeds would improve by 1-2%. Bus speed levels of service would remain at LOS C (Good) and LOS B (Very Good.)

Northbound bus travel time would be reduced by 3 minutes in the PM peak period, while southbound bus travel time would be reduced by 4 minutes in the AM peak period. Northbound bus travel times would be reduced from 25.7 to 25.2 minutes in the AM peak, from 26.8 to 26.5 minutes midday, and from 34.7 to 31.8 minutes in the PM peak. Southbound bus travel times would be reduced from 28.9 to 24.7 minutes in the AM peak, from 24.9 to 24.7 minutes midday, and from 26.1 to 25.7 minutes in the PM peak.

IMPACTS

Installation of the bus lanes between Clark St. and Sherman Way would have a significant impact on traffic delay and mobile air emissions because they would require conversion of mixed flow lanes to bus lanes. For example, traffic delay would increase by 129% in the AM peak at Vanowen St., by 24% in the PM peak at Victory Blvd. (now at LOS F), and by 14% in AM peak at Sherman Way (now at LOS F.)

All of the proposed bus lanes would significantly impact on-street parking. Approximately 300 southbound parking spaces would have to be removed during the AM peak period and 300 northbound parking spaces removed during the PM peak period to accommodate the bus lanes. Parking losses would need to be mitigated. Commercial areas generally have off-street parking available for customers and employees.

SEPULVEDA CORRIDOR NORTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Burbank Blvd to Metro Orange Line Busway
    - Slower bus speeds through segment (LOS C-E.)
- Victory Blvd.
    - Slower bus speeds at intersection in PM peak period (LOS C-E.) Victory Blvd. is favored with 10 seconds additional green time. Southbound right turn pocket exists, but none for northbound.
- Roscoe Blvd.
    - Slower bus speeds at intersection (LOS C-E.)

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - At Sherman Way, convert cycle length up to 120 seconds, adding green time to Van Nuys.
    - At Victory Blvd. convert cycle length up to 120 seconds adding green time to Van Nuys.
- Northbound Peak Period Bus Lanes
    - Clark St. to Sherman Way (PM peak period only) (2.25 miles) Bus lane would benefit bus speeds. Requires conversion of a mixed flow lane to a bus lane and removal of approximately 300 PM peak period parking spaces.
    - Rayen St. to Chatsworth St. (2.3 miles) Bus lane would be created by reducing center median and re-striping.
- Bus Stop Relocation
    - Relocate Victory Blvd. northbound bus stop from nearside to farside.

- Increase Mixed Flow Capacit

    - Widen at northbound Burbank Blvd. (300 feet south and 300 feet north of intersections) to create new right turn lane. *(Source: 2003 RSTIS)*

    - Widen at northbound Sherman Way (300 feet south and 300 feet north of intersections) to create new right turn lane. *(Source: 2003 RSTIS)*

    - Create northbound right turn pocket at Victory Blvd. by reducing southbound curb lane.

    - Create northbound right turn pocket at Roscoe Blvd. by reducing southbound curb lane.

- Landscaped Median Islands

    - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)

- Transit Enhancements

    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 12-15 northbound Metro buses per hour serve the Sepulveda Corridor during peak periods. Northbound buses operate at an average speed of 17.51 mph (LOS B – Very Good) in the AM peak, 16.78 mph (LOS B – Very Good) midday and 12.98 mph (LOS C - Good) in the PM peak. Northbound bus travel times are 25.7 minutes in the AM peak, 26.8 minutes midday and 34.7 minutes in the PM peak.

With the non-bus lane improvements, northbound bus travel time savings are estimated to be 31 seconds in the AM peak, 18 seconds midday, and 43 seconds in the PM peak. This translates into bus speeds improving from 17.51 mph to 17.87 mph (2.1%) in the AM peak, 16.78 mph to 16.97 mph (1.1%) midday, and 12.98 mph to 13.25 mph (2.1%) in the PM peak.

Total bus travel time savings increase with the addition of a PM peak period bus lane from Clark St. to Sherman way. An additional 130 seconds (2.2 minutes) in the PM peak would be saved with this bus lane. The additional savings are estimated to bring PM peak bus speeds up to 14.13 mph (LOS C), yielding a total bus speed increase of 9.1%.

Even with the improvements, the estimated increases in northbound bus speed do not meet LACMTA's 10-15% goal. Northbound bus speed level of service would remain at LOS B (Very Good) in the AM peak, LOS B (Very Good) midday, and LOS C (Good) in the PM peak. Northbound bus travel times would be reduced from 25.7 minutes to 25.2

minutes in the AM peak, from
minutes to 31.8 minutes in the PM

BUS LANE FEASIBILITY ANALYSIS

Sepulveda Blvd. is a designated Major Class II Highway with a varying roadway width of approximately 80-130 feet, three travel lanes in each direction, a median left turn lane or median islands, and full-time parking lanes. Converting mixed flow lanes to bus lanes in segments of Sepulveda Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There is one segment along northbound Sepulveda Blvd. where bus speeds would benefit from the installation of a PM peak period bus lane: Clark St. to Sherman Way (2.25 miles), which includes the crossing of the Metro Orange Line Busway. Bus speed level of service through this segment ranges between LOS C and LOS F in the PM peak period. Because of slow southbound bus speeds in this same segment during the AM peak period, a southbound AM peak period bus lane is proposed below. During the AM peak period and midday, bus speed level of service does not drop below LOS C, after adjustments for dwell time, and thus bus speeds would not benefit substantially from a bus lane at those times. Installation of the northbound PM peak period bus lane would require removal of PM peak period parking and conversion of a northbound mixed flow lane to a bus lane between Clark St. and Sherman Way.

The remainder of northbound Sepulveda Blvd. operates at Good to Excellent bus speed level of service (LOS A to LOS C) and therefore is not in need of a bus lane to improve bus speeds. However, there is another stretch where additional northbound peak period bus lane segments could be created by reducing the center median and creating an additional lane for buses: Rayen Blvd. to Chatsworth St. (2.3 miles). The peak period bus lane would have an insignificant impact on mixed flow traffic, and no parking loss is anticipated. A bus lane in this segment would help maintain existing bus speed levels of service over time.

BUS LANE IMPACTS

1. If a northbound mixed flow lane were converted to a PM peak period bus lane between Clark St. and Sherman Way, there would be impacts on both traffic delay and air emissions due to heavy northbound traffic volumes in the PM peak period. The tables below show traffic delay and air emission modeling results with conversion of a mixed flow lane to a PM peak period bus lane for four major intersections within this segment: Burbank Blvd., Victory Blvd., Vanowen St. and Sherman Way. The modeling assumes widening at Burbank Blvd. and Sherman Way to create northbound right turn pockets for mixed flow traffic. Traffic delay in the PM peak period would increase at all four intersections:

Intersection Traffic Delay

Intersection	Existing	Bus Lane Conversion	% Change
Burbank Blvd. (PM)	233.7 sec (F)	246.4 sec (F)	+5.4%
Victory Blvd. (PM)	127.1 sec (F)	157.1 sec (F)	+23.6%
Vanowen St. (PM)	24.5 sec (C)	50.3 sec (D)	+105.3%
Sherman Way (PM)	192.3 sec (F)	216.2 (F)	+12.4%

2. Air emissions would also increase as a result of the increase in traffic delay:

Air Emissions Impact

Intersection	Bus Lane Conversion
Burbank Blvd. (PM)	+3.4%
Victory Blvd. (PM)	+16.4%
Vanowen St. (PM)	+33.3%
Sherman Way (PM	+8.0%

For reference, a mode shift of 10% from single occupant vehicle to transit would yield a reduced impact on traffic delay and air emissions.

There would be no impact on mixed flow traffic or air emissions resulting from the creation of the peak period northbound bus lane between Rayen Blvd. and Chatsworth St. since no mixed flow lanes would be converted to bus lanes.

However, the bus lane segment between Clark St. and Sherman Way would require removal of PM peak period parking spaces. The following peak period parking spaces would be eliminated:

- 300 PM peak period spaces between Clark St. and Sherman Way (111 spaces between Burbank Blvd. and Victory Blvd. at 30% utilization)

It should be noted that only the bus lane between Clark St. and Sherman Way is expected to improve bus speeds. The bus lane between Rayen Blvd. and Chatsworth St. is operating at satisfactory bus speeds (LOS A-C), and the bus lane would help preserve that.

3. Parking losses affecting residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities. Commercial areas generally have off-street parking available for customers and employees

SEPULVEDA

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Metro Orange Line Busway to Oxnard St.
    - Low bus speed LOS combined with bus stop location before signal causes the bus to stop multiple times within segment.
- Victory Blvd.
    - Victory Blvd. is favored with 10 seconds additional green time. There is a southbound right turn pocket but none for northbound.
- Sherman Way
    - Four protected left turn phases, and Sherman Way receives more green time than Sepulveda Blvd.
- Lanark St., Chase St. and Roscoe Blvd.
    - Lanark St. and Chase St., north and south of Roscoe Blvd., operate at 90 second cycle lengths while Roscoe Blvd. operates on a 120 second cycle length.
- Chatsworth St. through SR-118 Freeway Ramps
    - At three of four intersections along Sepulveda Blvd., left turn movements are protected. Signals operate at 60 second cycle length.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - Nearside Transit Priority System signal priority to benefit buses approaching Oxnard St.
    - At Lanark St., Chase St. and Roscoe Blvd., reconcile cycle lengths to allow for better progression through segment.
    - At Sherman Way, convert cycle length up to 120 seconds adding green time to Van Nuys.

- At Victory Blvd. conver
  Van Nuys.

- Southbound Peak Period Bus Lanes

  - Clark St. to Sherman Way (AM peak period only) (2.25 miles) Bus lane would benefit bus speeds. Requires conversion of a mixed flow lane to a bus lane and removal of approximately 300 PM peak period parking spaces.

  - Rayen St. to Chatsworth St. (2.3 miles) Bus lane would be created by reducing center median and re-striping.

- Bus Queue Jump Signal

  - Install bus queue jump signal at Victory Blvd. for southbound buses. (Source: *2003 RSTIS*)

- Increase Mixed Flow Capacity

  - Create right turn pocket for southbound traffic from SR-118 Freeway ramps to Chatsworth St. and reconcile adjacent signals by increasing cycle lengths at freeway ramps.

- Landscaped Median Islands

  - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)

- Transit Enhancements

  - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT AND TRAVEL TIME SAVINGS

Currently, 12-15 southbound buses per hour serve the Sepulveda Corridor during peak periods. Southbound buses operate at an average speed of 14.41 mph (LOS C) in the AM peak, 16.73 mph (LOS B) midday and 15.96 mph (LOS C) in the PM peak. Southbound bus travel times are 28.9 minutes in AM peak, 24.9 minutes midday and 26.1 minutes in the PM peak.

With the non-bus lane improvements, southbound bus travel time savings are estimated to be 25 seconds in the AM peak, 12 seconds midday, and 24 seconds in the PM peak. This translates into bus speeds improving from 14.41 mph to 14.62 mph (1.5%) in the AM peak, 16.73 mph to 16.86 mph (0.8%) midday, and 15.96 mph to 16.21 mph (1.6%) in the PM peak.

Total bus travel time savings inc
from Sherman Way to Clark St. /
would be saved with this bus lane. The additional savings are estimated to bring AM peak bus speeds up to 15.6 mph (LOS C), yielding a total bus speed increase of 8.4%.

Even with the improvements, the estimated southbound bus speeds do not meet LACMTA's 10-15% goal. Southbound bus speed level of service would remain at LOS C (Good) in the AM peak, LOS B (Very Good) midday and LOS C (Good) in the PM peak. Southbound bus travel times would be reduced from 28.9 minutes to 26.7 minutes in the AM peak, from 24.9 minutes to 24.7 minutes midday, and from 26.1 minutes to 25.7 minutes in the PM peak.

BUS LANE FEASIBILITY ANALYSIS

Sepulveda Blvd. is a designated Major Class II Highway with a varying roadway width of approximately 80-130 feet, three travel lanes in each direction, a median left turn lane or median islands, and full-time parking lanes. Converting mixed flow lanes to bus lanes in segments of Sepulveda Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new AM peak period bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There is one segment along southbound Sepulveda Blvd. where bus speeds would benefit from the installation of an AM peak period bus lane: Sherman Way to Clark St. (approximately 2.25 miles.) Bus speed level of service through this segment ranges between LOS C and LOS E in the AM peak period. Because of slow northbound bus speeds in this same segment during the PM peak period, a northbound PM peak period bus lane has been proposed above, and a southbound AM peak period bus lane would complement that facility. During the PM peak period, southbound bus speeds drop at major intersections within the segment, e.g., Sherman Way and the Metro Orange Line Busway, but are still generally higher than in the AM peak period. Installation of a southbound AM peak period bus lane between Sherman Way and Clark St. would require removal of AM peak period parking and conversion of a mixed flow lane to a bus lane.

The remainder of northbound Sepulveda Blvd. operates at Good to Excellent bus speed level of service (LOS A to LOS C) and therefore is not in need of a bus lane to improve bus speeds. However, there is another stretch where an additional southbound peak period bus lane could be installed by reducing the center median and creating an additional lane for buses: Rayen Blvd. to Chatsworth St. (2.3 miles). The peak period bus lane would have an insignificant impact on mixed flow traffic, and no parking loss is anticipated. A bus lane in this segment would help maintain existing bus speed levels of service over time.

BUS LANE IMPACTS

1. If a southbound mixed flow lane were converted to an AM peak period bus lane between Sherman Way and Clark St., there would be impacts on both traffic delay and air emissions due to heavy southbound traffic volumes in the AM peak period. The tables below show traffic delay and air emission modeling results with conversion of a mixed flow lane to an AM peak period bus lane for four major intersections within this segment: Burbank Blvd., Victory Blvd., Vanowen St. and Sherman Way. The modeling assumes widening at Burbank Blvd. and Sherman Way to create northbound right turn pockets for mixed flow traffic. Traffic delay in the AM peak period would increase at all four intersections:

Intersection Traffic Delay

Intersection	Existing	Bus Lane Conversion	% Change
Burbank Blvd. (AM)	179.7 sec (F)	230.6 sec (F)	+28.3%
Victory Blvd. (AM)	196.1 sec (F)	233.1 sec (F)	+18.9%
Vanowen St. (AM)	80.8 sec (F)	184.8 sec (F)	+128.7%
Sherman Way (AM)	161.8 sec (F)	184.4 sec (F)	+14.0%

2. Air emissions would also increase as a result of the increase in traffic delay:

Air Emissions Impact

Intersection	Bus Lane Conversion
Burbank Blvd. (AM)	+18.8%
Victory Blvd. (AM)	+18.6%
Vanowen St. (AM)	+69.5%
Sherman Way (AM)	+8.8%

For reference, a mode shift of 10% from single occupant vehicle to transit would yield a reduced impact on traffic delay and air emissions.

There would be no impact on mixed flow traffic or air emissions resulting from the creation of the AM peak period southbound bus lanes between Rayen Blvd. to Chatsworth St. since no mixed flow lanes would be converted to bus lanes.

However, the bus lane segment between Clark St. and Sherman Way would require removal of AM peak period parking spaces. The following peak period parking spaces would be eliminated:

- 300 PM peak period spaces between Clark St. and Sherman Way (111 spaces between Burbank Blvd. and Victory Blvd. at 30% utilization)

It should be noted that only the bus lane between Clark St. and Sherman Way is expected to improve bus speeds. The bus lane between Rayen Blvd. and Chatsworth

St. is operating at satisfactory l
preserve that.

3. Parking losses affecting residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities. Commercial areas generally have off-street parking available for customers and employees

SEPULVEDA CORRIDOR SOUTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	1113			BRAND	118 FWY W/B		37	20.6	B	34	22.3	A	32	23.9	A											
2	335	300	60	118 FWY W/B	118 FWY E/B	**118 E/B RAMPS to CHATSWORTH ST.**	13	17.9	B	13	17.7	B	12	19.6	B											
3	320	p	60 / (70/30)	118 FWY E/B	CHATSWORTH	3 S/B lanes approaching Chatsworth St, 3	27	8.2	D	29	7.5	E	20	10.9	C											
4	2625	2625	120 / (50/50)	CHATSWORTH	DEVONSHIRE	out of 4 LT moevments are protected,	113	15.9	C	108	16.5	B	116	15.4	C											
5	2638	2627	120 / (47/53)	DEVONSHIRE	LASSEN	reducing through time.	65	27.7	A	61	29.5	A	77	23.4	A	**118 E/B RAMPS to CHATSWORTH ST.** Varying cycle lengths should be reconciled, however increasing ramp cycle lengths may cause queue at off ramps										
				Adusted 30 sec. for Dwell			*35*	*51.4*	A	*31*	*58.2*	A	*47*	*38.3*	A								AM & PM PEAK			
6	2630	1319	90 / (55/45)	LASSEN	PLUMMER		71	25.3	A	63	28.7	A	64	28.1	A											
7	1306	1335	90 / (55/45)	PLUMMER	TUPPER		57	15.6	C	52	17.1	B	51	17.5	B											
				Adusted 30 sec. for Dwell			*27*	*33.1*	A	*22*	*40.2*	A	*21*	*42.6*	A											
8	1346	1308	90 / (55/45)	TUPPER	NORDHOFF		87	10.6	D	72	12.7	C	91	10.1	D											
9	1289	1282	120 / (50/50)	NORDHOFF	RAYEN		96	9.1	D	84	10.4	D	83	10.6	D											
				Adusted 30 sec. for Dwell			*66*	*13.3*	C	*54*	*16.2*		*53*	*16.5*	B											
10	1262	1345	90 / (55/45)	RAYEN	PARENTHIA		46	18.7	B	46	18.7	B	50	17.3	B											
11	1316	1319	90 / (53/47)	PARENTHIA	CHASE		34	26.4	A	33	27.3	A	35	26.0	A											
12	1388	1162	90 / (55/45)	CHASE	ROSCOE	**ROSCOE BLVD.**	129	7.3	E	105	9.0	D	103	9.2	D	**PANORAMA CITY MALL AREA** Reconcile cycle lengths at Chase and Roscoe to allow for better progression		**ROSCOE BLVD.** Potential to widen to add RT pocket utilizing wide sidewalk on N/W corner		5	1	4				
				Adusted 30 sec. for Dwell		Intersection has 4 prot. phases reducing	*99*	*9.5*	D	*75*	*12.6*	C	*73*	*12.9*	C											
13	1153	1376	120 / (50/50)	ROSCOE	LANARK	through time. Signals operate at varying	39	19.9	B	28	28.6	A	32	24.6	A					3		3				
14	1368	1387	90 / (55/45)	LANARK	RAYMER	lengths.	29	31.8	A	38	24.4	A	47	19.9	B					3		3				
15	765	795	90 / (60/40)	RAYMER	STAGG		17	30.1	A	21	24.7	A	23	23.1	A					3		3				
16	1580	1319	90 / (55/45)	STAGG	SATICOY		58	18.5	B	60	18.0	B	70	15.3	C											
				Adusted 30 sec. for Dwell			*28*	*38.1*	A	*30*	*36.3*	A	*40*	*26.7*	A											
17	1028	1329	90 / (55/45)	SATICOY	VALERIO		38	18.5	B	31	22.9	A	39	18.0	B											
18	1182	1340	90 / (55/45)	VALERIO	SHERMAN		48	16.7	B	40	20.1	B	41	19.5	B											
19	1137	1010	120 / (55/45)	SHERMAN	VOSE		97	8.0	D	95	8.2	D	102	7.6	E	**SHERMAN WAY** increase to 120 cycle				3	3	3				
				Adusted 30 sec. for Dwell			*67*	*11.6*	C	*65*	*11.9*	C	*72*	*10.8*	D										15		
20	1477	1643	120 / (60/40)	VOSE	VANOWEN		69	14.7	C	40	25.0	A	48	20.8	B										10		
21	2600	2648	120 / (45/55)	VANOWEN	VICTORY		134	13.3	C	103	17.2	B	110	16.2	B	**VICTORY BLVD.** Install Q-Jump Signal; increase to 120 cycle				3	3	3		20		
				Adusted 30 sec. for Dwell			*104*	*17.1*	B	*73*	*24.2*	A	*80*	*22.2*	A											
22	1522	1355	120 / (50/50)	VICTORY	ERWIN		125	8.3	D	117	8.9	D	90	11.5	C					3	3	3		19		
				Adusted 30 sec. for Dwell		**METRO ORANGE LINE BUSWAY to**	*95*	*10.9*	C	*87*	*12.0*	C	*60*	*17.2*	B								AM PEAK			
23	816	905	120 / (60/40)	ERWIN	BUSWAY	**OXNARD ST.**	29	19.5	B	23	24.7	A	21	26.5	A									4		
24	505	450	120 / (50/50)	BUSWAY	OXNARD	Buses must stop after busway before	48	7.1	E	55	6.2	E	69	5.0	F	**METRO ORANGE LINE BUSWAY to OXNARD ST.** Nearside priority would benefit buses stopping between the Busway and Oxnard St.				2	2	2		7		
				Adusted 30 sec. for Dwell		passing Oxnard creating delay as they	*18*	*18.7*	B	*25*	*13.5*	C	*39*	*8.7*	D											
25	1333	1303	120 / (60/40)	OXNARD	HATTERAS	often stop twice at bus stop and	46	19.8	B	42	21.8	A	30	30.5	A									7		
26	1044	1354	120 / (65/55)	HATTERAS	BURBANK	intersection.	71	10.0	D	33	21.6	A	28	25.4	A									11		
27	1604	1329	90 / (55/45)	BURBANK	CLARK		113	9.7	D	70	15.6	C	84	13.0	C									17		
				Adusted 30 sec. for Dwell			*83*	*13.2*	C	*40*	*27.4*	A	*54*	*20.3*	B											
TOT	36682	34165					1735	14.4		1495	16.7		1567	16.0					Sum of TT Savings (sec.)	25	12	24		110	0	0
				Adjusted Travel Time			*1435*	*17.4*		*1195*	*20.9*		*1267*	*19.7*												

Bus Speed Improvements	AM	Midday	PM
Existing Bus Speeds (MPH)	14.41	16.73	15.96
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	14.62	16.86	16.21
B. Bus Speeds with Bus Lane Segments (MPH)	15.38	N/A	N/A
A and B. Bus Speeds with Potential Improvements and Bus Lane Segments (MPH)	15.62	16.86	16.21
	(LOS C)	(LOS B)	(LOS B)
% Improvement	8.4%	0.8%	1.6%

Bus Speed Level of Service (LOS) Criteria	
LOS	Bus Speed Range
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

Bus Lane Types

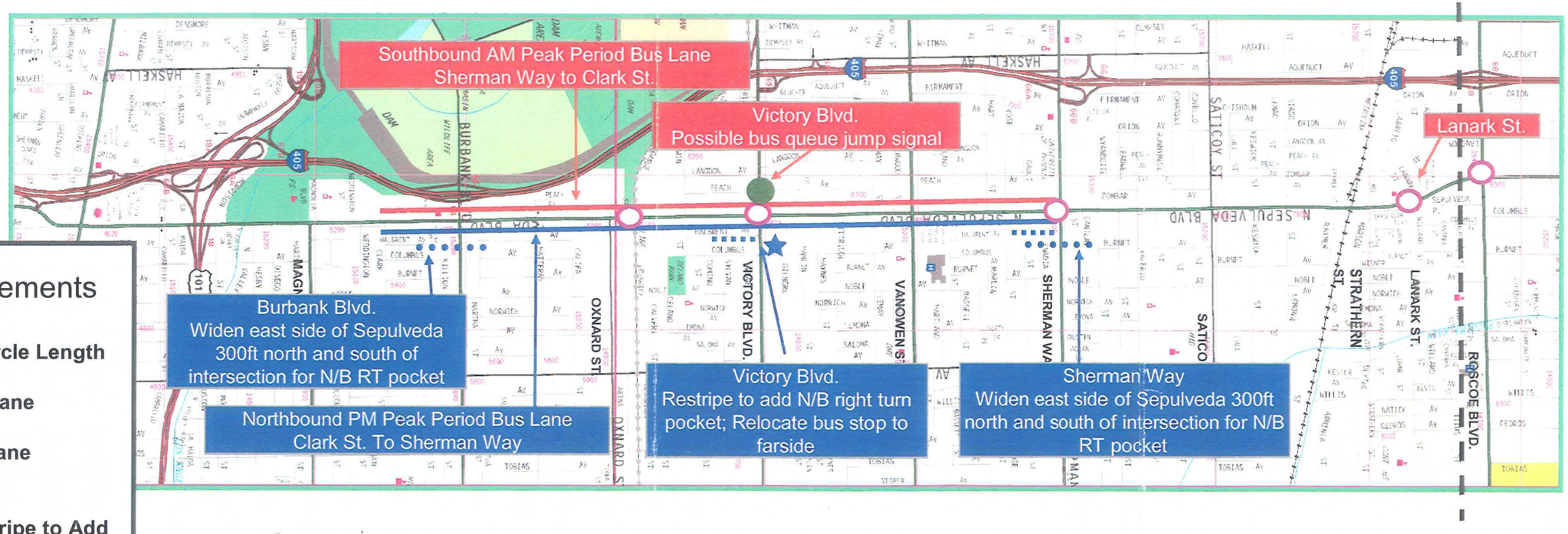
Bus Lane that Improves Bus Speeds

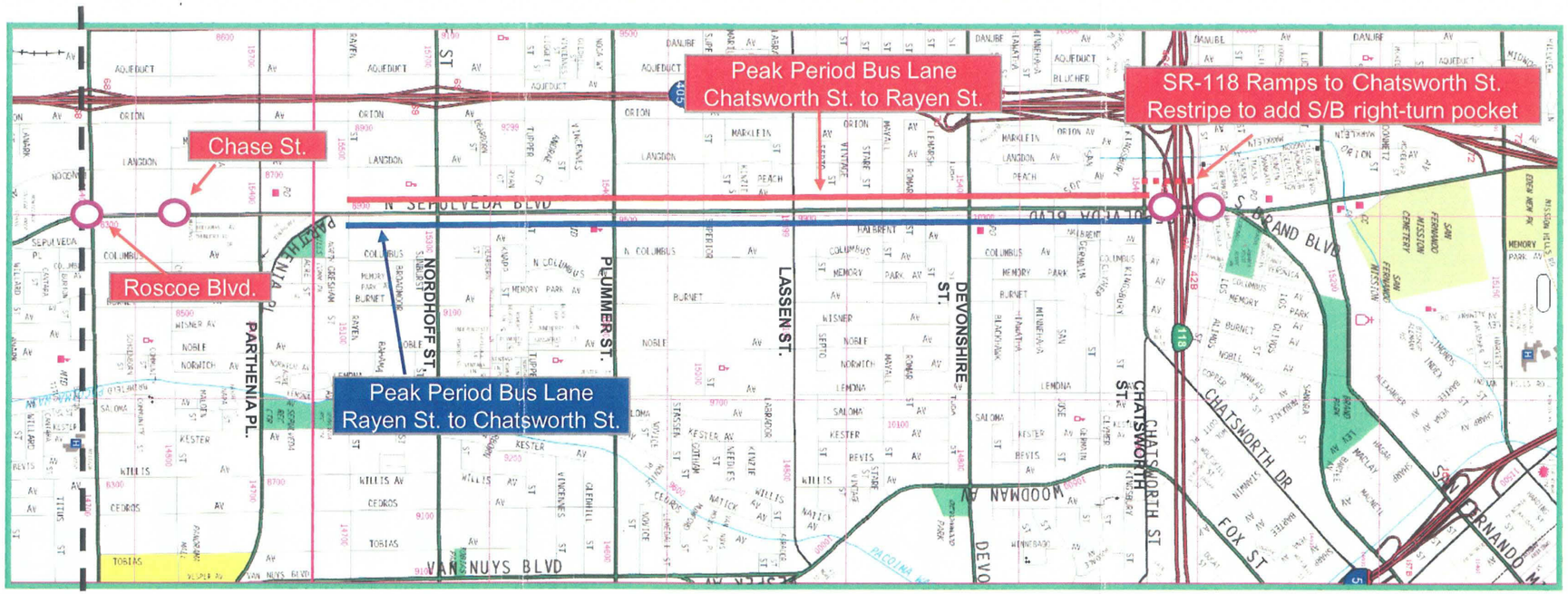
Bus Lane that Preserves Bus Speeds

SEPULVEDA CORRIDOR POTENTIAL IMPROVEMENTS

Potential Improvements

- **Optimize Signal Cycle Length**
- **Southbound Bus Lane**
- **Northbound Bus Lane**
- **Southbound: Restripe to Add Mixed Flow Lane**
- **Northbound: Restripe to Add Mixed Flow Lane**
- **Southbound: Widen to Add Mixed Flow Capacity**
- **Northbound: Widen to Add Mixed Flow Capacity**
- **Bus Queue Jump Signal**
- **Relocate Southbound Bus Stop**
- **Relocate Northbound Bus Stop**





SEPULVEDA CORRIDOR NORTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	632	650		CAMARILLO	101 FWY W/B		26	16.5	B	23	18.9	B	29	14.8	C											
2	2093	2050		101 FWY W/B	MAGNOLIA		50	28.5	A	48	29.5	A	62	23.1	A											
3	1242	1316	90 / (60/40)	MAGNOLIA	CLARK		38	22.3	A	42	20.3	B	52	16.1	C											
				Adusted 10 sec. for Dwell at Rapid Stop			*28*	*30.2*	*A*	*32*	*26.7*	*A*	*42*	*19.9*	*B*											
4	1012	1329	90 / (60/40)	CLARK	BURBANK		25	27.8	A	27	25.2	A	100	6.9	E		BURBANK BLVD. to METRO ORANGE LINE BUSWAY Potential to add an additional lane through the busway intersection as the street width is 88ft. Widen at Burbank 300' before and after I/S (RSTIS).		Peak period restriction of on-street parking.							15
5	1636	1354	90 / (55/45)	BURBANK	HATTERAS	**BURBANK BLVD. to METRO ORANGE LINE BUSWAY** 3 through lanes w/ all day parking in many portions. 50/50 green split at busway.	97	11.5	C	110	10.2	D	117	9.6	D					4	4	4				18
				Adusted 30 sec. for Dwell at Rapid Stop			*67*	*16.6*	*B*	*80*	*14.0*	*C*	*87*	*12.9*	*C*												
6	1333	1303	120 / (65/55)	HATTERAS	OXNARD		66	13.8	C	54	16.9	B	87	10.5	D											13
7	505	450	120 / (60/40)	OXNARD	BUSWAY		36	9.6	D	52	6.6	E	62	5.5	F					5	5	10				9
				Adusted 30 sec. for Dwell at Rapid Stop			*6*	*58.9*	*A*	*22*	*15.7*	*C*	*32*	*10.7*	*D*											
8	816	905	120 / (50/50)	BUSWAY	ERWIN		27	20.5	B	38	14.7	C	48	11.5	C											7
9	1522	1355	120 / (60/40)	ERWIN	VICTORY	**VICTORY BLVD.** 4 protected phases reducing time for through movement. Victory recieves 10 more seconds than Sepulveda. S/B RT pocket, no N/B.	90	11.5	C	93	11.1	C	134	7.8	E	**VICTORY BLVD.** Increase signal cycle to 120 sec.	**VICTORY BLVD.** Create RT pocket N/B by reducing S/B curblane possibly causing delay for S/B buses. Option of land aquisiton of empty lot at S/E corner to add RT pocket.		**VICTORY BLVD.** Relocate bus stop from nearside to farside	6	6	6				20
				Adusted 30 sec. for Dwell at Rapid Stop			*60*	*17.3*	*B*	*63*	*16.4*	*B*	*104*	*10.0*	*D*					1	1	2				
10	2600	2648	120 / (50/50)	VICTORY	VANOWEN		106	16.7	B	125	14.2	C	146	12.1	C											22
				Adusted 30 sec. for Dwell at Rapid Stop			*76*	*23.2*	*A*	*95*	*18.7*	*B*	*116*	*15.2*	*C*											
11	1477	1643	120 / (45/55)	VANOWEN	VOSE		43	23.7	A	51	19.9	B	42	23.8	A											6
12	1137	1010	120 / (60/40)	VOSE	SHERMAN		81	9.5	D	95	8.2	D	131	5.9	F	**SHERMAN WAY** Increase signal cycle to 120 sec.				3	3	3				20
				Adusted 30 sec. for Dwell at Rapid Stop		**SHERMAN WAY** 4 protected LT phases, and Sherman Way receives more of the available green time than Sepulveda.	*51*	*15.1*	*C*	*65*	*12.0*	*C*	*101*	*7.7*	*E*		**SHERMAN WAY.** Create RT pocket N/B by reducing S/B curblane. May cause slight delay for S/B buses. Widen at Sherman 300' before and after I/S (RSTIS).			1	1	4				
13	1182	1340	120 / 955/45)	SHERMAN	VALERIO		33	24.2	A	33	24.6	A	35	23.2	A					4	4	4				
14	1028	1329	90 / (55/45)	VALERIO	SATICOY		26	27.2	A	28	24.9	A	31	22.9	A											
15	1580	1319	90 / (55/45)	SATICOY	STAGG		72	14.9	C	69	15.6	C	78	13.8	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*42*	*25.5*	*A*	*39*	*27.7*	*A*	*48*	*22.5*	*A*											
16	765	795	90 / (55/45)	STAGG	RAYMER		19	26.9	A	21	24.3	A	31	16.9	B					3		3				
17	1368	1387	90 / (60/40)	RAYMER	LANARK		39	23.7	A	32	29.5	A	52	17.8	B					3		3				
18	1590	1376	90 / (55/45)	LANARK	ROSCOE	**ROSCOE BLVD.** 4 protected LT phases.	100	10.8	D	104	10.4	D	181	6.0	F		**ROSCOE BLVD.** Create RT pocket N/B by reducing S/B curblane. May cause slight delay for S/B buses.			4		7				
				Adusted 30 sec. for Dwell at Rapid Stop			*70*	*15.4*	*C*	*74*	*14.7*	*C*	*151*	*7.2*	*E*											
19	951	1162	120 / (50/50)	ROSCOE	CHASE		27	24.3	A	26	25.3	A	31	21.0	B					3		3				
20	1316	1319	90 / (55/45)	CHASE	PARENTHIA		41	21.6	A	38	23.8	A	55	16.2	B											
21	1382	1345	90 / (53/47)	PARENTHIA	RAYEN		44	21.3	A	39	23.9	A	52	18.1	B											
22	1314	1282	90 / (55/45)	RAYEN	NORDHOFF		59	15.2	C	58	15.4	C	78	11.5	C											
23	1311	1308	120 / (50/50)	NORDHOFF	TUPPER		63	14.3	C	72	12.4	C	74	12.1	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*33*	*27.5*	*A*	*42*	*21.3*	*A*	*44*	*20.4*	*B*											
24	1316	1335	90 / (55/45)	TUPPER	PLUMMER		53	17.0	B	53	16.9	B	60	14.9	C											
25	2655	1319	90 / (55/45)	PLUMMER	LASSEN		77	23.4	A	80	22.5	A	76	23.7	A											
				Adusted 30 sec. for Dwell at Rapid Stop			*47*	*38.2*	*A*	*50*	*35.9*	*A*	*46*	*39.1*	*A*											
26	2819	2627	90 / (55/45)	LASSEN	DEVONSHIRE		102	18.9	B	100	19.3	B	124	15.5	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*72*	*26.8*	*A*	*70*	*27.6*	*A*	*94*	*20.4*	*B*											
27	2434	2625	120 / (47/53)	DEVONSHIRE	CHATSWORTH		80	20.9	B	84	19.8	B	94	17.7	B											
28	307	487	120 / (50/50)	CHATSWORTH	118 FWY E/B		10	20.4	B	9	23.3	A	10	20.9	B											
29	303	75	60 / (70/30)	118 FWY E/B	118 FWY W/B		11	18.6	B	8	24.8	A	9	22.7	A											
TOT	39626	38443					1543	17.5		1610	16.8		2082	13.0					Sum of TT Savings (sec.)	37	24	49		0	0	130
				Adjusted Travel Time and MPH			*1233*	*21.9*		*1300*	*20.8*		*1772*	*15.2*											

Bus Speed Improvements	AM	Midday	PM
Existing Bus Speeds (MPH)	17.51	16.78	12.98
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	17.94	17.04	13.29
B. Bus Speeds with Bus Lane Segments (MPH)	N/A	N/A	13.84
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Lane (MPH)	17.94	17.04	14.20
	(LOS B)	(LOS B)	(LOS C)
% Improvement	2.5%	1.5%	9.4%

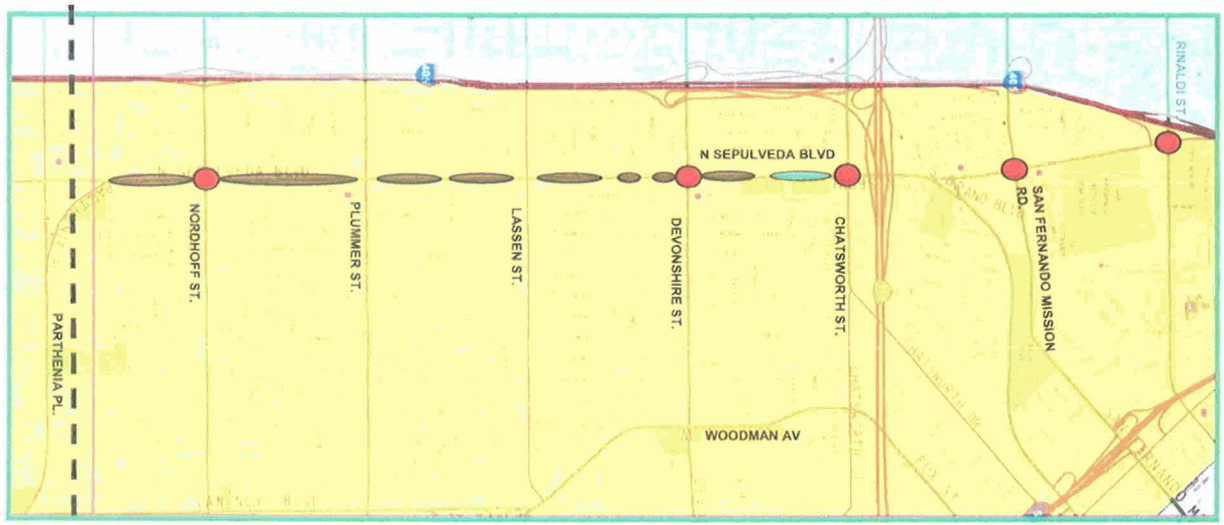
Bus Lane Types	
	Bus Lane that Improves Bus Speeds
	Bus Lane that Preserves Bus Speeds

Bus Speed Level of Service (LOS) Criteria	
LOS	**Bus Speed Range**
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

SEPULVEDA CORRIDOR TRANSIT/PEDESTRIAN ENHANCEMENTS

- Potential Median Island Location (subject to traffic analysis)
- Existing Median Island
- Potential Transit Enhancement Location
  - Decorative X-Walk
  - Bus Shelter
  - Bus Stop Security Lighting
  - Additional Pedestrian Amenities
- Match Line

- CD-6 Tony Cardenas
- CD-7 Richard Alarcon
- CD-12 Greig Smith
- CD-5 Jack Weis
- CD-2 Wendy Gruel



TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

BUS STOP ENHANCEMENTS

BEFORE

AFTER

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

ENHANCED CROSSWALK

BEFORE

AFTER

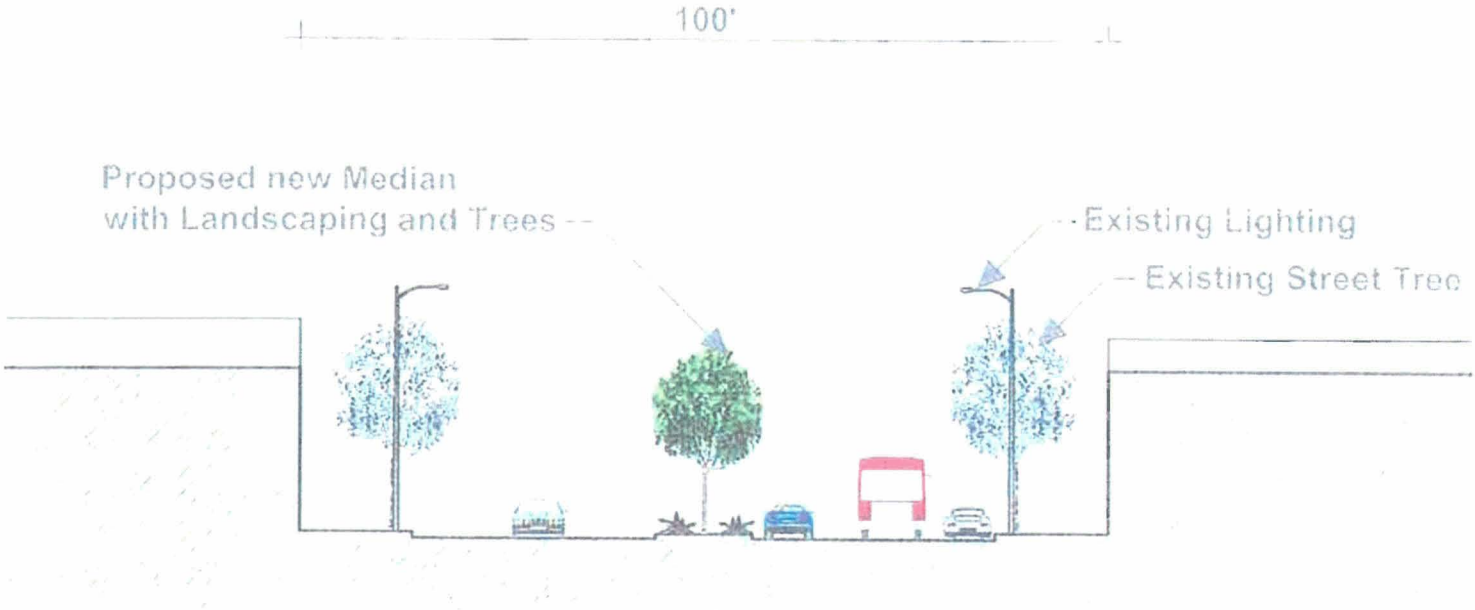
TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

NEW MEDIAN ISLAND

BEFORE

AFTER

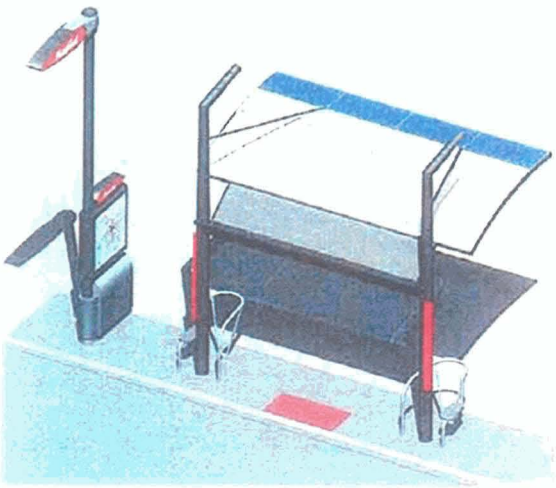
Stations and Accessibility Enhancements



source: Gruen Associates

source: Gruen Associates

Figure 4-33. Sepulveda Boulevard Median between Brand Boulevard and Nordhoff Street



source: Suisman Urban Design

Figure 4-15. Renderings of Typical Metro Rapid Bus Station Design

source: Gruen Associates

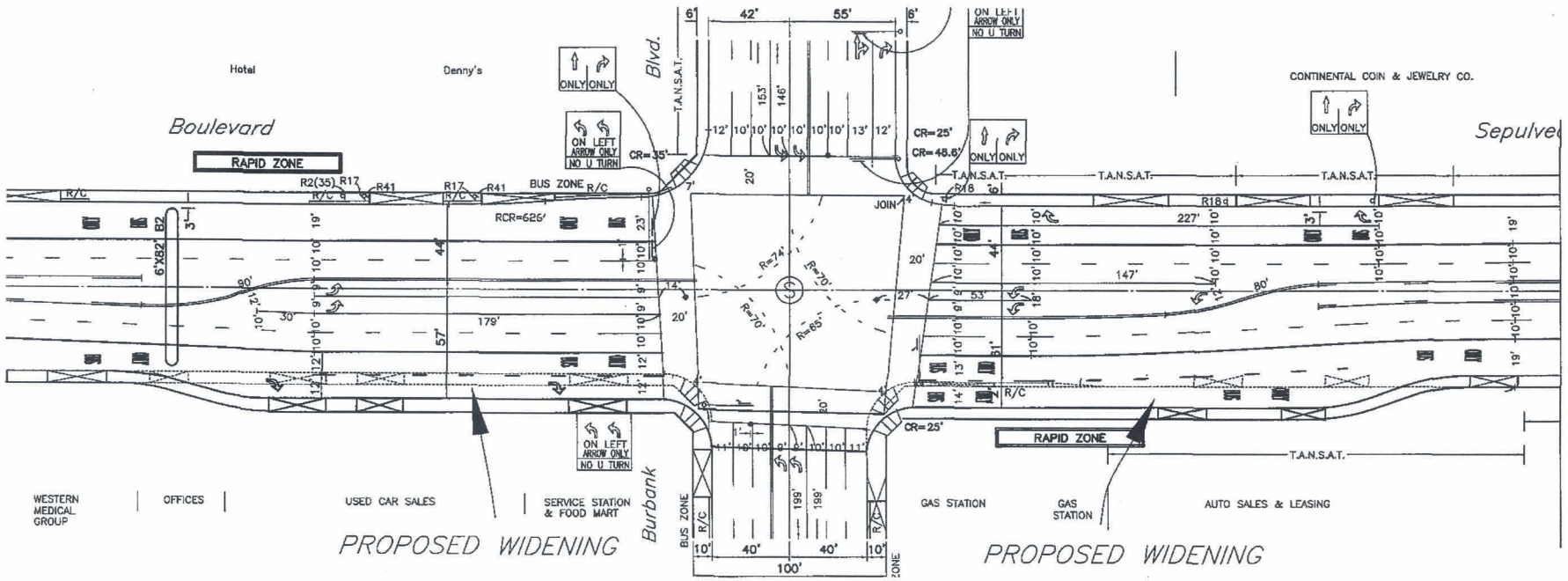
source: Viacom Decaux

Advertising / Neighborhood Kiosk

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

SEPULVEDA BOULEVARD AT BURBANK BOULEVARD

PROPOSED WIDENING 300' AT APPROACH AND DEPARTURE OF INTERSECTION S/B AM BUS LANE AND NB PM BUS LANE



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NOT TO SCALE

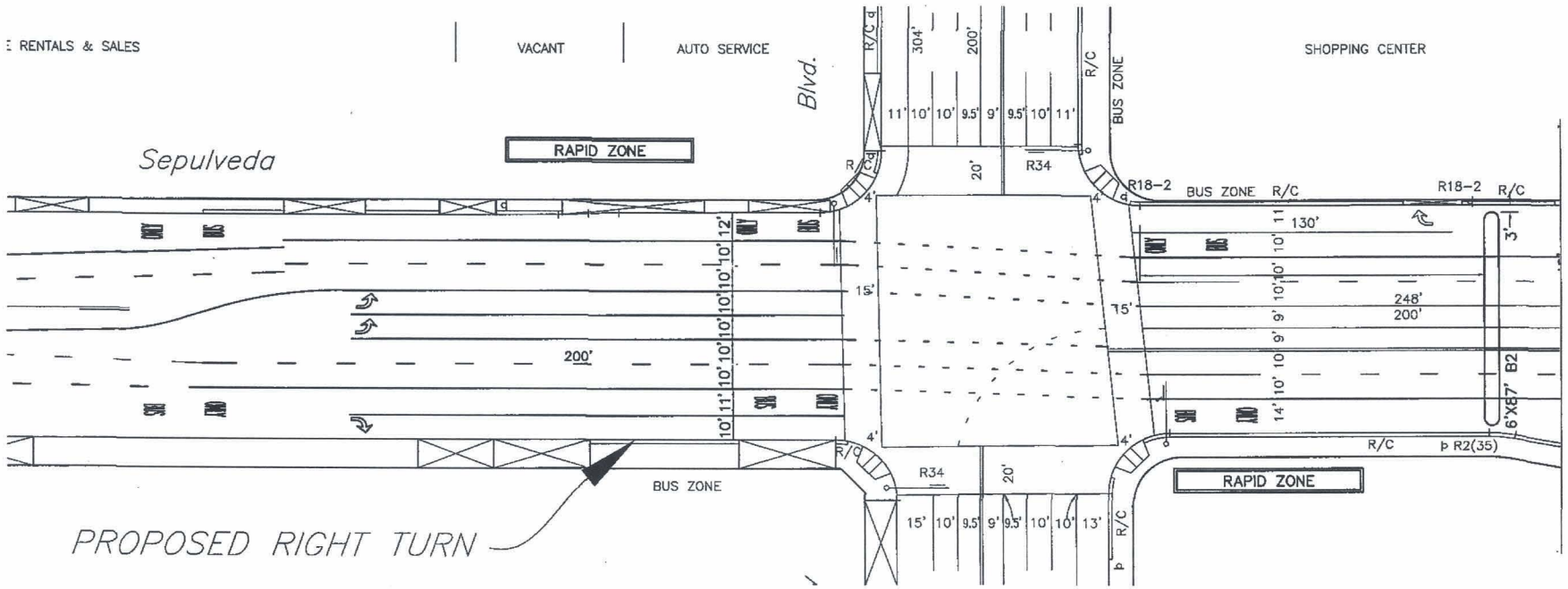
TRANSIT SYSTEM

LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 1 OF 3	

SEPULVEDA TRANSIT CORRIDOR

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

SEPULVEDA BOULEVARD AT VICTORY BOULEVARD
PROPOSED NB RIGHT TURN POCKET



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TRANSIT SYSTEM

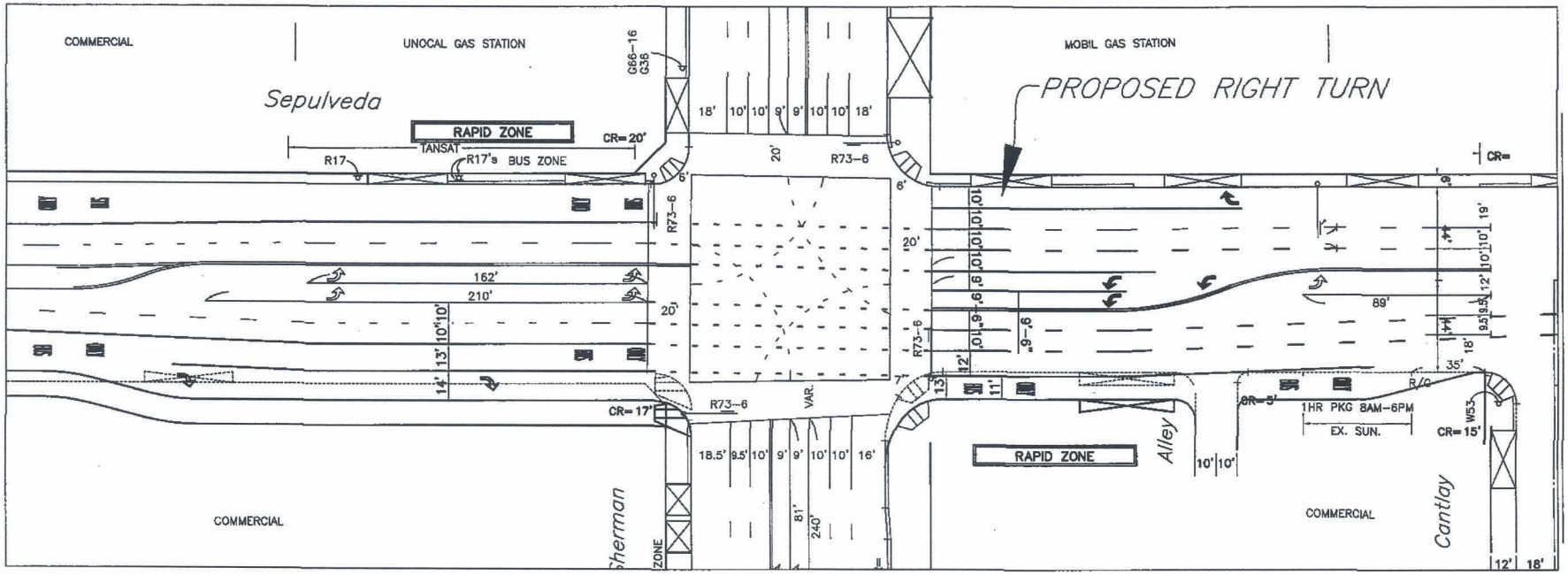
LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL SYSTEM PLAN DEPARTMENT OF TRANSPORTATION RITA ROBINSON, General Manager	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 2 OF 3	

SEPULVEDA TRANSIT CORRIDOR

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

SEPULVEDA BOULEVARD AT SHERMAN WAY

PROPOSED WIDENING 300' AT APPROACH AND DEPARTURE OF INTERSECTION S/B AM BUS LANE AND NB PM BUS LANE



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TRANSIT SYSTEM

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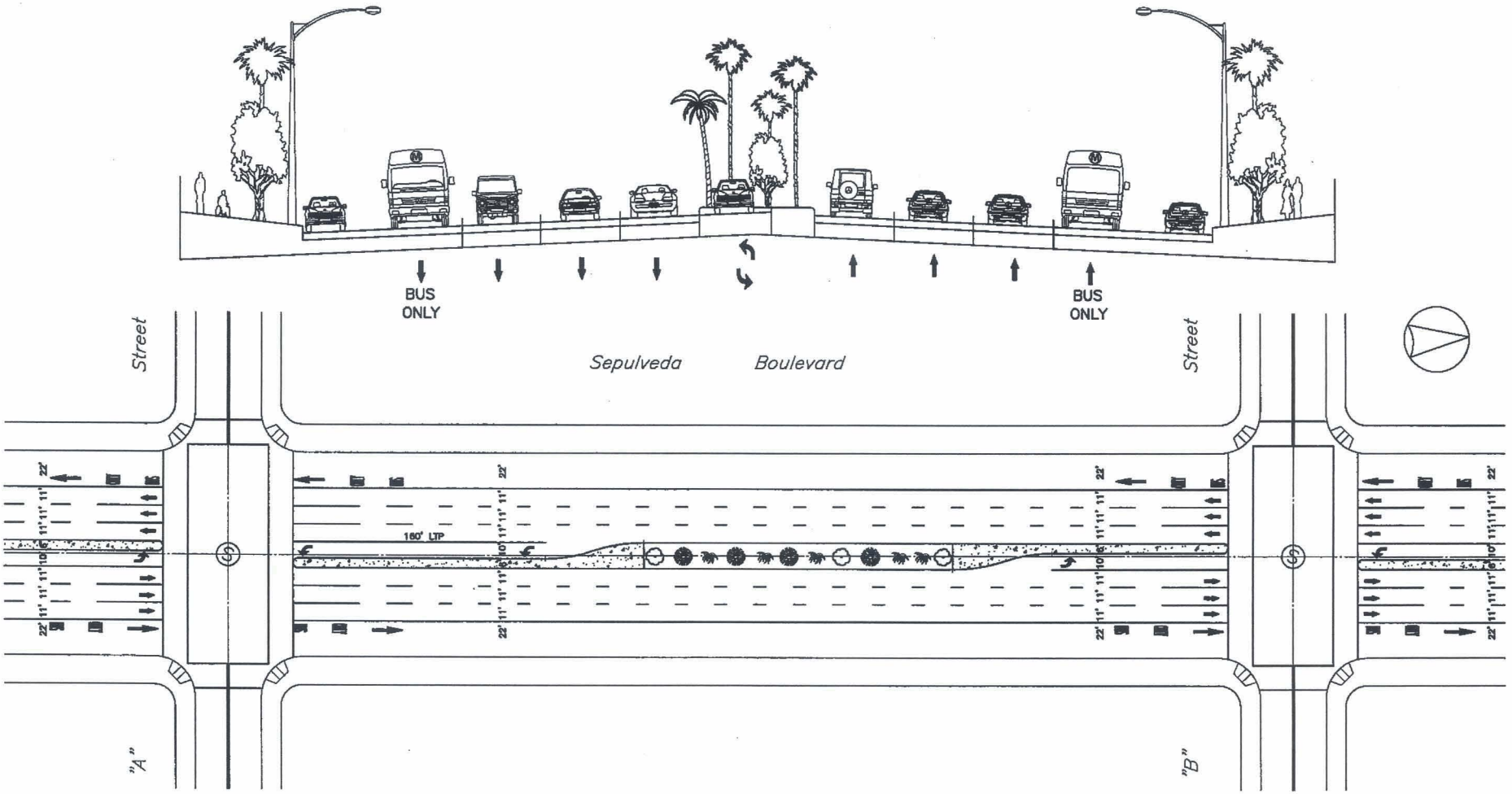
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 3 OF 3	

SEPULVEDA TRANSIT CORRIDOR

TYPICAL CROSS SECTION



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San Fernando Vally North-South Transit Corridors Project

Sepulveda Corridor Bus Lanes Between Chatsworth St. and Rayen St.

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
RITA L. ROBINSON, GENERAL MANAGER

Sepulveda Boulevard
Between
Chatsworth St. & Rayen St.

VAN NUYS

VAN NUYS CORRIDOR

EXECUTIVE SUMMARY

The Van Nuys Corridor consists of Van Nuys Blvd. between Ventura Blvd. and Foothill Blvd., a distance of 9½ miles in the San Fernando Valley. Bus speeds currently operate at Good (LOS C) level of service, per FTA's bus speed level of service criteria. Currently 12-15 Metro buses per hour serve the corridor in each direction during peak periods. The improvements discussed in this report would increase peak period bus speeds by 12-13% and reduce peak period bus travel times by 4-5 minutes. However, installation of proposed bus lanes (7.2 miles total) would also have significant impacts on traffic delay, mobile air emissions and on-street parking. Up to 900 peak period parking spaces would need to be removed. To reduce those impacts and eliminate parking loss and chronic bus delay in the Van Nuys Civic Center, LADOT has looked at the benefits of a busway tunnel under Van Nuys Blvd. between Oxnard St. and Sherman Way (1½ miles). A tunnel would improve bus speeds by 100-200% and reduce bus travel time by over 50% through the Civic Center. The engineering feasibility of such a facility has yet to be determined.

EXISTING CONDITIONS

Currently 12-15 Metro buses per hour serve the corridor in each direction during peak periods. Northbound bus speeds range between 11.7-15.4 mph, depending on time of day. Southbound bus speeds range between 13.0-13.5 mph. These bus speeds are rated LOS C (Good) per FTA's bus speed level of service criteria. Northbound bus travel times range between 35.3 and 46.7 minutes, depending on time of day. Southbound bus travel times range between 41.9 and 43.4 minutes.

Bus speed delays occur primarily at Ventura Blvd., the US 101 Freeway ramps, the Metro Orange Line Busway, Sherman Way, and in the Civic Center and Panorama City Mall areas.

POTENTIAL IMPROVEMENTS

- **Investigate Signal Timing Changes** at selected locations. Possibly increase signal cycle length up to 120 seconds and optimize signal cycle lengths.

- **Peak Period Bus Lanes:**
  - Northbound and southbound between Ventura Blvd. and US 101 Freeway ramps (0.4 miles)
  - Northbound and southbound between Addison St. and Oxnard St. (Metro Orange Line Busway) (1.3 miles)
  - Northbound and southbound between Oxnard St. and Vesper St. (Metro Orange Line Busway to Panorama City Mall) (4.6 miles)
  - Northbound and southbound between Arleta Ave. and San Fernando Rd. (0.9 miles)

- **Bus Stop Relocation** at Metro Orange Line Busway (southbound) (pending further analysis)

- **Increase Mixed Flow Capacity by Removing Parking or Lane Re-striping**
  - Ventura Blvd.
  - Huston St. to Chandler Blvd.
  - Keswick St. to Valerio St.
  - Parthenia St.
  - Pacoima Wash Bridge (Beachy Ave. to Arleta Ave.)

- **Landscaped Median Islands** at selected locations

- **Transit Enhancements** at selected major intersections.

BENEFITS

The improvements would increase peak period northbound bus speeds by 13.0-13.1% and peak period southbound bus speeds by 11.9-12.1%. Bus speed levels of service would be at LOS B (Very Good) and LOS C (Good.)

Bus travel times would be reduced by 4-5 minutes in the peak periods. Northbound bus travel times would be reduced from 35.3 to 31.2 minutes in the AM peak, from 39.5 to 39.1 minutes midday, and from 46.7 to 41.3 minutes in the PM peak. Southbound bus travel times would be reduced from 42.9 to 38.3 minutes in the AM peak, from 41.9 to 41.3 minutes midday, and from 43.4 to 38.8 minutes in the PM peak.

IMPACTS

Installation of the bus lanes between Oxnard St. (Metro Orange Line Busway) and Vesper St. (Panorama City Mall) would have a significant impact on traffic delay and mobile air emissions because they would require conversion of mixed flow lanes to bus lanes. For example, traffic delay would increase by 22.7% in the PM peak at Victory Blvd., by 100.3% in the PM peak at Vanowen St., and by 64.8% in the AM peak at Roscoe Blvd. Air emissions would also increase.

Approximately 886 on-street parking spaces would have to be removed during the AM and PM peak periods to accommodate the bus lanes as proposed. Parking losses would need to be mitigated; commercial areas generally have off-street parking available for customers and employees.

BUSWAY TUNNEL

Because of the significant impacts on traffic delay, air emissions and on-street parking generated by bus lanes through the Civic Center, and to eliminate chronic bus speed delay in that segment, LADOT has looked at the benefits of a 1.5-mile busway tunnel under Van Nuys Blvd. from the Metro Orange Line to Sherman Way, with subterranean stations at Victory Blvd. and Vanowen St. Bus speeds would average 25.3 mph and bus travel time would be

3.6 minutes through the tunnel. This represents a 100-200% improvement over existing bus speeds and a reduction in travel times of more than 50% through this congested segment. Mixed flow capacity and on-street parking on Van Nuys Blvd. through the Civic Center would remain intact. However, the engineering feasibility of a busway tunnel has yet to be determined.

VAN NUYS CORRIDOR NORTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Ventura Blvd. to Moorpark St.
    - Short blocks with Moorpark St. signal favoring southbound traffic.
- US 101 Freeway Ramps
    - Northbound traffic only receives 22% of available green time on 90-second cycle length.
- Huston St. to Chandler Blvd.
    - Northbound lanes reduce from 3 to 2 lanes, causing a decrease in speeds.
- Metro Orange Line Busway
    - Signals operate at 90-second cycle lengths through this segment.
- Calvert St. to Victory Blvd. (Civic Center)
    - Very short blocks with signalized intersections.
- Sherman Way Vicinity
    - Signal progression through segment has varying cycle lengths and is not optimized.
- Arminta St. to Parthenia Pl. (Panorama City Mall)
    - Signal progression through segment is not optimized with varying cycle lengths.
    - Northbound lanes reduce from 3 to 2 lanes causing a decrease in speeds.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - From Ventura Blvd. to Moorpark St., increase signal up to 120-second cycle length.

- At US 101 Freeway Ramps, increase signal up to 120-second cycle length.

- At the Metro Orange Line Busway, increase signals up to 120-second cycle length.

- From Calvert St. to Victory Blvd. (Civic Center), optimize cycle split for Van Nuys Blvd. and increase the entire segment cycle length from 90 up to 120 seconds.

- Convert intersections near Sherman Way up to 120-second cycle lengths and re-stripe to add southbound right turn pocket at Sherman Way.

- From Arminta St. to Parthenia Pl. (Panorama City Mall Area), optimize intersections around the Panorama City Mall by converting all intersections up to 120-second cycle length.

- Northbound Peak Period Bus Lanes

  - Ventura Blvd. to eastbound US 101 Freeway ramp (0.4 miles) Requires removal of approximately 38 peak period parking spaces.

  - Addison St. to Oxnard St. (1.3 miles) Requires removal of approximately 152 peak period parking spaces. Possibly create a special by-pass bus lane configuration approaching Burbank Blvd. (Source: *2003 RSTIS*)

  - Oxnard St. to Vesper St. (Metro Orange Line to Panorama City Mall) (4.6 miles) Bus lane would benefit bus speeds. Requires removal of approximately 177 peak period parking spaces and conversion of mixed flow lane to bus lane.

  - Arleta Ave. to San Fernando Rd. (0.9 miles) Requires removal of approximately 76 peak period parking spaces.

- Increase Mixed Flow Capacity

  - Add third northbound lane by restricting peak period parking between Huston St. to Chandler Blvd.

  - Widen/rebuild Pacoima Wash Bridge between Beachy Ave. & Arleta Ave. (Source: *2003 RSTIS*)

- Landscaped Median Islands

  - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)

- Transit Enhancements

    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 12-15 northbound Metro buses per hour serve the Van Nuys Corridor during peak periods. Northbound buses operate at an average speed of 15.43 mph (LOS C - Good) in the AM peak, 13.77 mph (LOS C – Good) midday and 11.65 mph (LOS C - Good) in the PM peak. Northbound bus travel times are 35.3 minutes in the AM peak, 39.5 minutes midday and 46.7 minutes in the PM peak.

With the non-bus lane improvements, northbound bus travel time savings are estimated to be 116 seconds in the AM peak, 26 seconds midday, and 119 seconds in the PM peak. This translates into bus speeds improving from 15.43 mph to 16.32 mph (5.8%) in the AM peak, 13.77 mph to 13.93 mph (1.2%) midday, and 11.65 mph to 12.17 mph (4.5%) in the PM peak.

Total bus travel time savings increase with the addition of a peak period bus lane from Oxnard St. to Vesper St. ((Metro Orange Line Busway to Panorama City Mall.) An additional 129 seconds in the AM peak and 203 seconds in the PM peak would be saved with this bus lane. The additional savings are estimated to bring average bus speeds in the corridor up to 17.46 mph (LOS B) in the AM peak, 13.93 mph (LOS C) midday, and 13.17 mph (LOS C) in the PM peak. This yields total bus speed increases of 13.1% in the AM peak, 1.2% midday, and 13.0% in the PM peak.

With all of the improvements, the increases in northbound bus speed during the peak periods meet the 10-15% goal set by LACMTA. Northbound bus speed level of service would improve from LOS C (Good) to LOS B (Very Good) in the AM peak and remain at LOS C (Good) midday and in the PM peak. Northbound bus travel times would be reduced from 35.3 minutes to 31.2 minutes in the AM peak, from 39.5 minutes to 39.1 minutes midday, and from 46.7 minutes to 41.3 minutes in the PM peak.

BUS LANE FEASIBILITY ANALYSIS

Van Nuys Blvd. is a designated Major Class II Highway with a variable roadway width of 66-90 feet, two to three travel lanes in each direction, a median left turn lane and full-time parking. Converting mixed flow lanes to bus lanes in segments of Van Nuys Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new peak period bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There is one long segment along northbound Van Nuys Blvd. where bus speeds would benefit significantly from the installation of a bus lane: Oxnard St. to Vesper St. (Panorama City Mall) (3 miles), which includes the crossing of the Metro Orange Line

Busway. Bus speeds are generally poor through most of this segment, especially in the PM peak period. However, creation of a peak period bus lane between Oxnard St. and Vesper St. would require removal of peak period parking and conversion of a mixed flow lane to a bus lane through most of the segment.

South of Oxnard St., bus speeds are generally at Good to Excellent levels of service (LOS A to LOS C), except at the US 101 Freeway ramps and Ventura Blvd. A northbound peak period bus lane between Ventura Blvd. and the US 101 Freeway ramps (0.4 mile) could be created by removing peak period parking in a mostly commercial area, generating no impacts on mixed flow traffic and improving operating conditions for buses. Another northbound peak period bus lane could be created between Addison St. and Oxnard St. by removing peak period parking in a mostly commercial area. Bus lanes in these segments would help maintain existing bus speed levels of service over time and have a minimal impact on residential areas.

North of the Panorama City Mall area, Van Nuys Blvd. operates at Good to Excellent bus speed levels of service (LOS A to LOS C) and therefore is not in need of a bus lane to improve bus speeds. However, a northbound peak period bus lane between Arleta Ave. and San Fernando Rd. (0.9 mile) could be created by restricting peak period parking, generating no impacts on mixed flow traffic. The peak period parking restriction would have a minimal impact on residential uses, since the area is mostly commercial. A bus lane in this segment would help maintain existing bus speed levels of service over time.

BUS LANE IMPACTS

1. If a northbound mixed flow lane were converted to a peak period bus lane between Oxnard St. and Vesper St., there would be impacts on both traffic delay and air emissions due to heavy traffic volumes on Van Nuys Blvd. The tables below show traffic delay and air emission modeling results with conversion of a mixed flow lane to a peak period bus lane for five sample intersections within the segment. The modeling indicates that traffic delay in the peak periods would increase at these major intersections:

Intersection Traffic Delay

Intersection	Existing	Bus Lane Conversion	% Change
Oxnard St (AM)	93.8 sec (F)	109 sec (F)	+16.2%
Oxnard St (PM)	35 sec (C)	53.7 sec (D)	+53.4%
Victory Blvd (AM)	69 sec (E)	80.8 sec (F)	+17.1%
Victory Blvd (PM)	56.5 sec (E)	69.3 sec (E)	+22.7%
Vanowen (AM)	36.3 sec (D)	59.7 sec (E)	+64.5%
Vanowen (PM)	36.3 sec (D)	72.7 sec (E)	+100.3%
Sherman Way (AM)	102.9 sec (F)	106.6 sec (F)	+3.6%
Sherman Way (PM)	116.6 sec (F)	117.6 sec (F)	+0.9%
Roscoe Blvd (AM)	42.1 sec (D)	69.4 sec (E)	+64.8%
Roscoe Blvd (PM)	126.3 sec (F)	141.1 sec (F)	+11.7%

2. Air emissions would also increase significantly as a result of the increase in traffic delay:

Air Emissions Impact

Intersection	Bus Lane Conversion
Oxnard St (AM)	+15.3%
Oxnard St (PM)	+29.2%
Victory Blvd (AM)	+38.0%
Victory Blvd (PM)	+34.4%
Vanowen (AM)	+17.4%
Vanowen (PM)	+50.6%
Sherman Way (AM)	+2.2%
Sherman Way (PM)	+0.5%
Roscoe Blvd (AM)	+20.4%
Roscoe Blvd (PM)	+7.6%

For reference, a mode shift of 10% would yield a reduction in delay impact to mixed flow vehicles.

3. Installation of the northbound bus lane segments would require eliminating approximately 443 peak period parking spaces:

- 38 peak period parking spaces between Ventura Blvd. and the US 101 Freeway ramps (0.4 mile) (approximate 17% utilization rate)
- 152 peak period parking spaces between Addison St. and Oxnard St. (1.3 mile) (approximate 24% utilization rate)
- 177 peak period parking spaces between Oxnard St. and Vesper St., mostly in the Civic Center (4.6 mile) (approximate 44% utilization rate)
- 76 peak period parking spaces between Arleta Ave. and San Fernando Rd. (0.9 mi) (approximate 24% utilization rate)

Parking losses in residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities.

BUSWAY TUNNEL

Because of the significant impacts on traffic delay, air emissions and on-street parking created by bus lanes through the Van Nuys Civic Center, and to alleviate persistent bus speed delay in that segment, LADOT has looked at the benefits of a busway tunnel under Van Nuys Blvd. between the Metro Orange Line Busway and Sherman Way, a distance

of 1.5 miles. A busway tunnel could start south of the Metro Orange Line Busway and daylight north of Vanowen St., where Van Nuys Blvd. widens again.

A busway tunnel between the Metro Orange Line and Sherman Way would leave mixed flow traffic capacity and on-street parking through the Civic Center intact. It would create an exclusive Bus Rapid Transit facility for the Van Nuys Corridor where it is needed most and would result in optimal bus speed and travel time through the segment. With two stops at Victory Blvd. and Vanowen St. (underground stations), a busway tunnel would result in an average bus speed of 25.3 mph and a bus travel time of 3.6 minutes in the segment, regardless of the time of day or direction of travel. This would more than double existing bus speeds and reduce travel times by more than half through the Civic Center:

Busway Tunnel (Metro Orange Line to Sherman Way)
Transit Benefits

Direction & Time of Day	Existing Bus Speed (mph)	Tunnel Bus Speed (mph)	% Change	Existing Travel Time (min.)	Tunnel Travel Time (min.)	% Change
Northbound						
AM Peak	12.7	25.3	99%	7.2	3.6	(50%)
PM Peak	8.1	25.3	212%	11.2	3.6	(68%)
Southbound						
AM Peak	10.3	25.3	146%	9.0	3.6	(60%)
PM Peak	9.6	25.3	164%	9.7	3.6	(63%)

Busway tunnels have been utilized successfully in other major cities, such as Seattle. Further study and engineering analysis is necessary before the feasibility of a bus tunnel under Van Nuys Blvd. can be fully determined.

VAN NUYS BOULEVARD SOUTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Ventura Blvd.
    - Queue on southbound Van Nuys Blvd. for left turns onto Ventura Blvd. extends beyond Moorpark St. during peak periods.
- Addison St. to US 101 Freeway Ramps
    - Signals through this segment operate at 90-second cycle lengths.
- Metro Orange Line Busway
    - Metro Rapid buses often have to stop twice, once for near-side bus stop and also at Busway traffic signal.
- Sherman Way
    - Large southbound right turn volumes hinder through movement in the curb lane at Sherman Way.
- Gilmore St. to Friar St. (Civic Center)
    - Closely spaced intersections operate on 90-second signal cycle lengths.
- Keswick St. to Valerio St.
    - Bus speeds are at LOS F.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - From Addison St. to US 101 Freeway Ramps, increase signal cycle lengths up to 120 seconds.
    - From Gilmore St. to Friar St. (Civic Center), increase signal cycle lengths up to 120 seconds.

- From Sherman Way to Vose St., increase signal cycle lengths up to 120 seconds and explore possibility of adding green time to Van Nuys Blvd. at Sherman Way.

- From Vesper St. to Arminta St., increase signal cycle lengths up to 120 seconds.

- From Nordhoff Blvd. to Rayen Ave., explore possibility of adding green time to Van Nuys Blvd.

- Southbound Peak Period Bus Lanes

  - San Fernando Rd. to Arleta Ave. (0.9 mi) Requires removal of approximately 76 peak period parking spaces.

  - Vesper St. to Oxnard St. (Panorama City Mall to Metro Orange Line) Bus lane would benefit bus speeds. Requires removal of approximately 177 peak period parking and conversion of mixed flow lane to bus lane.

  - Oxnard St. to Addison St. (1.3 mi) Requires removal of approximately 152 peak period parking spaces.

  - US 101 Freeway ramps to Ventura Blvd. (0.4 mi) Requires removal of approximately 38 peak period parking spaces.

- Bus Stop Relocation

  - At Metro Orange Line Busway, explore possibility of relocating bus stop to far side of Busway.

- Increase Mixed Flow Capacity

  - At Ventura Blvd., add double left turn pocket by re-striping using existing median.

  - From Keswick St. to Valerio St., restrict parking during peak periods and install red curb.

  - Shave southbound side of median through curve at Parthenia St. and re-stripe to add mixed flow capacity. (Source: *2003 RSTIS*)

- Landscaped Median Islands

  - Selected locations between the US 101 Freeway and the SR-118 Freeway (see accompanying map.)

- Transit Station Enhancements

    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities - at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT AND TRAVEL TIME SAVINGS

Currently, 12-15 southbound buses per hour serve the Van Nuys Corridor during peak periods. Southbound buses operate at an average speed of 13.17 mph (LOS C - Good) in the AM peak, 13.47 mph (LOS C – Good) midday and at an average speed of 13.01 mph (LOS C - Good) in the PM peak. Southbound bus travel times are 42.9 minutes in the AM peak, 41.9 minutes midday and 43.4 minutes in the PM peak.

With the non-bus lane improvements, southbound bus travel time savings are estimated to be 124 seconds in the AM peak, 37 seconds midday, and 126 seconds in the PM peak. This translates into bus speeds improving from 13.17 mph to 13.83 mph (4.5%) in the AM peak, 13.47 mph to 13.67 mph (1.5%) midday, and 13.01 mph to 13.67 mph (5.4%) in the PM peak.

Total bus travel time savings increase with the addition of a peak period bus lane from Vesper St. to Oxnard St. ((Panorama City Mall to Metro Orange Line Busway.) An additional 154 seconds in the AM peak and 150 seconds in the PM peak would be saved with this bus lane. The additional savings are estimated to bring average bus speeds in the corridor up to 14.76 mph (LOS C) in the AM peak. 14.56 (LOS C) midday, and 14.55 mph (LOS C) in the PM peak. This yields total bus speed increases of 12.1% in the AM peak, 1.5% midday, and 11.9% in the PM peak.

With all of the improvements, the increases in southbound bus speed during the peak periods meet the 10-15% goal set by LACMTA. Southbound bus speed level of service would remain at LOS C (Good) in the AM peak, midday and PM peak. Southbound bus travel times would be reduced from 42.9 minutes to 38.3 minutes in the AM peak, 41.9 minutes to 41.3 minutes midday, and from 43.4 minutes to 38.8 minutes in the PM peak.

BUS LANE FEASIBILITY ANALYSIS

Van Nuys Blvd. is a designated Major Class II Highway with a variable roadway width of 66-90 feet, two to three travel lanes in each direction, a median left turn lane and full-time parking. Converting mixed flow lanes to bus lanes in segments of Van Nuys Blvd. that already operate at satisfactory bus speed LOS would not provide significant or necessary improvements to average corridor bus speeds and would have significant traffic impacts. However, LADOT has examined the feasibility of creating new peak period bus lanes in segments where bus speeds are poor and would benefit significantly or where bus lanes would have minimal impacts on traffic and residential on-street parking.

There is one long segment along southbound Van Nuys Blvd. where bus speeds would benefit significantly from the installation of a bus lane: Vesper St. (Panorama City Mall) to Oxnard St. (3 miles), which includes the crossing of the Metro Orange Line Busway. Bus speeds are generally poor at major intersections in this segment. However, creation

of a peak period bus lane between Vesper St. and Oxnard St. would require removal of peak period parking and conversion of a mixed flow lane to a bus lane through most of the segment.

South of Oxnard St., bus speeds are generally good except in the approach to the US 101 Freeway ramps. A southbound peak period bus lane between the US 101 Freeway ramps and Ventura Blvd. (0.4 mile) could be created by removing peak period parking, generating no impacts on mixed flow traffic. The peak period parking restriction would have a minimal impact on residential uses, since the area is mostly commercial. A bus lane in this segment would help maintain existing bus speed levels of service over time.

North of the Panorama City Mall, Van Nuys Blvd. operates at Good to Excellent bus speed levels of service (primarily LOS A to C) and therefore is not in need of a bus lane to improve bus speeds. Additionally, north of the Panorama City Mall, Van Nuys Blvd. has only two southbound through lanes, making a bus lane conversion inadvisable. However, a southbound peak period bus lane between San Fernando Rd. and Arleta Ave. (0.9 mile) could be created by restricting peak period parking, generating no impacts on mixed flow traffic. The peak period parking restriction would have a minimal impact on residential uses, since the area is mostly commercial. A bus lane in this segment would help maintain existing bus speed levels of service over time.

BUS LANE IMPACTS

1. If a southbound mixed flow lane were converted to peak period bus lane between Vesper St. and Oxnard St., there would be impacts on both traffic delay and air emissions due to heavy traffic volumes on Van Nuys Blvd. The tables below show traffic delay and air emission modeling results with conversion of a mixed flow lane to a peak period bus lane for five sample intersections within the segment. The modeling indicates that traffic delay in the peak periods would increase at these major intersections:

Intersection Traffic Delay

Intersection	Existing	Bus Lane Conversion	% Change
Oxnard St (AM)	93.8 sec (F)	109 sec (F)	+16.2%
Oxnard St (PM)	35 sec (C)	53.7 sec (D)	+53.4%
Victory Blvd (AM)	69 sec (E)	80.8 sec (F)	+17.1%
Victory Blvd (PM)	56.5 sec (E)	69.3 sec (E)	+22.7%
Vanowen (AM)	36.3 sec (D)	59.7 sec (E)	+64.5%
Vanowen (PM)	36.3 sec (D)	72.7 sec (E)	+100.3%
Sherman Way (AM)	102.9 sec (F)	106.6 sec (F)	+3.6%
Sherman Way (PM)	116.6 sec (F)	117.6 sec (F)	+0.9%
Roscoe Blvd (AM)	42.1 sec (D)	69.4 sec (E)	+64.8%
Roscoe Blvd (PM)	126.3 sec (F)	141.1 sec (F)	+11.7%

2. Air emissions would also increase as a result of the increase in traffic delay:

Air Emissions Impact

Intersection	Bus Lane Conversion
Oxnard St (AM)	+15.3%
Oxnard St (PM)	+29.2%
Victory Blvd (AM)	+38.0%
Victory Blvd (PM)	+34.4%
Vanowen (AM)	+17.4%
Vanowen (PM)	+50.6%
Sherman Way (AM)	+2.2%
Sherman Way (PM)	+0.5%
Roscoe Blvd (AM)	+20.4%
Roscoe Blvd (PM)	+7.6%

For reference, a mode shift of 10% would yield a reduction in delay impact to mixed flow vehicles.

3. Installation of the southbound bus lane segments would require eliminating approximately 443 peak period parking spaces:

- 76 peak period spaces between San Fernando Rd. and Arleta Ave. (0.9 miles) (approximate 24% utilization rate)
- 177 peak period spaces between Vesper St. and Oxnard St. (4.6 mile) (approximate 44% utilization rate)
- 152 peak period parking spaces between Oxnard St. and Addison St. (1.3 mile) (approximate 24% utilization rate)
- 38 peak period parking spaces between the US 101 Freeway ramps and Ventura Blvd. (0.4 mile) (approximate 17% utilization rate)

Parking losses in residential areas would need to be mitigated. In areas with low parking utilization rates, mitigation may be achieved if surplus on-street parking exists on cross streets or there are sufficient off-street parking facilities.

BUSWAY TUNNEL

Because of the significant impacts on traffic delay, air emissions and on-street parking created by bus lanes through the Van Nuys Civic Center, and to alleviate persistent bus speed delay in that segment, LADOT has looked at the benefits of a busway tunnel

under Van Nuys Blvd. between the Metro Orange Line Busway and Sherman Way, a distance of 1.5 miles. A busway tunnel could start south of the Metro Orange Line Busway and daylight north of Vanowen St., where Van Nuys Blvd. widens again.

A busway tunnel between the Metro Orange Line and Sherman Way would leave mixed flow traffic capacity and on-street parking through the Civic Center intact. It would create an exclusive Bus Rapid Transit facility for the Van Nuys Corridor where it is needed most and would result in optimal bus speed and travel time through the segment. With two stops at Victory Blvd. and Vanowen St. (underground stations), a busway tunnel would result in an average bus speed of 25.3 mph and a bus travel time of 3.6 minutes in the segment, regardless of the time of day or direction of travel. This would more than double existing bus speeds and reduce travel times by more than half through the Civic Center:

Busway Tunnel (Metro Orange Line to Sherman Way)
Transit Benefits

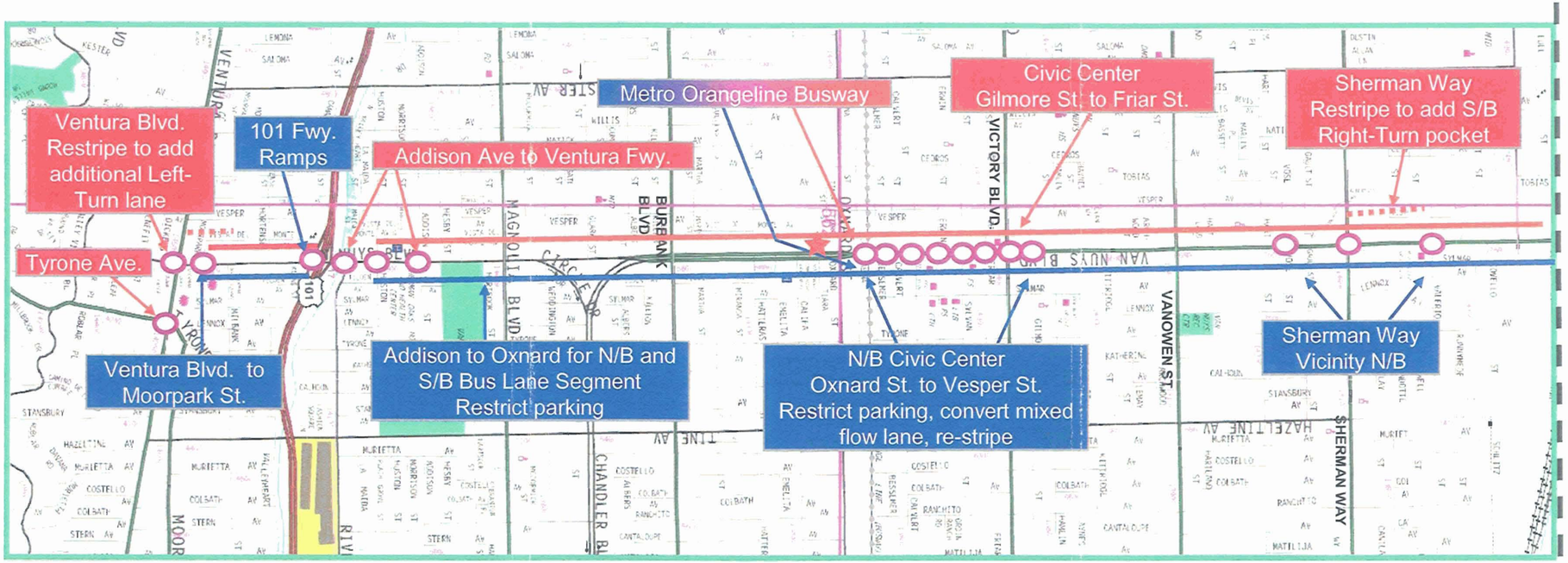
Direction & Time of Day	Existing Bus Speed (mph)	Tunnel Bus Speed (mph)	% Change	Existing Travel Time (min.)	Tunnel Travel Time (min.)	% Change
Northbound						
AM Peak	12.7	25.3	99%	7.2	3.6	(50%)
PM Peak	8.1	25.3	212%	11.2	3.6	(68%)
Southbound						
AM Peak	10.3	25.3	146%	9.0	3.6	(60%)
PM Peak	9.6	25.3	164%	9.7	3.6	(63%)

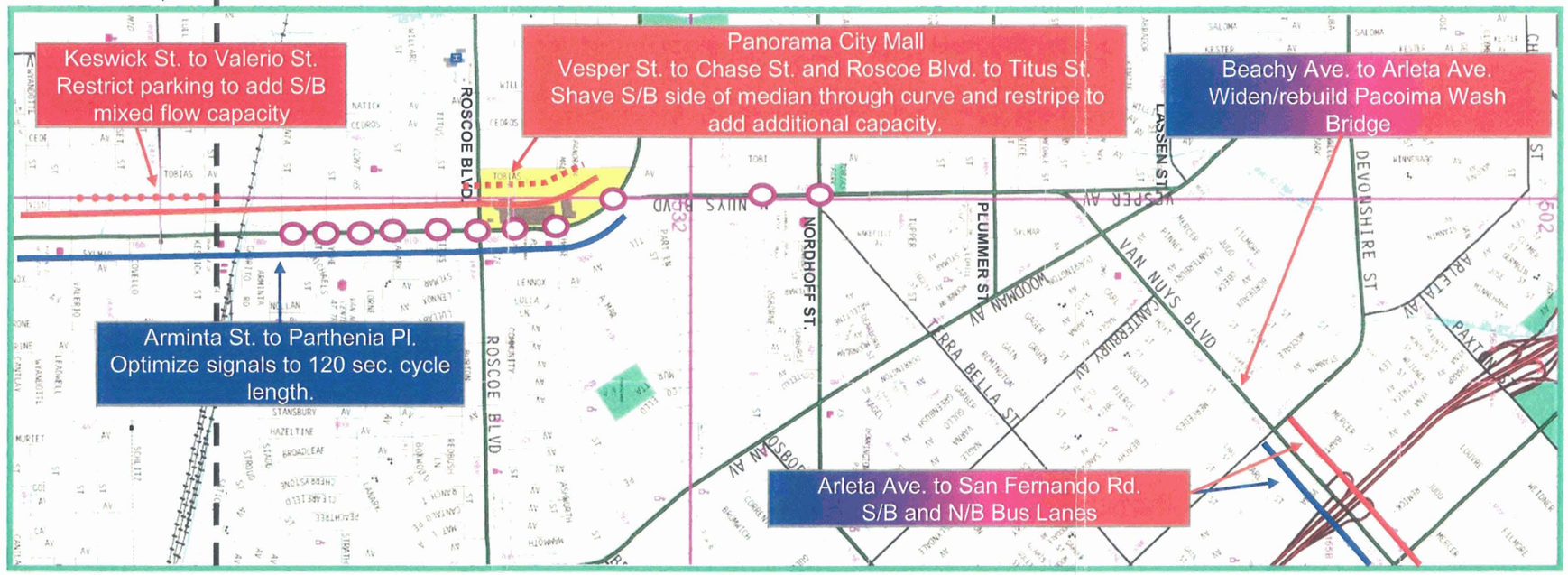
Busway tunnels have been utilized successfully in other major cities, such as Seattle. Further study and engineering analysis is necessary before the feasibility and advisability of a bus tunnel under Van Nuys Blvd. can be fully established.

VAN NUYS CORRIDOR POTENTIAL IMPROVEMENTS

Potential Improvements

- **Optimize Signal Cycle Length**
- **Southbound Bus Lane**
- **Northbound Bus Lane**
- **Southbound: Restripe to Add Mixed Flow Lane**
- **Northbound: Restripe to Add Mixed Flow Lane**
- **Southbound: Restrict Parking to Add Mixed Flow Capacity**
- **Northbound: Restrict Parking to Add Mixed Flow Capacity**
- **Relocate Southbound Bus Stop**
- **Relocate Northbound Bus Stop**





VAN NUYS CORRIDOR NORTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	298	310		VENTURA	MOORPARK	**VENTURA to MOORPARK AVE.** Only 22% green time for NB	46	4.4	F	60	3.4	F	69	2.9	F	**VENTURA BLVD THRU 101 FWY** Increase Cycle length to 120 sec. Synchronize lights accordingly. Review striping.				3		3	AM and PM PEAK			
2	575	408	100 / (60/40)	MOORPARK	MILBANK		11	34.4	A	11	35.8	A	12	33.7	A					3		3				
3	576	644	100 / (60/40)	MILBANK	HORTENSE		17	23.2	A	29	13.4	C	36	11.0	C					3		3				
4	703	767	90 / (60/40)	HORTENSE	101 EAST	**VENTURA FREEWAY RAMPS** N/B through is limited to 22% of green time due to turning movements.	35	13.7	C	50	9.6	D	58	8.3	D					6		6				
5	250	100		101 EAST	101 WEST		8	20.1	B	10	17.9	B	8	20.5	B					6		6				
6	545	340		101 WEST	RIVERSIDE		8	47.6	A	9	41.6	A	9	39.6	A					3		3				
7	605	508	90 / (65/35)	RIVERSIDE	HUSTON	**RIVERSIDE DR. TO ADDISON ST.** Reduces from 3 to 2 lanes, non-peak hour parking north of Huston	30	13.9	C	35	11.8	C	42	9.8	D		**HUSTON ST. TO CHANDLER BLVD.** Add 3rd lane curbside by restricting peak-period parking.			3		3				
8	588	673	90 / (65/35)	HUSTON	ADDISON		25	15.8	C	26	15.2	C	30	13.2	C					3		3				
9	1122	1323	90 / (60/40)	ADDISON	MAGNOLIA		60	12.7	C	67	11.5	C	70	10.9	C					3		3				
			Adusted 30 sec. for Dwell at Rapid Stop				*30*	*25.4*	A	*37*	*20.9*	B	*40*	*19.2*	B											
10	1132	1317	90 / (60/40)	MAGNOLIA	CLARK		30	25.3	A	29	26.3	A	32	24.4	A								AM and PM PEAK			
11	1405	1338	90 / (60/40)	CLARK	BURBANK		51	18.6	B	51	18.6	B	63	15.3	C	**BURBANK BLVD.** Create bus by-pass lane at Burbank (RSTIS)				5	5	5				
12	1286	1313	90 / (50/50)	BURBANK	HATTERAS		48	18.2	B	52	16.9	B	56	15.6	C											
			Adusted 30 sec. for Dwell at Rapid Stop				*18*	*48.1*	A	*22*	*40.0*	A	*26*	*33.6*	A											
13	1367	1326	90 / (50/50)	HATTERAS	OXNARD		48	19.3	B	45	20.8	B	51	18.4	B	**BUSWAY** Increase cycle to 120 sec. Re-coordinate short block signals north of Busway	**METRO ORANGE LINE BUSWAY** Restriping would need to be done to accommodate farside stop. Possible elimination of the Bessemer St. N/B left turn pocket to provide dwell area									
14	321	434	90 / (50/50)	OXNARD	BUSWAY	**METRO ORANGE LINE BUSWAY** Three potential locations for bus stop. Currrent location is nearside Aetna.	59	3.7	F	70	3.1	F	78	2.8	F					3		3		9		12
			Adusted 30 sec. for Dwell at Rapid Stop				*29*	*7.5*	E	*40*	*5.5*	F	*48*	*4.5*	F											
15	472	405		BUSWAY	CALVERT		19	16.9	B	17	18.7	B	15	21.6	A					3		3		3		2
16	430	363	90 / (50/50)	CALVERT	DELANO		16	18.5	B	14	21.2	A	16	18.8	B					3		3		2		2
17	350	365	90 / (55/45)	DELANO	ERWIN	**CALVERT ST. TO VICTORY BLVD. (Civic Center)** Pedestrian and short term parking heavy. Short blocks with 6 signalized intersections	16	15.1	C	11	21.2	A	16	15.3	C	**CALVERT ST. TO VICTORY BLVD. (Civic Center)** Possible optimization for minor intersections to favor Van Nuys; Increase cycle length to 120 sec. for entire stretch. Explore adding one lane either NB or SB by restriping or converting mixed flow lane into bus lane.				3		3		2		2
18	369	371	90 / (60/40)	ERWIN	SYLVAN		14	17.8	B	23	10.9	D	25	10.0	D					3		3		2		4
19	362	369	90 / (60/40)	SYLVAN	FRIAR		20	12.3	C	21	12.0	C	27	9.1	D					3		3		3		4
20	332	361	90 / (55/45)	FRIAR	VICTORY		26	8.6	D	29	7.7	E	37	6.0	E					3		3		4		6
21	283	369	90 / (50/50)	VICTORY	GILMORE		48	4.0	F	62	3.1	F	62	3.1	F					5	2	5		7		9
			Adusted 30 sec. for Dwell at Rapid Stop				*18*	*10.5*	D	*32*	*6.0*	E	*32*	*6.0*	F											
22	364	372	90 / (60/40)	GILMORE	HAMLIN		13	19.0	B	14	18.4	B	14	17.4	B					3		3		2		2
23	366	377	90 / (60/40)	HAMLIN	HAYNES		15	16.4	B	17	14.3	C	16	15.6	C									2		2
24	354	363	90 / (60/40)	HAYNES	KITTRIDGE		10	24.5	A	14	17.7	B	13	18.2	B									1		2
25	1230	1186	90 / (60/40)	KITTRIDGE	VANOWEN		33	25.5	A	41	20.6	B	53	15.7	C									5		8
			Adusted 30 sec. for Dwell at Rapid Stop				*3*	*294.3*	A	*11*	*78.2*	A	*23*	*36.0*	A											
26	403	445	90 / (50/50)	VANOWEN	HARTLAND		44	6.3	E	58	4.8	F	58	4.8	F	**SHERMAN WAY VICINITY** Convert intersections near Sherman Way to a 120 sec. cycle length, and synchronize signals in this segment. Explore re-striping to add SB right turn lane at Sherman Way.				3	3	3	AM and PM PEAK	7		9
27	1178	1209	90 / (50/50)	HARTLAND	VOSE	**SHERMAN WAY VICINITY** Signals are on both 90 and 120 sec. not allowing synchronization	41	19.4	B	45	17.7	B	57	14.2	C					3	3	3		6		9
28	1217	996	90 / (50/50)	VOSE	SHERMAN		58	14.3	C	83	10.0	D	185	4.5	F					3	3	3		9		28
			Adusted 30 sec. for Dwell at Rapid Stop				*28*	*29.6*	A	*53*	*15.6*	C	*155*	*5.4*	F											
29	1063	1320	120 / (45/55)	SHERMAN	VALERIO		75	9.7	D	93	7.8	E	93	7.8	E					5	5	5		11		14
30	1324	1325	90 / (60/40)	VALERIO	SATICOY		42	21.7	A	50	17.9	B	49	18.5	B					3	3	3		6		7
31	645	676	90 / (60/40)	SATICOY	KESWICK		17	25.8	A	20	22.4	A	26	17.0	B									3		4
32	1145	1150	90 / (65/35)	KESWICK	ARMINTA		46	17.1	B	45	17.4	B	69	11.3	C									7		10
			Adusted 30 sec. for Dwell at Rapid Stop				*16*	*50.0*	A	*15*	*52.6*	A	*39*	*20.1*	B											
33	635	666	90 / (60/40)	ARMINTA	BLYTHE		16	27.5	A	24	18.4	B	45	9.5	D					3		3		2		7
34	1004	1000	91 / (60/40)	BLYTHE	LANARK	**ARMINTA ST. TO PARTHENIA PL. (Panorama City Mall)** PM Peak traffic coupled with mall traffic. Roscoe operates at 120 second cycle length while the rest are on 90 second cycle length. At Parthenia, lane drops from 3 to 2 lanes causing congestion. Upstream LOS proves that 2 lanes is sufficient.	31	21.8	A	38	18.2	B	80	8.5	D	**ARMINTA ST. TO PARTHENIA PL. (Panorama City Mall)** Convert intersections in this segment to a 120 sec. cycle length, and synchronize signals. Possibly favor Van Nuys Blvd. green time at Roscoe Blvd.				3		3	AM and PM PEAK	5		12
35	633	659	90 / (60/40)	LANARK	TITUS		19	23.2	A	20	21.9	A	42	10.2	D					5	2	8		3		6
36	407	638	90 / (60/40)	TITUS	ROSCOE		81	3.4	F	96	2.9	F	120	2.3	F					3		3		12		18
			Adusted 30 sec. for Dwell at Rapid Stop				*51*	*5.5*	F	*66*	*4.2*	F	*90*	*3.1*	F											
37	370	562	120 / (50/50)	ROSCOE	PANORAMA MALL		14	18.2	B	22	11.4	C	29	8.7	D					3		3		2		4
38	562	612	90 / (65/35)	PANORAMA MAL	CHASE		37	10.3	D	38	10.1	D	54	7.1	E					3		3		6		8
39	946	847		CHASE	VESPER		54	11.9	C	71	9.1	D	73	8.8	D					3		3		8		11
			Adusted 30 sec. for Dwell at Rapid Stop				*24*	*26.7*	A	*41*	*15.7*	C	*43*	*14.9*	C											
40	545	686		VESPER	PARTHENIA		26	14.4	C	20	18.1	B	21	17.6	B					3		3				
41	1045	1069	90 / (60/40)	PARTHENIA	RAYEN		28	25.5	A	27	26.8	A	27	26.4	A					3		3				
42	1663	1322	90 / (65/35)	RAYEN	NORDHOFF		85	13.4	C	83	13.7	C	91	12.5	C					3		3				
			Adusted 30 sec. for Dwell at Rapid Stop				*55*	*20.7*	B	*53*	*21.5*	A	*61*	*18.6*	B											

VAN NUYS CORRIDOR NORTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements							B - Bus Lane			
																Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.)			Time Period	B - Estimated Bus Lane Travel Time Savings (sec.)		
																				AM	MID	PM		AM	MID	PM
43	980	1315	90 / (50/50)	NORDHOFF	TUPPER		38	17.4	B	37	18.0	B	35	19.2	B											
44	1295	1311	90 / (60/40)	TUPPER	PLUMMER		51	17.3	B	50	17.8	B	41	21.7	A											
45	2147	1860	90 / (60/40)	PLUMMER	WOODMAN		90	16.3	B	95	15.4	C	87	16.9	B											
						Adusted 30 sec. for Dwell at Rapid Stop	*60*	*24.5*	A	*65*	*22.4*	A	*57*	*25.9*	A											
46	2201	2478		WOODMAN	BEACHY		68	21.9	A	59	25.3	A	66	22.9	A											
47	1509	1320	90 / (60/40)	BEACHY	ARLETA		73	14.1	C	82	12.6	C	89	11.6	C											
						Adusted 30 sec. for Dwell at Rapid Stop	*43*	*24.0*	A	*52*	*20.0*	B	*59*	*17.6*	B											
48	461	668	90 / (60/40)	ARLETA	BARTEE		23	13.9	C	20	16.0	C	24	13.3	C											
49	2180	1982	90 / (60/40)	BARTEE	LAUREL CANYON		83	17.8	B	92	16.2		109	13.7	C											
						Adusted 30 sec. for Dwell at Rapid Stop	*53*	*27.8*	A	*62*	*24.1*	A	*79*	*18.9*	B								AM and PM PEAK			
50	1090	1324	90 / (50/50)	LAUREL CANYO	HADDON		40	18.7	B	44	17.0	B	46	16.1												
51	657	667	90 / (55/45)	HADDON	KEWEN		19	23.4	A	20	22.0	A	22	20.8	B											
52	647	648		KEWEN	TELFAIR		22	20.1	B	27	16.6	B	32	13.9	C											
53	1430	1385	90 / (60/40)	TELFAIR	SAN FERNANDO		81	12.0	C	87	11.2	C	99	9.9	D											
						Adusted 30 sec. for Dwell at Rapid Stop	*51*	*19.0*	B	*57*	*17.1*	B	*69*	*14.2*	C											
54	1079	1138	90 / (50/50)	SAN FERNANDO	PALA		29	25.2	A	30	24.4	A	32	22.7	A											
55	404	403	90 / (65/35)	PALA	BRADLEY		11	24.3	A	10	28.7	A	11	25.0	A											
56	816	816	90 / (60/40)	BRADLEY	NORRIS		19	29.0	A	23	24.3	A	19	28.8	A											
57	485	492	90 / (60/40)	NORRIS	HERRICK		16	20.6	B	15	22.4	A	15	21.8	A											
TOT	47851	48691					2115	15.4		2369	13.8		2800	11.7					Sum of Travel Time Savings (sec.)	116	26	119		129		203
						Adjusted Travel Time and MPH	*1695*	*19.3*		*1949*	*16.7*		*2380*	*13.7*												

* Does not include segment # 3 as buses use location as a layover area..

Bus Speed Improvement	AM	Midday	PM
Existing Bus Speeds (MPH)	15.43	13.77	11.65
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	16.32	13.93	12.17
B. Bus Speeds with Bus Lane Segments (MPH)	16.44	N/A	12.56
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Only Lane Segments (MPH)	17.46	13.93	13.17
	(LOS C)	(LOS C)	(LOS C)
% Improvement	13.1%	1.1%	13.0%

Bus Lane Types	
	Bus Lane that Improves Bus Speeds
	Bus Lane that Preserves Bus Speeds

Bus Speed Level of Service (LOS) Criteria	
LOS	Bus Speed Range
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

VAN NUYS CORRIDOR SOUTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements							B - Bus Lane			
																Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.)			Time Period	B - Estimated Bus Lane Travel Time Savings (sec.)		
																				AM	MID	PM		AM	MID	PM
1	1246	1315		FOOTHILL	DRONFIELD		51	16.6	B	53	15.9	C	53	15.9	C											
2	1313	315		DRONFIELD	BORDEN		40	22.6	A	38	23.3	A	37	24.1	A											
3	204	1331		BORDEN	GLENOAKS	(Low numbers due to layover location)*	676	0.2	F	1069	0.1	F	781	0.2	F											
4	1531	1323	90 / (50/50)	GLENOAKS	HERRICK		82	12.8	C	88	11.9	C	78	13.4	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*52*	*20.3*	B	*58*	*18.0*	B	*48*	*21.9*	A											
5	485	492	90 / (60/40)	HERRICK	NORRIS		16	20.1	B	17	20.0	B	15	22.2	A											
6	816	816	90 / (60/40)	NORRIS	BRADLEY		26	21.4	A	12	44.7	A	28	19.6	B											
7	404	403	90 / (60/40)	BRADLEY	PALA		15	18.9	B	12	22.1	A	18	15.6	C											
8	1186	1138	90 / (65/35)	PALA	SAN FERNANDO		57	14.3	C	50	16.3	B	58	14.0	C											
9	1323	1385	90 / (50/50)	SAN FERNANDO	TELFAIR		70	12.8	C	69	13.0	C	80	11.2	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*40*	*22.4*	A	*39*	*22.9*	A	*50*	*18.0*	B											
10	647	648	90 / (60/40)	TELFAIR	KEWEN		21	20.7	B	24	18.1	B	26	17.1	B								AM and PM PEAK			
11	657	667		KEWEN	HADDON		20	22.8	A	21	21.3	A	22	20.5	B											
12	1090	1324	90 / (55/45)	HADDON	LAUREL CANYON		26	28.2	A	27	27.2	A	32	23.0	A											
13	2180	1982	90 / (50/50)	LAUREL CANYON	BARTEE		108	13.8	C	106	14.1	C	122	12.2	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*78*	*19.0*	B	*76*	*19.6*	B	*92*	*16.2*	B											
14	461	668	90 / (60/40)	BARTEE	ARLETA		14	21.7	A	13	24.5	A	15	20.7	B											
15	1509	1320	90 / (60/40)	ARLETA	BEACHY		81	12.6	C	57	18.2	B	71	14.5	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*51*	*20.0*	B	*27*	*38.6*	A	*41*	*25.2*	A											
16	2201	2478	90 / (60/40)	BEACHY	WOODMAN		46	32.4	A	49	30.7	A	47	31.7	A											
17	2147	1860		WOODMAN	PLUMMER		101	14.5	C	119	12.3	C	95	15.4	C											
				Adusted 30 sec. for Dwell at Rapid Stop			*71*	*20.5*	B	*89*	*16.4*	B	*65*	*22.6*	A											
18	1295	1311	90 / (60/40)	PLUMMER	TUPPER		35	25.6	A	33	26.8	A	39	22.4	A											
19	980	1315	90 / (60/40)	TUPPER	NORDHOFF	**NORDHOFF BLVD. TO RAYEN AVE.**	45	15.0	C	22	30.6	A	41	16.2	B	**NORDHOFF BLVD. TO RAYEN AVE.** Explore possibility of adding green time to Van Nuys Blvd.				3		3				
20	1663	1322	90 / (50/50)	NORDHOFF	RAYEN	S/B receives only 27 sec. of green time.	154	7.4	E	150	7.6	E	144	7.9	E					3		3				
				Adusted 30 sec. for Dwell at Rapid Stop		(37sec. N/B)	*124*	*9.2*	D	*120*	*9.4*	D	*114*	*9.9*	D											
21	1045	1069	90 / (65/35)	RAYEN	PARTHENIA		33	21.7	A	31	22.9	A	40	17.8	B					3		3				
22	728	686	90 / (60/40)	PARTHENIA	VESPER		31	16.3	B	28	17.5	B	27	18.4	B					3		3				
23	763	847		VESPER	CHASE	**VESPER ST. TO CHASE ST.**	87	6.0	F	95	5.5	F	97	5.4	F	**VESPER ST. TO ARMINTA AVE.** Convert signals to 120 sec. cycle length	**PANORAMA CITY MALL** Explore shaving southbound side of median through curve and restripe to add additional capacity.			13	10	15	AM and PM PEAK	13		15
				Adusted 30 sec. for Dwell at Rapid Stop		Congestion around Panorama City Mall.	*57*	*9.1*	D	*65*	*8.1*	D	*67*	*7.8*	E											
24	562	612		CHASE	PANORAMA MALL	Roscoe on 120 sec. cycle length; rest of	18	20.9	B	25	15.3	C	25	15.2	C					3		3		3		4
25	370	562	90 / (65/35)	PANORAMA MALL	ROSCOE	signals are on 90 sec. cycle length.	16	16.2	B	12	21.3	A	13	18.8	B					3		3		2		2
26	877	638	120 / (50/50)	ROSCOE	TITUS		99	6.1	E	98	6.1	E	105	5.7	F					5	2	5		15		16
				Adusted 30 sec. for Dwell at Rapid Stop			*69*	*8.7*	D	*68*	*8.8*	D	*75*	*7.9*	D											
27	633	659	90 / (60/40)	TITUS	LANARK		27	15.8	C	23	18.7	B	23	18.6	B					3		3		4		3
28	1004	1000	90 / (60/40)	LANARK	BLYTHE		37	18.6	B	29	23.4	A	33	20.9	B					3		3		6		5
29	635	666	90 / (60/40)	BLYTHE	ARMINTA		25	17.6	B	37	11.6	C	19	22.9	A					3		3		4		3
30	1145	1150	90 / (60/40)	ARMINTA	KESWICK		49	15.8	C	26	30.3	A	31	25.0	A									7		5
31	645	676	90 / (65/35)	KESWICK	SATICOY	**KESWICK ST. TO VALERIO ST.**	64	6.9	E	58	7.6	E	57	7.7	E			**KESWICK to VALERIO** Restrict peak period parking and install red curb						10		9
				Adusted 30 sec. for Dwell at Rapid Stop		Speeds at LOS F	*34*	*13.1*	C	*28*	*15.7*	C	*27*	*16.0*	C											
32	1324	1325	90 / (60/40)	SATICOY	VALERIO		33	27.4	A	32	28.5	A	35	26.2	A									5		5
33	1063	1320	90 / (60/40)	VALERIO	SHERMAN	**SHERMAN WAY TO VOSE**	33	21.9	A	40	18.3	B	40	18.1	B					3	3	3		5		6
34	1217	996	120 / (45/55)	SHERMAN	VOSE	Sherman Way receives slightly more	126	6.6	E	128	6.5	E	129	6.4	E	**SHERMAN WAY TO VOSE** Convert neighboring intersections to a 120 sec. cycle length. Explore possibility of adding green time to Van Nuys Blvd. at Sherman Way.				5	5	5		19		19
				Adusted 30 sec. for Dwell at Rapid Stop		green than VN. Intersections in vicinity	*96*	*8.6*	D	*98*	*8.5*	D	*99*	*8.4*	D											
35	1241	1209	90 / (50/50)	VOSE	HARTLAND	operate on 90 second cycle lengths while	35	24.3	A	34	25.0	A	36	23.3	A					3	3	3	AM and PM PEAK	5		5
36	456	445	90 / (50/50)	HARTLAND	VANOWEN	Sherman is on 120 second cycle length.	31	10.0	D	21	14.9	C	22	14.3	C					3	3	3		5		3
37	1114	1186	90 / (50/50)	VANOWEN	KITTRIDGE		71	10.7	D	65	11.7	C	67	11.3	C					3	3	3		11		10
				Adusted 30 sec. for Dwell at Rapid Stop			*41*	*18.6*	B	*35*	*21.6*	A	*37*	*20.3*	B											
38	354	363	90 / (60/40)	KITTRIDGE	HAYNES		15	16.4	B	22	11.1	C	21	11.7	C									2		3
39	366	377	90 / (56/44)	HAYNES	HAMLIN		16	15.8	C	17	14.8	C	15	16.9	B									2		2
40	364	372	90 / (57/43)	HAMLIN	GILMORE	**GILMORE ST. TO FRIAR ST.**	15	17.0	B	15	16.8	B	18	13.5	C	**GILMORE ST. TO FRIAR ST.** Increase timing to 120 sec. Possibly take time from Victory Blvd. for Van Nuys Blvd.				3	3	3		2		3
41	385	369	90 / (57/43)	GILMORE	VICTORY	**(Civic Center)**	32	8.3	D	35	7.5	E	31	8.6	D					5	5	5		5		5
42	235	361	90 / (50/50)	VICTORY	FRIAR	Three intersections seperated by only 300	61	2.6	F	67	2.4	F	61	2.6	F									9		9
				Adusted 30 sec. for Dwell at Rapid Stop		feet. 90 sec. split evenly at Victory.	*31*	*5.1*	F	*37*	*4.4*	F	*31*	*5.2*	F					3		3	AM and PM PEAK			
43	362	369	90 / (55/45)	FRIAR	SYLVAN		15	16.6	B	14	17.7	B	13	18.8	B					3		3		2		2
44	369	371	90 / (60/40)	SYLVAN	ERWIN		12	21.2	A	12	21.2	A	10	25.9	A					3		3		2		1
45	350	365	90 / (57/43)	ERWIN	DELANO		10	22.9	A	12	20.3	B	10	24.2	A					3		3		2		1
46	430	363	90 / (55/45)	DELANO	CALVERT	**METRO ORANGE LINE BUSWAY**	13	22.7	A	12	24.0	A	11	26.7	A					3		3		2		2
47	611	405	90 / (55/45)	CALVERT	BUSWAY	Stop located north of busway. Often the	77	5.4	F	66	6.3	E	69	6.1	E			**METRO ORANGE LINE BUSWAY** Farside stop relocation (possible pedestrian issue) Further analysis necessary		3		3		12		10
				Adusted 30 sec. for Dwell at Rapid Stop		bus will stop for passengers as well and	*47*	*8.8*	D	*36*	*11.4*	C	*39*	*10.8*	D											
48	303	405		BUSWAY	OXNARD	get caught at busway intersection.	12	17.3	B	12	16.7	B	10	20.5	B					3		3		2		2
49	1343	434	90 / (50/50)	OXNARD	HATTERAS		30	30.4	A	38	24.0	A	28	32.6	A											
50	1367	1326	90 / (50/50)	HATTERAS	BURBANK		46	20.1	B	53	17.5	B	44	21.1												
51	1227	1338	90 / (50/50)	BURBANK	CLARK		57	14.6	C	58	14.5	C	50	16.7	B								AM and PM PEAK			
				Adusted 30 sec. for Dwell at Rapid Stop			*27*	*30.6*	A	*28*	*30.3*	A	*20*	*41.7*	A											
52	1132	1317	90 / (60/40)	CLARK	MAGNOLIA		32	24.5	A	33	23.1	A	29	26.9	A											

VAN NUYS CORRIDOR SOUTHBOUND

Ref. No.	TPS Loop/ Segment Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements				A - Estimated Travel Time Savings (sec.)			B - Bus Lane	B - Estimated Bus Lane Travel Time Savings (sec.)		
																Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	AM	MID	PM	Time Period	AM	MID	PM
53	1522	1323	90 / (60/40)	MAGNOLIA	ADDISON	**ADDISON ST. TO VENTURA FWY**	77	13.5	C	83	12.6	C	108	9.6	D					3		3	AM and PM PEAK			
			Adusted 30 sec. for Dwell at Rapid Stop			Van Nuys Blvd. drops from 3 S/B lanes to	*47*	*22.1*	A	*53*	*19.8*	B	*78*	*13.2*	C	**ADDISON ST. TO VENTURA FREEWAY**										
54	588	673	90 / (60/40)	ADDISON	HUSTON	2 S/B lanes just after Burbank Blvd.	41	9.9	D	42	9.5	D	65	6.2	E	Increase timing to 120 sec. through segment.				3		3				
55	605	508	90 / (65/35)	HUSTON	RIVERSIDE	Pavement striping utilizes available	26	15.8	C	28	14.7	C	57	7.2	E					3		3				
56	295	340	90 / (65/35)	RIVERSIDE	101 WEST		21	9.6	D	22	9.3	D	23	8.6	D					3		3				
57	250	100		101 WEST	101 EAST		14	11.9	C	22	7.9	E	14	12.4	C					3		3				
58	703	767		101 EAST	HORTENSE		35	13.9	C	33	14.6	C	28	17.1	B					6		6				
59	576	644	90 / (60/40)	HORTENSE	MILBANK	**AT VENTURA BLVD.**	33	11.8	C	33	12.0	C	24	16.4	B		**AT VENTURA BLVD.**			6		6	AM and PM PEAK			
60	575	408	100 / (60/40)	MILBANK	MOORPARK	Queue for SB left turn Ventura extends	24	16.0	C	23	17.3	B	22	18.2	B		Add double left turn by re-striping intersection utilizing			3		3				
61	924	365	100 / (60/40)	MOORPARK	VENTURA	beyond Moorpark during peak periods.	39	16.3	B	23	27.3	A	23	27.3	A		existing median.			3		3				
TOT	49709	50791					2574	13.2		2516	13.5		2606	13.0					Sum of Travel Time Savings (sec.)	124	37	126		154		150
						Adjusted Travel Time and MPH	*2124*	*16.0*		*2066*	*16.4*		*2156*	*15.7*												

* Does not include segment # 3 as buses use location as a layover area..

Bus Speed Improvement	AM	Midday	PM
Existing Bus Speeds (MPH)	13.17	13.47	13.01
A. Bus Speeds with Potential Improvements (MPH)	13.83	13.67	13.67
B. Bus Speeds with Bus-Only Lane Segments (MPH)	14.01	N/A	13.80
A and B. Bus Speeds with Potential Improvements and Bus Only Lane Segments (MPH)	14.76	13.67	14.55
	(LOS C)	(LOS D)	(LOS C)
% Improvement	12.1%	1.5%	11.9%

Bus Lane Types

Bus Lane that Improves Bus Speeds

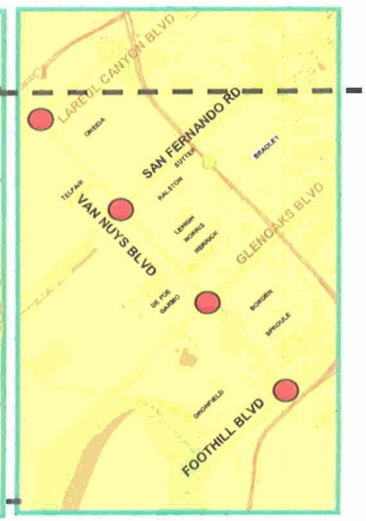
Bus Lane that Preserves Bus Speeds

Bus Speed Level of Service (LOS) Criteria	
LOS	Bus Speed Range
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

VAN NUYS CORRIDOR TRANSIT/PEDESTRIAN ENHANCEMENTS

- Potential Median Island Location (subject to traffic analysis)
- Potential Transit Enhancement Location
  - Decorative X-Walk
  - Bus Shelter
  - Bus Stop Security Lighting
  - Additional Pedestrian Amenities
- Match Line

- CD-6 Tony Cardenas
- CD-7 Richard Alarcon
- CD-12 Greig Smith
- CD-5 Jack Weis
- CD-2 Wendy Gruel



TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

BUS STOP ENHANCEMENTS

BEFORE

AFTER

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

ENHANCED CROSSWALK

BEFORE

AFTER

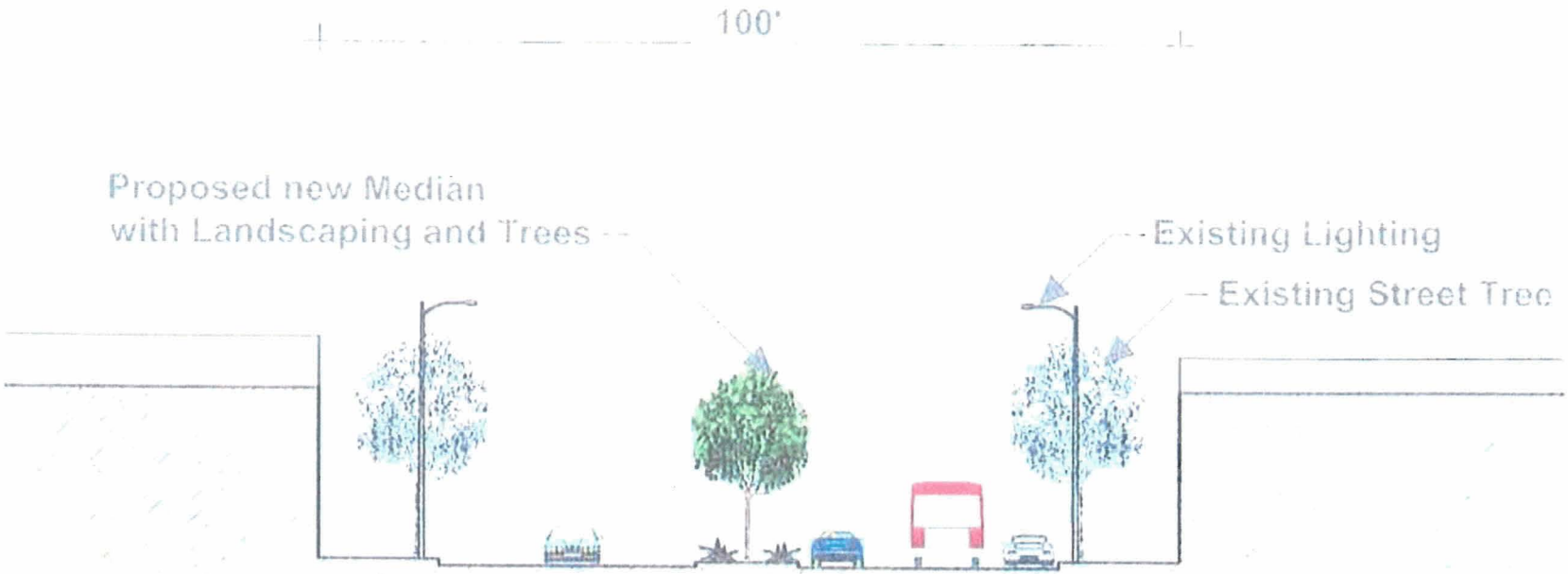
TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

NEW MEDIAN ISLAND

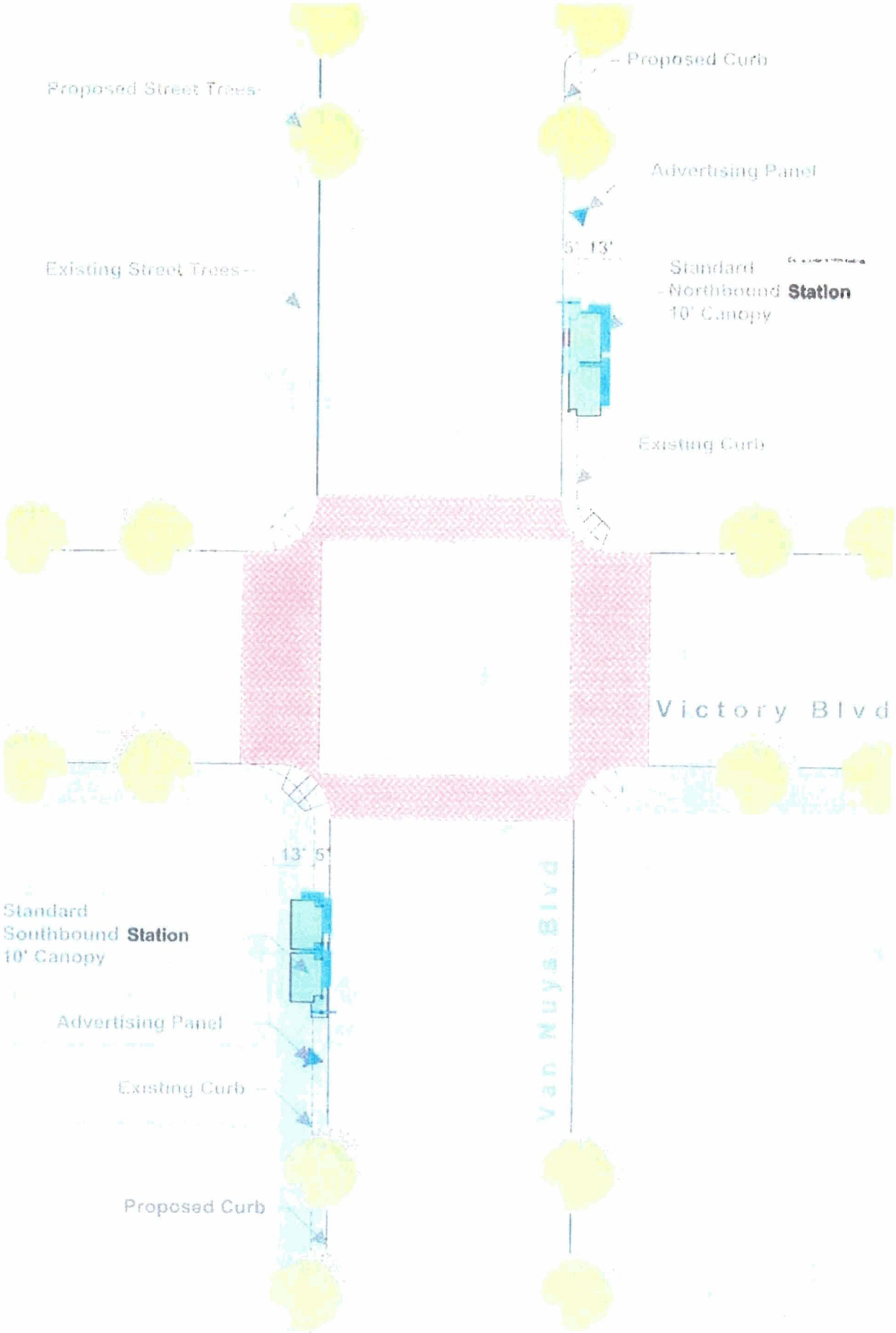
BEFORE

AFTER

Stations and Accessibility Enhancements

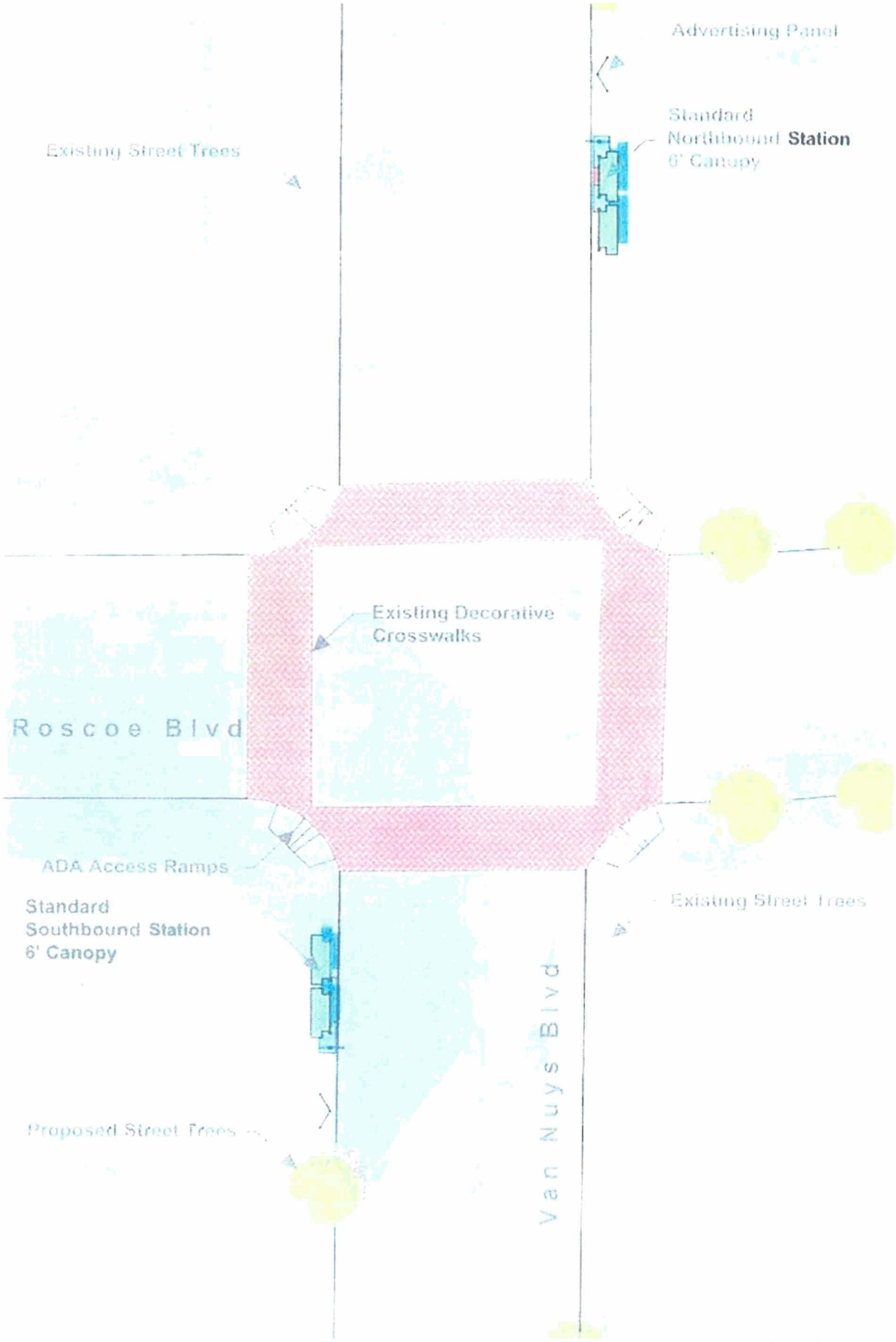


source: Gruen Associates



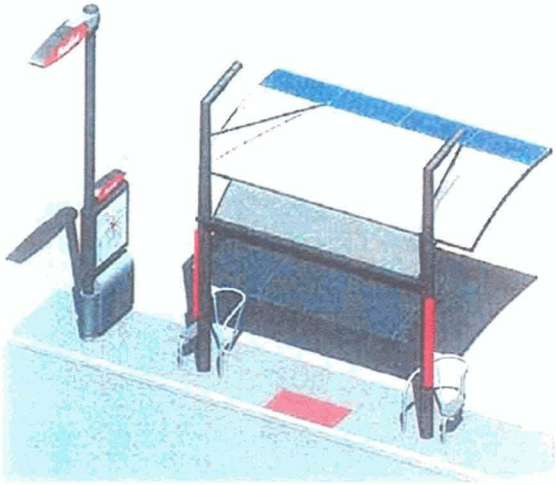
source: Gruen Associates

Figure 4-37. Site Plan of On-Street Station along Van Nuys Boulevard at Victory Boulevard



source: Gruen Associates

Figure 4-38. Site Plan of On-Street Station along Van Nuys Boulevard at Roscoe Boulevard



source: Suisman Urban Design

Figure 4-15. Renderings of Typical Metro Rapid Bus Station Design

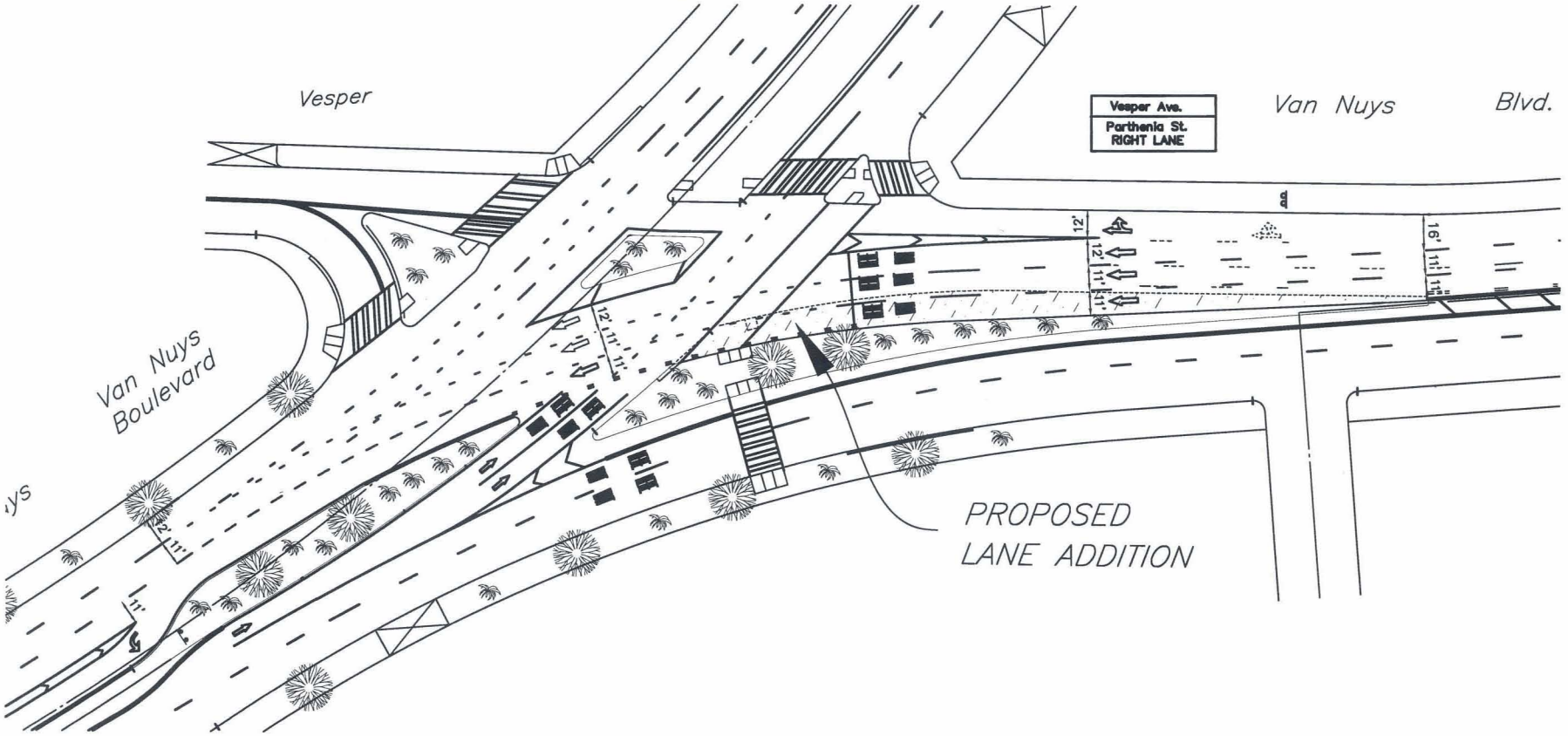
source: Gruen Associates

source: Viacom Decaux

Advertising / Neighborhood Kiosk

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

VAN NUYS BLVD SB – PARTHENIA
ADDITION OF LANE



NOT TO SCALE

TRANSIT SYSTEM

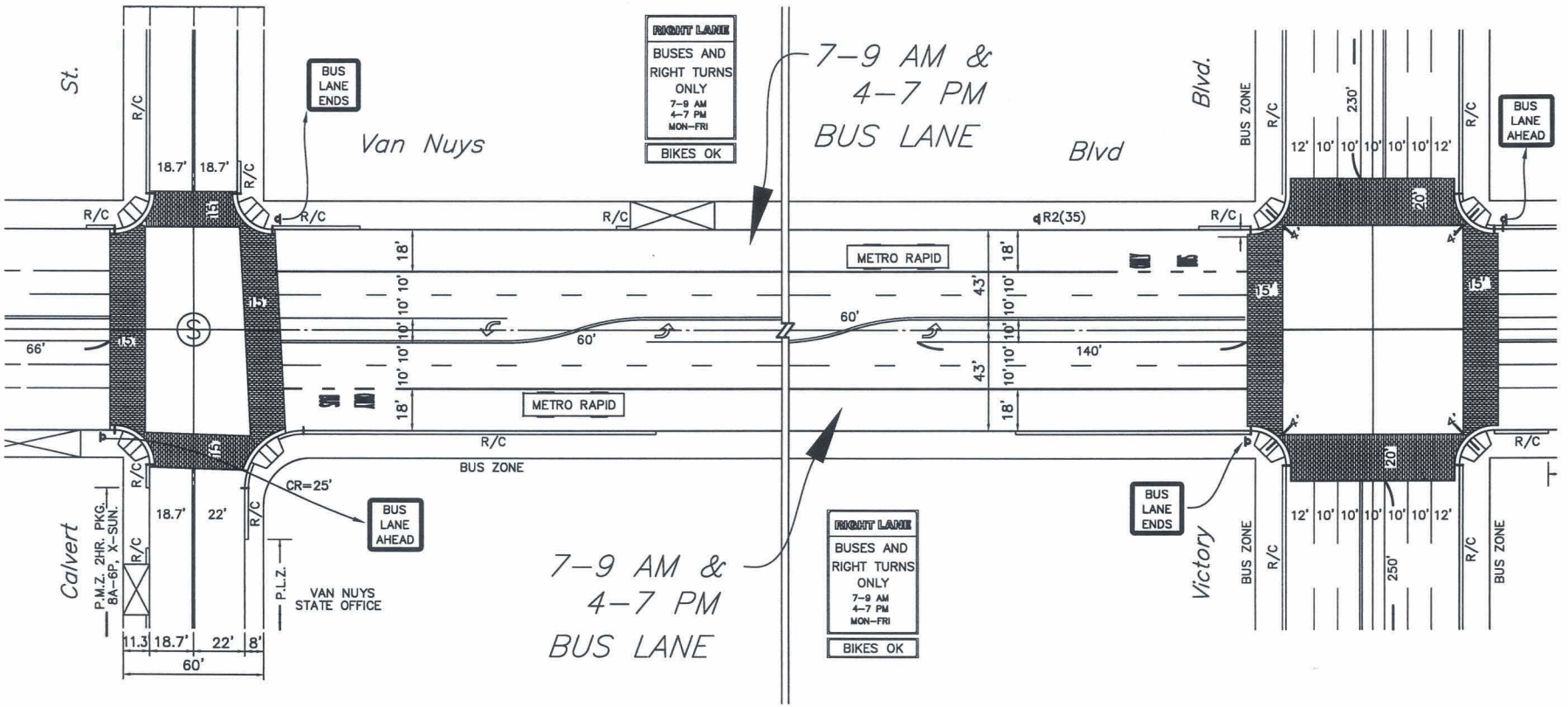
LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		PLAN DEPARTMENT OF TRANSPORTATION	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE	SHEET 2 OF 2	

VAN NUYS
TRANSIT CORRIDOR

8

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

VAN NUYS BLVD – CALVERT ST TO VICTORY BLVD (CIVIC CENTER)
NB & SB AM/PM PEAK PERIOD BUS LANES



NOT TO SCALE

TRANSIT SYSTEM

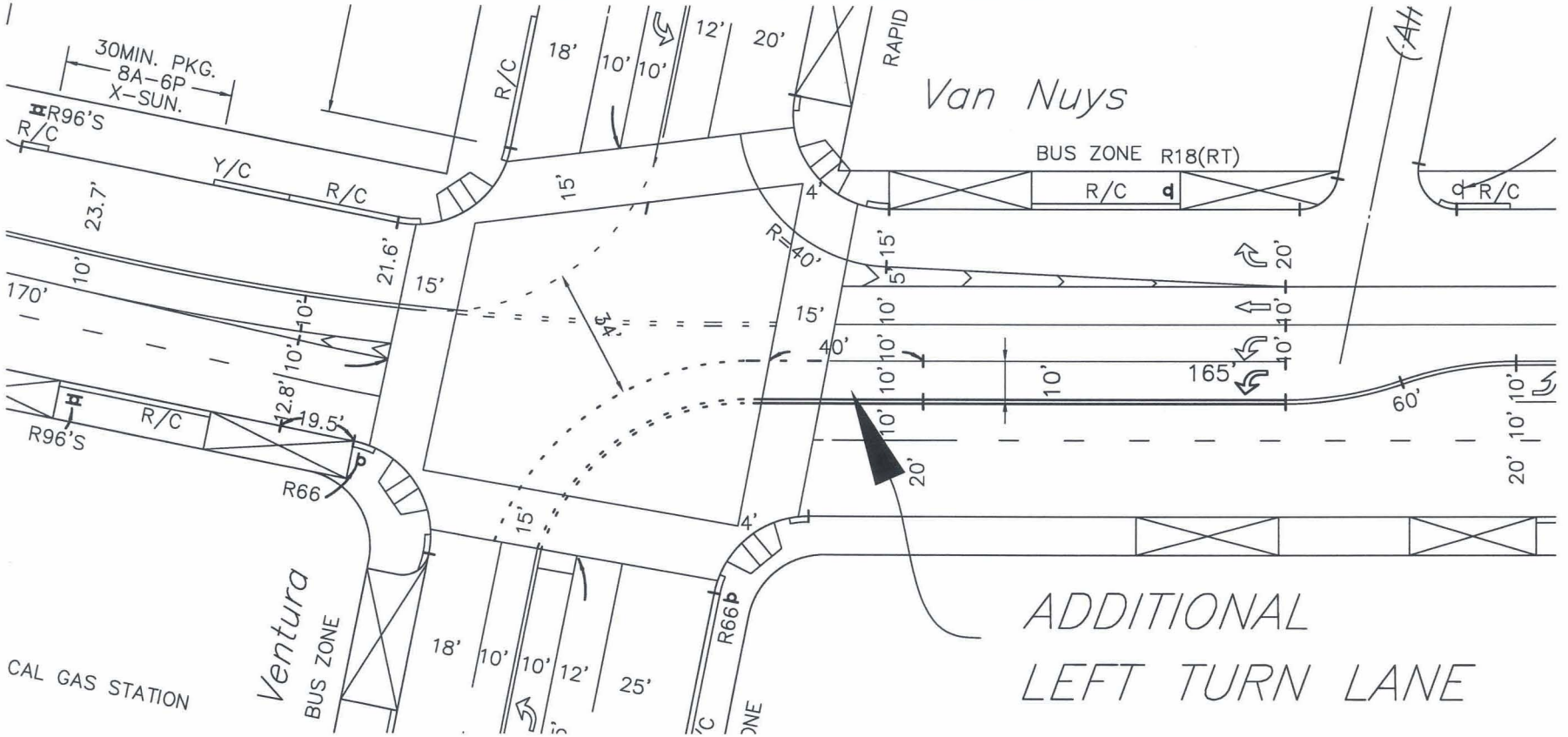
LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		PLAN DEPARTMENT OF TRANSPORTATION	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE		

VAN NUYS TRANSIT CORRIDOR

9

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

VAN NUYS BLVD SB – VENTURA BLVD
RESTRIPE EXISTING MEDIAN FOR LT ADDITION



NOT TO SCALE

TRANSIT SYSTEM

LADOT CONCEPTUAL PLAN INTERNAL USE ONLY NOT FOR CONSTRUCTION		PLAN DEPARTMENT OF TRANSPORTATION	
FILE NAME		PROJECT NO.	DES: 75061 CONS:
SCALE	NOT TO SCALE		

VAN NUYS
TRANSIT CORRIDOR

10

LANKERSHIM

LANKERSHIM/SAN FERNANDO CORRIDOR

EXECUTIVE SUMMARY

The Lankershim/San Fernando Corridor consists of Lankershim Blvd. between Ventura Blvd. and San Fernando Rd., and San Fernando Rd. between Lankershim Blvd. and the Sylmar Metrolink Station (excluding the City of San Fernando), a total distance of 11.6 miles In the San Fernando Valley. Bus speeds currently operate at Very Good (LOS B) to Excellent (LOS A) levels of service, per FTA's bus speed level of service criteria. Currently 10-12 Metro buses per hour serve the corridor in each direction during peak periods. The improvements discussed in this report would increase bus speeds by 2-3.5% and reduce bus travel times by 0.5-1 minutes. There would be no significant impacts on traffic delay, mobile air emissions, or on-street parking from these improvements. Bus lanes were not analyzed because they are not necessary to improve the corridor's already excellent bus speeds and would have significant impacts on traffic delay, mobile air emissions and on-street parking.

EXISTING CONDITIONS

Currently 10-12 Metro buses per hour serve the corridor in each direction during peak periods. Northbound bus speeds range between 17.7-22.2 mph, depending on time of day. Southbound bus speeds range between 19.3-19.7 mph. These bus speeds are rated LOS B (Very Good) to LOS A (Excellent) per FTA's bus speed level of service criteria. Northbound bus travel times range between 29.9 and 37.4 minutes. Southbound bus travel times range between 33.6 and 34.3 minutes.

While overall bus speeds are very good to excellent throughout this corridor, northbound and southbound delays do occur along Lankershim Blvd. between Chandler Blvd. and Ventura Blvd.

POTENTIAL IMPROVEMENTS

- **Investigate Signal Timing Changes** at selected locations. Possibly increase signal cycle length up to 120 seconds and optimize signal cycle lengths.

- **Bus Queue Jump Signal** for northbound buses at Cahuenga Blvd.

- **Increase Mixed Flow Capacity by Lane Re-striping**
  - Magnolia Blvd.
  - Victory Blvd.
  - Paxton St.

- **Landscaped Median Islands** at selected locations.

- **Transit Enhancements** at selected locations.

BENEFITS

The improvements would increase northbound bus speeds by 2.8-3.5% and peak period southbound bus speeds by 1.8-1.9%. Bus speed levels of service would remain at LOS A (Excellent) and LOS B (Very Good.)

Bus travel times would be reduced by 0.5-1 minutes. Northbound bus travel times would decrease from 30.9 to 29.9 minutes in the AM peak and from 37.4 to 36.4 minutes in the PM peak. Southbound bus travel times would decrease from 33.6 to 33.0 minutes in the AM peak and from 37.4 to 33.7 minutes in the PM peak.

IMPACTS

The improvements would have a generally positive impact on mixed flow traffic delay and air emissions. On-street parking would not be impacted by the potential improvements.

LANKERSHIM/SAN FERNANDO CORRIDOR NORTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Cahuenga Blvd. to Whipple St.
    - Delays for northbound bus and traffic movement. Lankershim Blvd. drops from 3 though lanes to 2 through lanes at Cahuenga Blvd.
- Chandler Blvd. to Cumpston St. (Metro Red Line and Metro Orange Line Stations)
    - Delays for north-south bus and traffic movement. Segment includes pedestrian crosswalk connecting Red Line and Orange Line Stations.
- Paxton St. to 118 Freeway Eastbound Ramps
    - Delays for north-south bus and traffic movement. Segment includes poorly timed signals for stretch near 118 Freeway.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - Improve signal coordination from Moorpark St. to the SR-134 Freeway ramps
    - Improve signal coordination from Magnolia St. to Cumpston St.
    - Improve signal coordination from Terra Bella St. to Pierce St.
    - Improve signal progression from Paxton St. to the SR-118 Freeway westbound ramps.
- Bus Queue Jump Signal
    - Install bus queue jump signal for northbound buses at Cahuenga Blvd.
- Increase Mixed Flow Capacity
    - Restripe northbound between Magnolia Blvd. and Chandler Blvd. to add a mixed flow lane.

- Street Improvements

    - Repair asphalt along Lankershim Blvd.
        - Hatteras St. to Erwin St. (0.6 miles)
        - Hamlin St. to Vanowen St. (0.4 miles)
        - Strathern St. to Tuxford St. (0.5 miles)

    - Repair asphalt along San Fernando Road
        - Sheldon St. to Truesdale St. (0.3 miles)
        - Pierce St. to Pinney St. (0.4 miles)

    - Install bus pad for northbound buses on San Fernando Rd. at Sheldon Ave.

- Landscaped Median Islands

    - Selected locations between Ventura Blvd. and Van Nuys Blvd. (see accompanying map.)

- Transit Enhancements

    - Improve pedestrian linkage between Metro Red Line North Hollywood station and Metro Orange Line eastern terminus at Lankershim Blvd. Modify existing Metro Red Line North Hollywood station to provide an access point on the west side of Lankershim Blvd. or create a pedestrian bridge over Lankershim Blvd. This transit enhancement increases safety by eliminating a busy, at-grade pedestrian crossing and would also reduce traffic and bus delay along Lankershim Blvd.

    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 10-12 northbound Metro buses per hour serve the Lankershim/San Fernando Corridor during peak periods. Northbound buses operate at an average speed of 21.45 mph (LOS B – Very Good) in the AM peak, 22.16 mph (LOS A - Excellent) midday, and 17.74 mph (LOS B – Very Good) in the PM peak. Northbound bus travel times are 30.9 minutes in the AM peak, 29.9 minutes midday and 37.4 minutes in the PM peak.

With the non-bus lane improvements, northbound bus travel time savings are estimated to be 61 seconds in the AM peak, 61 seconds midday, and 62 seconds in the PM peak. This translates into bus speeds improving from 21.45 mph to 22.18 mph (3.4%) in the AM peak, 22.16 mph to 22.94 mph midday (3.5%), and from 17.74 mph to 18.24 mph (2.8%) in the PM peak.

There are no northbound segments in which buses would see significant bus speed benefit due to the installation of a bus lane.

BUS LANE FEASIBILITY ANALYSIS

Lankershim Blvd. is a designated Major Class II Highway with a roadway width of 65-80 feet in most locations, two travel lanes in each direction, a median left turn lane and full-time parking lanes. San Fernando Road is a designated Major Class II Highway with a roadway width of 55 feet in most locations, two travel lanes in each direction, with no median island or left turn lanes, except on the approach to major intersections.

Converting mixed flow lanes to bus lanes in segments of Lankershim Blvd. or San Fernando Road that already operate at satisfactory bus speed level of service would not provide significant or necessary improvements to average corridor bus speeds. Bus lanes would have significant traffic impacts as both Lankershim Blvd. and San Fernando Rd. lack the necessary right-of-way to create new bus lanes without impacting traffic or parking. The impacts caused bus lanes along the corridor would far outweigh the minimal benefits, given existing bus speeds and number of buses per hour.

TRANSIT ENHANCEMENTS

Streetscape conditions for pedestrians and transit users along San Fernando Rd. between Lankershim Blvd. and the City of San Fernando are very poor relative to other transit corridors in the City of Los Angeles. Many bus stops lack bus shelters, sidewalks or necessary lighting and simply consist of a bus stop sign on a post. Pedestrian access is especially problematic for the northbound bus stops along the east side of San Fernando Rd., adjacent to the railroad tracks. The accompanying map details locations in need of transit enhancements to make San Fernando Rd. more functional and attractive for pedestrians and transit users.

LADOT is working separately with the LACMTA on the design and construction of a bike path along San Fernando Rd. The San Fernando Road Bike Path, from the City of San Fernando Limits to Branford St., is currently in design, and construction is estimated to begin as soon as July 2008. The bike path is situated along the LACMTA right-of-way between San Fernando Rd. and the railroad tracks used by Metrolink and Union Pacific freight trains. Paved bus stop waiting areas, bikeway lighting and landscaping are included in the project scope of work. (See attached San Fernando Road Bike Path Phase II Fact Sheet.)

LANKERSHIM/SAN FERNANDO CORRIDOR SOUTHBOUND

DETAILED ANALYSIS

BUS SPEED DELAY LOCATIONS

- Cumpston St. to Weddington St.
    - Multiple traffic signals with short blocks, including the Metro Red Line station pedestrian crossing causes delay for north and southbound buses and mixed flow traffic.
- Magnolia Blvd. to Hesby St.
    - Traffic delay for mixed use and buses are experienced, potentially due to poorly synchronized traffic signals.
- Riverside Dr. to Moorpark
    - Traffic delay for mixed use and buses are experienced, potentially due to poorly synchronized traffic signals.
- Campo de Cahuenga Way to Ventura Blvd.
    - Congestion along at the southern end of Lankershim Blvd. for southbound traffic caused by intersection of Ventura Blvd. and Lankershim Blvd.

POTENTIAL IMPROVEMENTS

- Investigate Signal Timing Changes
    - Improve signal coordination from Moorpark St. to the 134 Freeway Ramps
    - Improve signal coordination from Magnolia St. to Cumpston St.
    - Improve signal coordination from Terra Bella St. to Pierce St.
    - Improve signal progression from Paxton St. to the westbound SR-118 Freeway ramps.
    - Install southbound right turn arrow at intersection of San Fernando Rd. and Lankershim Blvd.
- Street Improvements
    - Repair asphalt along Lankershim Blvd.
        - Hatteras St. to Erwin St. (0.6 mi)

        - Hamlin St. to Vanowen St. (0.4 mi)
        - Strathern St. to Tuxford St. (0.5 mi)

    - Repair asphalt along San Fernando Rd.
        - Sheldon St. to Truesdale St. (0.3 mi)
        - Pierce St. to Pinney St. (0.4 mi)

- Landscaped Median Islands

    - Selected locations between Ventura Blvd. and Van Nuys Blvd. (see accompanying map.)

- Transit Station Enhancements

    - Modify existing Metro Red Line North Hollywood terminus to provide an access point on the west side of Lankershim Blvd. or create a pedestrian bridge over Lankershim Blvd. This transit enhancement increases safety by eliminating an at-grade pedestrian crossing, but would also improve bus and mixed-flow speeds along Lankershim Blvd.

    - Decorative crosswalks, bus shelters, security lighting and other pedestrian amenities at selected major cross streets (see accompanying map.)

BUS SPEED IMPROVEMENT & TRAVEL TIME SAVINGS

Currently, 10-12 southbound Metro buses per hour serve the Lankershim/San Fernando Corridor during peak periods. Southbound buses operate at an average speed of 19.66 mph (LOS B – Very Good) in the AM peak, 19.37 mph (LOS B – Very Good) midday, and 19.25 mph (LOS B – Very Good) in the PM peak. Southbound bus travel times are 33.6 minutes in the AM peak, 34.1 minutes midday and 37.4 minutes in the PM peak.

With the non-bus lane improvements, southbound bus travel time savings are estimated to be 37 seconds in the AM peak, midday and PM peak. This translates into bus speeds improving from 19.66 mph to 20.03 mph (1.9%) in the AM peak, 19.37 mph to 19.73 mph midday (1.8%), and from 19.25 mph to 19.61 mph (1.8%) in the PM peak.

There are no southbound segments in which buses would see significant bus speed benefit due to the installation of a bus lane.

BUS LANE FEASIBILITY ANALYSIS

Lankershim Blvd. is a designated Major Class II Highway with a roadway width of 65-80 feet in most locations, two travel lanes in each direction, a median left turn lane and full-time parking lanes. San Fernando Road is a designated Major Class II Highway with a roadway width of 55 feet in most locations, two travel lanes in each direction, with no median island or left turn lanes, except on the approach to major intersections. About 10-

12 per hour Metro local and Metro Rapid buses service the corridor, per direction, during peak periods.

Converting mixed flow lanes to bus lanes in segments of Lankershim Blvd. or San Fernando Road that already operate at satisfactory bus speed level of service would not provide significant or necessary improvements to average corridor bus speeds. Bus lanes would have significant traffic impacts as both Lankershim Blvd. and San Fernando Rd. lack the necessary right-of-way to create new bus lanes without impacting traffic or parking. The impacts caused bus lanes along the corridor would far outweigh the minimal benefits, given existing bus speeds and number of buses per hour.

TRANSIT ENHANCEMENTS

Streetscape conditions for pedestrians and transit users along San Fernando Rd. between Lankershim Blvd. and the City of San Fernando are very poor relative to other transit corridors in the City of Los Angeles. Many bus stops lack bus shelters, sidewalks or necessary lighting and simply consist of a bus stop sign on a post. Pedestrian access is especially problematic for the northbound bus stops along the east side of San Fernando Rd., adjacent to the railroad tracks. The accompanying map details locations in need of transit enhancements to make San Fernando Rd. more functional and attractive for pedestrians and transit users.

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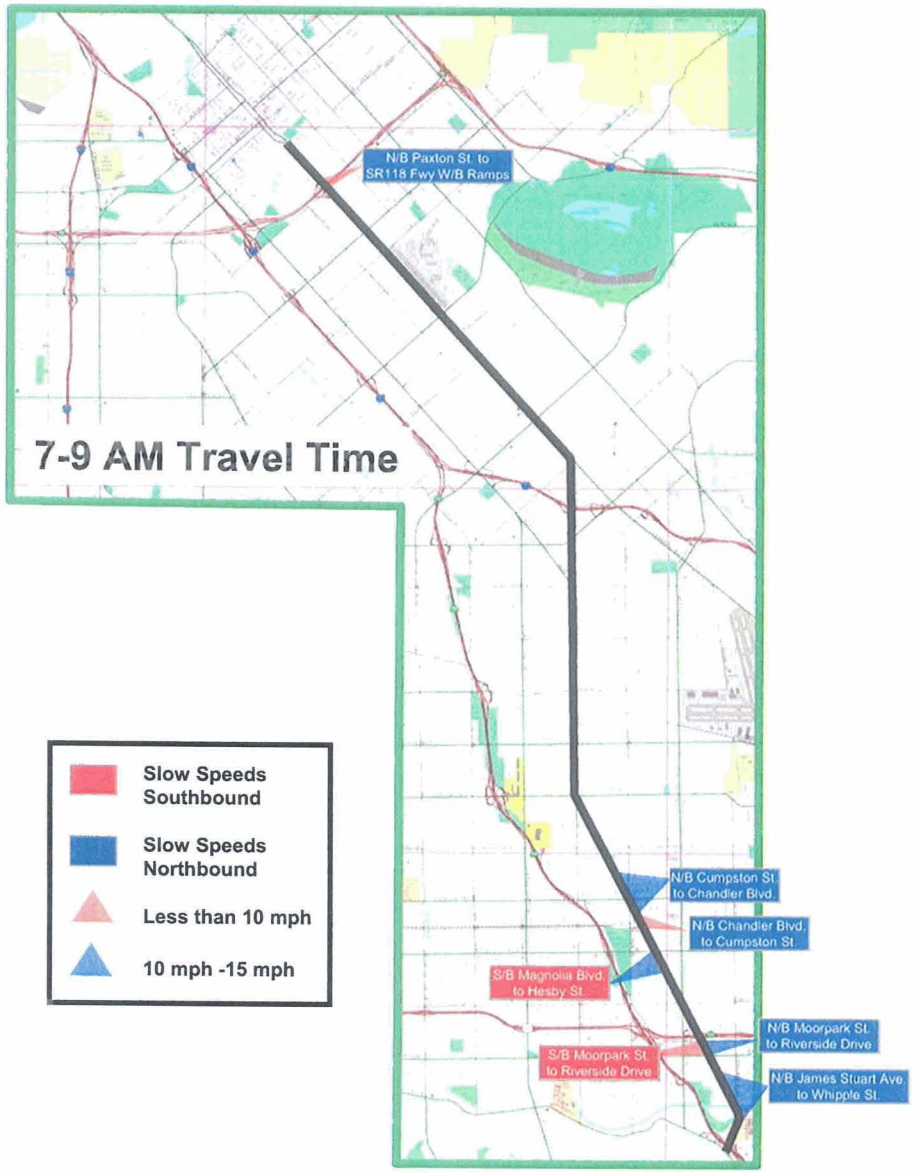
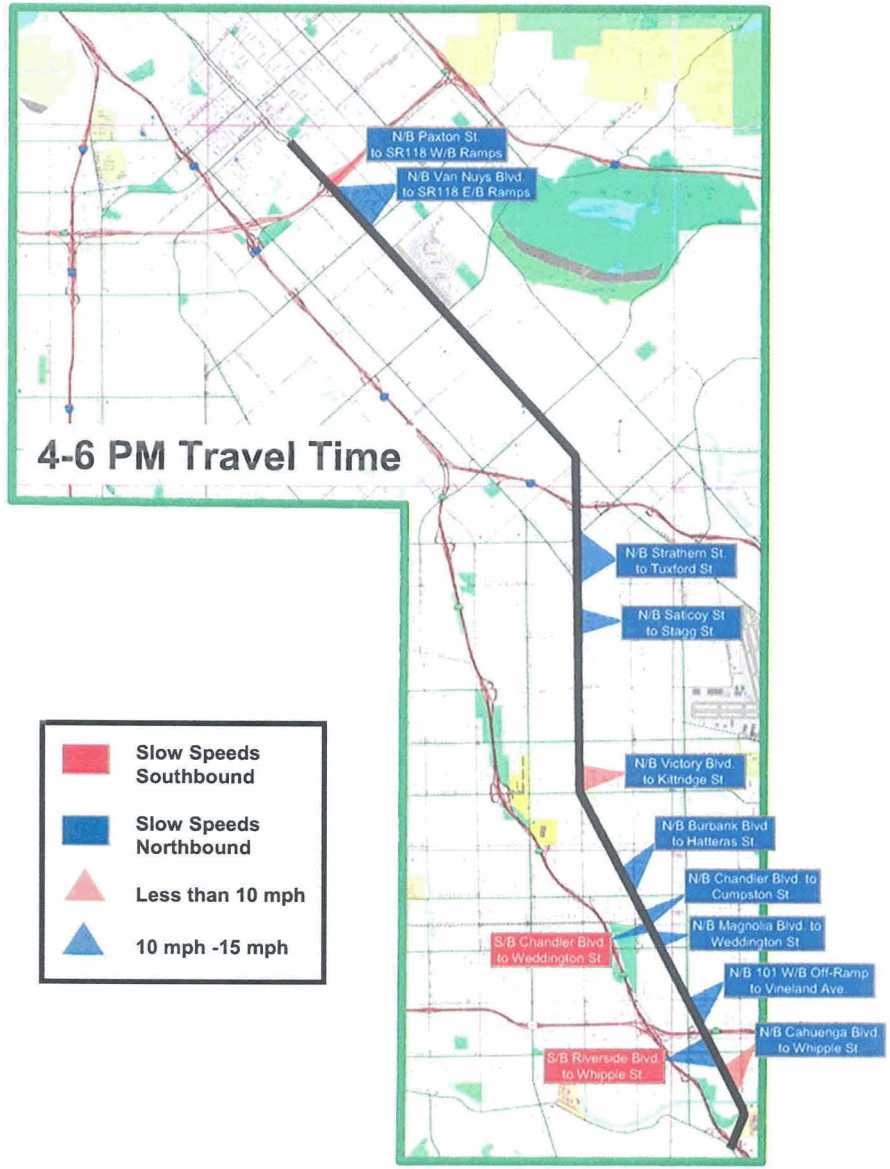
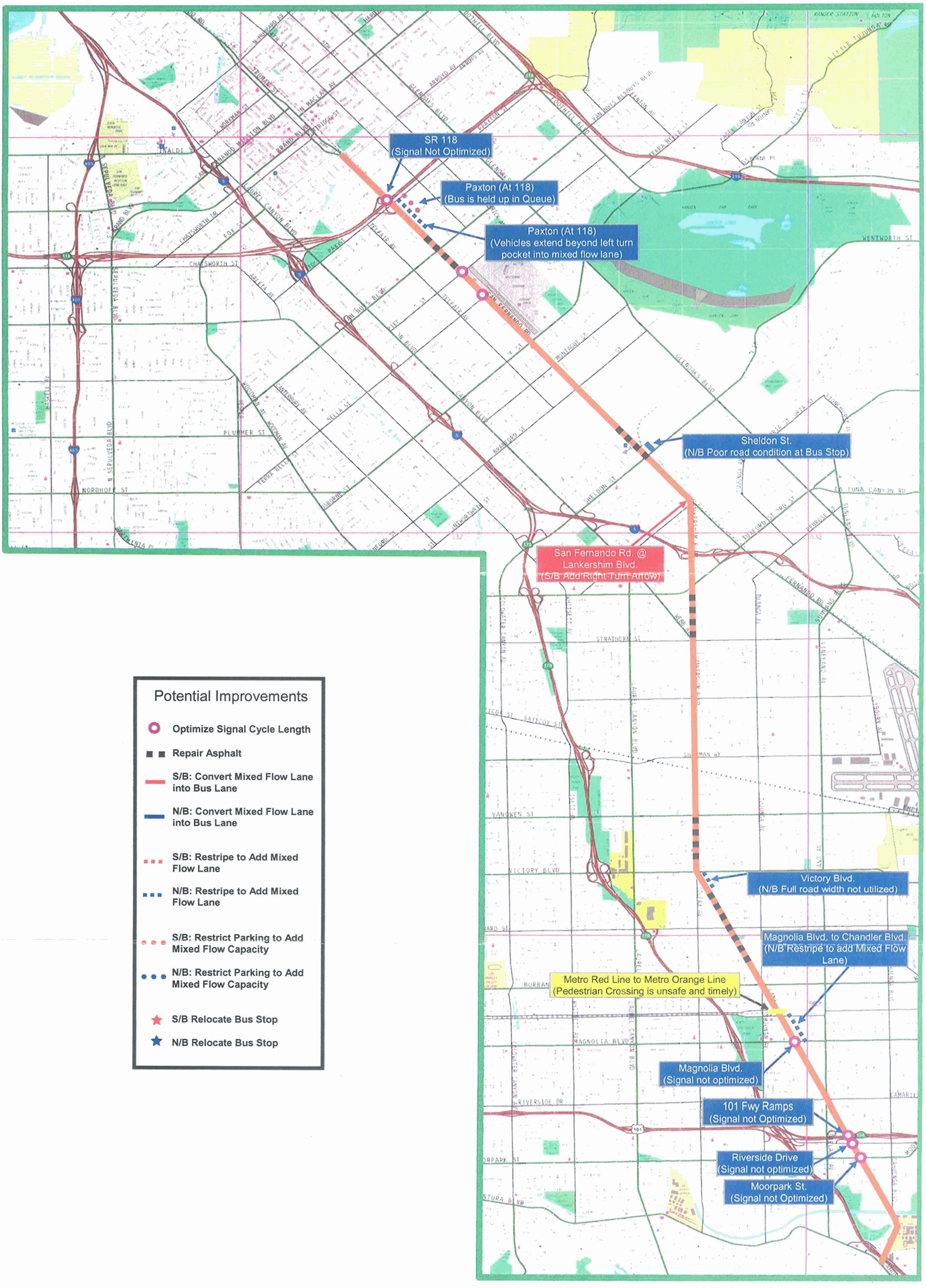
Lankershim Blvd. and San Fernando Road Bus Speed Delay Locations





LANKERSHIM/SAN FERNANDO CORRIDOR
POTENTIAL IMPROVEMENTS



LANKERSHIM/SAN FERNANDO CORRIDOR NORTHBOUND

Ref. No.	Intersection Distance (ft)	Intersection Distance (ft)	Cycle Time/ Split (Lankershim /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	MID	PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	MID	PM
1	0.16	845	60/40	Campo de Cahuenga	Main		32.4	17.8	B	21.0	27.44	A	65.8	8.75	D											
2	0.14	739		Main	Valleyheart/Stewart		13.0	38.77	A	10.5	48	A	17.4	29	A											
3	0.05	264	60/40	Valleyheart/Stewart	Cahuenga		14.3	12.56	C	4.5	40	A	6.9	26	A											
4	0.09	475		Cahuenga	Whipple		32.0	10.12	D	18.3	17.75	B	32.6	9.94	D		CAHUENGA BLVD. Add Q-Jump signal.			3	3	3				
5	0.38	2006		Whipple	Moorpark		46.8	29.26	A	54.7	25.02	A	51.7	26.45	A											
6	0.18	950		Moorpark	Riverside		44.6	14.53	C	36.2	17.92	B	36.9	17.58	B	MOORPARK AVE. Optimize Cycle Length				3	3	3				
7	0.15	792	65/35	Riverside	101 off-ramp		22.6	23.89	A	28.2	19.17	B	28.3	19.09	B					3	3	3				
8	0.09	475		101 off-ramp	Camarillo/Vineland		20.0	16.21	B	23.5	13.79	C	22.4	14.45	C					3	3	3				
9	0.35	1848		Camarillo/Vineland	Hesby		64.0	19.69	B	98.0	12.86	C	74.6	16.9	B											
10	0.3	1584		Hesby	Magnolia		29.6	36.49	A	35.0	30.86	A	42.4	25.45	A											
11	0.22	1162	65/35	Magnolia	Weddington		31.8	24.91	A	58.0	13.66	C	53.6	14.78	C	MAGNOLIA BLVD. Optimize Cycle Length	MAGNOLIA BLVD. Restripe to add mixed flow			8	8	8				
12	0.16	845	63/37	Weddington	Chandler		28.0	20.57	B	23.7	24.34	A	22.4	25.68	A			CHANDLER BLVD. Pedestrian grade seperation		5	5	5				
				BUS STOP			58.0	17.4	B	53.7	18.8	B	52.4	19.2	B											
13	0.14	739	50/50	Chandler	Burbank		54.6	9.23	D	18.0	28	A	45.4	11.05	C					16	16	16				
14	0.08	422	50/50	Cumpston	Burbank		21.2	13.58	C	12.5	23.04	A	14.4	19.96	B											
15	0.17	898	55/45	Burbank	Hatteras		47.2	12.97	C	23.3	26.23	A	53.6	11.42	C											
16	0.27	1426	55/45	Hatteras	Oxnard		29.0	33.52	A	38.3	25.36	A	35.9	27.11	A											
17	0.28	1478	55/45	Oxnard	Erwin		55.6	18.13	B	51.8	19.45	B	51.0	19.76	B											
18	0.27	1426	55/45	Erwin	Victory		26.0	37.38	A	35.0	27.77	A	42.4	22.91	A											
19	0.28	1478	70/30	Victory	Kittridge		45.4	22.2	A	35.2	28.66	A	111.4	9.05	D			VICTORY BLVD. Add right-turn pocket.		1	1	2				
				BUS STOP			75.4	13.4	C	65.2	15.5	C	141.4	7.11	E											
20	0.25	1320	70/30	Kittridge	Vanowen		28.0	32.14	A	38.8	23.18	A	40.3	22.34	A											
21	0.24	1267	70/30	Vanowen	Hart		39.0	22.15	A	26.3	32.81	A	33.1	26.07	A											
				BUS STOP			69.0	12.5	C	56.3	15.3	C	63.1	13.7	C											
22	0.25	1320	40/60	Hart	Sherman Way		22.4	40.18	A	24.2	37.24	A	28.9	31.19	A											
23	0.25	1320	60/40	Sherman Way	Cohasset		41.0	21.95	A	36.0	25	A	45.1	19.94	B											
				BUS STOP			71.0	12.7	C	66.0	13.6	C	75.1	12.07	C											
24	0.37	1954	50/50	Cohasset	Saticoy		37.6	35.43	A	42.8	31.1	A	46.6	28.6	A											
25	0.13	686	60/40	Saticoy	Stagg		13.4	34.93	A	13.3	35.1	A	43.3	10.81	D											
26	0.24	1267		Stagg	Strathern		29.0	29.79	A	23.2	37.29	A	35.9	24.1	A											
27	0.25	1320		Strathern	Tuxford		49.8	18.07	B	38.8	23.18	A	61.7	14.56	C											
28	0.47	2482		Tuxford	5 Fwy SB ramps		62.4	27.12	A	61.7	27.44	A	75.8	22.31	A											
				BUS STOP			92.4	18.3	B	91.7	18.5	B	105.8	16.0	C											
29	0.24	1267		5 Fwy SB ramps	5 Fwy NB ramps		40.6	21.28	A	41.3	20.9	B	35.7	24.19	A											
30	0.07	370		5 Fwy NB ramps	SanFernando/Lank.		12.2	20.66	B	8.7	29.08	A	12.1	20.75	B											
31	0.46	2429		SanFernando/Lank.	Sheldon		50.2	32.99	A	59.7	27.75	A	59.4	27.87	A											
32	0.51	2693		Sheldon	Branford		67.0	27.4	A	70.7	25.98	A	75.2	24.43	A											
				BUS STOP			97.0	18.9	B	100.7	18.2	B	105.2	17.5	B											
33	0.81	4277		Branford	Osborne		84.6	34.47	A	92.0	31.7	A	101.6	28.71	A											
34	0.54	2851		Osborne	Terra Bella		68.2	28.5	A	70.0	27.77	A	107.3	18.12	B											
				BUS STOP			98.2	19.8	B	100.0	19.4	B	137.3	14.2	C											
35	0.54	2851		Terra Bella	Pierce		60.6	32.08	A	60.2	32.31	A	69.4	28	A	TERRA BELLA AND PIERCE Optimize Cycle Length				3	3	3				
36	0.27	1426		Pierce	Van Nuys		33.0	29.45	A	28.7	33.91	A	29.1	33.35	A					3	3	3				
37	0.27	1426		Van Nuys	118 Fwy EB ramps		42.6	22.82	A	55.0	17.67	B	75.1	12.94	C											
				BUS STOP			72.6	13.4	C	85.0	11.4	C	105.1	9.2	D											
38	0.48	2534		118 Fwy EB ramps	Paxton		61.4	28.14	A	51.7	33.45	A	68.6	25.2	A			PAXTON ST. Add mixed flow or double LT. At 118 add RT Only and Q-Jump.		5	5	5				
39	0.07	370		Paxton	118 Fwy WB ramps		32.4	7.78	E	23.3	10.8	D	43.8	5.76	F	PAXTON ST. Optimize Cycle Length				5	5	5				
40	0.11	581		118 Fwy WB ramps	Desmond		25.8	15.35	C	18.7	21.21	A	23.7	16.7	B					3	3	3				
41	0.11	581		Desmond	Brand		12.6	31.43	A	12.0	33	A	12.6	31.5	A											
42	0.36	1901		Brand	(Route end)		43.0	30.14	A	32.5	39.88	A	69.6	18.63	B											
	11.05	**11.05**		**NO STOPS**			**1673**	**23.8**	A	**1609**	**24.7**	A	**2055**	**19.4**	B				Sum of TT Savings (sec.)	61.0	61.0	62.0		0	0	0
				ADJUSTED TIME WITH STOPS			***1855***	***21.4***	A	***1795***	***22.2***	A	***2243***	***17.7***	B											

Bus Speed Improvement	AM	Midday	PM
Existing Bus Speeds (MPH)	21.45	22.16	17.74
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	22.18	22.94	18.24
B. Bus Speeds with BusLane Segments (MPH)	21.45	22.16	17.74
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Lane Segments (MPH)	22.18 (LOS B)	22.94 (LOS B)	18.24 (LOS C)
% Improvement	3.4%	3.5%	2.8%

Bus Speed Level of Service (LOS) Criteria	
LOS	**Bus Speed Range**
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

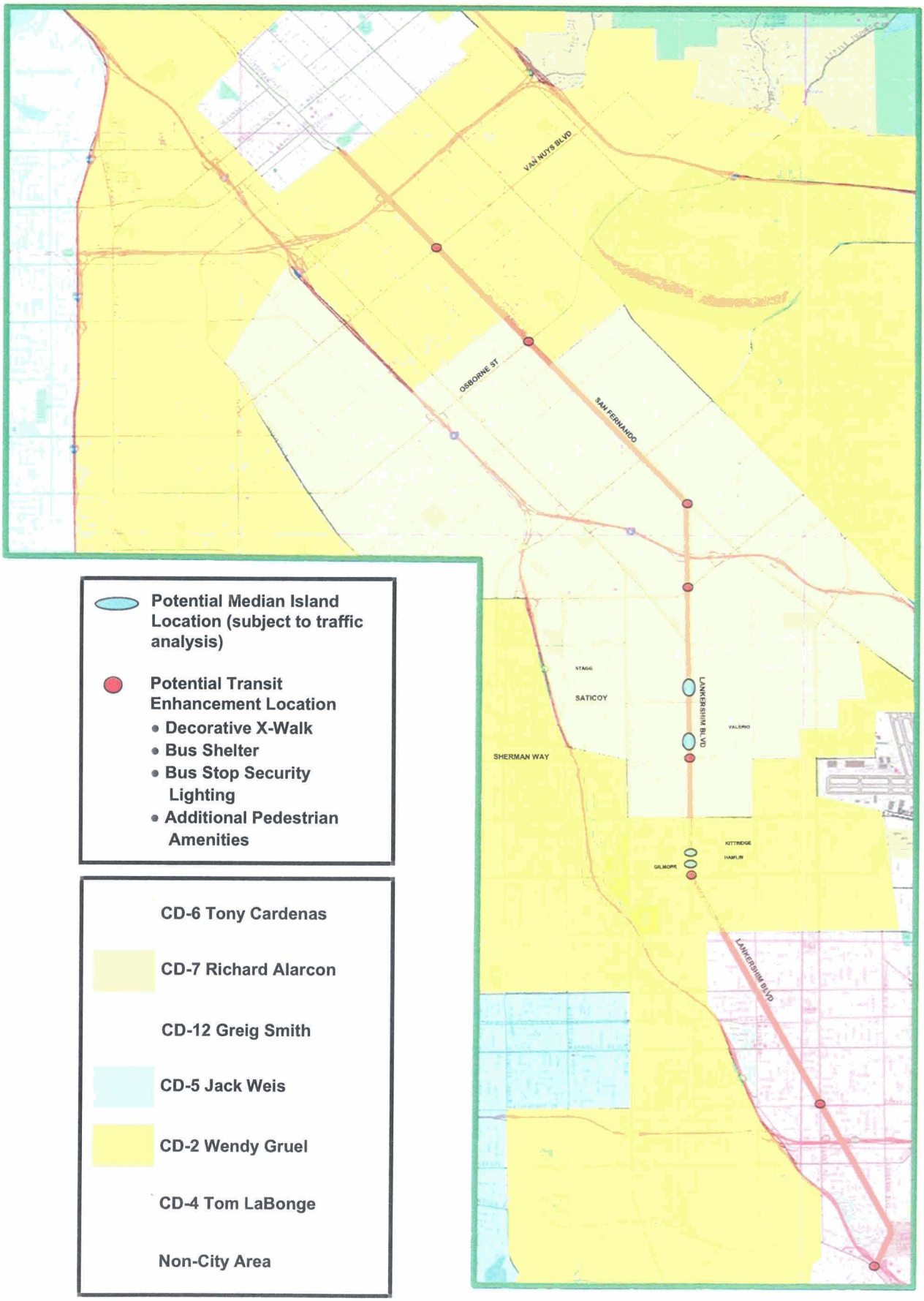
LANKERSHIM/SAN FERNANDO CORRIDOR SOUTHBOUND

Ref. No.	Route Loop Number	Intersection Distance (ft)	Cycle Time/ Split (Reseda /Cross)	Major Intersections		Segment Characteristics	AM Segment Time (sec)	AM Speed (MPH)	LOS	MID Segment Time (sec)	MID Speed (MPH)	LOS	PM Segment Time (sec)	PM Speed (MPH)	LOS	A - Non-Bus Lane Improvements: Signal Timing	Restriping	Road Modifications	Parking Modifications/ Bus Stop Relocation	A - Estimated Travel Time Savings (sec.) AM	A - Estimated Travel Time Savings (sec.) MID	A - Estimated Travel Time Savings (sec.) PM	B - Bus Lane: Time Period	B - Estimated Bus Lane Travel Time Savings (sec.) AM	B - Estimated Bus Lane Travel Time Savings (sec.) MID	B - Estimated Bus Lane Travel Time Savings (sec.) PM
1	69-68	0.35		Desmond	118 Fwy WB ramps		42.7	29.49	A	37.2	33.83	A	41.5	30.33	A											
2	68-65	0.11		118 Fwy WB ramps	Paxton		15.2	26.11	A	12.2	32.55	A	20.7	19.16	B	PAXTON ST. Optimize Cycle Length				3	3	3				
3	65-64-63	0.11		Paxton	118 Fwy EB ramps		19.7	20.14	B	17.3	22.85	A	21.2	18.71	B											
4	63-62	0.07		118 Fwy EB ramps	Van Nuys		14.3	17.58	B	11.5	21.91	A	16.2	15.59	C											
5	62-61-60	0.47		Van Nuys	Pierce		90.3	18.73	B	87.4	19.37	B	82.5	20.51	B											
				BUS STOP			120.3	14.1	C	117.4	14.1	C	112.5	15.0	C											
6	60-59	0.27		Pierce	Terra Bella		41.2	23.61	A	125.3	7.76	E	46.8	20.75	B	TERRA BELLA AND PIERCE Optimize Cycle Length				3	3	3				
7	59-58-57	0.27		Terra Bella	Osborne		31.2	31.19	A	35.2	27.64	A	44.0	22.09	A					3	3	3				
8	57-55	0.54		Osborne	Branford		91.0	21.36	A	76.3	25.47	A	68.8	28.24	A											
				BUS STOP			121.0	16.1	C	106.3	15.6	C	98.8	19.7	B											
9	55-54-53	0.54		Branford	Sheldon		54.8	35.45	A	68.5	28.38	A	71.5	27.19	A											
10	53-51-50-49	0.81		Sheldon	San Fernando/Lankershim		84.5	34.51	A	85.3	34.17	A	99.1	29.41	A											
				BUS STOP			114.5	25.5	A	115.3	14.4	C	129.1	22.6	A											
11	49-47-46	0.51		San Fernando/Lankershim	5 Fwy NB ramps		65.0	28.25	A	61.5	29.85	A	60.0	30.6	A	SAN FERNANDO Add Permissive Right Turn				3	3	3				
12	46-45-44	0.45		5 Fwy NB ramps	5 Fwy SB ramps		38.5	42.08	A	48.2	33.63	A	58.0	27.93	A											
13	44-43	0.08		5 Fwy SB ramps	Tuxford		8.8	32.6	A	12.2	23.67	A	11.5	25.04	A											
14	43-42	0.24		Tuxford	Strathern		53.3	16.21	B	47.8	18.06	B	55.3	15.61	C											
				BUS STOP			83.3	10.4	D	77.8	11.1	C	85.3	10.1	D											
15	42-41-40	0.46	60/40	Strathern	Stagg		56.2	29.48	A	79.3	20.87	B	59.8	27.68	A											
16	40-39	0.25	50/50	Stagg	Saticoy		34.8	25.84	A	25.7	35.06	A	29.0	31.03	A											
17	39-38	0.25	60/40	Saticoy	Cohasset		47.5	18.95	B	39.3	22.88	A	45.8	19.64	B											
18	38-37-36	0.1	40/60	Cohasset	Sherman Way		12.3	29.19	A	11.5	31.3	A	12.7	28.42	A											
19	36-35	0.4	70/30	Sherman Way	Hart		44.3	32.48	A	56.0	25.71	A	67.5	21.33	A											
				BUS STOP			74.3	19.4	B	86.0	19.3	B	97.5	14.8	C											
20	35-34	0.24	70/30	Hart	Vanowen		25.7	33.66	A	26.3	32.81	A	27.3	31.61	A											
21	34-32	0.25	70/30	Vanowen	Kittridge		38.2	23.58	A	56.8	15.84	C	52.8	17.03	B											
				BUS STOP			68.2	13.2	C	86.8	10.4	D	82.8	10.9	D											
22	32-29	0.25	55/45	Kittridge	Victory		33.5	26.87	A	28.3	31.76	A	32.8	27.41	A											
23	29-28-26	0.25	55/45	Victory	Erwin		89.4	10.07	D	62.5	14.4	C	54.3	16.56	B											
				BUS STOP			119.4	7.5	E	92.5	9.7	D	84.3	10.7	D											
24	26-24	0.27	55/45	Erwin	Oxnard		46.0	21.13		34.3	28.31	A	47.0	20.68	B											
25	24-23-21-19	0.28	55/45	Oxnard	Hatteras		41.5	24.29	A	53.7	18.78	B	64.8	15.55	C											
26	19-17-16-15	0.28	50/50	Hatteras	Burbank		26.5	38.04	A	28.7	35.16	A	31.8	31.66	A											
27	15-13-11	0.29	50/50	Burbank	Cumpston		57.0	18.32	B	56.7	18.42	B	55.3	18.87	B											
28	11-9	0.16	63/37	Cumpston	Chandler		36.0	16	C	17.2	33.55	A	18.5	31.14	A											
				BUS STOP			66.0	8.7	D	47.2	12.2	C	48.5	11.9	C											
29	9-7	0.08	65/35	Chandler	Weddington		21.2	13.61	C	33.3	8.64	D	22.8	12.61	C			CHANDLER BLVD. Pedestrian grade seperation							16	16	16
30		0.15		Weddington	Magnolia		21.0	25.71	A	17.5	30.86	A	25.5	21.18	B	MAGNOLIA BLVD. Optimize Cycle Length										
31		0.16		Magnolia	Hesby		49.1	11.72	C	59.8	9.63	D	38.2	15.09	C					3	3	3				
32		0.24		Hesby	Camarillo/Vineland		36.2	23.89	A	26.5	32.6	A	51.8	16.67	B											
33		0.32		Camarillo/Vineland	101 off-ramp		65.2	17.68	B	85.5	13.47	C	66.2	17.41	B											
34		0.32		101 off-ramp	Riverside		73.3	15.71	C	45.8	25.13	A	52.7	21.87	A	MOORPARK AVE. Optimize Cycle Length				3	3	3				
35		0.1	65/35	Riverside	Moorpark		37.5	9.6	D	24.7	14.59	C	32.0	11.25	C					3	3	3				
36		0.14		Moorpark	Whipple		32.3	15.59	C	40.5	12.44	C	36.0	14	C											
37		0.17	60/40	Whipple	Cahuenga		24.0	25.5	A	19.8	30.86	A	19.2	31.93	A											
38		0.4		Cahuenga	Valleyheart/Stewart		57.2	25.19	A	39.3	36.61	A	52.2	27.6	A											
39		0.07		Valleyheart/Stewart	Main		10.2	24.79	A	9.7	26.07	A	12.8	19.64	B											
40		0.04	60/40	Main	Campo de Cahuenga		4.7	30.86	A	4.8	29.79	A	13.2	10.94	C											
41		0.14		Campo de Cahuenga	Ventura		38.8	12.98	C	49.0	10.29	D	45.5	11.08	C											
42		0.14		Ventura	(Route end)		68.0	7.41	E	49.7	10.15	D	55.5	9.08	D											
		11.02		NO STOPS			1844	21.5	A	1855	21.4	A	1869	21.2	A				Sum of TT Savings (sec.)	21	21	21		16	16	16
				ADJUSTED TIME WITH STOPS			*2018*	*19.7*	B	*2048*	*19.4*	B	*2060*	*19.3*	B											

Bus Speed Improvement	AM	Midday	PM
Existing Bus Speeds (MPH)	19.66	19.37	19.25
A. Bus Speeds with Non-Bus Lane Improvements (MPH)	19.87	22.88	19.57
B. Bus Speeds with BusLane Segments (MPH)	19.82	19.52	19.41
A and B. Bus Speeds with Non-Bus Lane Improvements and Bus Lane Segments (MPH)	20.03 (LOS B)	19.73 (LOS B)	19.61 (LOS C)
% Improvement	1.9%	1.8%	1.8%

Bus Speed Level of Service (LOS) Criteria	
LOS	Bus Speed Range
A	≥ 21.2 MPH
B	16.2 - 21.1 MPH
C	11.0 - 16.1 MPH
D	7.9 - 10.9 MPH
E	6.0 - 7.8 MPH
F	< 6.0 MPH

LANKERSHIM/SAN FERNANDO CORRIDOR
TRANSIT/PEDESTRIAN ENHANCEMENTS



Potential Median Island Location (subject to traffic analysis)

Potential Transit Enhancement Location
- Decorative X-Walk
- Bus Shelter
- Bus Stop Security Lighting
- Additional Pedestrian Amenities

CD-6 Tony Cardenas

CD-7 Richard Alarcon

CD-12 Greig Smith

CD-5 Jack Weis

CD-2 Wendy Gruel

CD-4 Tom LaBonge

Non-City Area

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

BUS STOP ENHANCEMENTS

BEFORE

AFTER

TYPICAL PROPOSED TRANSIT/PEDESTRIAN ENHANCEMENTS

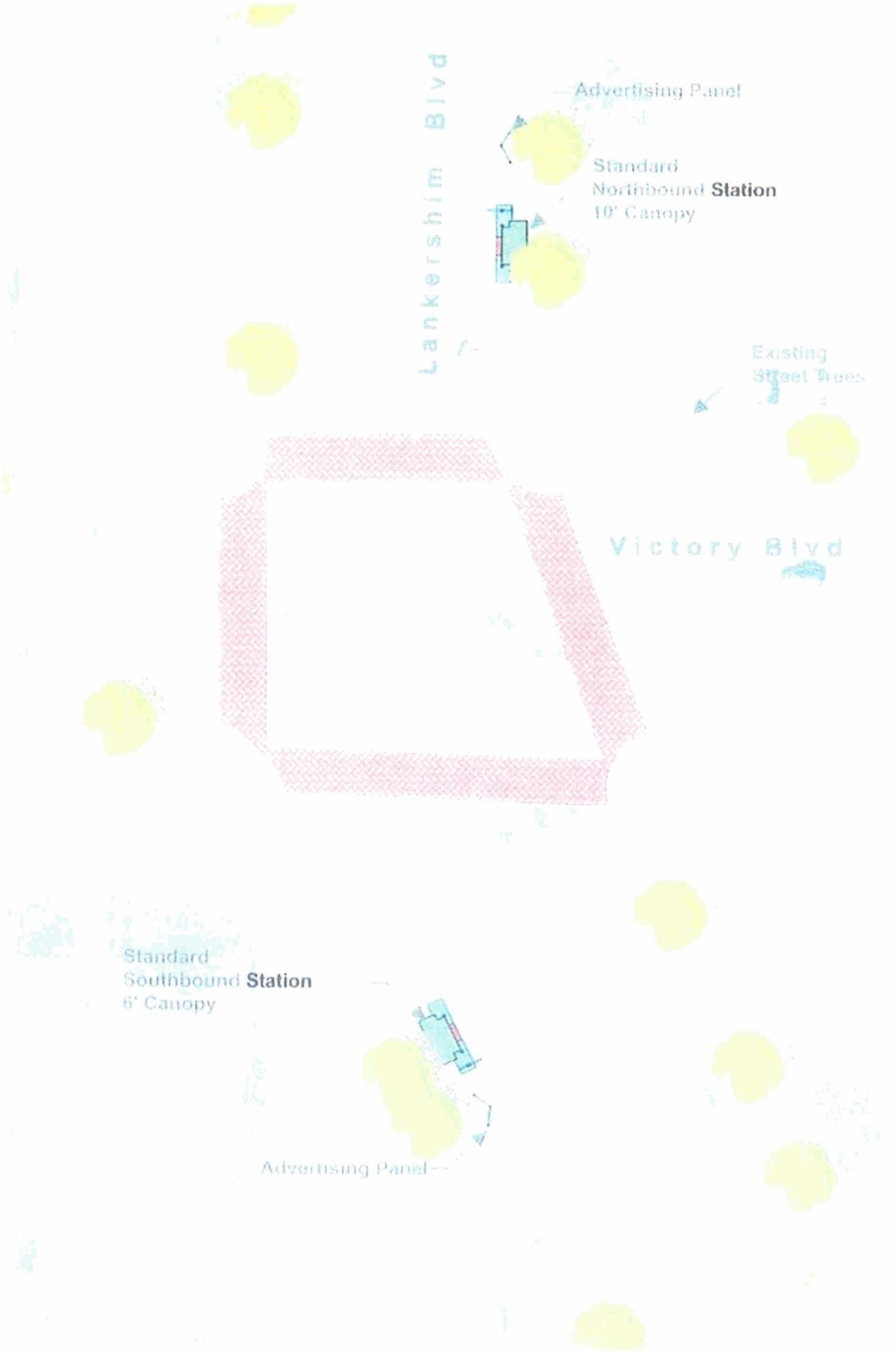
ENHANCED CROSSWALK

BEFORE

AFTER

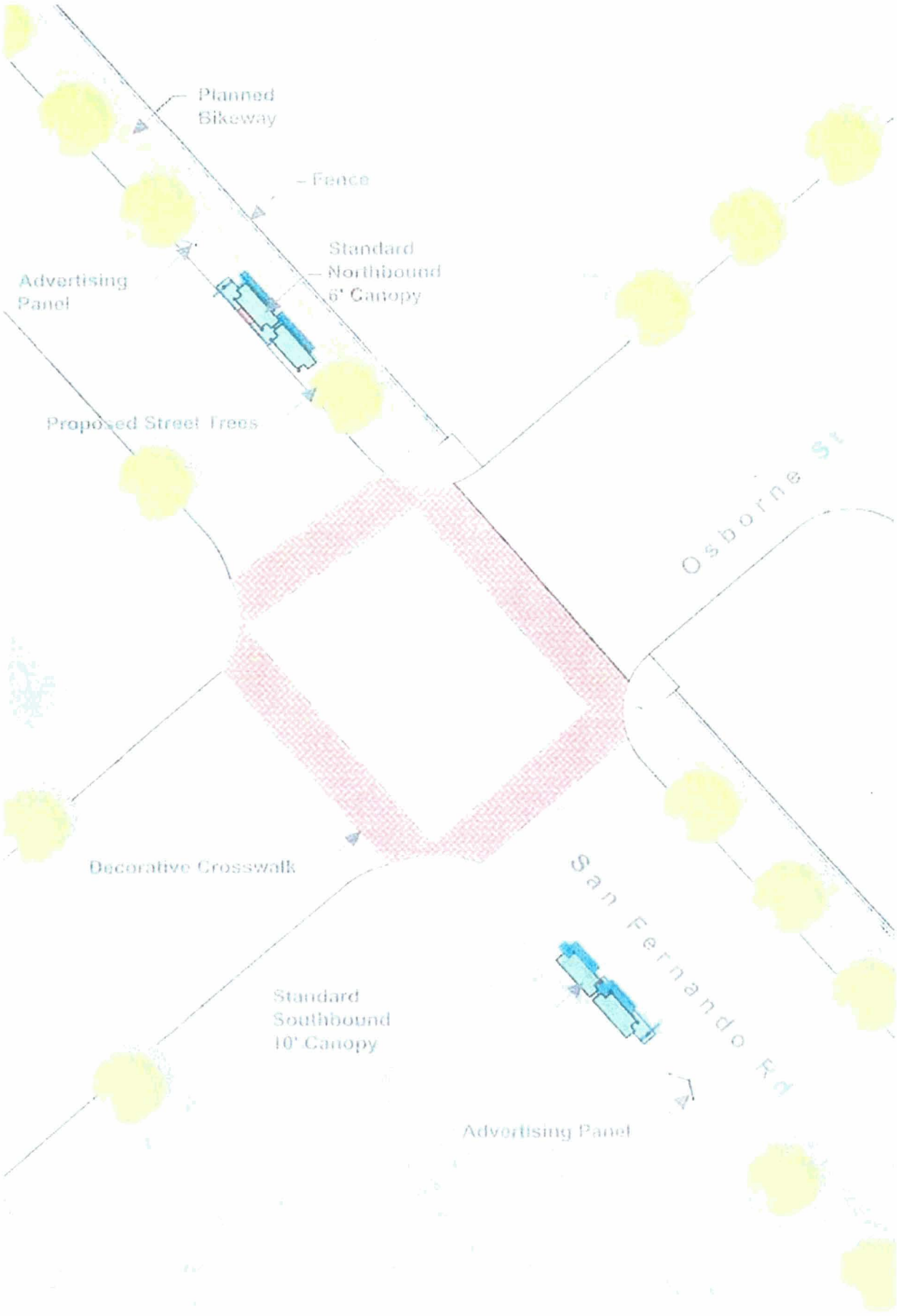
Stations and Accessibility Enhancements

Artist Rendering of Lankershim Boulevard Station at
North Hollywood Metro Red Line/SFV Metro Rapid Transitway Station



source: Gruen Associates

Figure 4-41. Site Plan of On-Street Station along Lankershim Boulevard at Victory Boulevard



source: Gruen Associates

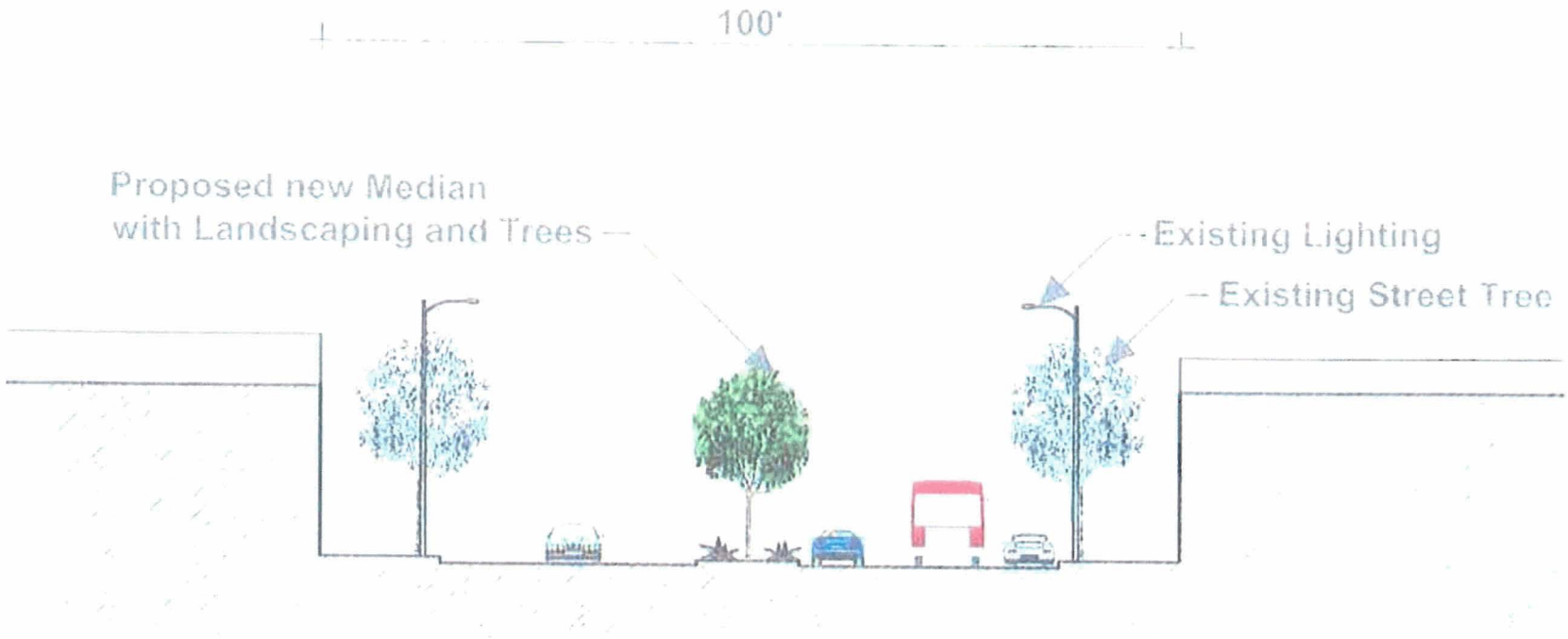
Figure 4-42. Site Plan of On-Street Station along San Fernando Road at Osborne Street

source: Gruen Associates

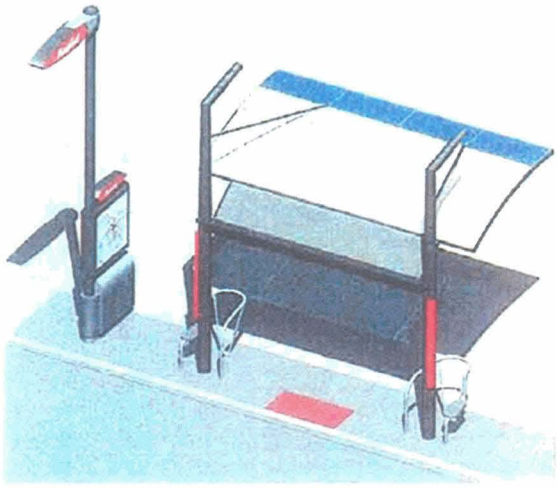
Figure 4-39. Tree-lined wide sidewalk along Lankershim in North Hollywood

source: Gruen Associates

Figure 4-40. Unimproved sidewalks near Vanowen Street along Lankershim Boulevard



source: Gruen Associates



source: Suisman Urban Design

Figure 4-15. Renderings of Typical Metro Rapid Bus Station Design

source: Gruen Associates

source: Viacom Decaux

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