

Los Angeles County Metropolitan Transportation Authority

SHORT RANGE TRANSPORTATION PLAN FOR LOS ANGELES COUNTY

Technical Document **2003**



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On the cover: *Detail*, Metro Rail
Chinatown Station.

Photographed by MTA Design Studio
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INTRODUCTION

The 2003 Draft Short Range Transportation Plan Technical Document (Draft Technical Document) is a companion document to the 2003 Draft Short Range Transportation Plan (Draft Plan). The Draft Plan, available under separate cover, lays out an action plan for funding and implementing Los Angeles County transportation programs and projects over the six-year period from fiscal year 2004 through fiscal year 2009. This Draft Technical Document provides more detailed analysis regarding various key components of the Plan.

PLAN OVERVIEW

MTA is responsible for planning and programming in Los Angeles County, in accordance with Government Code Section 130051. The Short Range Transportation Plan is a key element of MTA's planning process, identifying the short-term transportation needs and challenges that Los Angeles County will face over the next six years. It also serves to implement the near term strategies of MTA's Long Range Transportation Plan, which was adopted by the MTA Board in April 2001.

The Short Range Transportation Plan focuses on the various pieces of Los Angeles County's transportation puzzle, and which of these puzzle pieces can be put into place within existing financial sources in the near term. The following highlights some of the Plan's key recommendations:

- Working with municipal and local transit operators to effectively coordinate transit services and implement the strategies of the approved 2002 Regional Short Range Transit Plan.
- Continuing to implement 26 Metro Rapid corridors and working with municipal operators interested in providing Metro Rapid service beyond the Plan's implementation schedule.
- Extending Metro Rail and Metro Rapid Transitways along various corridors, and continuing support for the Metrolink regional commuter rail system.

- Adding approximately 70 lane miles to Los Angeles County's carpool lane network, and implementing priority arterial projects.
- Implementing various system management, Intelligent Transportation System and demand management strategies, including support for transportation/land use coordination, ridesharing, and bicycle and pedestrian programs.
- Responding to the State budget deficit and identifying new funding strategies that could be implemented through federal, State and local actions to offset a potential State shortfall of up to \$2 billion over the next six years.

The Plan was also developed to highlight transportation needs and strategies of various Los Angeles County subregions and along various congested corridors. The plan was also developed to support regional planning objectives, including regional mobility and air quality goals, environmental justice requirements, and to support coordination with the Southern California Association of Governments in the development of the Regional Transportation Plan and Regional Transportation Improvement Program. Finally, the Short Range Transportation Plan will be updated on an annual basis to reflect changing needs and conditions.

TECHNICAL DOCUMENT OVERVIEW

The purpose of the Draft Technical Document is to provide a more expanded discussion of various technical planning analysis and technical assumptions that provide the framework for the Draft Plan. The following provides a brief overview of this document.

[The Subregions.](#) This section features Los Angeles County's nine subregions, providing a thumbnail sketch of each subregion including the setting, major transportation facilities, and mobility challenges. This section also identifies major projects that will be implemented by 2009, as well as additional needs that are candidates for funding if additional funding became available.

Congested Corridors. In developing the Short Range Transportation Plan, a new approach was initiated in examining mobility along some of Los Angeles County's most congested corridors.

During this planning period, six of the county's most congested corridors were examined including:

- the Golden State and Santa Ana Freeways (Interstate 5),
- the Antelope Valley Freeway (State Route 14),
- the San Diego Freeway (Interstate 405),
- the Long Beach Freeway (Interstate 710),
- the Santa Monica Freeway (Interstate 10 from downtown Los Angeles to Santa Monica), and
- the San Bernardino and Pomona Freeways (Interstate 10 and State Route 60 from downtown Los Angeles through the San Gabriel Valley).

Each corridor section provides a profile of the setting, existing conditions, and congestion hot spots. It also identifies major projects that are scheduled for implementation through 2009. Finally, this section identifies projects proposed by cities at congested corridor outreach meetings that are potential candidate projects for funding if additional funds become available. Other congested corridors will be examined in the next Short Range Transportation Plan update.

Travel Demand Model Assumptions and Evaluation. This section provides the assumptions that were used in evaluating the Plan's performance through the use of the MTA Travel Demand Model. This includes a description of the inputs to the model, the modeling process, the performance measures that were used, and the system performance benefits that will result from implementing the Draft Plan.

Financial Element. This section provides the financial assumptions that provide the foundation for the Draft Plan by determining how much money is available for the Plan over its six year period and how funds will be utilized in implementing the Plan's recommendations.

TABLE OF CONTENTS

THE SUBREGIONS	1
ARROYO VERDUGO	2
GATEWAY CITIES	5
LAS VIRGENES/MALIBU	9
NORTH LOS ANGELES COUNTY	12
CENTRAL LOS ANGELES COUNTY	15
SAN FERNANDO VALLEY	19
SAN GABRIEL VALLEY	22
SOUTH BAY CITIES	27
WESTSIDE CITIES	31
CONGESTED CORRIDORS	35
GOLDEN STATE/SANTA ANA FREEWAY (I-5) SEGMENT A	36
GOLDEN STATE/SANTA ANA FREEWAY (I-5) SEGMENT B	39
GOLDEN STATE/SANTA ANA FREEWAY (I-5) SEGMENT C	43
GOLDEN STATE/SANTA ANA FREEWAY (I-5) SEGMENT D	46
ANTELOPE VALLEY FREEWAY (SR-14)	49
SAN DIEGO FREEWAY (I-405) SEGMENT A	52

TABLE OF CONTENTS (Continued)

SAN DIEGO FREEWAY (I-405) SEGMENT B	55
SAN DIEGO FREEWAY (I-405) SEGMENT C	59
LONG BEACH FREEWAY (I-710)	63
SANTA MONICA FREEWAY (I-10)	66
SAN BERNARDINO AND POMONA FREEWAYS (I-10 AND SR-60)	70
TRAVEL DEMAND MODEL ASSUMPTIONS AND EVALUATION	74
FINANCIAL ELEMENT	114
FINANCIAL ANALYSIS	114
FINANCIAL FORECASTING MODEL ASSUMPTIONS	118

THE SUBREGIONS

THE SUBREGIONS

The following section looks at the county's transportation issues through a more local perspective—that of the nine subregions that range from 60 to 2,503 square miles in area.

Because each subregion has unique characteristics, needs, and opportunities, the following section expands on the discussion in the Short Range Transportation Plan by laying out the physical setting, major transportation facilities, and mobility challenges. It also identifies major projects that will be implemented by 2009, other projects that have been funded by MTA's Call for Projects that are slated to proceed as well, provided adequate funding is available. Finally, this section identifies some additional transportation solutions that are candidates for funding if additional funding became available.

The following nine subregions are analyzed:

- Arroyo Verdugo
- Gateway Cities
- Las Virgenes/Malibu
- North Los Angeles County
- Central Los Angeles
- San Fernando Valley
- San Gabriel Valley
- South Bay Cities
- Westside Cities

ARROYO VERDUGO SUBREGION

ARROYO VERDUGO CITIES

Burbank, Glendale and La Canada Flintridge

THE SETTING

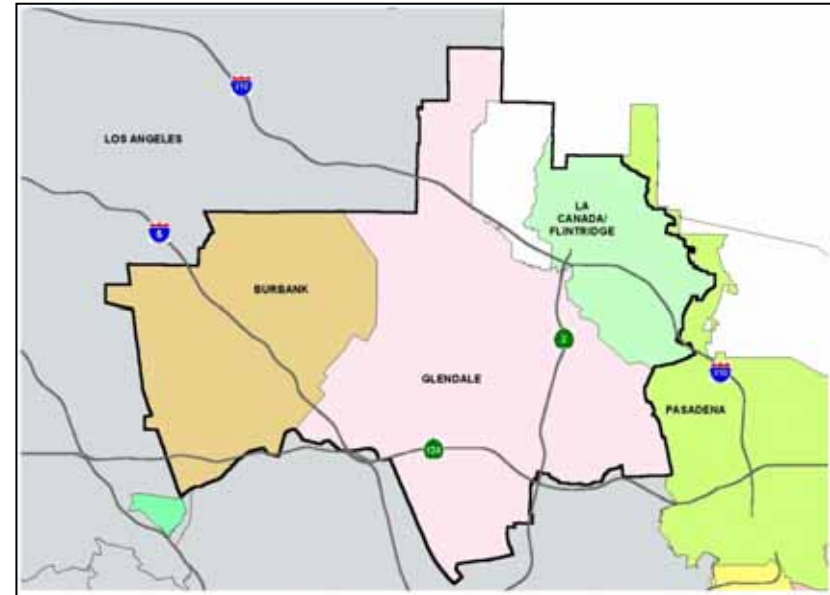
Arroyo Verdugo sits against a dramatic backdrop of the San Gabriel Mountains between the San Fernando and San Gabriel Valleys. It is located on the northern edge of the Los Angeles Basin, and is bounded to the north by the Angeles National Forest, to the west and south by the City of Los Angeles, and on the east by the City of Pasadena.

MAJOR TRANSPORTATION FACILITIES

Several major freeways traverse this subregion including the Foothill (I-210), Glendale (SR-2), Golden State (I-5) and Ventura (US-101 and SR-134) Freeways. The northern portion of the Hollywood Freeway (SR-170) extends northwesterly to the south and west of the subregion.

Bus service in the subregion is provided by MTA, LADOT as well as by local transit service providers in each of the member cities. Metrolink's Ventura County and Antelope Valley Lines provide commuter rail services to Burbank and Glendale. Limited Amtrak service is also available.

Burbank, Glendale, and La Canada Flintridge also provide paratransit services within their cities for the elderly and persons with disabilities. Service in La Canada Flintridge is administered by the City of Glendale. Access Services, Inc. provides paratransit service in Arroyo Verdugo as part of its region-wide service.



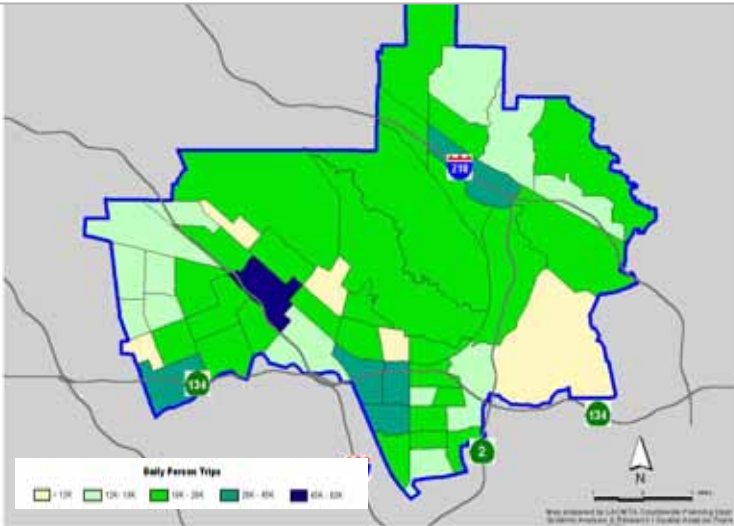
MOBILITY CHALLENGES

Local freeways serve residents and commuters in the subregion, but worsening congestion on the surface streets limits access at freeway interchanges. Growing employment densities in Glendale and Burbank have led to substantial arterial congestion intruding into neighborhoods, as drivers seek short-cuts through residential areas. This problem is especially acute on Foothill Boulevard in La Canada Flintridge.

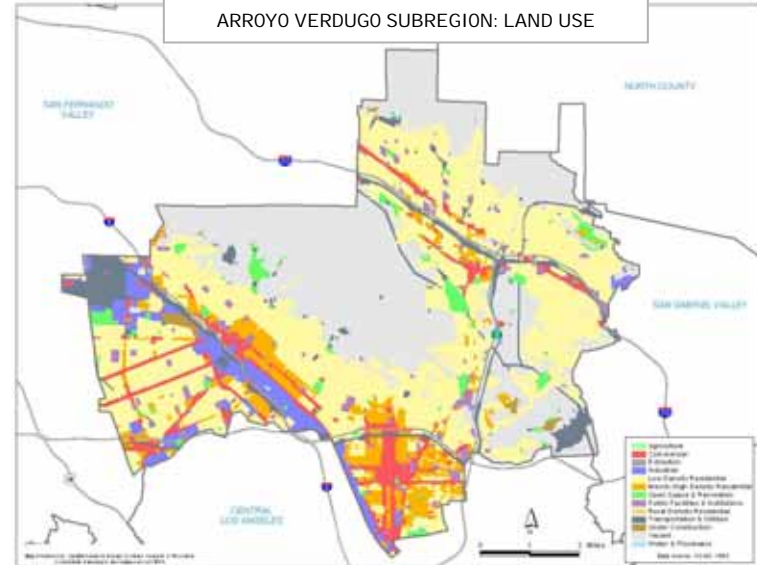
Metrolink service does not extend to Burbank and Glendale's highest density employment centers, but shuttle service links passengers with key locations. The possibility of linking this area with high-speed rail is also being considered.

ARROYO VERDUGO TRIP PRODUCTION AND ATTRACTION, LAND USE AND DEMOGRAPHICS

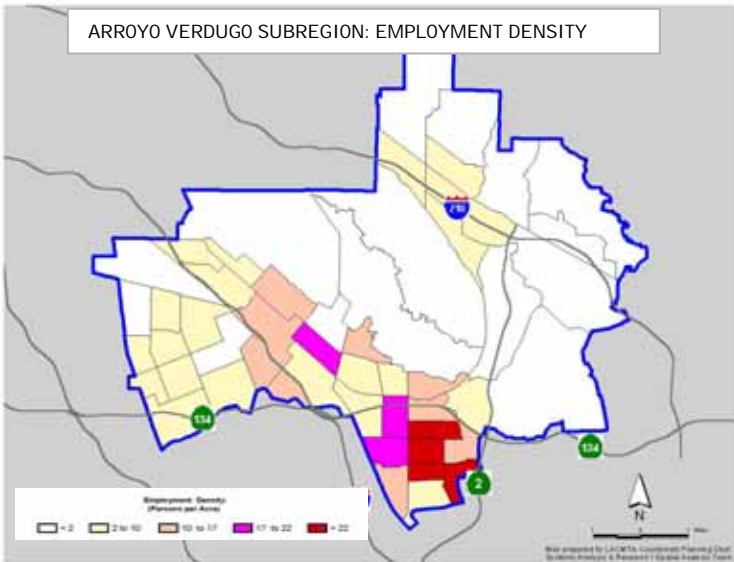
ARROYO VERDUGO SUBREGION: DAILY TRIPS PRODUCED & ATTRACTED



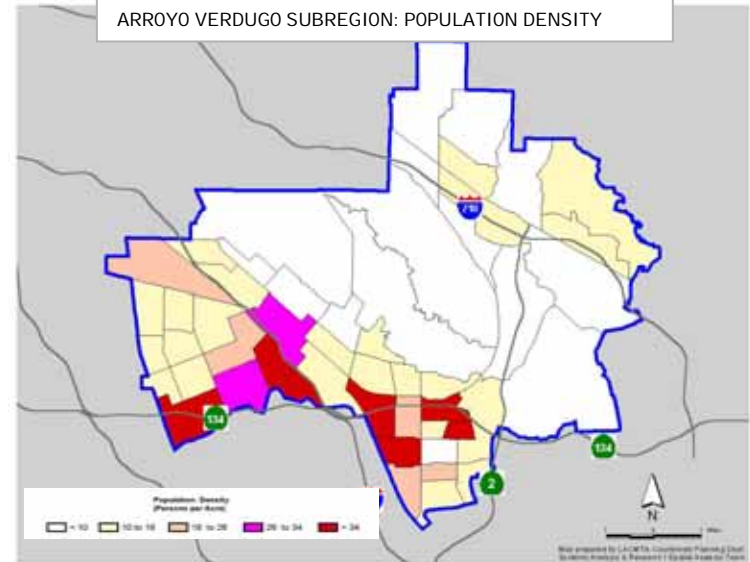
ARROYO VERDUGO SUBREGION: LAND USE



ARROYO VERDUGO SUBREGION: EMPLOYMENT DENSITY



ARROYO VERDUGO SUBREGION: POPULATION DENSITY



WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the Arroyo Verdugo cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Implementation of two new Metro Rapid bus lines;
- I-5 carpool lanes from the SR-134 to SR-170 with Empire Avenue (design only); and
- Metrolink locomotive and passenger coach purchases.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeway – Carpool lanes on SR-134 from SR-2 to I-210, and I-5/Empire Avenue access;
- Arterials – Burbank Boulevard/Victory Boulevard Intersection Improvements, and Burbank RITC South Front Street Improvements;
- Signal Synchronization – Burbank Media District ITS Phases I & II, Arroyo Verdugo ATSAC Interface, and Arroyo Verdugo TOC Fiber optic Communications System;
- Transportation Demand Management – Citywide Metrolink Shuttle Program – Media District Area, Glendale Metrolink Express Shuttle, and Glendale TMA Parking Management Project;
- Bikeway and Pedestrian Improvement Projects – Burbank-LA Chandler Boulevard Accessway;
- Transportation Enhancements – Burbank Transit Center Landscaping Enhancements, and Burbank RITC Pedestrian Bridge; and
- Transit – Purchase of eight 35-foot, low-floor, CNG heavy-duty transit vehicles for use in Glendale and purchase of two electric buses for Burbank.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with Arroyo Verdugo cities to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Reducing arterial congestion and through traffic in residential areas;
- Increasing Metrolink access and service;
- Constructing soundwalls on local Route 210 segments;
- Providing bikeways linking employment and activity centers and other transportation modes;
- Providing or encouraging independent bus service for the subregion and adjacent portions of the San Fernando Valley; and
- Improving freeway access to relieve traffic congestion by widening/reconfiguring on- and off-ramps.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the Arroyo Verdugo subregion on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

GATEWAY CITIES SUBREGION

GATEWAY CITIES

Artesia, Avalon, Bell, Bell Gardens, Bellflower, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Habra Heights, La Mirada, Lakewood, Long Beach, Lynwood, Maywood, Montebello, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Vernon, and Whittier

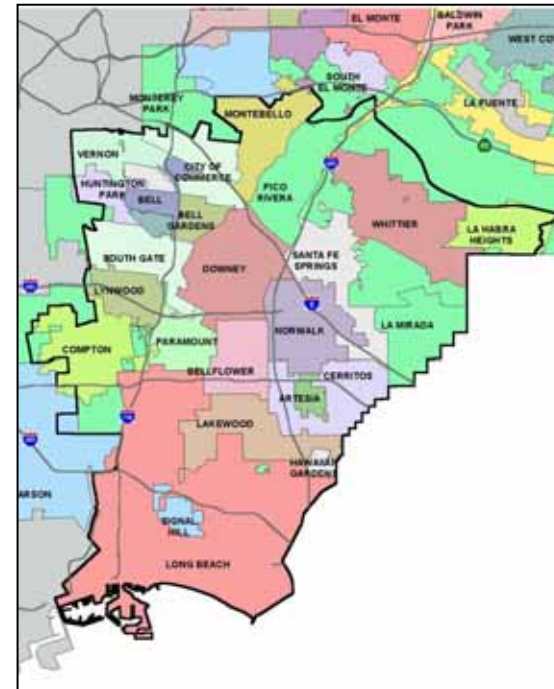
SETTING

The Gateway cities are located at the southeastern end of Los Angeles County. This subregion is bounded to the south by the Pacific Ocean and Ports of Long Beach and Los Angeles; the Orange County Line on the east; the I-110 (Harbor Transitway) on the west; and SR-60 (Pomona Freeway) on the north.

This subregion has an approximate resident population of 2 million people who commute to workplaces throughout the county. The Gateway Cities have a highly diverse population that has formed and retained a unique identity throughout various cities. The Port of Long Beach is located within this subregion and serves as an important industrial center to Southern California. Some cities such as Vernon and Commerce were developed specifically for business, while other cities such as Montebello, Pico Rivera, Paramount, South Gate and Santa Fe Springs have balanced development of business and residential areas.

MAJOR TRANSPORTATION FACILITIES

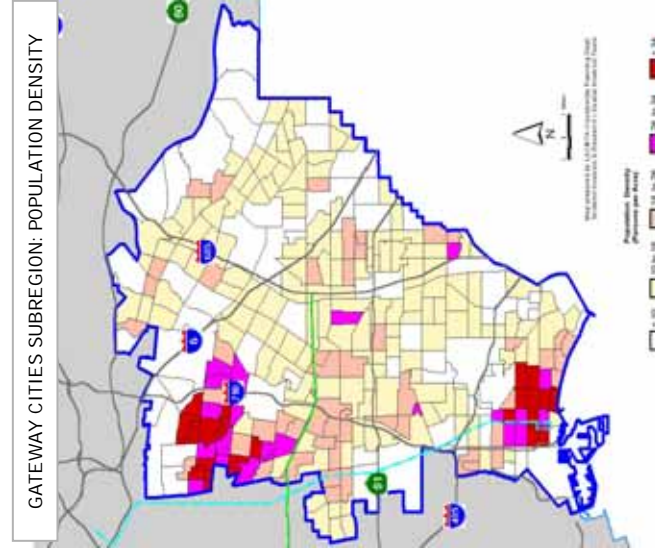
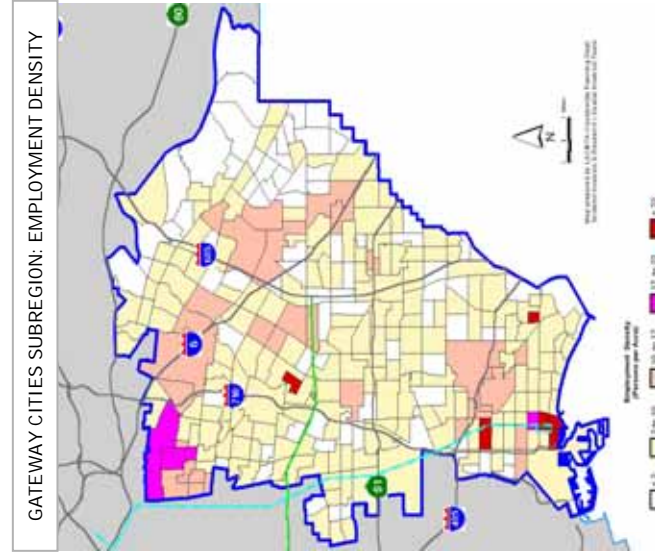
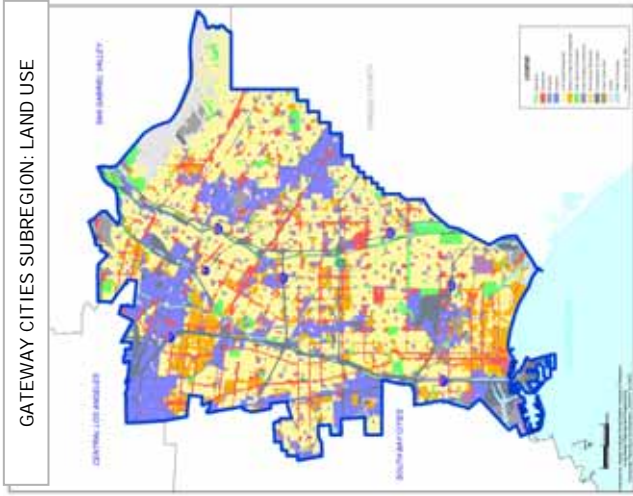
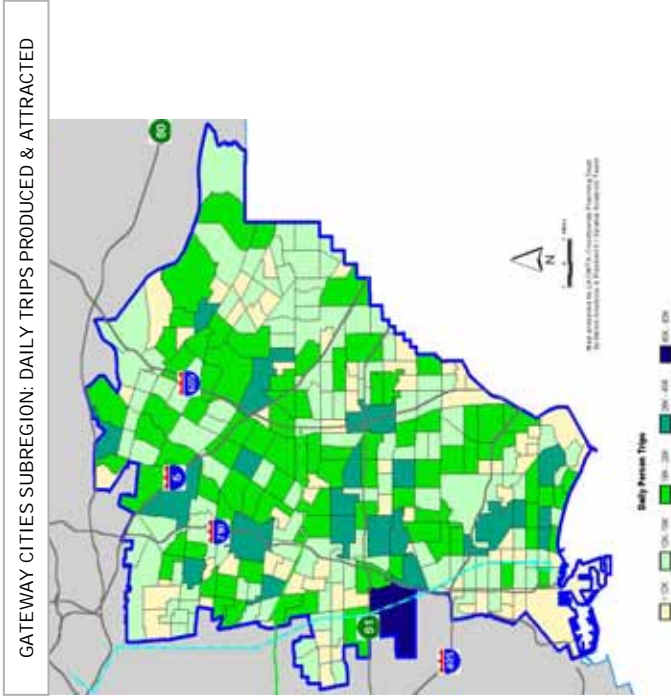
The SR-60 (Pomona Freeway), SR-91 (Artesia Freeway), and I-105 (Glenn Anderson Freeway) serve as major east-west freeway corridors in this subregion. The I-5 (Santa Ana Freeway), I-405 (San Diego Freeway), I-710 (Long Beach Freeway), and I-605 (San Gabriel River Freeway) freeways serve as the major north-south corridors. An airport located in the City of Long Beach serves as a hub of corporate activity as well as being one of the busiest airports in the world. An all-weather port and a superb transportation infrastructure comprising marine terminals,



rail and freeway networks are complimented by the Alameda Corridor, a 20-mile railway designed to speed cargo out of the Ports to all of North America.

The Metro Blue Line and Metro Green Line that run along the I-110 and I-105 freeways, respectively, make it convenient for businesses to attract workers from a diverse and experienced labor force. MTA, Long Beach Transit, Norwalk Transit, Downey Link, and LADOT's Commuter Express provide the area's transit services. In addition, many cities operate transit and dial-a-ride services, such as La Mirada Dial-a-Ride, within their cities. Metrolink's Orange County Line provides commuter service with stops in Norwalk/Santa Fe Springs and the City of Commerce.

GATEWAY CITIES
TRIP PRODUCTION AND ATTRACTION, LAND USE AND DEMOGRAPHICS



MOBILITY CHALLENGES

The Gateway Cities subregion has one of the largest all weather ports in the world. As the 10th busiest cargo container port in the world, the Port of Long Beach moved 95 billion dollars worth of cargo in 2002. Currently, goods movement-related traffic is growing at a faster rate than that of automobiles. Daily truck traffic is expected to dramatically increase from 30,000 to 100,000 trucks a day by the year 2025. The trucks transporting cargo to and from the Port of Long Beach use Ocean Boulevard, I-710, SR-47/103 (Terminal Island Freeway), and I-110. The heavy congestion generated by this truck traffic has a significant impact on the traffic flow of I-110, I-405 and I-710 freeways.

Safety is also an issue due to aging and inadequate design of transportation infrastructure that requires trucks to weave across multiple lanes in short distances, especially at major freeway interchanges. Railroad and arterial grade crossings cause traffic queues, delays and accidents in this subregion. Identification, prioritization of such locations, and providing funding for improvement at regionally significant railroad/arterial grade crossings remain a very important element in improving the transportation infrastructure.

WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the Gateway Cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Implementation of seven new Metro Rapid bus lines;
- I-5 carpool and mixed-flow lanes from I-605 to the Orange County Line including Valley View and Carmenita Road interchange improvements (Design only, construction of project is subject to future funding availability);
- I-710 freeway improvements from PCH to Downtown Long Beach;
- Metrolink locomotive and passenger coach purchases;
- Metrolink rolling stock maintenance facility in San Bernardino phase 1A (phase 1B is subject to future funding availability);
- Traffic signal timing projects on numerous arterials; and
- Major corridor study along I-710 freeway.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeways – Interchange improvement and carpool lane construction on I-5 (Santa Ana Freeway), including the Carmenita and Valley View interchanges; I-710 Major Corridor Study, which is due for completion by the end of second quarter in December 2004;
- Arterials – Projects designed to increase capacity and improve mobility by reducing traffic congestion and problematic conditions at major arterials and intersections are currently underway. Examples are the Terminal Island Freeway interchange improvement at Ocean Blvd., and arterial carpool projects in Long Beach and northbound I-710 off-ramp reconstruction at Firestone Blvd. in South Gate;
- Signal Synchronization – In order to improve traffic flow throughout the subregion, major arterial corridor signals have been or will be synchronized in cities such as South Gate, Compton, Downey and Lakewood. Additionally, the subregion will be among the first in the county to be equipped with the Information Exchange Network (IEN), which allows for the sharing of traffic signal data across jurisdictional boundaries to allow for improved traffic management;
- Transportation Demand Management – The capacity and inter-modal efficiency of transportation systems are improved through projects that involve change or improvement in policies or actions with focus on modification of travel behavior. Such projects have already been implemented or are in the planning stages. Examples are Parking Demand Management in Bellflower and a Southeast Regional Transit Information Network in Long Beach;
- Bikeway and Pedestrian Improvement Projects – In an effort to encourage use of alternate forms of transportation, a number of bikeway and pedestrian transportation projects have been funded through the Call for Projects. Such projects include Buena Vista Pedestrian Trail project in Avalon, and the Artesia Metro Blue Line Station Pedestrian Access Improvement in Compton;
- Transportation Enhancements – Transportation Enhancement Activities projects often involve rail corridor and streetscape improvements and station rehabilitation. Currently, some Transportation Enhancement projects are underway in the cities of Compton, Whittier, and Downey; and

- Transit – In an effort to improve transit facilities and services, MTA and the municipal transit operators are providing transit centers, bus stop improvements and utilizing new transit technologies. Several projects such as a Transit Center Expansion/Multi-modal Transportation Blvd. in Compton, Long Beach Transit Center Improvement at Pine Avenue and 1st Street, and a Bus Stop Improvement Project in Long Beach. In addition, MTA’s Gateway Sector office located in Downey has carried out day-to-day operational functions since its inception in July of 2002.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with cities and the Gateway Cities Council of Government to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document.

These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- I-710 Improvements;
 - Arterial and traffic signal improvements;
 - Ramp widening and extended carpool lanes;
 - More efficient goods movement;
 - Implementation of the Gerald Desmond Bridge Replacement Project;
 - Improving safety along the Metro Blue Line;
 - More timed connections and circular routes between municipal operators; and
 - Implementation of advanced ITS technology to maximize capacity on arterial streets.
- The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the Gateway Cities on an on-going basis to ensure that their priorities are taken into consideration during each annual update.

LAS VIRGENES/MALIBU SUBREGION

LAS VIRGENES/MALIBU CITIES

Agoura Hills, Calabasas, Hidden Hills, Malibu and Westlake Village

THE SETTING

The Las Virgenes/Malibu subregion occupies the westernmost portion of Los Angeles County, and is bordered by Malibu and the Pacific Ocean to the south and Ventura County to the west and north. The area's most prominent feature is the strikingly rugged Santa Monica Mountains, which divide this subregion. The Las Virgenes cities occupy the north-facing foothills and valleys adjacent to the Santa Monica Mountains State Park and National Recreation Area.

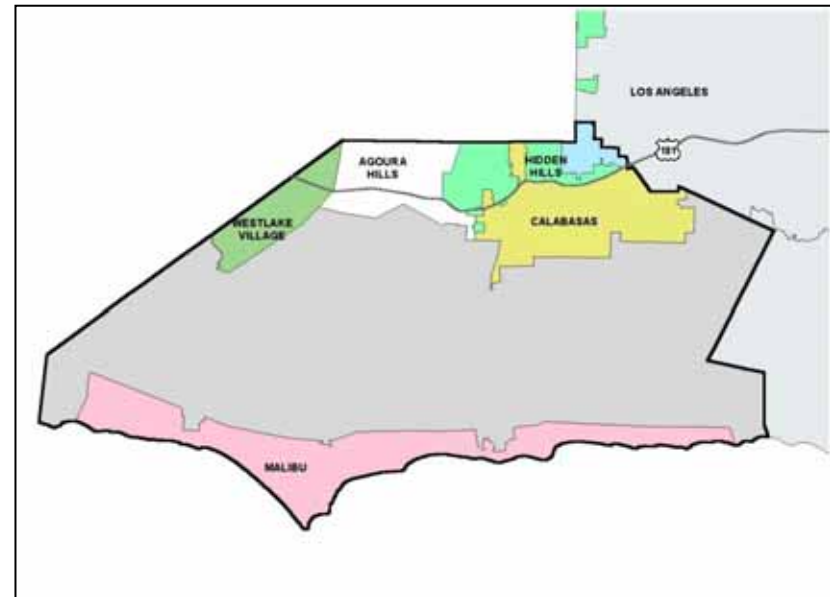
MAJOR TRANSPORTATION FACILITIES

The Ventura Freeway (US-101) is the subregion's dominant transportation corridor, around which most commercial/research park development and employment opportunities have clustered. This generally low-density area has a limited network of arterial roadways, of which Pacific Coast Highway (SR-1) is the most heavily traveled. A series of north-south arterials connect the two highways, which include Decker/Westlake (SR-23), Kanan Dume/Kanan, Las Virgenes/Malibu Canyon Road, and Topanga Canyon Boulevard (SR-27).

Regional bus service is provided by MTA and LADOT. Calabasas runs a community shuttle while the other cities in the subregion operate dial-a-ride services. There is currently no rail service in the subregion.

MOBILITY CHALLENGES

The transportation system in the Las Virgenes/Malibu subregion has substantial capacity problems. As home to some of the nation's most-visited beaches and recreational sites, severe weekend and summertime traffic are frequent occurrences. Weekday traffic volumes have also grown as development and employment opportunities have extended into

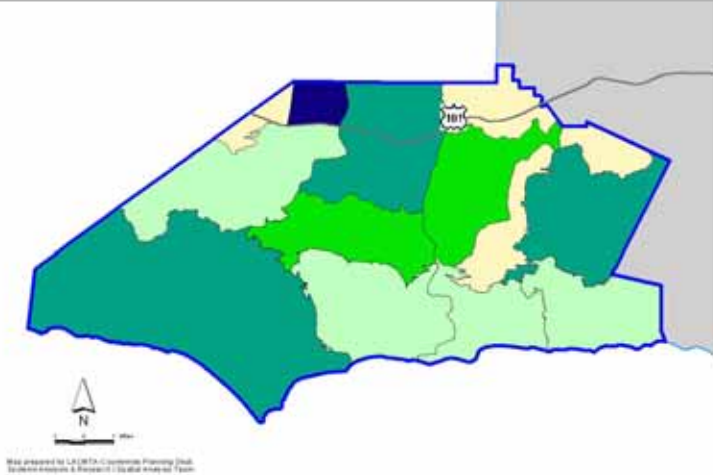


Ventura County. The unavoidable reliance on two primary routes presents substantial challenges to this area and yields the anticipated outcomes: traffic delays, disruptions and unreliable service levels.

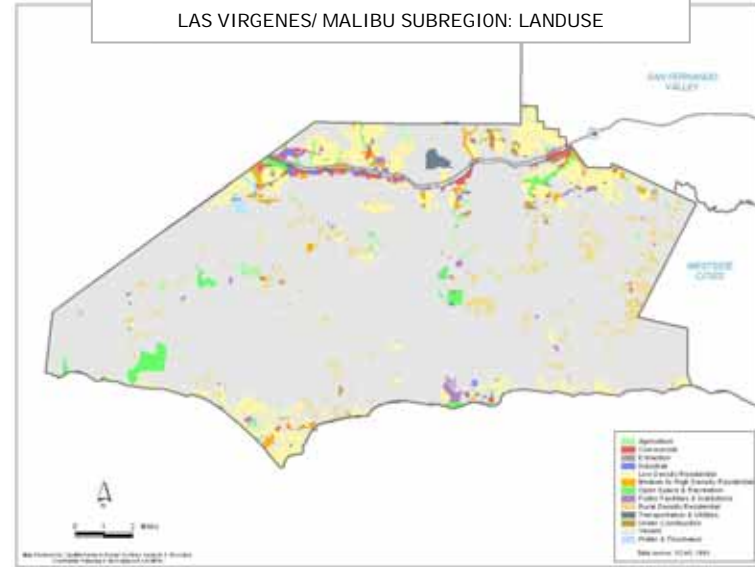
Due to the region's topography, size, modest roadway network, and limited transportation alternatives, congestion has become commonplace. While all the cities in the Las Virgenes/Malibu subregion provide dial-a-ride or community shuttle services, coordination of these services is limited. Bus service does not traverse the mountains in a north-south direction. This significantly reduces access to employment opportunities by day-workers and access to Pepperdine University by students traveling from other areas of the region.

LAS VIRGENES/MALIBU TRIP PRODUCTION AND ATTRACTION, LAND USE AND DEMOGRAPHICS

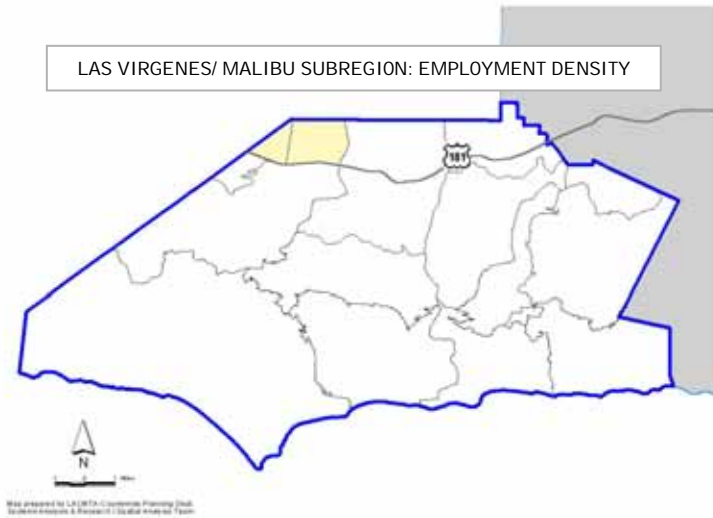
LAS VIRGENES/ MALIBU SUBREGION: DAILY TRIPS PRODUCED & ATTRACTED



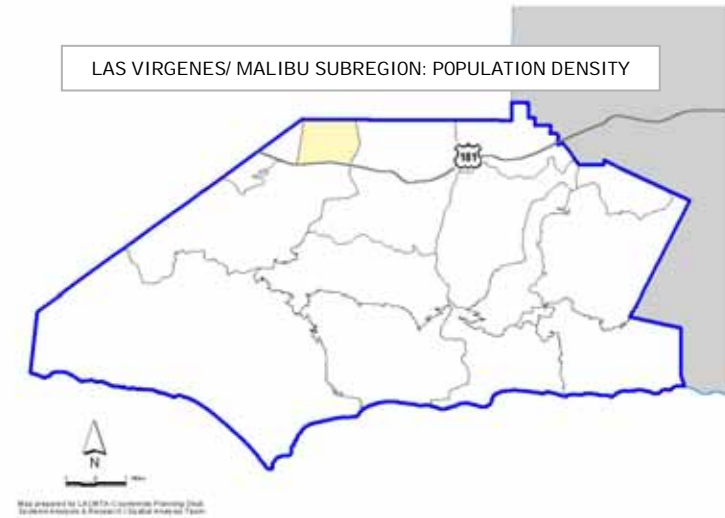
LAS VIRGENES/ MALIBU SUBREGION: LANDUSE



LAS VIRGENES/ MALIBU SUBREGION: EMPLOYMENT DENSITY



LAS VIRGENES/ MALIBU SUBREGION: POPULATION DENSITY



WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the Las Virgenes/Malibu cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Major corridor study along US-101 freeway; and
- Enhanced Commuter Service between Las Virgenes/Malibu Subregion and the San Fernando Valley Metro Rapidway.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Arterials – US-101 Freeway/Kanan Road Interchange Improvements and Old Town Calabasas Road Improvements;
- Signal Synchronization – City of Agoura Hills' Signal Synchronization Project and City-wide Centralized Traffic Signal Control System in the City of Calabasas;
- Bikeway and Pedestrian Improvement Projects – US-101 Interjurisdictional Bike Lane Gap Closure;
- Transportation Enhancements – Freeway Landscape Project in the City of Agoura Hills; and
- Transit – Agoura Hills' Park-and-Ride Lot and Westlake's Community-Based Intercept Intermodal Facility.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with cities and the Las Virgenes/Malibu Council of Governments (COG) to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Increase capacity of US-101 by adding freeway and carpool lanes, and improving access to and provision of other modes of transportation, such as light rail;
- As recommended by the US-101 Freeway Corridor Study, improve operation of US-101 corridor by improving local freeway interchanges and parallel arterials, subject to further community review and refinement and modification by affected agencies;
- Improve access to emergency services; and
- Increase transportation alternatives in this subregion, such as adding smart shuttles, and increasing the number of transportation "hubs."

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the Las Virgenes/Malibu COG and its member cities on an ongoing basis to ensure that their priorities are taken into consideration during each annual update.

NORTH LOS ANGELES COUNTY SUBREGION

NORTH LOS ANGELES COUNTY CITIES

Lancaster, Palmdale, Santa Clarita, and parts of unincorporated Los Angeles County

THE SETTING

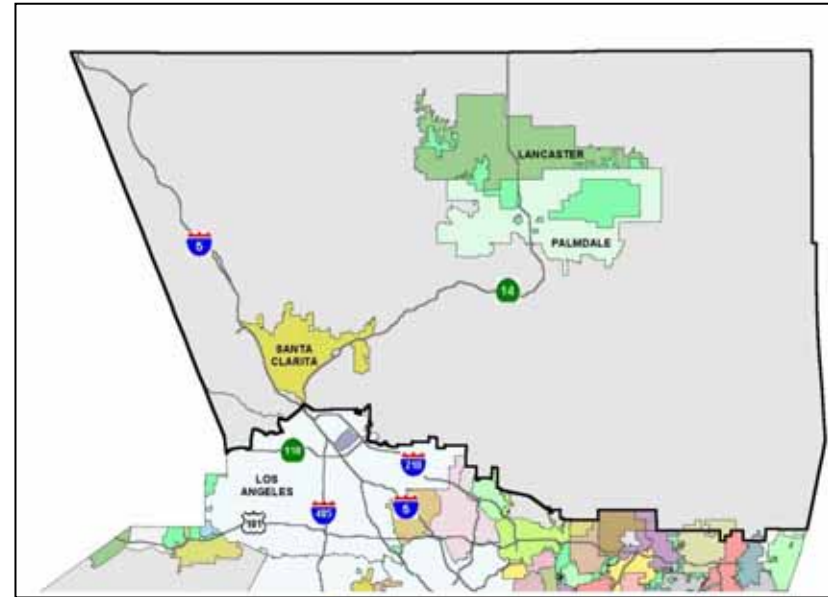
This subregion comprises all of Los Angeles County north of the San Fernando Valley and includes the Angeles National Forest. The two most populous areas of the subregion are the Santa Clarita and Antelope Valleys. Santa Clarita, in the southern portion of the subregion, is divided from Lancaster and Palmdale in the Antelope Valley to the north, by the breathtaking natural beauty and open space of the Angeles National Forest.

MAJOR TRANSPORTATION FACILITIES

Area freeways include the Golden State (I-5) and the Antelope Valley (SR-14). SR-126 and SR-138 also impact the region. Antelope Valley Transit Authority and Santa Clarita Transit provide local bus services. Metrolink operates commuter rail services with stations located in the cities of Lancaster and Santa Clarita and in unincorporated LA County. A future Metrolink station will be located in Palmdale.

MOBILITY CHALLENGES

The steady growth in population in the North County is expected to continue. Commuters traveling into the Los Angeles County basin area comprise the bulk of transportation facilities users in North Los Angeles County. SR-14, running from just south of Santa Clarita to Lancaster and Palmdale, is a relatively new freeway. However, I-5, which feeds SR-14 into North Los Angeles County from the south, experiences slow-moving heavy-duty trucks negotiating the steep grade along the Newhall Pass which causes intermittent stop-and-go traffic conditions. These traffic conditions will have an even larger impact on worsening travel conditions as overall traffic volumes increase over the next several decades.



The Angeles National Forest, which straddles the center of this subregion, is also a magnet for day-trippers, weekenders and vacationers.

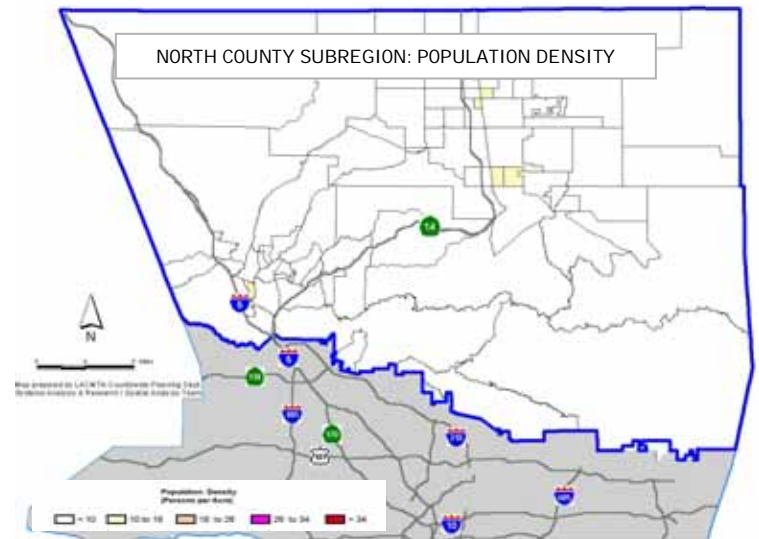
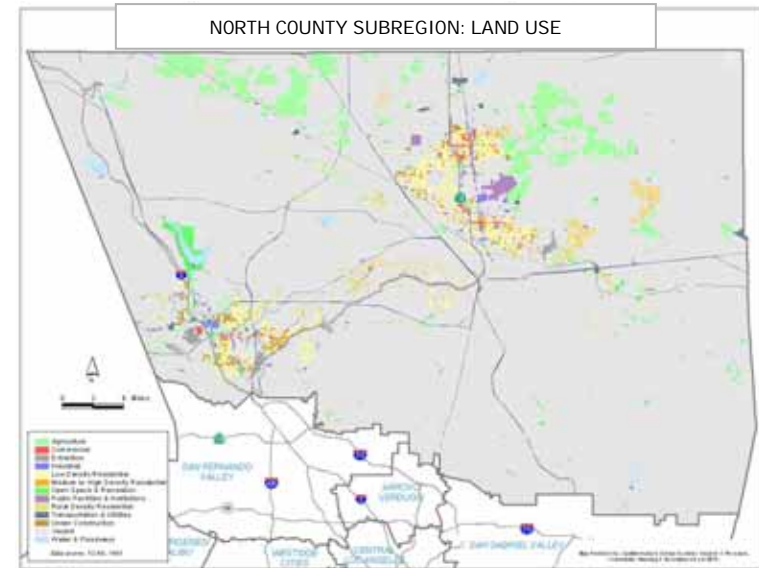
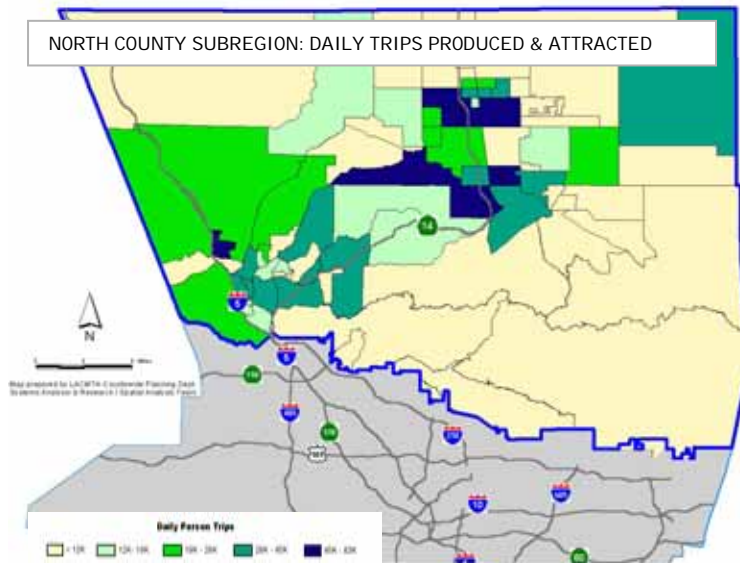
Because of this subregion's location at the northern-most reaches of Los Angeles County, transportation linkages with adjacent Kern and Ventura counties may be more germane to North Los Angeles County than destinations south of downtown Los Angeles.

WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the North Los Angeles County subregion and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Metrolink Antelope Valley Line Improvements;
- Metrolink Antelope Valley Line Track Curve Straightening (Project is subject to future funding availability);

NORTH COUNTY TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS



- SR-14 carpool lanes from Pearblossom Highway to Avenue P-8 (Design only, construction is subject to future funding availability);
- I-5/SR-14 carpool lane direct connector (North to/from South) (Design only, construction is subject to future funding availability);
- Metrolink locomotive and passenger coach purchases; and
- Major corridor study along I-5/SR-14/SR-138.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeway – Carpool Direct Connector lanes at I-5/SR-14 interchange, carpool lanes on SR-14 in various segments from the I-5/SR-14 interchange to Avenue P-8 and interchange improvements at I-5/Magic Mountain Parkway, I-5/Hasley Canyon Road, and SR-126/Commerce Center Drive;
- Arterials – Cross Valley Connector Gap Closure from I-5 to Copper Hill Drive, I-5/Magic Mountain Parkway (SR-126) Interchange Reconstruction, Golden Valley Road/Soledad Canyon Road Interchange Improvements, and SR-14/Avenue H Interchange Improvements;
- Signal Synchronization – Avenue P Traffic Signal Interconnect, North County/Antelope Valley Traffic Improvement, and Automated Incident Management System in the City of Santa Clarita;
- Transportation Demand Management – Santa Clarita Valley Shuttles and Shelters and Palmdale Commuting Vanpool;
- Bikeway and Pedestrian Improvement Projects – Sierra Highway Bikeway Gap Closure, Avenue K-8 Regional Commuter Bikeway, Avenue S Class I Bikeway, and Santa Clara River Regional Commuter Trail;
- Transportation Enhancements – Lancaster Gateway – Antelope Valley Freeway Landscaping, Sierra Corridor Landscape Improvements, and Soledad Canyon Median Landscaping Gap Closure; and
- Transit – Palmdale Transportation Center, Antelope Valley Line Changes in Santa Clarita, and Lancaster Metrolink Station.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with the North County cities to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Seek to ensure that it receives a “fair” share of resources to fund transportation improvements in the subregion;
- Promote alternate routes in addition to SR-14 to ultimately relieve demands on congested corridors, including High Speed Rail, new highways, airport access, and goods movement; and
- Improve access for key trips within the subregion and to major employment centers outside of the subregion.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the North Los Angeles County subregion on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

CENTRAL LOS ANGELES COUNTY SUBREGION

CENTRAL LOS ANGELES COMMUNITIES

Atwater Village, Baldwin Hills, Boyle Heights, Central City, Chinatown, Eagle Rock, Echo Park, Glassell Park, Hancock Park, Highland Park, Hollywood, Hollywood Hills, Korea Town, Leimert Park, Little Tokyo, Miracle Mile, Mt. Washington, Silver Lake, University Park, West Adams, Wilshire Center, portions of South Los Angeles, and the unincorporated County area of East Los Angeles

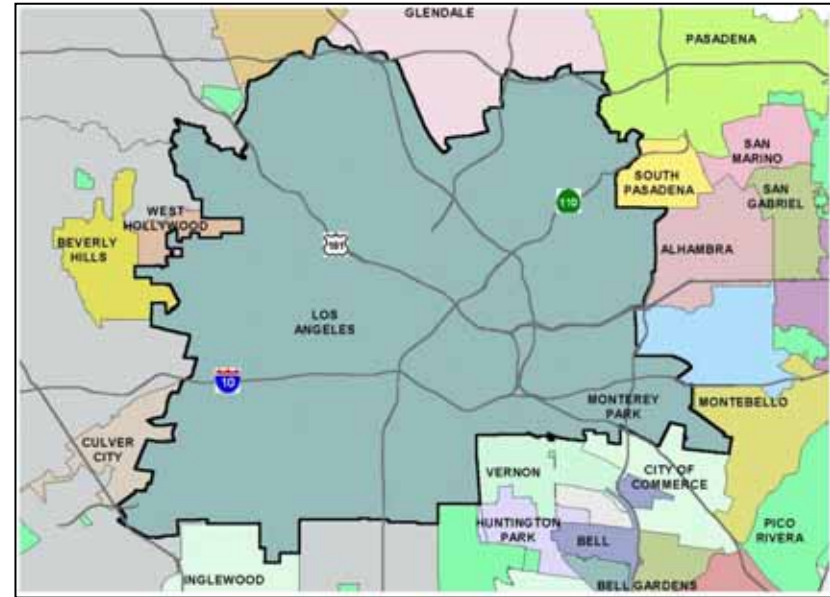
SETTING

The Central Area is generally bounded by the City of Glendale to the north; the cities of Inglewood, Vernon, and Commerce to the south; the cities of West Hollywood, Beverly Hills, and Culver City to the west; and the cities of Pasadena, South Pasadena, Alhambra, Monterey Park, and Montebello to the east.

The Central Area contains a diverse land use pattern that includes the County's heaviest concentration of commercial and government offices; major industrial areas along the Los Angeles River; the most densely populated residential communities in the region; and retail recreational cultural facilities. Downtown Los Angeles is the county's largest employment district and over the past decade the site of a considerable amount of residential, entertainment, and retail development. The communities to the north and west of downtown (Mt. Washington, Eagle Rock, Atwater Village, Hancock Park, Hollywood, Melrose, and Silver Lake) tend to be more affluent than those to the east and the south (Boyle Heights, Lincoln Heights, and University Park) along with East Los Angeles. The Central subregion's road infrastructure is built-out and cannot accommodate more road capacity without serious community impacts.

MAJOR TRANSPORTATION FACILITIES

A total of eight freeways pass through the Central Area. They include SR-2 (Glendale Freeway), I-5 (Golden State/Santa Ana Freeway), I-10



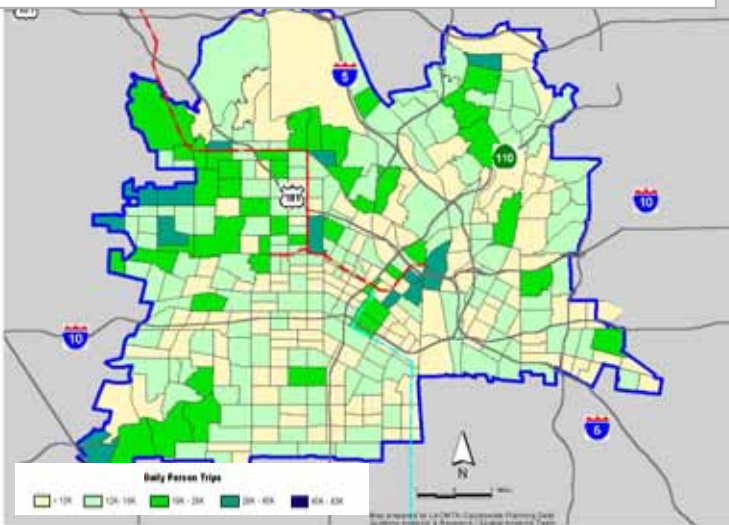
(Santa Monica/San Bernardino Freeway), SR-60 (Pomona Freeway), SR-134 (Ventura Freeway), and the US-101 (Hollywood Freeway). The El Monte Busway runs along the San Bernardino Freeway's median and terminates at Alameda Street. The Harbor Transitway runs along the Harbor Freeway's median and terminates at Adams Boulevard.

Downtown LA is the focal point of the county's transportation system. Union Station is the county's largest transit facility. Existing transit service at Union Station includes the Metro Red Line, Metro Gold Line, five Metrolink commuter rail lines, Metro Rapid, and fixed-route bus service. Amtrak also operates 24 weekday trains out of Union Station across the country.

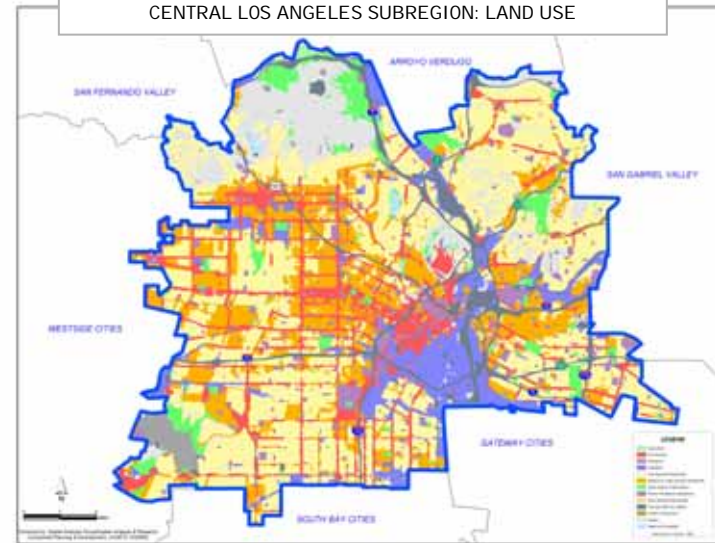
The Metro Red Line operates between Union Station and either Wilshire/Western or North Hollywood. The Metro Gold Line operates between Union Station and Pasadena. The Metro Blue Line operates between the 7th Street/Metro Center Station and Long Beach.

CENTRAL LOS ANGELES
TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS

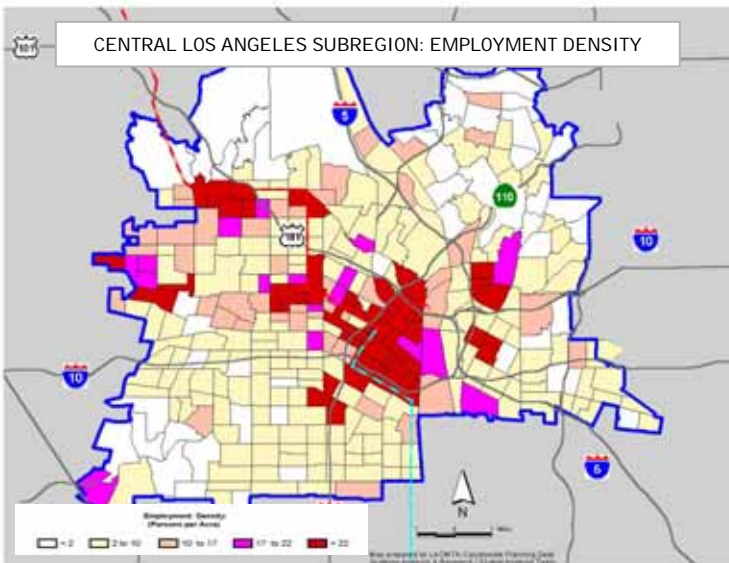
CENTRAL LOS ANGELES SUBREGION: DAILY TRIPS PRODUCED & ATTRACTED



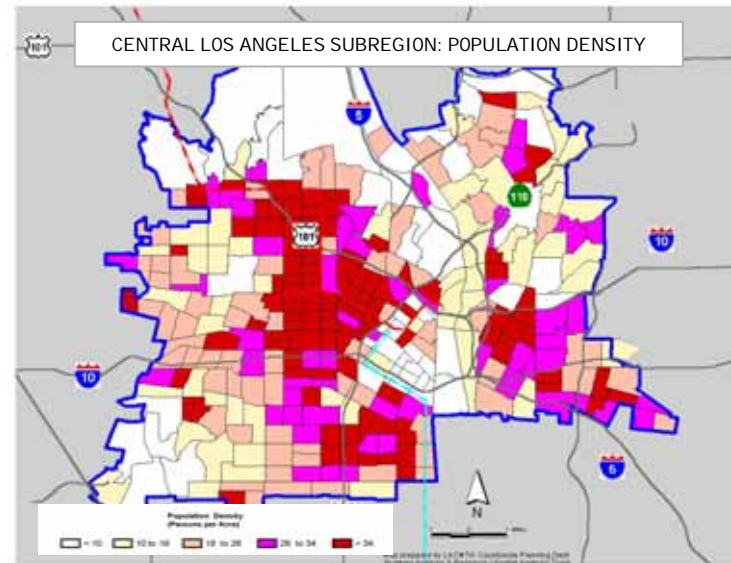
CENTRAL LOS ANGELES SUBREGION: LAND USE



CENTRAL LOS ANGELES SUBREGION: EMPLOYMENT DENSITY



CENTRAL LOS ANGELES SUBREGION: POPULATION DENSITY



Over the next six years, MTA is opening two new Metro Rail lines that will add 20 miles of new service. The Pasadena Metro Gold Line opened in July 2003; its Eastside extension will open in 2009. These two lines will join in Downtown LA to form a single, operating line extending from the San Gabriel Valley to East LA. At Union Station, they will connect with the Metro Red Line and be linked to the rest of the Metro System. Ten municipal operators serve the Central Area. They include MTA, Antelope Valley Transit, Foothill Transit, Gardena Municipal Bus Lines, LADOT (Dash and Commuter Express), Montebello Municipal Bus Lines, OCTA, Santa Clarita Transit, Santa Monica Municipal Bus Lines, and Torrance Transit. Currently, MTA operates four Metro Rapid lines within the Central Area (Wilshire/Whittier Boulevards, South Broadway, Vermont Avenue and Florence Avenue). Service is planned to begin on eight additional lines that will serve the Central Area by 2008.

MOBILITY CHALLENGES

Downtown LA is the Central Area's primary travel destination. All freeways that pass through the Central Area, along with major arterials connecting downtown LA with neighboring communities experience delay during both morning and evening peak periods. The Central Area's built-out urban setting limits the ability to expand or add capacity to the existing freeway and arterial networks. As a result, projects that improve the existing transportation system's efficiency, provide multi-modal capacity, or that influence travel behavior to decrease the reliance on automobile travel are key components of the strategy to meet the Central Area's mobility challenges.

WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the City of LA and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Gold Line service and rail stations from Union Station to Sierra Madre Villa (opened in July 2003);
- Eastside Light Rail Transit line from Union Station to Pomona/Atlantic;
- Preliminary engineering for Exposition Light Rail Transit line from 7th/Metro to Culver City (subject to future construction funding availability);
- Metro Rapid Transitway along Wilshire Corridor from Western to the

City of Santa Monica;

- Initial Improvements to the Crenshaw Corridor Metro Rapid Transitway (schedule for other elements is subject to future funding availability);
- Implementation of 17 new Metro Rapid bus lines across the subregion;
- Improvements to Metrolink's San Bernardino Line;
- US-101 Freeway and Ramp Realignment at Center Street;
- Metrolink rolling stock Maintenance facility in San Bernardino phase 1A (phase 1B is subject to future funding availability);
- Metrolink locomotive and passenger coach purchases;
- Traffic Signal Forums; and
- Major Corridor study along US-101 freeway.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeways – Projects include US-101 freeway and on-ramp realignment at Vignes Street, reconstruction of the southbound US 101 off-ramp at Los Angeles/Center Street, and design of the US-101 Ramirez flyover interchange;
- Arterials – Major arterials and intersections have been improved to decrease congestion, improve transit access, and improve freight movement. Specific projects include the Los Angeles Street Realignment near El Pueblo, the East Downtown Truck Access Improvements project, and the Figueroa Corridor Improvement project. In addition, grade separation and bridge widening projects have been undertaken at Valley Boulevard, Riverside Drive, 1st Street, North Spring Street, and Soto Street;
- Signal Synchronization – The traffic signals on many of the Central Area's major arterials have been synchronized in recent years. Traffic flow has been improved and congestion reduced in the communities of Boyle Heights, West Adams and South Park as a result. In the future the City of Los Angeles will be equipped to be connected to LA County's Information Exchange Network, which allows for the sharing of traffic signal data across jurisdictional boundaries to allow for improved traffic management;
- Transportation Demand Management – A number of innovative projects, policies, or programs that focus on reducing the dependency on automobile use or modifying travel behavior have been

implemented to improve the efficiency of the Central Area's transportation system. These projects/programs include improved transit information signage, installation of bike racks on all buses that serve the Central Area, development of local land use policies that help influence travel behavior by concentrating different land uses next to transit facilities, and the development of transportation information web pages and kiosks;

- Bikeway and Pedestrian Improvement Projects – MTA has funded numerous bicycle and pedestrian projects within the Central Area to promote bicycling and walking as viable alternatives to automobile travel. Bicycle projects include the Los Angeles River Bike Path projects, the Arroyo Seco Bike Path, and the Taylor Yard bike bridge. Pedestrian projects include the Northeast Community Linkage projects, El Pueblo Pedestrian Improvements, Vermont Avenue Sidewalk Widening project, the Little Tokyo Pedestrian Linkages, and the Hollywood Pedestrian/Transit Corridors project;
- Transportation Enhancements – A number of transportation enhancement projects have been undertaken to enhance the quality of life in many the highly urbanized communities within the City of LA and parts of LA County. These projects include walking brochures, landscaping in the medians along major arterials, gateway signs, pocket parks, street runoff catch basins, tree planting and law enforcement bike safety program; and
- Transit – MTA along with LADOT are working together to improve transit access to the Central Area by implementing bus stop improvements and employing new transit technologies. The MTA Board approved bus signal priority projects for each of the Central Area's four Metro Rapid lines. Additional bus signal priority projects are planned for each of the new Metro Rapid lines scheduled for implementation by 2008. Additionally, MTA worked with LADOT to implement an am-peak bus High Occupancy Vehicle Lane on Figueroa Street to improve transit access between the Harbor Transitway and downtown LA. Two Metro Service Sectors, the Central/Westside, and the San Gabriel Valley cover the Central Area. Both sectors began operation on July 1, 2002.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with the City of LA to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and

congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Improving mobility and capacity on arterials through innovative signal synchronization, transit coordination and other ITS technologies;
- Improving transit access to downtown LA by improving connections to the Harbor Transitway and the El Monte Busway;
- Working with appropriate city and county agencies to develop policies that encourage mixed-use, transit-oriented development along major transit corridors;
- Improving pedestrian connections between transit facilities and major destinations/activity centers;
- Working with municipal transit operators to expand transit service within the Central Area to accommodate changing travel patterns resulting from downtown LA's continued redevelopment;
- Improving access from the I-5 freeway to Downtown LA;
- As recommended by the US-101 Freeway Corridor Study, improve operation of US-101 corridor by improving freeway exit lanes, freeway auxiliary lanes, parallel arterials, bus and rail transit enhancements/expansions, park-and-ride/transit center expansions, and provide continued support for transportation demand management strategies, subject to further community review and refinement and modification by affected agencies;
- Improving bicycle connections between the Los Angeles River trail and downtown LA; and
- Coordinating TEA projects in conjunction with major Central Area investments such as the Cornfields and Taylor Yards State Parks, the LA River, the new LAUSD's schools construction program, and loft conversions within downtown LA.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the Central Los Angeles County subregion on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

SAN FERNANDO VALLEY SUBREGION

SAN FERNANDO VALLEY CITIES AND COMMUNITIES

San Fernando Valley portion of the City of Los Angeles and City of San Fernando

THE SETTING

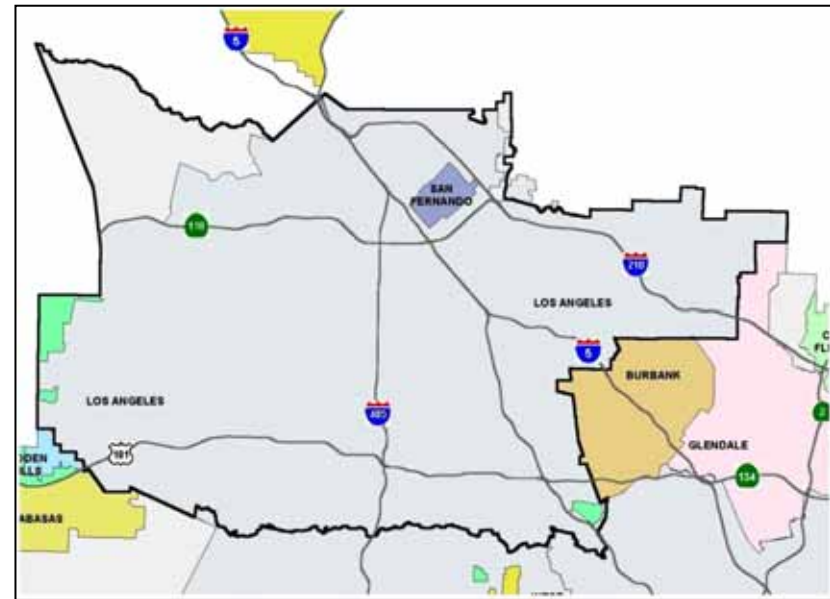
The Valley fans north of the Hollywood Hills and Santa Monica, west to the Las Virgenes/Malibu area and eastwards near the San Gabriel Valley towards the Arroyo Verdugo subregion. This subregion occupies the north and central portions of Los Angeles County.

MAJOR TRANSPORTATION FACILITIES

A number of freeways crisscross this subregion including the Golden State (I-5), Ventura (US-101 and SR-134), Simi Valley (SR-118), Hollywood (SR-170), San Diego (I-405) and Foothill (I-210) freeways. There are several carpool lanes running on SR-118, SR-134, SR-170 and I-405.

Municipal operators as well as MTA provide regional bus service to the subregion. The Metro Red Line serves this area between downtown Los Angeles, Universal City and North Hollywood. Metrolink's Antelope Valley and Ventura County Lines also provide rail service into this subregion.

MTA kicked off the San Fernando Valley Metro Rapidway project on January 17, 2003. The 14-mile landscaped Rapidway, with 13 stations spaced about a mile apart, will run between the North Hollywood Metro Rail station and Warner Center. When opened in 2005, it will provide quicker, more efficient bus service to Valley commuters and easier access to the Metro Rail system.



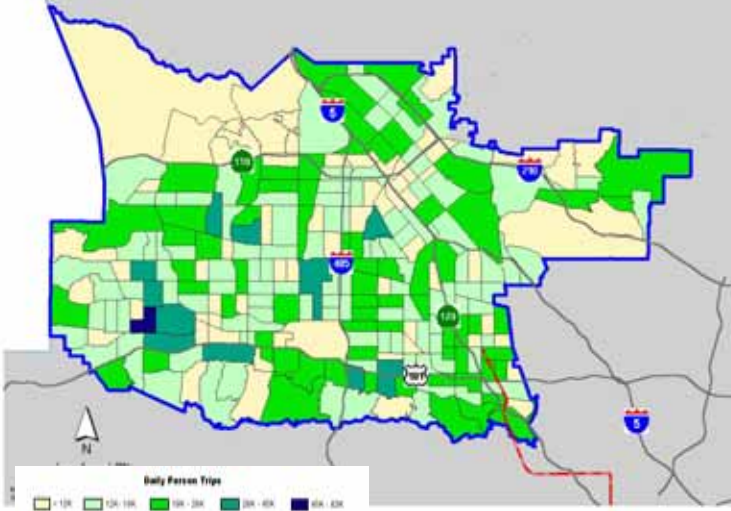
MOBILITY CHALLENGES

The Valley is now growing at a faster rate than many of the other subregions, and not surprisingly its demographics are changing while its transportation needs are growing. This subregion is growing fastest at its east and west extremities, where transportation service must be accommodated as volumes of service needs remain concentrated in the Central core of east-west service through the Valley.

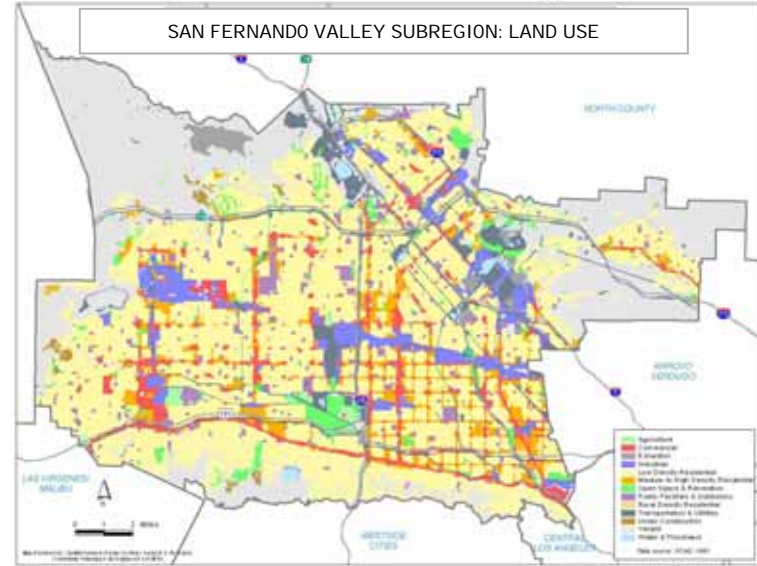
As with the Westside Cities, I-405 is the conduit between the San Fernando Valley and West Los Angeles. This freeway brings streams of commuters from West LA into the Valley. In addition to the freeway, Sepulveda Boulevard, Laurel Canyon Boulevard, Coldwater Canyon Avenue and Beverly Glen Boulevard are major non-freeway connections between the Valley, Westside and Beverly Hills area. I-405 is also a primary route to LAX from the San Fernando Valley. To avoid I-405 congestion, Valley residents commonly use the narrow north-south routes such as Coldwater Canyon and Laurel Canyon Boulevards.

SAN FERNANDO VALLEY TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS

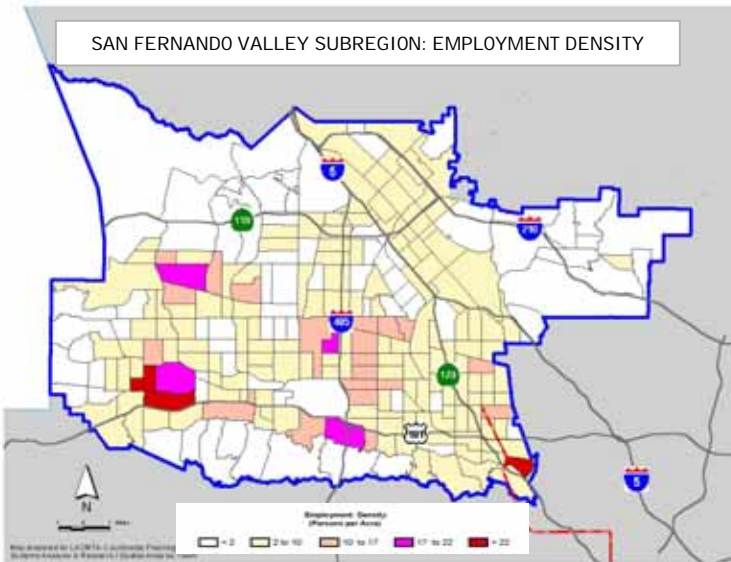
SAN FERNANDO VALLEY SUBREGION: DAILY TRIPS PRODUCED & ATTRACTED



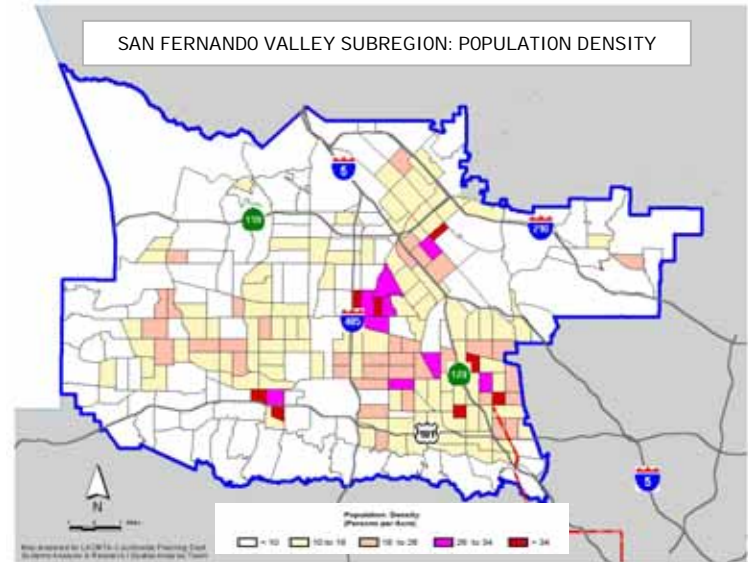
SAN FERNANDO VALLEY SUBREGION: LAND USE



SAN FERNANDO VALLEY SUBREGION: EMPLOYMENT DENSITY



SAN FERNANDO VALLEY SUBREGION: POPULATION DENSITY



WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the San Fernando Valley cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- San Fernando Valley Metro Rapidway between North Hollywood and Warner Center;
- Initial improvements to the San Fernando Valley North/South Metro Rapid Transitway (schedule for other elements is subject to future funding availability);
- Implementation of two new Metro Rapid bus lines;
- I-5 carpool lanes from SR-118 to SR-14;
- I-405/US 101 Connector Gap Closure;
- I-405 northbound carpool lane from Greenleaf to Burbank;
- I-5 carpool lanes from SR-170 to SR-118;
- I-5 carpool lanes from SR-134 to SR-170 w/Empire (design only);
- I-5/SR-14 carpool lane direct connector (north to/from south) (design only, construction is subject to future funding availability);
- Metrolink locomotive and passenger coach purchases; and
- Major corridor study along US-101 freeway.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeway – Carpool lanes on I-5 (SR-170 to SR-118), I-405/US-101 Connector Gap Closure, and I-405 carpool and auxiliary lanes;
- Arterials – Cahuenga Boulevard Widening from Magnolia Boulevard to Lankershim Boulevard, Tampa Bridge Replacement and Widening, and Valley Circle Boulevard/US-101 Interchange Improvements;
- Signal Synchronization – North Hollywood ATSAC Project, Victory Boulevard ATSAC, and Van Nuys Boulevard Transit Priority Treatments;
- Transportation Demand Management – Northridge Metrolink Station/Northridge Shuttles, Chatsworth Historic Transportation and Movie Museum, and Smart Shuttle Program – West San Fernando Valley;

- Bikeway and Pedestrian Improvement Projects – San Fernando Road ROW Bike Path Phase II, Chandler Bikeway Extension, and San Fernando Valley East-West Bike Path;
- Transportation Enhancements – East San Fernando Valley Scenic Corridors Vista Points, Chandler Boulevard Median Landscaping, and Sherman Way Median Landscaping; and
- Transit – Warner Center Transit Hub, Northridge Transit Center, and DASH – Van Nuys Station.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with cities in the San Fernando Valley to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Improving freeway traffic flows on US-101, SR-170, SR-134 and I-405;
- As recommended by the US-101 Freeway Corridor Study, improve operation of US-101 corridor by improving freeway exit lanes, freeway auxiliary lanes, parallel arterials, bus and rail transit enhancements/expansions, park-and-ride/transit center expansions, and provide continued support for transportation demand management strategies, subject to further community review and refinement and modification by affected agencies;
- Widening arterial streets and improving arterial/freeway interchanges;
- Implementing low-cost signal synchronization and TSM projects to improve transportation system capacity; and
- Improving street landscaping and promoting pedestrian and bicycle mobility.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the San Fernando Valley subregion on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

SAN GABRIEL VALLEY SUBREGION

SAN GABRIEL VALLEY CITIES

Alhambra, Arcadia, Azusa, Baldwin Park, Bradbury, Claremont, Covina, Diamond Bar, Duarte, El Monte, Glendora, Industry, Irwindale, La Puente, La Verne, Monrovia, Montebello, Monterey Park, Pasadena, Pomona, Rosemead, San Dimas, San Gabriel, San Marino, Sierra Madre, South El Monte, South Pasadena, Temple City, Walnut, and West Covina

SETTING

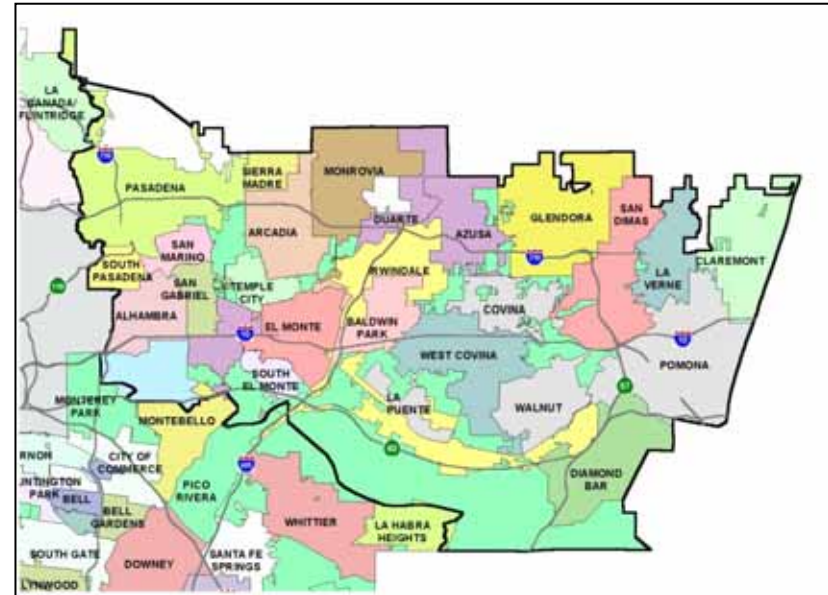
The San Gabriel Valley is located in the easternmost portion of Los Angeles County. This subregion is bounded on the west by the Cities of Pasadena, South Pasadena, Alhambra and Monterey Park, on the north by the San Gabriel Mountains, on the east by the Los Angeles County/San Bernardino County line, and on the south by the City of Montebello and the communities of Hacienda Heights and Rowland Heights.

The area is approximately 97% built-out leaving very little undeveloped land for commercial or industrial uses. The subregion encompasses thirty jurisdictions and a portion of an unincorporated county area whose combined population represents 20% of the total population of Los Angeles County. The San Gabriel Valley subregion is characterized by socioeconomic and ethnic diversity and is comprised of some of the most affluent as well as the lowest income communities within Los Angeles County.

MAJOR TRANSPORTATION FACILITIES

One of the unique transportation features of this subregion is the significant number of freeways that traverse it; namely, San Bernardino (I-10), Foothill (I-210), Pasadena (SR-110), Orange (SR-57), Pomona (SR-60), Chino Valley (SR-71), San Gabriel River (I-605) and the Long Beach (I-710) Freeways.

The Foothill Freeway has a carpool lane in each direction through the entire San Gabriel Valley subregion. Carpool lanes also exist on portions

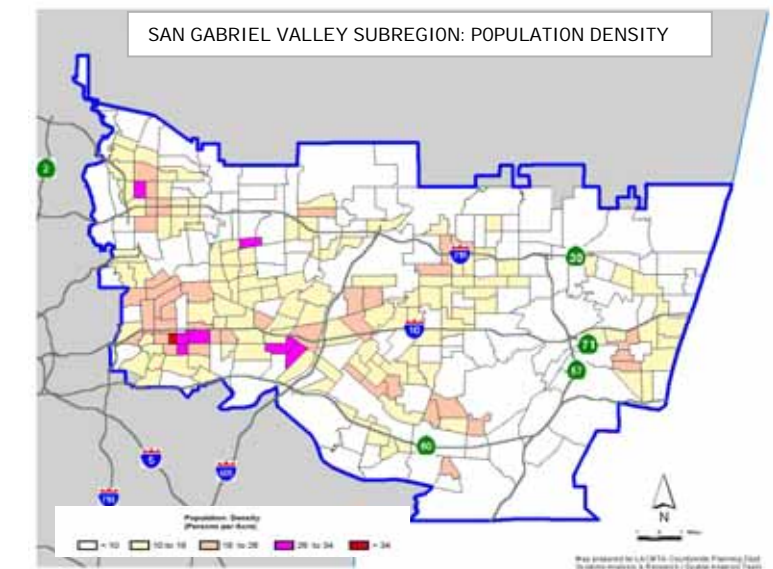
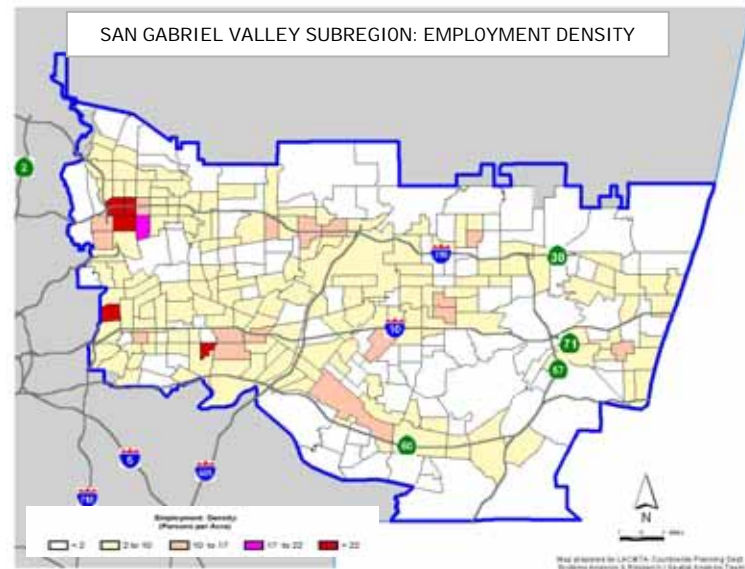
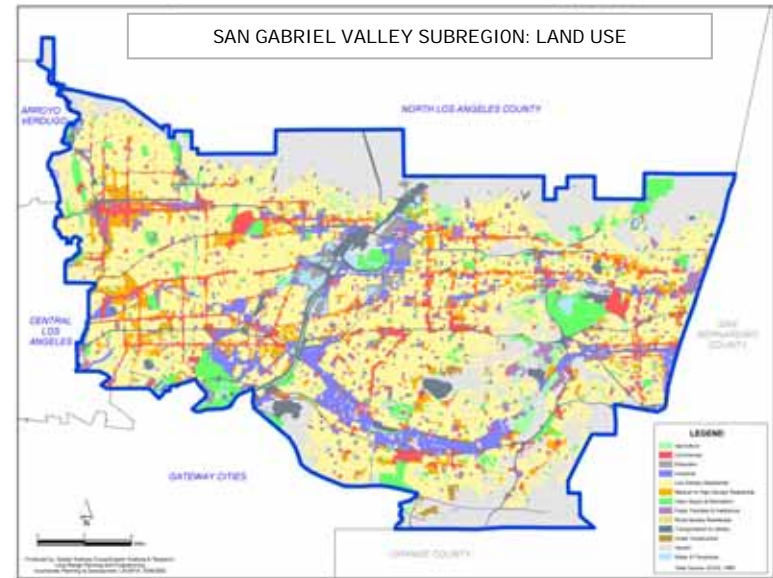
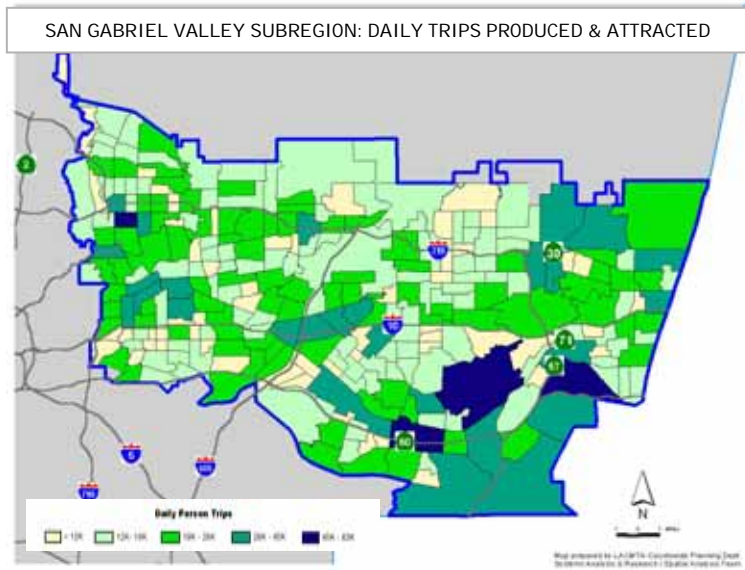


of I-10, I-605 and SR-60. The El Monte Busway on the I-10, serves both buses and carpools and is the highest-volume carpool facility in Los Angeles County.

The Alameda Corridor East (ACE) generally parallels the San Bernardino and Pomona Freeways along the Union Pacific and former Southern Pacific rail lines. The ACE project's aim is to improve mobility, enhance safety and mitigate the effects of increased rail freight traffic from the ports. Phase I of the ACE project, currently underway, includes safety upgrades, traffic signal control measures and roadway widenings at railroad crossings as well as eight grade separations throughout the corridor.

The San Gabriel Valley subregion is served by the San Bernardino and Riverside Metrolink lines whose combined ridership accounts for approximately 42 per cent of the System's total weekday ridership. The Metro Gold Line, which opened in July 2003, serves the subregion with seven stations located in the cities of South Pasadena and Pasadena.

SAN GABRIEL VALLEY TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS



MTA, Foothill and Montebello Transit provide bus service to the subregion. Most cities in this subregion provide dial-a-ride services within their city limits to seniors and persons with disabilities, with some providing additional service to the general public through community shuttle programs.

MOBILITY CHALLENGES

Mitigating the impacts of traffic generated by the movement of goods via trucks and rail is one of the foremost mobility challenges for the subregion. Much of the freight traffic carrying goods from the ports of Los Angeles and Long Beach traverses the subregion's freeways, specifically SR-60 and I-10, en route to neighboring counties and other major cities in the nation. Moreover, railroad and arterial grade crossings often create traffic delays and accidents and remain a priority for the subregion. To this end, the subregion has investigated the viability of truck lanes on some of the area's freeways and is proactive in securing funds to complete both phases of the Alameda Corridor East project.

A high percentage of traffic within this subregion is interregional commuter traffic from neighboring counties (i.e., San Bernardino, Riverside, Orange) destined for employment sites in downtown Los Angeles as well as other subregions of Los Angeles County. In the westernmost portion of the subregion, north/south mobility is severely hindered by the I-710 freeway gap. Several jurisdictions within the subregion are interested in a viable alternative with minimal impact to residences that will allow extension of I-710 to close this gap.

Safety and mobility are also challenged by aging and/or inadequate transportation infrastructure, which requires ongoing maintenance and operational improvements. This is specifically true for major arterials that serve as the subregion's backbone in providing north/south mobility through the jurisdictions.

WHAT THE FUTURE HOLDS

- To address the subregion's mobility challenges, the San Gabriel cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Gold Line service and rail stations from Union Station to Sierra Madre Villa (opened in July 2003);
- Gold Line extension phase I: Sierra Madre Villa to Irwindale (Preliminary Engineering);
- Alameda Corridor East program;
- Implementation of three new Metro Rapid bus lines;
- Improvements to Metrolink's San Bernardino Line (rolling stock phase 1B is subject to future funding availability);
- I-10 carpool lanes from Baldwin Avenue to I-605;
- SR-57/SR-60 carpool lane direct connectors;
- SR-60 carpool lanes from I-605 to Brea Canyon Rd.;
- I-10 carpool lanes from I-605 to Puente Avenue;
- Ramona grade separation;
- Metrolink rolling stock Maintenance facility in San Bernardino phase 1A (phase 1B is subject to future funding availability);
- Metrolink locomotive and passenger coach purchases;
- Traffic Signal Forums;
- Traffic signal timing coordination on numerous arterials; and
- Initiate study of I-710 Gap Closure Tunnel alternative.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeways - The I-210/SR-30 Freeway Gap Closure Project opened a new 8-lane freeway through the cities of La Verne and Claremont in Los Angeles County. Carpool lanes on I-10 through the communities of El Monte, Pomona and Claremont are currently being constructed and on SR-60 through the communities of Industry, Hacienda Heights and Rowland Heights are currently being designed;
- Arterials - To increase capacity and enhance mobility by reducing congestion, major arterials and intersections have undergone various improvements. These include: Garfield Avenue, Fremont Avenue, Mission Road, Valley Boulevard, Towne Avenue, Beverly Boulevard, Atlantic Boulevard, and Azusa Avenue;
- Signal Synchronization - To improve traffic flow throughout the subregion, major arterial corridor signals have been or will be

synchronized in cities such as Pasadena, Diamond Bar, Covina, and Pomona. Additionally, the subregion is the first in the County to begin implementing the Information Exchange Network, which allows for the sharing of traffic signal data across jurisdictional boundaries to allow for improved traffic management. The Los Angeles County Department of Public Works will also be locating their regional traffic management center in Alhambra. Intelligent Transportation System (ITS) technology is also being deployed in an effort to squeeze additional capacity out of the arterials by allowing for improved traffic management through the sharing of traffic and other types of information both within and outside the subregion. Along with the County and the San Gabriel Valley Traffic Forum, cities such as Pasadena and Arcadia are currently working on ITS projects;

- Transportation Demand Management – To improve the capacity and inter-modal efficiency of the transportation system, a number of projects that involve policies, programs or actions that focus on reducing dependency on automobile use or modifying travel behavior have been or will be implemented in the San Gabriel Valley including South Pasadena’s Mission Meridian Multi-Use Transit- Oriented Parking which will serve Metro Gold Line users, SCRRA’s GPS and Software for Paging and Internet Voice Response and El Monte’s San Gabriel Valley Metro Hub project;
- Bikeway and Pedestrian Improvement Projects – To encourage residents and commuters to use alternate forms of transportation, the MTA has funded several bikeway and pedestrian transportation projects including the Duarte Bike Trail Improvements, Diamond Bar’s Brea Canyon Road Class 1 Bike Trail and Monterey Park’s Pedestrian Facilities at East LA College;
- Transportation Enhancements – A number of transportation enhancement projects have been undertaken to enhance the quality of life and provide more livable communities including South Pasadena’s Oaklawn Bridge Restoration project, Pomona’s Mission Boulevard Corridor Landscape Enhancements and West Covina’s South Azusa Avenue Median Landscaping Phase I; and
- Transit – MTA and the subregion’s municipal transit operators are working to improve transit facilities by providing transit centers, bus stop improvements and utilizing new transit technologies. Foothill

Transit recently completed two state-of-the-art transit facilities in Pomona and Arcadia. The Metro San Gabriel Sector began operation in FY 03. Its offices are located in the City of El Monte. This body will also make recommendations on transit service improvements for the subregion.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with the San Gabriel Valley Council of Governments to gather input on additional subregional needs and priorities. A summary of recommendations from subregional stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Improve mobility and capacity on arterial streets through innovative signal synchronization, transit coordination and other ITS technologies;
- Increase the capacity of major east-west and north-south arterials through improvements such as roadway widenings, grade separations, gap closures and intersection improvements;
- Implement Mission Boulevard/SR-71 improvement project;
- Implement SR-71 freeway upgrade and carpool lane between SR-60 and I-210;
- Implement I-10/I-605 interchange upgrade;
- Fund engineering of I-710 gap closure tunnel;
- Increase transit services along major corridors by implementing bus signal priority and expanding MTA and municipal operator services in the subregion;
Expand Metrolink service and capacity on San Bernardino and Riverside lines;
- Complete all carpool lane gaps within the subregion;
- Mitigate the impacts of traffic generated by the movement of goods through implementation of truck lanes;
- Conduct Eastern Gateway Freeway Corridor Improvement Study;
- Continue to implement TDM and bicycle and pedestrian improvements to provide connections to transit and to provide a viable alternative to the single occupant drivers; and

- Revitalize local communities and to ensure a more livable environment within the San Gabriel Valley region.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the San Gabriel Valley region on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

SOUTH BAY CITIES SUBREGION

SOUTH BAY CITIES

Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, City of Los Angeles – San Pedro/Wilmington Harbor Corridor, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Torrance, and parts of unincorporated Los Angeles County

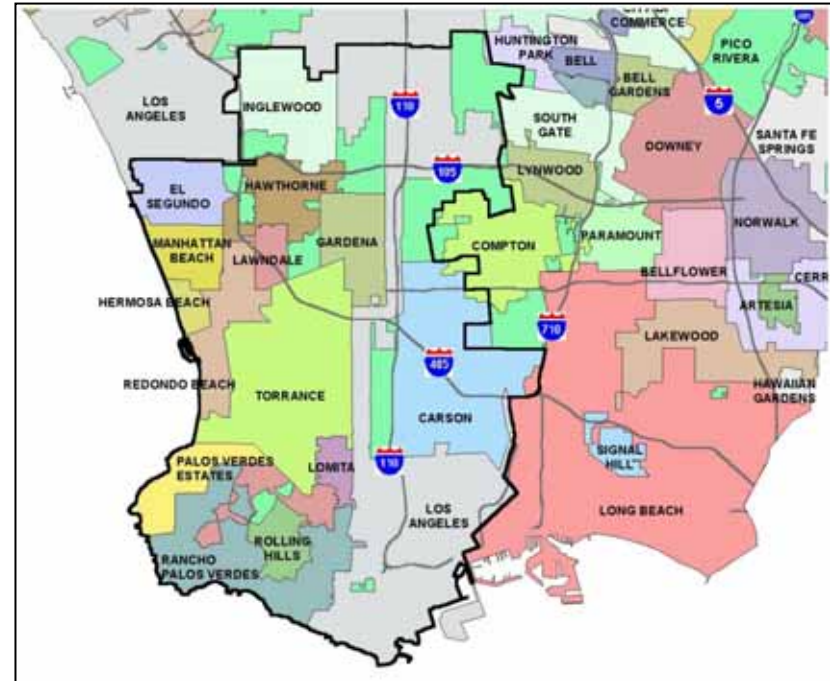
SETTING

The South Bay cities are located at the southern end of the Santa Monica Bay – bounded by the Pacific Ocean on the west and south; the Port of Los Angeles, the City of Carson and the Harbor Freeway (I-110) on the east and the Marina Freeway (SR-90) and the cities of Inglewood and Los Angeles on the north.

The area is almost entirely built-out in terms of residential uses and has somewhat limited growth available for commercial and industrial uses. Land use patterns are such that new businesses have replaced older ones, rather than adding to the “stock” of subregional businesses. Typically, residential development follows a general pattern where the communities in the Beach cities and on the peninsula are largely high-income areas, and the central and eastern portions of the subregion contain middle-income communities.

MAJOR TRANSPORTATION FACILITIES

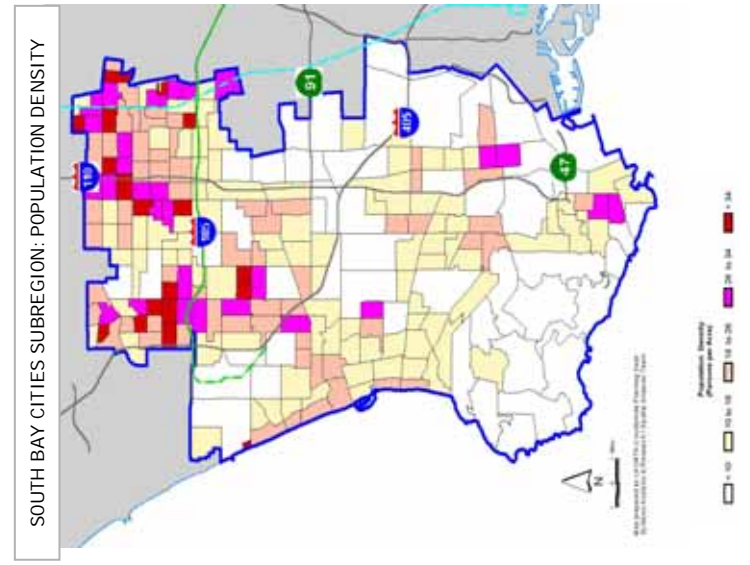
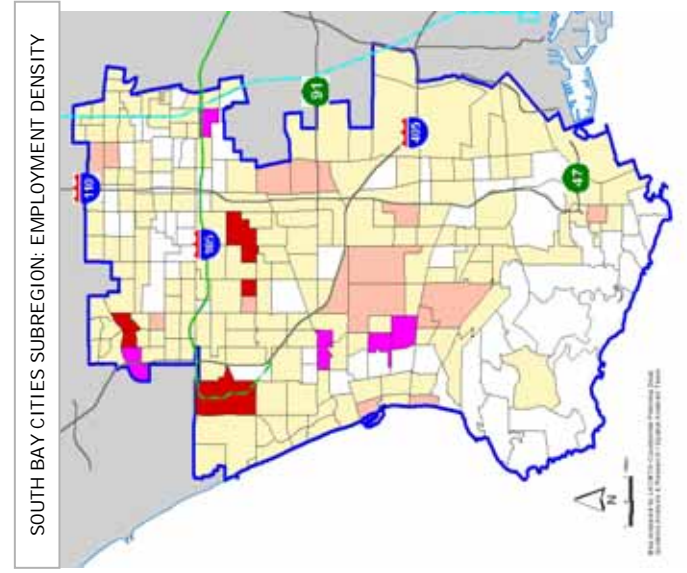
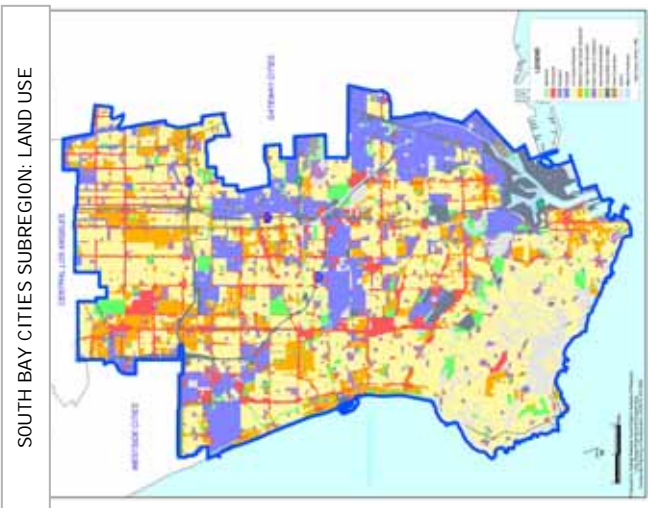
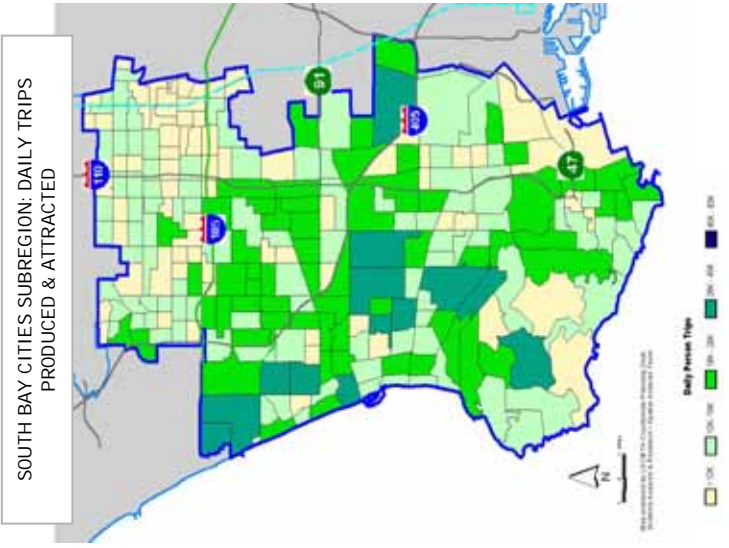
The Glenn Anderson (or Century, I-105), Harbor (I-110) and the San Diego (I-405) Freeways serve the South Bay area. The Gardena Freeway (SR-91) weaves in and out of the easternmost portion of the subregion. A transitway, which provides freeway level and elevated carpool lanes and a busway, runs down the center of the Harbor Freeway from USC in Central Los Angeles southwards to SR-91. A unique feature of the carpool lanes on the I-110 and I-105 freeways is that they flow directly into each other via an elevated direct connector interchange, bypassing the at-grade interchange used by other traffic.



The Metro Green Line runs in the median of the I-105 Freeway from Norwalk in the east to the southern edge of Los Angeles International Airport then south to Redondo Beach. A short segment of the Alameda Corridor runs along the subregion's eastern border.

The area has regional and local transit services provided by MTA, Torrance Transit, Municipal Area Express (MAX), Gardena Municipal Bus Lines, Long Beach Transit, Palos Verdes Transit, Redondo Beach WAVE, Carson Circuit, Lawndale Beat, San Pedro Trolley, and LADOT's Commuter Express. In addition, many local jurisdictions operate transit and dial-a-ride services within their boundaries. Currently, MTA is operating Metro Rapid lines within the subregional boundaries. Additional lines are scheduled to begin service within this plan's time frame including service along Crenshaw Boulevard that is scheduled to start in December 2003.

SOUTH BAY CITIES
TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS



MOBILITY CHALLENGES

The South Bay has two major transportation hubs on its borders — Los Angeles International Airport (LAX), and the Ports of LA and Long Beach. LAX passenger trips substantially add to traffic volumes on the freeways and surface streets traversing the area. Cargo and truck traffic also impact the subregion's transportation system. During the economic downturn in the 1990s, the South Bay adapted existing business structures to warehousing, which has led to increased truck traffic, added congestion and associated pavement damage on arterials and freeways (I-405 and I-110). At the same time, transporting goods into and out of the subregion has added traffic volumes to the freeways, placing additional capacity pressure on the aging on-ramps. In addition, major trip generators/attractors such as the Los Angeles Air Force Base and National Training Center, add to the considerable demand for commuter travel and overall travel mobility needs of the subregion.

The greatest needs for the subregion are to upgrade the east-west and north-south arterials so they can provide alternative routes to I-405 and I-105 and to improve freeway on- and off-ramps to accommodate increasing traffic volumes and to alleviate bottlenecks.

WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the South Bay cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Initial improvements to the Crenshaw Corridor Metro Rapid Transitway (schedule for other elements is subject to future funding availability);
- Implementation of ten new Metro Rapid bus lines;
- I-405 carpool lanes from Century Boulevard to SR-90; and
- Major arterial traffic signal synchronization and intelligent transportation system improvements.

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeways – Closing the gap on the I-405 carpool lane in both directions between the SR-90 and the I-10 Freeways, widening the I-105 Freeway off-ramp at Sepulveda Boulevard, and interchange improvements at Arbor Vitae Street and the I-405 Freeway;
- Arterials – To increase capacity and improve mobility by reducing congestion, major arterials and intersections have been improved, or are currently underway. These include: Hawthorne, Torrance and Lomita Boulevards and Aviation and Manhattan Beach Boulevard widening. In addition, some grade separation and bridge widening projects have also been undertaken at Del Amo Boulevard, Douglas Street and La Tijera Boulevard;
- Signal Synchronization – To improve traffic flow throughout the subregion major arterial corridor signals have been or will be synchronized in cities such as Torrance, El Segundo, Inglewood, Hawthorne and the communities of San Pedro, Wilmington and Westchester within the City of LA. Additionally, the subregion will be among the first in the county to be equipped with the Information Exchange Network (IEN), which allows for the sharing of traffic signal data across jurisdictional boundaries to allow for improved traffic management. Intelligent Transportation System (ITS) technology to squeeze additional capacity out of the arterials by allowing for improved traffic management through the sharing of traffic and other types of information both within and outside the subregion is also being deployed. A Transportation Management Center will be located in the South Bay housing the IEN Corridor. Along with the County and the South Bay Traffic Forum, the Cities of Inglewood and El Segundo are currently working on ITS projects;
- Transportation Demand Management –To improve the capacity and inter-modal efficiency of the transportation system, a number of projects that involve policies, programs or actions that focus on reducing dependency on automobile use or modifying travel behavior have been or will be implemented in the South Bay including the Redondo Beach/South Bay Transit Providers Commuter Centers;
- Bikeway and Pedestrian Improvement Projects – To encourage residents and commuters to use other alternate forms of transportation, MTA has funded several bikeway and pedestrian transportation projects including Bike trail improvements at Playa del Rey, Redondo Beach, and pedestrian and bikeway improvements along Del Amo and the Dominguez Channel;

- Transportation Enhancements – A number of transportation enhancement projects have been undertaken to enhance the quality of life and provide more livable communities including the landscaping in the medians along major arterials, gateway signs indicating the entry into particular South Bay cities, improvements to the White Point Nature Reserve in San Pedro, and Deep Valley Drive streetscape in Rolling Hills Estates; and
- Transit – MTA and the municipal transit operators are working to improve transit facilities in the subregion by providing transit centers, bus stop improvements and utilizing new transit technologies. The MTA Board approved a bus signal priority project, which will be piloted along the Crenshaw corridor. This pilot will begin operation in early FY 04 and will be used to expand the Metro Rapid system into the South Bay subregion, particularly along the Crenshaw Corridor. The Metro South Bay Service Sector began operation during FY 03. Its offices are located in the City of Torrance and the Service Sector Council was nominated by the South Bay Council of Governments and ratified by the MTA Board in mid-FY 03, the first service sector council to become operational. This body will make recommendations on transit service improvements for the subregion.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with local jurisdictions, stakeholders, and representatives of the South Bay Cities Council of Governments to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Improve mobility and capacity on arterial streets through innovative signal synchronization, bus signal priority, and other ITS technologies;
- Increase the capacity of major east-west and north-south arterials through improvements such as roadway widenings, grade separations, gap closures and intersection improvements;

- Increase transit services along major corridors by providing bus signal priority, expanding the Metro Rapid program along major South Bay corridors such as Hawthorne Boulevard, Sepulveda Boulevard and Manchester Avenue, and expand express bus service provided by municipal operators and MTA to the region's major activity centers and destinations such as LAX and the beaches;
- Conduct planning for Metro Green Line extension to South Bay Galleria;
- Promote the Harbor Transitway;
- Construct the Crenshaw Corridor transitway;
- Improve the southbound and northbound I-405 on- and off-ramps at numerous locations by re-configuring, widening and altering metering/signalization timing;
- Implementing I-405 at Rosecrans Access Improvements;
- Constructing or widening auxiliary lanes at various locations along I-405 primarily in the northbound direction; and
- Revitalize local communities to ensure a more livable environment within the South Bay region.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the South Bay Cities subregion on an on-going basis to ensure that its priorities are taken into consideration during each annual update.

WESTSIDE CITIES SUBREGION

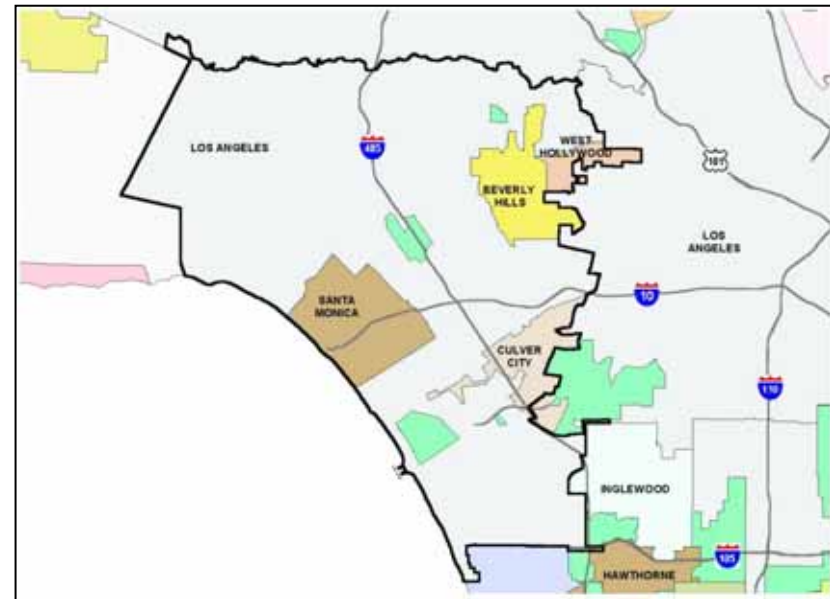
THE WESTSIDE CITIES

Beverly Hills, Culver City, Santa Monica, West Hollywood, parts of the City and County of Los Angeles including Pacific Palisades, Brentwood, Century City, Westwood, Westchester, LAX, Baldwin Hills, Ladera Heights, Marina del Rey, and Venice

SETTING

The Westside subregion covers an area of approximately 102 square miles and is bounded by Mulholland Drive to the north, the Pacific Ocean to the west, the South Bay Cities subregion to the south and the Central Los Angeles subregion to the east. The subregion is a series of developed and mature communities with a mix of low, medium and dense residential, employment and activity centers clustered within close proximity of each other. Some of the Westside cities almost triple in population during the day as they attract hundreds of thousands of people to employment, educational, commercial, cultural and recreational destinations from all over the Los Angeles region. Some of the Westside's neighborhoods (such as parts of Santa Monica, West Hollywood, Westwood and Venice) have population densities almost 10 times the county average, and more people will be calling the Westside home in future years.

Access is key in the Westside as people place a higher value on lifestyle preferences (geographical and community) and on amenities within short distances over job location. This clustering gives the feeling that all traffic seems to lead into the area bounded by Santa Monica, West Los Angeles, Westwood, Century City, Beverly Hills and West Hollywood. The Westside cities' road infrastructure is completely built-out and cannot accommodate any more road capacity without serious community impacts.

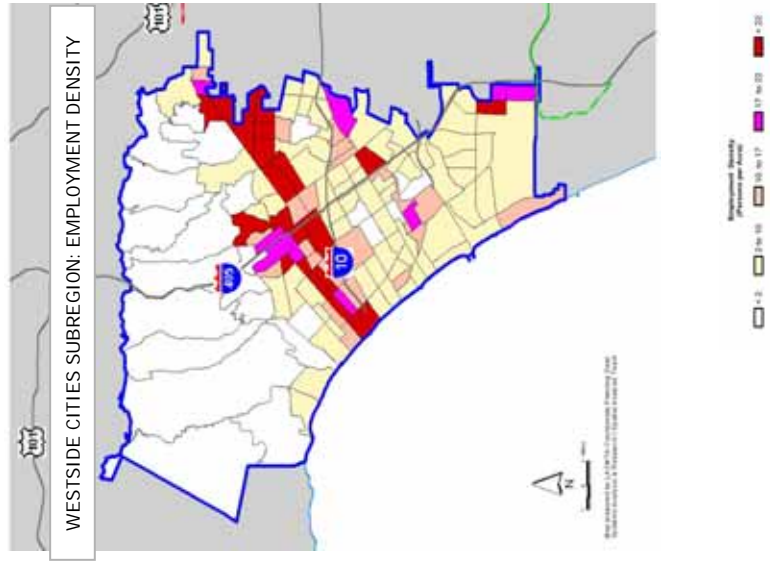
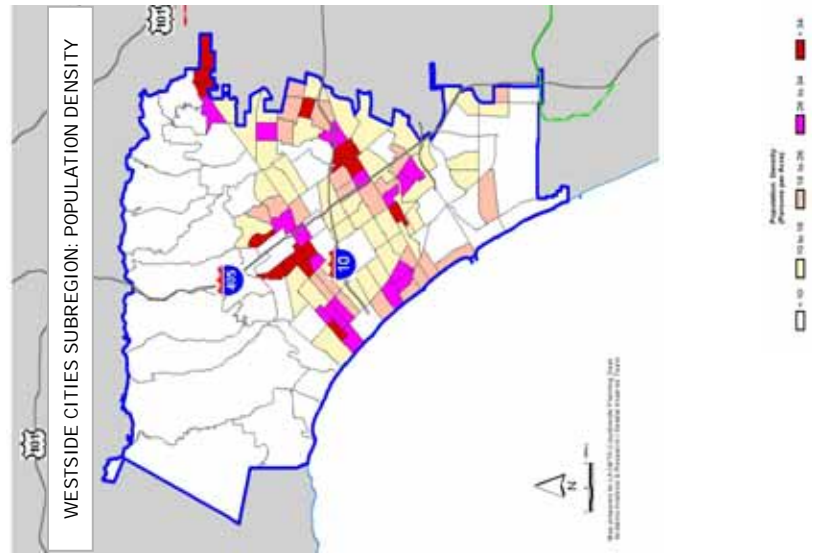
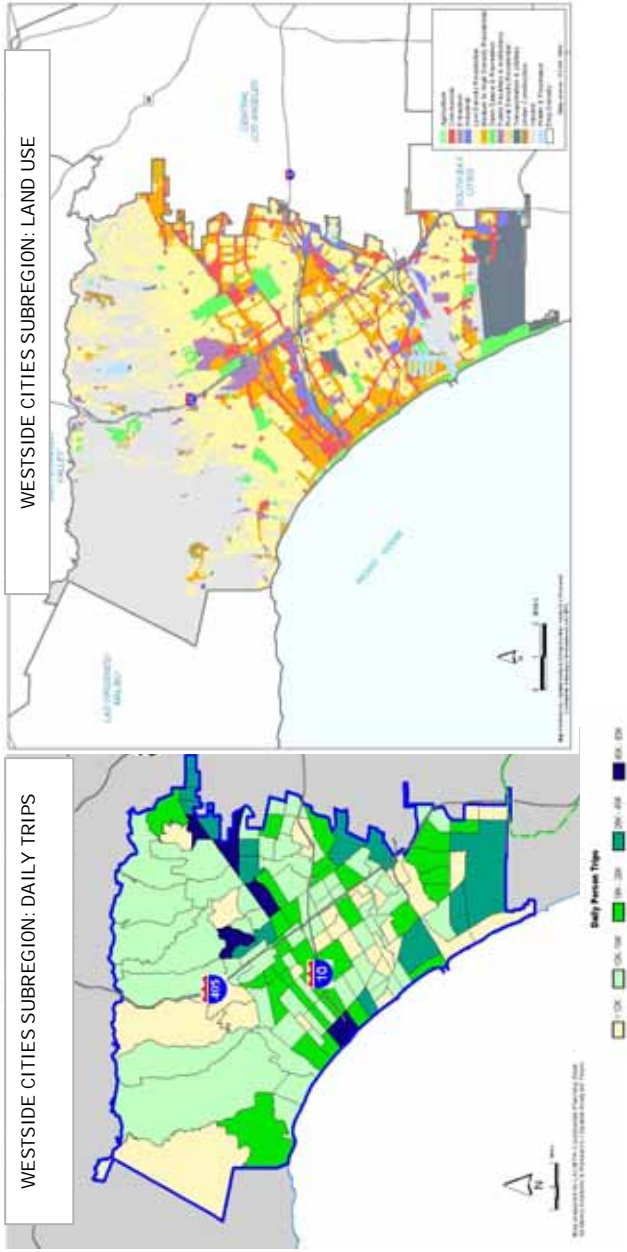


MAJOR TRANSPORTATION FACILITIES

The Santa Monica (I-10), the San Diego (I-405) and Marina (SR-90) freeways serve the Westside area. Several major east-west and north-south boulevards parallel I-10 and I-405 providing primary access to and within the Westside area.

While the subregion has no fixed guideway transit, the area has an extensive network of regional and local transit services provided by MTA, LADOT's Commuter Express, Santa Monica Big Blue Bus, Culver City Bus and Santa Clarita Transit. Community shuttles such as LADOT's DASH and West Hollywood's Cityline provide neighborhood transit service. In addition, several local jurisdictions operate dial-a-ride services within their boundaries. Currently, MTA is operating a Metro Rapid line along Wilshire Boulevard within the subregional boundaries. This line connects to the Metro Red Line at the Wilshire/Western station. More lines are scheduled to begin service within this plan's time frame.

WESTSIDE CITIES
TRIP PRODUCTION AND ATTRACTION, LAND USE, AND DEMOGRAPHICS



MOBILITY CHALLENGES

The greatest needs for the subregion are to improve access within and around the subregion while ensuring that the quality of life is maintained. The subregion will need to look at giving more priority for multi-modal transportation options to increase the people-moving capacity on the heavily-traveled arterial roads and provide more vertically mixed land use developments. Nine of the County's 20 highest volume bus routes are within the subregion and collectively provide up to 30 percent additional people-moving capacity along these corridors. Transit plays a vital role in the Westside's mobility. However buses operating in mixed-flow traffic are challenged to provide reliable service on these ever-increasing congested roads, making transit less effective. Improving the connectivity between arterials and the freeway system is also a key concern. In addition, closing the gaps on the I-405 carpool lanes is vital for trans-regional multi-modal mobility.

WHAT THE FUTURE HOLDS

To address the subregion's mobility challenges, the Westside cities and MTA have undertaken many transportation improvement projects that are expected to be operational by 2009. These include:

- Preliminary engineering for the Exposition Light Rail Transit line from 7th/Metro Center to Culver City (subject to future construction funding availability);
- Metro Rapid Transitway along Wilshire Corridor from Western to the City of Santa Monica;
- Initial improvements to the Crenshaw Corridor Metro Rapid Transitway from Wilshire/Western to LAX (schedule for other elements including connections to LAX is subject to future funding availability);
- Implementation of ten new Metro Rapid bus lines throughout the subregion;
- I-405 carpool lanes from Century Boulevard to I-10 (north- and southbound); and
- I-405 carpool lane from Waterford Street to I-10 (southbound).

MTA has also awarded funding through the Call for Projects process for several additional local priorities that are expected to proceed, subject to funding availability:

- Freeways – To improve the traffic management of the freeways, projects such as the Santa Monica Freeway Smart Corridor, The I-405 southbound carpool lane through the Sepulveda Pass and increased freeway service patrols are underway;
- Arterials – To increase the people-carrying capacity and improve mobility, major arterials and intersections have been improved, or are currently underway. These include: Santa Monica Boulevard in West Hollywood, Santa Monica Boulevard Transit Parkway in Century City, and Pico Boulevard in Santa Monica;
- Signal Synchronization – To improve people-carrying capacity throughout the subregion, major arterial corridor signals have been or will be synchronized in the cities of Los Angeles, Beverly Hills, Culver City, Santa Monica, and West Hollywood. Intelligent Transportation System (ITS) technology to squeeze additional people-carrying capacity out of the arterials by allowing for improved traffic management through the sharing of traffic and other types of information both within and outside the subregion is also being deployed;
- Transportation Demand Management –To improve the capacity and inter-modal efficiency of the transportation system, a number of projects that involve policies, programs or actions that focus on reducing dependency on automobile use or modifying travel behavior have been or will be implemented in the Westside including: Santa Monica Transit Mall and Bike Racks on Culver City's buses;
- Bikeway and Pedestrian Improvement Projects – To encourage residents and commuters to use cleaner forms of transportation, MTA has funded several bikeway and pedestrian transportation projects including pedestrian and bikeway improvements in Culver City, Los Angeles, Santa Monica and West Hollywood;
- Transportation Enhancements – A number of transportation enhancement projects have been undertaken to enhance the quality of life and provide more livable communities including the landscaping in the medians along major arterials, gateway signs indicating the entry into particular Westside cities, renovating Santa Monica Boulevard in West Hollywood and Culver Boulevard in Culver City;

- Transit – MTA and the municipal transit operators are working to improve transit facilities in the subregion by providing transit centers, bus stop improvements and utilizing new transit technologies. The MTA Board approved a 24-line expansion of the Metro Rapid system of which 10 additional lines will serve the Westside with the help of the municipal operators including along Fairfax Avenue, Beverly, Olympic, Pico, Santa Monica, Florence and Crenshaw/LAX, La Cienega, Sepulveda and Lincoln Boulevards. The Metro Central/Westside Service Sector began operation during FY 03. The Westside cities will be forming a Council of Governments and will participate with the newly created Service Sector Council that will be nominated and ratified by the MTA Board within the time-frame of this plan. This body will make recommendations on transit service improvements for the subregion.

STAKEHOLDER RECOMMENDATIONS

During the development of the Short Range Transportation Plan, MTA met with the Westside cities to gather input on additional subregional needs and priorities. A summary of recommendations from subregional and congested corridor stakeholders is incorporated in the Congested Corridor section of this document. These represent potential strategies that could be explored should additional funds become available through 2009. These strategies include, but are not limited to:

- Increase access via fixed guideway rail and bus transit (Exposition LRT, LAX rail and BRT connection and Red Line subway extensions) and expand bus service provided by municipal operators to the region's major activity centers;
- Improve mobility and person-carrying capacity on the major east-west and north-south arterial roads identified by the Westside cities as "grand boulevards" through transit signal synchronization, transit coordination, dedicated bus and bike lanes, and other ITS technologies;
- Expanding the Metro Rapid program in the Westside, providing transit patrons with clean, comfortable and convenient service both at the transit stop and on the transit vehicle;
- Improve the I-10 and I-405 on and off ramps at numerous locations by re-configuring, widening and altering metering/signalization

- timing; and, constructing or widening auxiliary lanes at various locations along the I-405 primarily in the northbound direction;
- Continue to implement Transportation System Management options and identify Clean Mobility Transit Centers with electric bicycle and car sharing and LAX access facilities in Santa Monica, Culver City, Westwood, Century City, Beverly Hills, and West Hollywood;
- Improve diversity of transit vehicles to be able to provide for cross-mountain transit connections from the Valley to the Westside and to accommodate needs such as luggage carrying capacity for buses bound for LAX;
- Implement TDM/ITS systems such as car parking information management to reduce vehicle miles traveled;
- Continue to implement bicycle lane gap closures and pedestrian linkage improvements in Beverly Hills, Los Angeles, and Santa Monica to provide connections to transit and to provide viable options to single occupant drivers; and
- Promote transportation improvements in local communities that promote a more livable and sustainable transportation environment within the Westside subregion.

The Short Range Transportation Plan is a living document that will be continually updated. MTA will work with the Westside subregion on an ongoing basis to ensure that its priorities are taken into consideration during each annual update.

CONGESTED CORRIDORS

CONGESTED CORRIDORS

Through the development of the 2003 Draft Short Range Transportation Plan, six congested corridors have been identified for study. The goal was to assess corridor performance along major countywide travel corridors, identify congestion hot spots that experience significant mobility concerns, identify projects that will be implemented over the next six years to help improve corridor travel, and identify other projects that could benefit the corridor if additional funding becomes available.

The following section provides a corridor profile, including major projects recommended for implementation by 2009, for six major freeway corridors. Corridor profiles also include project recommendations identified by cities and other stakeholders through congested corridor outreach meetings that are candidates for future funding, if additional funding becomes available.

Because of their length, several corridors are divided into segments that have unique characteristics. The corridors and respective segments discussed in the following section are as follows:

- (1) Golden State and Santa Ana Freeways (I-5)
 - Segment A: I-5 between SR-14 and SR-126,
 - Segment B: I-5 between SR-14 and SR-134
 - Segment C: I-5 between SR-134 and I-710
 - Segment D: I-5 between I-710 and Orange County Line
- (2) Antelope Valley Freeway (SR-14 between I-5 and Avenue P)
- (3) San Diego Freeway (I-405)
 - Segment A: I-405 between I-5 and I-10
 - Segment B: I-405 between I-10 and SR 91
 - Segment C: I-405 between SR-91 and Orange County Line
- (4) Long Beach Freeway (I-710 between I-210 and Ports of Long Beach and Los Angeles)
- (5) Santa Monica Freeway (I-10 between SR-1 and I-5)
- (6) San Bernardino and Pomona Freeways (I-10 and SR-60 between I-5 and San Bernardino County Line).

Other congested corridors will be examined in future annual updates to the Plan. Next year's Plan will examine several new corridors, including:

- SR-134 and I-210
- US-101
- I-605
- I-105 and SR-91

By the third Plan update, all congested corridors will have been examined.

GOLDEN STATE FREEWAY (I-5) SEGMENT A: BETWEEN SR-126 AND SR-14

SETTING

Stretching for nearly 5 miles between SR-14 (Antelope Valley Freeway) and SR-126, this segment of I-5 runs through a new, master-planned community. The segment has 4 to 5 mixed-flow lanes for both north and southbound traffic. There are no High Occupancy Vehicle (HOV) or carpool lanes on this segment. Though traffic levels continue to grow along this segment, peak hour travel speeds average above 40 mph for the most heavily-traveled portions and are free-flow for much of the segment.

This segment is not supported by any parallel arterials, except The Old Road, which serves as a collector street and does not have any excess capacity to relieve any congestion off I-5. In addition, this part of the I-5 corridor is serviced by Santa Clarita Transit and commuter rail service on Metrolink's Antelope Valley Line offering service approximately every 30 minutes during peak periods.

CURRENT CONDITIONS

I-5 Segment A has an average daily traffic count of 98,000 to 184,000 with traffic levels decreasing from south to north. As the major interstate highway in California, a large proportion of trips along this segment are destined for Kern County, central and northern California. I-5 is designated as a truck route, and approximately 17 percent of traffic is heavy-duty trucks.

This segment, along with SR-14, connects the Santa Clarita Valley, one of the fastest growing communities in Los Angeles County, with the Los Angeles Basin. Northbound peak hour travel speeds average 40 to 50 mph and above, while southbound peak hour travel speeds are also generally above 40 to 50 mph for most of the segment, decreasing to 40 mph at the I-5/SR-14 interchange.

The volume of truck traffic along this segment has recently become a mobility and safety concern. Slow-moving heavy-duty trucks negotiating

the steep grade along the Newhall Pass cause intermittent stop-and-go conditions and will have an even larger impact on worsening travel conditions as overall traffic volumes increase over the next several decades.

The impact of heavy-duty trucks on this segment of I-5 will be more noticeable than on I-5 south of SR-14 due to the existence of truck lanes separate from the mainline I-5 for 2.5 miles between I-210 and SR-14, and constraints on widening I-5 through the Newhall Pass for extending the truck lanes over this segment.

CONGESTION HOT SPOTS

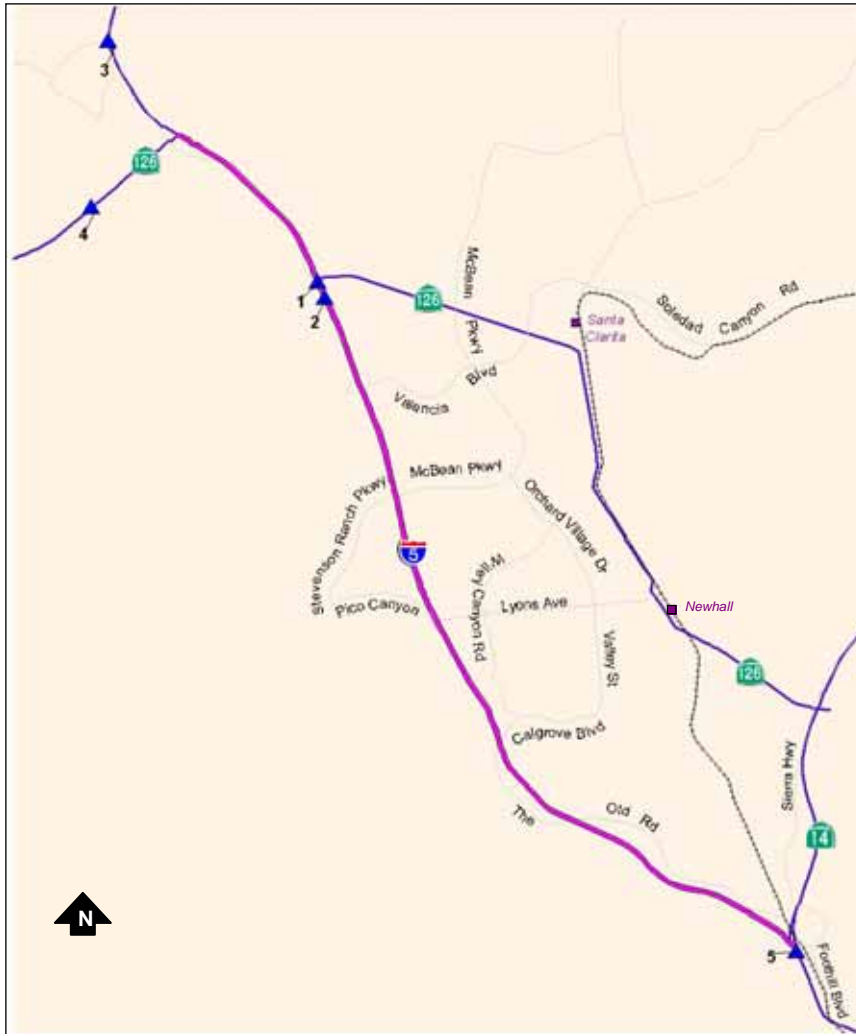
The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with an average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph.

There are currently no major hot spots along this segment of I-5, with the exception of intermittent congestion on the approach to SR-14. However, traffic levels continue to rise over this segment as evidenced by average traffic growth of over 17 percent from 1999 to 2001, and continued high levels of population growth forecasted for the Santa Clarita Valley through 2025.

WHAT THE FUTURE HOLDS

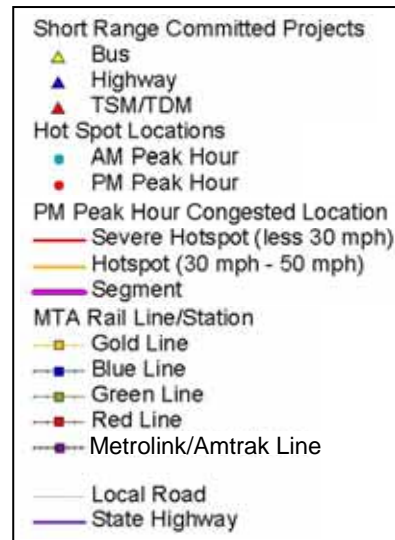
Major short-term projects planned along this segment of I-5 through 2009 include the design of HOV connector ramps between I-5 and SR-14. This and additional major committed projects (pending availability of funding) are identified on the following page.

Previously Funded Major Projects along I-5 Segment A
(between SR-126 and SR-14)



Map ID	Committed Major Projects*
1	Interchange Improvement – will reconstruct the I-5/SR-126 interchange
2	Magic Mountain Parkway Construction – Phase I is to reconstruct the Santa Clara River Bridge using SHOPP funds and Phase II is to reconstruct the I-5 interchange
3	Interchange Improvement – will reconstruct the Hasley Canyon interchange
4	Interchange Improvement – will reconstruct the Commerce Center Drive/SR-126 interchange
5	HOV direct connector ramp – will construct carpool lane connector ramp between I-5 and SR-14

* Some projects may be deferred beyond 2009 due to funding shortfalls



SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-5 Segment A focuses on:

- Increased transit, both local and express service, between Northern Los Angeles County and the Los Angeles basin
- HOV connector
- Improved major highway interchanges

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-5 Segment A Stakeholder Recommendations

Project Title	Project Limit	Project Type
Add a reversible lane on The Old Road/ San Fernando Road	Weldon Canyon Road and SR-14/Sierra Highway	Arterial
Add mixed-flow lane on I-5	Weldon Canyon Rd to SR-14	Freeway
Add HOV and truck lanes to SR-14/I-5 interchange	SR-14/I-5 interchange	Freeway
Add HOV and truck lanes on I-5	SR-14 and SR-126	Freeway
Add HOV and truck lanes to SR-126/I-5 interchange	SR-126/I-5 interchange	Freeway
Separate SR-14 connectors to I-5 with a physical barrier to prevent weaving and queuing	I-5/SR-14 SB merge	Freeway
Increase frequency on existing Santa Clarita Transit routes: 794, 798, 799 (Express Bus)	Santa Clarita Transit: 794, 798, 799	Transit
Add late night and weekend service to specific destinations in Santa Clarita, Valencia, San Fernando and Burbank	Santa Clarita, Valencia, San Fernando, Burbank	Transit
Initiate fixed-route transit service between Santa Clarita and San Fernando Valleys	Santa Clarita and San Fernando Valleys	Transit
Additional local bus routes serving the Castaic Lake area and SR-126	Castaic Lake area and SR-126	Transit
Add trains to Metrolink's Antelope Valley Line	Metrolink between Union Station and Lancaster	Transit
Increase Shuttle service from Metrolink Stations to employment destinations (Newhall, Santa Clarita, Via Princessa, Vincent Grade, Lancaster)	Newhall, Santa Clarita, Via Princessa, Vincent Grade, Lancaster	Transit
Install CCTV and Communications System from SR-14 to the Kern Co. line	In Los Angeles, SR-14 to Kern County Line	TSM/TDM
Add/expand Park/Ride facilities throughout the corridor	Various locations to be determined	TSM/TDM
Expand Freeway Service Patrol throughout the corridor	From SR-126 to SR-14	TSM/TDM

GOLDEN STATE FREEWAY (I-5) SEGMENT B: BETWEEN SR-14 AND SR-134

SETTING

This segment of the I-5 Freeway is about 19 miles in length with 4 to 6 mixed-flow lanes in each direction and no carpool lanes. This segment is heavily congested with peak traffic southbound in the morning and northbound in the afternoon/evening hours. Truck volume is 12% of the total traffic volume. Antelope Valley Transit Authority, Santa Clarita Transit, LADOT, and MTA provide bus service in this corridor segment. Two Metrolink commuter rail lines (Antelope Valley and Ventura County) operate in this segment with combined service headways of approximately 30 minutes.

CURRENT CONDITIONS

I-5 Segment B has an average daily traffic of 203,000 vehicles, ranging from a low of 129,000 at Mission Boulevard to over 280,000 at Osborne Street. Average speeds along the most severely-congested portions of this segment vary from 15 to 30 mph. Slow travel speeds along the segment can largely be attributed to major interchanges, including those at SR-134, SR-170 and Lankershim Boulevard, a parallel alternate route to SR-170; and through the City of Burbank. The severity of travel conditions on this segment of I-5 just south of SR-14 is mitigated by truck-climbing lanes at the approach to Newhall Pass between I-210 and SR-14.

In the AM period, high traffic volumes destined SB for the Burbank media center and downtown Los Angeles experience reduced travel speeds between Burbank Boulevard and SR-134, and between SR-14 and SR-170 (including Lankershim Boulevard). SB conditions at the SR-134 interchange are exacerbated by the lack of an actual freeway-to-freeway interchange between SB I-5 and WB SR-134 with vehicles required to exit the freeway entirely. Speeds improve between Lankershim Boulevard and Burbank Boulevard. NB travel speeds are generally acceptable during the AM period.

In the PM period, NB becomes the dominant direction of travel and recurring bottlenecks between SR-134 and Burbank Blvd and at the SR-170 interchange. Speeds also decrease slightly upon approach to SR-14 but are mitigated by truck climbing lanes over this portion of the segment. SB travelers also experience some delays with average travel speed falling to 45 mph on the approach to SR-170 and Lankershim Boulevard; and dropping to 30 mph before the SR-134 interchange.

A major contributing factor to heavy AM and PM traffic conditions on I-5 is the gap in HOV lane service. Five of the six freeways that connect to I-5 — SR-134, SR-170, I-405, SR-118, I-210, and SR-14 — have HOV lanes. A lack of HOV lanes is compounded by the lack of HOV connectors at these key interchange locations. A dedicated HOV lane through this segment would also greatly enhance line-haul express bus services between North Los Angeles County, the San Fernando Valley, and downtown Los Angeles.

CONGESTION HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with average PM peak speeds between 35 and 50 mph. Segments that are un-shaded have average speeds of greater than 50 mph.

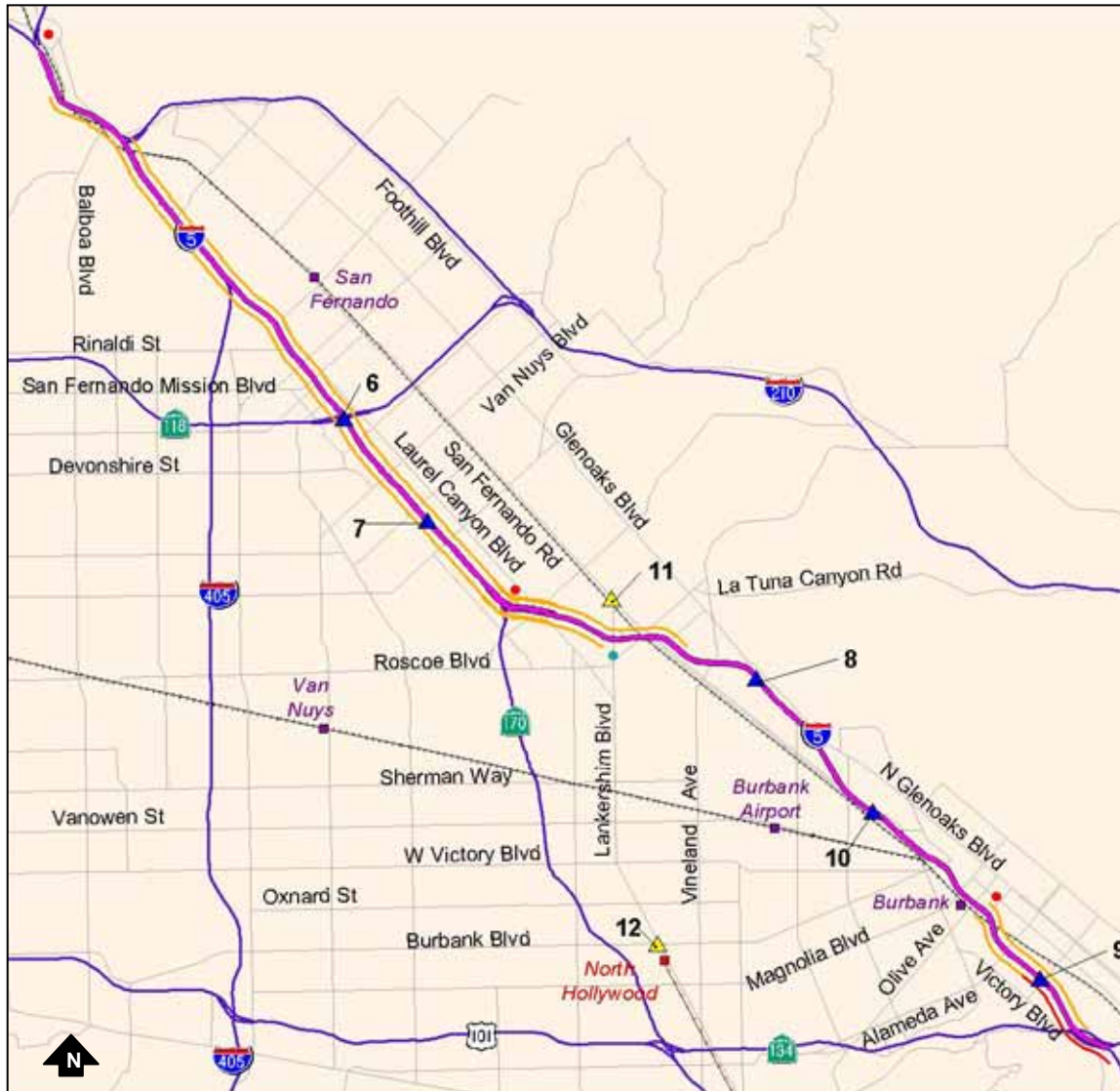
During the weekday AM peak period, traffic congestion is heavier in the southbound direction with recurring hot spots at:

- SB approach to SR-134
- SB I-5 between SR-210 and Lankershim Boulevard

During the PM peak period, I-5 suffers critical bottlenecks at:

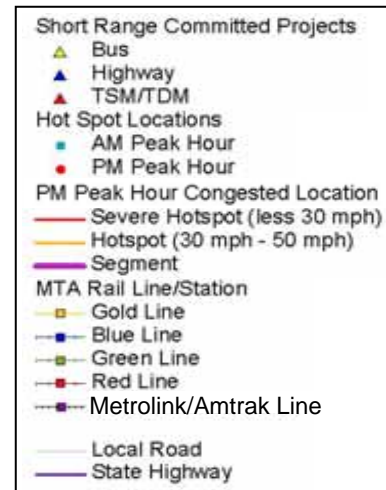
- NB I-5 at Burbank Boulevard
- SB/NB approach to SR-170
- SB/NB approach to SR-14
- SB I-5 at Burbank Boulevard

Previously Funded Major Projects along I-5 Segment B
(between SR-14 and SR-134)



Map ID	Committed Major Projects*
6	HOV lanes from SR-118 to SR-14
7	HOV lanes from SR-170 to SR-118 including the connector ramps
8	Empire Avenue Interchange Improvements: Improvement of the I-5/Empire Avenue Interchange in partnership with Caltrans and the City of Burbank
9	I-5/Western Avenue Interchange Modifications: Realignment of the I-5 northbound on/off ramps at Western Ave. in the City of Glendale, bordering the City of Burbank
10, 12	Metro Rapid – San Fernando Blvd. – Lankershim: Implementation of Metro Rapid service along Lankershim Blvd. and San Fernando Road between the Sylmar/San Fernando Metrolink Station and the North Hollywood Metro Rail Station
11	Metro Rapid – San Fernando Blvd. (South): Implementation of Metro Rapid service along San Fernando Road between Burbank and downtown Los Angeles.

* Some projects may be deferred beyond 2009 due to funding shortfalls



WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-5 through 2009 include the construction of HOV lanes between SR-14 and SR-170 and implementation of Metro Rapid San Fernando Road and San Fernando-Lankershim lines. These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-5 Segment B focuses on:

- Improvements to problematic freeway on/off-ramps including ramp metering at more ramps
- Improved express bus and feeder service throughout the San Fernando Valley
- Additional Metrolink commuter rail service on the Antelope Valley and Ventura County lines including more reverse commute service

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-5 Segment B Stakeholder Recommendations

Project Title	Project Limit	Project Type
Add a reversible lane on The Old Road/ San Fernando Rd/Sepulveda Blvd	SR-14/Sierra Hwy and Roxford St	Arterial
Widen/add lanes on Foothill Blvd	Balboa Blvd and Sierra Hwy	Arterial
Widen intersection (bridge over Metrolink tracks) by adding two lanes on Sierra Hwy	San Fernando Rd/Sierra Hwy intersection	Arterial
Widen/add lane on Sepulveda Blvd with direct access to I-5 SB on-ramp	San Fernando Rd and Roxford St	Arterial
Add truck lane on I-5	SR-14 and I-405	Arterial
Modify/rebuild I-5 (SB) /I-210 (EB) transition - by braiding over the SR-14 southbound connector ramps	SR-14 and I-210	Freeway
Widen I-5/I-405 interchange to allow for add'l NB merge lane	I-405 and I-210	Freeway
Reconstruct off-ramp/construct new half interchange at Balboa Blvd/Foothill Blvd and I-5	Balboa Blvd/Foothill at I-5	Freeway
Reconstruct interchange of I-5 and Roxford St to provide add'l capacity on surface street	Roxford St at I-5	Freeway
Separate SR-14 connectors to I-5 with a physical barrier to prevent weaving and queuing	SB merge of I-5 and SR-14	Freeway
Add mixed-flow and HOV lanes	I-405 and SR-14	Freeway
Add reverse commute service on Antelope Valley line	Antelope Valley Metrolink Service	Transit
Additional local bus routes serving the Castaic Lake area and SR-126	Castaic Lake area and SR-126	Transit
Add trains to Metrolink's Antelope Valley Line	Metrolink between Union Station and Lancaster	Transit
Increase Shuttle service from Metrolink Stations to employment destinations (Glendale, Burbank, Sun Valley, Sylmar, San Fernando)	Glendale, Burbank, Sun Valley, Sylmar, and San Fernando	Transit
Install ramp metering on more on-ramps throughout the I-5 corridor	Throughout Segment B of I-5	TSM/TDM
Add/expand Park and Ride facilities throughout the corridor	Various locations to be determined	TSM/TDM

I-5 Segment B Stakeholder Recommendations

Project Title	Project Limit	Project Type
Expand Freeway Service Patrol throughout the corridor	From SR-14 to SR-134	TSM/TDM
Install traffic signals at intersections of San Fernando Rd with Sierra Hwy and Sierra Hwy with Foothill Blvd/NB I-5/SR-14 ramp	Intersections of San Fernando Rd with Sierra Hwy and Sierra Hwy with Foothill Blvd/NB I-5/SR-14 ramp	TSM/TDM
Install new traffic signal at the intersection of Sierra Hwy and Foothill Blvd (NB I-5/SR-14 on-ramp)	Intersection of Sierra Hwy and Foothill Blvd (NB I-5/SR-14 on-ramp)	TSM/TDM
Install new traffic signal at San Fernando Rd/The Old Road and Sierra Hwy intersection	San Fernando Rd/The Old Road and Sierra Hwy intersection	TSM/TDM

GOLDEN STATE FREEWAY (I-5) SEGMENT C: BETWEEN SR-134 AND I-710

SETTING

I-5 Segment C stretches between SR-134 and I-710. It is located within the central portion of the City of Los Angeles, contains 4 to 5 mixed-flow lanes in both directions and has no carpool lanes. This corridor segment experiences heavy congestion due to the intersection of several freeways and its close proximity to downtown Los Angeles. Additionally, very few arterials parallel this corridor segment. Trucks comprise approximately 10 percent of all traffic on this corridor segment.

MTA, Antelope Valley Transit Authority, LADOT, and Orange County Transportation Authority provide bus service to the area. Metrolink service operates on the Antelope Valley, Ventura County, and Orange County lines with service approximately every 30 minutes during peak periods (also Metrolink monthly pass holders can ride on Amtrak trains operating on the Ventura County and Orange county lines for no additional charge).

CURRENT CONDITIONS

Segment C of I-5 has an average daily traffic of 285,000 vehicles, with average speeds below 20 mph in both directions. Much of the segment runs parallel to the Los Angeles River, with connectors serving Griffith Park, Los Feliz, Silverlake and Elysian Park just north of downtown Los Angeles. South of downtown Los Angeles, I-5 runs through Lincoln Heights, Boyle Heights and east Los Angeles.

In the AM period, the traffic problem is generalized localized on the northbound and southbound approaches to downtown Los Angeles – where motorists transitioning from I-110, SR-60, I-710 and I-10 are fed through a series of connectors to northbound and southbound I-5. The amount of vehicular weaving along each of these segments results in stop-and-go conditions throughout the typical weekday. Just north of the I-5/SR-60, heavy traffic diverts off I-5 via 4th and 1st Streets into the heart of downtown Los Angeles. The section of I-5 between SR-60 and I-110 (through Lincoln Heights) is also heavily congested, due a drop

from 4 to 3 lanes in each direction. North of the I-110 interchange, northbound traffic conditions improve dramatically, and degrade slightly at the SR-2 interchange.

In the PM period, the worst traffic conditions along this segment are also localized around downtown Los Angeles. The stretch of I-5 between I-710 and the I-10/US-101 transition suffers severe bumper-to-bumper conditions due to weaving of approaching I-5 and I-710 vehicles attempting to make the appropriate transition.

CONGESTION HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with an average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph.

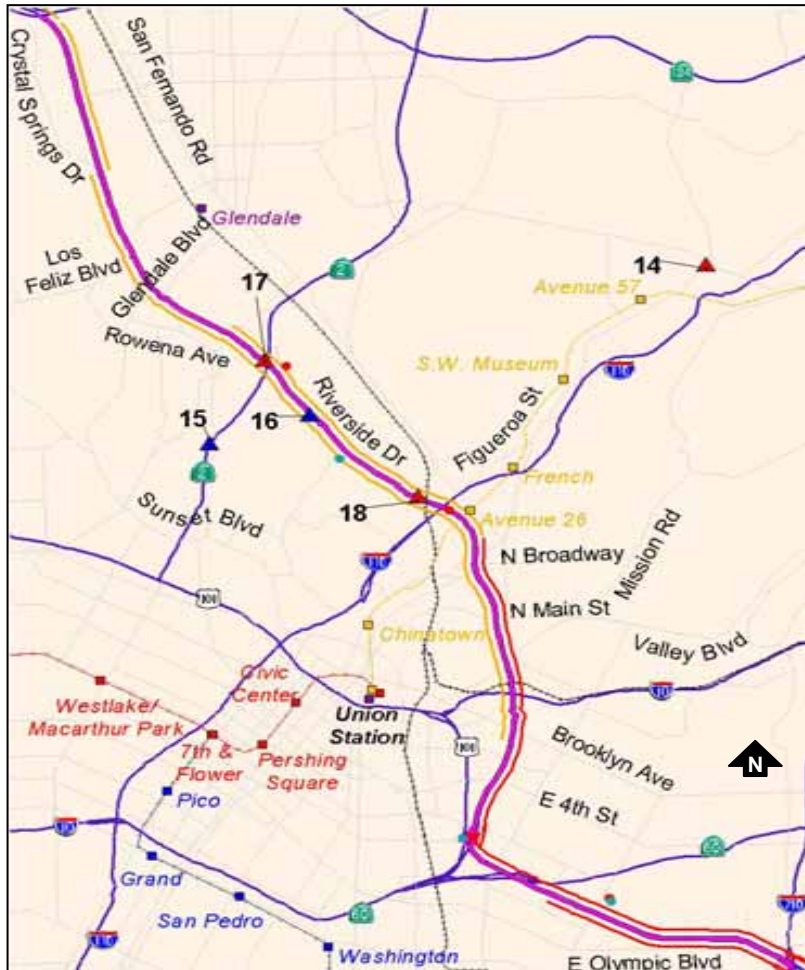
Also shown on the map are the locations of recurring congestion hot spots. In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by blue dots):

- I-5/I-10/US-101 interchange in downtown Los Angeles
- SB approach to downtown Los Angeles
- NB approach to downtown Los Angeles

In the PM peak, recurring traffic congestion occurs at the following bottleneck locations (denoted on the map by red dots):

- NB approach to SR-2
- NB approach to downtown
- I-5/I-10/US-101 interchange in downtown Los Angeles (near Boyle Heights)
- I-5/SR-110 interchange

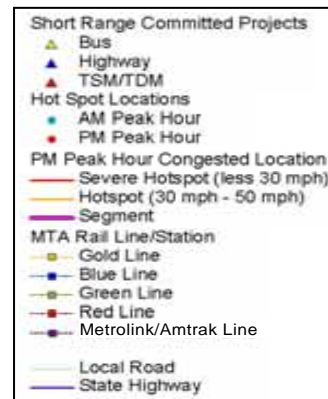
Previously Funded Major Projects along I-5 Segment C
(between SR-134 and I-710)



Map ID	Committed Major Projects*
13**	Eagle Rock ATSAC/ATCS Project: This project replaces obsolete traffic signal controls at 59 intersections in the area generally bounded by Ventura, Golden State, Pasadena, and Glendale Freeways. This project will improve the overall level of service on arterials in this area.
14	Highland Park ATSAC/Bus Priority Project: This project will replace obsolete traffic signals at 42 intersections primarily along York Boulevard and Figueroa Street. Improvements will improve the overall level of service on arterials in this area.
15	SR-2 Terminus Improvement Project: This project's purpose is to better manage traffic flow and to enhance vehicular and pedestrian mobility and safety at SR-2's terminus at Glendale Boulevard.
16	Riverside Drive Viaduct Widening and Replacement: The project will replace the existing two-lane Riverside Drive viaduct with a four lane bridge that will include bike path ramps and will result in an increase in circulation, eliminate a 15-mph curve, and allow an optimum speed of 50 mph.
17	Los Angeles River Bike Path – Phase 1C: Construction of a 2.58-mile Class I bike trail along the Los Angeles River West Bank from Fletcher Drive to Barclay Street.
18	Los Angeles River Bike Path – Phase 3A: Construction of approximately 1 mile of Class I bike path and 1 mile of Class II bike lanes along the Los Angeles River from Barclay Street to Riverside Drive.
19**	Metro Rapid – San Fernando Rd. (South): Implementation of Metro Rapid service along San Fernando Road between Burbank and downtown Los Angeles.

* Some projects may be deferred beyond 2009 due to funding shortfalls

** Project improvements are planned at multiple locations throughout the corridor



WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-5 through 2009 include the implementation of Metro Rapid San Fernando Road line. This and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-5, Segment B focuses on:

- Improvements to problematic freeway on/off-ramps
- Smart corridor/ITS (signal synchronization)
- Amtrak through-track (shared with Metrolink through movements)

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-5 Segment C Stakeholder Recommendations

Project Title	Project Limit	Project Type
Implement SR-2 terminus improvements at Glendale Blvd and SR-2	Glendale Blvd at SR-2	Arterial
Widen San Fernando Rd and improve key signalized intersections in the Sylmar area	San Fernando/Sylmar	Arterial
Improve access between I-5 and downtown Los Angeles	Various locations to be determined	Arterial/ Freeway
Close ramps to I-5/I-10 at 4th St and 7th St in the Boyle Heights neighborhood	I-5 at 4th and 7th St on-ramps	Freeway
Construct SB deceleration lane, modify off-ramp at Calzona St	SB Calzona St off-ramp	Freeway
Construct SB auxiliary lane on I-5 from Ditman Ave to Calzona St	SB from Ditman Ave to Calzona St	Freeway
Construct SB auxiliary lane on I-5 from Marietta St to Lorena St	SB from Marietta St to Lorena St	Freeway
Widen the overcrossing at Hyperion Ave and Glendale Blvd	Hyperion Ave and Glendale Blvd	Freeway
Reconstruct the I-5/I-710 interchange by replacing left-side connectors with right-side connectors and adding 2 missing connectors	I-5/I-710 interchange (I-5: Triggs Street to Herbert Ave) (I-710: Bandini Park to Whittier Blvd)	Freeway
Increase transit services throughout the I-5 corridor	Various locations to be determined	Transit
Expand Metrolink service and capacity on existing trains	Various locations to be determined	Transit
Add trains to Metrolink's Antelope Valley Line	Metrolink between Union Station and Lancaster	Transit
Increase Shuttle service from Metrolink Stations to employment destinations	Various locations to be determined	Transit
Add/expand Park and Ride facilities throughout the corridor	Various locations to be determined	TSM/TDM
Expand Freeway Service Patrol throughout the corridor	From SR-134 to I-710	TSM/TDM

GOLDEN STATE FREEWAY (I-5) SEGMENT D: BETWEEN I-710 AND LOS ANGELES/ORANGE COUNTY LINE

SETTING

I-5 Segment D stretches between the I-710 Freeway and the Los Angeles County line. This stretch of the I-5 was built in the 1950s and is outdated with existing and future traffic demand, significantly exceeding its current capacity. This freeway corridor consists of 3 to 4 mixed-flow lanes in each direction and has no HOV lanes. The corridor experiences severe congestion, particularly at the Los Angeles/Orange County line and the northbound approach to I-710. Trucks account for 10 percent of this traffic. This corridor has only one parallel arterial, Telegraph Road, which is highly congested.

Transit service is provided on the freeway and along arterial streets by Montebello Municipal Bus Lines, Orange County Transit Authority and MTA. In addition, commuter passengers are served by Metrolink in both directions, between Los Angeles, Orange and Riverside Counties.

CURRENT CONDITIONS

I-5 Segment D has an average daily traffic count of 275,000 vehicles, with average AM and PM peak speeds below 20 mph at several key bottleneck locations. This segment of I-5 is the major commuter shed connecting north Orange County and western Riverside County to the San Gabriel Valley (via I-605 and I-710) and downtown Los Angeles. Traffic is generally balanced throughout the day, with slightly higher northbound volumes in the AM peak period. From a traffic operations standpoint, there are several configuration issues that contribute to recurring peak period traffic problems.

In the AM period, approximately three-quarters of northbound I-5 traffic along this segment originates in Orange County, where the lanes drop from 6 (5 mixed-flow and 1 HOV) to 3. The lane drop and discontinuation of HOV lane service contributes to severe stop-and-go between the Valley View Avenue and Firestone Boulevard exits, which are the main I-5 access points for northbound trips originating in residential

areas of La Mirada, Cerritos, Santa Fe Springs and Norwalk. The northbound approach to the I-605 interchange regularly backs up. Further north, the approach to the I-710 interchange, which is on the left side of NB lanes, causes vehicular weaving patterns north of Atlantic.

In the PM period, southbound traffic is quite severe. There is a major recurring backup at Washington Boulevard, which serves trips destined for Montebello and Pico Rivera. Further south, traffic backups occur at Rosecrans Avenue and Carmenita Road, where a significant amount of work-to-home trips exit I-5.

CONGESTION HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with an average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph.

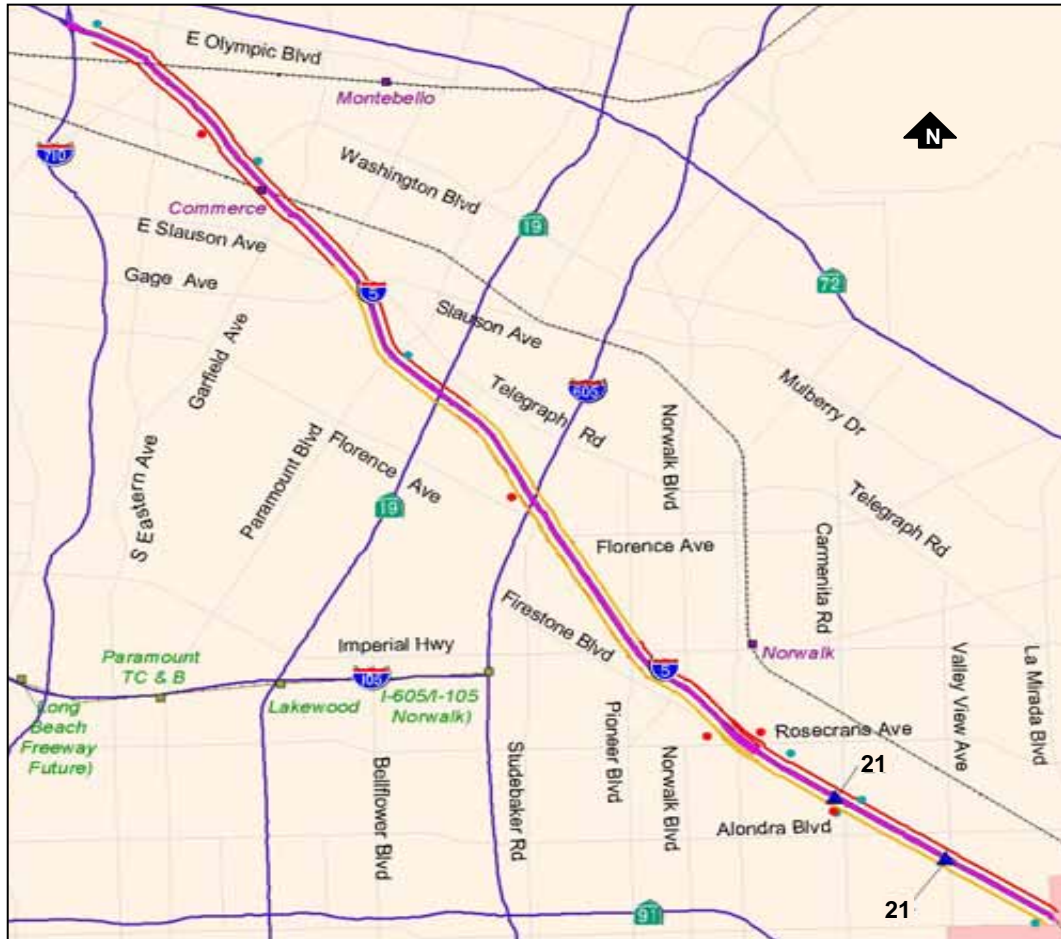
Also shown on the map are the locations of recurring congestion hot spots. In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by blue dots):

- NB I-5 at Carmenita, Rosecrans, Paramount, Washington
- NB approach to I-710
- SB at Carmenita
- SB approach to SR-91

During the PM peak period, there are several bottlenecks that contribute to the severity of stop-and-go conditions (denoted on the map by red dots):

- SB I-5 at Washington Boulevard
- SB approach to I-605
- SB I-5 at Rosecrans Avenue and Carmenita Road
- NB I-5 at Rosecrans Avenue

Previously Funded Major Projects along I-5 Segment D
(between I-710 and Los Angeles/Orange County Line)



Map ID	Committed Major Projects*
20**	Traffic Signal Synchronization Projects: Telegraph Rd, Imperial Highway, Firestone Blvd, Studebaker Rd, and Bandini Blvd/37 th St/38 th St, Garfield Ave, Rosemead Blvd, Carmenita Rd
21	Freeway/Arterial Interchange Improvements: I-5/Carmenita Rd and I-5/Valley View Ave
22**	Truck Impact Intersection Improvement: Selected interchange improvements

* Some projects may be deferred beyond 2009 due to funding shortfalls

** Project improvements are planned at multiple locations throughout the corridor

Short Range Committed Projects	
▲	Bus
▲	Highway
▲	TSM/TDM
Hot Spot Locations	
●	AM Peak Hour
●	PM Peak Hour
PM Peak Hour Congested Location	
—	Severe Hotspot (less 30 mph)
—	Hotspot (30 mph - 50 mph)
—	Segment
MTA Rail Line/Station	
—	Gold Line
—	Blue Line
—	Green Line
—	Red Line
—	Metrolink/Amtrak Line
—	Local Road
—	State Highway

WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-5 through 2009 include the design of interchange improvements at Carmenita Road and Valley View Avenue and design of mixed-flow and carpool lanes between the Orange County line and I-605. These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-5 Segment D focuses on:

- Freeway interchange improvements with longer merging areas
- Improvement of interregional arterial corridors to “Smart Street” operational standards to accommodate ITS deployment
- Major arterial improvements
- Implementation of transit vehicle signal prioritization on major arterials

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-5 Segment D Stakeholder Recommendations

Project Title	Project Limit	Project Type
Improve 50 arterial intersections	Lakewood/Rosemead Blvd and OC Border	Arterial
Improvements of 6 interregional arterial corridors to “Smart Street” operational standards	Lakewood/Rosemead Blvd and OC Border	Arterial
Develop arterial route parallel to I-5 to be used as a preferred arterial alternative to I-5	Lakewood/Rosemead Blvd and OC Border	Arterial
Reconstruct I-5/I-710 interchange by replacing left-side connectors with right-side connectors and adding 2 missing connectors	I-5:Triggs Street to Herbert Ave; I-710: Bandini Park to Whittier Blvd	Freeway
Reduce bus service headways	Corridor-wide	Transit
Add reverse commute service to OCTA express bus lines	Corridor-wide	Transit
Increase Metro Bus service (up to 10%)	Corridor-wide	Transit
Increase frequency and add bus signal priority at key intersections on Metro Bus lines 362 and 460	362 - from downtown LA along Telegraph Rd to San Antonio; 460 - from East LA south along Telegraph Rd	Transit
Improve coordination of service between local bus service and longer-haul service	Corridor-wide	Transit
Increase Metrolink service and add capacity to existing trains	Orange County, Riverside, and 91 Lines	Transit
Upgrade Commerce Station to 100% of 91 Line service (current service ~ 75%)	Commerce Metrolink Station	Transit
Provide Airport Fly-away Service	Norwalk Transportation Center	Transit
Procure and install transit systems equipment to implement transit vehicle priority capability	Lakewood/Rosemead Blvd and OC Border	Transit
Installation of Central Control and Communications Centers at each of five I-5 corridor cities	Lakewood/Rosemead Blvd and OC Border	TSM/TDM
Implement ITS strategies for optimizing corridor traffic flow	Lakewood/Rosemead Blvd and OC Border	TSM/TDM
Support existing and expand TDM programs	Corridor-wide	TSM/TDM
Create a Transportation Management Association to champion TDM programs	Corridor-wide	TSM/TDM
Add/expand park-and-ride facilities	Corridor-wide	TSM/TDM

ANTELOPE VALLEY FREEWAY (SR-14): BETWEEN I-5 AND AVENUE P

SETTING

Stretching for 26 miles between the I-5 Golden State Freeway and Avenue P in the City of Palmdale, this segment of SR-14 runs through a newly developed Santa Clarita community and a long stretch of rural, undeveloped high desert area. The segment has 2 to 3 mixed-flow lanes for both north and southbound traffic and has one High Occupancy Vehicle (HOV) lane in each direction extending from I-5 to Pearblossom Highway, exclusive to carpools only during rush hours in the peak travel direction. Severe congestion occurs in both the north and southbound directions during the morning and afternoon peak periods, where there are “lane drops” and between I-5 and SR-126.

This segment is not supported by any parallel arterials, except the Sierra Highway which serves as a major thoroughfare in the City of Santa Clarita, and does provide excessive capacity to relieve the congestion off SR-14. In addition, this part of SR-14 is serviced by Santa Clarita Transit and Antelope Valley Transit Authority, and commuter rail service on Metrolink’s Antelope Valley Line, operating approximately every 30 minutes during peak period.

CURRENT CONDITIONS

SR-14 carries 2 to 3 mixed-flow lanes in each direction with a carpool lane from I-5 to Pearblossom Highway. The average daily traffic count along SR-14 varies from 145,000 vehicles at just east of I-5 to 31,500 at the junction of SR-14 with Avenue G in Lancaster.

Generally, traffic congestion along SR-14 is moderate, with recurring bottlenecks at several locations along SR-14 where the average speeds fall below 35 mph. Hot spot locations are shown on the map on the following page. The main causes of severe recurring traffic congestion are lane drops (from 3 to 2 lanes), high peak demand in excess of capacity, especially between I-5 and SR-126 and peak hour southbound congestion in the AM and northbound congestion in the PM peak. In addition, non-recurring incidents such as traffic accidents also contribute to intermittent traffic backups along the corridor.

Lack of adequate transit service makes SR-14 the only alternative for many North County commuters.

HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with average PM peak speeds of between 35 and 45 mph. Segments that are unshaded have average speeds of 45 mph or greater. The map also shows the locations of recurring congestion hot spots.

In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by blue dots):

- SB SR-14 SB approach to I-5
- SB SR-14 between San Fernando Road and I-5
- San Fernando Road

In the PM period, traffic conditions northbound on SR-14 are relatively smooth, with no major hot spots north of the I-5 interchange.

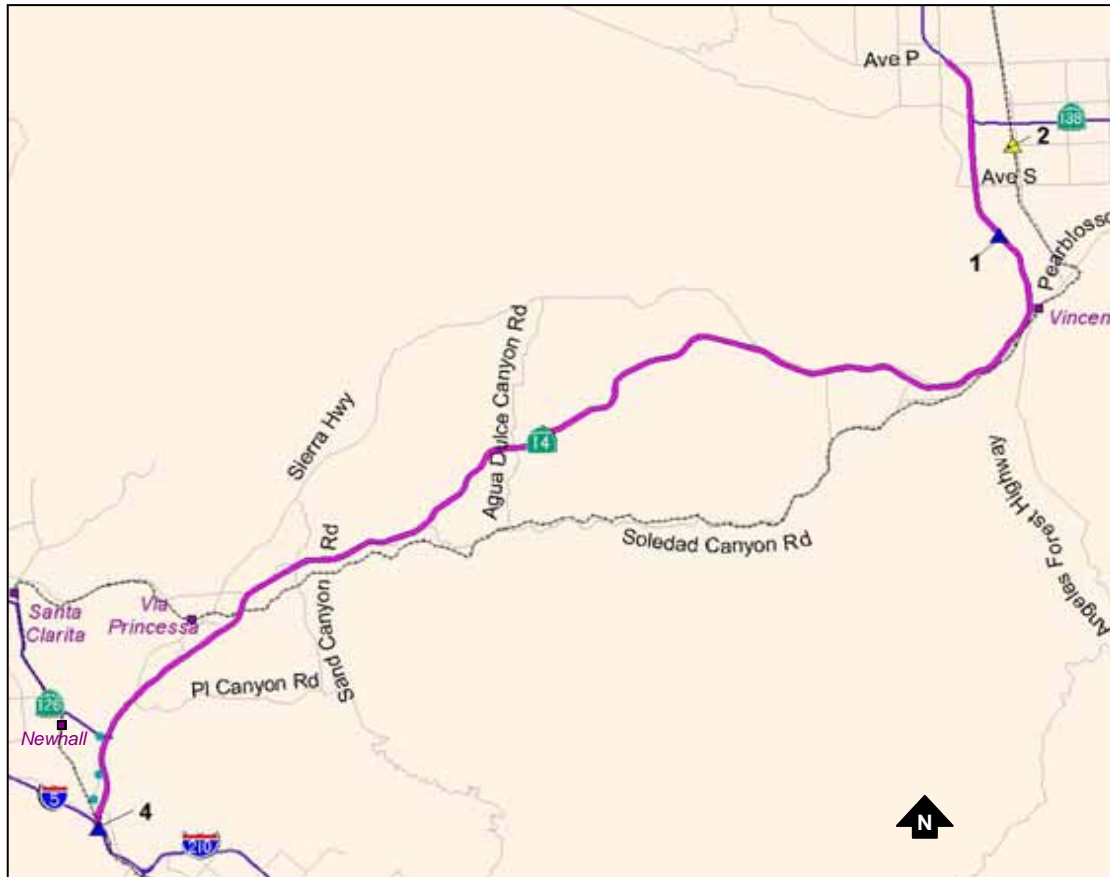
WHAT THE FUTURE HOLDS

Major short-term projects planned along SR-14 through 2009 include the design of carpool lanes between Pearblossom Highway and Avenue P-8. This and additional major committed projects (pending availability of funding) are identified on the following page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective

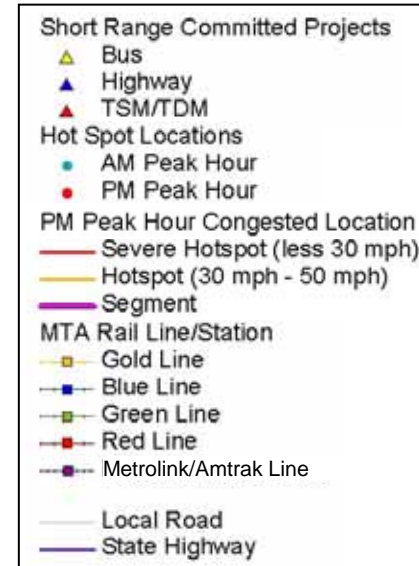
Previously Funded Major Projects along SR-14
(between I-5 and Avenue P)



Map ID	Committed Major Projects*
1	HOV lane – will construct one carpool lane in each direction between Pearblossom Highway and Avenue P-8
2	Palmdale Intermodal Transit Center
3**	Traffic Signal Improvements
4	HOV direct connector ramp – will construct carpool lane connector ramp between I-5 and SR-14

* Some projects may be deferred beyond 2009 due to funding shortfalls

** Project improvements are planned at multiple locations throughout the corridor



improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for SR-14 focuses on:

- ITS improvements including signal coordination
- Expanded Freeway Service Patrol
- HOV connector extension at the SR-14/I-5 Interchange
- Improved/enhanced transit service in the entire region, including enhanced Metrolink services

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

SR-14 Stakeholder Recommendations

Project Title	Project Limit	Project Type
Install Traffic Signal Synchronization and Other Improvements along major arterial roads serving SR-14 (Sierra Highway, Agua Dulce Canyon Rd, San Canyon Rd, Soledad Canyon Rd, San Fernando Rd)	Sierra Highway, Agua Dulce Canyon Rd, San Canyon Rd, Soledad Canyon Rd, San Fernando Rd	Arterial
Redo/restripe the transition from SB SR-14 to SB I-5 to allow a continuous two-lane truck route and separate SR-14 connectors to I-5 with a physical barrier to prevent weaving and reduce queuing	I-5/SR-14 Interchange	Freeway
Expansion of Freeway Service Patrol (FSP)	Throughout the SR-14 corridor	Freeway
Add High Occupancy Vehicle (HOV) & truck lanes to SR-14/I-5 interchange	I-5/SR-14 Interchange	Freeway
Construct HOV lane in each direction on SR-14 from SR-138 to Avenue P	From SR-138 to Avenue P	Freeway
Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue L and SR-14	Avenue L and SR-14 Interchange	Freeway

SR-14 Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue L and SR-14	Avenue L and SR-14 Interchange	Freeway
Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue I and SR-14	Avenue I and SR-14 Interchange	Freeway
Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue H and SR-14	Avenue H and SR-14 Interchange	Freeway
Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue G and SR-14	Avenue G and SR-14	Freeway
Widen Overcrossing at Golden Valley Road	Golden Valley Road	Freeway
Add a mixed-flow lane on SR-14 at San Canyon Rd and Avenue P	Sand Canyon Rd/Ave P	Freeway
Construct Palmdale Intermodal Transit Center	Construction of Palmdale Intermodal Transit Center	Transit
Improve bus transit services along SR-14 corridor	SR-14 Corridor	Transit
Expansion of Metrolink services and capacity on existing trains	SR-14 Corridor Metrolink Service	Transit - Commuter Rail
I-5 to Avenue P along SR-14	Deployment of 4 ITS projects along the proposed SR-14 HOV lanes	TSM/TDM
Add and/or expand Park-and-Ride facilities	SR-14 Corridor	TSM/TDM
Install CCTV and Communications System from Los Angeles to Santa Clarita (I-5 to Sand Canyon Rd)	In Los Angeles to Santa Clarita, Rte 5 to Sand Canyon Road	TSM/TDM

SAN DIEGO FREEWAY (I-405) SEGMENT A: BETWEEN I-5 AND I-10

SETTING

I-405, Segment A has 5 to 6 mixed-flow lanes in each direction. There is a carpool lane in southbound direction from SR-118 to Waterford Street and one in northbound direction from Burbank Boulevard to I-5. This segment is congested in both directions. Heavy congestion exists southbound in the morning and northbound in the afternoon between US-101 and I-5. South of US 101, traffic is nearly balanced in both directions. Average speed during peak period is less than 20 miles per hour. Truck volume in this segment is 4% of the total traffic volume. There are limited parallel arterials through the Sepulveda Pass. Los Angeles Department of Transportation, Culver City Bus, Santa Monica Big Blue Bus, Santa Clarita Transit, Antelope Valley Transit Authority, and MTA provide bus service in this segment. LAX-Van Nuys Fly-Away provides service throughout the day.

CURRENT CONDITIONS

I-405 Segment A has an average daily traffic of 350,000 vehicles, with average speeds below 15 mph during peak commuter periods at several key bottleneck locations. The main causes of recurring traffic congestion are lane drops, geometric design of several on/off-ramps, and vehicular conflicts at key approaches to I-405. In the AM period, high traffic volumes destined for west Los Angeles contribute to bottlenecking over the Sepulveda Pass in the SB direction, where the steep vertical curve reduces free flow speeds. SB traffic conditions north of US-101 are also exacerbated by weaving of vehicles attempting to transition westbound on US-101. Backups at the Sunset, Wilshire and Santa Monica Boulevards exits also contribute to downstream queuing problems.

In the PM period, NB traffic over the Sepulveda Pass is among the worst in Los Angeles County. No HOV lanes exist in the northbound direction over the Sepulveda Pass. A high percentage of traffic originating south of I-10 exits I-405 at Santa Monica, Wilshire and Sunset Boulevards, causing backups south of I-10. The remainder of NB vehicular traffic is funneled through the narrow Sepulveda Pass, which is subject to stop-

and-go congestion due to the steep grade through the canyon. North of the Pass, the NB I-405/US-101 interchange is a major traffic choke point, unable to adequately accommodate the flow of NB I-405 traffic transitioning to the US-101 in both directions. NB traffic conditions north of US-101 are also subject to some stop-and-go traffic jams but are generally acceptable.

A major contributing factor to heavy traffic conditions on I-405 is the gap in HOV lane service. The gap in HOV lane service along the 13-mile stretch between I-105 and Burbank Boulevard effectively reduces capacity by 20 percent along a segment that has a relatively high proportion of 2-plus carpools and vanpools. A dedicated HOV lane through the Sepulveda Pass would also greatly enhance line-haul operating conditions for express bus services.

HOT SPOTS

During the weekday AM peak period, traffic congestion is heavier in the southbound direction, with recurring hot spots at:

- SB approach to SR-118 (between I-5 and San Fernando Blvd)
- SB I-405 at Devonshire St., Victory Blvd., Sherman Way, and Burbank Blvd.
- SB I-405 at Sepulveda Pass (between Ventura Blvd. and Skirball Center Dr.)
- SB approach to I-10 (between Wilshire and Sunset Boulevards)
- NB approach to US-101

During the PM peak period, there are several bottlenecks that contribute to the severity of stop-and-go conditions:

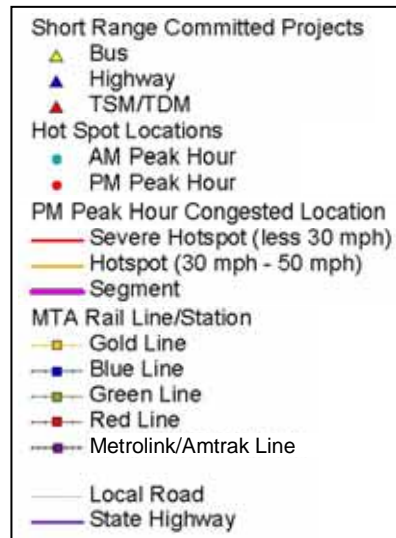
- NB I-405 at Santa Monica, Wilshire and Sunset Boulevards
- NB I-405 at Sepulveda Pass (between Getty Center Dr. and US-101)
- transition from NB I-405 to US-101
- NB approach to SR-118
- SB approach to US-101

Previously Funded Major Projects along I-405 Segment A
(between I-5 and I-10)



Map ID	Committed Major Projects*
1	Extension of northbound carpool lane from Greenleaf Street to Burbank Boulevard
2	Connector widening from northbound I-405 to southbound US-101
3	Northbound auxiliary lane from Mulholland Drive to Ventura Boulevard
4	Metro Rapid - service on Van Nuys Boulevard
5	Signal synchronization on Van Nuys Boulevard and bus speed improvements on arterials adjacent to I-405
6**	Arterial improvements along Sepulveda Boulevard

* Some projects may be deferred beyond 2009 due to funding shortfalls
 ** Project improvements are planned at multiple locations throughout the corridor



WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-405 through 2009 include:

- Construction of a carpool lane between Greenleaf Street and Burbank Boulevard in the northbound direction
- Construction of a carpool lane between Waterford Street and I-10 in the southbound direction
- Implementation of improvements to I-405/US-101 interchange
- Implementation of Metro Rapid Van Nuys Boulevard line

These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-405 Segment A focuses on:

- Improvements to problematic freeway on/off-ramps
- Redesign I-405/US-101 interchange
- Improved express bus and feeder service throughout West Los Angeles and Valley
- HOV gap closure

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-405 Segment A Stakeholder Recommendations

Project Title	Project Limit	Project Type
Additional arterial improvement to Sepulveda Blvd, including signal synchronization	Sepulveda Blvd between SR-118 and I-10	Arterial
Add a reversible peak period transit lane on Sepulveda Blvd	Sepulveda Pass (between US-101 and Getty Center Dr)	Arterial
Improve several segments of Van Nuys Blvd, Balboa Blvd that connect to I-405	Van Nuys Blvd, Balboa Blvd	Arterial
Reconfigure both NB and SB on/off-ramps at Sunset Blvd & I-405	Sunset Blvd & I-405	Freeway
Widen SB onramp at Skirball Center Dr and I-405	Skirball Center Dr & I-405	Freeway
Construct grade separated on-ramps and off-ramps at Greenleaf St and I-405 (just south of Ventura Blvd)	NB Route 405/101 Connector Gap Closure	Freeway
Modify SB onramp at Ventura Blvd and I-405	Ventura Blvd and I-405	Freeway
Construct freeway connector from SB I-405 to NB/SB US-101	SB I-405/NB US-101 connector	Freeway
Construct Direct HOV Connectors at I-5 & I-405 interchange	I-5/I-405 Interchange	Freeway
Increase frequency and add bus signal priority at key intersections on existing service: Santa Clarita, San Fernando Valley, the Westside	Various locations to be determined	Transit
Increase service frequency of High Occupancy buses, bus signal priority and/or Metro Bus service on parallel bus routes	Various locations to be determined	Transit
Increase express bus service over Sepulveda Pass, with collector/feeder service throughout West Los Angeles and the San Fernando Valley	Sepulveda Pass	Transit
Implement cross mountain bus service along Coldwater Cyn Dr, Beverly Glen Blvd, Benedict Cyn Dr	Coldwater Cyn Dr, Beverly Glen Blvd, Benedict Cyn Dr	Transit
Expand Van Nuys FlyAway with better transit connections and more park and rides	Van Nuys Fly Away	Transit
Expand operations of Freeway Service Patrol	Throughout I-405 corridor	TSM/TDM

SAN DIEGO FREEWAY (I-405) SEGMENT B: BETWEEN I-10 AND ARTESIA BLVD

SETTING

Stretching for 13 miles between I-10 and Artesia Boulevard (SR-91), I-405 Segment B runs through the heart of the Westside and South Bay regions. The segment has 4 to 5 mixed-flow lanes for both north and southbound traffic and has 1 High Occupancy Vehicle (HOV) lane in each direction extending from I-105 to SR-91. Severe congestion occurs in both the northbound and southbound directions during the morning and afternoon peak periods. This segment is supported by many parallel and feeder arterials that are also congested during the peak rush hours. In addition, this part of the I-405 corridor is serviced by many transit operators including MTA, Culver City Bus, Santa Monica Big Blue Bus, Gardena Transit and Torrance Transit.

CURRENT CONDITIONS

I-405 Segment B has an average daily traffic of 300,000 vehicles, with average speeds below 15 mph at several key bottleneck locations. The main causes of recurring traffic congestion are lane drops, discontinuation of HOV lane service (near LAX), and non-standard geometric designs at several on/off-ramps. In the AM period, this segment suffers traffic congestion in both directions. The discontinuation of the northbound HOV lane at Century Boulevard causes backups. Further north, there is another lane drop on the NB approach to the I-10 that causes stop-and-go conditions between La Tijera and National Boulevards. Traffic conditions southbound also experience stop and go, due in part to the absence of HOV lane service until I-105. South of I-105, AM traffic conditions improve significantly.

In the PM period, traffic along the segment is among the worst in Los Angeles County. Vehicular weaving at off-ramps contributes significantly to backups throughout the segment. There is a discontinuation of HOV lane service at Century which contributes to the traffic congestion which continues to the approach to I-10, where mixed flow lanes drop from 5 to 4.

Of equal concern is the severity of congestion on major arterials serving the Westside and South Bay. Several arterials along this segment of the I-405 are subject to excessive peak hours delays.

HOT SPOTS

During the AM peak period, traffic congestion materializes at several recurring bottleneck locations in the NB and SB directions:

- NB I-405 at Century and Manchester Boulevards and the Marina Freeway (SR-90)
- NB approach to I-10 at National Boulevard
- NB I-405 at Hawthorne Boulevard
- SB I-405 at Venice Boulevard
- NB and SB I-405 at Rosecrans and La Cienega Boulevards

During the weekday PM peak period, there are several bottleneck locations that are subject to recurring stop-and-go traffic conditions:

- SB I-405 at Venice Boulevard and SR-90
- SB I-405 at Hawthorne Boulevard
- NB approach to I-10
- NB I-405 at Century Boulevard
- NB and SB I-405 at Rosecrans and La Cienega Boulevards

WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-405 through 2009 include:

- Construction of carpool lanes between I-10 and SR-90
- Construction of carpool lanes between SR-90 and I-105
- Implementation of Metro Rapid Crenshaw-Rossmore, Hawthorne Boulevard, Lincoln Boulevard, Sepulveda Boulevard and Manchester Boulevard lines

These and additional major committed projects (pending availability of funding) are identified on the following page.

Previously Funded Major Projects along I-405 Segment B
(between I-10 and Artesia Boulevard)



Map ID	Committed Major Projects*
7	La Tijera Bridge Widening – will provide side-by-side dual left turn lanes and widen the freeway on-ramps
8	Arbor Vitae St./I-405 Interchange (South Half) – construct southern half of interchange (1 on-ramp and 1 off-ramp)
9	Playa Vista Area Congestion Improvement Projects: Sepulveda Blvd. to Hughes Terrace, Culver Blvd., Lincoln Blvd.-Jefferson to Fiji Way – arterial widening in all 3 locations
10	Sepulveda Blvd. from Centinela Ave. to Lincoln Blvd. – will eliminate the bottleneck of a lane reduction in the business district during off peak hours, provide exclusive right turn lanes at critical intersections and create an overall traffic management strategy
11**	Hawthorne Blvd. Improvements – will reconfigure lanes to optimize traffic movement
12	Douglas Street Gap Closure/RR Separation – will close gap on Douglas St. and improve access to the El Segundo Metro Green Line Station by constructing a grade-separation over the railroad tracks.
13	Westchester Transportation Management Enhancements (ATCS) - upgrade intersections to Adaptive Traffic Control System (ATCS), install CCTV cameras and install Changeable Message Signs (CMS) to more effectively manage traffic in the area
14	I-405 HOV Lane: I-105 to SR-90 – will construct northbound and southbound HOV lanes that will connect to the HOV lanes on the San Diego Fwy. to the south and the HOV lane on I-105 to the east.
15	I-405 HOV: I-10 to SR-90 - will provide a continuous HOV system on the I-405 in both directions between the I-10 and the Orange County line
16**	El Segundo Area ITS – will construct advanced traffic control/detection devices and a TMC
17**	South Bay Signal Synch and Bus Speed Improvements – A multi-agency project aimed at enhancing mobility through signal coordination along major arterials
18**	Metro Rapid Expansion: Manchester Ave. and Crenshaw, Hawthorne, Sepulveda, Lincoln Blvds.

* Some projects may be deferred beyond 2009 due to funding shortfalls

** Project improvements are planned at multiple locations throughout the corridor

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost effective improvements that enhance the previously committed projects and could be implemented by 2009, if additional funding becomes available.

The short-term corridor strategy for I-405 Segment B focuses on:

- “Smart Corridor” improvements to major parallel and connecting arterials
- Reconstruction of several I-405 on/off-ramps
- Ramp metering at key I-405 interchange locations
- HOV gap closure
- Removal of channelizers on NB I-405 between El Segundo and National Boulevard
- Provide better and consistent HOV signs for ingress and egress
- Increased transit amenities to enhance express and feeder bus service

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future, if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-405 Segment B Stakeholder Recommendations

Project Title	Project Limit	Project Type
Impose peak period parking restrictions along major connecting and parallel arterials (Sawtelle Blvd, Santa Monica Blvd, Centinela Ave, La Cienega Blvd)	Various locations	Arterial
I-405 ramp improvements at Hawthorne Blvd. (1) Reopen SB Hawthorne to NB I-405 (2) Upgrade signalization at I-405 SB and NB Off-ramps Hawthorne Blvd	Hawthorne Blvd and I-405	Arterial

I-405 Segment B Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Upgrade 11 existing traffic signals to ATSAC standards in the Fox Hills area of Culver City (Jefferson Blvd, Slauson Ave, Centinela Ave, Bristol Pkwy, Sepulveda Blvd)	Fox Hills Area	Arterial
Implement bikeway projects throughout the I-405 corridor (approx. 24 miles of Class II and 1.6 miles of Class I)	Corridor-wide	Arterial
Widen Inglewood Ave from Manhattan Beach Blvd to I-405 to add right-turn lane	Inglewood Avenue from Manhattan Beach Blvd to I-405	Arterial
Widen NB-405 off-ramp to Manchester Blvd and close Ash Ave	Manchester off-ramp at I-405	Arterial
Channelize and raise Manchester Blvd median	Ash Ave and La Cienega Blvd	Arterial
Complete the missing segment of Del Amo Blvd between Denker Ave and Normandie Ave; complete missing segment from Normandie to Vermont Ave	Del Amo Blvd between Crenshaw Blvd and Maple Ave	Arterial
Modify the NB onramp at Artesia by adding a third lane	Artesia on ramp/I-405	Arterial
Reconfigure La Brea Ave/La Brea Dr/ Market St/Spruce Ave from six-legged intersection to T-intersection and eliminate dog-leg in La Brea Ave alignment and replace with a continuous S-curve alignment	La Brea Ave intersection with La Brea Dr, Market St, and Spruce Ave	Arterial
Add dedicated right turn lanes and left turn pockets to intersection of Hawthorne Blvd and PCH	Intersection of Hawthorne Blvd and PCH	Arterial
Realign I-405 south of SR-90, where it bends sharply just north of Manchester Blvd	South of SR-90 near LAX	Freeway
Widen NB onramp at Inglewood Ave	Inglewood and I-405	Freeway
Construct SB auxiliary lane on I-405 from Manchester Blvd to Century Blvd	between Manchester Blvd to Century Blvd on I-405	Freeway
Construct auxiliary lane on SB I-405 from Florence Ave to Howard Hughes Parkway	SB I-405 from Florence Ave to Howard Hughes Parkway	Freeway
Construct NB High Occupancy Vehicle (HOV) lane on SR-90 to I-10	I-405: SR-90 to I-10 HOV Lanes	Freeway

I-405 Segment B Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Add connector metering between I-105 and SR-90 interchanges	I-105 IC and SR-90 IC	Freeway
Widen SB onramp at 190th (just west of Western Ave)	From Western Ave to 190th Street	Freeway
Widen SB onramp from Western Ave/190th Street and I-405	Western Ave/190th St On-ramp at SB I-405	Freeway
Widen NB off-ramp to Crenshaw/182nd Street and I-405	Crenshaw Blvd/182nd St off-ramp at I-405	Freeway
Widen NB onramp to Crenshaw/182nd Street and I-405	Crenshaw Blvd/182nd St on-ramp at I-405	Freeway
Widen SB off-ramp to Hindry Ave and I-405	Hindry Ave off-ramp at I-405	Freeway
Widen SB onramp to Hindry Ave and I-405	Hindry Ave on-ramp at I-405	Freeway
Add NB auxiliary lane on I-405 from Redondo Beach Blvd to Hawthorne	From Redondo Beach Blvd to Hawthorne	Freeway
Implement I-405 at Rosecrans Access Point improvement project	I-405 at Rosecrans Ave	Freeway
Add NB auxiliary lane on I-405 from Hawthorne to Inglewood Ave	I-405 from Hawthorne to Inglewood Ave	Freeway
Add NB auxiliary lane on I-405 from Inglewood Ave to Rosecrans	From Inglewood Ave to Rosecrans	Freeway
Add NB 405 auxiliary lane on I-405 from La Tijera on-ramp to Howard Hughes on-ramp	La Tijera to Howard Hughes	Freeway
Add NB 405 auxiliary lane on I-405 from Howard Hughes on-ramp to Sepulveda off-ramp	Howard Hughes to Sepulveda	Freeway
Modify NB and SB collector/distributor from SR-90 off-ramp to SR-90 onramp	I-405 at SR-90	Freeway
Add connector metering at SR-90 connector ramps to I-405	SR-90 at I-405	Freeway
Increase Airport express bus service	LAX to South Bay	Transit
Increase headways to Airport bus service between Beverly Hills, West Hollywood and LAX	Robertson Blvd	Transit
Increase Metro Rapid Service: Crenshaw	Crenshaw Blvd	Transit
Increase Metro Rapid Service: Sepulveda Blvd	Sepulveda Blvd	Transit

I-405 Segment B Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Increase Express bus service	Harbor Transitway service to I-105	Transit
Reduce peak period headways on selected local and express transit	Various locations to be determined	Transit
New express bus Big Blue Bus (Santa Monica Bus)	On Lincoln Blvd	Transit
Implement BRT Service on Sepulveda Blvd (Culver CityBus)	On Sepulveda Blvd	Transit
Increase Express bus service (Torrance Transit)	Transit Connect to South Bay activity Centers	Transit
Planning for Metro Green Line extension to South Bay Galleria	Marine/Redondo Metro Green Line Station to South Bay	Transit
Expand operations of Freeway Service Patrol	Throughout Segment B of I-405	TSM/TDM

SAN DIEGO FREEWAY (I-405) SEGMENT C: BETWEEN ARTESIA BLVD AND LOS ANGELES/ORANGE COUNTY LINE

SETTING

I-405 Segment C, stretching between Artesia Boulevard (SR-91) in Torrance and the Los Angeles/Orange County Line, has 4 to 5 mixed flow lanes in each direction and has HOV lane service throughout the segment. Between Artesia Blvd and I-710, I-405 runs diagonally through the South Bay from northwest to southeast, and connects to several major north/south and east/west arterials serving the cities of Torrance, Gardena, Carson, Los Angeles, unincorporated LA County and the Ports. From I-710 to the Orange County Line, I-405 runs northeast-southwest through Long Beach to the I-605 transition. The southern portion of this segment serves trips to Cal State Long Beach, Cal State Dominguez Hills, and the Long Beach Municipal Airport. An additional potential impact to I-405 is the new entertainment complex in Carson. This segment of I-405 is serviced by MTA, Gardena Transit, Torrance Transit and Long Beach Transit. No grade-separated fixed guideway transit service along this corridor exists.

CURRENT CONDITIONS

I-405, Segment C has an average daily traffic count of 325,000 vehicles, with average speeds below 15 mph at several key bottleneck locations. Peak traffic conditions along this segment are generally better than Segments A and B, due in large part to the presence of continuous HOV lanes throughout this segment. Several sharp horizontal curves along this segment, particularly in areas close to freeway-to-freeway interchanges, contribute to vehicular weaving at critical “pinch point” locations that cause stop-and-go traffic conditions.

Given the northwest/southeast orientation of I-405, this segment generally serves longer-distance trips between north Orange County and locations in further north in Segments A and B. A high proportion of trips along this corridor are local trips served by major arterials. In the AM peak period, Segment C suffers considerably more traffic congestion in the northbound direction, with a large proportion of those northbound

trips originating in Orange County. Traffic congestion in the PM peak period is heavier in the southbound direction. Of equal concern is the severity of congestion on major arterials serving the South Bay. Several east-west arterials that are subject to excessive peak hours delays: Carson, Del Amo Blvd and 190th. There are also several north-south arterials that suffer from excessive traffic delays: Avalon, Wilmington, Long Beach Blvd, Atlantic and Bellflower. At the south end of Segment C, the NB lane drop at the Los Angeles/Orange County border represents a major “choke point.”

Of the three I-405 segments, Segment C experiences the highest peak directional flows, with heaviest congestion northbound in the AM peak and southbound at the PM peak. The corridor is well served by an extensive street grid of north/south and east/west arterials that carry a relatively large proportion of local trips through the corridor. Because it connects directly to several major truck routes, Segment C also carries a relatively higher proportion of truck traffic, particularly near the approaches to I-110 and I-710.

HOT SPOTS

During the typical weekday, traffic flows along the segment are bi-directional, with heavier northbound traffic in the am peak and heavier southbound traffic in the pm peak. In the AM peak, there are several recurring hot spots:

- NB approach to I-110
- NB I-405 east of Wilmington (at South Bay curve)
- NB approach to I-710
- NB I-405 at Bellflower, Lakewood and Atlantic
- SB I-405 at Crenshaw Boulevard

During the weekday PM peak period, heavy traffic congestion occurs in southbound direction, with recurring hot spots at:

- SB I-405 at Crenshaw

Previously Funded Major Projects along I-405 Segment C
(between Artesia Blvd and Los Angeles/Orange County Line)



Short Range Committed Projects	
▲	Bus
▲	Highway
▲	TSM/TDM
Hot Spot Locations	
●	AM Peak Hour
●	PM Peak Hour
PM Peak Hour Congested Location	
—	Severe Hotspot (less 30 mph)
—	Hotspot (30 mph - 50 mph)
—	Segment
MTA Rail Line/Station	
—	Gold Line
—	Blue Line
—	Green Line
—	Red Line
—	Metrolink/Amtrak Line
—	Local Road
—	State Highway

Map ID	Committed Major Projects*
19	Carson Street Traffic Signal Synchronization Project – will synchronize traffic signals and implement operational improvements on Carson St. between Long Beach Blvd. and Bloomfield Ave.
20	Long Beach East-West Arterial HOV Corridor Project – will provide transit-related street improvements on Anaheim St., 7 th St., and vicinity in the City of Long Beach
21	Gateway Cities Traffic Signal Corridors Project, Phase II – will synchronize traffic signals along many arterials in the Gateway Cities. Three arterials – Long Beach Boulevard, Cherry Avenue, and Bellflower Boulevard - will improve traffic in this corridor segment.
22	Southeast Los Angeles County Traffic Signal Synchronization Corridors Project - will synchronize traffic signals along many arterials in Southeast Los Angeles. On arterial - Lakewood Boulevard - will improve traffic in this corridor segment.
23	Metro Rapid Torrance-Long Beach line – will provide bus service with increased travel speeds due to signal priority, low-floor buses, and longer stop spacing.

* Some projects may be deferred beyond 2009 due to funding shortfalls

- SB approach to I-110 and I-710
- SB I-405 at Atlantic, Cherry and Lakewood
- NB I-405 at Crenshaw Boulevard

WHAT THE FUTURE HOLDS

Major short-term projects planned along this segment of I-405 through 2009 include implementation of Metro Rapid Torrance-Long Beach line. This and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009, if additional funding becomes available.

The short-term corridor strategy for I-405 Segment C focuses on:

- “Smart Corridor” improvements to major parallel and connecting arterials
- Interchange improvements (I-405/SR-91, I-405/I-110)
- Increased express bus service connecting to Metro Blue Line Wardlow station and Artesia Transit Center
- Critical arterial widenings, interchanges and gap closures

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future, if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-405 Segment C Stakeholder Recommendations

Project Title	Project Limit	Project Type
Widen and restripe to provide dual EB left turn lane and WB right turn lane	Sepulveda Blvd at Western Avenue	Arterial
Intersection Improvement - Construct SB right turn pocket	Maple Avenue at Sepulveda Blvd	Arterial
Add NB lane (restripe) Anza, add WB and EB lane on Torrance Blvd, signal upgrades and remove on-street parking	Torrance Blvd and Anza Blvd	Arterial
Street widening (including add'l ROW) - Crenshaw and 182nd, Signal upgrades. 2 NB right-turn on Crenshaw, 1 WB right turn/1 EB through lane to I-405 NB on-ramp	Crenshaw Blvd and 182nd Street	Arterial
Reconstruct intersection (remove median and restripe) - add on Crenshaw a NB left turn	Crenshaw Blvd and 190th Street	Arterial
Street widening (including add'l ROW) - Crenshaw and Torrance Blvd. Provide dedicated SB right turn lane	Crenshaw Blvd and Torrance Blvd	Arterial
Street widening (including add'l ROW) - Crenshaw and Carson St. Add 4th through lane on Crenshaw at intersection; and transition to merge back to 3 NB lanes	Crenshaw Blvd and Carson St	Arterial
Street widening (including add'l ROW) - Crenshaw at Sepulveda Blvd. On Crenshaw: add dual NB right-turn on Sepulveda: add dedicated EB right-turn lane and 4th through lane	Crenshaw Blvd and Sepulveda Blvd	Arterial
Street widening (including add'l ROW) - Crenshaw and Lomita Blvd. On Crenshaw: add dual NB right-turn and a single SB lane. Lomita: add dedicated WB right-turn lane and 4th through lane	Intersection Crenshaw Blvd and Lomita Blvd	Arterial
Street widening (including add'l ROW) - Prairie Ave. and 190th. On 190th add dual NB right-turn and restriping to provide 3 through lanes for WB and EB. Also prohibit on-street parking	Intersection Prairie Avenue and 190th St	Arterial

I-405 Segment C Stakeholder Recommendations (continued) I-405

Project Title	Project Limit	Project Type
Widen signalized intersection at Van Ness Ave and 190th. On 190th, restripe to add 3 through lanes for both WB and EB and prohibit on-street parking and upgrade traffic signal	Van Ness Ave and 190th St	Arterial
Widen Torrance Blvd to 3 WB through lanes from Crenshaw to Madrona Ave	Torrance Blvd from Crenshaw to Madrona Ave	Arterial
Street widening and restripe to add SB through lane and signal modifications (for concurrent (NB/SB left-turns)	Intersection Anza Ave and Pacific Coast Hwy	Arterial
Widen Inglewood Ave 4 ft. to the west	Inglewood Avenue from Rosecrans to Marine Ave within ROW	Arterial
Reconfigure IC to meet future traffic loads; widen NB offramp at Avalon	Avalon Blvd at I-405	Arterial
Modify the NB onramp at Artesia by adding a third lane	Artesia on ramp/I-405	Arterial
Widen the SB offramp at Wilmington to two lanes, and widen the intersection at off-ramp and Wilmington	Wilmington and I-405	Freeway
Modify the SB onramp at Avalon Blvd at I-405	Avalon Blvd and I-405	Freeway
Modify NB offramp at Crenshaw and I-405	Crenshaw Blvd and I-405	Freeway
Additional bus service	South Bay and LAX	Transit
Increase service frequency on bus routes connection Long Beach to the CSULB campus	Connect downtown Long Beach to Cal State LB	Transit
Increase service frequency on bus routes connecting downtown Long Beach to Orange County	Connect Long Beach to Orange County (OCTA)	Transit
Increase feeder bus service Metro Green line and Harbor Transitway	Metro Green Line (Lines 340, 439, 561, 232, 40), Harbor Transitway (Lines 442, 444, 445, 447, 448, 550)	Transit
Add express bus service to downtown Long Beach from South Bay Galleria	Add transit service connection to downtown Long Beach to South Bay Galleria	Transit

Segment C Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Expand Artesia Station Park and Ride facility	Artesia Station	TSM/TDM
Expand operations of Freeway Service Patrol	Corridor-wide	TSM/TDM

LONG BEACH FREEWAY (I-710): BETWEEN I-210 AND PORTS OF LONG BEACH AND LOS ANGELES

SETTING

I-710 stretches from Valley Boulevard to the Ports of Long Beach and Los Angeles, with a 6.5 mile freeway gap between I-210 and Valley Boulevard. This corridor consists of 3 to 5 mixed-flow lanes in each direction and has no HOV lanes. The corridor experiences severe congestion, even though the north and southbound traffic is balanced during rush hours. Average operating speeds are less than 20 mph during peak hours. This corridor has several parallel major arterials which are highly congested. Another major contributing factor to this congestion is the large numbers of trucks that use I-710 to travel between the Ports and the rail yards located near I-5 and the warehouses and distribution points throughout Southern California. This truck traffic accounts for 22 percent of all freeway traffic along I-710. Transit service is provided along arterial streets by MTA, Long Beach Transit and other local municipal transit providers. In addition, the Metro Blue Line, which operates on approximately 5-minute headways during peak times, parallels the south portion of the corridor.

CURRENT CONDITIONS

Built nearly 50 years ago and essentially is as it was constructed, I-710 currently carries an average daily traffic counts of 240,000 vehicles. During the peak commute hours, the facility is congested with average speeds falling below 25 mph at several key bottleneck locations in both directions. Due to the increased levels of truck traffic in recent years, the facility does not have the capacity to accommodate the current demand.

From an operations standpoint, I-710 has several design characteristics that limit efficient vehicular movement. For example, close spacing between local interchanges which results in short weaving and merging distances. In addition, many of these interchanges are cloverleaf configurations which were designed in accordance with antiquated standards (i.e., short radii) which result in short weaving distances and delays for the on and off-ramp traffic. Other inefficiencies include inadequate ramp storage to accommodate heavy truck traffic (i.e.,

Atlantic and Bandini Boulevards), narrow lane widths, limited or no shoulder widths, steep climbing grades, poor pavement conditions, inadequate drainage facilities, and antiquated design of freeway to freeway interchanges that is trying to accommodate higher than design volumes of traffic.

In the AM peak, traffic conditions northbound are stop-and-go from I-105 to Florence Avenue, due to horizontal curves, narrow lanes, and the heavy traffic transitioning to I-5. Southbound, speeds are below 30 mph from the I-105 Interchange to the I-405 Interchange due to the heavy traffic transitioning to the I-405.

The accident rate on this corridor is well above the statewide average for freeways of this type. On average, five accidents occur on I-710 each day, making it one of the most accident-prone freeways in Los Angeles County.

HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph.

Also shown on the map are the locations of recurring hot spots. In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by green dots):

- NB approach to I-5
- SB approach to I-405

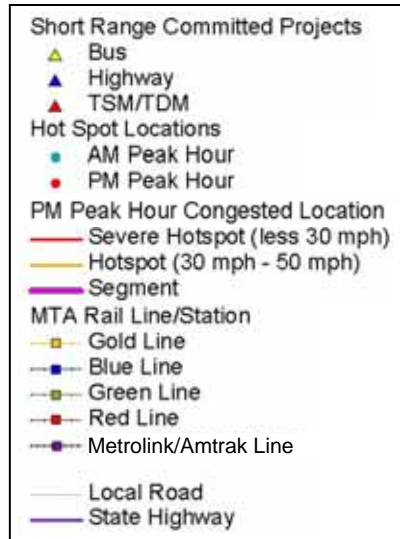
During the weekday PM peak period, traffic congestion occurs at the northbound and southbound I-710 at Firestone Boulevard (denoted on map by red dot).

Previously Funded Major Projects along I-710
(between I-210 and Ports of Long Beach and Los Angeles)



Map ID	Committed Major Projects*
1**	Traffic Signal Synchronization Projects: Atlantic Blvd/Atlantic Ave, Rosemead Blvd/Lakewood Blvd, Rosecrans Ave, Alondra Blvd, Artesia Blvd, Bellflower Blvd, Garfield Ave/Eastern Ave/Cherry Ave, Pacific Ave/Long Beach Blvd, Santa Fe Ave, Lakewood Blvd Signal Interconnection
2**	Downtown/Shoreline Drive Adaptive Traffic Management System: Deployment of ITS elements in the Long Beach downtown area to provide an adaptive traffic management system to respond to special generator traffic
3	Pier B St Intermodal Railyard Expansion: Expansion of the Pier B St Intermodal Railyard (including re-alignment/widening of Pier B St) to facilitate additional volume of rail shipments to and from the Port of Long Beach
4	Freeway/Arterial Interchange Improvements: I-710 Firestone Blvd – Phase II, III, IV and I-710 Atlantic/Bandini – Phase I
5	Truck Impact Intersection Improvement: Selected interchange improvements
6**	I-710 Fwy (PCH to Downtown L.B. Improvement): Pavement rehab, metal beam guard rail replacement, and 2 landscaping projects
7**	Metro Rapid Transit: Atlantic Avenue, Long Beach and Soto Street lines

* Some projects may be deferred beyond 2009 due to funding shortfalls
 ** Project improvements are planned at multiple locations throughout the corridor



WHAT THE FUTURE HOLDS

Major short-term projects planned along I-710 through 2009 include:

- Implementation of freeway improvements at PCH/Downtown Long Beach
- Implementation of Metro Rapid Atlantic Avenue, Long Beach Boulevard and Soto Street lines

These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-710 focuses on:

- Widen/lengthen selected on and off-ramps to increase storage
- Provide exclusive truck ramps at heavy truck access points
- Widen key intersections along parallel arterials
- Improve signing and lighting
- Provide real-time commercial vehicle travel routing information
- Increase mainline capacity at spot locations

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-710 Stakeholder Recommendations

Project Title	Project Limit	Project Type
Upgrade traffic signals and install signal synch along Atlantic, Cherry & Garfield	Atlantic, Cherry, Garfield	Arterial
Upgrade traffic signal at the intersection of Atlantic Blvd and Bandini Blvd	Atlantic Blvd at Bandini Blvd	Arterial
Widen Long Beach Blvd, from Antonio to Firestone	Long Beach Blvd, from Antonio to Firestone	Arterial
Widen Atlantic Blvd: PCH to SR-60	Atlantic Blvd: PCH to SR-60	Arterial
Widen Cherry Ave: PCH to 70th St	Cherry Ave: PCH to 70th St	Arterial
Widen Garfield Ave: 70th to Pomona	Garfield Ave: 70th to Pomona	Arterial
Widen Eastern Ave: Garfield to Atlantic	Eastern: Garfield to Atlantic	Arterial
Widen Paramount Blvd: Carson to I-5	Paramount Blvd: Carson to I-5	Arterial
Widen PCH: from Terminal Island Freeway to Cherry	PCH: from Terminal Island Freeway to Cherry	Arterial
Widen Willow: Terminal Island Fwy to Cherry	Willow St: from Terminal Island Freeway to Cherry	Arterial
Widen Del Amo Blvd: Alameda to Cherry	Del Amo Blvd: Alameda to Cherry	Arterial
Widen Firestone Blvd: from Atlantic to Paramount	Firestone Blvd: from Atlantic to Paramount	Arterial
Florence Ave: Atlantic to Paramount	Florence : Atlantic to Paramount	Arterial
Widen Ocean Blvd: Terminal Island Freeway to Harbor Scenic Drive (excluding Gerald Desmond Bridge)	Ocean Blvd: Terminal Island Fwy to Harbor Scenic Dr (excl Gerald Desmond Bridge)	Arterial
Replace Gerald Desmond Bridge	SR-47 and Pico Ave	Arterial
Widen 38th/37th/Bandini Blvd: Alameda to I-5	38th/37th/Bandini Blvd: Alameda to I-5	Arterial
Widen Arterial	Washington: Alameda to I-5	Arterial
Widen existing Atlantic Blvd bridge at the Los Angeles River (from 68' to 100')	Atlantic Blvd at the Los Angeles River	Arterial
Add truck lanes to I-710 between I-405 and I-10	I-405 to I-10	Freeway
Reconstruct SR-91/I-710 interchange to improve geometrics to standard	SR-91/I-710 IC (SR-91: Long Beach Blvd to Atlantic Ave) (I-710: Long Beach Blvd to Alondra Blvd)	Freeway
Reconstruct interchange at I-405/I-710 to improve geometrics to standard, eliminate weaving	I-405/I-710 IC (I-405: North Pacific Place to Santa Fe Ave) (I-710: Wardlow Road to Metro Blue Line Bridge)	Freeway

SANTA MONICA FREEWAY (I-10): BETWEEN PCH (SR-1) AND I-5

SETTING

The Santa Monica Freeway (I-10) has 4-6 mixed-flow lanes in each direction. There are no carpool lanes along this corridor. This corridor is severely congested in both eastbound and westbound directions. The historical pattern of heavier traffic towards Downtown in the morning and away from Downtown in the evening has now given way to a more balanced distribution of traffic between eastbound and westbound flows. Stop and go congestion is common on weekdays from 6:30 – 9:30am and from 3:30 – 7:00pm. During these times, a 15-mile trip from Downtown to Santa Monica commonly takes more than one hour to complete. Truck volumes in this corridor are approximately 4 percent.

The Santa Monica Freeway is supported by many parallel and feeder arterials that are also congested during the peak rush hours. These streets carry more than 20 parallel bus routes with headways as frequent as every 2-10 minutes during peak periods on many routes. Los Angeles Department of Transportation, Culver CityBus, Santa Monica Big Blue Bus and MTA provide bus service along the Santa Monica Freeway and several parallel arterials. MTA operates Metro Rapid service (Line 720) on Wilshire Blvd. The Metro Red Line operates from Wilshire/Western to Hollywood and Union Station. West of Wilshire and Western, there is no grade-separated mass transit service through the corridor.

CURRENT CONDITIONS

The Santa Monica Freeway has an average daily traffic count of 380,000 vehicles, with average peak speeds below 15 mph throughout the corridor. Traffic volumes are heavy in both directions throughout the AM and PM peak periods. The main causes of severe recurring traffic congestion are lane drops near the I-405 interchange, the bottleneck at the I-110 transition near downtown Los Angeles and problematic arterial-freeway connections. The I-10 connectors at Venice and Washington are subject to recurring traffic conflicts, which result in back-ups onto I-10. In both the AM and PM peaks, the eastbound bottleneck near downtown is largely responsible for stop-and-go traffic that regularly back-ups all the way to La Brea.

In the AM period, heavy traffic destined for downtown Los Angeles, Hollywood (via US-101) and Glendale/Burbank (via I-5) and east Los Angeles must pass through the downtown “pinch-point,” which causes severe backups all the way back to La Cienega. In the westbound direction, stop-and-go conditions usually materialize at Crenshaw and continue to the approach to I-405, which narrows to one lane on both the NB and SB connectors. West of I-405, traffic conditions are considerably better, with isolated backups at Bundy Drive, Lincoln Boulevard, and 4th Street exits.

HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph. The map also shows the locations of recurring congestion hot spots. In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by blue dots):

- EB approach to I-110 interchange
- EB I-10 at Washington/Venice
- EB I-10 at Overland Ave
- WB approach to I-405
- WB I-10 at Crenshaw

In the PM peak, recurring traffic congestion occurs at the following bottleneck locations (denoted on the map by red dots):

- WB approach to I-405
- WB I-10 at Crenshaw
- WB I-10 at Washington/Venice
- EB connector to I-5/SR-60 transition
- EB approach to I-110
- EB I-10 at Vermont

Previously Funded Major Projects along I-10
(between PCH and I-5)



Map ID	Committed Major Projects*
1	Santa Monica Transit Parkway: Reconstruction and reconfiguration of Big and Little Santa Monica Boulevards between I-405 and Century City into one arterial with three lanes in each direction plus frontage roads, a landscaped median, bicycle lanes, and bus priority features.
2**	Wilshire Boulevard Metro Rapid Transitway: Enhancements to Metro Rapid including higher capacity buses, station enhancements, reconstruction of the curb lane for 3.8 miles, expansion of an MTA Operating Division and peak period dedicated bus lanes subject to the approval of local jurisdictions.
3**	Metro Rapid Pico
4**	Metro Rapid Santa Monica
5**	Metro Rapid Crenshaw
6**	Metro Rapid West Olympic
7**	Metro Rapid Western
8**	Metro Rapid Vernon-La Cienega

* Some projects may be deferred beyond 2009 due to funding shortfalls
 ** Project improvements are planned at multiple locations throughout the corridor

Short Range Committed Projects

- ▲ Bus
- ▲ Highway
- ▲ TSM/TDM

Hot Spot Locations

- AM Peak Hour
- PM Peak Hour

PM Peak Hour Congested Location

- Severe Hotspot (less 30 mph)
- Hotspot (30 mph - 50 mph)
- Segment

MTA Rail Line/Station

- Gold Line
- Blue Line
- Green Line
- Red Line
- Metrolink/Amtrak Line

MTA

- Line 720
- Local Road
- State Highway

WHAT THE FUTURE HOLDS

Major short-term projects planned along I-10 through 2009 include:

- Implementation of Metro Rapid Transitway on Wilshire Boulevard
- Implementation of Metro Rapid Pico, Santa Monica, Crenshaw, West Olympic, Western and Vernon-La Cienega lines

These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for I-10 focuses on:

- increased storage capacity at metered on-ramps
- “Smart Corridor” (signal synchronization, other ITS improvements) for Pico, Washington, Jefferson
- improvement to approaches to key interchanges
- improvement to connection between freeway and arterial system
- designation of a dedicated transit lane between West LA and downtown

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-10 Stakeholder Recommendations

Project Title	Project Limit	Project Type
Restripe various arterials for turn pockets and additional lanes	Corridor-wide	Arterial
Arterial reconfiguration to facilitate directional flow such as reversible lanes	Corridor-wide	Arterial
Implement direction-based traffic signal coordination	Corridor-wide	Arterial
Elimination of auto/pedestrian conflicts at Robertson and Exposition terminus	I-10 freeway on- and off-ramps at Robertson	Freeway
Expansion of Freeway Service Patrol	Corridor-wide	Freeway
Widen over-crossing and modify ramps at Overland Ave	Overland Avenue	Freeway
Modify EB off-ramps at Western Ave, Arlington Ave, Crenshaw Blvd	EB Western Ave, Arlington Ave, Crenshaw Blvd off-ramps	Freeway
Modify EB I-10 to NB I-110 connector	EB 10 to N/B 110 connector	Freeway
Modify EB I-10 and SB I-110 connector	EB 10 to S/B 110 connector	Freeway
Modify WB I-10 to SB I-110 connector	WB 10 to SB 110 connector	Freeway
Add WB lane to I-10 from Harcourt Ave to Overland Ave	Harcourt Avenue to Overland Ave	Freeway
Install ramp metering on both lanes of the EB Bundy Dr onramp to I-10	EB Bundy Dr on-ramp	Freeway
Eliminate raised channelizers separating the mainlines and the collector/distributors (at Crenshaw, Arlington, Western, Normandie, Vermont); add mixed-flow lane with extra space	I-10 between Crenshaw and Hoover	Freeway
Redesign on-ramp shoulders to accommodate Express Bus service	Corridor-wide	Freeway/ Transit
Implement Rapid Bus Transit Improvements along major arterials (Lincoln, Sepulveda and Pico)	Lincoln, Sepulveda and Pico	Transit
Increase service frequency of Wilshire Metro Rapid (Line 720)	Wilshire Blvd Bus Rapid Transit	Transit
Expand Metro Rapid bus service along Pico Blvd, Venice Blvd, Jefferson Blvd, Sunset Blvd	Metro Rapid Service on Pico Blvd, Venice Blvd, Jefferson, Sunset Blvd	Transit
Install bike racks on buses along I-10 parallel arterials	Corridor-wide	Transit
Additional bus service along I-10 corridor	Corridor-wide	Transit

I-10 Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Improved Transit Services by increasing frequency, signal priority, dedicated transit lanes and high-capacity buses	SR-1 to I-5 parallel to I-10	Transit
Improve limited bus lines with longer stop spacing and stops in downtown Los Angeles	Corridor-wide	Transit
Construction of Exposition Light Rail Line	Exposition Light Rail initial segment - Downtown to Culver City and Santa Monica	Transit
Santa Monica Smart Corridor System Phase II	Corridor-wide	TSM/TDM
Promotion of Ridesharing and Transportation Demand Management Strategies throughout the corridor	Corridor-wide	TSM/TDM
Coordinate pedestrian, bicycle, and transit information and amenities	Corridor-wide	TSM/TDM
Expansion of Park and Ride facilities	Corridor-wide	TSM/TDM
Install fiber optics infrastructure to signal coordination on Lincoln and Pico Blvds	Lincoln Blvd and Pico Blvd	TSM/TDM
Install CCTV and other communications systems	Corridor-wide	TSM/TDM
Upgrade surveillance system throughout this segment of I-10	Corridor-wide	TSM/TDM
Coordinate construction schedules to avoid additional traffic conflicts	Corridor-wide	TSM/TDM

SAN BERNARDINO AND POMONA FREEWAYS (I-10/SR-60): I-5 TO LOS ANGELES/SAN BERNARDINO COUNTY LINE

SETTING

The I-10/SR-60 Corridor in Los Angeles County extends from I-5 near Downtown Los Angeles to the Los Angeles/San Bernardino County Line at the eastern edge of the San Gabriel Valley.

The I-10 segment has 4 mixed-flow lanes and one carpool lane in each direction from Interstate 710 to Baldwin Avenue. Peak traffic is heavily directional westbound in the morning and eastbound in the afternoon. Truck traffic comprises 7 percent of all traffic on the freeway. Significant local bus service is provided (approximately 12 lines). Additional commuter transit is available with approximately 80 buses per hour operating on the El Monte Transitway and Metrolink service provided every 25-minutes during peak periods on the San Bernardino Line.

The SR-60 segment has 4 to 5 mixed-flow lanes and one carpool lane in each direction from Brea Canyon Road to the San Bernardino County Line. East and westbound peak traffic is relatively balanced. This segment is characterized by heavy goods movement traffic with truck traffic comprising 13 percent of all traffic on the freeway. Local transit service is provided on parallel arterials for a portion of the segment from Downtown Los Angeles to the Montebello Metrolink Station operating at 5-minute headways during peak periods. Metrolink service operates on the Riverside Line at 25-minute headways.

CURRENT CONDITIONS

San Bernardino Freeway (I-10): Peak flow occurs westbound in the AM and eastbound in the PM. Peak average daily traffic varies from approximately 230,000 vehicles east of I-5 interchange to 270,000 vehicles at the Los Angeles/San Bernardino county line. The peak hour average speed drops to 20 miles per hour westbound in the AM peak between Garfield Avenue in Alhambra and Citrus Avenue in West Covina. PM peak congestion occurs eastbound on I-10 between Eastern Avenue

and Citrus Avenue where the average speeds drop below 18 miles per hour.

Pomona Freeway (SR-60) runs almost parallel to I-10 and serves as a major connector to downtown from the county line. Similar to I-10, peak traffic flow occurs in the westbound direction in the AM and eastbound direction in the PM. The freeway carries a substantial amount of truck traffic (13%), which exacerbates traffic conditions during peak and non-peak hours. In the AM peak period, stop-and-go conditions occur westbound between Azusa Avenue and Sunol Road. Eastbound, stop-and-go traffic occurs between 3rd Street and San Gabriel Boulevard and 7th Avenue and Fairway Drive. The average daily traffic on SR-60 varies from 185,000 near downtown, 300,000 near SR-57 interchange to 175,000 near the San Bernardino County Line.

HOT SPOTS

The map on the following page shows the intensity of weekday PM peak traffic congestion along the corridor. Areas shaded in red represent segments that have average PM peak speeds of less than 35 mph; areas shaded in orange represent segments with average PM peak speeds of between 35 and 50 mph. Segments that are unshaded have average speeds of greater than 50 mph. Also shown on the map are recurring congestion hot spots. In the AM peak, there are recurring bottlenecks at the following locations (denoted on the map by green dots):

- WB I-10 at New Avenue
- WB I-10 approach to I-605
- WB SR-60 approach to SR-57
- WB SR-60 approach to I-605
- WB SR-60 approach to I-5

In the PM peak, recurring traffic congestion occurs at the following bottleneck locations (denoted on the map by red dots):

- EB I-10 at Baldwin
- EB I-10 approach to I-710

Previously Funded Major Projects along I-10/SR-60 Corridor
(between I-5 and Los Angeles/San Bernardino County Line)



Map ID	Committed Major Projects
1	I-10 HOV Lane: County Line to SR-57: One HOV lane in each direction. This will connect LA County to San Bernardino County's 10-mile HOV project from the County Line to I-15
2	I-10 HOV Lane: Baldwin Ave. to I-605: One HOV lane in each direction. This project will extend the existing I-10 HOV system to I-605.
3	I-10 HOV Lane: I-605 to Puente Ave: One HOV lane in each direction. This project will extend the I-10 HOV system to Puente Ave and connect to future extensions that will complete a continuous HOV lane to the San Bernardino County Line.
4	SR-60 HOV Lane: I-605 to Brea Canyon Road: One carpool lane in each direction. This project will connect to existing HOV lanes extending to the San Bernardino County Line linking San Gabriel Valley to San Bernardino County.
5	SR-57/SR-60 HOV Lane Connector Ramps: Construction of HOV direct connector from NB SR-57 to EB SR-60, construction of HOV direct connector from WB SR-60 to SB SR-57 and addition of collector road on-ramp to WB SR-60 between Grand Ave. and Brea Canyon Rd.
6**	Alameda Corridor East: Safety upgrades, traffic signal control measures, roadway widenings, and grade separation projects at 55 crossing locations over 30 miles at ultimate build out.

Short Range Committed Projects

- ▲ Bus
- ▲ Highway
- ▲ TSM/TDM

Hot Spot Locations

- AM Peak Hour
- PM Peak Hour

PM Peak Hour Congested Location

- Severe Hotspot (less 30 mph)
- Hotspot (30 mph - 50 mph)
- Segment

MTA Rail Line/Station

- Gold Line
- Blue Line
- Green Line
- Red Line
- Metrolink/Amtrak Line

Local Road

- State Highway

* Some projects may be deferred beyond 2009 due to funding shortfalls
 **Project improvements are planned at multiple locations throughout the corridor

- EB I-10 at Azusa
- EB SR-60 approach to I-605
- EB SR-60 at Hacienda Boulevard
- EB SR-60 approach to SR-57

WHAT THE FUTURE HOLDS

Major short-term projects planned along I-10 through 2009 include:

- Construction of carpool lanes on I-10 between Baldwin Avenue and I-605 and between I-605 and Puente Avenue
- Construction of carpool lanes on SR-60 between I-605 and Brea Canyon Road
- Construction of carpool lane connector ramps between SR-57 and SR-60
- Implementation of Metro Rapid Garvey-Chavez line

These and additional major committed projects (pending availability of funding) are identified on the previous page.

SHORT TERM CORRIDOR STRATEGY

In an effort to build off the previously committed projects and further improve corridor mobility, MTA met with local jurisdictions, transportation partners, and subregional Councils of Governments to develop additional corridor-specific, short-range improvement strategies. The corridor strategy presented here identifies several cost-effective improvements that enhance the previously committed projects and could be implemented by 2009 if additional funding becomes available.

The short-term corridor strategy for the I-10/SR-60 Corridor focuses on:

- Implementation of Smart Corridor and adaptive traffic control systems in the corridor
- Enhanced on-ramp operations by better ramp metering and providing adequate storage capacity especially for HOV lanes
- Coordination of traffic signals along regionally significant parallel arterials such as Valley and Ramona Boulevards along I-10 and Colima Road and Pomona Boulevard along SR-60
- Expansion of freeway service patrol at least by 15 percent to minimize non-recurring congestion

STAKEHOLDER RECOMMENDATIONS

To help implement the corridor strategy listed above, there are a variety of project and program recommendations identified through the stakeholder outreach process that could be considered for implementation in the future if adequate funding becomes available. These stakeholder recommendations are summarized in the following table.

I-10 Stakeholder Recommendations

Project Title	Project Limit	Project Type
Improve signal coordination along I-10 at City of Rosemead	I-10 segment in City of Rosemead	Arterial
Implement signal coordination along I-10 at Santa Anita	Signal coordination along I-10 near Santa Anita Race Track	Arterial
Expand Freeway Service Patrol (FSP) for San Gabriel Valley	Throughout the San Gabriel Valley	Freeway
Expand Bus Service along El Monte Busway by increasing route and line capacity with high occupancy buses	Along El Monte Busway	Transit
Implement the Foothill Transit Bus Priority Project, which includes increased service, improved service coordination with MTA & other transit services, and new express bus routes	Bus transit priority - Foothill Transit	Transit
Design and construction of carpool lane along I-10 from I-605 to Puente Ave	One car pool lane in each direction on I-10 from I-605 to Puente Avenue	Freeway
Add HOV lane to I-10 between I-605 and Puente Ave	I-605 to Puente Avenue	Freeway
Add HOV lane on I-10 between Puente Ave and Citrus Ave	Puente Ave to Citrus Ave	Freeway
Add HOV lane on I-10 between Citrus and SR-57	Citrus Ave to SR-57	Freeway
Construct truck climbing lane on WB I-10 to WB SR-57 connector, modify off-ramp	WB I-10 to WB SR-57 connector	Freeway
Widen overcrossing and relocate ramps at Cesar Chavez Drive	Cesar Chavez Drive	Freeway
Modify interchanges along I-10 in Baldwin Park (Fraser, Francisquito and other local connectors in the Baldwin Park area)	Walnut Grove & I-10 (at Fraser, Francisquito and others in Baldwin Park)	Freeway
Conduct Eastern Gateway Freeway Corridor Improvement Study	I-710 to San Bernardino County Line	Freeway

SR-60 Stakeholder Recommendations

Project Title	Project Limit	Project Type
Add one lane each direction on Valley Blvd	On Valley Blvd (from I-710 to Santa Anita)	Arterial
Add one lane each direction on Valley Blvd	On Garvey Blvd (from Atlantic to Rosemead Blvd.)	Arterial
Widen Valley Blvd from I-605 to SR-57	Valley Blvd from I-605 to SR-57	Arterial
Widen Colima from Hacienda to Diamond Bar	Colima from Hacienda to Diamond Bar	Arterial
Review signal timing for synchronization on Valley to Colima	Valley Blvd and Colima	Arterial
Upgrade signals on Valley and Colima	Valley Blvd and Colima	Arterial
Improve signal coordination along I-10 in City of Rosemead	I-10 segment in City of Rosemead	Arterial
Implement signal coordination along I-10 at Santa Anita	Signal coordination along I-10 near Santa Anita Race Track	Arterial
Construct a new interchange at Lemon Ave and SR-60	SR-60 and Lemon Avenue	Freeway
Convert expressway to freeway mixed flow and HOV on SR-71 from I-10 to Mission	SR-71 from I-10 to Mission Blvd	Freeway
Add a WB auxiliary lane from Hacienda Blvd to 7th Ave	SR-60 from Hacienda Blvd to 7th Ave	Freeway
Add storage lane from WB SR-60 to I-605 Connector	SR-60 to I-605	Freeway
Carry WB 4th lane through the I-605 interchange, which is currently 3 lanes	SR-60/I-605 interchange	Freeway
Merge two lanes SB I-605 connector to WB SR-60 prior to merging with WB SR-60 mainline	SR-60/I-605 interchange	Freeway
Widen SR-60 to add EB 5th lane from Paramount to San Gabriel	SR-60 from Paramount to San Gabriel	Freeway
Expand Freeway Service Patrol (FSP) for San Gabriel Valley	Throughout the San Gabriel Valley	Freeway
Design and construction of carpool lane along I-10 from I-605 to Puente Ave	One carpool lane in each direction on I-10 from I-605 to Puente Ave	Freeway
Add HOV lane to I-10 between I-605 and Puente Ave	I-605 to Puente Ave	Freeway

SR-60 Stakeholder Recommendations (continued)

Project Title	Project Limit	Project Type
Add HOV lane on I-10 between Puente Ave and Citrus Ave	Puente Ave to Citrus Ave	Freeway
Add HOV lane on I-10 between Citrus and SR-57	Citrus to SR-57	Freeway
Construct truck climbing lane on WB I-10 to WB SR-57 connector, modify off-ramp	WB I-10 to WB SR-57 connector	Freeway
Widen overcrossing and relocate ramps at Cesar Chavez Drive	Cesar Chavez Drive	Freeway
Modify interchanges along I-10 in Baldwin Park (Fraser, Francisquito and other local connectors in the Baldwin Park area)	Walnut Grove and I-10 (at Fraser, Francisquito and others in Baldwin Park)	Freeway
Conduct Eastern Gateway Freeway Corridor Improvement Study	I-710 to San Bernardino County Line	Freeway
Increase bus service/Metro Rapid/BSP	I-5 to County Line	Transit
Add trains to Metrolink's Riverside Line	Expand Metrolink's Riverside Line	Transit
Expand Inland Empire Metrolink Service	Expand Metrolink's San Bernardino Line	Transit
Add/expand various Park and Ride lots from I-605 to San Bernardino County Line	Throughout SR-60 corridor	Transit
Construct multimodal station with Metrolink, Foothill Transit, HOV direct connection to Brea Canyon Station	Various locations to be determined	Transit
Expand Bus Service along El Monte Busway by increasing route and line capacity with high-occupancy buses	Along El Monte Busway	Transit
Implement the Foothill Transit Bus Priority Project, which includes increased service, improved service coordination with MTA and other transit services, and new express bus routes	Bus transit priority - Foothill Transit	Transit

TRAVEL DEMAND MODEL ASSUMPTIONS AND EVALUATION

The development of the Short Range Transportation Plan (S RTP) was preceded by a rigorous assessment of the analytical tools, assumptions and performance criteria that would be employed in the evaluation of potential plan alternatives. The primary analysis tool is the MTA Travel Demand Model. This report provides a technical summary of the travel demand modeling process and performance measures analyses conducted as part of the S RTP effort.

1. OVERVIEW OF MTA TRAVEL DEMAND MODEL

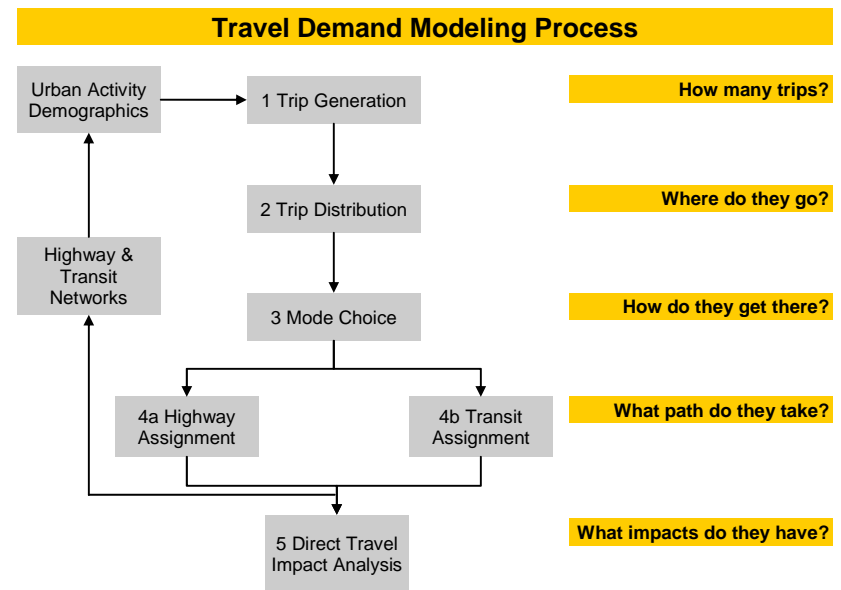
The MTA Travel Demand Model uses the traditional four-step process generally employed by travel forecasting modelers throughout the United States. The four steps are trip generation, trip distribution, mode choice and network assignment. Exhibit 1 is a conceptual representation of the four-step modeling process. The implementation of the four-step process is achieved through a series of seventeen (17) computer simulation modules. Each module has been calibrated from observed data, typically from a sample of household interviews from which detailed demographic and travel characteristics are collected through written questionnaires.

The most current MTA Travel Demand Model is the Year 2000 Model that was developed for the 2001 Long Range Transportation Plan for Los Angeles County (2001 LRTP). The 2000 Model is the latest and most sophisticated evolution of the MTA model originally developed in the early 1970s. The trip generation of the 2000 Model is primarily based on the 1967, 1976 and 1991 home interview surveys for the Los Angeles metropolitan area surveys conducted by Caltrans and SCAG. The trip distribution and mode choice modules were updated using the 1990 Census, the 1991 Household Travel Survey, and the 1995-97 on-board surveys on rail and bus patrons.

The 2000 Model was validated for its ability to replicate 1998 travel patterns and conditions using the survey data from which it was calibrated as well as highway vehicular ground counts and transit ridership statistics. The model performed within standard limits for all components including average trip length, mode shares, and comparisons of screenline volumes and transit boardings.

For the 2003 S RTP, the 2000 Model has been updated to reflect 2001 as the base year and 2009 as the forecast year. The process includes updating the input socioeconomic data and the modification of highway and transit network for the years 2001 and 2009.

Exhibit 1: Four-Step Travel Demand Modeling Process



2. MODEL INPUTS

The basic inputs to a travel demand simulation model include socioeconomic data and the transportation network (both highway and transit networks) simulated. This section describes the socioeconomic data and network information used in the 2003 S RTP Model.

2.1 Socioeconomic Forecast

The socioeconomic input data to the MTA model are consistent with the SCAG forecast. The latest official forecast released by SCAG is the

“2001 RTP” version, used to develop the 2001 Regional Transportation Plan adopted by the Regional Council. When the SRTP process began in early 2002, SCAG had just begun its forecasting process for the 2004 RTP. At that time, new projections by SCAG for the 2004 RTP were only available on county level; socioeconomic data below county level (e.g., subregion, regional statistical area, community, and traffic analysis zone) were not available yet. As a result, the MTA staff applied SCAG’s new 2004 RTP county total forecasts as the control totals for each county, then assigned the demographics within each county based on the distributions found in the 2001 RTP.

Population and employment are the main socioeconomic input to a travel demand model. For the SRTP, population and employment estimates by traffic analysis zone (TAZ) for 2001 and 2009 were derived based on the population and employment data contained in SCAG’s 2001 RTP and the county level forecasts for the new 2004 RTP.

2.1.1 Population Forecasts

The analysis of population growth was conducted regionally by county and in a subregional level for Los Angeles County. The county was divided into nine (9) subregions as shown in Exhibit 2.

Exhibit 3 shows that Los Angeles County’s population is forecast to grow by 11 percent from approximately 9.6 million in 2001 to 10.7 million in 2009. The region’s population will grow by about 12 percent during the same period. Los Angeles County’s share of the regional population is estimated to be 61 percent in 2001 and will remain at the same level in 2009.

Population growth trends by subregion within the county are summarized in Exhibit 4. Gateway Cities will continue to be the most populous subregion in the county with 1.93 million forecast for 2009. North County will see the highest growth with population growing from 0.59 million in 2001 to 0.82 million in 2009, a growth of about 39 percent.

Exhibit 2: Los Angeles County Subregions

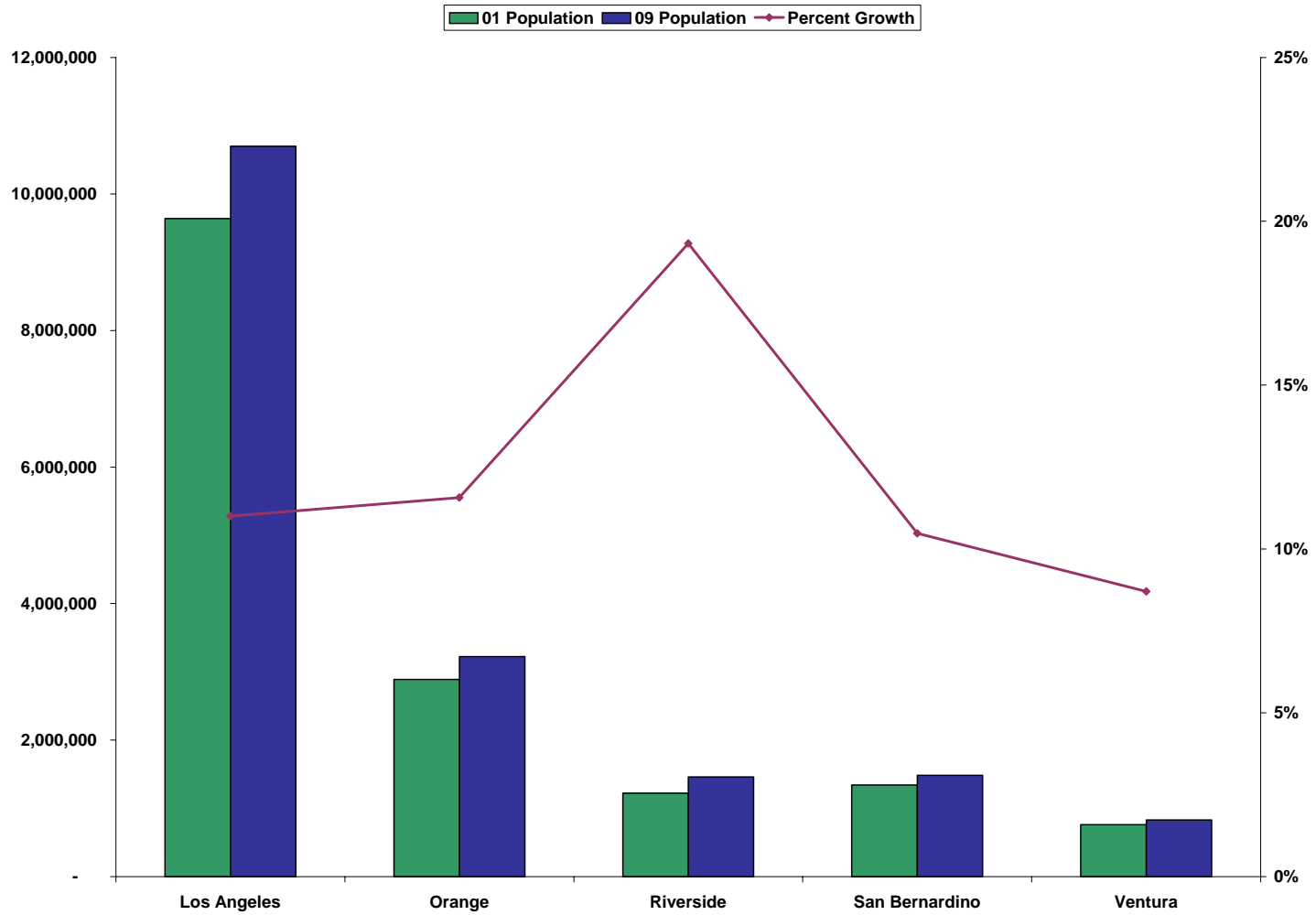


2.1.2 Employment Forecasts

Exhibit 5 shows that while the region’s employment is expected to grow by 16 percent between 2001 and 2009, the growth for Los Angeles County will only be 12 percent. Projected growth for other counties is much higher, ranging from 18 percent for Ventura, 19 percent for Orange, 23 percent for San Bernardino to 35 percent for Riverside County. Employment share of Los Angeles County is expected to decrease from 62 percent of the regional total in 2001 to 60 percent in 2009.

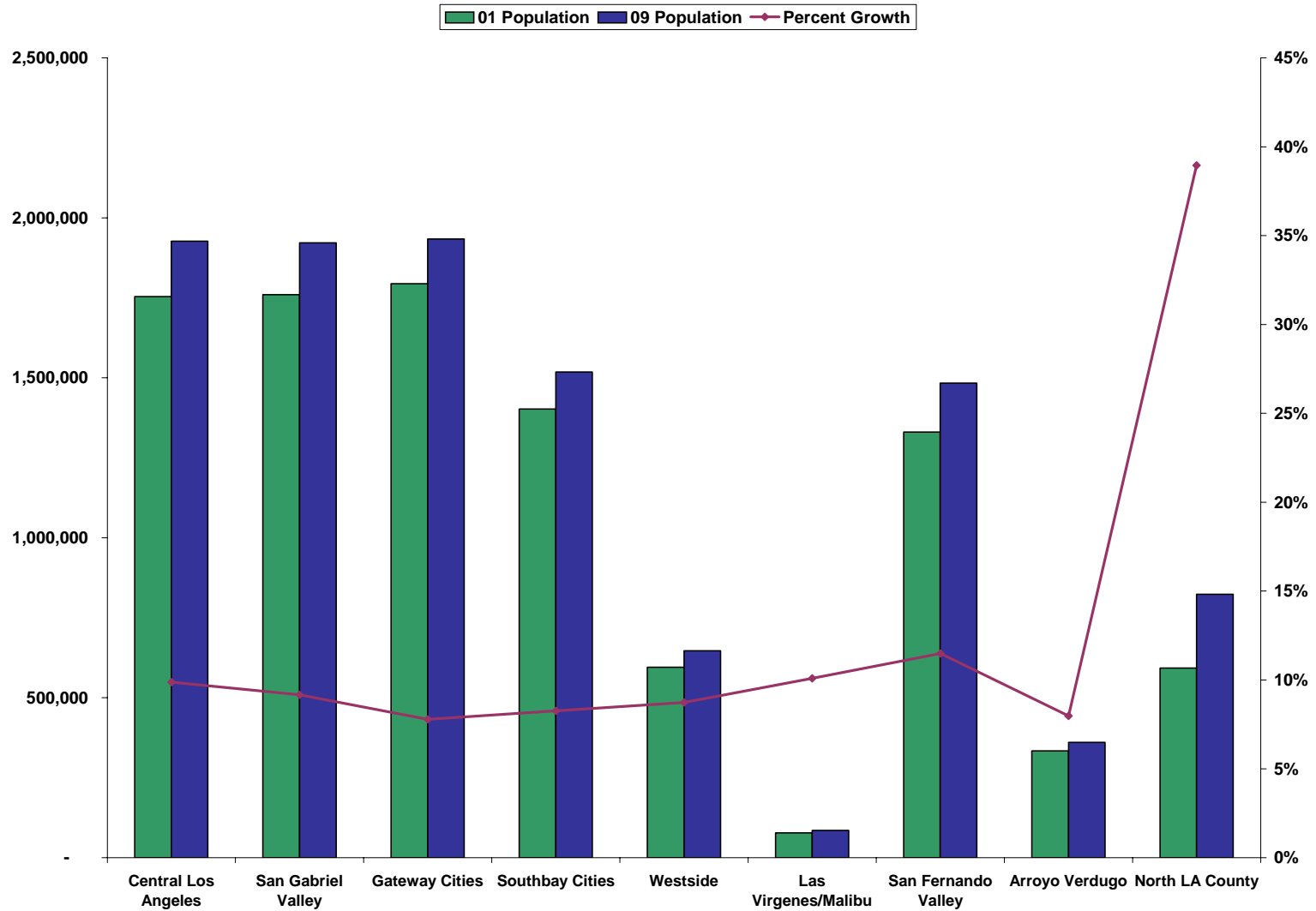
As shown in Exhibit 6, within Los Angeles County, the Central subregion will continue to be the subregion with the most jobs with over one million employment projected in 2009. The highest-growth subregion is again the North County with 32 percent growth estimated.

Exhibit 3: Population Growth by County (2001-2009)



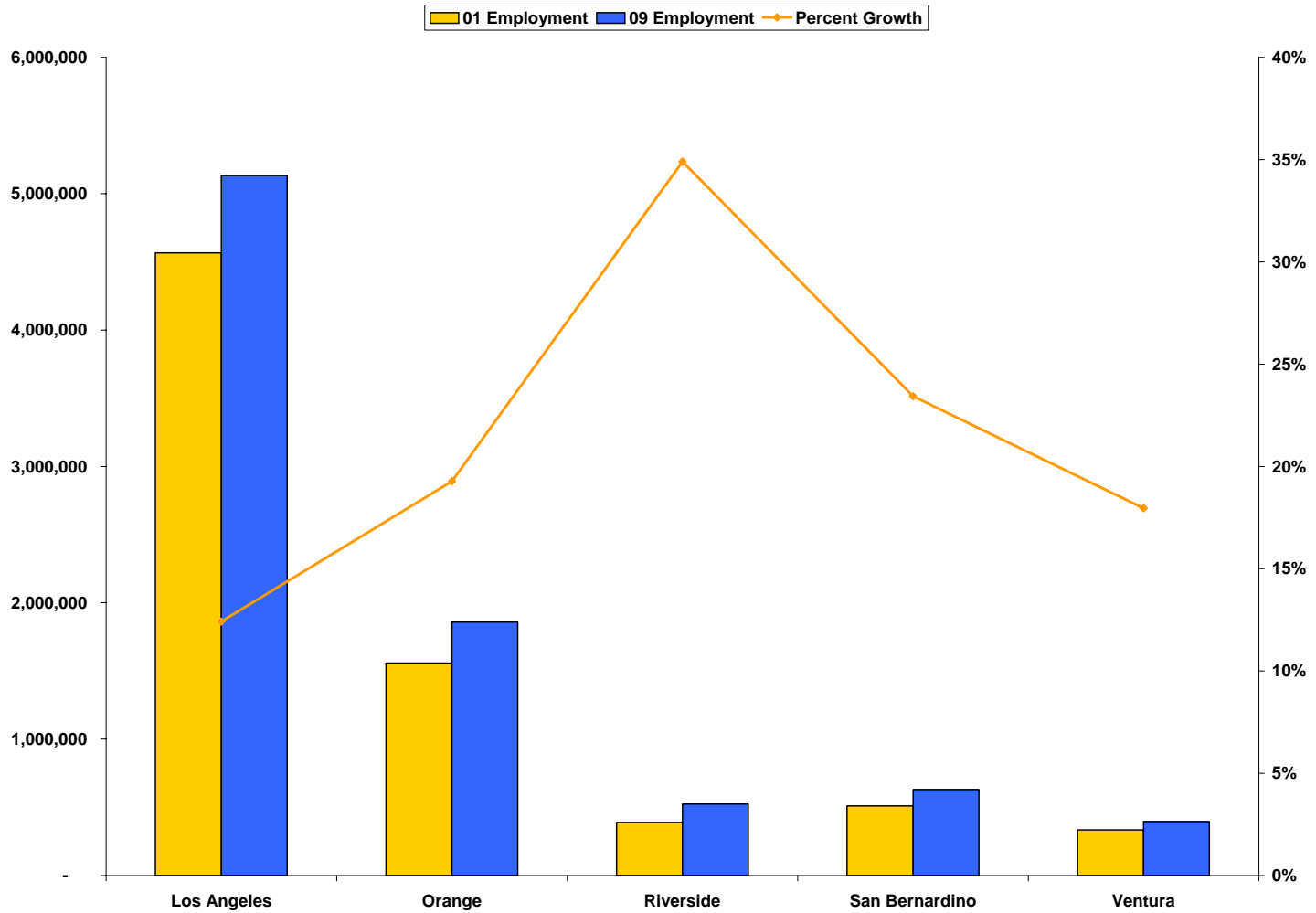
	Los Angeles County	Orange County	Riverside County	San Bernardino County	Ventura County	Region Total
01 Population	9,640,502 (61%)	2,889,356 (18%)	1,223,413 (8%)	1,342,242 (8%)	761,515 (5%)	15,857,028 (100%)
09 Population	10,700,815 (60%)	3,223,629 (18%)	1,459,832 (8%)	1,482,853 (8%)	827,795 (5%)	17,694,924 (100%)
Increment	1,060,313 (58%)	334,273 (18%)	236,419 (13%)	140,611 (8%)	66,280 (4%)	1,837,896 (100%)
Percent Growth	11%	12%	19%	10%	9%	12%

Exhibit 4: Population Growth by Subregion (2001-2009)



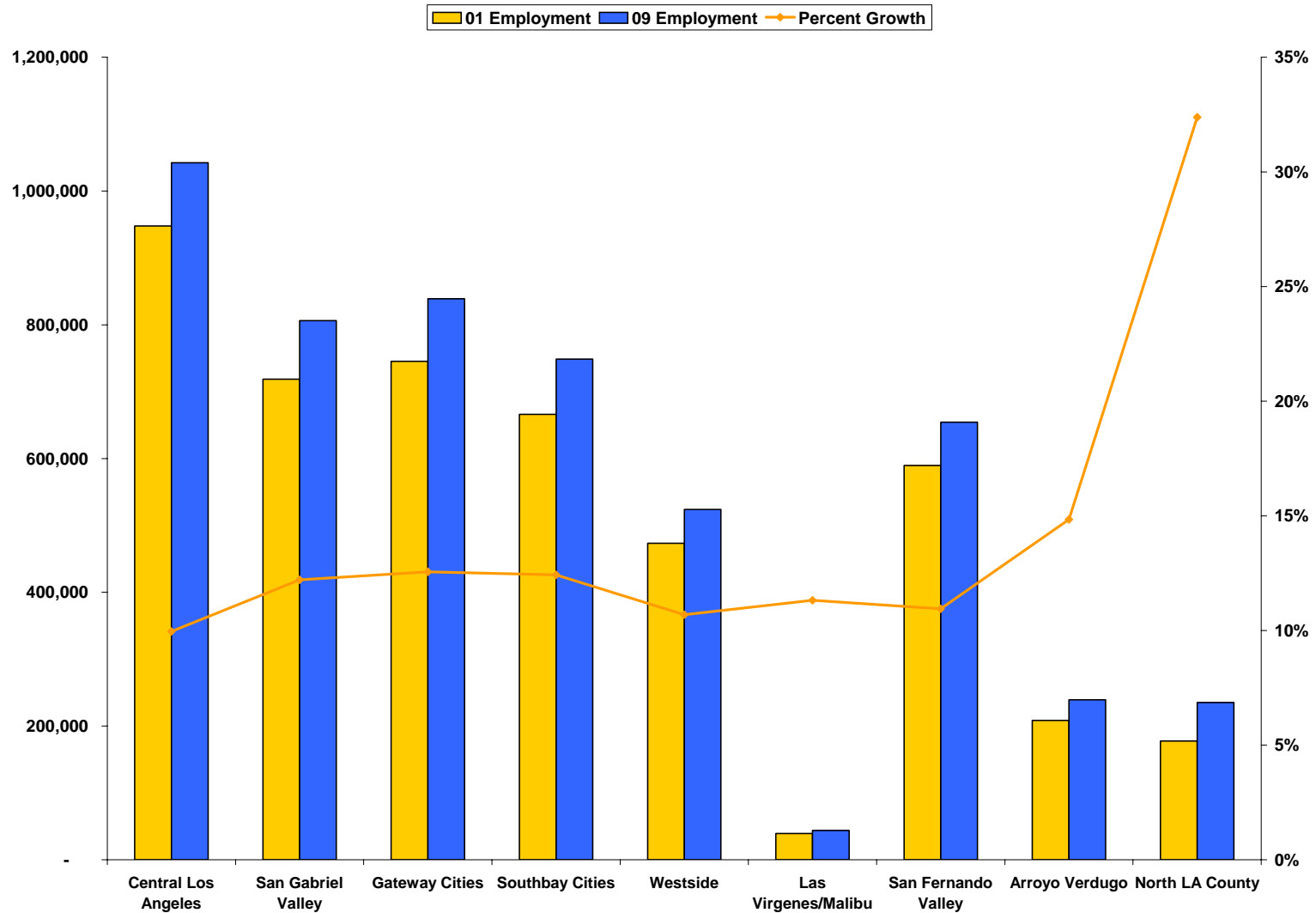
	Central Los Angeles	San Gabriel Valley	Gateway Cities	Southbay Cities	Westside Cities	Las Virgenes/Malibu	San Fernando Valley	Arroyo Verdugo	North LA County	County Total
01 Population	1,753,633 (18%)	1,760,162 (18%)	1,794,155 (19%)	1,402,199 (15%)	595,199 (6%)	77,811 (1%)	1,330,712 (14%)	333,917 (3%)	592,714 (6%)	9,640,502 (100%)
09 Population	1,926,792 (18%)	1,921,483 (18%)	1,933,813 (18%)	1,518,134 (14%)	647,174 (6%)	85,665 (1%)	1,483,573 (14%)	360,567 (3%)	823,614 (8%)	10,700,815 (100%)
Increment	173,159 (16%)	161,321 (15%)	139,658 (13%)	115,935 (11%)	51,975 (5%)	7,854 (1%)	152,861 (14%)	26,650 (3%)	230,900 (22%)	1,060,313 (100%)
Percent Growth	10%	9%	8%	8%	9%	10%	11%	8%	39%	11%

Exhibit 5: Employment Growth by County (2001-2009)



	Los Angeles County	Orange County	Riverside County	San Bernardino County	Ventura County	Region Total
01 Employment	4,566,164 (62%)	1,557,935 (21%)	388,629 (5%)	510,260 (7%)	334,661 (5%)	7,357,649 (100%)
09 Employment	5,132,839 (60%)	1,858,172 (22%)	524,279 (6%)	629,795 (7%)	394,768 (5%)	8,539,853 (100%)
Increment	566,675 (48%)	300,237 (25%)	135,650 (11%)	119,535 (10%)	60,107 (5%)	1,182,204 (100%)
Percent Growth	12%	19%	35%	23%	18%	16%

Exhibit 6: Employment Growth by Subregion (2001-2009)



	Central Los Angeles	San Gabriel Valley	Gateway Cities	Southbay Cities	Westside Cities	Las Virgenes/Malibu	San Fernando Valley	Arroyo Verdugo	North LA County	County Total
01 Employment	947,738 (21%)	718,628 (16%)	745,285 (16%)	666,042 (15%)	473,278 (10%)	39,269 (1%)	589,766 (13%)	208,459 (5%)	177,699 (4%)	4,566,164 (100%)
09 Employment	1,042,156 (20%)	806,399 (16%)	838,881 (16%)	748,813 (15%)	523,875 (10%)	43,714 (1%)	654,353 (13%)	239,402 (5%)	235,246 (5%)	5,132,839 (100%)
Increment	94,418 (17%)	87,771 (15%)	93,596 (17%)	82,771 (15%)	50,597 (9%)	4,445 (1%)	64,587 (11%)	30,943 (5%)	57,547 (10%)	566,675 (100%)
Percent Growth	10%	12%	13%	12%	11%	11%	11%	15%	32%	12%

2.2 Transportation Networks

The transportation networks in the 2000 Model were updated from representing 1998 conditions to 2001 conditions. Networks representing year 2009 with recommended improvements were also developed.

2.2.1 2001 Base Year Condition

Exhibit 7 depicts the highway links included in the computer network file representing the year 2001 highway network. The network consists of 17,234 nodes and 40,564 links. They cover all freeways as well as major, primary and secondary arterials within the five-county modeling area.

A summary of the 2001 highway network by facility type for each subregion is provided in Exhibit 8. Countywide, a total of 20,000 lane-miles of roadway are represented in the network. Among them, 4,059 lane-miles, or 22 percent are freeway. The San Gabriel Valley subregion has the highest freeway lane-miles while the Gateway Cities subregion has the highest concentration of HOV facilities.

2.2.2 2009 Recommended Plan Condition

The 2009 Recommended Plan Condition includes highway and transit improvement projects listed in Exhibit 9A and the locations of the major projects are shown graphically in Exhibit 9B. These projects are assumed to be completed by 2009. The 2001 Base Year highway network and transit network were modified to reflect the completion of these projects.

The highway projects included in the Recommended Plan will add 150 lane-miles of High-Occupancy-Vehicle (HOV) only freeway, 35 lane-miles of general-purpose freeways, and 75 lane-miles of new/upgraded arterials. Combined, they represent 4.1 percent increase in freeway lane-miles and 0.3 percent increase in arterial lane-miles in Los Angeles County.

In addition, the Plan will add substantial transit infrastructure to the network.

3. MODELING RESULTS

This section describes the four-step modeling process of the 2003 S RTP Model. A summary of the modeling results is also provided.

3.1 Trip Generation

Trip generation is the process of estimating how many daily person trips are generated by household within each Traffic Analysis Zone (TAZ). Trip generation includes trips of the following five (5) different purposes:

1. Home-to-other
2. Other-to-Other
3. Other-to-Work
4. Home-to-Work
5. Home-to-Shopping

Using the population and employment estimates for 2001 and 2009 as input, a trip production model and a trip attraction model are applied to estimate the trips produced from and trips attracted to each TAZ.

3.1.1 Trip Productions

The result of trip production is summarized in Exhibits 10 and 11. Consistent with population growth Los Angeles County will produce 11 percent more trips by 2009. As shown in Exhibit 10, Riverside County will see the highest growth at 24 percent. Within Los Angeles County, North County is expected to have the highest growth at 28 percent as shown in Exhibit 11.

3.1.2 Trip Attractions

The result of trip attraction is summarized in Exhibits 12 and 13. Exhibit 12 shows that Los Angeles County will grow 10 percent in trip attraction between 2001 and 2009, the lowest growth compared to other counties in the region. Riverside, again, will have the highest growth at 28 percent. Exhibit 13 indicates that North County is expected to have the highest growth at 42 percent.

Exhibit 7: MTA 2001 Highway Networks

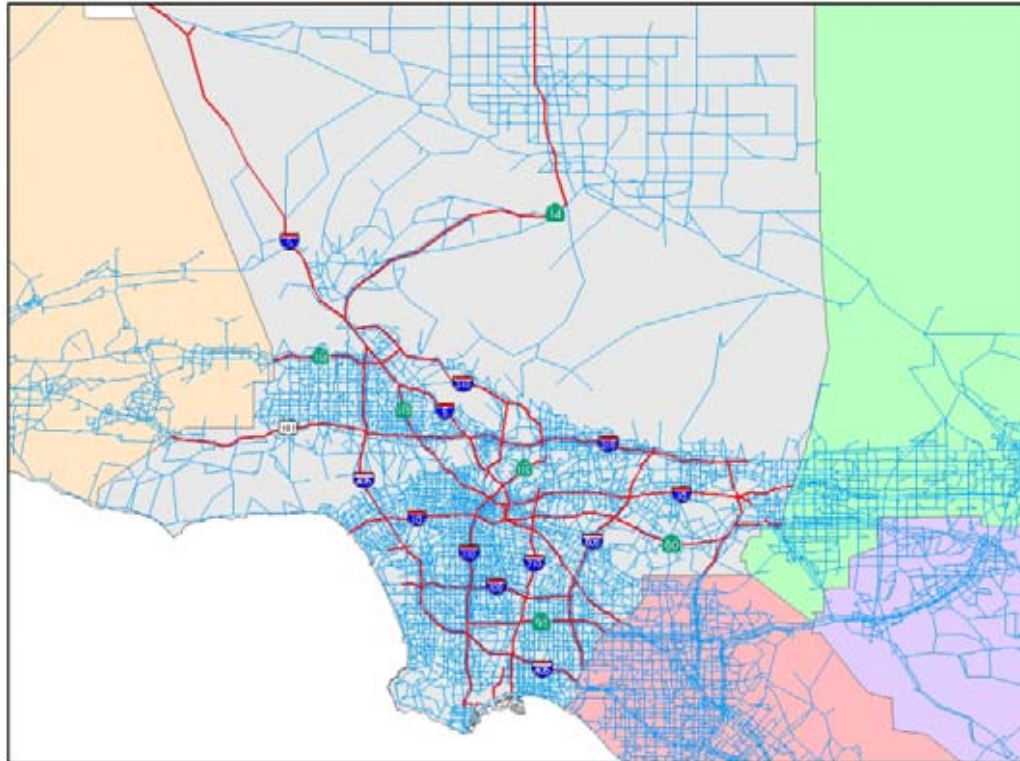


Exhibit 8: Summary of Highway Lane Miles by Facility Type and Subregion in Los Angeles County (2001 Existing System)

Facility Type:	Central LA	San Gabriel Valley	Gateway Cities	South Bay Cities	Westside	Las Virgenes/ Malibu	San Fernando Valley	Arroyo Verdugo	North County	Total
Freeway	558	842	599	361	183	93	658	152	613	4,059
Major Arterial	513	140	288	486	192	0	277	39	15	1,950
Primary Arterial	579	1,394	1,611	1,170	496	186	1,078	270	1,577	8,362
Secondary Arterial	850	872	678	555	364	115	643	118	790	4,986
HOV Lane (2+ occupancy)	20	85	114	97	3	0	76	14	34	444
Freeway On- and Off-ramps	31	33	28	19	14	3	27	7	13	174
HOV Lane (3+ occupancy)	10	16	0	0	0	0	0	0	0	26
Total	2,560	3,383	3,318	2,690	1,253	397	2,758	600	3,041	20,001

Exhibit 9A: 2009 Recommended Improvement Projects

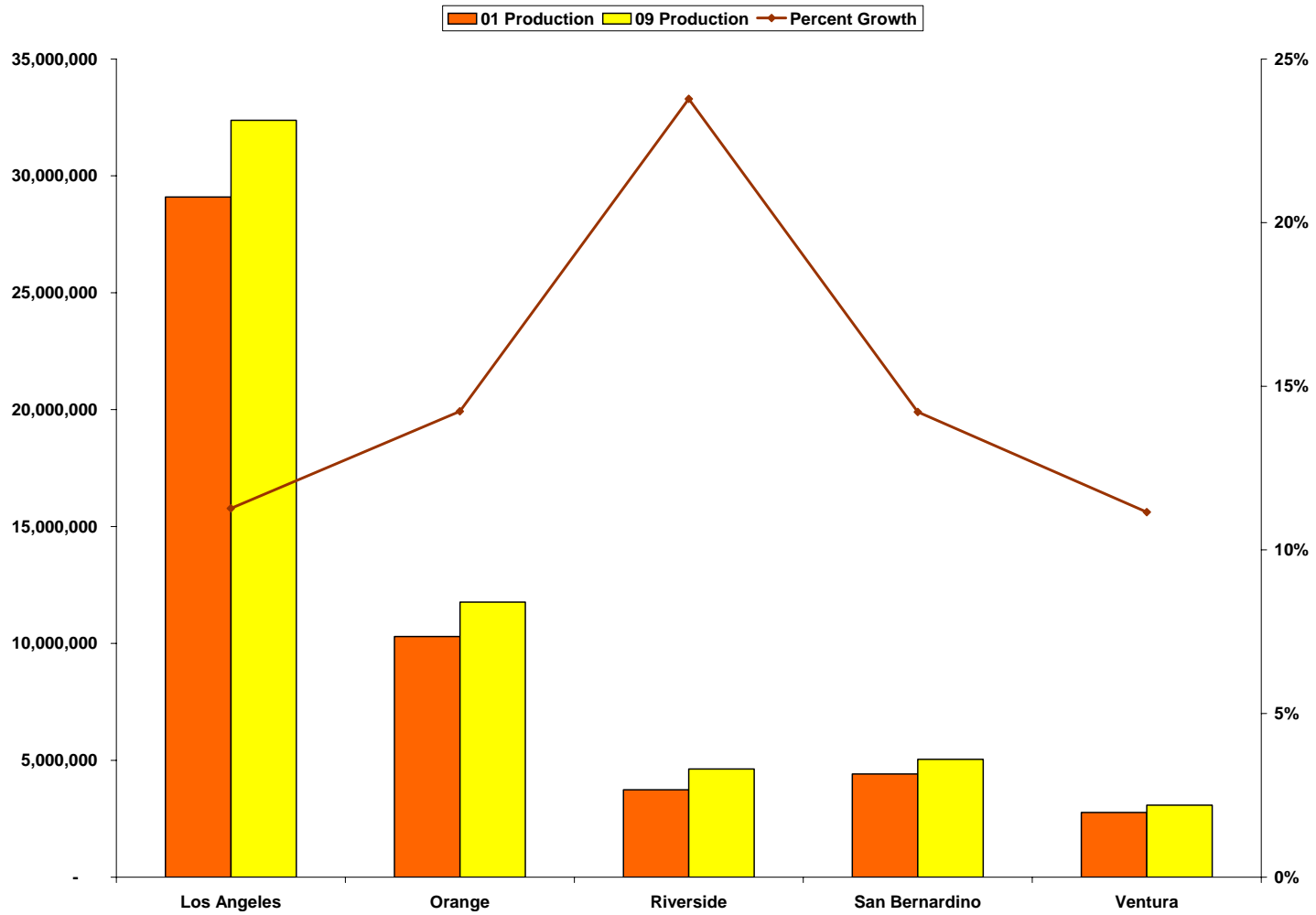
Project Code	Project Type (1)	Description/Limits
Freeway Projects		
H01	HOV Lane	Route 14: Route 5 to San Fernando Road (SR 126)
H02	HOV Lane	Route 405: US 101 to Waterford (SB only)
H03	Fwy + HOV Lane	Route 30: Foothill Bl. to SBCL (6 MF + 2 HOV)
H04	HOV Lane	Route 14: Escondido to Pearblossom
H05	HOV Lane	Route 10: Route 57 to SBCL
H06	HOV Lane	Route 10: Baldwin to Route 605
H07	HOV Lane	Route 405: Century Bl. to Route 90
H08	HOV Lane	Route 5: Route 118 to Route 14
H09	HOV Connectors	Route 57: Route 57 & Route 60 (S to/from E)
H10	HOV Lane	Route 405: Route 90 to Route 10 (NB)
H11	HOV Lane	Route 405: Route 90 to Route 10 (SB)
H12	HOV Lane	Route 405: Greenleaf to Burbank Blvd. (NB)
H13	HOV Lane	Route 405: Waterford St. to I-10 (SB)
H14	HOV Lane	Route 60: Route 605 to Brea Canyon Rd.
H15	HOV Connectors	Route 5: Route 5 & Route 170 (N to/from S)
H16	HOV Lane	Route 5: Route 170 to Route 118
H17	HOV Lane	Route 10: Route 605 to Puente
Arterial Projects		
A01	Street Widening	Sepulveda Blvd: Grand Ave. to 22nd St. (2 to 4 lanes)
A02	Street Widening	Fremont Ave LRTP defined this as Valley Bl. To Commonwealth (6 to 8 lanes) by FY 1998
A03	Street Widening	Route 138: Longview Rd to SR 18 (2 to 4 lanes)
A04	Street Widening	Town Ave: Baseline Rd to Foothill Bl. (1 SB/2 NB to 2 SB/2 NB)
A05	Street Widening	Alameda Blvd: PCH to Henry Ford Ave. LRTP defined this as Lomita Bl. To Henry Ford (4 to 6 lanes) by FY 1999
A06	Street Widening	Aviation Blvd: Manhattan Beach Blvd. to Arbor Vitae St. LRTP defined this as Marine to Arbor Vitae St. (4 to 6 lanes) by FY 1999
A07	Street Widening	Arbor Vitae St: LRTP defined this as La Brea to I-405 (2 to 5 lanes) by FY 1999
A08	Street Widening	Overland Ave: Palms Bl. to Washington Bl. (2 to 4 lanes) LRTP has this completed by FY 2000
A09	Street Widening	Alameda St: Arcadia St. to LA River (4 to 6 lanes)
A10	Street Widening	Arbor Vitae St: La Cienega Blvd. to Airport Blvd. (to 2EB/2WB)
A11	Street Widening	Ave. G: Route 14 to 25th St. West (2 to 4 lanes) LRTP has this completed by FY 1999
A12	Street Widening	Ave. S: Route 138 to Route 14 (2 to 4 lanes)
A13	Street Widening	Lincoln Blvd (SR 1): La Tijera to Hughes Terrace (MUL) 3NB/3B to 4NB/3SB
A14	Street Widening	Commercial St: Alameda to Center St (1EB/1WB to 2EB/2WB)
A15	Street Widening	Beverly Bl.: Montebello to Hondo River (4 to 6 lanes)
A16	New Street	Cross Valley Connector: Newhall Ranch Rd to Copper Hill Dr. (8 lanes divided)
A17	Street Widening	Route 1: Jefferson to Fuji Way (6 to 8 lanes)
A18	Street Widening	Centinela Av: Washington Bl. to Short Bl. (2SB/1NB to 2SB/2NB)

Project Code	Project Type (1)	Description/Limits
Transit Projects		
T01	LRT	Gold Line: Union Station to Sierra Madre Villa
T02	BRT	San Fernando Valley E/W: North Hollywood to Warner Center
T03	BRT/Rapid Bus	Wilshire/Whittier: Rapid Bus to Western, BRT from Western to S. Monica
T04	LRT	East LA: Union Station to Beverly/Atlantic
T05	LRT	Exposition: 7th/Metro to Vermont
T06	BRT/Rapid Bus	San Fernando Valley N/S: Sylmar to Tarzana via Reseda Blvd., to Sherman Oaks via Sepulveda Blvd.
T07	BRT/Rapid Bus	Crenshaw Corridor BRT/Rapid Bus Improvements
T08	Rapid Bus	Implement 23 rapid bus corridors
T09	Local Shuttle	Dash Line: Highland RL Station to Cedars-Sinai
T10	Park 'N' Ride	First Street Parking Structure (350 spaces) - Long Beach
T11	Commuter Rail	Newhall ML Station: Increase parking to 330 spaces pre SCRRA
T12	Commuter Rail	Covina ML Station: Increase parking to 476 spaces per SCRRA
T13	Commuter Rail	Ventura Line: Running time improvements at various locations
T14	Commuter Rail	Antelope Line: Running time improvements at various locations
T15	Commuter Rail	Antelope Line: Add Sun Valley Station
T16	Commuter Rail	Antelope Line: Add Newhall Station
T17	Commuter Rail	Antelope Line: Add Palmdale Station
T18	Commuter Rail	Orange Line: Running time improvements at various locations
T19	Commuter Rail	Riverside Line: Running time improvements at various locations
T20	Commuter Rail	San Bernardino Line: Running time improvements at various locations
T21	Commuter Rail	Riverside-Fullerton-LA Line: Running time improvements

Notes

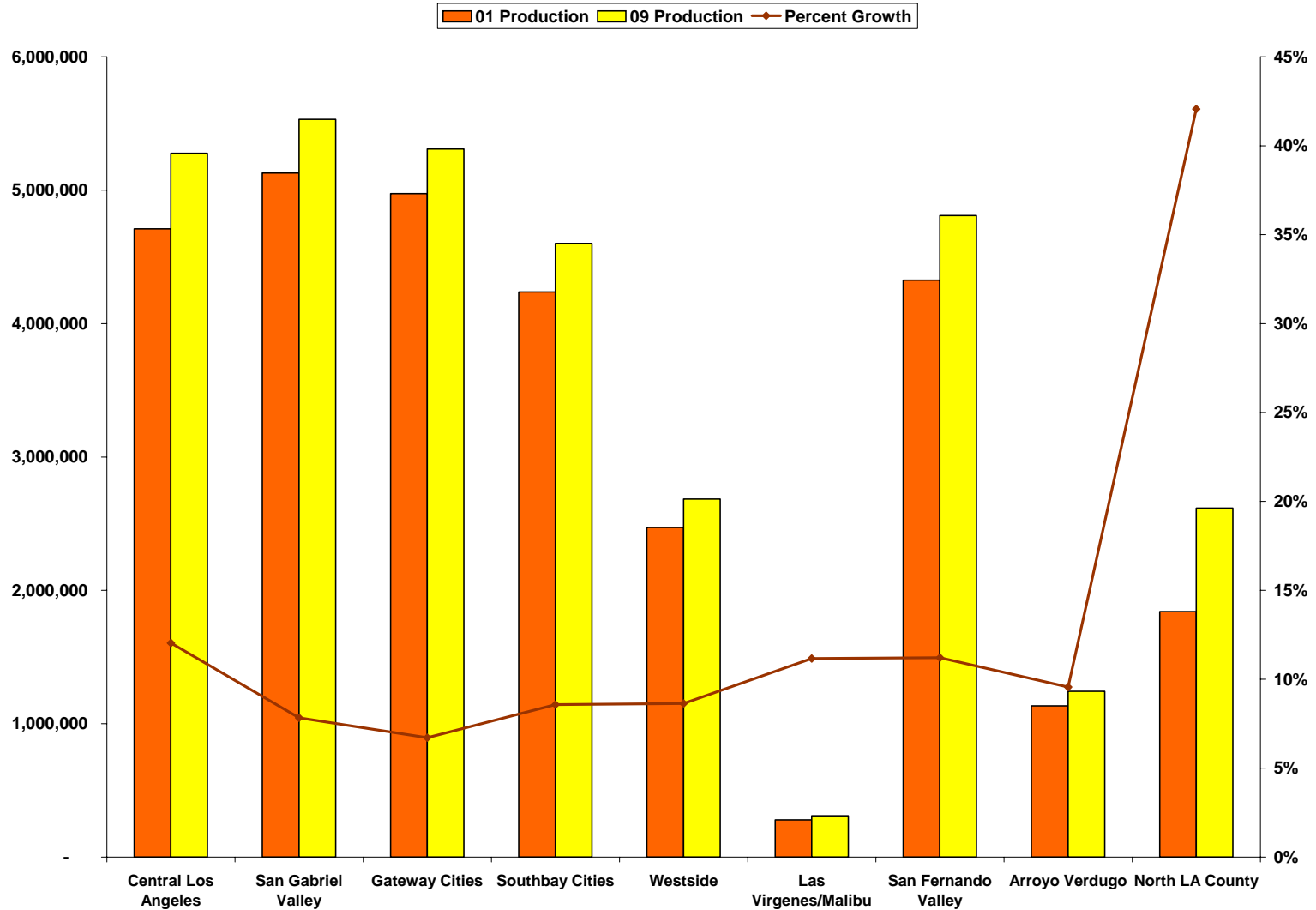
1. Unless otherwise noted, a HOV lane is the addition of one HOV lane in each direction of the freeway segment identified.
2. This table does not include projects that can not be analyzed with the travel demand model.

Exhibit 10: Total Daily Trip Production Growth by County (2001-2009)



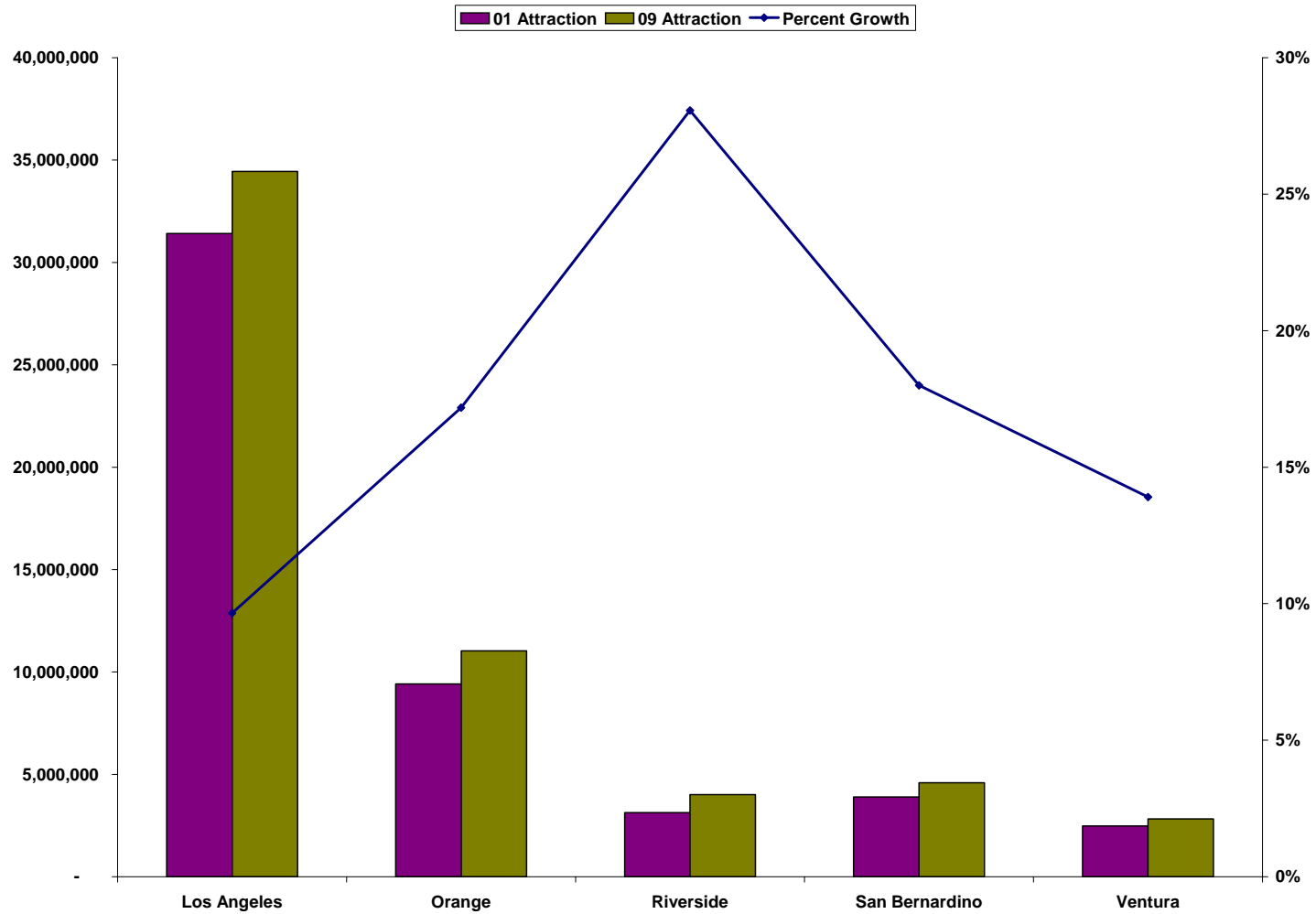
	Los Angeles County	Orange County	Riverside County	San Bernardino County	Ventura County	Region Total
01 Production	29,099,955 (58%)	10,295,786 (20%)	3,735,871 (7%)	4,413,680 (9%)	2,769,687 (6%)	50,314,979 (100%)
09 Production	32,379,348 (57%)	11,761,619 (21%)	4,624,278 (8%)	5,041,158 (9%)	3,078,627 (5%)	56,885,030 (100%)
Increment	3,279,393 (50%)	1,465,833 (22%)	888,407 (14%)	627,478 (10%)	308,940 (5%)	6,570,051 (100%)
Percent Growth	11%	14%	24%	14%	11%	13%

Exhibit 11: Total Daily Trip Production Growth by Subregion (2001-2009)



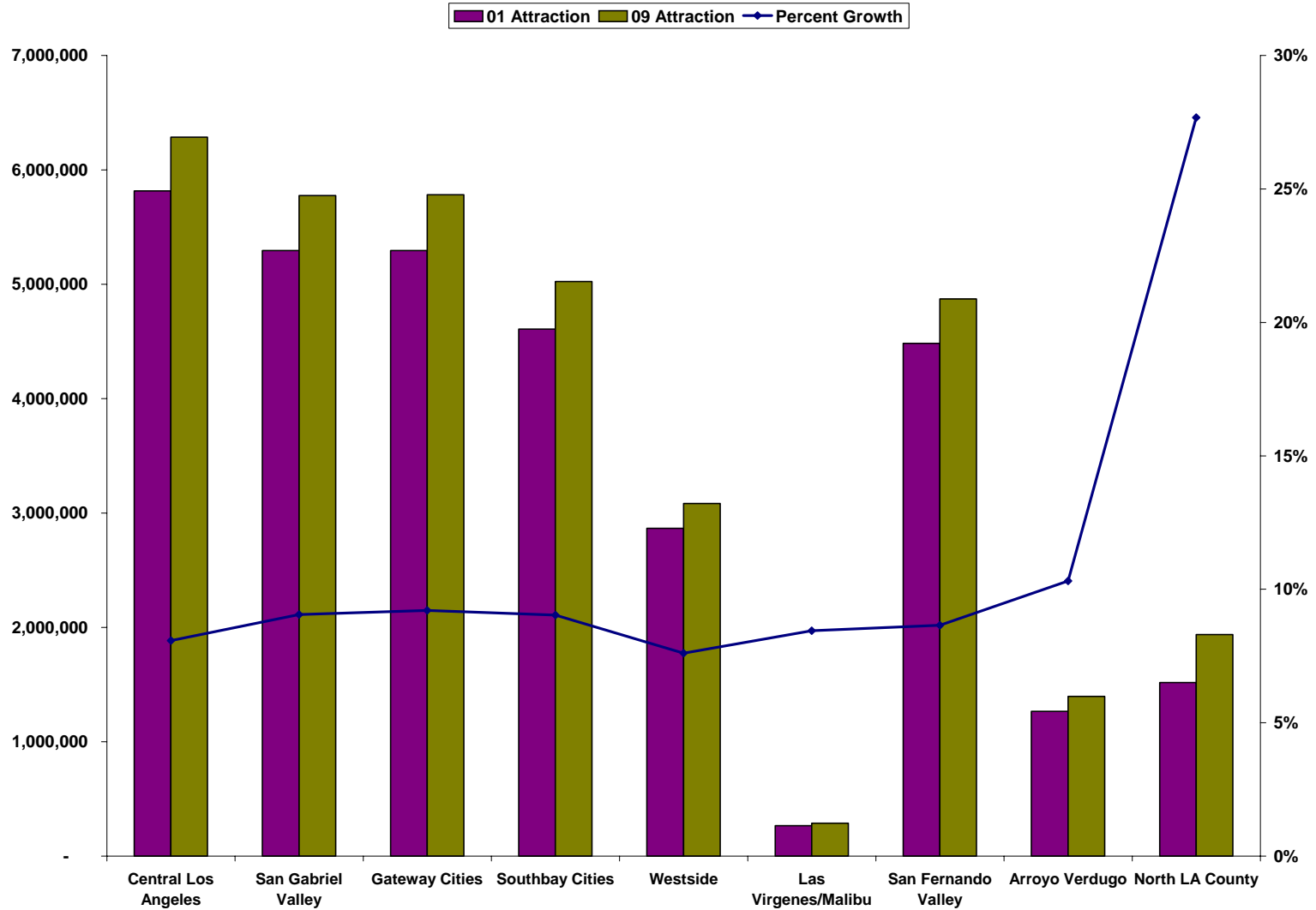
	Central Los Angeles	San Gabriel Valley	Gateway Cities	Southbay Cities	Westside Cities	Las Virgenes/Malibu	San Fernando Valley	Arroyo Verdugo	North LA County	County Total
01 Production	4,709,850 (16%)	5,128,702 (18%)	4,974,051 (17%)	4,236,851 (15%)	2,471,067 (8%)	279,084 (1%)	4,324,598 (15%)	1,134,274 (4%)	1,841,478 (6%)	29,099,955 (100%)
09 Production	5,276,915 (16%)	5,530,844 (17%)	5,308,182 (16%)	4,600,289 (14%)	2,684,573 (8%)	310,235 (1%)	4,809,536 (15%)	1,242,746 (4%)	2,616,028 (8%)	32,379,348(100%)
Increment	567,065 (17%)	402,142 (12%)	334,131 (10%)	363,438 (11%)	213,506 (7%)	31,151 (1%)	484,938 (15%)	108,472 (3%)	774,550 (24%)	3,279,393 (100%)
Percent Growth	12%	8%	7%	9%	9%	11%	11%	10%	42%	11%

Exhibit 12: Total Daily Trip Attraction Growth by County (2001-2009)



	Los Angeles County	Orange County	Riverside County	San Bernardino County	Ventura County	Region Total
01 Attraction	31,413,217 (62%)	9,409,580 (19%)	3,127,976 (6%)	3,887,308 (8%)	2,476,837 (5%)	50,314,918 (100%)
09 Attraction	34,444,930 (61%)	11,026,074 (19%)	4,005,978 (7%)	4,586,821 (8%)	2,821,268 (5%)	56,885,071 (100%)
Increment	3,031,713 (46%)	1,616,494 (25%)	878,002 (13%)	699,513 (11%)	344,431 (5%)	6,570,153 (100%)
Percent Growth	10%	17%	28%	18%	14%	13%

Exhibit 13: Total Daily Trip Attraction Growth by Subregion (2001-2009)



	Central Los Angeles	San Gabriel Valley	Gateway Cities	Southbay Cities	Westside Cities	Las Virgenes/Malibu	San Fernando Valley	Arroyo Verdugo	North LA County	County Total
01 Attraction	5,816,955 (19%)	5,295,128 (17%)	5,294,615 (17%)	4,607,686 (15%)	2,865,461 (9%)	266,254 (1%)	4,483,090 (14%)	1,266,837 (4%)	1,517,191 (5%)	31,413,217(100%)
09 Attraction	6,286,780 (18%)	5,774,622 (17%)	5,782,058 (17%)	5,023,950 (15%)	3,083,376 (9%)	288,741 (1%)	4,870,878 (14%)	1,397,462 (4%)	1,937,063 (6%)	34,444,930(100%)
Increment	469,825 (15%)	479,494 (16%)	487,443 (16%)	416,264 (14%)	217,915 (7%)	22,487 (1%)	387,788 (13%)	130,625 (4%)	419,872 (14%)	3,031,713 (100%)
Percent Growth	8%	9%	9%	9%	8%	8%	9%	10%	28%	10%

3.2 Trip Distribution

Trip distribution is the process of taking all person trip productions and linking them with specific attraction TAZs. This process produces a “trip table” of trip interchanges between TAZs. The trip distribution pattern for 2001 and 2009 within Los Angeles County by subregion are summarized in Exhibits 14 and 15, respectively.

3.2.1 2001 Condition

Exhibit 14 summarizes the trip distribution pattern of 2001 daily peak periods home-based work trips. The larger pie in the lower left corner shows the number of home-based work trips produced daily in each subregion during peak periods. The San Gabriel Valley subregion produces the largest number of trips at 728,022. This is followed by the Gateway Cities subregion’s 709,362 trips.

Among the trips produced in the San Gabriel Valley subregion, 64 percent stay in the same subregion, 12 percent end in the neighboring Central subregion, while 11 percent go to adjacent San Bernardino or Orange Counties.

The region-wide (five counties) average trip length for home-based work trips is in the range of 13 miles, for both peak and off-peak periods. The average speeds for home-based work trips are estimated at 27 and 36 miles per hour, for peak and off-peak period, respectively. This difference in travel speed yields average commute time of about 29 minutes during peak and 22 minutes during off-peak period.

The region-wide average length of home-based non-work trips is about 7.3 miles. The average length of non-home-based trips is about 8.0 miles, with average travel time in the range of 15 to 18 minutes depending on the time the trips are made. The daily average length of all trip purposes combined is approximately 8.9 miles or 18 minutes per trip.

3.2.2 2009 Condition

Exhibit 15 shows the forecast trip distribution pattern of 2009. Compared with 2001 pattern, it shows a larger share of trips heading

into other counties. For example, in the San Gabriel Valley subregion, share of trips going into other counties increases from 11 percent in 2001 to 13 percent in 2009. In the Gateway Cities subregion 14 percent of the trips generated in this subregion go out of the county in 2001 compared to 16 percent in 2009.

On the other hand, given the large projected population and employment growth in the North County, the share of the trips staying in the North County is expected to decrease from 51 percent in 2001 to 47 percent in 2009. This means a larger portion of the home-based work trips generated in the North County will go out of this subregion.

The region-wide (five counties) average trip length for home-based work trips is 13 miles for the peak period and 14 miles for the off-peak period. The average speeds for home-based work trips are estimated at 27 and 35 miles per hour, for peak and off-peak period, respectively. This difference in travel speed yields average commute times of about 30 minutes during peak and 24 minutes during off-peak period.

The region-wide average length of home-based non-work trips is about 7 to 8 miles with average travel time ranging from 24 to 30 minutes depending on time of day. The average length of non-home-based trips is about 8.0 miles, with average travel time in the range of 15 to 18 minutes depending on the time the trips are made. The daily average length of all trip purposes combined is approximately 9.3 miles or 18 minutes per trip.

3.3 Mode Choice

The mode choice process determines the share of person trip taking various modes of transportation. The modes considered in the MTA Travel Demand Model include two main categories: automobiles (including single-occupancy and high-occupancy vehicles), and transit modes (including bus, urban rail and commuter rail).

Exhibit 16 shows the share of total person-miles-traveled (PMT) by transit modes during AM peak period by subregion. In 2001, 95.1 percent of all PMT in the county are made by automobiles; only 4.9 percent are made by transit modes. The transit share is expected to increase to 5.3 percent by 2009 with the recommended improvement.

Exhibit 14: 2001 Trip Distribution Pattern by Subregion (Daily Peak Home-Based Work Trips)

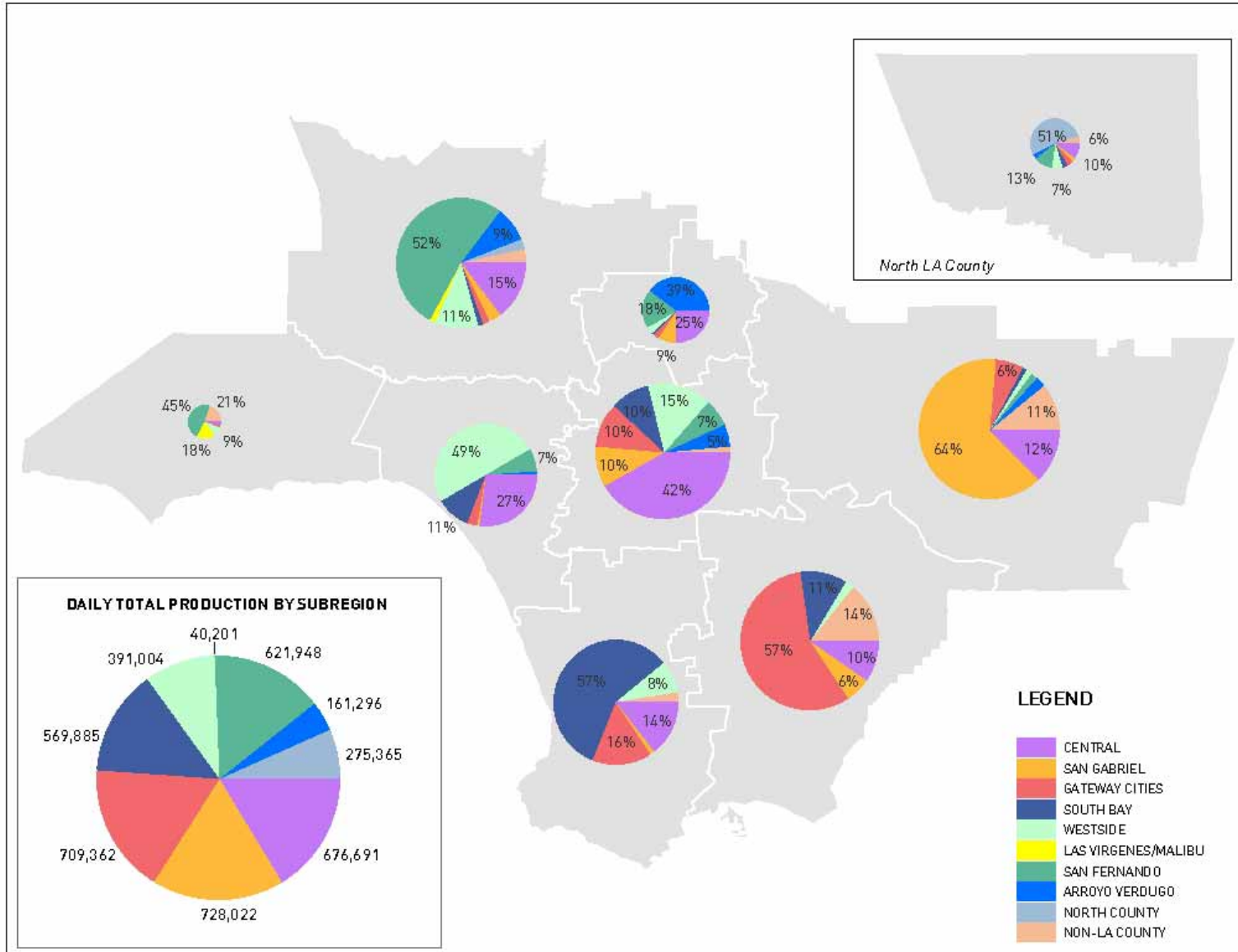


Exhibit 15: 2009 Trip Distribution Pattern by Subregion (Daily Peak Home-Based Work Trips)

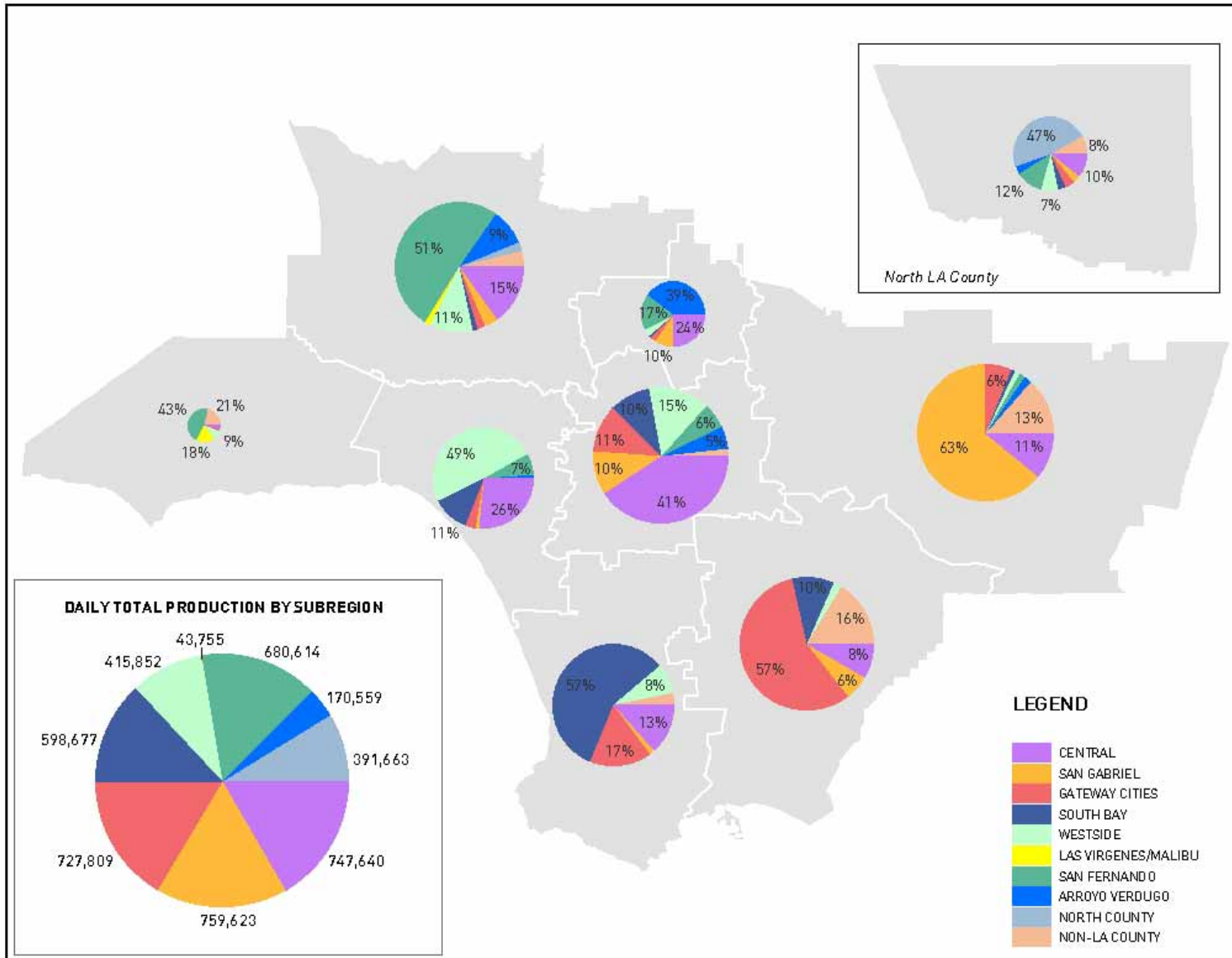
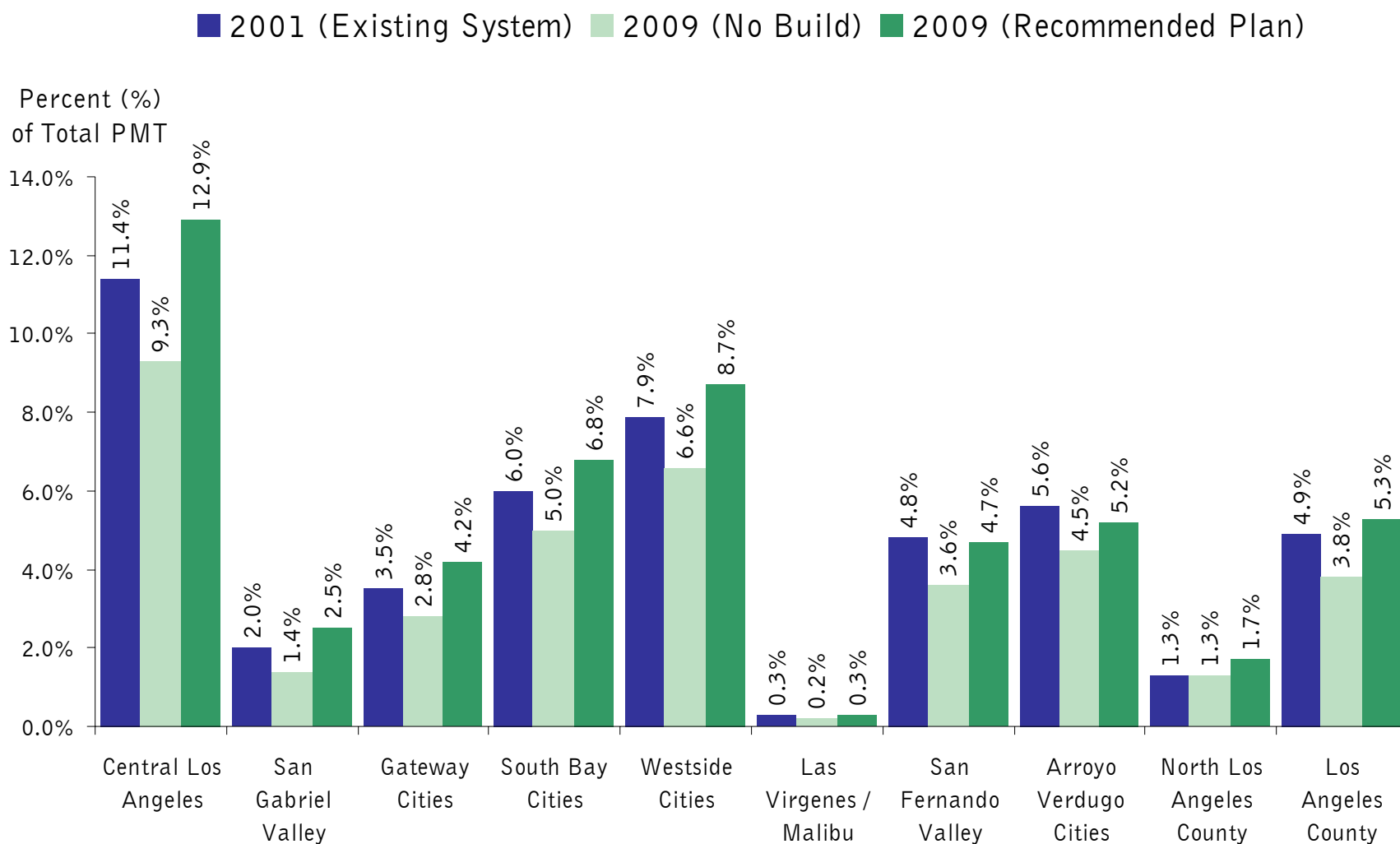


Exhibit 16: AM Peak Period Percent of Total Person-Miles-Traveled (PMT) by Transit by Subregion



Among the subregions, Central has the highest transit mode share of 11.6 percent in 2001. If no improvements were made, the transit share in Central is expected to decline to 9.3 percent. The recommended improvements will raise the transit share to 12.9 percent.

With minimal rail transit service in Las Virgenes/Malibu, the subregion has the lowest transit share, accounting for only 0.3 percent of the total PMT in 2001 and 2009. This is followed closely by North County's 1.3 percent and 1.7 percent for 2001 and 2009 with recommended improvements respectively.

3.4 Traffic Assignment

Traffic assignment is the process of loading vehicle trips onto the appropriate highway network and transit trips onto the transit network. This process produces traffic volumes and resulting congested speeds on each road segment represented in the highway network as well as passenger volumes on transit network.

MTA uses a four-time-period equilibrium highway assignment process. Separate vehicle trip tables for AM Peak, Midday, PM Peak and Night periods are generated and assigned to the highway networks using the equilibrium assignment procedures. The assignment results were reviewed for reasonableness and minor adjustments were made when required.

Traffic assignments for three (3) scenarios were conducted. They include: 2001 Base Year scenario, 2009 No-Build scenario, and 2009 Recommended Plan scenario.

4. PERFORMANCE MEASURES

The Performance Analysis of the 2003 SRTP is designed to evaluate the performance of the highway and transit systems for the base year and a series of future year alternatives. This analysis is intended to determine the effectiveness of alternative transportation strategies and assist in the development of program and project recommendations. These analyses were conducted on both subregional and corridor levels.

4.1 Performance Measures Selected for the SRTP

Staff considered the input provided through the survey and assessed performance measures that are used to gauge the impact of the SRTP and focused on the following performance measures for the SRTP:

1. Average Freeway Speed and Throughput
2. Air Quality Impact
3. Economic Impact

4.1.1 Average Freeway Speed and Throughput

For this study, the average freeway speed for an area (such as a subregion) is defined as the average speed of all the links within the area weighted by the vehicle-miles-traveled (VMT). The output of the Traffic Assignment process include traffic volume, distance, travel time for each link so the average freeway speed can be calculated as follows:

$$\text{Average Freeway Speed} = \frac{[\sum (d_i / t_i) \times d_i \times v_i]}{\sum d_i v_i}$$

where d_i is the length of link i ,
 t_i is the time traveled on link i , and
 v_i is the assigned traffic volume on link i .

Throughput is designed to measure the performance of a multi-modal transportation system taking into consideration the number of people moved and their travel speed. It is a function of both speed and vehicle occupancy and it focuses on moving people instead of vehicles.

The formula is specified as:

$$\text{Throughput} = (\text{PMT} / \text{PHT}) \times (\text{PMT} / \text{VMT})$$

where PMT = person-miles-traveled for the mode(s) considered (automobile, transit or both),
PHT = person-hours-traveled by the mode(s) considered (automobile, transit or both), and
VMT = vehicle-miles-traveled for the mode(s) considered (automobiles, transit or both).

Mathematically, the first half of this formula, PMT/PHT, can be expanded to represent the difference between the average personal flow speed and a weighted variance of the speed between all link pairs. PMT/PHT equals to the average personal flow speed when the weighted variance equals to zero when all links have the same speed (meaning no variation in speed). Since speed does not stay constant across the highway and transit networks, PMT/PHT is always lower than the average personal flow speed.

Likewise, the second half of the throughput formula, PMT/VMT, can be expanded to represent the difference between the average vehicle occupancy and a weighted variance of the occupancy between all link pairs. Since the occupancy does not vary much from one link to the next, the weighted occupancy variance is not a large number. Thus, PMT/VMT is similar to the average vehicle occupancy.

4.1.2 Air Quality Impacts

For this study, the Air Quality Index (AQI) defined by the California Air Resources Board was adopted. The index includes emissions of Carbon Monoxide (CO), Oxides of Nitrogen (NO_x) and Total Organic Gases (TOG). It is calculated as follows:

$$AQI = CO/7 + NO_x + TOG$$

It is normally measured in Tons/Day or Lbs/Hour.

4.1.3 Economic Impact

Capital investments in transportation infrastructure have a positive effect on the regional economy as a whole. Improvements to transportation infrastructure reduce travel time, vehicle operating costs, and accident costs. Since the Plan reduces traffic congestion, it promotes greater access to products and markets, which helps lower production costs to business. Business is then able to pass on some of the cost savings to consumers in the form of lower prices. This in turn results in increased economic activity and expansion of the county's productive capacity.

MTA measures the economic impact of transportation expenditures by comparing the difference between the baseline and improvement scenarios using the computer-generated Regional Economic Models Inc. (REMI). Improvements to the transportation infrastructure from transportation expenditures are measured by changes in personal and vehicle travel time, vehicle operating costs and accident costs. The net effect of the changes results in relatively less traffic congestion, greater access to product and factor markets and lower production costs to business. These results in turn lead to increased economic activity and expansion of the county's productive capacity as reflected in the growth in employment, personal income and business output.

4.2 Performance Measure Results

This section highlights the results of the performance analysis by comparing key performance measures of the 2009 Recommended Plan scenario with those of the 2001 and the 2009 No Build scenario. The key performance measures compared are: AM peak period freeway speed and throughput, air quality impacts, and economic impacts.

The result of performance measures analysis was summarized first by congested corridor. A total of six (6) congested corridors were identified in the SRTP. Exhibit 17 shows the location of these congested corridors. The result of performance measures analysis was also summarized by subregion. The boundary of the nine (9) subregions within Los Angeles County is shown in Exhibit 2.

4.2.1 Freeway Speed

A summary of AM peak period (6-9 AM) average freeway speeds by corridor (Exhibit 18) shows that corridors with the highest population growth (I-5 and SR-14) have the most significant mobility challenges in the future. This is intuitive, since general mobility is bound to decrease in areas where transportation infrastructure is unable to keep pace with growth. Key findings include:

- Without the improvements recommended in the Short Range Transportation Plan, the average speed on I-5 corridor will drop to 29 MPH in 2009. However, with the new HOV lanes proposed in the

Exhibit 17: Map of Study Corridors

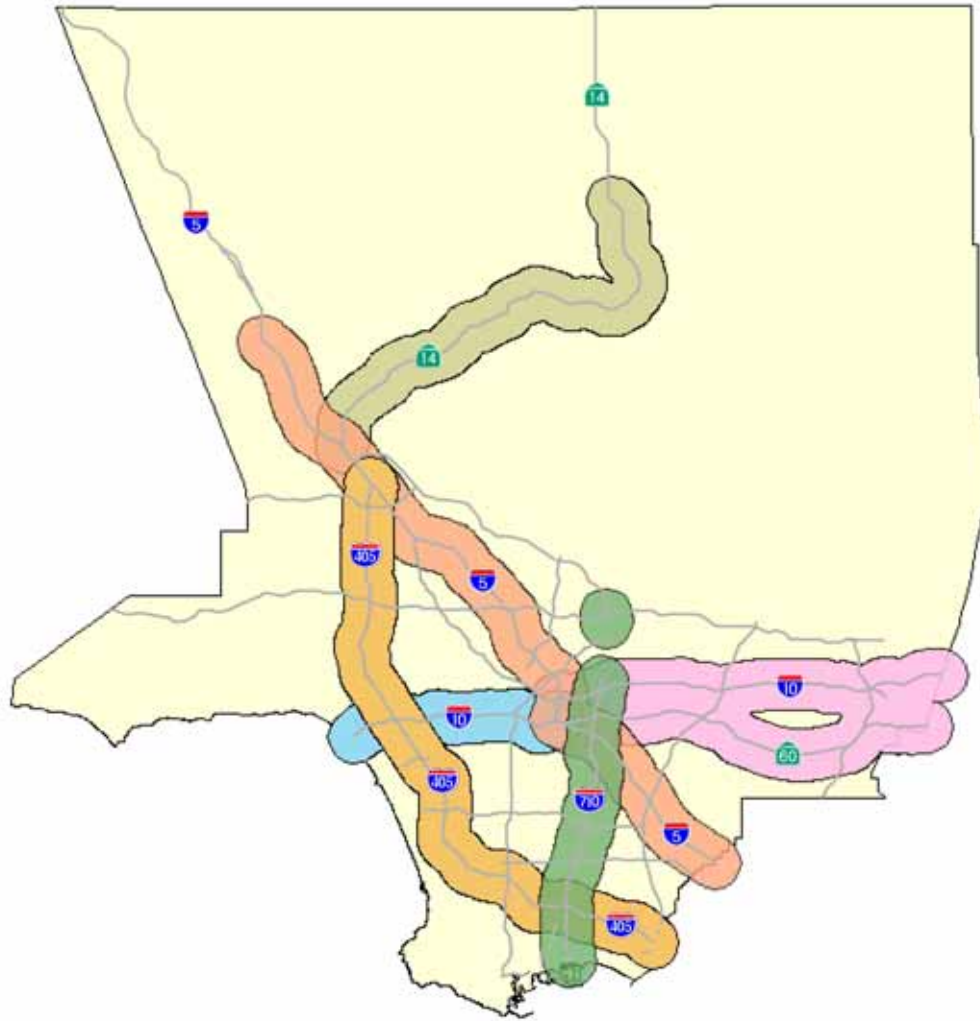
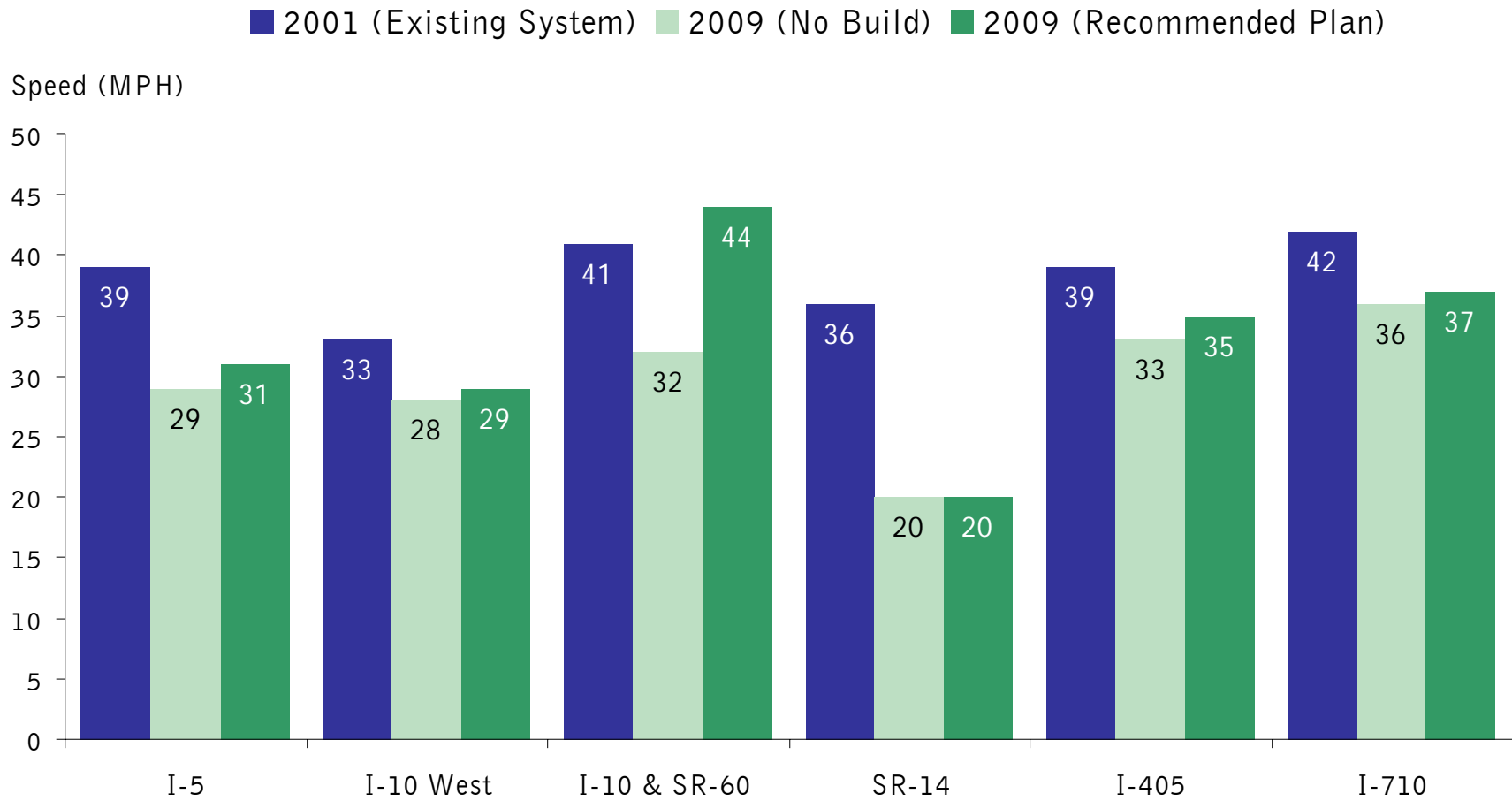


Exhibit 18: AM Peak Average Freeway Speed (MPH) by Corridor



Plan on the segments of I-5 between SR-14 and SR-118, the average speed is expected to increase to 31 MPH.

- The average speed on the west segment of I-10 corridor will increase marginally from 28 MPH under the 2009 No-Build scenario to 29 MPH under the 2009 Build scenario. Though no additional freeway capacity is planned for this corridor, planned bus and rail improvement projects are expected to increase the transit share of the corridor and hence, result in slightly faster freeway traffic.
- The I-10/SR-60 corridor will see significant increases in peak speed from 32 MPH under No Build to 44 MPH under the 2009 Recommended Plan scenario. These are attributable to the substantial added capacity from the new HOV lanes on I-10 between Baldwin Avenue and Puente Avenue and on SR-60 between I-605 and Brea Canyon Road.
- Without the improvements recommended in the Short Range Transportation Plan, average speed on the SR-14 corridor is expected to decline to 20 MPH in 2009. This phenomenon is due to the substantial and disproportionate growth assumed by SCAG for North County. As shown previously in Exhibit 4, 22% of the total growth in the County will occur in North County. North County is predicted to grow by 39%, whereas the average growth of LA County is in the range of 11%.
- The average speed on I-405 corridor is expected to increase from 33 MPH in No-Build scenario to 35 MPH in Recommended Plan scenario as a result of the new HOV lanes between US-101 and I-105 along the corridor.
- Though no new HOV lanes are planned for I-710 corridor, a slight improvement in speed from 36 MPH in No-Build to 37 MPH under Recommended Plan scenario may be expected. This improvement may be attributed to transit improvements within the corridor.

Exhibit 19 compares the speed for the same three (3) scenarios by subregion. It provides the following observations:

- Without the improvements recommended in the Short Range Transportation Plan, the countywide average of freeway speed will decline to 33 MPH under 2009 No Build scenario. However, with the proposed improvements in this Plan, the average speed is expected to increase to 37 MPH. This trend is expected since the county's population is projected to grow 11 percent (see Exhibit 3) while the county's freeway lane-miles will only increase by 4 percent.
- The most significant improvement is expected in San Gabriel Valley subregion. With new HOV lanes on I-10 and SR-60, the average freeway speed during AM peak period for San Gabriel Valley subregion is expected to improve from 35 MPH under the 2009 No-Build scenario to 45 MPH under the 2009 Recommended Plan scenario.
- The freeway speeds of all the other subregions will also improve with the planned improvement projects. However, the speed improvement of San Fernando and North County subregions is less significant. This is due to the disproportionate growth forecast described above.

The results of throughput analysis are summarized by congested corridor first in Exhibits 20 through 22, then by subregion in Exhibits 23 through 25.

Exhibit 20 shows the automobile throughput by corridor. The largest reduction in throughput between 2001 and 2009 can be expected along SR-14 and I-5 corridors due to the large population growth projected for the North County. The projects in the 2009 Recommended Plan will restore the throughput back to at or close to 2001 level along most corridors except SR-14 and I-5 corridors.

Transit vehicles carry many more passengers per vehicle than automobiles. Consequently, transit improvements proposed in the Plan will significantly improve transit passenger throughput, as shown in Exhibit 21. For the SR-14 corridor, the improvements in throughput are largely due to the Metrolink train and long distance commuter bus connecting North County and the rest of the county.

Exhibit 19: AM Peak Average Freeway Speed (MPH) by Subregion

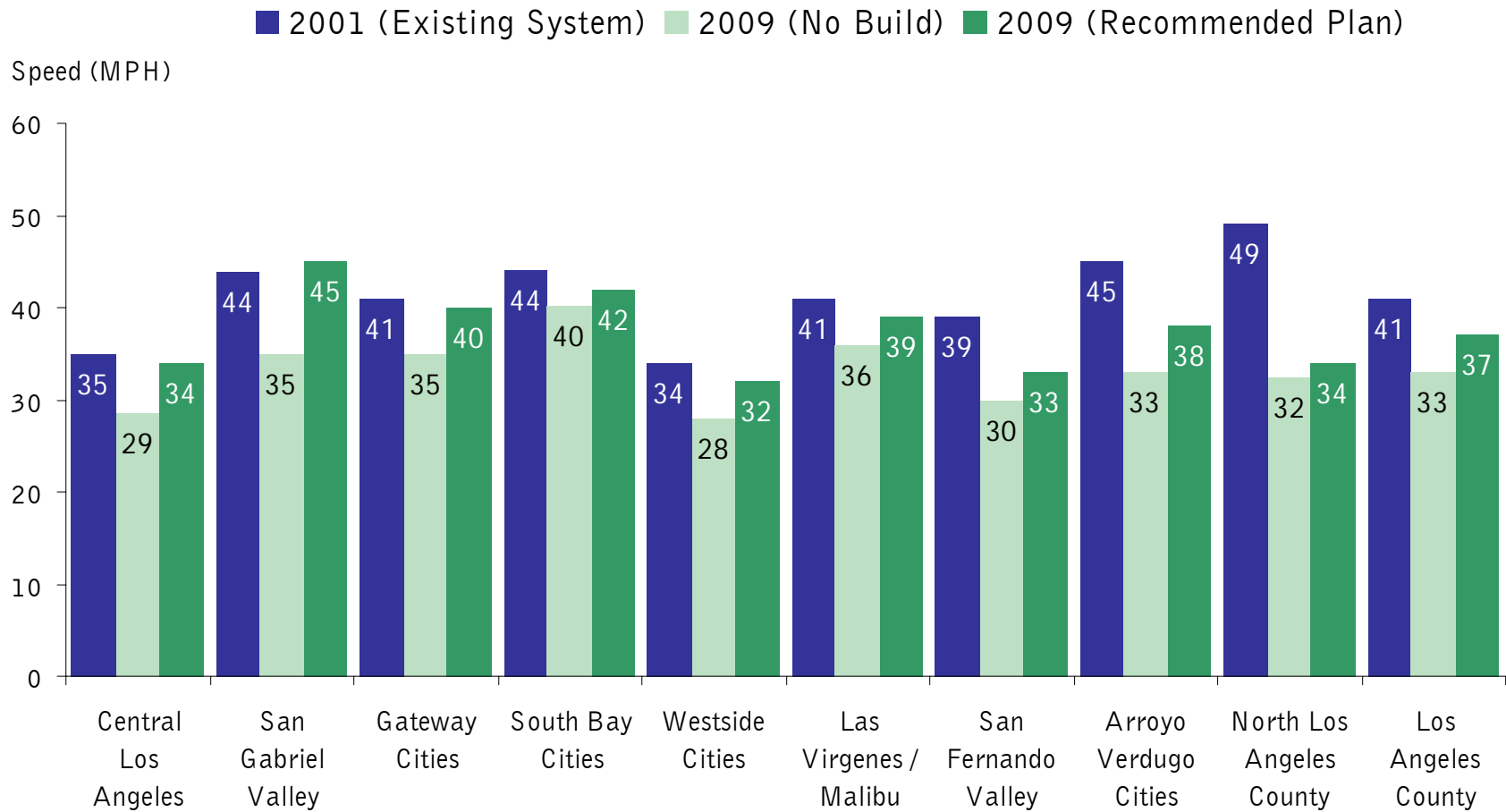


Exhibit 20: AM Peak Period Automobile Mode Throughput (MPH-PPV) by Corridor
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

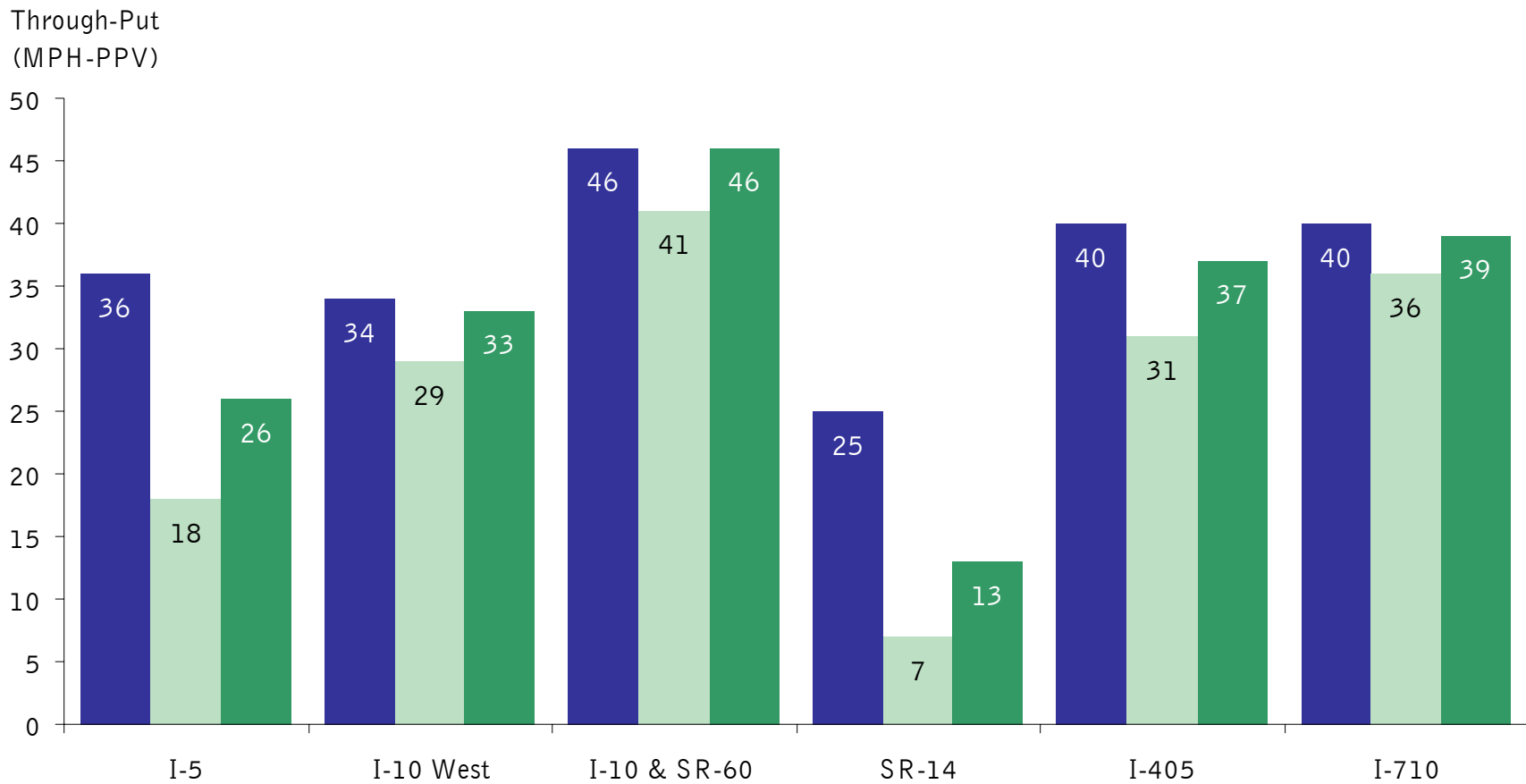


Exhibit 21: AM Peak Period Transit Mode Throughput (MPH-PPV) by Corridor
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

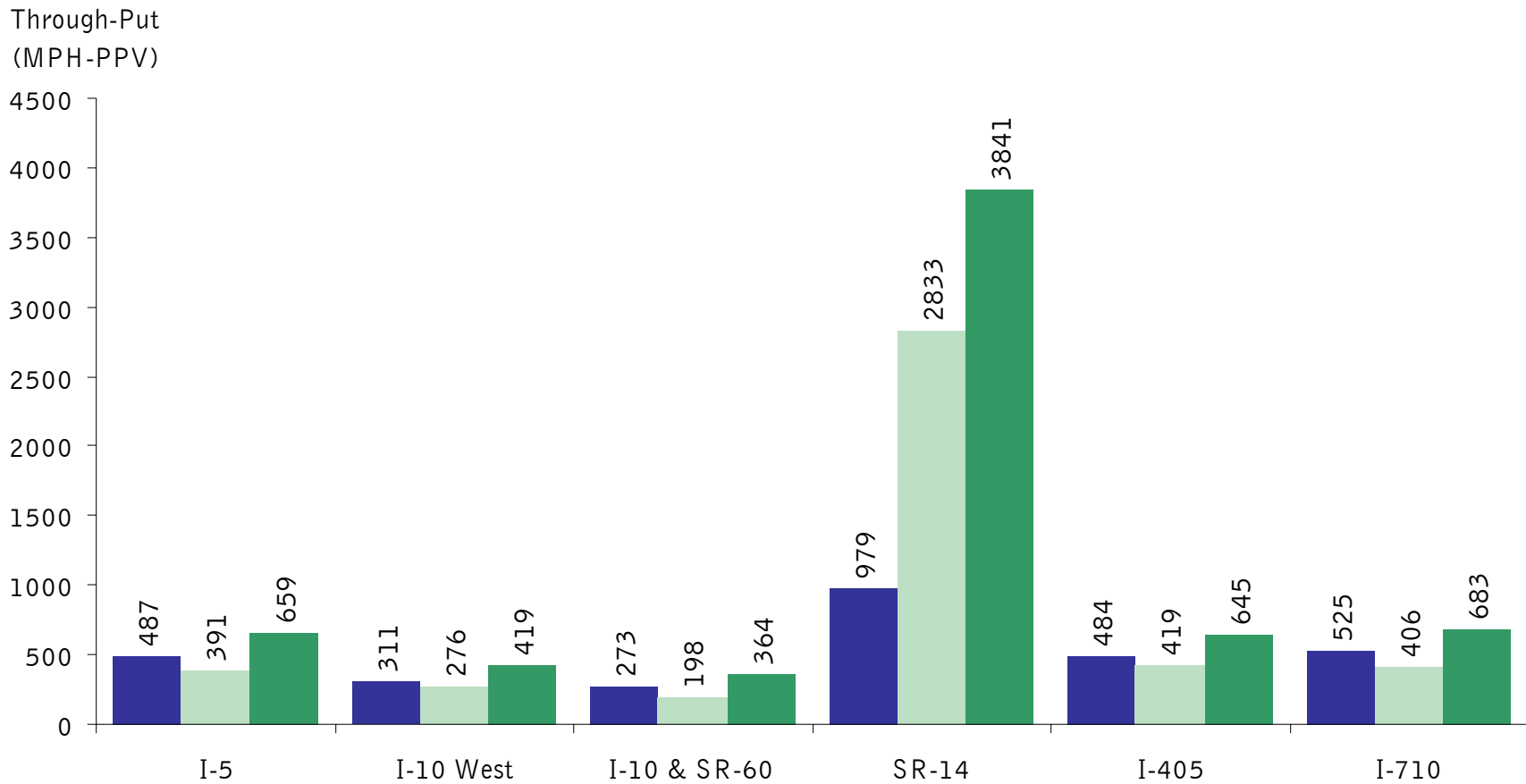


Exhibit 22: AM Peak Period Multimodal Mode Throughput (MPH-PPV) by Corridor
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

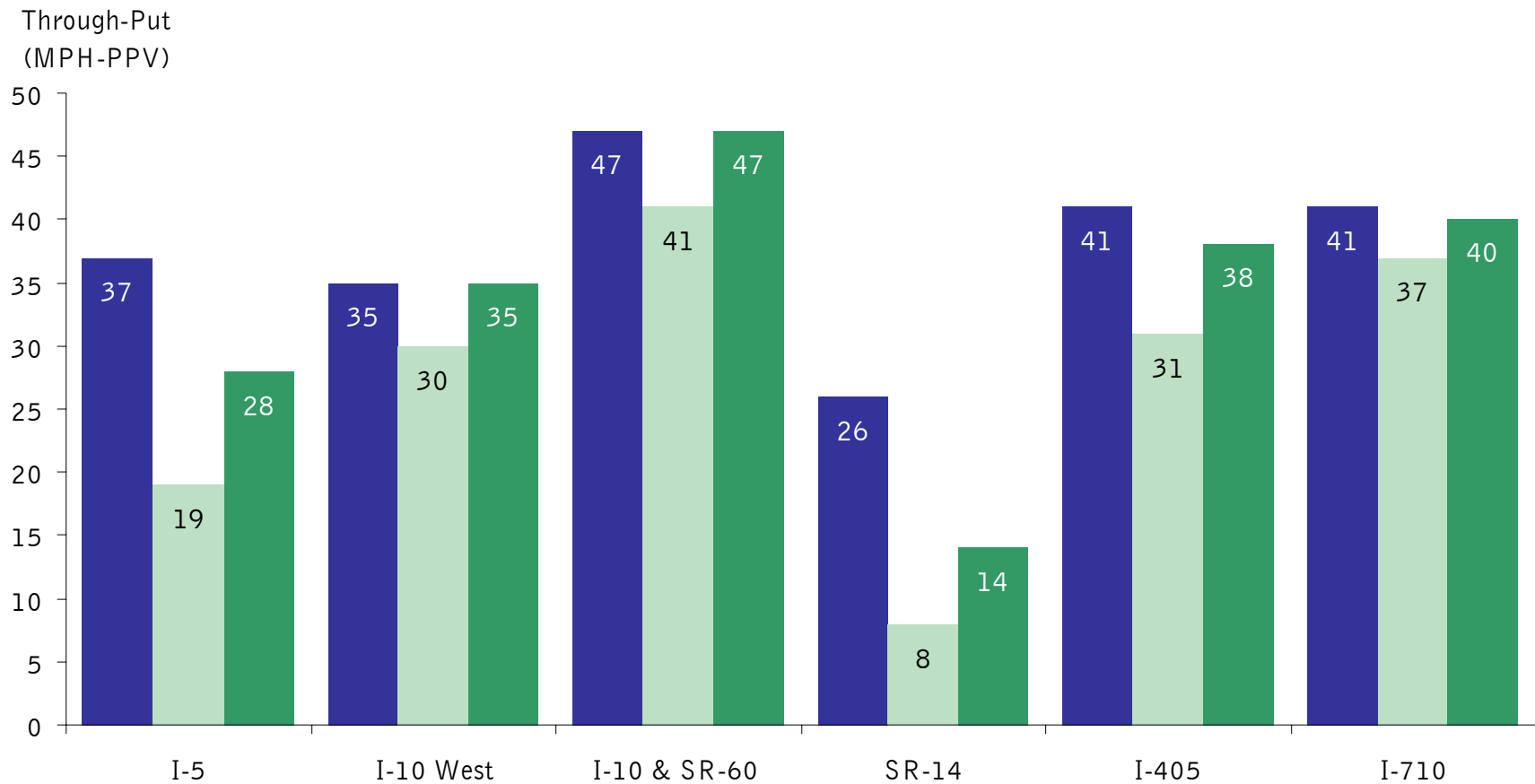


Exhibit 23: AM Peak Period Automobile Mode Throughput (MPH-PPV) by Subregion
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

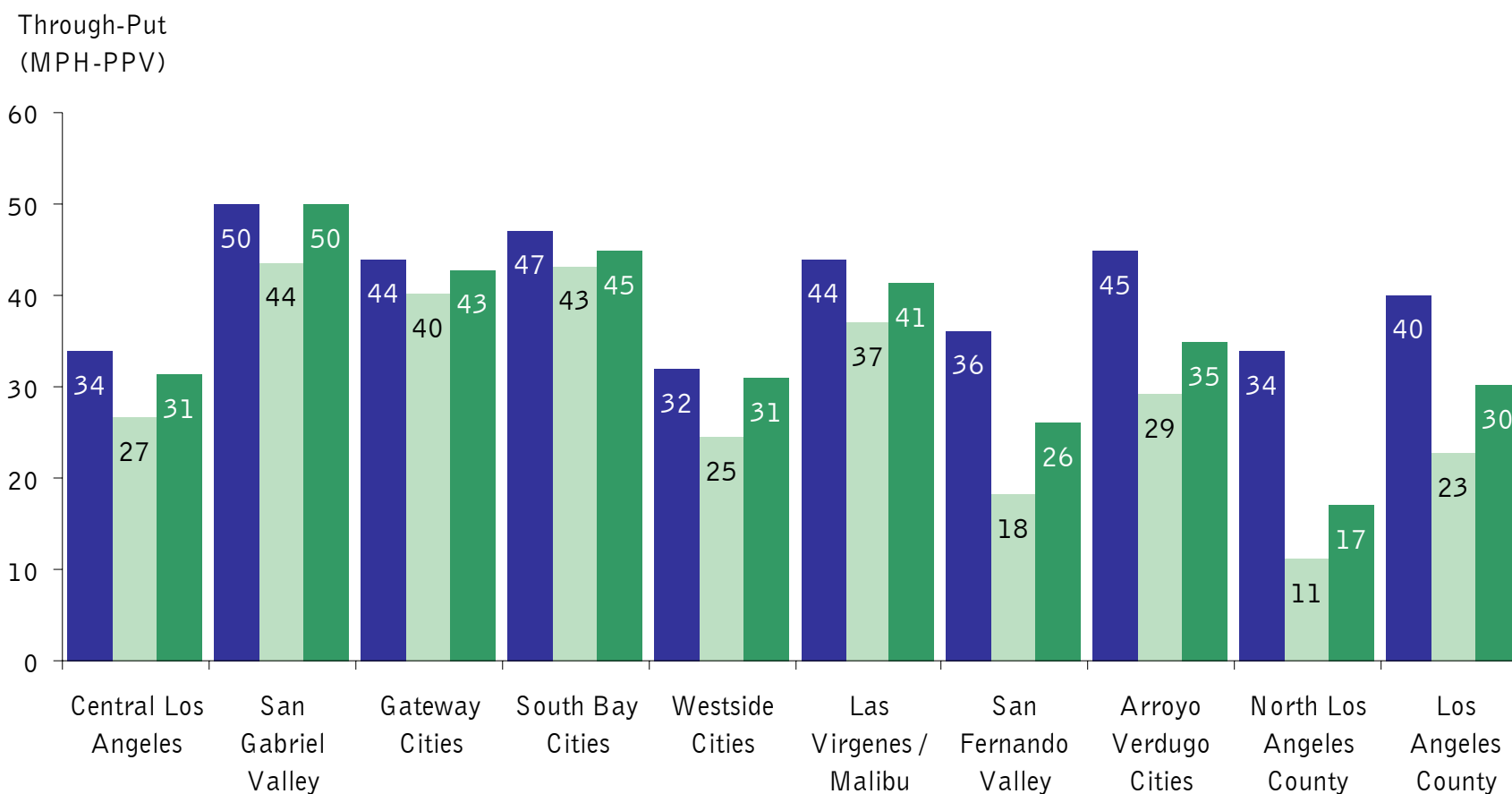


Exhibit 24: AM Peak Period Transit Mode Throughput (MPH-PPV) by Subregion
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

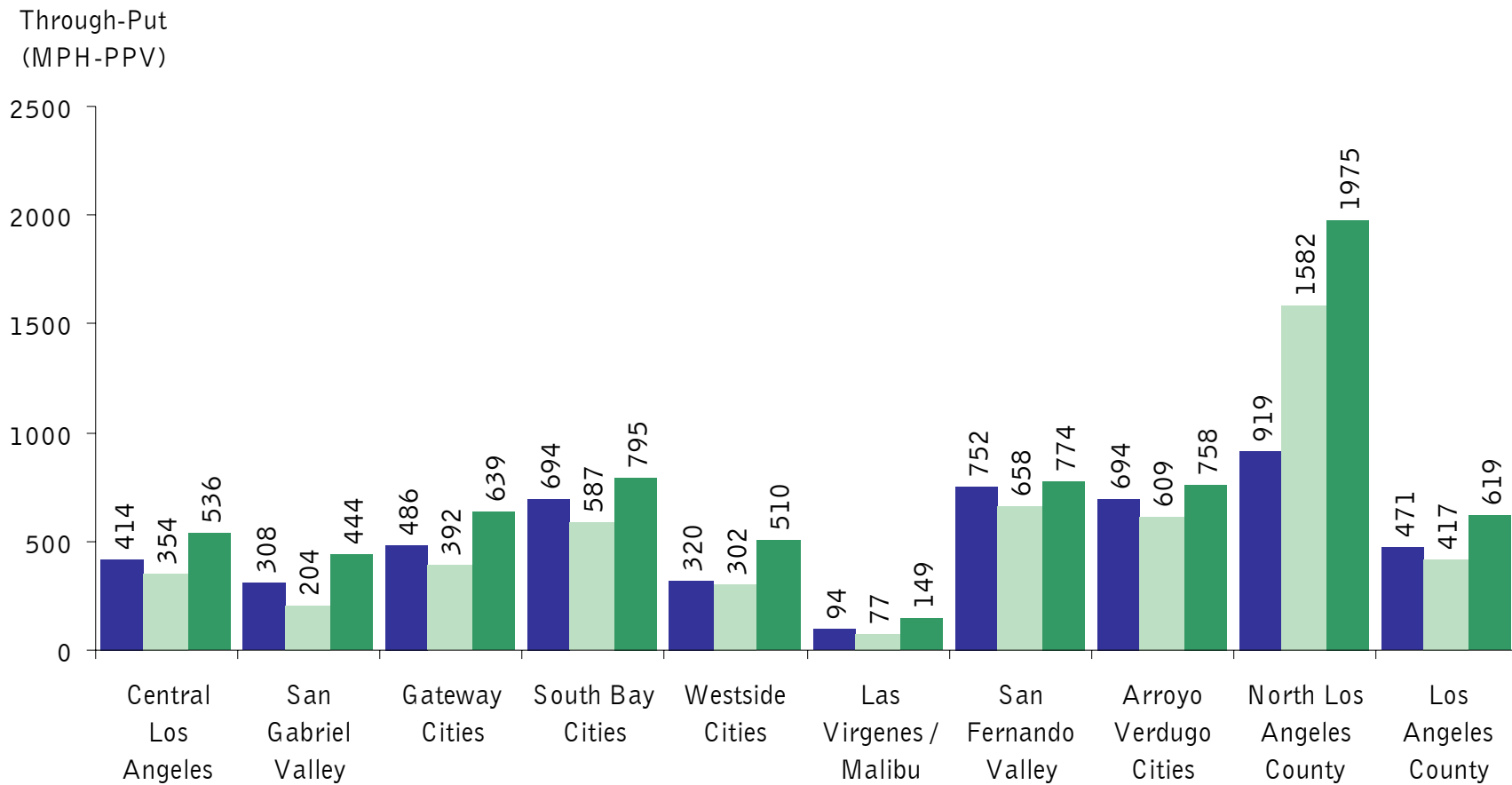
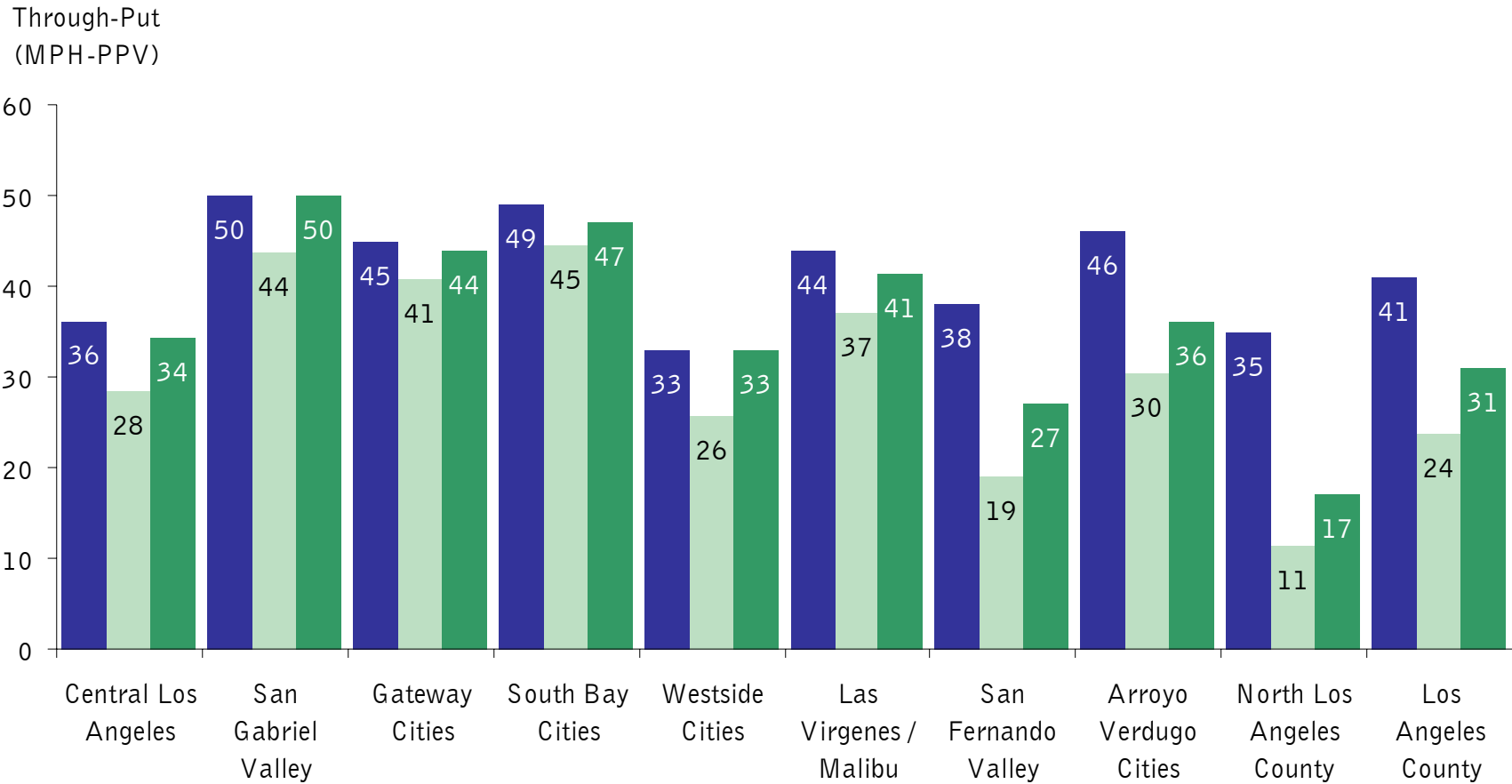


Exhibit 25: AM Peak Period Multimodal Mode Throughput (MPH-PPV) by Subregion
 Throughput = (PMT/PHT) x (PMT/VMT)

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)



Similar results are observed in Exhibits 23 through 25 for subregions. The San Gabriel Valley subregion has the highest total system throughput (50) in both 2001 and 2009 with recommended improvements.

4.2.2 Air Quality Impacts

Exhibits 26 and 27 compare AM peak hour mobile source emissions by corridor and by subregion between the three (3) scenarios. As previously reported, the technological improvements in the automotive industry are expected to reduce the mobile source emissions along all congested corridors and subregions in the future.

The improvements proposed in the Recommended Plan scenario will further reduce emissions levels as compared to the 2009 No-Build scenario. As shown in Exhibit 26, the improvement projects included in the 2009 Build scenario will improve air quality in all study corridors. The most significant improvement can be expected in the I-10/SR-60 corridor, a 12% reduction in emissions level between 2009 Recommended Plan and 2009 No Build scenario. Similarly, the emissions level for all subregions is expected to reduce as shown in Exhibit 27.

4.2.3 Economic Impacts

Over the next six years, the Plan will significantly benefit the regional economy. The REMI model results show healthy improvements to the regional economy from implementation of the Short Range Transportation Plan. For example, over 95,000 full time equivalent jobs will be created from increased economic activity that accompanies the growth in our infrastructure (Exhibit 28). Exhibit 29, illustrates the variety of job-types that will be created by the Plan. Note, however, that the figures presented in Exhibit 29 are based on projections prior to the State funding shortfall.

The REMI model indicates the Plan will grow our county's economy by over \$10 billion, including \$2.8 billion in 2009 (Exhibit 30).

4.2.4 Environmental Justice

The Short Range Transportation Plan provides improved access to transit and jobs for low-income, transit dependent, and minority populations. For example, when compared to 2001 conditions, the percentage of low-income residents who can travel between home and work via a 60-minute transit trip will increase from 59 to 60.7 percent in 2009 with implementation of the Plan (Exhibit 31). When compared to the 2009 No Build scenario, the improvement is even greater, increasing from 57.1 to 60.7 percent. Further, when looking at the benefits to minority groups, transit access to jobs generally increase by 6 to 7 percent (Exhibit 32). As illustrated in the Plan document, these results reflect the Plan's extensive transit investments and their proximity to areas with lower-income populations and job opportunities that support those areas. These areas are those where: a) 21% or more households include individuals 65 or older, b) 17% or more households have an income of \$15,000 or less (1999 dollars); or c) 13% or more of the households don't have a car.

Exhibit 26: AM Peak Air Quality Index (Lbs/Hour) by Corridor
 Air Quality Index = 1/7 of Carbon Monoxide + Oxides of Nitrogen + Total Organic Gases

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

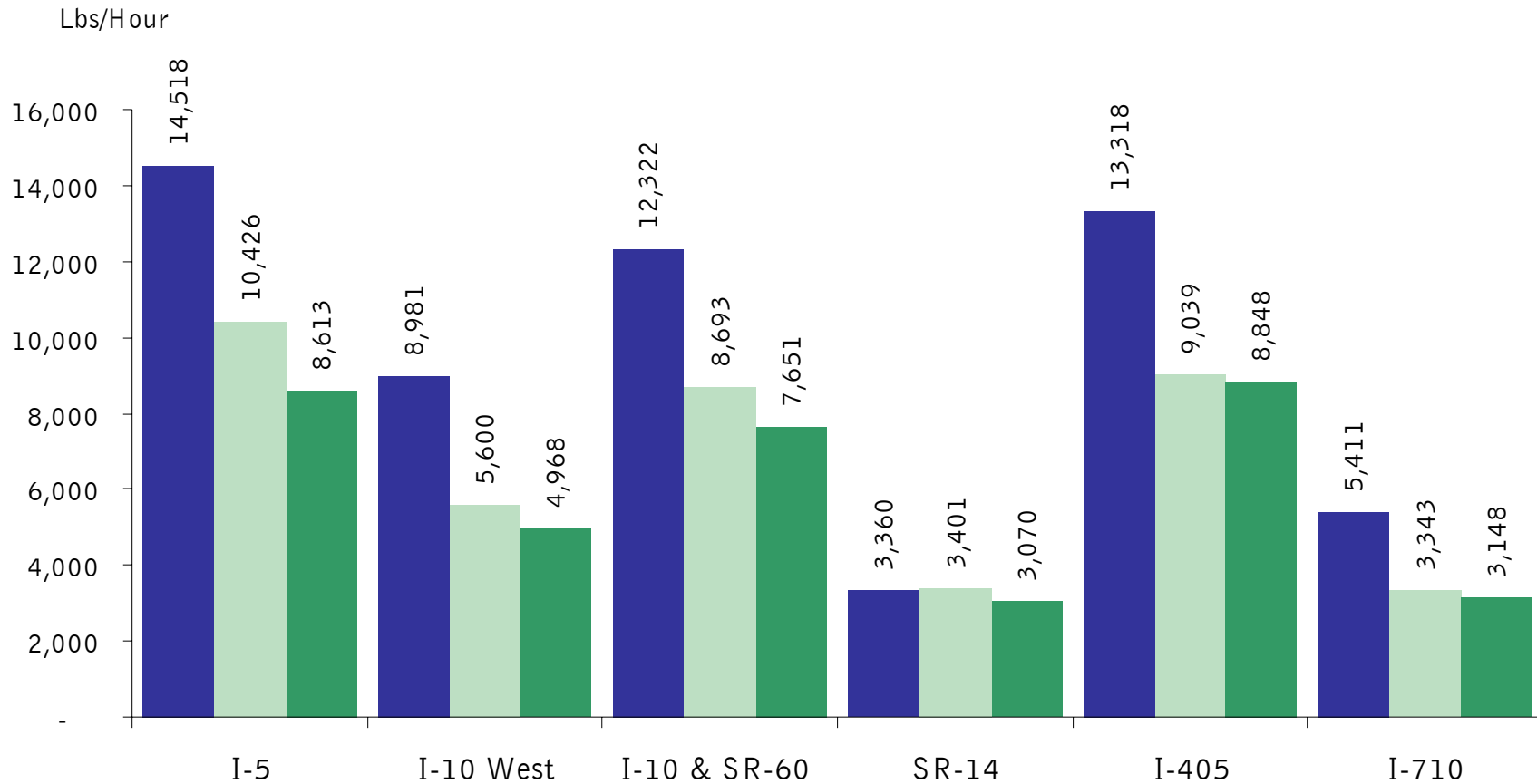


Exhibit 27: AM Peak Air Quality Index (Lbs/Hour) by Subregion
 Air Quality Index = 1/7 of Carbon Monoxide + Oxides of Nitrogen + Total Organic Gases

■ 2001 (Existing System) ■ 2009 (No Build) ■ 2009 (Recommended Plan)

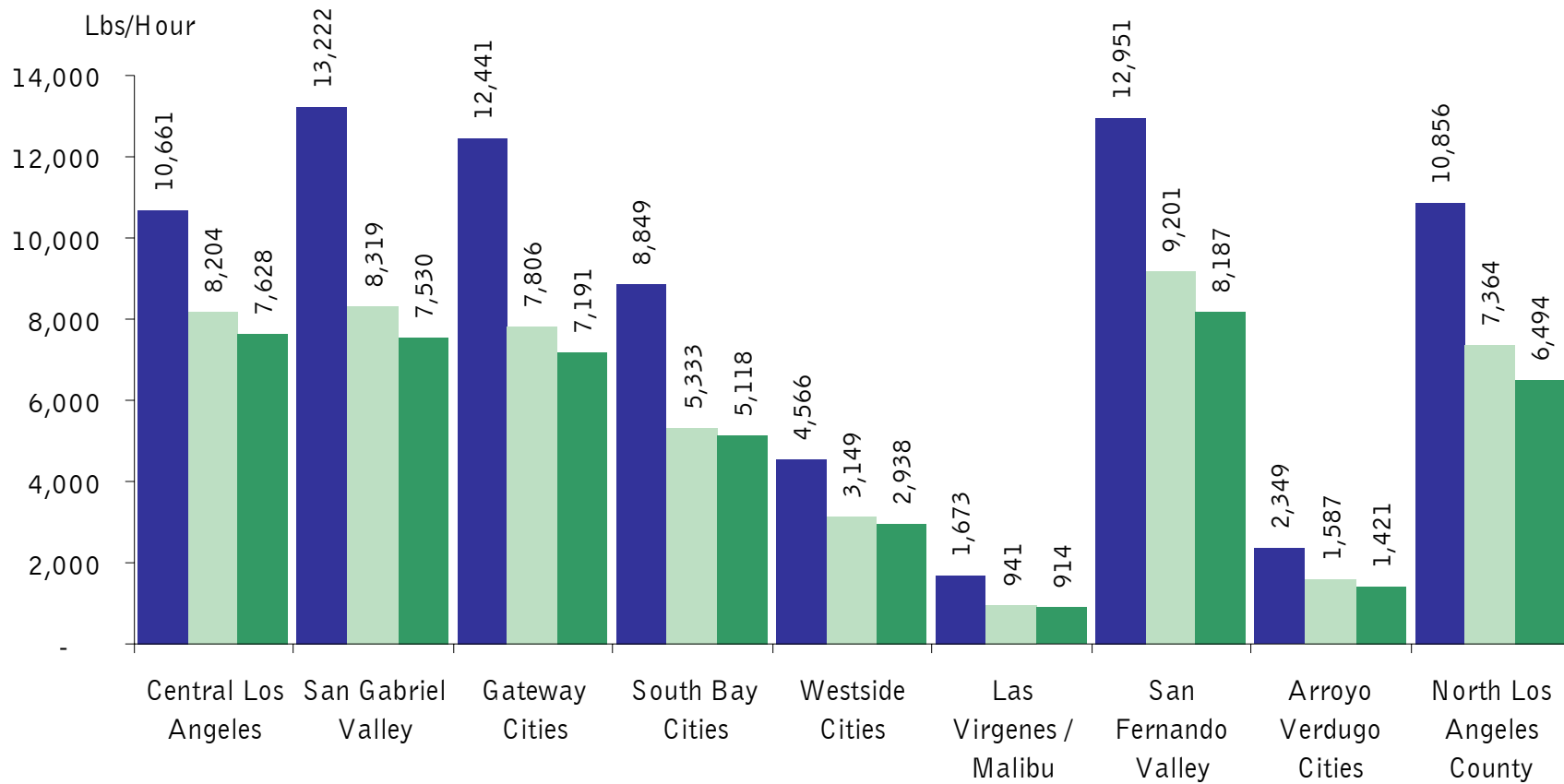


Exhibit 28: Full Time Equivalent Jobs Resulting from the Plan

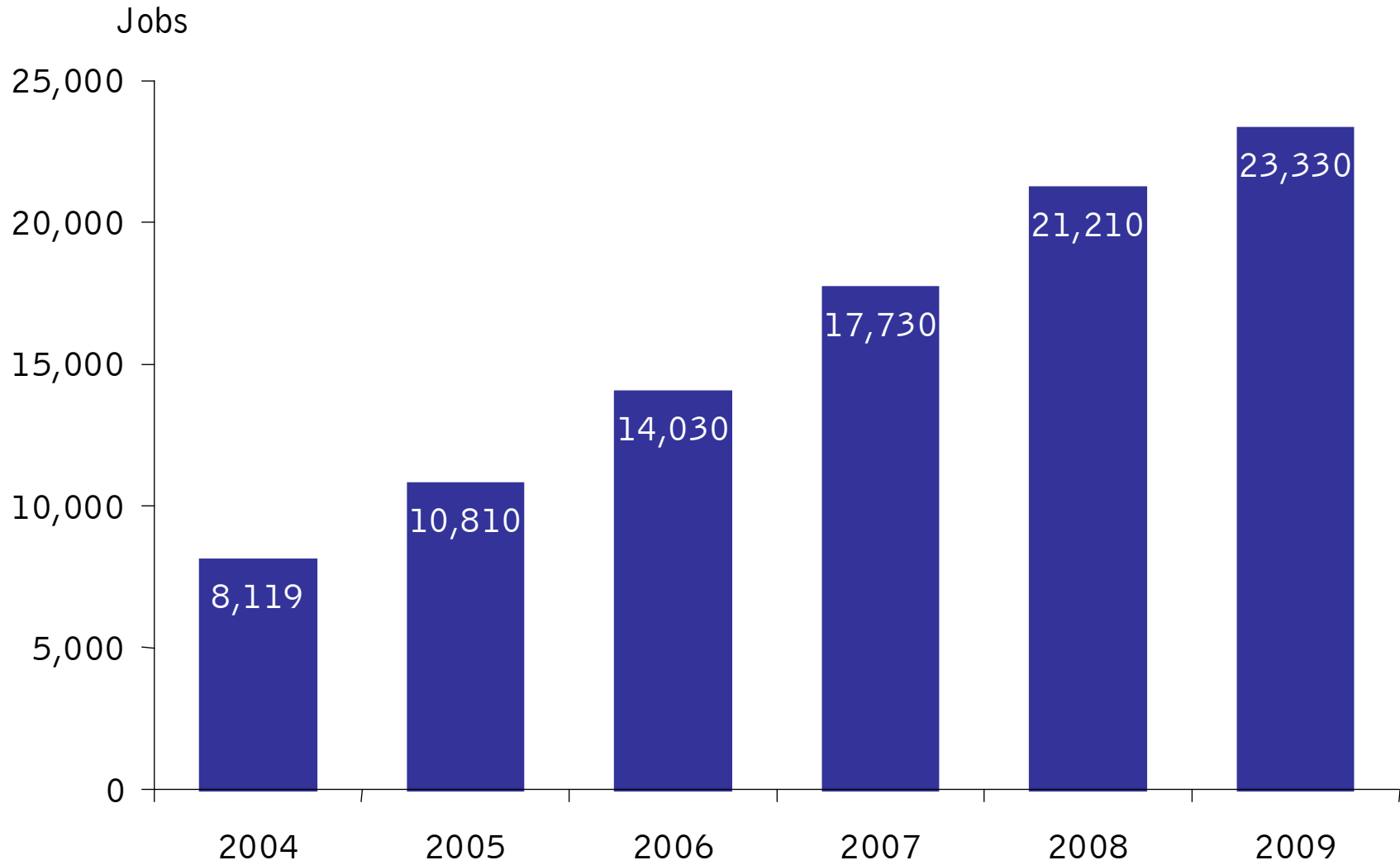


Exhibit 28: Job-Types Resulting from the Plan

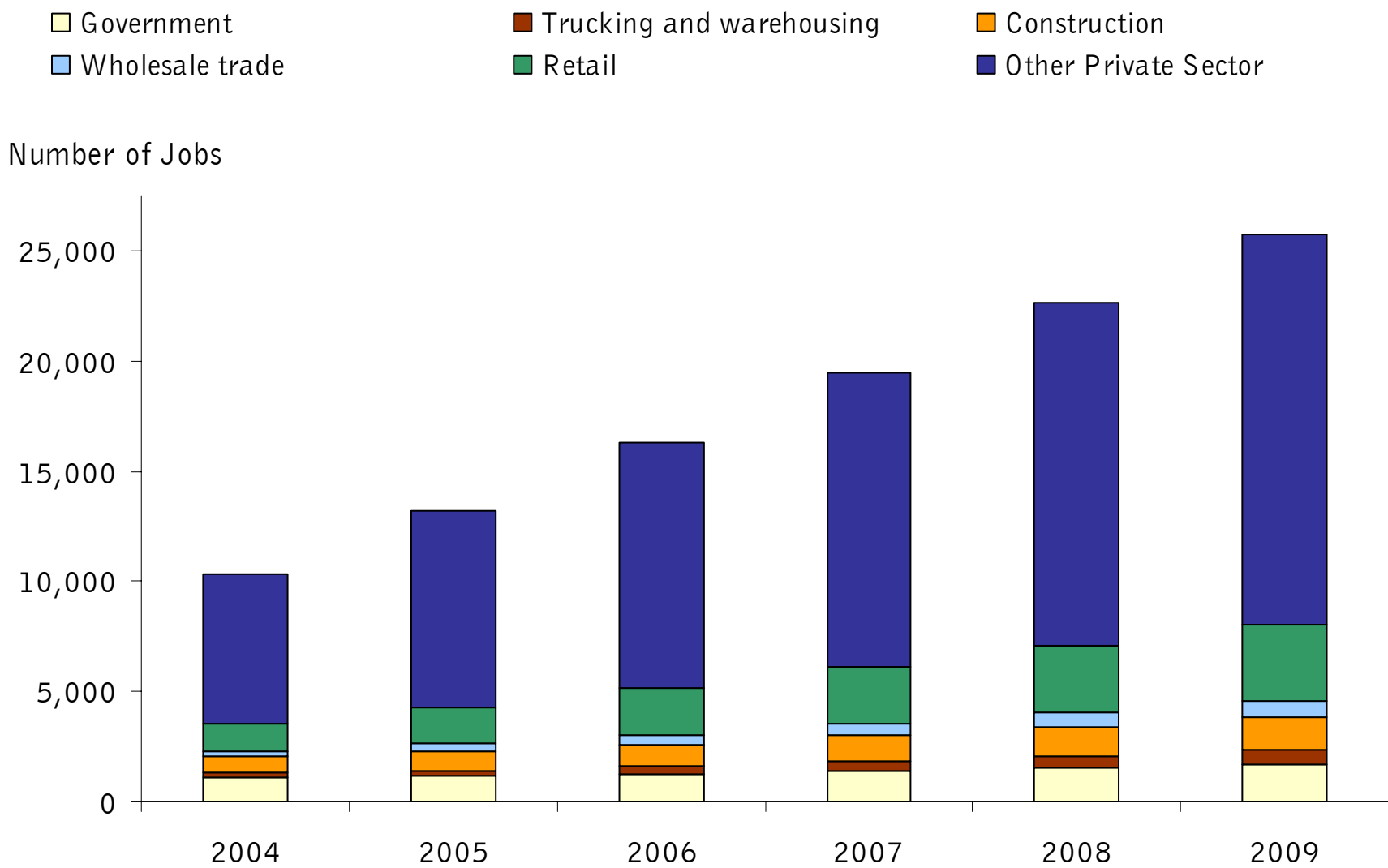


Exhibit 30: Business Growth Resulting from the Plan

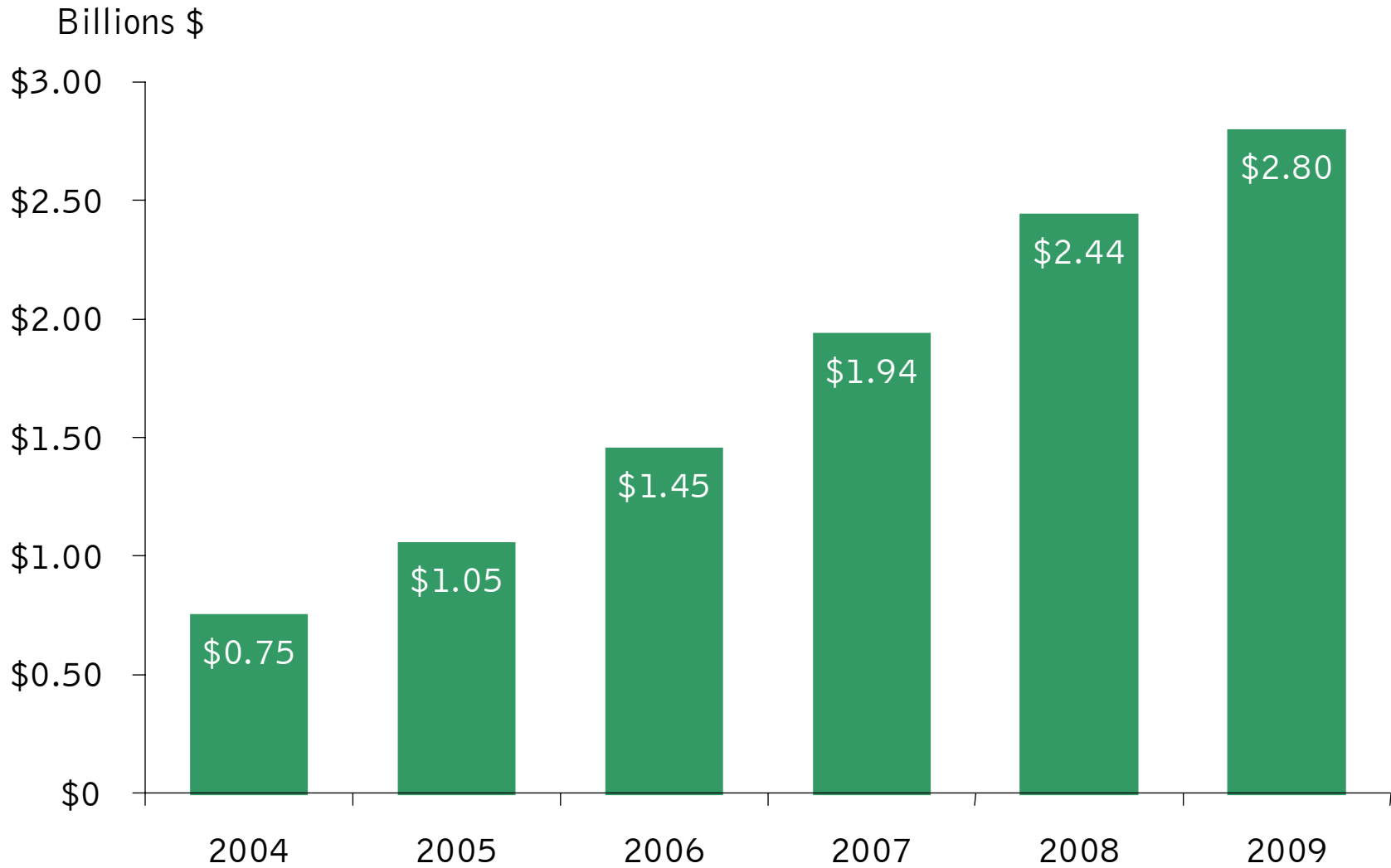


Exhibit 31: Percent of Home to Work Trips Within 60 Minutes Via Transit

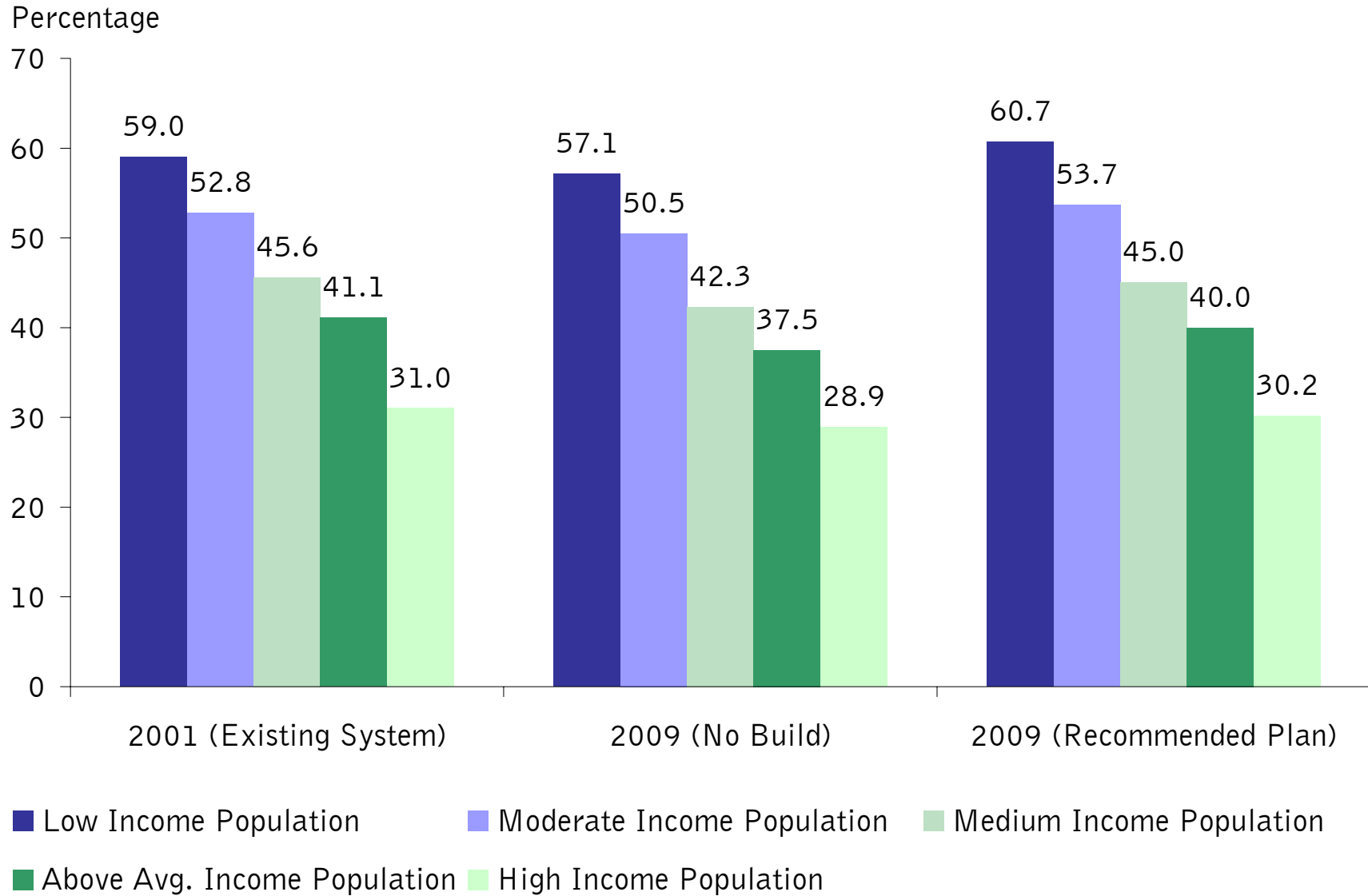


Exhibit 32: Percent of Home to Work Trips Within 60 Minutes Via Transit

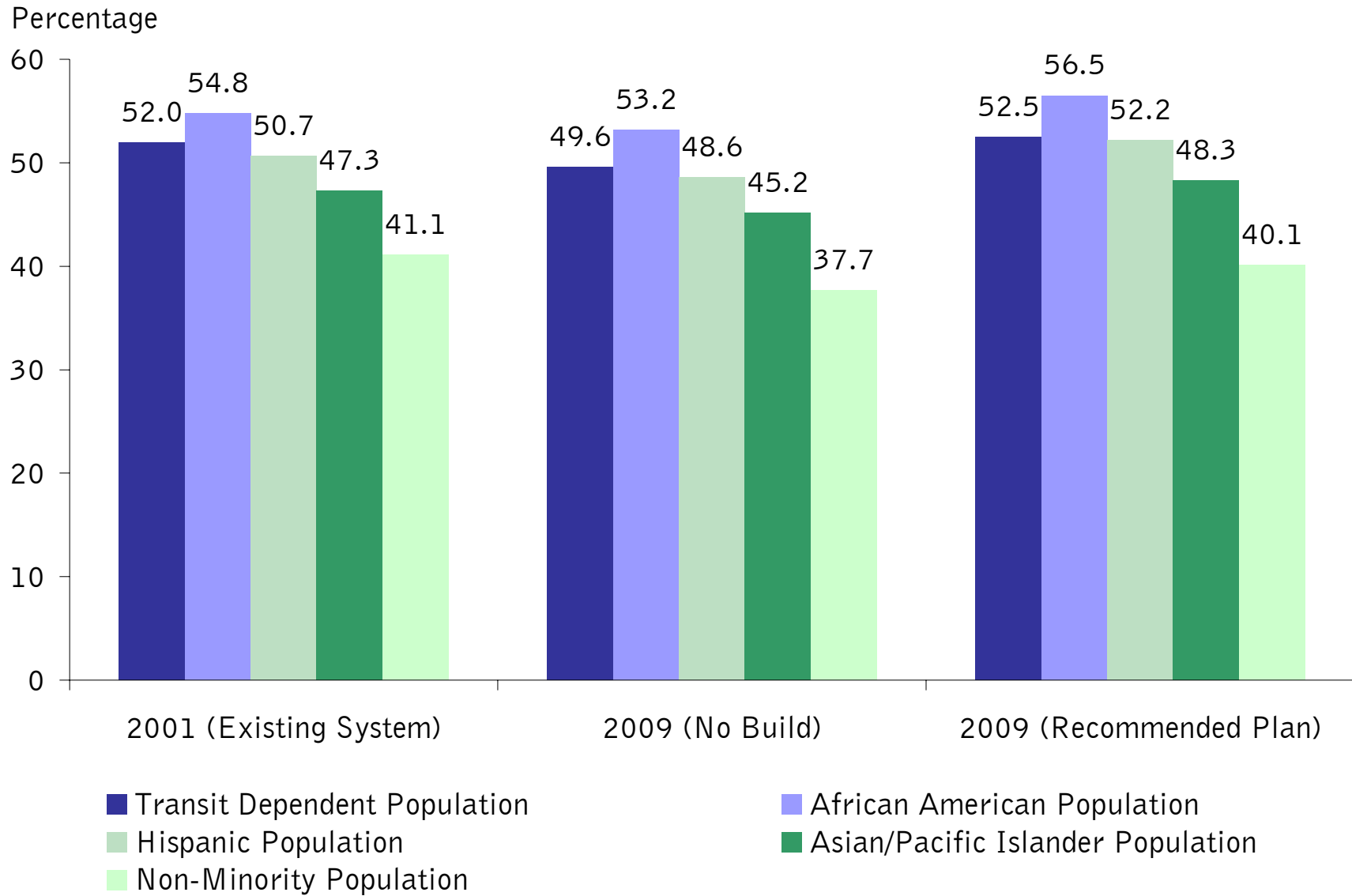


Exhibit 33: Mode Split of Home to Work Trips By Mode

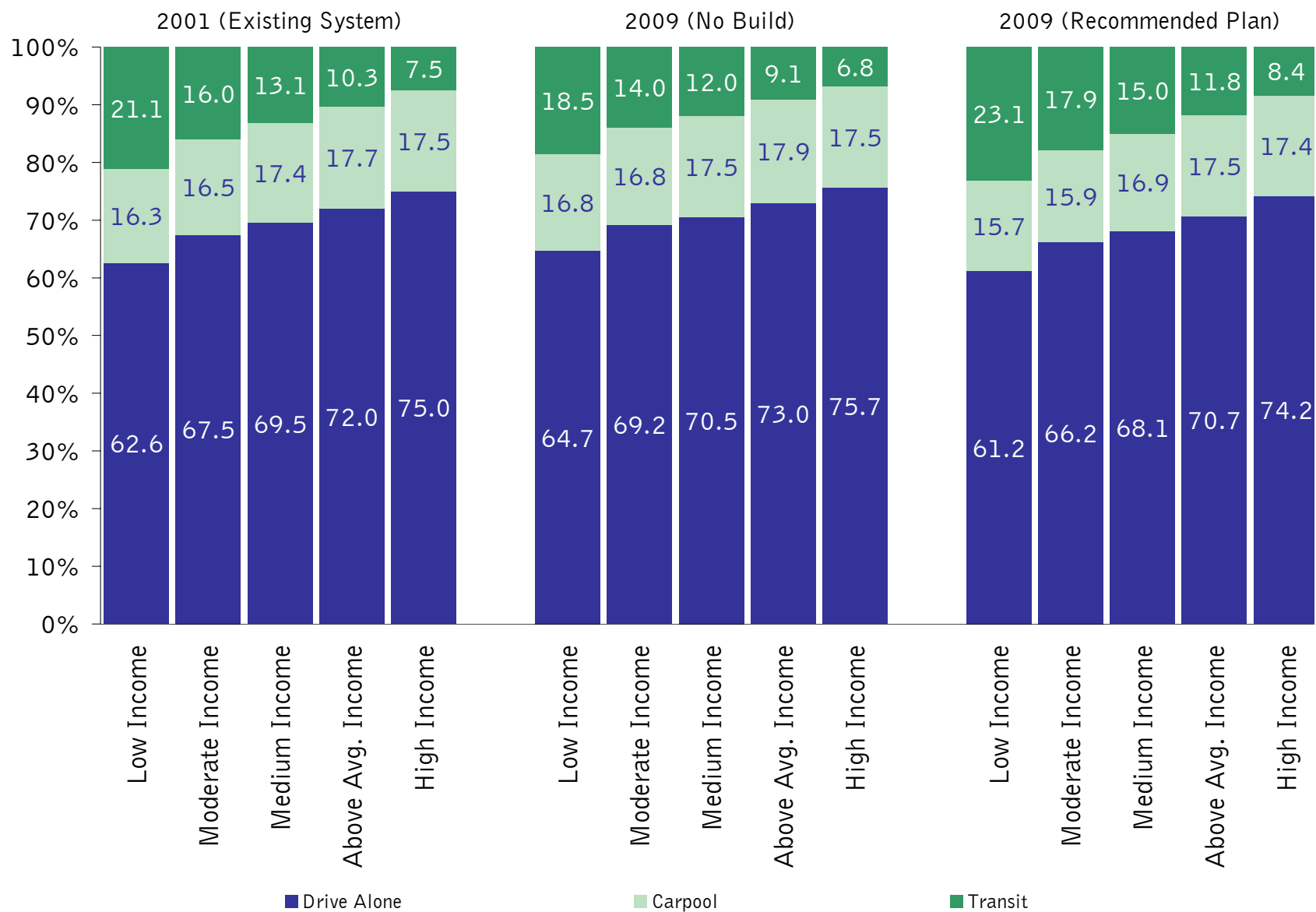
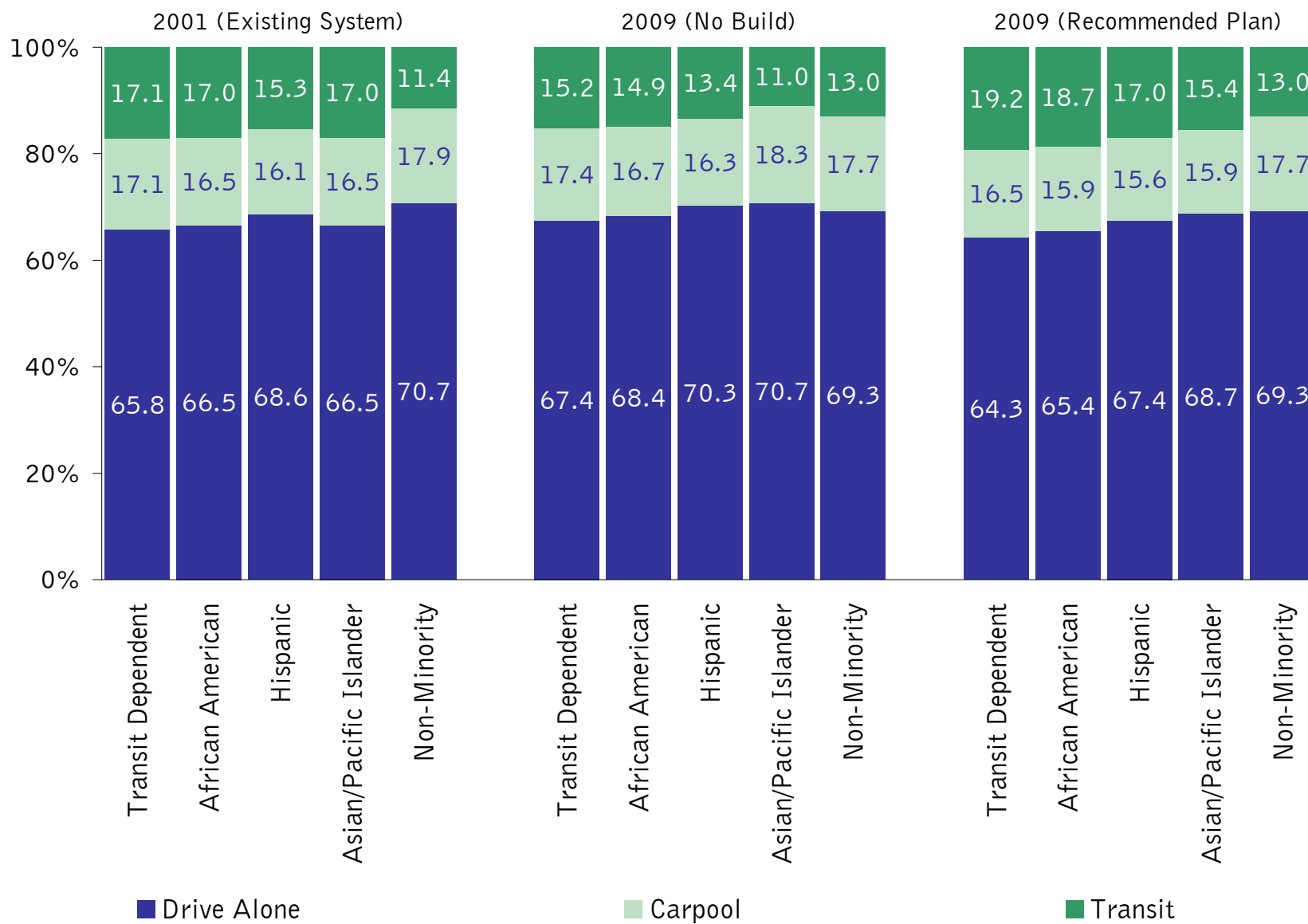


Exhibit 34: Mode Split of Home to Work Trips By Mode



FINANCIAL ELEMENT

FINANCIAL ANALYSIS

The Short Range Transportation Plan considers the financial foundations originally assumed in the Long Range Transportation Plan and adjusts them to reflect current circumstances. The first step is to determine how much funding will be available to maintain, operate, and improve Los Angeles County's transportation system. The Short Range Transportation Plan represents MTA's action plan to respond to the transportation funding challenges facing Los Angeles County in a constrained funding environment.

IMPACT OF STATE BUDGET

The State General Fund Budget deficit is projected as high as \$35 billion by next year, unless the State Legislature takes corrective action. To help reduce the deficit in FYs 2003 and 2004, the Governor has proposed reductions of \$1.8 billion in transportation funding including suspending Traffic Congestion Relief Program (TCRP) funding for FYs 2003 and 2004 and merging the remaining projects into the State Transportation Improvement Program (STIP) without additional funding. In light of this proposal, MTA has evaluated its TCRP projects and identified those that require immediate funding in order to allow critical construction and procurement contracts to be awarded and to preserve time-sensitive federal discretionary funding. The STIP and the State Transit Assistance (STA) are other key funding sources that could be impacted. In addition, the entire committed Call for Projects is impacted when STIP funds are redirected to fund projects previously funded through the State General Fund's TCRP.

The MTA Board has established priority-setting criteria to guide near-term programming decisions about allocation, obligation, and expenditure of state, federal and local funds in Los Angeles County. These criteria are designed to prevent local funds from being expended on lower priority projects at the expense of higher priority projects, to help ensure that MTA's projects remain strong contenders for state funds, and to enable MTA to secure an unknown, but significant, amount of funds that remain available from the State and federal governments.

Since up to \$2.0 billion in transportation funding expected for Los Angeles County between FY 2004 and FY 2009 could be postponed or eliminated, the Short Range Transportation Plan has assessed the financial impacts and presents short-term and longer-term response strategies.

FINANCIAL RESOURCES

Revenues come from many federal, state, and local taxes and subsidies as well as from passenger fares, advertising, real estate rentals, and other miscellaneous sources.

Sales Taxes. State and local sales taxes, which account for 51% of total forecasted revenues, are projected to grow an average of 4.7% per year through FY 2009.

Fares. MTA action to change the transit fare structure is an important assumption in the efforts to continue the improved bus service that MTA has developed in response to the Consent Decree. The changed fare structure will pair user benefits with fares paid, resulting in a fair and efficient allocation of passenger revenues.

Federal Revenues. Federal transit revenue estimates are preliminary, since FY 2004's pending reauthorization of the Transportation Equity Act for the 21st Century (TEA-21) could profoundly influence the amount of federal transportation funds available to Los Angeles County. MTA has submitted to the Federal Transit Administration a Full Funding Grant Agreement application for \$490 million in federal New Starts funds for the Eastside Corridor Light Rail Transit Project (Eastside Project). In addition to this Eastside project and any other future federal project funding earmarks, Los Angeles County's formula funds could be impacted. Los Angeles County's Congestion Mitigation and Air Quality (CMAQ) Improvement funds (our highest source of funding in TEA-21 and the most critical in the reauthorization) could be reduced if other air quality attainment areas throughout the country are allowed to be at higher levels than the annual recalculated approach in TEA-21.

TEA-21 reauthorization funding levels are also important factors. More federal funds could be available through the state process if the increase in federal funding is greater than the 20% assumed by Caltrans. Conversely, an increase of 20% or less would negatively affect the State's ability to respond to the General Fund deficit.

Based on these assumptions, a total of \$19.3 billion is projected to be available through FY 2009. However, most of this money is not discretionary since federal and state revenues are restricted for highway or transit capital. Certain federal funding programs can be transferred between transit and highway capital usage. This flexible funding is assumed to be used by MTA to assist transit capital. Only limited funding (approximately 13%) from state and federal sources is available for operating uses. Propositions A and C likewise have specific set-asides but 43% is used for rail and bus operating purposes.

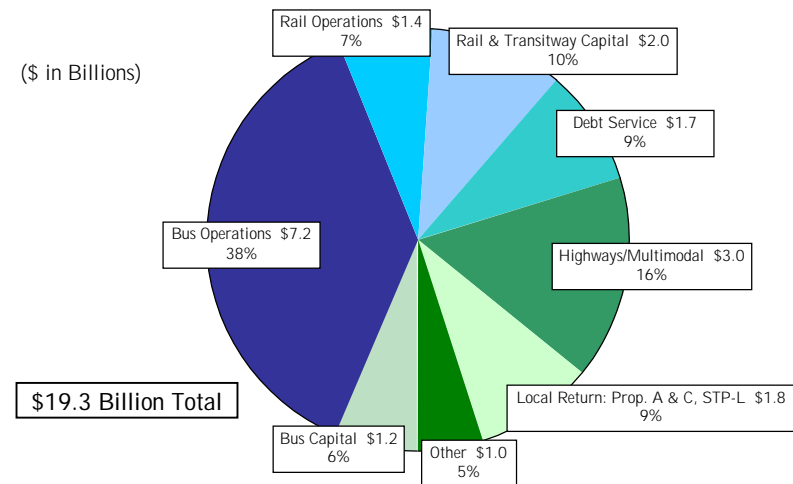
OPERATING AND CAPITAL COSTS

Most of MTA's available revenues are committed to maintaining and operating the transportation system, and the projects and programs already approved by the MTA Board [see Exhibit 1: Estimate of Fund Uses (FY 2004-2009)]. \$8.6 billion, 45% of total commitments, is projected for countywide bus and rail operations. To comply with the January 2003 ruling by the Special Master in the Bus Consent Decree case, 237,500 revenue service hours have been added to the base MTA bus service beginning in FY 2004.

The high priority capital projects are the San Fernando Valley Metro Rapidway, the Eastside Project, and the purchase of articulated buses to assist meeting Consent Decree obligations. \$3.2 billion will be spent on these projects, other rapid transit corridors, and Metrolink through 2009.

The share of highway and multimodal programs funded through MTA (which does not include the additional amount provided directly to Caltrans, Los Angeles County, and local cities) is projected at \$3.0 billion. Sales tax revenues returned directly to local governments and other miscellaneous expenditures account for \$2.8 billion and Debt Service totals \$1.7 billion. A more detailed breakdown of funding is shown in Exhibit 2: Short Range Transportation Plan Summary of Uses.

Exhibit 1: Estimate of Fund Uses (FY 2004-2009)



1. Highway/Multimodal includes \$2 billion for capacity increasing projects and \$1 billion for highway safety, maintenance, and rehabilitation.
2. Other includes MTA agency-wide capital and administration.

Exhibit 2: Short Range Transportation Plan Summary of Uses

Category (\$ in millions)	FY 04-09
Metro Buses (MTA Operations and MTA Local Bus Capital)	6,128.6
MTA Operations	4,925.3
MTA Capital	812.9
MTA-Service Area Paratransit	390.4
Metro Rapid Capital (not including \$20.7 in FY10 to total \$92.3)	71.6
Metro Transitways Capital (San Fernando Valley Metro Rapidway, San Fernando Valley North-South BRT, Mid-City/Wilshire BRT, Crenshaw Corridor)	477.6
Municipal Operators (Operations and Capital)	3,085.7
Municipal Operations including Incentive Program	1,807.6
Municipal Operations: Prop A Local Return to Cities	822.7
Non-MTA Service Area Paratransit	101.9
Municipal Capital	342.3
Countywide Transit Enhancements	11.2
Metro Rail (Blue, Red, Green, and Gold Lines, Eastside LRT, Mid-City/Exposition LRT)	2,555.2
Operations	1,253.6
Capital	1,301.6
S RTP Rail (Eastside LRT, Gold Line, Gold Line Extension, Mid-City/Exposition LRT)	880.9
Rail Rehab and Replacement	303.5
Rail Cars	108.0
Miscellaneous	9.2
Metrolink	304.9
Operations	179.6
Rehabilitation and Renovation	79.4
Capital (including \$23.6 from prior Call for Projects)	44.9
Capital-Ramona Grade Separation	1.0
Highways	1,626.4
S RTP Freeway Projects	495.2
Outstanding Prior Freeway CFP Commitments	72.8
Soundwalls from prior CFP	61.6
Caltrans Highway Maintenance (SHOPP)	990.8
Environmental Enhancement and Mitigation	6.0
System Management	186.4
Freeway Service Patrol	128.6
Freeway Call Boxes (SAFE)	42.8
ITS-Bus Preferential Signalization System	15.0
Demand Management-Rideshare	31.7
Call for Projects--Prior, New Regional Funds, and Sponsor New Match Funds (all except Freeway, Soundwalls, and Metrolink)	1,052.0
Miscellaneous	3,803.9
Local Return to Cities - Prop C	743.9
Local Return to Cities - STP-L	190.2
Debt Service (Existing and Proposed) for capital	1,708.3
AMTRAK Pacific Surfliner	72.0
Agency-wide Regional Costs*	1,089.5
TOTAL	19,324.0

* Includes MTA non-allocable overhead, regional planning and support, agency-wide computer systems and other capital, and restricted/reserved costs for other agencies.

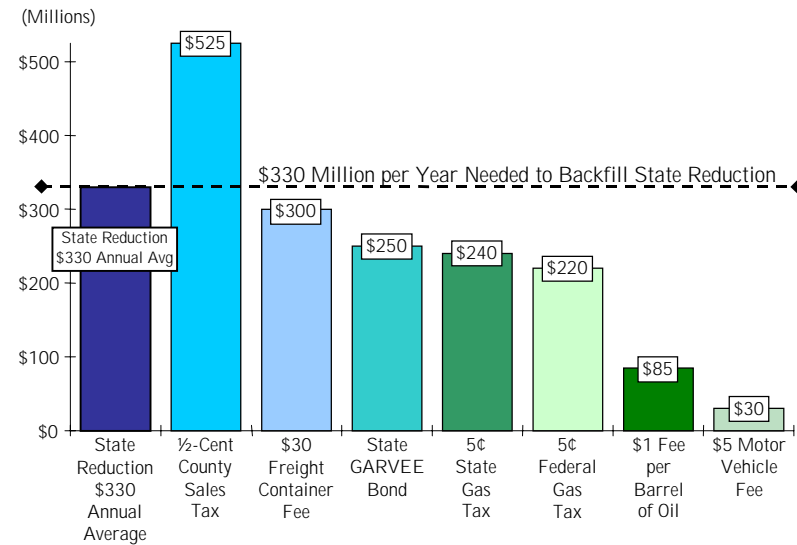
OPTIONS FOR SECURING MORE FUNDS

Given the budget shortfalls throughout the State, the transportation plans for Los Angeles County will be disrupted without new transportation revenues. The Short Range Transportation Plan assumes that as much as a quarter of the \$6.5 billion in planned state-funded improvements is deferred to beyond 2009. In February 2003, the MTA Board voted to support State budget balancing efforts that would preserve funding for LA County transportation projects, include a temporary or permanent increase in the state gasoline tax, and allow local transportation agencies to impose user fees for transportation.

Temporary increases to existing taxes and fees would yield needed significant revenues to help compensate for the state reduction as well as provide needed increases in transportation funding. The following additional funds could be generated per year for Los Angeles County:

1. \$525 million – from an additional half-cent sales tax.
2. \$300 million – from a \$30 per freight container fee collected (assumes 10 million containers per year).
3. \$240 million – from a five-cent motor vehicle fuel tax imposed at the county level, collected at the pump (\$150 million if allocated by the current STIP formula).
4. \$220 million – from a five-cent motor vehicle fuel tax imposed at the federal level, collected at the pump (assumes 90.5% return).
5. \$30 million – from a \$5.00 fee per motor vehicle, collected at vehicle registration (assumes 6 million vehicles).

Exhibit 3: Estimated Additional Annual Revenues That Could Be Generated to Backfill State Reduction



FINANCIAL FORECASTING MODEL ASSUMPTIONS

OVERVIEW

The Financial Forecasting Model is based on several assumptions that reflect the best available estimate of revenues (sources) and costs (uses) through the end of the planning period. These assumptions cover the planning period for both the Short Range Transportation Plan (SRTP), through 2009, and Long Range Transportation Plan (LRTP), through 2025. For reporting purposes the financial forecasting model provides funding totals and allocations for the period through 2009. The assumptions also reference the LRTP to ensure continuity between the two plans.

Existing MTA policies along with recent and potential actions of the MTA Board of Directors guide the development of the financial modeling assumptions. The MTA Board of Directors makes specific policy and project decisions that typically impact the financial forecast. The specific actions taken will be analyzed to determine the actual impact on the financial forecasting model and both the SRTP and LRTP. Adjustments will be made as necessary to comply with the ultimate decision of the MTA Board of Directors.

The financial forecast for the Short Range Transportation Plan includes estimates developed and submitted to the Federal Transit Administration (FTA) for the Eastside Light Rail project Full Funding Grant Agreement. The submittal is intended to comply with the FTA booklet entitled *"Guidance for Transit Financial Plans"* dated June 2002 and is used for planning purposes. Further, the financial forecast serves as a planning tool for MTA business and is subtotaled by planning increments that correspond to the SRTP and LRTP planning periods.

The financial forecasting assumptions conform to the MTA financial policy and standards for FY2003-04 as adopted by the MTA Board on January 23, 2003. The financial standards include three sections as follows:

- (1) General - The purpose of the general standards is to ensure that MTA prudently manages its financial affairs and establishes appropriate cash reserves to be able to meet its future financial commitments;
- (2) Debt - The purpose of Debt Standards is to limit the level of debt that may be incurred and to ensure that debt assumptions are based on financial parameters similar to or more conservative than those that would be placed on MTA by the financial marketplace. Actual debt covenants may differ from these standards although the financial forecasting model complies with the existing debt policy and does not propose any deviation. Where differences occur, the actual covenants will be disclosed in the Board report supporting debt issuance as required by MTA's Debt Policy; and
- (3) Business Planning Parameters - The purpose of the Business Planning Parameters is to provide management with a framework for developing the budget for the coming fiscal year and other MTA financial plans and to establish targets for future MTA business.

MTA has programming authority of transportation funds for Los Angeles County. As the Regional Transportation Planning Agency (RTPA), MTA will program billions of dollars in funds over the study period. In addition, MTA administers the local sales tax initiatives receiving the collected funds from the State of California. By having such programming and management of funds authority, it is not uncommon for large fund balances to be available in MTA accounts. Balances, however, are not to be confused with those funds actually available to MTA for bus and rail capital and operations. For example, balances in MTA accounts such as Proposition C 25%, Transit Related Highway funds are awaiting disbursement to sponsors from prior years Call for Projects. Other accounts have balances wherein the funds can only be used for specific purposes such as security (Proposition C 5%), or commuter rail, transit centers, and park-and-ride lots (Proposition C 10%).

It is important to note that the delivery and implementation of all projects and programs are dependent on the availability of local, state, and federal revenues at the projected levels. Major changes in local, state, or federal policy, or unanticipated shifts in the state/national economy would impact the implementation of the proposed projects and programs. This financial forecast has adjusted previous project schedules and transferred funding to high priority projects to reflect deficits in the current California State Budget. The state deficit, as high as \$35 billion in FY-2003, has impacted the short-term availability of funds and therefore required changes be made to funding sources for a number of projects so that schedule and cost containment is achieved. All changes to date are included in this financial forecast for the Short Range Transportation Plan to ensure continuation of high priority projects.

MAJOR FINANCIAL ASSUMPTIONS

The Financial Forecasting Model forms the fiscal basis of the Long Range Transportation Plan through the entire planning period of 2025 and Short Range Transportation Plan through 2009. The financial forecasting model is a tool used to evaluate the fiscal capacity of MTA and to implement the SRTP. The assumptions do not replace MTA Board action or policies. These assumptions, the financial policy and standards and the financial forecasting model itself will be updated periodically to reflect separate, specific MTA actions. All the financial policies, standards, assumptions and financial forecasting model are intended as management tools to assist in evaluating the impacts of contemplated actions involving transportation programs or projects on the overall financial capacity of MTA as the regional transportation planning agency for Los Angeles County.

The following are some of the major assumptions that the financial forecasting model follows along with a discussion of potential outcomes if these are not realized:

- **Transportation Equity Act for the 21st Century (TEA-21) Funding Assumed** - Funding from the TEA-21 legislation has been assumed through its expiration at the end of September 2003. After the expiration of TEA-21's, federal funding levels are assumed to grow annually at 1.4%, which is the historical annual growth rate of the

Federal Highway Trust Fund. TEA-21 funding includes all federal highway, transit and transportation programs. The amounts programmed vary annually based on the guaranteed levels in the TEA-21 legislation or a specified percentage of the national authorization. Congestion Mitigation and Air Quality (CMAQ) improvement program funding has been adjusted downward after FY 2004 to reflect anticipated improvements in air quality standards in Los Angeles County. The CMAQ program has been reduced by more than 50% starting in FY 2011 when the South Coast Air Quality Basin is expected to meet air quality standards.

- **MTA transit fare revenues adjust with inflation and media changes in FY 2004** - Passenger fares are adjusted in FY 2004 and reflect changes in the cash fares, monthly passes and other fare media based on customer usage data and review of selected media sources. After FY 2004, fare recovery is adjusted based in part on the Consumer Price Index for Southern California, estimated changes in ridership, opening of new transit projects and corridors, and revised fare media projections. The adopted 2001 Long Range Transportation Plan states that fare recovery would be adjusted to reflect cost increases associated with operations through the planning period. The same assumption applies to the Short Range Transportation Plan.
- **New Buses and Added Service** - The financial forecasting model assumes implementation of the Consent Decree using the passenger counting calculations methodology identified in the January 2003 ruling of the Special Master. New buses and added service resulting from the ruling are included in this financial forecast. It is planned that starting in FY 2004 an additional 237,500 revenue service hours will be added to base MTA bus service to comply with this order. Funding for the added service is included and is based on existing marginal costing approaches used for added bus service in the financial forecasting model. The costing method assumes a reduced marginal rate for the first two years of operation. The first year of added service is estimated at 70% of total MTA bus operating costs and 85% for the second year. Subsequent years are estimated at full cost.

While the forecasting assumptions do include the additional Consent Decree service costs, the added costs are subject to change based on actual conditions experienced during service implementation. The estimate used is for planning purposes only and does not commit MTA to any specific expenditure level. Further, adjustments in future bus service growth needs have been lowered due to this added service occurring prior to planned future growth.

An annual purchase of 200 new MTA replacement buses is proposed after FY 2004. When averaging the MTA replacement buses with the Municipal Operators' fleet, a countywide bus fleet with an average age of 6 years is established. While funding has been set aside for an annual purchase of 200 40-ft buses, adjustment has been made to reflect the accelerated purchase of 55-ft to 70-ft articulated buses. MTA is considering a purchase of 600 articulated buses over the next six years. Proposed funding and allocation is represented in the financial forecast to accomplish the purchase. The purchase of articulated buses will require an increased allocation of regional funding and the resetting of project priorities. Funding is proposed in the State Transportation Improvement Program (STIP) for this purpose. Funding for other projects has been extended to ensure that the priority project status of this bus program is met.

- **Sales Tax Forecast** – The sales tax forecast is based on a sales tax model developed specifically for Los Angeles County by an independent economist, with the exception of the first two years of the forecast, which is based on management's best estimate. After the initial two years, the real growth projections of the model are reduced by 20% annually for the forecasting period. Sales tax revenue for the FY 2004 budget will be forecast at \$565.8 million for Proposition A and \$565.7 million for Proposition C. This estimate is consistent with the 10-Year Forecast dated August 2002.

Sales tax growth results from a combination of population increases and economic expansion. Historically since 1951, Los Angeles County has averaged 6.2% annual sales tax growth. The financial difference from a 4.0% growth versus 5.0% is approximately \$10 million annually based on \$1 billion in revenue. These assumptions reduce the economic expansion by 20% annually in accordance with

the financial policy and standards adopted by the MTA Board of Directors on January 23, 2003.

- **State Funding** - Effective January 1, 1998, state and local transportation financing allocations throughout the State of California changed. The then new process repealed seven separate transportation-funding programs and authorized local Regional Transportation Planning Agencies (RTPA) such as MTA to decide how the funds are to be spent. This funding program is referred to as "*Regional Improvement Program Funds*" and allows MTA to select projects for funding as reviewed and concurred with by the California Transportation Commission (CTC). This local control of transportation funding replaced a series of programs that were complex and restrictive in how transportation funds could be used. MTA programs these funds through the State Transportation Improvement Program (STIP) and uses the local Call for Project process, along with the MTA LRTP and SRTP to determine which projects are to receive funding.
- **Latest State Funding Issues (the deficit)** - The last source of funding added to the financial forecasting assumptions was a state source known as the "*Traffic Congestion Relief Program*" referred to as TCRP. The TCRP, enacted by the state legislature and signed by the Governor in June 2000, provides funding for needed highway and transportation capital projects throughout Los Angeles County in an amount of \$1.7 billion over the next five to seven years. In addition, an estimated \$244 million would be directly allocated to Los Angeles County and its cities for local road uses. A voter-approved initiative continues the funding for this program in certain aspects starting in FY 2009 although the state legislature can suspend the program on an annual basis.

The State of California Legislative Analysts Office estimates that without corrective action the current law State General Fund deficit is \$6.1 billion this year, growing to over \$30 billion in FY 2004. The governor has stated that the deficit could grow as large as \$35 billion, and remain at an annual deficit thereafter of \$12 to \$16 billion. Current state law dedicates \$9.6 billion of General Fund revenues to transportation programs statewide through FY 2009, at

least \$2.5 billion of which is committed to Los Angeles County transportation programs during this period. A shortfall of this magnitude could cause a reduction of up to 30% of planned revenues for MTA from the STIP and other state sources. The financial forecasting model has been adjusted as outlined below to address the funding deficit.

The Governor recommended the TCRP program for suspension in December 2002 in response to these announced shortfalls. In addition, it was further recommended that the TCRP program be merged with the STIP without the accompanying funding for the TCRP projects nor the payback of funds borrowed from the State Highway Account by the State General Fund over the last year. This action requires state legislative approval and will take several months to resolve. The financial forecasting model assumes that all TCRP funding not allocated by the CTC will not be available for the capital projects originally intended. This assumption requires reprogramming of funds, extensions of planned project completion dates, and deletion of extensive funding (\$1.48 billion).

The financial forecasting model assumes the suspension of the TCRP program including the FY 2009 planned increase in allocation for the State Transit Assistance (STA) program. The forecast assumes a reduction of \$1.72 billion in TCRP funding: \$241 million for local city/county road uses and \$1.48 billion for capital projects specified in the legislation. Of the \$1.48 billion, \$1.29 billion has been replaced with Region Improvement Program (RIP) and Proposition C 25% bond funds. No replacement funding is included for \$190 million of TCRP capital projects controlled by outside agencies.

Funding of \$317.8 million is being transferred from lower priority projects to higher priority projects through a STIP amendment. This action is being taken to ensure adherence to the schedules of major high priority projects that are ready for construction with contracts pending (ready for signature having been designed and bid) and authorized to continue. The recommended STIP amendment would strategically redirect a total of \$317 million of RIP funds to three high-priority regional transit projects. These high priority projects are the Eastside Light Rail Line, San Fernando Valley

Metro Rapidway, and the purchase of articulated buses related to Consent Decree compliance. The STIP amendment is designed to meet immediate Federal Full Funding Grant Agreement financial criteria for the Eastside Project and State funding guidelines for funding sources availability. Should faith in the TCRP funds be restored, MTA will again consider the original TCRP fund source for these projects.

- **No New Revenue Sources** - No new revenue sources are assumed to be available over and above the local, state, and federal revenue sources that are currently obtainable or identified by law to become available. The level of funding for state and federal funds is projected to increase in accordance with the historical growth of each source assigned to support the program or project. The financial forecast assumes that MTA will maintain the historical growth level of funding provided by current revenue sources, except in specific funds sources such as fares. If projected levels of funding are not maintained, projects and programs will be reduced or delayed accordingly unless comparable cost savings measures or alternative revenues are implemented.
- **Opening of Four Transit Corridors** - The financial forecasting model assumes four transit corridors, for which major investment studies (MIS) have been completed and contracts either let or pending signature, will be fully constructed between 2004 and 2008 and will operate daily thereafter for the remainder of the forecasting period. The four corridors are as follows:
 - Pasadena Gold Line Light Rail: extending from Union Station to Sierra Madre Villa in Pasadena opened July 2003.
 - Eastside Light Rail Line: extending from Union Station to Pomona/Atlantic Boulevards in East Los Angeles with a planned operations date of 2009.
 - San Fernando Valley Metro Rapidway: extending along the Southern Pacific Railroad Line between North Hollywood and Warner Center with a planned operations date of July 2005; and
 - Wilshire Rapid Transitway: extending along Wilshire Boulevard with a planned operations date of November 2008.

- **Extension of Three Planned Project Completions Due to State Deficit Issue** - Completion of following major projects has been extended for fiscal planning purposes but will be reevaluated for acceleration should federal or state funding be identified. MTA will continue to pursue funding for these projects despite the completion dates being adjusted beyond the horizon of the SRTP, current STIP and federal planning periods. The major projects are as follows:

- A Bus Rapid Transit Line is proposed along Crenshaw Boulevard with a potential cost of approximately \$343 million between 2015 and 2023. Capital funding advancement while not assumed in the financial forecasting model will be evaluated in the ensuing years to ascertain whether the project can be built and operated sooner than planned. Funding for a Major Investment Study has already been planned for the near future and other planning efforts will be undertaken through 2009. \$10 million in funding has been set-aside for this effort. In addition, a new rapid bus line is planned in the Crenshaw Community Area and is to be funded in an early phase of the Rapid Bus Program. The extent of the new service will be determined as part of the implementation of the rapid bus program.
- A San Fernando Valley North-South Rapid Transitway line is proposed along Van Nuys Boulevard in the San Fernando Valley extending from Ventura Boulevard to the Metrolink Station in Sylmar (approximately 11 miles long). This route has been selected for fiscal planning purposes only and may not be the exact route finally selected but ensures funds are reserved and acknowledged for the project area. This line is estimated to cost approximately \$289.3 million to build starting in 2009 and would operate starting in FY 2013 at an approximate cost of \$11.6 million annually. During the SRTP period \$20 million will be spent on design and planning.
- Light Rail Line along Mid-City Exposition Boulevard terminating at Robertson and Venice Boulevards in West Los Angeles is planned. This project may be built in segments with completion extended beyond FY 2015, however for this forecast

assumes completion is June 2015 for the entire length of the locally preferred alternative. The anticipated capital cost is \$845.7 million including bridge loans and interest.

- **Current federal funding programs continue and allocations increase with the growth of the Highway Trust Fund** - The forecasting model assumes the implementation of TEA-21 at the guaranteed transit funding levels. Highway formula funds are assumed to be available at the level estimated by Caltrans. If federal funds do not occur at the estimated levels, planned highway, rail, automated bus guideway and Call for Projects capital projects may be delayed accordingly unless comparable project cost savings measures are implemented. In the event federal funds increase, projects and services will be brought on-line in accordance with the available revenue.
- **Federal Transit Administration (FTA) Section 5307** - Federal regulations allow Section 5307 funds to be used for preventive maintenance costs as well as capital costs. The financial forecasting model assumes the continued usage by MTA of Section 5307 funds for preventive maintenance purposes that appear in MTA's operating budget.

The Municipal Operators allocate Section 5307 formula funds for capital facilities and purchasing replacement buses on a 12-year cycle. Municipal Operators are planning the purchase of 316 fixed-route buses and 48 smaller vehicles in addition to capital facilities as part of their expansion program. The capital expansion program also provides for alternative fueling facilities in the event the Municipal Operators convert from diesel fuel to cleaner burning fuels. Several operators have initiated this conversion. Implementation of the new buses and facilities will occur incrementally over the planning period of the SRTP and LRTP.

- **Los Angeles County continues to receive discretionary FTA Section 5309 New Starts Funds for future construction projects** - The forecasting model assumes that the North Hollywood Extension of the Metro Red Line receives \$40 million in FY 2003 from Section 5309 New Starts funds. A variable appropriation is assumed annually from this revenue source from FY 2004 through the

planning period, which allows for the Eastside Light Rail Line and Mid-City Exposition Boulevard Light Rail Line to fully utilize previously pledged New Starts funding. The annual New Starts funding level is based on capital construction cash flows for the two rail corridor projects and averages \$70 million annually through 2016. After FY 2016, the financial forecast allocates a variable amount annually through 2025 to allow for completion of planned New Starts projects such as Crenshaw Boulevard Bus Rapid Transit and potential Municipal Operator projects.

- **Leveraging State and Federal Funds** - The forecasting model assumes that local funds are bonded for capital needs if necessary to match state and federal funds consistent with the project and program priorities established by the MTA Board of Directors.
- **Use of Long Term Debt** - The forecasting model assumes that senior lien bonds will be issued each year as necessary to fund major capital projects. It is further assumed that such bonding will be in conformance with the MTA debt policy adopted in October 1998 and subsequently amended annually with the most recent occurring in October 2002. Debt services on the bonds are assumed paid with Proposition A and Proposition C cash revenues after issuance. The financial model assumes these new payments annually and applies a cash payment that is deducted from the sales tax annual revenue amount.

Given all other assumptions, debt financing is necessary for the completion of scheduled construction projects and to fully fund recognized funding allocations in the adopted 2001 Long Range Transportation Plan and Short Range Transportation Plan. Actual bond issuances must be approved by separate MTA Board action and are analyzed separately from the financial forecasting model assumptions.

- **Lease Revenues and Available Short Term Funds** - MTA may from time to time lease equipment and receive funds back as payments as the financial market dictates. These funds become general revenues and are used to fund agency operations in most instances. While these are limited in scope and do not occur each year, they can offer

offsets to supplement and increase existing funding sources. Much of this funding emanates from the innovative financial marketing of MTA assets. Such items as cross border leases and funds held as reserves and later released are the primary source of these funds. The financial forecast does utilize these funds periodically.

MAJOR REVENUE ASSUMPTIONS

Inflation Factors

Operating and Capital Inflation - Based upon the August 2002 annual economic forecast for Los Angeles County completed by the Anderson School of Business at the University of California, Los Angeles (UCLA), the average inflation rate is estimated to be 2.61%. The financial forecasting model applies the annual inflation rate from the forecast to various operating cost items.

The capital inflation rate is based on the ratio of the Construction Cost Index (CCI) to the CPI, which has found that CCI inflation is approximately 80% of CPI. The average capital inflation rate is estimated to be 2.09%. The financial model applies the annual inflation rate to various capital cost items. In the Call for Projects application review process, all projects are escalated annually by 3%.

LOCAL REVENUES

Proposition A - This revenue is generated by a half-cent sales tax for countywide transportation programs, which was passed by Los Angeles County voters in 1980. Pursuant to the Proposition A Ordinance, these funds are used to improve public transit throughout Los Angeles County. A portion of the revenues is returned to local jurisdictions, based on population, for use in public transit projects. Revenues are divided as follows:

Local Return Program	25%
Rail Development	35%
Discretionary (bus operations only pursuant to MTA Board policy)	40%

The forecasting model assumes that the entire Proposition A 40% discretionary funds are used for bus operations in accordance with established formulas. Some Proposition A local return revenues are spent on bus operations expenditures that are based on the Short Range Transit Plans of the local municipal operators, MTA's annual budget process and MTA's Office of Budget and Management (OMB) latest available Ten-Year Forecast. Other Proposition A local return funds are used for local transit and improvements to transit service.

Proposition C - This revenue is also generated by a half-cent tax for countywide transportation programs, which was passed by Los Angeles County voters in 1990. The Proposition C ordinance specifies that funds be used for "public transit purposes." Revenues are divided as follows:

Rail and bus security	5%
Commuter rail/transit centers/park and ride	10%
Transit-related streets/state highways	25%
Local return (direct to cities and county)	20%
Discretionary	40%

The forecasting model assumes that the 40% discretionary funds are split among rail capital and operations, bus capital and operations and bus service expansion (Consent Decree through October 2006). Allocations between bus and rail capital and operating requirements shift over time to meet evolving system needs as projects are built and operations begin.

A Municipal Operators allocation for bus expansion to offset for MTA's usage of Proposition C 40% for the Consent Decree has been included in this financial forecasting model and extends through 2025. This program assigns Proposition C 40% discretionary funds of \$15 million annually to the Municipal Operators and escalates annually at 3% through the entire planning period of FY 2025. Most of the 25% transit-related highway funds are programmed for highway related projects, such as high occupancy vehicle (HOV) lanes. These funds are also eligible to be used for portions of transit projects that are on a state highway or freeway designation. The funds can be used to provide public mass transit improvements to railroad rights of way.

The Proposition C 10% funds are intended for commuter rail predominantly although portions of the funds are set-aside for the Call for Projects process for regional park-and-ride facilities and transit centers. Metrolink receives approximately 70% of the funds received annually for operations and capital rehabilitation through the annual budgetary process.

MTA has also allocated funds totaling \$580 million to assist Metrolink in meeting its capital facility and improvement plan through 2025 pursuant to the adopted Long Range Transportation Plan. Metrolink is no longer part of the Call for Projects process starting with the FY 2003 Call proceedings and funding historically received in the Call has been transferred for usage directly to Metrolink through the annual budgetary process of MTA.

Bonds/Financing Mechanisms Senior Lien Bonds (Propositions A and C) - Senior Lien Bonds are bonds which have a senior claim on an MTA pledged revenue source that is superior to the claim of any other bonds or debt. The forecasting period assumes that senior lien bonds will be issued as needed throughout the period to support bus, rail and highway capital requirements. Bonds are projected for issuance each year they are needed to meet capital requirements. The financial forecasting model assumes bond payments based on an issuance interest rate initially at 5.50% gradually increasing annually to 7.0%. Bond issuances, generated from the forecasting model, *do not* substitute for specific Board action required to issue bonds. Short-term bridge loans for specified construction projects are assumed and fully repaid within a five-year period. These loans may emanate from within MTA fund sources themselves or take the form of a revenue anticipation note charging interest. For modeling purposes it is assumed interest notes will be used and are shown as part of the projects construction cash flow.

Bonds/Financing Mechanisms Certificates of Participation (COPs) - COPs previously pledged by Federal Section 5307 capital formula funds and TDA Article 4 funds are not assumed to be issued for bus purchases in the ensuing years. Debt service for COPs that were issued in prior periods is included but no new issuances are assumed.

Transportation Development Act (TDA Article 4) - Revenues are derived from one-quarter cent retail sales tax collected statewide. TDA Article 4 funds are available for bus and rail capital and operations. The estimated annual amount of TDA Article 4 revenue is based on the same growth assumptions that local sales tax follows which reduces the projected growth component by 20% annually. Distribution of the funds is done on an approved formula basis and the County of Los Angeles does the actual disbursement based upon authorization from MTA. Funds received may be used to meet either capital or operating needs of the agencies in accordance with TDA regulations. Each year the formula assigns the actual funds based on the amount available but generally MTA receives approximately 70% and the Municipal Operators 30% of the total available.

City of Los Angeles Funds - These funds represent the City's contributions to Metro Rail Red Line and Union Station Gateway. The City's assumed contribution is 7% of the current costs for Red Line North Hollywood extension as has been the case for previous Metro Red Line projects in Segments 1 and 2. An amended agreement (May 19, 2000) with the City of Los Angeles relating to the North Hollywood extension has been enacted and the annual payments by the City are reflected in the financial forecasting model. These payments total approximately \$34 million over a seven-year period and are reflected in the model on an annual basis. The total commitment to the North Hollywood Metro Red Line extension by the City is \$89.5 million.

While not assumed in the financial forecasting model, additional revenue may be forthcoming for the Eastside and Exposition Light Rail Lines to complete the obligation made by the City of Los Angeles for the metro projects initially. MTA will be pursuing this funding for the two projects as part of the annual budgetary process of MTA and to secure multi-year commitments similar to the Metro Red Line agreements.

Benefit Assessment - The financial forecasting model assumes the construction of the Metro Rail Red Line and includes costs for station construction to be partially paid for by assessments levied on the properties, adjacent to stations, which will financially benefit from the close proximity to a major transit system station. A benefit assessment district has been in place for Metro Red Line Segment 1 since 1985,

producing revenues of \$162 million, of which \$130 million was used for construction costs directly for rail stations.

When the initial planning process began for the Metro Red Line, MTA was not required to conduct an election to assess levies on property owners. However, as recently prescribed in Proposition 218, any new assessment districts require a vote of property owners before enacting an assessment. The forecasting model no longer assumes this revenue source and no funding is assumed for any new projects.

Passenger Fare Revenues MTA - The assumed farebox recovery ratio is as established by the FY 2003 MTA budget. The actual farebox recovery ratio varies annually but averages 27.5% during the plan period for bus operations and 23.6% for rail operations. Fare recovery is adjusted in FY 2004 to meet adjustments in the CPI and ratio of fare media usage such as passes to cash fare changes as described in the Long Range Transportation Plan.

Passenger Fare Revenues Municipal Operators - Passenger fare revenues for the Municipal Operators are based on projections in the Short Range Transit Plans and FY 2003 operating budgets. The farebox recovery ratio for the plan period is approximately 26.2%. For FY 2004 and beyond, fare revenues are escalated by inflation as approved by the Bus Operating Subcommittee (BOS) during review of these assumptions as part of the Long Range Transportation Plan process and Short Range Transportation Plan.

STATE REVENUES

Regional Improvement Program Funds - Senate Bill 45 consolidated the former Flexible Congestion Relief (FCR) Program and six other programs into a Regional Improvement Program (RIP) (sometimes referred to as "Regional Choice") project selection process that allows the MTA Board to decide how these funds will be spent. Revenues anticipated through the RIP program are at the discretion of MTA Board and can be programmed for capital improvements to highway, bus, rail, fixed guideway and other capital projects. MTA programs RIP funds to specific projects through either the Call for Projects, MTA Annual Budget, or the County Transportation Improvement Programming (CTIP)

process. The Financial Forecasting Model incorporates Caltrans' Proposed 2002 State Transportation Improvement Program (STIP) Fund Estimate and the recent changes in December 2002 and January 2003 regarding the California State Budget deficit.

Traffic Congestion Relief Program (TCRP) Funds-June 2000 ("suspended/merged") – This funding source has been "suspended/merged" and only projects that have already received an allocation vote from the CTC continue to be included in the financial forecasting model. As a result, unallocated TCRP project funding of \$1.48 billion and local city/county funding of \$241 million have been removed from the forecast. The Governor has requested CTC to consider continued funding of TCRP projects by merging them into the STIP.

South Coast Air Quality Management District (AQMD) - This agency administers state and federal funds for the improvement to air quality throughout the Southern California Region. One funding program, created as part of State Assembly Bill 2766, is targeted to reduce mobile source emissions, including assisting bus operating agencies in purchasing alternative-fueled buses. The source of funds is motor vehicle registration fees. The funding is awarded annually and no formula exists for distribution.

State Transit Assistance (STA) - Funds are used for bus and rail operations and capital throughout the plan period. STA Funds are derived from half of the State's Public Transportation Account, which is funded from sales tax statewide on gasoline and diesel fuels. MTA's regional allocation is based on Los Angeles County's shares of population and transit operator revenue compared to the rest of the state. The population portion of STA is used for MTA rail operations and the operator revenue share is used for MTA and Municipal Operators bus capital and operating needs.

Assembly Bill 2928 directs that, annually from FY 2003 through FY 2006, the state share of gasoline sales tax revenues previously deposited into the State General Fund will be dedicated to transportation. The California Legislative Analyst's Office estimates this amount to be about \$976 million annually. Of this amount, \$678 million will be allocated to fund specified Traffic Congestion Relief Projects. The Governor for budgetary constraints reasons has diverted these funds and

the assumption has been made to not assume continuation of this source in the financial forecasting except for funds receiving an allocation approval. Likewise, funding proposed in FY 2009 by Proposition 42 which among several items increases the level of STA funding going to public transit in California has not been assumed any longer in the financial forecasting model. The financial forecasting model assumes that this anticipated additional STA revenue will not occur as previously planned. The continuation of the current funding level and growth to reflect the historical level of STA reflects a conservative future projection based on the state deficit of up to \$35 billion currently.

Proposition 42 Funds for Local City/County Streets and Roads – Proposition 42, approved by the voters in March 2002, amended the state constitution to require all of the state's sales taxes on gasoline revenues to be used for specified state and local transportation purposes. Under this measure, beginning in FY 2009, gasoline sales tax revenues would be allocated 40% to cities and counties for local streets and roads improvements. The measure also provides that these uses can be suspended under certain circumstances such as the State budget deficit. Due to the uncertainty of the State's budget, \$1.97 billion of Proposition 42 funds for the period FY 2009–FY 2025 for city/county roads have been removed from the financial forecasting model.

FEDERAL REVENUES

Federal Flexible Funding Categories - As part of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and continued in TEA-21, the federal government created flexible funding programs-- the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality Improvement Program (CMAQ). These programs allow for funds to be exchanged between highway and transit modes (often called flexible funds). Portions of these funds have been assumed in the financial forecasting to be flexed to transit capital and operating needs in accordance with the published federal regulations, for either bus purchase or for the first three years of new operating transit segments. The 2001 adopted Long Range Transportation Plan (LRTP) directs the usage of these funds and assigns to programs and projects for highway and transit usage. Generally MTA Board policy directs usage of CMAQ for the Pasadena Gold Line operations-first three years and five projects in four transportation corridors for operations-first three years.

Surface Transportation Program (STP) - STP funds are flexible but appropriated by Congress for highway improvements. Eligible uses include transit capital projects, Transportation Demand Management (TDM), and improvements to highways and arterial roads. Half of the STP allocation to the State goes to the State of California Highway Account with the remainder divided by formula to the regions [Regional Surface Transportation Improvement Program (RSTP)] in accordance with Section 182.6 of the Streets and Highway Code of the State of California. STP funding is used primarily for Access Services paratransit. Only limited STIP allocation is assumed in FY 2008 and 2009 due to the state deficit and recommendations of the Caltrans and funding received is for the Wilshire Boulevard Bus Rapid Transit Project.

RSTP funding increases resulting from TEA-21 have been partially allocated to fund the Regional Highway Program (HOV System Integration Program and Freeway Gap Closures/Arterial Widening) in Los Angeles County. Caltrans has required, as result of a change from ISTEA to the TEA-21 legislation, that no sub-state allocation of the federal "minimum guarantee" funds will occur and redirected the funds. These funds are placed in the State Highway Account instead.

Congestion Mitigation and Air Quality (CMAQ) - The CMAQ program is designed to fund projects that contribute to attainment of national ambient air quality standards. CMAQ funds cannot be used to construct facilities providing additional capacity for single-occupancy vehicles.

The CMAQ program funding has been adjusted downward after FY 2004 to reflect improvements in air quality standards in Los Angeles County. The CMAQ program has been substantially reduced by over 50% in FY 2011 when attainment with the established standards is planned for the South Coast Air Basin. MTA Board of Directors action will be required through the Call for Projects and TIP programming process to program TEA-21 funds to specific projects. It is assumed that new transit corridors, including the Pasadena Gold Line extension, future population growth buses will receive CMAQ funding for the first three years of operation.

Section 5309 New Starts - This fund emanates from the United States General Fund and the Federal Mass Transit Account of the Federal

Highway Trust Fund, which is generated from two cents of the 18.4-cent federal excise tax on gasoline. Previously MTA has entered Full Funding Grant Agreements (FFGA) for Metro Rail Red Line Segments 1, 2 and 3 for Section 5309 New Starts funds with the FTA. It is anticipated that new agreements will be executed for the Eastside and Mid-City/Exposition Light Rail projects. The Eastside is scheduled for finalization of the FFGA process within the next 7 months.

Congress allocates section 5309 New Starts Funds to specific projects, and generally follows the annual payment schedule in the FFGA. These funds are assumed to average \$70 million annually through FY 2016 to permit the Eastside and Mid-City communities to achieve previously pledged funding from the New Starts program. Thereafter, the annual allocation varies and it is assumed that the New Starts program for capital projects planned in the adopted 2001 LRTP will be followed. This variable allocation in later years averages \$8 million per year ranging from a high of \$17.0 million to zero in some years and includes such projects as Crenshaw Corridor BRT and unspecified Municipal Operator projects. Over the next several years MTA will be evaluating future capital projects to ascertain application for New Starts funds needed to fully implement a comprehensive countywide bus and rail capital program. Any required updates would be included in future amendments to the LRTP and SRTP.

Section 5309 Fixed Guideway Modernization - Section 5309 Fixed Guideway Modernization funds are used in the financial forecasting model for rail rehabilitation and other minor rail capital expenses. The amount assumed annually reflects the guaranteed level of TEA-21 and eligible miles that become seven years old during the forecasting period. After the expiration of TEA-21, the program is estimated to expand at 1.4% annually, which is the historical growth of the Highway Trust Fund. Some additional miles will be included annually as Metrolink, Metro Red, Green and Gold Lines service miles become eligible for the funding category and are applied to the federal formula. The model assumes this added revenue based on formulas in place currently.

Section 5307 Capital - Funding is assumed at the guaranteed level of TEA-21 as determined by the federal formula and Southern California Association of Governments (SCAG) implementing formulas. This

funding source was decreased this year and into the future based on the 2000 Census results. When the new Census data is factored into the formulas implementing Section 5307, the amount of funds the Los Angeles Region receives is lower than previously anticipated. The financial forecasting model was updated to reflect this census change. The level is assumed to increase in relation to the Federal Highway Trust Fund's annual growth rate of 1.4% after the expiration of TEA-21 in federal fiscal year 2003.

The forecasting model assumes that these funds will be allocated to all eligible bus operators by formula for identified capital requirements, pursuant to the current Capital Allocation Procedure [84% allocation prescribed by formula and 16% discretionary (which includes 1% TEA set-aside)]. For purposes of assigning the future discretionary funds, an average of the last five years is used to determine the split between the Municipal Operators and MTA for financial modeling purposes only. This is not meant to allocate future discretionary funds but is done to assist in determining potential funds for the agencies. The actual allocation of the 16% discretionary funds is done on an annual budgetary basis and will vary from the financial forecasting model.

Under TEA-21, federal regulations allow preventive maintenance costs to be funded with Section 5307 formula funds. MTA is using these flexible funds for eligible bus and rail preventive maintenance costs in the operating budget. Approximately 9.2% of the MTA bus operation preventive maintenance is forecasted for funding using this source of funds through 2025.

Set-aside of Section 5307 Allocation - In accordance with the TEA-21 requirements, 1% of the countywide allocation of Section 5307 bus capital funds are set-aside for Transit Enhancement Activities (TEA) qualifying projects. These funds are distributed on a discretionary basis to eligible projects by the Bus Operating Subcommittees' annual selection process involving all countywide bus operators and as concurred by the MTA Board of Directors.

Section 5308 Clean Fuel Program - MTA estimated share of the national formula contained in Clean Fuel Program (which references the CMAQ formula) has been calculated and it is estimated that \$2.7 million will

potentially be received annually. Congress has, by appropriation actions the last four years, transferred the Clean Fuel Program allocation to the Section 5309 Bus and Bus Facilities discretionary section of the annual funding bill, and earmarked generally the same amount (\$3 million) each year to MTA by discretionary action.

The financial forecasting model continues to project \$2.7 million per year for this source through the term of TEA-21, which is FY-2003, \$3 million in FY-2004. Starting in FY 2005 it is assumed \$5.0 million will be received annually from this source or other bus funding for environmental protection through FY 2009. Thereafter increasing to \$7.0 million annually for the remainder of the forecasting period. This forecast is based on the intent of the Clean Fuel Program and assumes that funding will be available to meet clean air requirements in Los Angeles County from federal sources.

BUS PROGRAM ASSUMPTIONS

BUS CAPITAL

Transit Operators - The financial forecasting model covers funding for clean fuels, vehicle replacement schedule, facilities and support equipment, Certificate of Participation (COPs) payments, and bus bonds as described below.

Clean Fuels - Air Quality Management District (AQMD) requirements are met by:

- converting vehicles and facilities to clean fuels (e.g., alternative fuel vehicles);
- increasing transit service so that work trips on transit as a percentage of all regional trips increases by the year 2010 (year compliance is achieved for air quality in the South Coast Air Basin); and
- local bus operators (Municipal Operators) currently using diesel fuel have been programmed to receive funds for converting fueling facilities and transitioning buses to cleaner burning fuels in the event such decisions are made. Such funding emanates from the Section 5307 funds allocated to the Municipal

Operators and the new bus expansion allocation to the Municipal operators enacted by the MTA Board.

Vehicle Replacement Schedule - Vehicle replacement is based on following retirement schedule:

Transit Buses (35, 40 foot and Articulated) -- (MTA/Muni Operators fleets average 6-years-old)	12 years
Heavy Duty Smaller Buses	10 years
Dial-A-Ride Vehicles (for light duty, mid-sized buses, approx. 25-35 feet long)	5 years
Dial-A-Ride Vehicles (for light duty, small buses, cutaways, or modified vans less than 25 feet in length)	4 years

Vehicle Costs - Total vehicle costs, including wheelchair lifts, taxes, forced accounts, spare parts and air conditioning are presented below. This purchase price assumes replacements with alternative fueled vehicles and are escalated annually by the regional CPI starting in FY 2006.

Articulated & Double Artics (averaging 55-70 feet in length)	\$710,000
Buses – 40-45 footers, MTA & Municipal (Smart Bus)	\$390,000
Mid-Sized Buses	\$257,500
Small Buses	\$122,600
Vans	\$ 55,700

Based on MTA's recent procurements compressed natural gas buses, the price in 2002 was \$390,000 per standard 40-foot bus (includes extra parts from plant assembly, sale tax and labor force account of MTA expenses) and is escalated annually by CPI after FY 2005 through the ensuing years until the forecasting period ends. An artic bus is priced at \$710,000 based on recent bids received by MTA and are subsequently increased in the out years based on inflation tables. The financial forecasting model assumes the same price for MTA and Municipal Operators for bus purchases. Municipal Operators purchase buses separately using criteria unique to their own needs and standards and the actual price may vary from the forecasting model assumptions.

It is assumed that 200 buses will be purchased annually to replace the basic active bus fleet of MTA. The Municipal Operators plan on purchasing approximately 100 buses annually and some are considering procurement of articulated buses in the next few years. This may vary on a year to year basis based on actual purchases but as a planning average provides for the optimum efficient delivery of new buses and allows for equally spreading the age of the basic bus fleet over time. A decision has not been made on the technology of future bus procurements. However, a feasibility analysis for countywide bus procurement standard will be undertaken to determine future costs. The 200 buses purchased annually have been adjusted through FY 2012 to reflect the purchase of up to 600 artic buses instead of the 200 buses annually of standard 40-footers. Funding has been assumed to meet the annual demand for the artic buses based upon a cash flow plan in the model for bus purchases by MTA. Funding has been accelerated from out years and cash float determined to ensure a balance each year based on delivery schedule. This has been achieved using some state funding from the STIP and is part of the pending STIP amendment and the high priority nature of the bus purchases for Consent Decree compliance.

Facilities and Support Equipment - The financial model assumes that costs for bus capital projects are based on MTA's OMB projections through FY 2012 as contained in the Ten-Year Forecast dated August 2002, except for the adjustments for articulated buses and actual cash flow demand rather than programmed demand being used in FY 2004 through FY 2010. The cash draw down averaged between \$15-22 million lower than the capital program based on historical spending patterns and unspent balances. Beyond FY-2012 an average annual expenditure projection is used based on CPI and CCI and an expanded amortization schedule through 2025. Funding for a new Bus Division has been assumed in FY 2015 through 2017. The financial model also includes the adopted MTA Capital Program costs through FY 2007. These cost projections include expenditures for: bus maintenance overhaul and rehabilitation, CNG fueling facilities, bus maintenance facilities improvements, non-revenue vehicles and communications support. For the Municipal Operators, a capital facilities and bus purchase assessment was completed and a Long Term Capital Facilities Booklet prepared that outlines needed buses, facilities and a 361 fixed-route bus expansion program combined with 48 smaller buses being added during the plan period.

COP Payments - Early in the planning period, prior to FY 2004, debt payments for existing Certificates of Participation for bus purchases issued by MTA, Torrance Transit, and Culver City Municipal Bus Lines are made annually in the forecasting model. This payment is assumed prior to any allocation formula being applied to the funds.

Bus Capital Bonds - The forecasting model assumes that bonds will be issued as needed to support bus capital requirements if compliance with the MTA debt policy can be achieved. The forecasting model assumes bond payments based on a 5.50% interest rate in FY 2004, which will gradually increase to 7% in FY 2013 and thereafter. The debt incurred is paid over a period of 30 years through annual payments and is not issued for the buses themselves.

BUS OPERATIONS

MTA Bus Operations - The financial forecasting model assumes the following for MTA bus operations:

- Operating and maintenance cost projections are based on OMB Ten-Year Forecast (August 2002 and July 2004 for inclusion of the adopted FY 2004 MTA budget) and grows at the rate of inflation after FY 2012 except for the following changes since August 2002:
 - Additional service hours for the Consent Decree have been assumed at the rate of at least approximately 237,500 annually throughout the planning period; and
 - Service hour changes as a result of FY 2004 MTA budget and new transit scheduling techniques. Increased operating efficiency, if any, would be reflected in the annual update to the Short Range Transportation Plan.
- The July 2004 MTA Ten-Year Forecast will be used in this Short Range Transportation Plan as operating and capital expenditure guide prior to the next Short Range Transportation Plan update;
- Funds for TDA Article 4, Proposition A, and STA will continue to be allocated through the Formula Allocation Program (FAP) in future years;
- Section 5307 preventive maintenance usage is continued throughout the forecasting period;
- Rapid Bus Demonstration Program is funded for two routes (Ventura Boulevard and Wilshire/Whittier Boulevards) and becomes funded with MTA operating revenues after the demonstration period along with 23 additional rapid bus routes (funded in the Call for Projects category in FY 2005 through 2007 and Ten-Year Forecast in FY 2008 through FY 2010). Three additional routes has been approved by the Board of Directors for implementation and allocation of funding;
- For the first five years of the forecast (FY 2004 through FY 2008) an additional 1.5% of the MTA operating budget is designated for reduction as a cost-saving measure and efficiency directive for both rail and bus operations. Reductions are accomplished through a series of performance measures including workers' compensation program, increasing contracting services, labor negotiations strategies, decreased pay hour to platform hour ratio and enhanced usage of Business Development Operations Facility (BDOF) drivers; and
- The Consent Decree is implemented with some services being contracted out. The Consent Decree concludes in October 2006. New and expansion bus service is assumed after that date for population growth, congestion relief, rapid bus and feeder buses. This new service is costed on a marginal basis since infrastructure exists in MTA facility capacity to handle such added capacity. Service has been added since the model run of August 2002 to provide for Special Master's passenger overcrowding methodology ruling in January 2003.
- Articulated and double articulated buses are assumed phased in becoming approximately 38% of the MTA fleet during this period. Funding for these higher cost articulated buses is provided for in the latter years, after 2015, by allowing for an increased cost per replacement bus for the specified percentage of the fleet assumed to convert to higher-capacity articulated buses. Articulated buses will be entering the fleet sooner than 2015 as capital transit corridor

budgets allow such as Wilshire BRT, San Fernando Valley Metro Rapidway and recent bus purchase plans for articulated buses of up to 600 by FY 2009. Escalated CPI applies to replacement buses. No increase in operating costs is assumed when articulated buses become operational since potentially fewer buses are needed which offsets for higher cost of articulated buses and facilities to accommodate them.

- The San Fernando Valley Metro Rapidway operating plan will be implemented over time from the revenue operation date of July 2005. During the SRTP period Transportation System Management (TSMs) techniques will be introduced on various bus routes in the San Fernando Valley to assist the new East-West corridor operating plan. TSMs will be done to ensure that increases in public transit throughout the valley area occur and meet customer demands. Additional funding has been provided in the overall agency-operating budget to accommodate 160,000 revenue service hours annually for this new bus-operating plan. The funding for the operating budget may be partially transferred to the capital budget if capital items are needed for implementation of the operating plan previously identified in the environmental documents for the West San Fernando Valley Metro Rapidway project.

Municipal Operators - Operations and maintenance costs were based on data included in the capital facilities booklet prepared in conjunction with the Municipal Operators and the FY 2003 operating budgets. These cost estimates are used as the basis for future years' cost projections and escalated using the inflation factors. The forecasting model assumes TDA Article 4, Proposition A, and STA funds will continue to be allocated via the Formula Allocation Program. Proposition C 40% for expansion buses has likewise been assumed for the entire planning period. Municipal transit operators receiving formula funding include:

- Antelope Valley Transit Authority
- Los Angeles Department of Transportation (LADOT)
- Montebello Municipal Bus Lines

- Norwalk Transit
- Redondo Beach
- Santa Clarita Transit
- Santa Monica Municipal Bus Lines
- Torrance Transit
- Long Beach Transit
- Arcadia
- Claremont
- Commerce Municipal Bus Lines
- Culver City Municipal Bus Lines
- Foothill Transit
- Gardena Municipal Bus Lines
- La Mirada Transit

Expansion Services - Subsequent to the Consent Decree (FY 2006), the financial forecasting model provides for ongoing operations for MTA services and the planned transit corridor projects. New service is planned for population growth, congestion relief and feeder services totaling some \$2.7 billion in new funding for bus operations through 2025. Capital funding of \$1.2 billion is planned for expansion, the rapid bus program and emergence of articulated buses. It is assumed that Transportation System Management (TSM) program and other techniques to ensure rapid movement of buses along the highways will occur as technology improvements and funding emerge in years ahead. A new transit corridor

and Metro Rapid line is planned along Crenshaw Boulevard and funds for overall system upgrades are provided.

The local Municipal Operators are planning for 361 fixed-route expansion buses and 48 smaller expansion buses through 2025. This expansion is related to projected population growth and can be funded from existing capital sources. Facilities and buses have been planned to accommodate this growth. Operating funds to implement the expansion will require extensive coordination between the MTA and Municipal Operators to overcome projected countywide transit operating deficiencies and duplicative service.

Access Services Incorporated (ASI) - The forecasting model assumes the continued usage of Regional Surface Transportation Program (RSTP) funds programmed for ASI as the countywide paratransit provider. Allocating RSTP funds for ASI allows the MTA to make Proposition C 40% Discretionary funds available for capital bonding.

RAIL PROGRAM ASSUMPTIONS

Rail Capital

Rail Projects Capital Cost Estimates - Costs for rail projects, which have been approved by the MTA Board, are based on the adopted FY-2003 budget. Costs for rail projects with no existing budgets are calculated based on MTA's cost estimation guidelines from the MTA Construction Division and specialized consultants. The cost estimation process considers factors such as the projected construction cost in current dollars, construction start date, construction duration and cash demand curve during construction based on experience with past and current projects.

Metro Rail Line Segment 1 (Opened in January 1993) - The Metro Red Line Segment 1 extends 4.4 miles with five stations through downtown Los Angeles, from Union Station/Gateway Transit Plaza to the Westlake/MacArthur Park station. Costs included:

Source	Amount	% Breakdown
Local Funds	\$516 million	36%
State Funds	\$228 million	16%
Federal Funds	\$696 million	48%
Total Project Cost	\$1.4 billion	100%

Metro Red Line Segment 2 (Opened in two phases July 1996 and June 1999) - Totaling 6.7 miles, the Metro Red Line Segment 2 consists of two rail corridors:

- *Wilshire Corridor* - Opened in July 1996, this corridor extends from the Westlake/MacArthur Park station northwest to Wilshire Boulevard and Vermont Avenue intersection, and west along Wilshire Boulevard, terminating at the Wilshire/Western station, and Wilshire Boulevard.
- *Vermont/Hollywood Corridor* - Opened in June 1999, this corridor extends north from Wilshire/Vermont intersection along Vermont Avenue, turning west along Hollywood Boulevard to the Hollywood/Vine station.

The costs for the Metro Red Line Segment 2 were:

Source	Amount	% Breakdown
Local Funds	\$935.8 million	53%
State Funds	\$133.0 million	7%
Federal Funds	\$719.1 million	40%
Total Project Cost	\$1.8 billion	100%

Metro Red Line Segment 3 (Opened in June 2000) - This segment is a 6.3-mile project with three stations, which begins just west of the Segment 2 Hollywood/Vine station and continues west under Hollywood Boulevard to the Hollywood/Highland station and north under the Santa Monica mountains to the Universal City station and finally terminating in North Hollywood. The budgeted costs for the Metro Red Line North Hollywood Extension of Segment 3 is:

Source	Amount	% Breakdown
Local Funds	\$276.7 million	20%
State Funds	\$333.4 million	24%
Federal Funds	\$761.6 million	56%
Total Project Cost	\$1.4 billion	100%

Metro Green Line (Opened in November 1995) - The Metro Green Line light rail extends 20 miles with 14 stations primarily along the center of the 105 Freeway from Studebaker Road and the 605 Freeway in Norwalk to Marine Ave. in Redondo Beach. The total construction costs were:

Source	Amount	% Breakdown
Local Funds	\$593.7 million	85%
State Funds	\$105.9 million	15%
Federal Funds	\$0 million	0%
Total Project Cost	\$699.6 million	100%

Metro Blue Line (Opened in July 1990) - The Metro Blue Line extends 22 miles, with 22 stations, from the Downtown Los Angeles station (Metro/7th Street station) to Long Beach. The total construction cost was:

Source	Amount	% Breakdown
Local Funds	\$854 million	100%
State Funds	\$0 million	0%
Federal Funds	\$0 million	0%
Total Project Cost	\$854 million	100%

The Blue Line was expanded to three-car train lengths in 2002 and funded through MTA's annual budgetary process that includes the Capital Program (CP) for a five-year period.

Pasadena Gold Line (Opened July 2003) -The Metro Gold Line light rail line extends from Sierra Madre Villa in the City of Pasadena to Union Station in downtown Los Angeles. This line covers 13.5 miles and has 14 stations. An authority created by state law built the Pasadena Gold Line

and previously approved funding for this extension was transferred to this authority. This authority is legally known as the "Pasadena Metro Blue (subsequently renamed "Gold Line") Line Construction Authority" (PMBLCA). The overall project budget is \$689.1 million. There is consideration underway for an additional \$19.5 million in project betterments that if done would be funded by local jurisdictions along the route. The capital budget is:

Source	Amount	% Breakdown
Local Funds	\$260.6 million	37.8%
State Funds	\$428.5 million	62.2%
Federal Funds	\$0 million	0%
Total Project Cost	\$689.1 million	100%

The financial forecasting model reflects the PMBLCA schedule for an initial revenue operating date of July 1, 2003 (FY 2004). MTA has programmed the operating funds for this line once completed and is using CMAQ funds toward operation for the first three years. In October 1999, MTA presented a "Full Funding Operational Plan" for FY 2004 through FY 2010 for the Pasadena Gold Line to the California Transportation Commission, which accepted the plan. The financial forecasting model assumes full implementation of that operating plan (as adjusted by the MTA OMB Ten-Year Forecast of August 2002) and provides operating funds for the remainder of the Short Range Transportation Plan and Long Range Transportation Plan periods.

Eastside Light Rail Transit Project – (Scheduled to open 2009) – The Eastside project is a 6-mile light rail transit project running from Union Station to the intersection of Pomona and Atlantic Boulevards in East Los Angeles. From Union Station, the proposed alignment extends across US-101 Highway along an aerial structure and continues on Alameda Street to the intersection with 1st Street and then proceeds easterly to 1st and Lorena Streets, then transitioning south along Indiana Street to 3rd Street and proceeding east via 3rd Street/Pomona Boulevard to the Pomona/Atlantic Boulevards terminus. The system will operate primarily at-grade, but will include a tunnel segment along 1st Street for about 1.8 miles.

The Eastside project will include 8 stations plus the main station at Union Station, which is also the station stop for the Pasadena Gold Line. The station stops are at: Union Station; 1st and Alameda Streets; 1st and Utah Streets; 1st Street and Boyle Avenue; 1st and Soto Streets; 3rd and Indiana Streets; 3rd Street and Ford Boulevard; 3rd and Mednik Streets; and Pomona and Atlantic Boulevards intersection. In addition, the Eastside project will provide approximately 200 parking spaces (adjacent to the Pomona/Atlantic Boulevards Intersection) and will acquire 20 light rail vehicles. The estimated capital cost of the project (in year of expenditure amounts or escalated costs) is \$912.7 million. The cost breakdown is:

Source	Amount	% Breakdown
Local Funds	\$137.5 million	15.1 %
State Funds	\$241.2 million	26.4 %
Federal Funds	\$534.0 million	58.5 %
Total Project Cost	\$912.7 million	100 %

Mid-City/Exposition Boulevard Blue Line Extension – (Scheduled to open June 2015) – A light rail line first segment to at least Vermont Avenue from the 7th/Metro Center is programmed for initial design during the Short Range Transportation Plan period and ultimate construction from 2010 through 2015 with an anticipated public service opening date of June 2015 (commonly called revenue operation date—ROD). The Mid-City/Exposition Boulevard Transit Corridor is a 9.6-mile light rail transit (LRT) project running from Downtown Los Angeles to Culver City. The first segment of the line would share 1.9 miles of trackway and three stations with the existing Metro Blue Line. The Expo Line would branch off the existing Metro Blue Line at Washington Boulevard and Hill Street, and a new guideway would be constructed to proceed south on Hill Street and west on MTA owned Exposition Right-of-Way to Venice and Robertson Boulevards, a distance of 7.7 miles. The total running distance would be 9.6 miles, of which 7.7 miles would be new construction and 1.9 miles would upgrade existing track.

Seven new stations would be provided at Figueroa Street, Vermont Avenue, Western Avenue, Crenshaw Boulevard, La Brea Avenue, La Cienega Boulevard, and Venice/Robertson Boulevards. Except for a

planned aerial station at La Cienega Boulevard, all stations are proposed at-grade. This line would also include three existing stations in Downtown Los Angeles at 7th/Metro, Pico and Grand. These stations would be upgraded to include increased levels of service generated by the Exposition Line. The Expo project will provide more than 1400 parking spaces at four parking facilities. These are located at Crenshaw, LaBrea, La Cienega and Venice/Robertson stations. The project includes 25 light rail vehicles, which will be serviced at an overnight storage, and light maintenance facility built as part of project. Heavy maintenance would be performed at existing MTA facilities.

A request to the Federal Transit Administration (FTA) to utilize previously committed Section 5309 New Starts funding for a portion of the project costs is assumed in this forecast plus additional Section 5309 in accordance with FTA standards. The project has been approved for preliminary engineering a required step in a series of actions necessary to ensure full utilization of the previously committed Section 5309 funding assigned to the Los Angeles County Metropolitan Transportation Authority and additional funding. The project may be built in phases or segments and this will be determined at a later time after complete analysis of financial, safety and environmental factors impacting the project and agency are fully scoped. Preliminary engineering cost estimate of \$845.7 million has been allocated in this financial forecasting model for the capital construction of this extension for the full project. The cost is:

Source	Amount	% Breakdown
Local Funds	\$265.4 million	31.4 %
State Funds	\$ 75.1 million	8.9 %
Federal Funds	\$505.2 million	59.7 %
Total Project Cost	\$845.7 million	100 %

LA Rail Car - The Los Angeles light rail car procurement consists of a base order of 50 standard cars and two prototype vehicles for a total of 52 light rail vehicles. The budget for the 52-car procurement of \$201.4 million, including prior years, is derived from Proposition 116, State STP, Regional STP, and Proposition C funds. The standard cars will be used on the Metro Blue Line and planned extensions of the lines including possibly the Pasadena Gold Line.

Fleet Procurement - Non-local revenue is provided for a new fleet purchase, beyond that of the LA Rail Car purchases, of 30 additional rail cars for expenditure from FY 2003-2009 and 20 cars for the Eastside Light Rail Project in the FY 2004 through 2010 period. These railcars are programmed at \$3.8 million each for a total of \$190 million in escalated dollars. The revenue if not needed for rail cars because of a possible negotiated cost savings will then be used for other rail costs for the Metro Red, Blue, Gold and Green Line construction close out. The Eastside railcars are funded in conjunction with the overall Eastside project construction budget contained in the financial forecasting model and some \$70.4 million is reserved for this purchase.

Commuter Lines (Metrolink) - The Southern California Regional Rail Authority (SCRRA) is a Joint Powers Agency that plans, constructs, and operates Southern California's commuter rail system. MTA funds a portion of the capital and operating costs for commuter rail lines and projects located within Los Angeles County, including:

- Los Angeles /San Bernardino & Los Angeles/Riverside
- Los Angeles /Oxnard
- Los Angeles /Santa Clarita /Palmdale /Lancaster
- Los Angeles /Oceanside & Fullerton/LAUPT
- Los Angeles /Riverside (Union Pacific)
- Shared Facility

The current SCRRA system includes 575 unduplicated track miles, 276 of which are in Los Angeles County. The financial forecasting model assumes continued funding for the current commuter rail system. SCRRA staff has provided operating cost projections. Los Angeles County's share of commuter rail costs is funded with Proposition C 10% revenues, which is consistent with policies in the MTA FY 2003 budget. The MTA allocations for SCCRA are:

- \$29.0 million, which is escalated by CPI in subsequent years, for operating subsidy;
- \$8.6 million for capital maintenance, which is escalated by CCI in subsequent years;

- New funding for capital projects previously pursued through the Call for Projects process is no longer to occur and annual funding has increased to offset this previous source; and
- MTA's adopted 2001 Long Range Transportation Plan (LRTP) allocates an additional \$580 million beyond current funding levels through 2025 for capital and operating needs of the SCRRA based on the 30-Year Expenditure Plan for Commuter Rail in Los Angeles County.

Rail Rehabilitation and Replacement - Projected rehabilitation and replacement costs are based on a methodology developed by Robert Peskin of KMPG Peat Marwick (commonly called Peskin Model). This methodology was developed based on actual costs experienced by the Washington Metropolitan Area Transit Authority (WMATA). Actual WMATA rehabilitation and replacement costs were compared to their original installation capital costs.

The MTA rail rehabilitation and replacement costs were calculated in the same manner based on the Metro Blue, Red, Gold and Green Lines original installation capital costs. The rehabilitation and replacement costs are estimated to begin five years after a rail line begins revenue operations. Some limited repair is assumed in the forecasting model for the first few years as reflected in the five-year MTA Capital Improvement Program (CIP) and annual budget.

Based on the MTA Office of Management and Budget near term forecast and Peskin Model in the later years the rail rehabilitation and replacement costs through 2025 are:

MTA Facilities	Amount
Operating/Facilities/Heavy Rehab. & Repl. Systemwide	\$4.3 billion
Vehicle Rail Car Replacement	\$123.1 million
Maintenance of Way	\$251.2 million
Total Cost	\$ 27.0 million
	\$4.7 billion

The costs for rehabilitation and replacement of rail capital are funded with a combination of local TDA Article 4 revenues, Propositions A/C bond proceeds and federal Section 5309 Fixed Guideway Modernization revenues.

Systemwide Rail Capital/Other Projects/Station Enhancements - In addition to the costs associated with the construction of each individual rail line, there are costs related to developing the overall rail system. These include the procurement of computer software and hardware, safety and security measures, legal support, insurance, radio upgrades, feasibility studies, facilities, Americans with Disabilities Act (ADA) requirements, and transit station access.

RAIL OPERATIONS

Rail operations costs are based on an operating and maintenance (O&M) cost model that was also used in the adopted 2001 Long Range Transportation Plan and the MTA OMB Ten-Year forecast (August 2002). The model is consistent with the methodology specified by the FTA for Alternatives Analysis studies. Staffing requirements, labor costs, and non-labor expenses are calculated based on the projected quantity of service supplied (e.g., peak vehicles, revenues vehicle-miles) and the physical size of the system (e.g., route-miles, number of stations).

The Ten-Year Enterprise Fund Forecast of MTA's Office of Management and Budget (August 2002) is used for costs and revenues through FY 2012, which includes the opening of the Metro Rail Pasadena Gold Line Segment in FY 2004 (July 2003). Costs for the ongoing maintenance of the Pasadena Gold Line have been added to the financial forecasting model through FY 2025 as well as the Eastside Light Rail Project planned to open FY 2009 and the Exposition Light Rail Line project scheduled for FY 2015 public opening.

Inflation is used to determine costs in out years beyond FY 2012 for projected construction projects like Exposition Boulevard Light Rail Line and San Fernando Valley North-South project. While this type of escalation is not the exact parameters of the O&M model, it does allow for costs to be reflected based on growth and contemplated changes in the rail operations system.

HIGHWAY, MULTIMODAL, AND CALL FOR PROJECTS ASSUMPTIONS

The highway/multimodal component of the forecasting model focuses on mobility and air quality and includes funding for projects such as HOV lanes, Traffic Systems Management efforts and other highway and multimodal programs.

Freeway Incident Management - The forecasting model assumes continued funding for the Freeway Incident Management program, also known as Freeway Service Patrol (FSP) and Major Incident Response Program. This program is funded primarily through Proposition C (25%), Freeway Service Patrol State Highway Account Funds, and HOV violation funds. The program is assumed to grow at the rate of the Consumer Price Index (CPI) annually.

Service Authority for Freeway Emergencies (SAFE) - A separate legal entity that is housed within MTA, SAFE operates 4,300 call boxes along the freeways. It is funded by a \$1 surcharge on each registered vehicle in Los Angeles County. Cost estimates and assumptions are based on the SAFE ten-year Financial Plan and include capital requirements and operations/maintenance expenses. Increased number of vehicles would be the only mechanism, other than legislative means, to increase revenues.

Intelligent Transportation System (ITS) - The financial forecasting model includes the Intelligent Transportation Infrastructure program, which is part of the federal Department of Transportation's Intelligent Transportation System (ITS). This program aims to efficiently utilize advanced technologies in Southern California's transportation systems. The forecasting model assumes a limited amount of funding for the program.

Freeway Traffic Systems Management (TSM) & Traffic Operations System (TOS) - The forecasting model assumes Caltrans will continue providing the operating costs for the freeway TSM measures. Project completion is funded by Proposition C (25%) funds.

State Highway Operation and Protection Program (SHOPP) - Freeway Rehabilitation - Every four years, Caltrans prepares a SHOPP plan that identifies needed projects for maintenance. Caltrans administers this program and allocates funding throughout California on an as-needed basis. The amount allocated to Los Angeles County is reflected in the financial forecasting model for reference and comparison to other areas of California.

Environmental Enhancement & Mitigation (EEM) - The financial forecasting model assumes that Los Angeles County will receive \$1.0 million annually. Although this program is funded through the State Highway Account, it is not included in the STIP. These revenues are expected to be expended in accordance with approved applications. This program is administered by the State of California.

Traffic Congestion Relief Program (TCRP) - The financial forecasting model includes only those TCRP funds allocated to the highway capital projects specified in Assembly Bill 2928. Additional funding is needed to fully fund all phases of these projects. Since the TCRP program was suspended by the State, only \$5 million allocation in FY 2004 is assumed in the financial forecasting model. To be considered allocated the California Transportation Commission (CTC) must have voted the allocation prior to suspending the program.

Retrofit Soundwalls - Funding for this program is now an MTA responsibility due to the passage of Senate Bill 45. Funding has been included in the forecasting model for the Soundwall projects programmed in previous STIPs and/or Calls for Projects. In April 2000, the Board adopted the Post 1989 HOV Retrofit Soundwall Program Funding Plan. Total funding of \$257 million is included in the financial forecasting model.

CALL FOR PROJECTS

The Call for Projects is the process that MTA established to allocate discretionary capital transportation funds available for regionally significant multimodal transportation projects to local jurisdictions, transit operators, MTA, and other public agencies. The program is divided into seven modes: the Freeway mode and six multimodal

categories. As part of the application review process, all projects are escalated annually by 3%.

Projects are selected for funding after completion of a competitive merit-based evaluation and are approved by the MTA Board of Directors. Approved projects are awarded funding (i.e. programmed) for specific year(s), with a time limit to expend the funds of 3-4 or more years depending on the situation.

Projects funded with Proposition C 10% and 25% are forecasted on a cash flow basis based on the historical expenditure trend. Expenditures can occur several years beyond the years in which the funds were programmed. Most of the forecast for those two funding sources through FY 2009 represents expenditures for prior Call for Projects.

State and federal funding for projects is forecasted on a programming basis. The amounts included through FY 2009 for state and federal funding sources represent only approved or potential programming and not expenditures. Many highway projects scheduled for construction between FY 2004 and FY 2009 were actually programmed with state and/or federal funding before FY 2004. Therefore, the forecast does not include state and federal expenditures that may occur between FY 2004 and FY 2009 if the funds were programmed before FY 2004.

Freeway Mode

High Occupancy Vehicle (HOV) Carpool Lanes - The forecasting model provides for the implementation of Option 2 of the completed HOV Systems Integration Plan for Los Angeles County. Although funded for \$2.8 billion through 2025, this program is not fully funded. Completion of major projects such as the south I-5 HOV will depend on additional funding availability and Call for Project selections.

Freeway Gap Closures and Interchanges - The costs for gap closures and interchanges are provided by Caltrans District 7 for Los Angeles County. MTA assumes implementation of those Freeway Gap Closures identified, except extending I-710 to I-210. Funding sources consist of Proposition C 25%, Local Agency/Private) Funds, and STIP funds.

Multimodal Categories

Signal Synchronization and Bus Speed Improvements - Signal Synchronization and Bus Speed Improvements project funding levels are determined through the Call for Projects. They are also eligible for project support funding as well as capital outlay funding from the State Highway Account. Funding sources for consist of the following: Proposition C 25%, Local Agency Funds, and TEA-21 CMAQ funds, Regional Improvement Program STIP Funds, and TCRP Funds.

Transportation Demand Management (TDM/Ridesharing) - The total funding is derived by leveraging local and private sector efforts. Funding for TDM is: Proposition C 10%, Proposition C 25%, CMAQ, RSTP, Transportation Enhancement Activities (TEA), and Local Agency Funds.

Regional Bikeways and Pedestrian Improvements

Regional Bikeways - Funding sources consist of the following: Local Agency Funds, TDA Article 3 funds, CMAQ, Regional Improvement Program STIP Funds, and TEA funds.

Pedestrian Improvements - Funding sources consist of the following: Local Agency Funds, CMAQ, Regional Improvement Program STIP Funds, and TEA funds.

Regional Surface Transportation Improvements (RSTI) - The forecasting model designates funding to RSTI projects, which includes the Alameda Corridor East and other arterial street improvement programs. Funding sources for RSTI projects are Proposition C 25%, Local Agency Funds, Regional Improvement Program STIP funds, RSTP, federal TEA-21, and TCRP Funds.

Alameda Transportation Corridor East - This project is a \$912 million endeavor in the San Gabriel Valley to install railroad grade separations to avoid traffic congestion once the Alameda Transportation Corridor is complete. MTA has indicated a willingness to participate up to 17% (\$155 million) of the costs once other funding is secured. Since \$88 million of TCRP funds awarded to the project have been suspended, only

\$74 million is assumed from FY 2004 through FY 2009 as MTA's share of the \$435 total funding secured to date.

Transit Capital (Park and Ride Facilities/Transit Centers) - Funding for Park and Ride Facilities/Transit Centers and other transit capital is primarily from Proposition C 10% and is generally part of the Call for Projects process.

Transportation Enhancement Activities (TEA) - TEA funds are a set-aside of STP funds and can only be spent on enhancements. The financial forecasting model includes Los Angeles County's portion of the 75% regional share of TEA funds. The specific projects are approved in the Call for Projects process.

For copies of the Plan or questions regarding this document, please call the Short Range Transportation Plan Hotline at 213.922.2833, contact us via e-mail at mtaplan@mta.net, or visit us at mta.net

