SUBREGIONAL MOBILITY MATRIX
WESTSIDE CITIES

Project No. PS-4010-3041-U-01

Final Report

Prepared for:

Metro

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March 2015

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Subregional Mobility Matrix
Westside Cities
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Prepared for:

Los Angeles County
Metropolitan Transportation Authority

Prepared by:
Fehr & Peers

In Association With:
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Quality Review Tracking

Version #	Date	Reviewer Signature	Description/Comments
Internal Review Draft	2/9/15	FP Reviewer: Rachel Neumann	RMN
Draft	2/11/15	FP Reviewer: Sarah Brandenberg	Submit Draft to Metro

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List of Terms and Acronyms

Acronyms	Definitions
AB	Assembly Bill
ADT	Average Daily Traffic
BRT	Bus Rapid Transit
CalEnvironScreen	California Environmental Health Hazard Screening Tool
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
COG	Council of Governments
CSTAN	Los Angeles Countywide Strategic Truck Arterial Network
ITS	Intelligent Transportation Systems
LOS	Level-of-Service
LRT	Light Rail Transit
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act

Acronyms	Definitions
Metro	Los Angeles County Metropolitan Transportation Authority
MPO	Metropolitan Planning Organization
OPR	Governor's Office of Planning and Research
PCH	Pacific Coast Highway
PDT	Project Development Team
PeMS	Caltrans Freeway Performance Monitoring System
SB	Senate Bill
SCS	Sustainability Communities Strategy
SRTP	Short Range Transportation Plan
STAA	Surface Transportation Assistance Act
TDM	Transportation Demand Management
TSM	Transportation Systems Management
VMT	Vehicle miles traveled
WSCCOG	Westside Cities Council of Governments

EXECUTIVE SUMMARY

Mobility Matrix Overview

In February 2014, the Los Angeles County Metropolitan Transportation Authority (Metro) Board approved the holistic, countywide approach for preparing Mobility Matrices for Central Los Angeles, the Las Virgenes/Malibu Council of Governments (LVMCOG), North County Transportation Coalition (NCTC), San Fernando Valley Council of Governments (SFVCOG), San Gabriel Valley Council of Governments (SGVCOG), South Bay Cities Council of Governments (SBCCOG) and Westside Cities Council of Governments (WSCCOG) (see Figure ES-1). The Gateway Cities COG is developing its own Strategic Transportation Plan to serve as its Mobility Matrix.

For the purposes of the Mobility Matrix, cities with membership in two subregions selected one subregion in which to participate. The Arroyo Verdugo subregion decided to include the cities of La Cañada Flintridge, Pasadena, and South Pasadena in the SGVCOG, and Burbank and Glendale in the SFVCOG. The City of Santa Clarita opted to be included in the SFVCOG instead of the NCTC.

In response to the Metro Board's direction in January 2015, the boundary between the WSCCOG and the Central Los Angeles subregion was revised to roughly follow La Brea Avenue from north to south. The border between the WSCCOG and the SBCCOG was revised to transfer the portion of the City of Los Angeles south of Marina Del Rey and surrounding LAX to the WSCCOG.

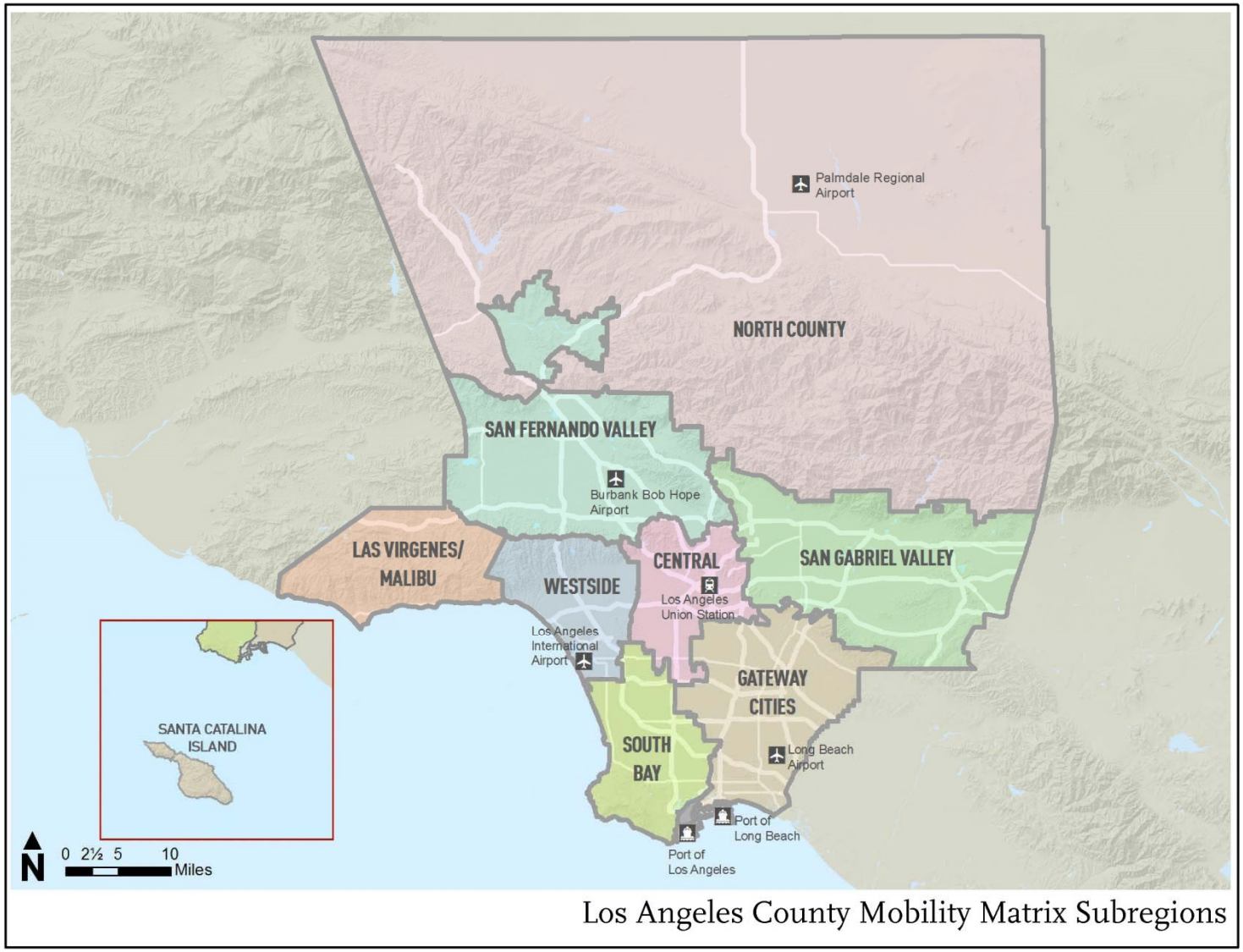
In January 2015 the Metro Board created the Regional Facilities category. Regional Facilities include projects and programs related to Los Angeles County's four commercial airports (Los Angeles International Airport, Burbank Bob Hope Airport, Long Beach Airport, and Palmdale Regional Airport), the two seaports (Port of Los Angeles and Port of Long Beach), and Union Station. The projects/programs related to Regional Facilities have either been removed from the subregional Mobility Matrices or else a Regional Facilities category was created at the request of the subregion.

Project Purpose

The Mobility Matrix will serve as a starting point for the update of the Metro Long-Range Transportation Plan (LRTP) currently scheduled for adoption in 2017. This Westside Cities Mobility Matrix, along with concurrent efforts in other Metro subregions, includes the development of subregional goals and objectives to guide future transportation investments, an assessment of baseline transportation system conditions to identify critical needs and deficiencies, and an initial screening of projects and programs based on their potential to address subregional objectives and countywide performance themes.

The Mobility Matrix includes a preliminary assessment of anticipated investment needs and project and program implementation over the short-term (0 to 10 years), mid-term (11 to 20 years) and long-term (20+ years) timeframes. The Mobility Matrix does not prioritize projects, but rather serves as a basis for further quantitative analysis to be performed during the Metro LRTP update, expected in 2017.

Figure ES-1. Los Angeles County Mobility Matrix Subregions



Process

To ensure proposed projects and programs reflect the needs and interests of the subregion, the Mobility Matrices followed a "bottom-up" approach guided by a Project Development Team (PDT) selected by the subregion, consisting of city, stakeholder, and subregional representatives. The Westside Cities PDT consists of representatives from the following jurisdictions and stakeholder agencies:

- Westside Cities COG
- City of Beverly Hills
- City of Culver City/Culver CityBus
- City of Los Angeles
- City of Santa Monica/Big Blue Bus
- City of West Hollywood
- Los Angeles County Department of Public Works
- California Department of Transportation
- Southern California Association of Governments

The Westside Cities PDT met six times over the eight-month study period to guide the creation of strategic goals and objectives, determine a subregional package of projects and programs, oversee the project and program evaluation process and implementation time period, and review and approve all work products associated with the Subregional Mobility Matrix. In addition, targeted outreach was conducted with city staff and other stakeholders on an as-needed basis to confirm project and program details. Coordination activities for this effort are summarized in Appendix A.

Subregional Overview

A Baseline Conditions Report was prepared for the Westside Cities Mobility Matrix Subregion including assessments of existing projects and studies, demographics, land uses, population and employment change, environmental justice measures, travel markets, freeways and arterials, goods movement, active transportation facilities, and transit. The following information highlights the main findings in each category:

- Most of the increases in housing and jobs are well-distributed across the southern 75% of the Mobility Matrix subregion. The highest growth in employment is projected to occur in West Hollywood, Beverly Hills, and West LA in Century City and areas near UCLA. There are no noticeable concentrations of projected population growth, although the area in and near the UCLA campus is projected to experience somewhat denser population change.
- Overall, the Westside Cities Mobility Matrix Subregion shows generally lower levels of at-risk communities based on the CalEnviroScreen tool when compared with other subregions such as Central Los Angeles. The location with the worst CalEnviroScreen score in the subregion is in the eastern portion of the subregion, generally running between Rodeo Road and the I-10, and La Cienega Boulevard and La Brea Avenue.
- The Westside Cities Mobility Matrix Subregion as a whole is predominantly zoned residential (over 50% overall) with higher density commercial and a small amount of industrial uses.

- Almost 75%, or 2.5 million, daily trips stay within the subregion. Of the trips produced in the Westside Cities area, the highest volume of trips is destined for the Central Los Angeles Mobility Matrix subregion.
- The highest volume freeway in the subregion is I-405. Many segments of I-405 experience very slow AM peak hour speeds and congestion, including the portions generally approaching the I-10 and leaving the San Fernando Valley southbound. I-405 southbound south of the I-10 generally has operating speeds of 40 mph or greater during the AM peak hour. During the PM peak hour, the I-405 experiences speeds slower than 30 mph both north and south of I-10.
- Slowing on the arterial system is significantly greater during the PM peak hour than the AM peak hour. Similar patterns to the AM peak hour are seen in the PM peak, but generally in the opposite direction. PM peak hour slowing occurs along significant portions of Wilshire Boulevard, Santa Monica Boulevard and Lincoln Boulevard, as well as along Wilshire Boulevard at the I-405 interchange.
- The designated truck routes include many roadways in Santa Monica and Beverly Hills, along with roadways that serve LAX. Other routes include Jefferson Boulevard, La Cienega Boulevard, and Washington Boulevard. Trucks making local deliveries can legally use the entire arterial system, unless specifically prohibited by ordinance. Non-local through trucks must use the designated truck route system.
- Each of the cities in the subregion has some designated bike routes, although network coverage varies widely. The most extensive system is in Santa Monica, which has a comprehensive system of Class III routes, supplemented with many Class II routes and bicycle-friendly streets. The Westside Cities Mobility Matrix Subregion also has the Coastal Bike Path that runs along the beach both north and south of LAX/Marina del Rey.
- The study area is well-served by both local and express bus service, run by Metro, Santa Monica Big Blue Bus, Culver CityBus, and other regional bus services which operate lines within the Westside Cities subregion. Passenger rail service in the area is provided by the Expo Line, which has three stations located in the cities of Culver City and Los Angeles, and the Green Line, which terminates at the Aviation/LAX station located on the border between the Westside Cities and South Bay Mobility Matrix Subregions. The Expo Phase II Line from Culver City to Santa Monica is currently under construction.

Goals and Objectives

The Westside Cities goals and objectives were built upon the county's overall framework, consisting of six broad themes common among all subregions (see Figure ES-2). Members of the PDT helped define the goals and objectives for the Westside Cities Mobility Matrix Subregion. The goals also reflect subregional priorities and are based on recent studies, the cities' general plans, and discussions with city staff. The Westside Cities PDT developed several goal statements within each overarching theme, intended to address transportation needs, to guide the evaluation of proposed projects/programs, and ultimately to inform Metro's forthcoming LRTP update. The Westside Cities goals and objectives were approved by the Westside Cities COG Board in Fall 2014.

Westside Cities Mobility Matrix Goal Statements

- Place alternative transportation modes at an equal advantage with private vehicle travel.
- Create safe, complete street spaces through effective street design.
- Incentivize transportation choices that reduce GHG emissions and improve air quality, such as active transportation and transit.
- Support infill development in close proximity to high quality transit to reduce VMT per capita.
- Facilitate easy access to and around the Westside for visitors and tourists.
- Ensure infrastructure for all modes is maintained at an equally high level.
- Utilize technology to increase access to transportation options, including provision of real-time transportation information and the creation of one app for all transit systems.
- Coordinate multi-modal infrastructure investments and first-last mile strategies in transit station areas, including Mobility Hubs.

Figure ES-2. Common Countywide Themes for All Mobility Matrices

Subregional Projects and Programs

An initial Westside Cities Mobility Matrix Subregion project and program list was compiled from Metro's December 2013 subregional project lists, which included unfunded LRTP projects; unfunded Measure R scope elements; and subregional needs submitted in response to requests by Directors Antonovich and Dubois. The project and program list was updated through the outreach process to incorporate input from the PDT members and other subregion stakeholders.

A total of 433 transportation improvement projects were identified for the Westside Cities Mobility Matrix subregion. Many of the smaller projects were combined or grouped into larger programs or consolidated improvements for ease of analysis and reporting. Some of the larger improvements were maintained as individual projects for evaluation purposes. Table ES-1 indicates the number of transportation improvement projects included in each Mobility Matrix program in the Westside Cities subregion.

Table ES-1. Westside Cities Transportation Programs

Mobility Matrix Program	Total Projects
Active Transportation	198
Arterials Program	87
Goods Movement Program	1
Highway Program	38
TDM Program	36
Transit Program	75

The Westside Cities project list includes transportation improvement priorities identified in countywide planning documents and by local jurisdictions. Active transportation projects make up nearly 45%, while arterial improvements focusing on vehicular travel and transit projects make up approximately 20% of the project list, each.

The Westside Cities Mobility Matrix includes improvements that address both existing deficiencies in the transportation system as well as anticipated future needs. The Westside Cities Mobility Matrix:

- Addresses subregional demand for transit travel within the Westside Cities subregion and between subregions, including projects such as rail extensions to West Hollywood and beyond, the Metro Crenshaw/LAX Line Extension, the Subway to the Sea (Purple Line Extension), and bus transit service enhancements.
- Facilitates more robust transportation system demand management through technology applications and multimodal improvements such as Intelligent Transportation Systems (ITS) and Transportation Demand Management (TDM) programs.
- Improves subregional active transportation options through projects such as bicycle routes, lanes, paths, and pedestrian treatments including first-last mile treatments around transit facilities.
- Supports the subregional and countywide priority of maintaining a state of good repair on the transportation system.

These improvements are intended to keep the multimodal transportation system functioning smoothly in the future in order to retain and attract business and development in the subregion, and enhance mobility options for Westside residents

Evaluation

Each project or program was evaluated in an initial, high-level screening based on its potential to contribute to subregional goals and objectives under each of the six countywide Mobility Matrix themes identified in Figure ES-2. Due to the limited timeframe for the Mobility Matrix completion and incomplete or inconsistent project/program details and data, this evaluation was qualitative in nature. The evaluation serves not as a prioritization, but as a preliminary screening process to identify projects and programs with the potential to address subregional and countywide transportation goals. This merely serves as a starting point for more quantitative analysis during the Metro LRTP update process.

Projects or programs received a single score for each subregional goal, as outlined in Table ES-2. Generally speaking, projects or programs that contribute to subregional goals on a large scale received a higher benefit rating. Note that cost effectiveness was not considered in the application of performance evaluation scores because of the lack of specific details and data associated with projects and programs, as described above.

The preliminary performance evaluation shown in Table ES-3 represents a collaborative effort spanning many months, and incorporates input from Metro, consultants and the Westside Cities PDT.

Table ES-2. Evaluation Methodology

To Achieve the following score in a single theme:	Project must meet the corresponding criterion:
● HIGH BENEFIT	Significantly benefits one or more theme goals or metrics on a **subregional** scale
◑ MEDIUM BENEFIT	Significantly benefits one or more theme goals or metrics on a **corridor or activity center** scale
◔ LOW BENEFIT	Addresses one or more theme goals or metrics on a **limited/localized** scale (e.g., at a single intersection)
○ NEUTRAL BENEFIT	Has no cumulative positive or negative impact on theme goals or metrics
▬ NEGATIVE IMPACT	Results in cumulative negative impact on one or more theme goals or metrics

Table ES-3. Performance Evaluation – Summary by Subprogram

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Active Transportation							
Bicycle Program	74	◑	◑	◑	◑	●	○
Citywide Bicycle Master Plan Program	6	●	●	●	◑	●	○
Livable Boulevards and Streetscapes Program	48	◑	●	●	◑	●	◑
Mobility Hubs Program	1	●	◑	●	◑	●	○
Education & Encouragement Program	11	◑	●	◔	◔	◑	○
First-Last Mile Program	23	●	●	●	◑	●	○
Pedestrian Program	24	◑	◑	◔	◑	●	○
Safe Routes to School Program	8	◑	●	●	◔	●	○
Sidewalk State of Good Repair Program	3	◔	◑	◔	◔	◑	●
Arterials							
Capacity Enhancement Program	40	●	◑	○	◔	◔	○

SUBREGIONAL MOBILITY MATRIX – WESTSIDE CITIES

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Complete Streets Program	18	●	●	●	◔	●	◔
ITS Program	23	●	◑	◔	◔	◔	○
State of Good Repair Program	3	◔	◑	○	◔	◑	●
Traffic Calming Program	3	◔	●	◑	○	◔	○
Goods Movement							
Goods Movement Program	1	◔	◔	◔	●	○	○
TDM							
Technology Program	3	●	◑	●	◑	◑	○
Parking Program	17	◑	○	◑	◔	◑	○
Shared Ride Program	8	●	◔	●	◑	◑	○
TMAs/Parking Districts/Park Once/Neighborhood Traffic Mgmt/ Employee Incentives Program	8	●	◔	●	◑	◑	○
Transit							
Crenshaw Line Extension to West Hollywood/Hollywood	1	●	◔	●	◑	●	○

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Sepulveda BRT/LRT	3	●	◑	●	◑	●	○
Metro Purple Line Extension to Downtown Santa Monica	2	●	◑	●	●	●	○
Metro Purple Line West Hollywood Extension	1	●	◑	●	●	●	○
Lincoln Blvd. BRT/LRT	4	●	◑	●	●	●	○
BRT Program (corridors)	7	●	◔	●	◑	●	○
Bus/Shuttle Program	31	●	○	◑	◑	●	○
Bus/Rail Integration Program	7	●	◔	◑	◑	●	○
Transit Technology Program	4	●	◔	●	◔	●	○
Rail Program	2	●	◔	●	●	●	○
State of Good Repair Program	8	◔	◑	●	◔	◔	●
Bus Station/Stop Improvement Program	5	◔	●	◑	◔	●	◔
Caltrans							
I-10 Robertson Interchange Program	1	●	◑	◔	◔	◑	◔

SUBREGIONAL MOBILITY MATRIX – WESTSIDE CITIES

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I-10 Carpool Lanes (Lincoln Blvd. - I-5)	1	●	◔	◑	◔	○	○
ITS Program	6	●	●	◑	◔	◔	○
Main Line Program (LRTP Strategic Unfunded and others)	10	●	◔	◑	◔	◔	○
Ramp Program	18	●	◔	○	◔	◔	○

Findings

The Westside Cities Mobility Matrix addresses each of the six countywide themes:

- **Mobility**. Highway programs provide high benefit for mobility in the subregion by implementing carpool lanes, implementing ITS, and improving interchanges. Arterial programs provide localized benefit by improving intersections, and provide overall mobility benefits by implementing ITS projects across the subregion. Transit expansion programs provide improvements to travel times, system reliability, and person throughput. Active Transportation improvements provide high benefits to subregional mobility by providing efficient alternatives to the automobile, while individual multimodal projects close identified gaps in modal connectivity.
- **Safety**. Active Transportation scores highest of all programs under the safety theme by providing protected facilities and minimizing conflict potential. The Arterial Complete Streets program and the Arterial Traffic Calming program both performed well in the Safety theme. Transit and TDM programs enhance vehicular, pedestrian and bicycle safety and improve reliability by reducing incidents in the right-of-way.
- **Sustainability**. The Mobility Matrix contributes to reduced greenhouse gas emissions, improved air quality, and greater quality of life in the study area. Active Transportation, TDM, and Transit programs exhibit the greatest benefits by facilitating travel by modes other than single occupant vehicle and improving public health and quality of life. The Arterial Complete Streets program also performed well for Sustainability by providing viable alternatives to driving alone.
- **Economy**. The Goods Movement and Transit programs performed best under the Economy theme by increasing opportunities for economic output and job creation, access and retention for the most potential users.
- **Accessibility**. Active Transportation and Transit programs perform highest under the Accessibility theme by improving comprehensive, low-cost, multimodal improvements across the subregion.
- **State of Good Repair**. The Westside Cities Mobility Matrix includes a Transit State of Good Repair program, a Sidewalk State of Good Repair program, and an Arterial State of Good Repair program, which all performs very well under the State of Good Repair theme. Other projects that have State of Good Repair components the Livable Boulevards and Streetscapes program, the Arterial Complete Streets program, the Bus Station/Stop Improvement program, and the I-10 Robertson Interchange program.

Implementation Timeframes and Cost Estimates

The Mobility Matrix included the development of high-level, rough order-of-magnitude planning-cost ranges for short-, mid-, and long-term subregional funding needs. Table ES-4 indicates anticipated Mobility Matrix cost estimate ranges by project type and implementation timeframe.

Due to variations in project scope and available cost data, costs estimated for use in the Mobility Matrix are not intended to be used for future project-level planning efforts. Rather, the cost ranges developed via this process constitute a high-level, rough order-of-magnitude planning estimate range for short-, mid-, and long-term subregional funding needs for the Mobility Matrix effort only. For the most part, these estimates do not include vehicle, operating, maintenance and financing costs. More detailed analysis will be conducted in the Metro LRTP update process, which may necessitate refinement of project/program details and associated cost estimates. A full description of the cost estimation methodology can be found in Appendix B.

Projects or programs that cross subregional boundaries may be included in multiple subregional project lists. Where the same projects or programs are included in multiple subregions, the cost estimates include the total estimated project cost, not the cost share for each subregion. The cost sharing will be determined as part of future efforts.

Finally, due to lack of available data and the short timeframe of the Mobility Matrix effort, some of the projects and programs have missing cost estimates or do not include operations and maintenance (O&M) costs. Where O&M costs were available, they were included for the applicable timeframes. O&M costs will be revisited as part of the Metro LRTP update.

What's Next

The Mobility Matrix is the first step in identifying Westside Cities transportation projects and programs that require funding. This important work effort serves as a "bottom-up" approach towards updating Metro's LRTP in the future.

Three major next steps should arise out of the Mobility Matrix process:

- **Westside Cities Prioritization of Projects.** This Mobility Matrix study does not prioritize projects. Instead, it provides some of the information needed for decision makers to prioritize projects/programs in the next phase of work, and an unconstrained list of all potential transportation projects/programs in the region. In preparation for a potential ballot measure and LRTP update (as described below), the Westside Cities COG should decide how it wants to prioritize these projects/ programs assuming a constrained funding scenario.
- **Metro Ballot Measure Preparations.** Metro will continue working with the PDTs of all Subregions as it develops a potential ballot measure. Part of the ballot measure work would involve geographic equity determination, as well as determining the amount of funding available for each category of projects/programs and subregion of the County.
- **Metro LRTP Update.** The potential ballot measure would then feed into a future Metro LRTP update and be integrated into the LRTP Finance Plan. If additional funding becomes available through a ballot

measure or other new funding sources or initiatives, some projects from the Mobility Matrix project list or any subsequent list developed by the subregion could be used to update the constrained project list for the LRTP moving forward.

Table ES-4. Westside Cities Mobility Matrix Summary of Rough Order of Magnitude Cost Estimates and Categorizations

Type / Category	Active Transportation	Arterial	Goods Movement	TDM	Transit	Caltrans	Total
Short-Term (0-10 yrs)	162 out of 198 Projects $753M - $1.1B	36 out of 47 Projects $189M - $284M	1 out of 1 Projects $792K - $1.2M	26 out of 36 Projects $178M – 276M	44 out of 57 Projects $1.6B - $2.3B	10 out of 24 Projects $20M - $30M	279 out of 364 Projects $2.8B - $4.0B
Mid-Term (11-20 yrs)	162 out of 198 Projects $753M - $1.1B	59 out of 64 Projects $232M - $356M	1 out of 1 Projects $792K - $1.2M	3 out of 3 Projects $11.6M - $17.4M	51 out of 64 Projects $4.9B - $21.5B	18 out of 35 Projects $57M – $85M	294 out of 365 Projects $5.9B - $23.1B
Long-Term (>20 yrs)	99 out of 126 Projects $664M - $1.0B	18 out of 21 Projects $21M - $31M	1 out of 1 Projects $792K - $1.2M	0 out of 0 Projects $0	46 out of 59 Projects $9.5B - $16.8B	10 out of 20 Projects $2.1B - $3.1B	174 out of 227 Projects $12.2B - $20.9B
Total	162 out of 198 Projects $2.2B - $3.3B	74 out of 87 Projects $442M- $671M	1 out of 1 Projects $2M - $4M	26 out of 36 Projects $190M - $294M	62 out of 75 Projects $16.0B - $42.5B	19 out of 36 Projects $2.1B - $3.2B	345 out of 433 Projects $21.0B - $49.9B

Notes: Estimated costs in 2015 dollars.
Some highway and transit projects are counted in multiple timeframes, thus total project counts for those types will not match totals row.
Estimates underrepresent operations and maintenance costs due to limited project data availability. Costs also may be underestimated where cost estimate ranges are still under development.
Projects or programs that cross subregional boundaries may be included in multiple subregional project lists. Where the same projects or programs are included in multiple subregions, the cost estimates include the total estimated project cost, not the cost share for each subregion. Any subregional cost-sharing agreements will be determined through future planning efforts.

1.0 INTRODUCTION

1.1 Mobility Matrix Overview

In February 2014, the Los Angeles County Metropolitan Transportation Authority (Metro) Board approved the holistic, countywide approach for preparing Mobility Matrices for the Central Los Angeles subregion (CLA), Las Virgenes/Malibu Council of Governments (LVMCOG), North County Transportation Coalition (NCTC), South Bay Cities Council of Governments (SBCCOG), San Fernando Valley Council of Governments (SFVCOG), San Gabriel Valley Council of Governments (SGVCOG), and Westside Cities Council of Governments (WSCCOG) (see Figure 1-1). The Gateway Cities COG is developing its own Strategic Transportation Plan which will serve as their Mobility Matrix.

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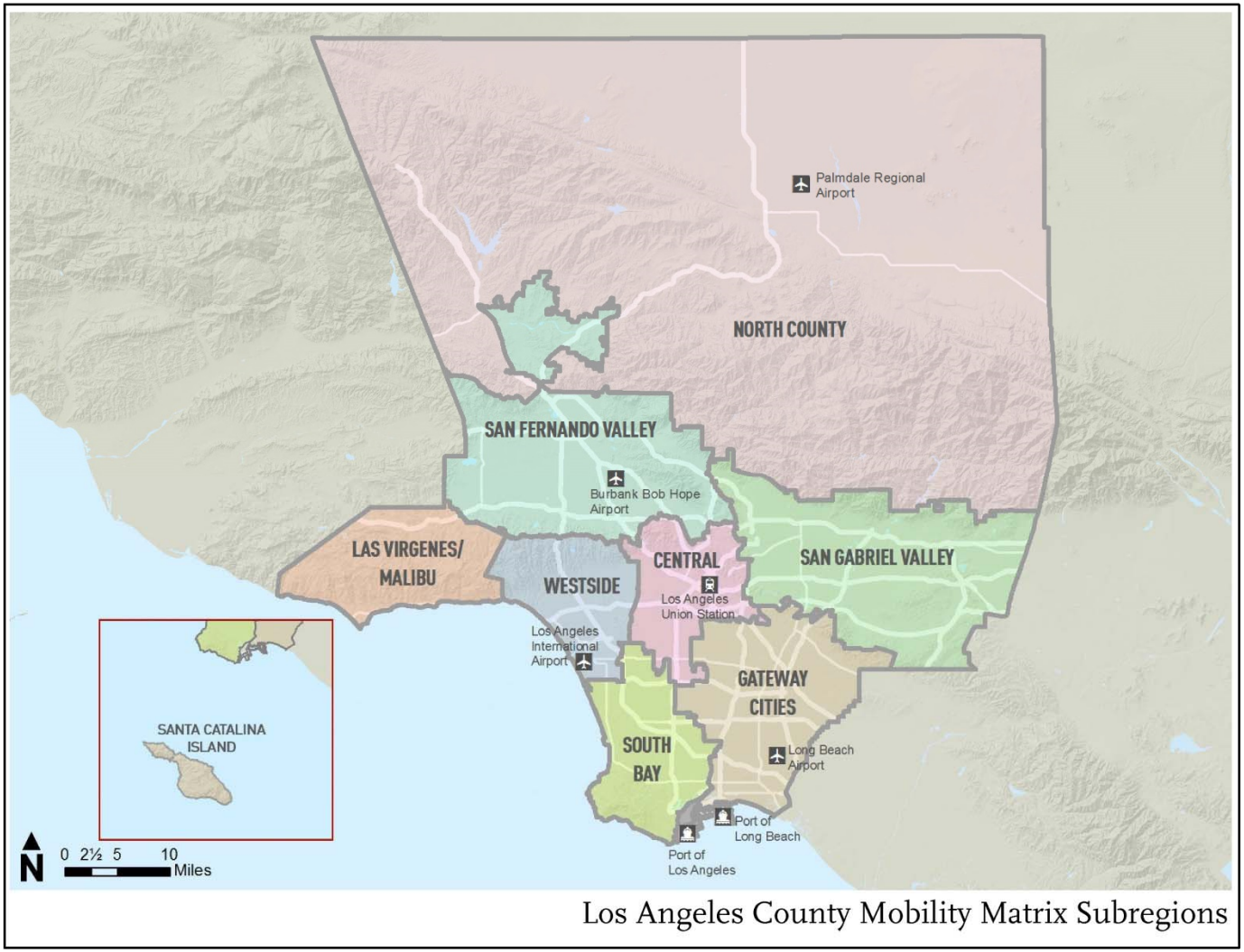
Also in January 2015, the Metro Board created the Regional Facilities category. Regional Facilities include projects and programs related to Los Angeles County's four commercial airports (Los Angeles International Airport, Burbank Bob Hope Airport, Long Beach Airport, and Palmdale Regional Airport), the two seaports (Port of Los Angeles and Port of Long Beach), and Union Station. The projects/programs related to the Regional Facilities will be included in a separate report.

1.2 Project Purpose

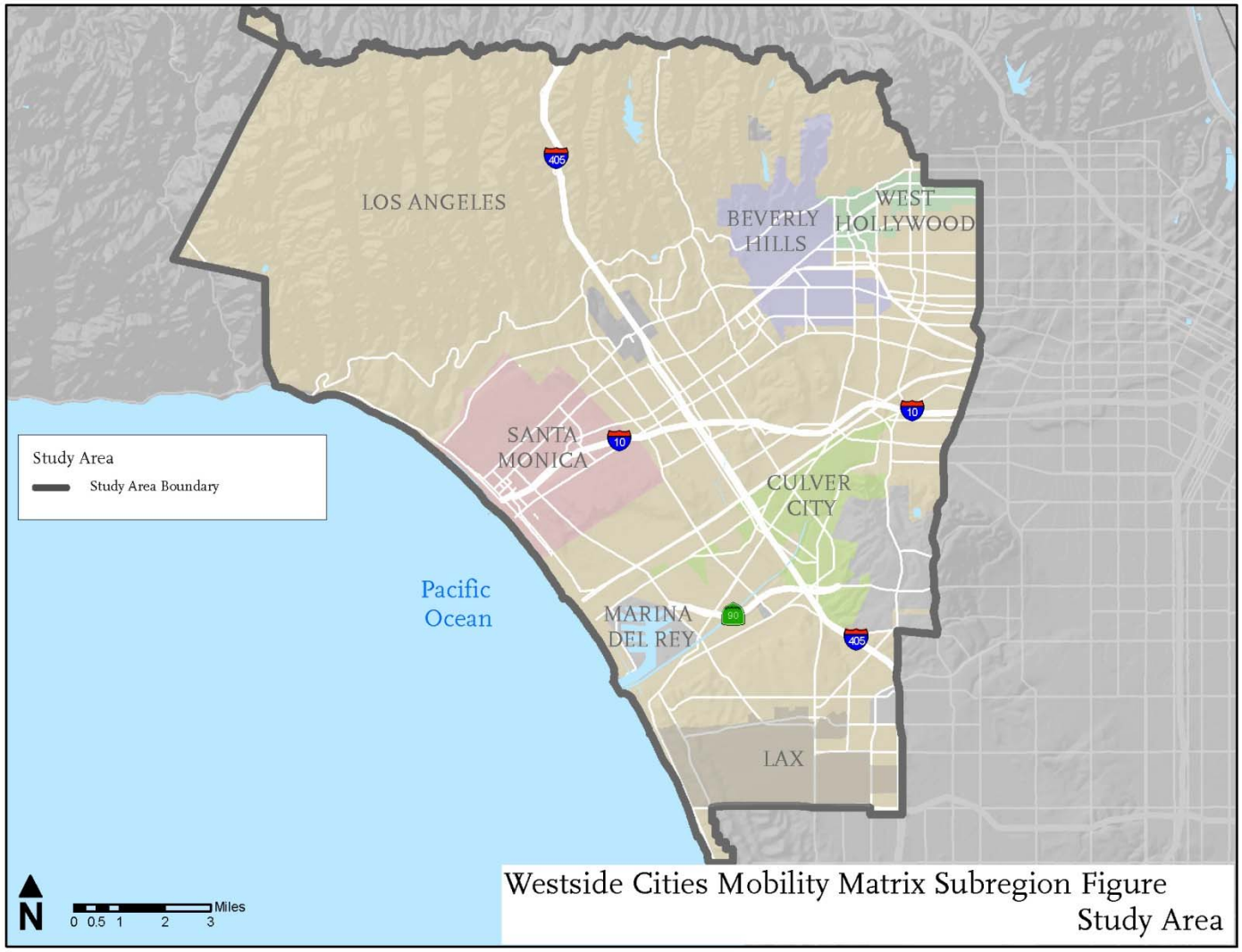
The purpose of the Westside Cities Mobility Matrix is to establish subregional transportation objectives and goals consistent with Metro's overall framework containing six broad themes common among all subregions, and to identify, develop and evaluate projects and programs that meet these goals and objectives. The Mobility Matrix will serve as a starting point for the update of the Metro Long Range Transportation Plan (LRTP) currently scheduled for adoption in 2017. This Westside Cities Mobility Matrix, along with concurrent efforts in other Metro subregions, includes the development of subregional goals and objectives to guide future transportation investments, an assessment of baseline transportation system conditions to identify critical needs and deficiencies, and an initial screening of projects and programs based on their potential to address subregional objectives and countywide performance themes. The Mobility Matrix includes a high-level assessment of the anticipated investment needs and project and program implementation over short-term (2015-2024), mid-term (2025-2034) and long-term (2035-2045) time frames. The Mobility Matrix does not prioritize projects, but rather serves as a basis for a Strategic Transportation Plan for future transportation investments over the next 20+ years.

Figure 1-1. Los Angeles County Mobility Matrix Subregions



Source: Iteris, 2014; Fehr & Peers, 2014

Figure 1-2. Westside Cities Mobility Matrix Subregion



Source: Iteris, 2014; Fehr & Peers, 2014

1.3 Developed by Subregional Jurisdictions and Stakeholders

To ensure proposed projects and programs reflect the needs and interests of the subregion, the Mobility Matrices followed a "bottoms-up" approach guided by a Project Development Team (PDT) selected by the subregion, consisting of city, stakeholder, and subregional representatives. The Westside Cities PDT consisted of representatives from the following jurisdictions and stakeholder agencies:

- Westside Cities COG
- City of Beverly Hills
- City of Culver City/Culver CityBus
- City of Los Angeles
- City of Santa Monica/Big Blue Bus
- City of West Hollywood
- Los Angeles County Department of Public Works
- California Department of Transportation (Caltrans)
- Southern California Association of Governments (SCAG)

The Westside Cities PDT met six times over the eight-month study period to guide the creation of strategic goals and objectives, identify a subregional package of projects and programs, oversee the project and program evaluation process, and review and approve all work products associated with the Subregional Mobility Matrix. The Westside Cities COG staff presented updates to the COG Board throughout the study. In addition, targeted outreach was conducted with city staff and other stakeholders on an as-needed basis to confirm project and program details. Several meetings with adjacent Mobility Matrix subregions were held in late 2014 to ensure coordination on projects and programs that crossed or approached subregional boundaries. The purpose of these meetings was to ensure consistency for projects that crossed subregional boundaries and to ensure that negative effects would not be created. Coordination activities for this effort are summarized in Appendix A.

1.4 What's in it for the Subregion?

The Mobility Matrix serves as a vehicle for communicating subregional needs into Metro's LRTP update process, providing:

- **A process for developing consensus.** Through the PDT and targeted outreach, the Mobility Matrix stakeholders built consensus around goals and objectives for improving mobility within the subregion in order to more consistently address their transportation issues and proposed improvements in the next LRTP and beyond.
- **An initial framework for LRTP performance analysis.** The consensus-building process included articulating a set of subregional goals and objectives; a high level analysis of potential projects and programs to address those goals and objectives; and development of a set of proposed performance measures.
- **An approved list of projects and programs.** The Mobility Matrix provides a list of subregion-identified projects and programs intended to address transportation system deficiencies and needs.

- **Draft investment needs and implementation time frames.** Based on high-level estimates of project/program readiness and project costs, the Mobility Matrix presents the subregional investment needs to be considered in the next LRTP over its 30-year time horizon.

1.5 Policy Context

The Subregional Mobility Matrix process was undertaken in the context of federal, state and local policies and is intended to complement local and regional planning efforts. A sampling of relevant policies considered during the development of subregional objectives and project and program evaluation includes:

1.5.1 Federal

- Moving Ahead for Progress in the 21st Century Act (MAP-21, 2012), the Federal Transportation Authorization Bill, places a greater emphasis on performance-based planning for Metropolitan Planning Organizations (MPOs), LRTPs, and the Transportation Improvement Program (TIP).

1.5.2 State

- Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, set greenhouse gas (GHG) mitigation targets for California with a goal of reducing GHG emissions to 1990 levels by the year 2020 across all sectors.
- Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2006, authorized the Air Resources Board (ARB) to set regional targets for GHG emissions reductions from passenger vehicles, and directed California MPOs to prepare a Sustainable Communities Strategy (SCS), incorporating land use, housing, and transportation strategies intended to help regions meet GHG emissions reduction targets.
- SB 743 (2013), the Jobs and Economic Improvement Through Environmental Leadership Act, directed the Governor's Office of Planning and Research (OPR) to develop a new approach for analyzing transportation impacts under the California Environmental Quality Act (CEQA). The law provides exemptions to CEQA requirements for certain types of development located in transit-priority areas that are consistent with adopted SCS or alternative planning strategies. An outcome of this Bill is the use of vehicle miles traveled (VMT) rather than level-of-service (LOS) metrics in CEQA transportation analysis. Whereas LOS evaluation prioritizes capacity expansion projects that reduce delay or congestion, VMT reduction can be attributed to projects that encourage ridesharing, transit use, transit-oriented development, and active transportation projects that contribute to the reduction of vehicle travel. In short, SB 743 allows for the use of VMT, rather than delay or congestion, to prioritize transportation investments. OPR has yet to establish comprehensive guidelines for the implementation of SB 743.

1.5.3 Local

- Metro's LRTP, a 30-year transportation planning document required for obtaining federal funding, was last updated in 2009. The Mobility Matrix will serve as an initial step in the LRTP update scheduled for adoption in 2017.

- Local Option Sales Tax Measures. Los Angeles County voters have approved three half-cent sales tax ballot measures over the past three decades: Proposition A, Proposition C, and Measure R. Unlike the first two tax measures, which do not expire and did not designate funding for specific projects, Measure R expires in 30 years and contains a specific expenditure plan. Metro is considering placing a new sales tax on the 2016 Ballot. Through the Mobility Matrix process, subregional stakeholders began the project/program vetting process by identifying goals and priorities specific to their subregion. These goals and unmet needs will help focus potential additional funding on key subregional projects and programs.

1.6 Document Overview

The Subregional Mobility Matrix contains the following chapters:

- Chapter 2.0 – Subregional Overview. An overview of the Westside Cities COG Mobility Matrix Subregion, including key trends and issues impacting the subregional transportation system and highlighting critical needs.
- Chapter 3.0 – Subregional Goals and Objectives. A summary of Westside Cities Mobility Matrix Subregion objectives that guide subregional transportation investments.
- Chapter 4.0 – Subregional Mobility Matrix. An initial evaluation of subregional priority projects and programs.
- Chapter 5.0 – Implementing the Vision. A proposed categorization of project and program implementation, including short-, mid- and long-term investment needs, and a summary of next steps for the Mobility Matrix.
- Appendices – Includes a log of the PDT and outreach process; a methodology memorandum; and a complete list of projects identified by the subregion.

2.0 SUBREGIONAL OVERVIEW

This chapter presents an overview of the 2014 baseline transportation conditions within the Westside Cities Mobility Matrix Subregion. It provides key information, at the subregional level, that can be used to understand the major transportation conditions and issues in the area, and is used to assist in the subregional needs assessment as well as project/program level assessment.

A Baseline Conditions Report was prepared for the Westside Cities Mobility Matrix Subregion, and is contained in Appendix D. The following information was assessed as part of this baseline conditions analysis effort:

- Existing projects and studies
- Demographics
- Land uses in the subregion
- Population and employment change projected from 2012 to 2024
- Environmental justice measures: socioeconomic vulnerability or physical exposure, such as low income, low education attainment, linguistic isolation, pollution exposure, hazardous waste exposure, or traffic exposure
- Travel markets: an assessment of the magnitude of trip origins and destinations to and from the subregion and within the subregion
- Goods movement: designated truck routes per the Draft City of Los Angeles Mobility Plan, Surface Transportation Assistance Act (STAA), and the Draft Countywide Strategic Truck Arterial Network (CSTAN) within the area
- Freeways: average daily traffic flow and peak hour speeds
- Arterial roadways: daily traffic flow and peak hour speeds
- Active transportation: existing and proposed bicycle routes, pedestrian facilities, and bicycle/pedestrian-involved collisions
- Transit: bus routes, passenger rail routes, and average daily boardings

The following sections summarize the results of the Mobility Matrix baseline conditions analysis.

2.1 Land Use and Demographics

The Westside Cities Mobility Matrix Subregion as a whole is predominantly zoned residential (over 50% residential overall) with higher density commercial and a small amount of industrial uses. The land use patterns are somewhat similar from city to city, however, there are some key differences. The commercial land uses per city range from 9% (Los Angeles) up to 25% (Culver City and West Hollywood). Open space is relatively similar among the cities, with the exception of Los Angeles, which has 40% open space, which represents the Santa Monica Mountains area.

2.1.1 Population and Employment

The Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was used to assess the possible change in population and employment in the Mobility Matrix Subregion between 2014 and 2024. This analysis

provides an indication of where additional trips may occur due to growth in the Mobility Matrix Subregion. Figure 2-1 shows the forecasted change in population and employment, with each color point indicating an added 20 jobs (blue dot) or 20 residents (green dot) at that location. As shown in Figure 2-1, most of the increases in housing and jobs are well distributed across the southern 75% of the Mobility Matrix subregion. Some of the highest growth in employment is projected to occur in West Hollywood, Beverly Hills, Century City, and areas near UCLA. The map shows that there are no noticeable concentrations of projected population growth in a particular area, although the area in and near the UCLA campus does show somewhat denser population change.

2.1.2 Environmental Justice

Concentrations of minority and low-income communities were identified using the California Environmental Health Hazard Screening Tool (CalEnviroScreen). This tool aggregates variables that indicate certain types of socioeconomic vulnerability or physical exposure, such as low income, low education attainment, linguistic isolation, pollution exposure, hazardous waste exposure, or traffic exposure. The resulting indexed score shows the communities most disproportionately burdened by multiple types of exposure and risk, with a high score indicating higher levels of exposure and risk.

The Westside Cities Mobility Matrix Subregion overall shows generally lower (i.e., better) CalEnviroScreen scores than some other subregions such as Central Los Angeles. The only location with a CalEnviroScreen score higher than 50 is an area in the eastern portion of the subregion, generally running between Rodeo Road and the I-10, and La Cienega Boulevard and La Brea Avenue. Surrounding this area are parcels with scores in the 36 to 50 range. Other areas with scores from 36 to 50 include UCLA and portions of the east side of Santa Monica near the I-10 freeway. The remainder of the subregion experiences scores of 35 or below.

2.2 Travel Patterns

Subregional trip patterns were developed for the Westside Cities Mobility Matrix Subregion study area using the Metro 2014 SRTP model. The model data were summarized for two conditions: Total Daily Person Trips, and AM Peak Hour Home-Based Work Person Trips. Person trips represent vehicle occupants (drivers and passengers), transit trips, and non-motorized trips. The model was used to determine the number of trips to and from the Mobility Matrix Subregion to other Mobility Matrix Subregions within Los Angeles County. This provides a general understanding of the major patterns of trip movements associated with people who live and work in the Westside Cities Mobility Matrix Subregion.

Figure 2-2 illustrates the daily person trips using bandwidths to visually show the magnitude of the trip patterns, and colors to illustrate the outbound (blue) and inbound (green) direction of the trips. Daily person trips include all trips made for any reason throughout the day; and home-based work trips which are trips from home to work (with the reverse trip from work to home occurring at the end of the workday). The data reflects typical weekday conditions.

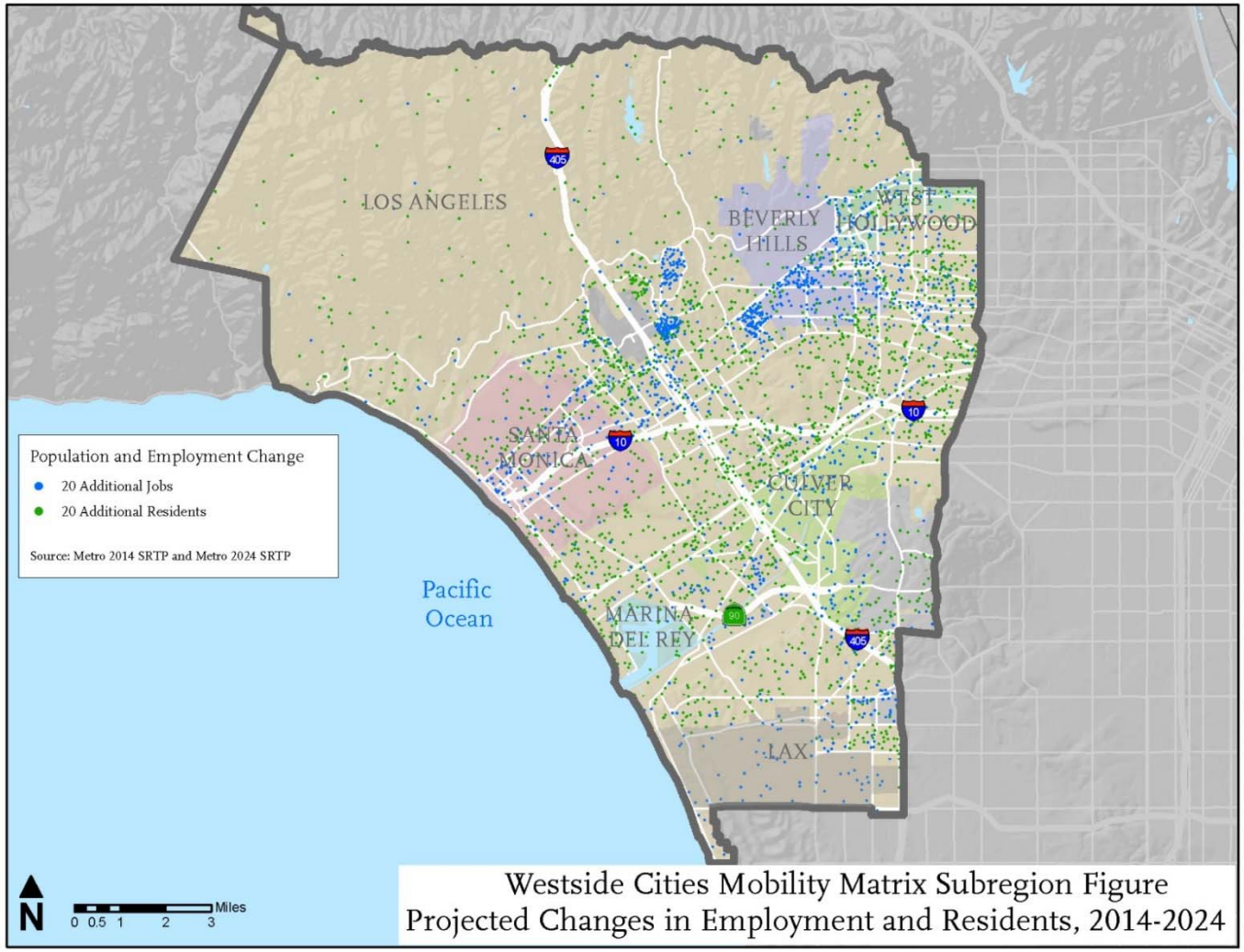
The highest trip producer and attractor for the Westside Cities Mobility Matrix Subregion is the Central Los Angeles Mobility Matrix Subregion. Approximately 325,000 daily person trips, or nine percent of all trips

produced by the Westside Cities Mobility Matrix Subregion go to the Central Los Angeles Mobility Matrix Subregion on an average day; and nearly 596,000 daily trips, or 13% of all trips that come into the Westside Cities Mobility Matrix subregion come from the Central Los Angeles subregion.

Almost 75%, or 2.5 million daily trips stay within the subregion. As with daily trips, the greatest overall trip interaction during the AM peak hour occurs with Central Los Angeles. Almost 14% of the AM peak hour home-based-work trips, or nearly 58,430 trips produced by the Westside Cities Mobility Matrix Subregion go to Central Los Angeles and about 15% of the AM peak hour home-based-work trips, or 111,510 trips, attracted to the Westside Cities Mobility Matrix Subregion come from the Central Los Angeles subregion. However, a slightly higher number of trips are attracted to the Westside Cities Mobility Matrix subregion from the San Fernando Valley, which has about 115,000 or 16% of trip attractions.

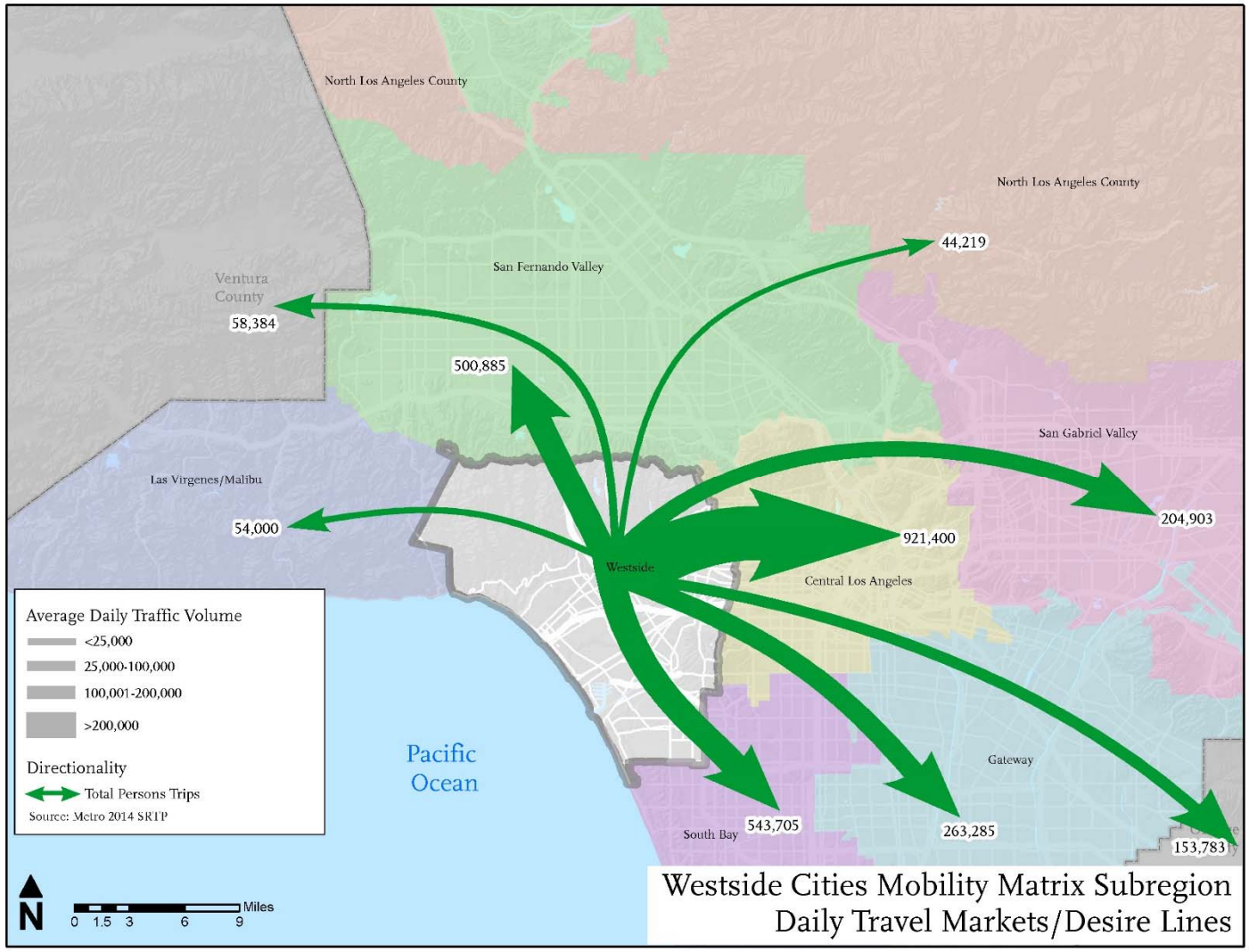
About 65% of the work trip productions and 35% of the work trip attraction trips stay within the subregion.

Figure 2-1. Projected Changes in Employment and Residents, 2014-2024



Source: Iteris, 2014; Fehr & Peers, 2014; Metro 2014 SRTP. Note: Based on input from the PDT, planned growth in the City of Santa Monica will be more focused around the Expo Phase II stations currently under construction.

Figure 2-2. 2014 Average Daily Trips to/From Westside Cities Mobility Matrix Subregion



Source: Iteris, 2014; Fehr & Peers, 2014; Metro 2014 SRTP

2.3 Vehicle Travel

2.3.1 Freeways

The Caltrans Freeway Performance Monitoring System (PeMS) was used to assess freeway volumes and speeds. Within the study area, Caltrans PeMS monitoring locations were available through the freeway system at various locations. October 2013 speed data were reviewed, with only typical weekdays (non-holiday Tuesdays, Wednesdays and Thursdays) as a basis for the average speed data extraction. October was chosen as a typical month because it lacks major holidays, all schools are in session, it avoids peak vacation times such as during the summer when volumes tend to be lower. Speeds were extracted over the 24 hours of every weekday, with the peak hours chosen based on the slowest observed speeds during the peak commute period.

The PeMS speed profile data shows where congestion currently occurs, as illustrated by actual slow speeds and mainline delay. The specific areas of slowing on the network indicate some type of geometric or operational issue (or both) on the system, which result in systemic speed reduction and vehicle delay at specific freeway locations. Causes of slowing could include inadequate mainline weaving areas, ramp/mainline merge or diverge locations with inadequate operating conditions, existing geometric alignment constraints such as curvature or sight distance, or simply too much travel demand and too many vehicles for the available freeway capacity.

Based on PeMS data, the daily freeway volumes in the Westside Cities Mobility Matrix Subregion are:

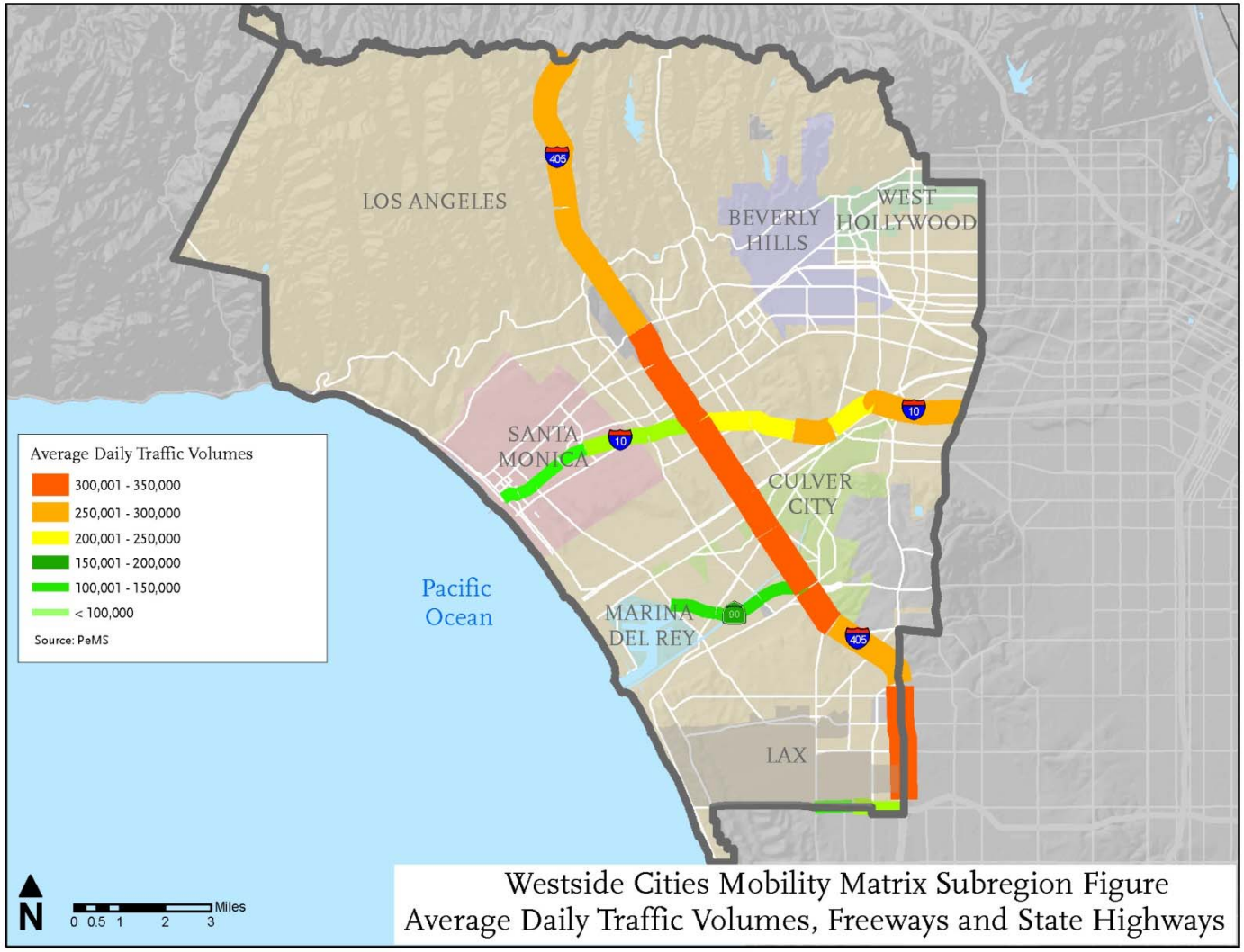
- A portion of I-405 through the subregion has very high volumes of between 300,000 and 350,000 vehicles per day generally between I-105 and Florence Avenue; and from Sepulveda Boulevard to Wilshire Boulevard.
- The remaining portions of I-405 in the subregion experience volumes of approximately 250,000 to 300,000 vehicles per day.
- I-10, east of I-405 generally has volumes ranging between 200,000 and 300,000 vehicles per day.
- The remaining freeways in the subregion generally have volumes under 200,000 vehicles per day, including I-10 west of I-405, I-105 west of I-405 and SR-90.

Freeway volumes in the Westside Cities Mobility Matrix subregion are shown in Figure 2-3.

Many segments of the I-405 experience very slow AM peak hour speeds and congestion, including the portions generally approaching the I-10 and also leaving the San Fernando Valley southbound (south of SR-101) experience speeds of less than 30 mph. The same is seen on portions of the I-10 eastbound approaching the I-405, and both directions of the I-105 west of the I-405. The I-405 southbound south of the I-10 generally has operating speeds of 40 mph or greater during the AM peak hour.

During the PM peak hour the I-405 experiences speeds less than 30 mph both north and south of the I-10. The entire portion of the I-405 through the Sepulveda Pass between West LA and SR-101 also experiences very slow speeds during the PM peak hour. The I-10 continues to experience slow speeds eastbound during the PM peak hour, all the way from Santa Monica to Downtown Los Angeles, and the I-105 experiences slow speeds in both directions west of the I-405.

Figure 2-3. Average Daily Traffic Volumes on Westside Cities Mobility Matrix Subregion Freeways



Source: Iteris, 2014; Fehr & Peers, 2014; Caltrans, 2014

2.3.2 Arterial Roadways

Unlike the freeway PeMS system, there is no single comprehensive source of daily traffic flow information on arterial roadways. Due to the lack of available count-based arterial volume data, the Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was used to identify daily volumes on selected key arterial corridors. Peak hour traffic speeds on the arterial roadways were analyzed through the use of iPeMS system. The iPeMS gathers vehicle probe data along arterials and then delivers real-time and predictive traffic analytics. The vehicle probe data comes from cell phones and fleet (truck/taxi/bus/other) GPS units, which are observed, and their position and speed are used to determine average speeds occurring throughout the day and during peak periods on the arterial system. For this analysis, vehicle probe data were assessed for the months of January through April 2013, and for the hours of 7:30-8:30 AM and 4:30 to 5:30 PM, which typically reflect the hours with the highest demand for travel

Some of the highest arterial volumes of over 40,000 vehicles per day are seen along the following Westside Cities corridors:

- Lincoln Boulevard from Marina del Rey north into Santa Monica
- Wilshire Boulevard from Sepulveda Boulevard and extending east into the Century City area and Beverly Hills
- Santa Monica Boulevard also from Sepulveda Boulevard and extending east into the Century City area, Beverly Hills and West Hollywood
- Venice Boulevard east of I-405
- Sepulveda Boulevard at the south end of the subregion
- La Cienega Boulevard extending nearly the entire length of the subregion
- Slauson Avenue east of I-405
- Sunset Boulevard at the east end of the subregion in West Hollywood
- Portions of Olympic Boulevard and Pico Boulevard
- La Brea Avenue on the eastern border of the subregion with the Central area
- Pacific Coast Highway from the terminus of the I-10 freeway and to the north

Several other corridors are shown to experience volumes from 20,000 to 40,000 per day.

During the AM peak hour slowing occurs on portions of eastbound Wilshire Boulevard between Pacific Coast Highway and I-405, significant portions of Santa Monica Boulevard, Sepulveda Boulevard northbound between Jefferson Boulevard and Wilshire Boulevard, Sepulveda Boulevard southbound as it parallels I-405 between Bel Air and Sunset Boulevard; portions of Lincoln Boulevard near the I-10 and to the south, and Beverly Glen Boulevard as it goes from Ventura Boulevard south to Sunset Boulevard.

PM peak hour arterial slowing on the arterial system is significantly greater in the Westside Cities Mobility Matrix Subregion than during the AM peak hour. Similar patterns to the AM peak hour are seen, but generally in the opposite directions. PM peak hour slowing occurs

along significant portions of Wilshire Boulevard, Santa Monica Boulevard and Lincoln Boulevard. Severe slowing occurs along Wilshire Boulevard at the I-405 interchange. Northbound Sepulveda Boulevard parallel to I-405 experiences slowing from Wilshire Boulevard north to Bel Air; and Beverly Glen Boulevard experiences northbound slowing between Sunset Boulevard and Ventura Boulevard. During the PM peak hour slowing is also experienced along Venice Boulevard in the eastbound direction where it closely parallels I-10 as well as at I-405.

2.3.3 Goods Movement

STAA truck routes mainly follow state routes and include Lincoln Boulevard, Pacific Coast Highway and Venice Boulevard. Trucks making local deliveries can legally use the entire arterial system, unless specifically prohibited by ordinance. Non-local through trucks must use the designated truck route system.

In the Westside Cities Mobility Matrix Subregion, the designated truck routes include many major arterials throughout the Westside, including roadways that serve LAX. Other routes include: Jefferson Boulevard, La Cienega Boulevard, and Washington Boulevard.

The Draft CSTAN is intended to ultimately help with the development of goods movement policies for the Countywide arterial system through Metro's Long- and Short-Range Transportation Plans. The draft CSTAN consists of much of the City of Los Angeles truck route network as identified in the draft Mobility Plan and it also includes some other key arterial routes which provide connectivity to the regional system. In the Westside Cities Mobility Matrix Subregion, the Draft CSTAN includes the following key north-south routes: Lincoln Boulevard, Sepulveda Boulevard, La Cienega Boulevard, and La Brea Boulevard; and key east-west routes: Santa Monica Boulevard, Olympic Boulevard, Venice Boulevard, Jefferson Boulevard, Washington Boulevard and Slauson Avenue.

2.4 Active Transportation

Each of the cities in the subregion have some designated bike routes, although network coverage varies widely. The most extensive system is in Santa Monica, which has a comprehensive system of Class III routes, supplemented with many Class II routes and bicycle friendly streets. Culver City has three existing Class I bike paths, including Ballona Creek bike path, Expo bike path, and Culver Boulevard bike path. All three bike paths provide connections to bike facilities in the City of Los Angeles. In addition, Culver City has some Class II and Class III bike facilities that also provide direct connection to bike facilities in the City of Los Angeles. The bikeway system in West Hollywood is comprised of both Class II and Class III bike facilities. Beverly Hills has a more limited system with a Class II and a Class III route. The City and County of Los Angeles also have routes within the subregional study area in Marina del Rey in the County and around and connecting to UCLA in the City. The Westside Cities Mobility Matrix Subregion also has the Coastal Bike Path that runs along the beach both north and south of LAX/Marina del Rey.

2.5 Transit

Figure 2-4 illustrates the 2014 bus transit network in the Westside Cities Mobility Matrix Subregion, while Figure 2-5 illustrates the passenger rail transit network as well as the daily weekday boardings at the station locations. The

data in Figure 2-5 provides an indication of the overall usage of passenger rail transit within the Westside Cities Mobility Matrix Subregion. Passenger rail service in the area is provided by the Expo Line, which has three stations located in the Cities of Culver City and Los Angeles, and the Green Line, whose terminal Aviation/LAX station is located on the border between the Westside Cities and South Bay Mobility Matrix Subregions. Data is from Metro 2012 Rail Ridership.

The daily weekday boarding data indicate that the highest ridership on the Expo Line occurs at the La Cienega/Jefferson station, where there are between 1,000 and 2,500 boardings per day. The other two Expo Line stations experience less than 1,000 boardings per day. The Green Line Aviation/LAX station has daily boardings of approximately 3,500 per day.

Since the compilation of the Countywide daily boardings summary based on Metro 2012 Rail Ridership data that was used by all the Mobility Matrix Subregions, the Westside Cities PDT has provided more recent information on ridership at the Culver City Expo station. Data obtained in January 2015 indicates that the Culver City Expo station has the highest number of daily boardings (approximately 4,180 daily weekday boardings) followed by the La Cienega/Jefferson station (approximately 1,660 daily weekday boardings).

Additionally, several significant and highly utilized express bus services run by Metro, Santa Monica Big Blue Bus, Culver CityBus, and other services operate within the Westside Cities Mobility Matrix Subregion, along with a grid network of local bus services which serve the subregion as well.

Countywide, regional, and local bus systems provide important connections to other transit systems, such as Metro Rail lines, as well as access to key activity centers throughout the Westside Cities Mobility Matrix Subregion. Rapid bus service is provided along many of the major arterials in the Westside, and the rapid service is supplemented by local services and connectors. The bus services available in the subregion are described below and illustrated in Figure 2-4:

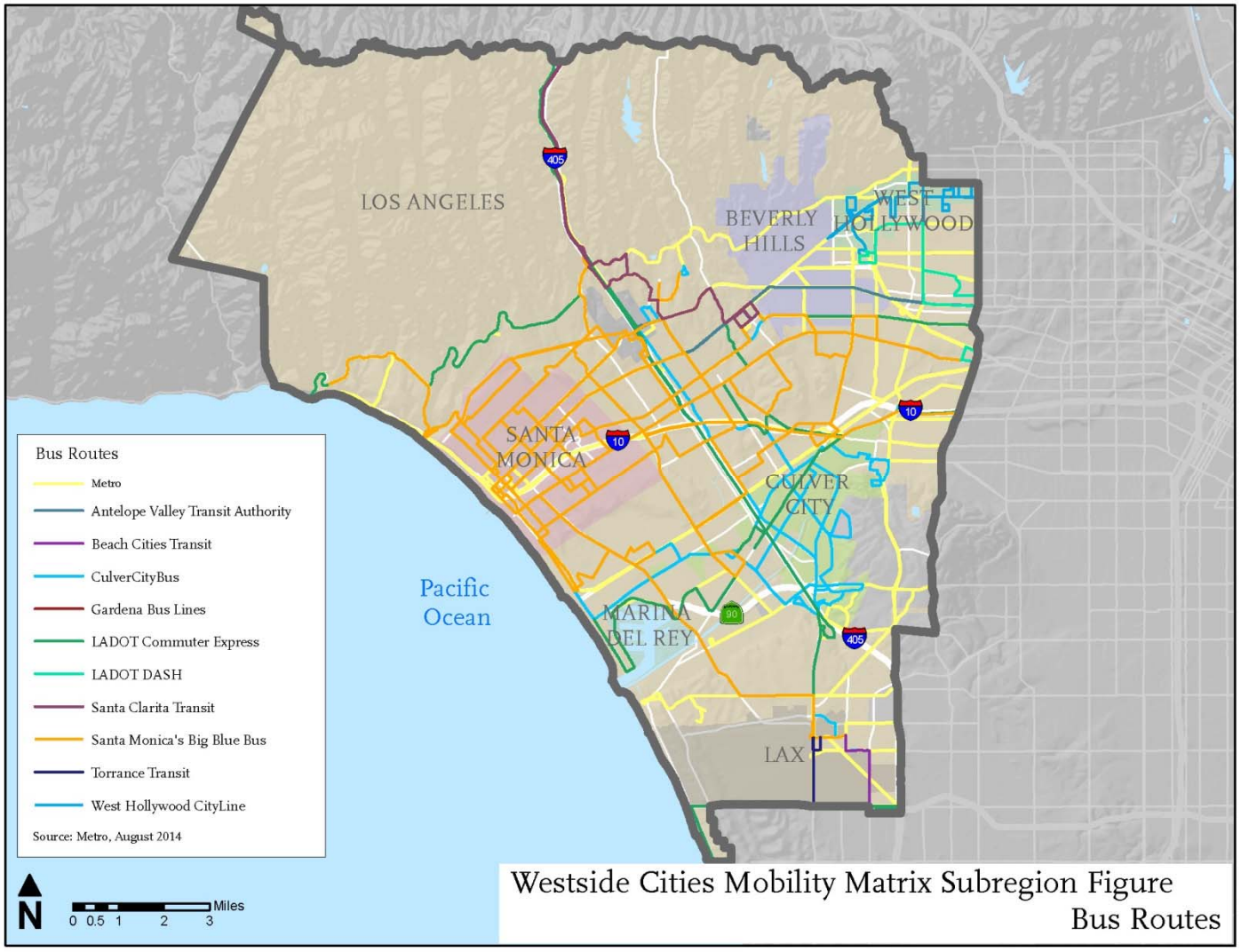
- Los Angeles Metro – Metro currently operates 35 bus routes within the subregion (two commercial circulators, seven Rapid/BRT routes, 11 local commercial business district (CBD) routes, one limited/express route, and 14 non-CBD routes)
- Antelope Valley Transit (AVTA) – AVTA currently operates one commuter express route, Route 786, within the subregion
- Beach Cities Transit (BCT) – BCT currently operates one bus route, Route 109, within the subregion
- Culver CityBus – Culver CityBus currently operates eight bus routes within the subregion
- Gardena Bus Lines – Gardena Bus Lines currently operates one bus route, Route 5, within the subregion
- LADOT Commuter Express – The Los Angeles Department of Transportation (LADOT) currently operates seven Commuter Express routes within the subregion
- LADOT DASH – LADOT currently operates three DASH routes within the subregion

- Santa Clarita Transit – Santa Clarita Transit currently operates two express routes, Route 792 and 797, within the subregion
- Santa Monica Big Blue Bus – Santa Monica Big Blue Bus currently operates 16 bus routes within the subregion
- Torrance Transit – Torrance Transit currently operates one bus route, Route 8, within the subregion
- West Hollywood City Line – The West Hollywood City Line is a free shuttle that operates one bus route within the subregion
- West Hollywood Pick-Up Line – The West Hollywood Pick-Up Line is a free weekend nighttime shuttle along Santa Monica Boulevard

Other transit services available in the study area include:

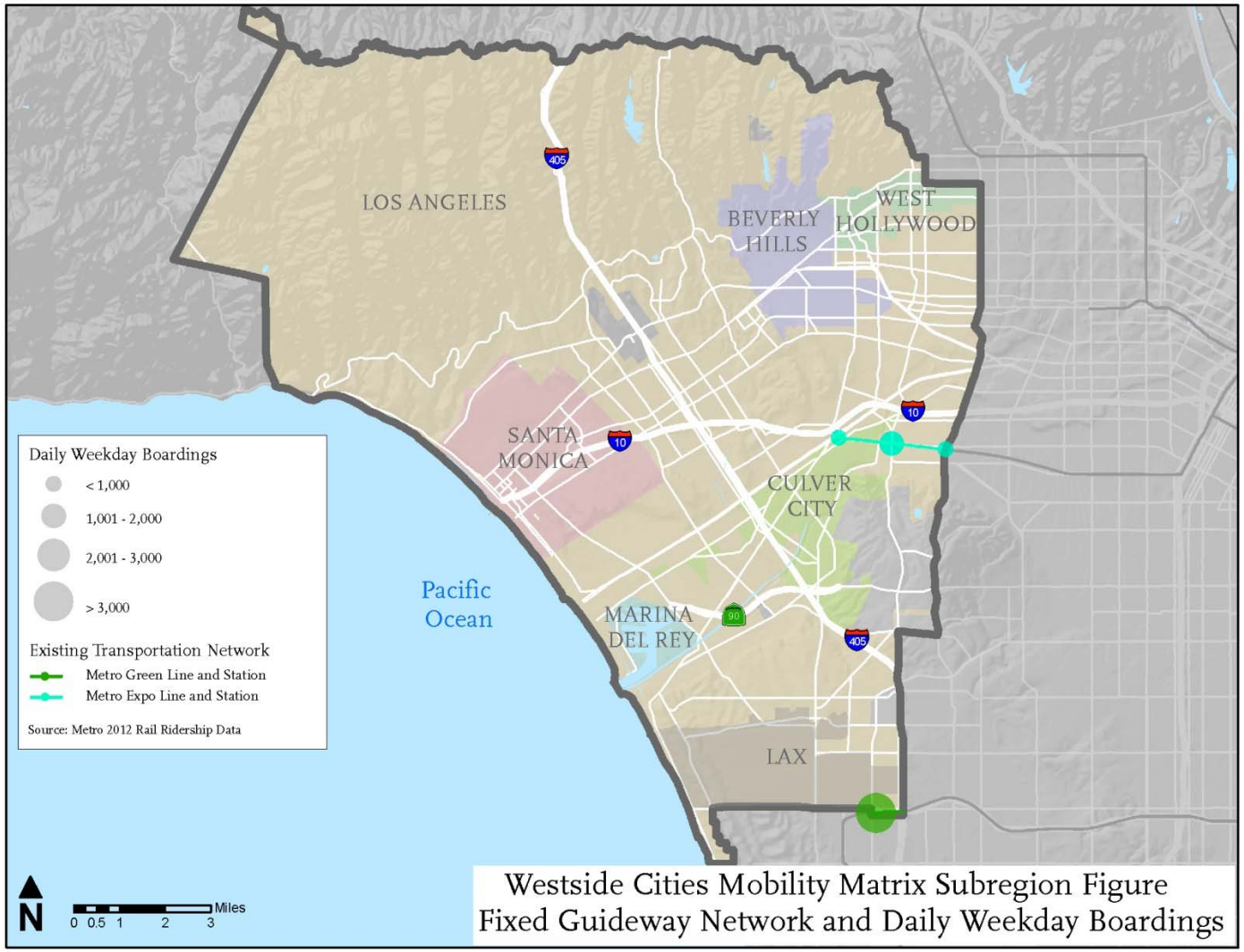
- Access Services – The Americans with Disabilities Act (ADA) complementary paratransit service for functionally disabled individuals in Los Angeles County
- Dial-a-Ride – A variety of dial-a-ride services offering curb-to-curb transportation for the disabled and seniors is available in each of the Westside cities and in Marina Del Rey

Figure 2-4. Bus Transit Network



Source: Iteris, 2014; Fehr & Peers, 2014

Figure 2-5. Fixed Guideway Network Service



Source: Iteris, 2014; Fehr & Peers, 2014; Transit boardings data is from Metro 2012 Rail Ridership.

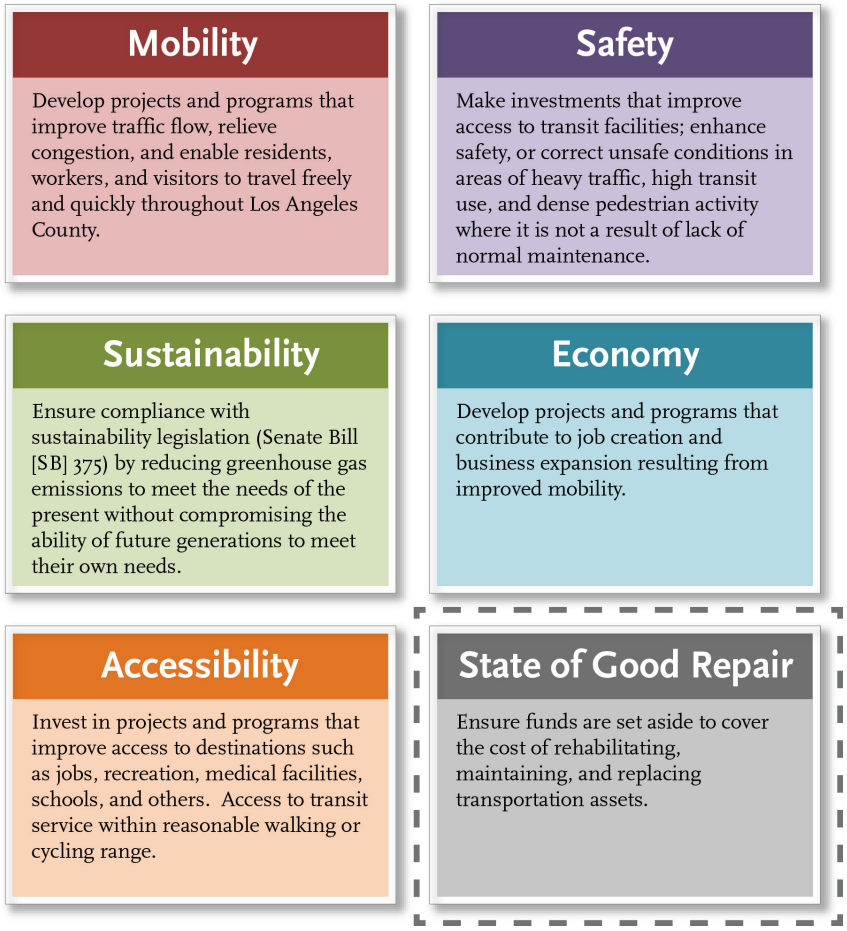
3.0 GOALS AND OBJECTIVES

This section describes the goals and objectives of the Westside Cities Mobility Matrix Subregion. The goals are consistent with the county's overall goals framework, which consists of six broad themes common among all the subregions. The goals also reflect the Subregion's priorities, and are based on recent studies, Westside Cities' General Plans, and discussions with the Westside Cities PDT.

3.1 Mobility Matrix Themes

Six themes guide the development of the Mobility Matrix. The themes are defined in Figure 3-1. These were developed in consultation with Metro and the Mobility Matrix consultant teams to highlight the importance of recent federal and state legislation and to reflect the shared concerns of all Los Angeles County jurisdictions. Each program considered in the Mobility Matrices received one evaluation score for each of the six themes.

Figure 3-1. Common Countywide Themes for All Mobility Matrices



State of Good Repair, which includes major rehabilitation and restoration, ensures that mature transportation system assets are preserved and adequately maintained. New projects or programs included for consideration in the Mobility Matrix work effort do not necessarily require state of good repair. However, state of good repair remains a priority for Metro and local jurisdictions. MAP-21 called for a renewed focus on ensuring transportation infrastructure is maintained in good condition.

MAP-21 includes national performance measures for interstate highway conditions, and a requirement that state and metropolitan plans indicate how project selection helps achieve measure targets. Similar requirements exist for transit impacting Federal funding, including transit asset management plans and system condition reporting.

The State of Good Repair theme is included in the Mobility Matrix to ensure its compliance with this renewed federal attention to system preservation, and to highlight projects and programs that help Los Angeles County achieve its countywide goal of maintaining a state of good repair on transportation infrastructure.

3.2 Subregional Priorities

The PDT was asked to consider the six Mobility Matrix themes and develop goals and objectives for each theme which reflected subregional priorities. The Westside Cities subregion has a range of residential districts, including some high density areas, numerous jobs centers and iconic tourist destinations of regional importance. The subregion has a gridded street network throughout much of the area, which provides multiple parallel facilities to the I-10 and I-405 freeways, leading to widespread heavy congestion on arterials and the infiltration of cut-through traffic onto neighborhood streets. Limited freeway crossings in combination with high congestion levels on the freeway mainlines and ramp connections results in bottlenecks in the arterial network for those roadways that do provide freeway access.

Some areas in the Westside lack a gridded street network, which presents challenges for active transportation modes and transit, and leads to congestion on facilities that do not have a redundant alternative. Regional commuters suffer long commute times and local residents and tourists suffer the consequences as short vehicle trips are impeded by regional traffic. Recent investments such as construction of the Expo Line and expansion of bicycle facilities will improve both regional and local transportation options, but many more improvements are needed to meet the existing and future demand for travel in and around the subregion.

The PDT expressed a strong commitment to including all modes of travel as a method of addressing congestion with strategies such as increasing multimodal travel options and creating alternative transportation options that are competitive with the private automobile. The subregion is interested in utilizing multiple strategies to enhance the efficiency of alternative transportation modes, including technology, land use planning, first/last mile strategies, and financial incentives. Overall, the PDT's goal is to continue to find solutions that address transportation and environmental issues.

Table 3-1 lists the goals and performance measures for each goal.

Table 3-1. Goals and Performance Measures for the Westside Cities Mobility Matrix Subregion

Theme	Goal	Performance Measures
Mobility	**Prioritize people in motion, not just vehicles.** Historic prioritization of vehicle throughput to the exclusion of other metrics has been detrimental to those traveling by any other mode. Emphasis should be placed on person – rather than vehicle – through-put and trip quality.	• Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability
	Elevate alternative transportation modes to make them competitive with SOV travel. There is a lack of universally viable alternatives to driving. There is a need for improved bicycle and pedestrian infrastructure, as well an expansion of transit service.	
	Provide transportation alternatives to the SOV that are seamless, convenient, flexible, and competitive with driving alone. If alternative transportation is not competitive with driving alone, those that have a choice will continue to choose driving.	
Safety	**Create safe, complete transportation spaces through effective infrastructure design.** Urban design can be used to facilitate safe interactions between users of all modes, improving physical and personal safety while waiting for transit, riding transit, bicycling, walking, or driving.	• Reduce incidents • Improve personal safety
	Implement neighborhood traffic calming and safety measures based on current best practices. The subregion would like to expand traffic calming practices beyond stop signs and speed bumps to eliminate neighborhood traffic intrusion.	
	Harness street design in order to minimize transportation-related incidents. On wide roadways where speeding is a problem and autos mix with more vulnerable street users such as pedestrians and bicyclists, street design can be used to slow drivers down to speeds at which a pedestrian or bicyclist may survive if hit by an automobile, increase sight distance, or encourage safer driving to reduce collisions.	
	Invite travelers out of their cars by increasing the personal and physical safety and security of alternative transportation modes. Many people drive rather than use alternative transportation because they do not feel safe riding a bicycle on streets without protected facilities, or do not ride transit because they fear for their personal safety while waiting at transit stops or riding transit at night.	
Sustainability	**Incentivize transportation choices that improve air quality and reduce GHG emissions and other environmental impacts.** This may include "carrots" such as free or reduced transit passes and cash-out benefits for those who walk or bicycle or carpool to work, or "sticks" such as increasing the cost to park.	• Reduce greenhouse gases • Reduce vehicle miles traveled

Theme	Goal	Performance Measures
	Support infill development in close proximity to transit to reduce VMT per capita. Providing retail, housing, and employment opportunities close to transit allows people to choose alternatives to private vehicle travel.	• Improve quality of life
	Provide the infrastructure necessary to support alternative-fuel vehicle adoption. This includes more electric vehicle charging stations and hydrogen fueling stations.	
Economy	**Create direct transit options to Westside jobs centers from destinations around the region, at competitive speeds to the automobile.** The Westside, having a high concentration of jobs in the Los Angeles region, needs direct transit service from places such as Long Beach and Pasadena, similar to the Rapid 10 Freeway Express bus service provided by the Big Blue Bus from Santa Monica to Downtown Los Angeles.	• Increase economic output • Increase job creation and retention
	Facilitate easy access to and around the Westside to promote tourism. This may include regional services such as connections to airports and train stations, local services such as beach shuttles, circulators, bike share, and taxis, and a robust wayfinding system.	
	Maximize business and individual productivity through an efficient, multimodal transportation system that enhances quality of life. Travel between destinations should be as efficient as possible to allow people the most possible time to work and live their lives as they desire.	
Accessibility	**Integrate rail and multi-agency bus operations to maximize connectivity and accessibility for transit riders.** Better connections between transit services are needed to reduce the reliance on automobiles.	• Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections
	Utilize technology to increase access to transportation options, including provision of real-time transportation information and the creation of one app for all transit systems. A lack of reliable information about many transit services, and a lack of integration between the data sources that do exist, create a burden for transit users.	
	Coordinate multi-modal infrastructure investments and first/last mile strategies at transit stations and major transfer points, including Mobility Hubs. Helping transit users complete their journeys can greatly improve the viability of transit service.	
	Implement universal design standards to create environments inviting and accessible to everyone regardless of age, ability, or circumstance. This includes orienting facilities to the street instead of a parking lot, providing multiple access points wherever possible, and always considering the most direct route for all users, not just private vehicle drivers.	

SUBREGIONAL MOBILITY MATRIX – WESTSIDE CITIES

Theme	Goal	Performance Measures
State of Good Repair	**Ensure infrastructure for all modes is maintained at an equally high level.** Transit and active transportation infrastructure should be maintained at an equally high level as infrastructure for automobiles.	• Extend life of facility or equipment
	Repair infrastructure to best-practice standards. Use repairs as an opportunity to improve roadways currently designed below national standards.	
	Increase focus on state-of-good repair, including transit infrastructure and vehicles. In order to provide more and better transit, existing transit infrastructure must be maintained to a very high level.	

4.0 SUBREGIONAL MOBILITY MATRIX

An initial Westside Cities Mobility Matrix project and program list was compiled from Metro's December 2013 subregional project lists, which included unfunded LRTP projects, unfunded Measure R scope elements, and subregional needs submitted in response to requests by Directors Antonovich and Dubois. The project and program list was updated through the outreach process to incorporate input from the PDT members and other subregion stakeholders. The list reflects not only the transportation needs within the jurisdictions, but also includes many projects with wider subregional and regional impacts.

This chapter summarizes the transportation needs of the Westside Cities Mobility Matrix Subregion, as demonstrated by the project and program list, and describes the high-level evaluation of project and program performance.

4.1 Project List

A total of 433 projects and programs were identified for the Westside Cities Mobility Matrix Subregion. The projects are divided into six broad categories: Active Transportation, Arterial, Goods Movement, Transportation Demand Management (TDM), Transit, and Freeway. Within each category, the projects are grouped by similarity into subcategories. Several projects, such as the Culver City Bicycle Plan or the City of Los Angeles Mobility Element, consist of many smaller projects such as individual bicycle lane segments or individual mobility hubs. The details associated with specific projects can be found in Appendix C. In addition, an interactive website allowing users to view Mobility Matrix project location and information is under development and will be available upon completion of this effort.

Arterial projects account for just over 20% of the list, and primarily consist of spot intersection improvements, ITS improvements, and complete streets improvements. Transit projects also make up just under 20% of the list, including major rail projects such as the Purple Line Extension, stop and station area improvements, and Bus Rapid Transit. Active transportation projects compose over 40% of the project/program list. Freeway projects make up less than 10% of the project list, and include ramp projects, ITS projects and major interchange upgrades. Transportation Demand Management (TDM) projects also account for less than 10% of the project list, and include parking programs, rideshare programs, and transportation management organizations (TMOs). Only one Goods Movement project exists in the subregion, involving industrial access and site loading.

A full list of the projects and programs is provided in Appendix C.

4.2 Evaluation

The evaluation was developed as a high level analysis to identify projects and programs that have the potential to address subregional and countywide transportation goals for later quantitative analysis in the LRTP update. The Mobility Matrix does not prioritize the projects, but rather to be used as a screening evaluation and a starting point for the Metro LRTP update process. The evaluation is qualitative in nature, due to the limited time frame for

completion of the work effort and incomplete project/program details and data. The evaluation methodology shown in Table 4-1 represents a collaborative effort spanning many months, and incorporates input from all the subregional representatives across Los Angeles County.

A description of the evaluation methodology is provided in Appendix B.

4.2.1 Evaluation Matrix

Due to the subregional scale of the study, many of the smaller projects were combined or grouped into larger subcategories, or programs, for ease of analysis. The evaluation assigns ratings at the subcategory level for each of the six Mobility Matrix themes. As discussed in Chapter 3, each Mobility Matrix theme has corresponding goals; projects were rated based on their potential to contribute to one or more of the subregional goals. The ratings are shown in Table 4-2.

Table 4-1. Evaluation Methodology

To Achieve the following score in a single theme:	Project must meet the corresponding criterion:
● **HIGH BENEFIT**	■ Significantly benefits one or more theme goals or metrics on a subregional scale
◑ **MEDIUM BENEFIT**	■ Significantly benefits one or more theme goals or metrics on a corridor or activity center scale
◔ **LOW BENEFIT**	■ Addresses one or more theme goals or metrics on a limited/localized scale (e.g., at a single intersection)
○ **NEUTRAL BENEFIT**	■ Has no cumulative positive or negative impact on theme goals or metrics
— **NEGATIVE IMPACT**	■ Results in cumulative negative impact on one or more theme goals or metrics

Table 4-2. Westside Cities Performance Evaluation – Summary by Sub-Program

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Active Transportation							
Bicycle Program (including bikeways, bike parking, bike share)	74	◑	◑	◑	◑	●	○
Citywide Bicycle Master Plan Program	6	●	●	●	◑	●	○
Livable Boulevards and Streetscapes Program	48	◑	●	●	◑	●	◑
Mobility Hubs Program	1	●	◑	●	◑	●	○
Education and Encouragement Program (including public awareness programs, public events, and information dissemination)	11	◑	●	◔	◔	◑	○
First-Last Mile Program	23	●	●	●	◑	●	○
Pedestrian Program	24	◑	◑	◔	◑	●	○
Safe Routes to School Program	8	◑	●	●	◔	●	○
Sidewalk State of Good Repair Program	3	◔	◑	◔	◔	◑	●

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Arterials							
Capacity Enhancement Program (including localized intersection widening and phasing adjustments, and localized corridor widening)	40	●	◑	○	◔	◔	○
Complete Streets Program	18	●	●	●	◔	●	◔
ITS Program (including CMP monitoring stations, real-time dynamic signage, and traffic signal timing)	23	●	◑	◔	◔	◔	○
State of Good Repair Program	3	◔	◑	○	◔	◑	●
Traffic Calming Program (including reduction of speeds through neighborhoods and reduction of cut-through traffic)	3	◔	●	◑	○	◔	○
Goods Movement							
Goods Movement Program	1	◔	◔	◔	●	○	○
TDM							
Technology Program (social media, app development, communications)	3	●	◑	●	◑	◑	○

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Parking Program (including park and ride, performance-based parking, and parking policies on a corridor or district scale)	17	◑	○	◑	◔	◑	○
Shared Ride Program (subregional and district-level)	8	●	◔	●	◑	◑	○
TMAs/Parking Districts/Park Once/Neighborhood Traffic Management/Employee Incentives Program	8	●	◔	●	◑	◑	○
Transit							
Crenshaw Line Extension to West Hollywood/Hollywood	1	●	◔	●	◑	●	○
Sepulveda BRT/LRT	3	●	◑	●	◑	●	○
Metro Purple Line Extension to Downtown Santa Monica	2	●	◑	●	●	●	○
Metro Purple Line West Hollywood Extension	1	●	◑	●	●	●	○
Lincoln Bl BRT/LRT	4	●	◑	●	●	●	○
BRT Program (corridors)	7	●	◔	●	◑	●	○

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Bus/Shuttle Program	31	●	○	◑	◑	●	○
Bus/Rail Integration Program	7	●	◔	◑	◑	●	○
Transit Technology Program (including real-time travel information, signal timing coordination with transit, and transit technology systems)	4	●	◔	●	◔	●	○
Rail Program (including LRTP Strategic Recommended and Unfunded projects, and other rail projects)	2	●	◔	●	●	●	○
State of Good Repair Program	8	◔	◑	●	◔	◔	●
Bus Station/Stop Improvement Program (Safety improvements, lighting, benches, etc.)	5	◔	●	◑	◔	●	◔
Caltrans							
I-10 Robertson Interchange Program	1	●	◑	◔	◔	◑	◔
I-10 Carpool Lanes (Lincoln Bl - I-5)	1	●	◔	◑	◔	○	○
ITS Program (including surveillance system upgrades, others)	6	●	●	◑	◔	◔	○

SUBREGIONAL MOBILITY MATRIX – WESTSIDE CITIES

Program/ Sub-Program	# Projects Included	Mobility • Improve travel times • Improve system connectivity • Increase person throughput • Increase travel by transit and active modes • Improve reliability	Safety • Reduce incidents • Improve personal safety	Sustainability • Reduce greenhouse gases • Reduce vehicle miles traveled • Improve quality of life	Economy • Increase economic output • Increase job creation and retention	Accessibility • Increase population served by facility • Increase service to transit-dependent populations • Improve first-last mile connections	State of Good Repair • Extend life of facility or equipment
Main Line Program (LRTP Strategic Unfunded and others)	**10**	●	◔	◑	◔	◔	○
Ramp Program	**18**	●	◔	○	◔	◔	○

The Active Transportation projects score quite highly under the Mobility, Safety, Sustainability, and Accessibility themes. The projects involving bicycle and pedestrian improvements accomplish several goals in multiple themes; this informs the PDT's stated commitment to improving Active Transportation facilities in the Subregion.

Arterial and Freeway projects perform well under the Mobility theme, as they primarily focus on improving system connectivity and travel time reliability. Their ratings under Safety tend to be mixed; some projects, such as active transportation projects, have clear safety benefits, but other projects, such as road widenings, may actually decrease safety for transportation network users such as pedestrians. While there are a few road widening projects that address congested intersections, they may induce demand and increase emissions. The highway projects typically had very low benefit for Accessibility, and most projects scored no benefit for State of Good Repair.

The Goods Movement project scored well on Economic themes. The project involves industrial access and site loading.

The TDM projects score well on Mobility and Sustainability. The TDM category includes a number of parking programs, rideshare programs, and ITS improvements.

Most of the Transit projects score highly for Mobility, Sustainability, and Accessibility. The Transit category contains several high-profile projects, such as Metro Purple Line extension, Bus Rapid Transit, and the Metro Crenshaw/LAX Line northern extension.

The full list of the project ratings can be found in Appendix C.

4.3 Findings

Overall, most projects perform very well under one or two Mobility Matrix themes, while also providing some additional benefits in other themes. None of the projects in the Westside Cities Region received negative scores in any of the themes. Some projects have many Neutral/No Benefit scores, but that does not mean they do not provide benefits; rather, those projects tend to be tightly focused on one theme, such as Safety, or confer benefits for some users, but not all users of the transportation system.

When looking at the scores for all six Mobility Matrix themes, the Active Transportation and Transit projects appear to perform better and achieve more subregional goals. This is not surprising, since the subregional goals emphasize safety, encouraging travel by fuel-efficient modes, and improving first-mile/last-mile connections. The Arterial, Goods Movement, and Highway projects are also an important component of the transportation network and project list, and improvements can help to increasing the reliability of the roadway network.

5.0 IMPLEMENTATION TIMEFRAMES

5.1 Implementation Timeframes

The projects and programs described in Chapter 4 were categorized into the three different timeframes based on a number of factors, including project readiness, need, funding availability or potential, and phasing. A 20-plus year timeframe was used as the basis for categorizing projects, with breakpoints at the ten and twenty year timeframes. The timeframes correspond to when the projects are anticipated to be completed and in operation. Some projects span multiple timeframes, particularly those involving on-going operations or maintenance programs. Metro, the Mobility Matrix consultants, PDT members, cities and other stakeholders worked collaboratively to determine project implementation timeframes. Table 5-1 presents the categorization for the Westside Cities project/program categories. A full description of the categorization methodology can be found in Appendix B.

Most of the projects in the Westside Cities Mobility Matrix Subregion fall into the short- and mid-term timeframes. The long-term projects typically consist of those which are phased over the 20-plus time period, or are major transportation or freeway infrastructure improvements. The emphasis on the shorter term is partially a result of the "bottoms-up approach", since the cities tended to submit projects for which they have immediate needs.

Table 5-1. Westside Cities Subregional Mobility Matrix Projects and Programs Categorization Summary

Westside Cities Mobility Matrix Projects and Programs	Number of Projects	Project Categories		
		Short Term (0-10 Years)	Mid Term (20 Years)	Long Term (20+ Years)
Bicycle Program	74	✓	✓	✓
Citywide Bicycle Master Plan Program	6	✓	✓	✓
Livable Boulevards and Streetscapes Program	48	✓	✓	
Mobility Hubs Program	1	✓	✓	
Education and Encouragement Program	11	✓	✓	✓
First-Last Mile Program	23	✓	✓	
Pedestrian Program	24	✓	✓	✓
Safe Routes to School Program	8	✓	✓	✓
Sidewalk State of Good Repair Program	3	✓	✓	✓
Capacity Enhancement Program	40		✓	
Complete Streets Program	18	✓	✓	✓
ITS Program	23	✓		
State of Good Repair Program	3	✓	✓	✓
Traffic Calming Program	3	✓	✓	
Goods Movement Program	1	✓	✓	✓
Technology Program	3	✓	✓	
Parking Program	17	✓		
Shared Ride Program	8	✓		
TMA Program	8	✓		
Crenshaw Line extension to West Hollywood/Hollywood	1			✓
Sepulveda BRT/LRT Program	3		✓	✓
Purple Line extension to Downtown Santa Monica	2		✓	✓
Purple Line West Hollywood Extension	1			✓
Lincoln Bl BRT/LRT	4		✓	✓

Westside Cities Mobility Matrix Projects and Programs	Number of Projects	Project Categories		
		Short Term (0-10 Years)	Mid Term (20 Years)	Long Term (20+ Years)
BRT Program	7	✓	✓	✓
Bus/Shuttle Program	31	✓	✓	✓
Bus/Rail Integration Program	7	✓	✓	✓
Transit Technology Program	4	✓	✓	✓
Rail Program	2	✓	✓	✓
State of Good Repair Program	8	✓	✓	✓
Bus Station/Stop Improvement Program	5	✓	✓	✓
I-10 Robertson Interchange Program	1		✓	✓
I-10 Carpool Lanes (Lincoln Bl - I-5)	1			✓
ITS Program	6	✓	✓	
Main Line Program	10		✓	
Ramp Program	18	✓	✓	✓

5.2 Cost Estimates

This section contains the Westside Cities Mobility Matrix cost range estimates at the summary program level. Due to variations in project scope and available cost data, costs estimated for use in the Mobility Matrix are not intended to be used for future project-level planning. Rather, the cost ranges developed via this process constitute a high-level, rough order-of-magnitude planning estimate range for short-, mid-, and long-term subregional funding needs for the Mobility Matrix effort only. More detailed analysis will be conducted in the LRTP process, which may necessitate refinement of project/program and associated cost estimates.

The purpose of this section is to outline the approach for preparing rough order-of-magnitude capital cost estimates for planning purposes. For the most part, these estimates do not include vehicles, operating, maintenance and financing costs. For consistency, all estimated project and program costs were reported in year 2015 dollars, as this is the base year of the 2014 Metro SRTP. Estimates from prior years were escalated to year 2015 dollars at a three-percent annual rate.

Due to lack of available data and the short timeframe for the Mobility Matrix effort, some of the projects and programs have missing cost estimates or do not include operations and maintenance (O&M) costs. Where O&M costs were available, they were included for the applicable timeframes. O&M costs will be revisited as part of the LRTP update as the subregions prioritize their projects and programs. It should be noted that for this reason, the cost established may be understated. A full description of the cost estimation methodology can be found in Appendix B.

Table 5-2 shows the estimated cost ranges for each Westside Cities program level type, divided into the three time periods. The table also contains columns showing the total number of projects within the program, as well as the number of projects with available cost estimates. This will help indicate which programs have low cost estimate range values due to unavailable cost data. Table 5-3 summarizes the cost estimate ranges by time period categorized according to the high-level programs used for all the subregions.

These estimates under represent the operations and maintenance costs due to limitations of data availability. Costs are also underestimated due to projects and programs where cost estimate ranges are still under development. Projects or programs that cross subregional boundaries may be included in multiple subregional project lists. Where the same projects or programs are included in multiple subregions, the cost estimates include the total estimated project cost, not the cost share for each subregion. Any subregional cost sharing agreements will be determined through future planning efforts.

Table 5-2. Westside Cities Mobility Matrix Program Cost Estimate Ranges and Categorizations (2015 Dollars)[1]

Westside Cities Mobility Matrix Projects & Programs	Total Projects	Projects with Costs	Short Term (0 to 10 Years)		Mid Term (11 to 20 Years)		Long Term (20 plus Years)	
			Low	High	Low	High	Low	High
Bicycle Program	74	55	$27,733,200	$44,305,800	$27,733,200	$44,305,800	$27,733,200	$44,305,800
Citywide Bicycle Master Plan Program	6	6	$436,520,700	$657,389,700	$436,520,700	$657,389,700	$436,520,700	$657,389,700
Livable Boulevards and Streetscapes Program	48	43	$58,705,000	$88,755,000	$58,705,000	$88,755,000	N/A	N/A
Mobility Hubs Program	1	1	$17,340,000	$26,010,000	$17,340,000	$26,010,000	N/A	N/A
Education and Encouragement Program	11	11	$1,795,200	$2,692,800	$1,795,200	$2,692,800	$1,795,200	$2,692,800
First-Last Mile Program	23	17	$12,950,000	$19,795,000	$12,950,000	$19,795,000	N/A	N/A
Pedestrian Program	24	18	$29,145,600	$43,718,400	$29,145,600	$43,718,400	$29,145,600	$43,718,400
Safe Routes to School Program	8	6	$166,877,700	$250,321,500	$166,877,700	$250,321,500	$166,877,700	$250,321,500
Sidewalk State of Good Repair Program	3	3	$2,065,800	$3,098,700	$2,065,800	$3,098,700	$2,065,800	$3,098,700
Capacity Enhancement Program	40	38	N/A	N/A	$122,120,000	$190,730,000	N/A	N/A
Complete Streets Program	18	15	$17,744,100	$26,617,800	$17,744,100	$26,617,800	$17,744,100	$26,617,800
ITS Program	23	16	$79,100,000	$118,640,000	N/A	N/A	N/A	N/A
State of Good Repair Program	3	3	$2,758,800	$4,138,200	$2,758,800	$4,138,200	$2,758,800	$4,138,200
Traffic Calming Program	3	3	$89,555,000	$134,335,000	$89,555,000	$134,335,000	N/A	N/A
Goods Movement Program	1	1	$792,000	$1,188,000	$792,000	$1,188,000	$792,000	$1,188,000
Technology Program	3	3	$11,600,000	$17,400,000	$11,600,000	$17,400,000	N/A	N/A
Parking Parking	17	12	$63,120,000	$102,800,000	N/A	N/A	N/A	N/A
Shared Ride Program	8	5	$70,080,000	$105,120,000	N/A	N/A	N/A	N/A
TMA Program	8	6	$33,440,000	$51,660,000	N/A	N/A	N/A	N/A
Crenshaw Line extension to West Hollywood/Hollywood	1	1	N/A	N/A	N/A	N/A	$2,336,400,000	$6,365,700,000
Sepulveda BRT/LRT Program	3	3	N/A	N/A	$1,360,260,000	$3,876,230,000	$1,360,260,000	$3,876,230,000

Westside Cities Mobility Matrix Projects & Programs	Total Projects	Projects with Estimated Costs	Short Term (0 to 10 Years)		Mid Term (11 to 20 Years)		Long Term (20 plus Years)	
			Low	High	Low	High	Low	High
Purple Line extension to Downtown Santa Monica	2	2	N/A	N/A	$1,058,840,000	$1,588,260,000	$1,058,840,000	$1,588,260,000
Purple Line West Hollywood Extension	1	1	N/A	N/A	N/A	N/A	$2,395,760,000	$3,593,640,000
Lincoln Bl BRT/LRT	4	4	N/A	N/A	$727,640,000	$915,060,000	$727,640,000	$915,060,000
BRT Program	7	7	N/A	N/A	$134,560,000	$12,914,560,000	N/A	N/A
Bus/Shuttle Program	31	20	$273,517,200	$410,275,800	$273,517,200	$410,275,800	$273,517,200	$410,275,800
Bus/Rail Integration Program	7	6	$82,882,800	$125,149,200	$82,882,800	$125,149,200	$82,882,800	$125,149,200
Transit Technology Program	4	4	$7,600,000	$11,400,000	N/A	N/A	N/A	N/A
Rail Program	2	2	$422,677,200	$460,940,700	$422,677,200	$460,940,700	$422,677,200	$460,940,700
State of Good Repair Program	8	7	$819,885,000	$1,229,910,000	$819,885,000	$1,229,910,000	$819,885,000	$1,229,910,000
Bus Station/Stop Improvement Program	5	5	N/A	N/A	$1,058,840,000	$1,588,260,000	$1,058,840,000	$1,588,260,000
I-10 Robertson Interchange Program	1	1	N/A	N/A	$20,000,000	$30,000,000	$20,000,000	$30,000,000
I-10 Carpool Lanes (Lincoln Bl - I-5)	1	1	N/A	N/A	N/A	N/A	$2,024,000,000	$3,036,000,000
ITS Program	6	2	$5,200,000	$7,800,000	$5,200,000	$7,800,000	N/A	N/A
Main Line Program	10	7	N/A	N/A	$16,510,000	$24,770,000	N/A	N/A
Ramp Program	18	8	$15,094,200	$22,638,000	$15,094,200	$22,638,000	$15,094,200	$22,638,000

[1]Notes: Estimated costs in 2015 dollars.

NA – Not applicable.

Table 5-3. Rough Order of Magnitude (ROM) Project Cost Estimates and Categorization (2015 Dollars)

Type / Category	Active Transportation	Arterial	Goods Movement	TDM	Transit	Caltrans	Total
Short-Term (0-10 yrs)	162 out of 198 Projects $753M - $1.1B	36 out of 47 Projects $189M - $284M	1 out of 1 Projects $792K - $1.2M	26 out of 36 Projects $178M – 276M	44 out of 57 Projects $1.6B - $2.3B	10 out of 24 Projects $20M - $30M	279 out of 364 Projects $2.8B - $4.0B
Mid-Term (11-20 yrs)	162 out of 198 Projects $753M - $1.1B	59 out of 64 Projects $232M - $356M	1 out of 1 Projects $792K - $1.2M	3 out of 3 Projects $11.6M - $17.4M	51 out of 64 Projects $4.9B - $21.5B	18 out of 35 Projects $57M – $85M	294 out of 365 Projects $5.9B - $23.1B
Long-Term (>20 yrs)	99 out of 126 Projects $664M - $1.0B	18 out of 21 Projects $21M - $31M	1 out of 1 Projects $792K - $1.2M	0 out of 0 Projects $0	46 out of 59 Projects $9.5B - $16.8B	10 out of 20 Projects $2.1B - $3.1B	174 out of 227 Projects $12.2B - $20.9B
Total	162 out of 198 Projects $2.2B - $3.3B	74 out of 87 Projects $442M- $671M	1 out of 1 Projects $2M - $4M	26 out of 36 Projects $190M - $294M	62 out of 75 Projects $16.0B - $42.5B	19 out of 36 Projects $2.1B - $3.2B	345 out of 433 Projects $21.0B - $49.9B

5.3 Financing the Transportation System

5.3.1 2009 Long Range Transportation Plan and Identified Needs

The 2009 Long Range Transportation Plan (LRTP) lays out a 30-year strategy for keeping Los Angeles County moving and is based on a financial forecast of continued economic growth and moderate inflation. The 2009 LRTP identifies a $297.6 billion investment in Los Angeles County's transportation system through 2040 and is funded with more than 45 sources of federal, state and local revenue. A majority of funding is locally generated through three half-cent voter initiatives, Propositions A and C and Measure R. These local initiatives, other local sources of revenue such as passenger fares, advertising, real estate rentals, bonding, and competitive grants account for 75 percent of Metro's 30-year financial forecast. Many more projects and programs are needed in Los Angeles County than the transportation funding is available. These additional needs constitute the Strategic Unfunded Plan. However, both the funded 2009 Plan and the Strategic Unfunded Plan will require new funding in order to add projects and services and/or accelerate projects identified for funding. Metro's commitment to maintain and improve Los Angeles County's transportation system will depend on funding availability and strategies for obtaining new or increased funding.

5.3.2 2017 Long Range Transportation Plan Update and Exploration of New Funding Options

The 2017 LRTP will incorporate significant changes that have occurred since the 2009 LRTP was adopted, including changes in economic conditions, growth patterns, and the transportation costs and funding forecast. It is anticipated that this Plan would incorporate existing 2009 LRTP projects as well as new project initiatives such as those that may be identified by the sub regions through the Mobility Matrices process. As with past LRTPs, this update will include recommendations for constrained (funded) projects as well as strategic (unfunded) projects that could be built if additional funding becomes available, consistent with adopted Metro Board priorities and actions. The LRTP update will revise funding recommendations for various major transportation programs, including funds available to the Call for Projects by funding category, Regional Rail/Metrolink, Access Services and other programs. The Plan will also address state of good repair needs, new requirements for sustainability, and other initiatives and policies not anticipated in the 2009 LRTP.

The 2017 LRTP update includes the exploration of several new funding sources beyond those identified in the 2009 LRTP. Most notable is the exploration of a new transportation sales tax measure that could be considered by Los Angeles County voters as soon as November 2016. Approval of a 2016 transportation sales tax measure could significantly augment the availability of new funding included in the LRTP update and increase the size of the constrained plan. In addition to a new transportation sales tax measure, Metro is continuing the exploration of Public-Private Partnerships and congestion pricing for applicable highway and transit projects. Other new funding sources under consideration include, but are not limited to, land value capture around transit stations and California State Cap & Trade funds.

5.4 What's Next?

The Mobility Matrix is the first step in identifying the subregion's transportation projects and programs that require funding. The Mobility Matrix also identifies the subregion's goals and objectives for their unique needs and geographic considerations. The Mobility Matrix work effort resulted in a subregional, project/program list, as well as estimating those projects and program costs. This important work effort serves as a "bottoms-up" approach towards updating Metro's LRTP in the future.

Three major next steps should arise out of the Mobility Matrix process:

- **Westside Cities Subregion Prioritization of Projects** – This Mobility Matrix study does not prioritize projects. Instead, it provides some of the information needed for decision makers to prioritize projects/programs in the next phase of work, and an unconstrained list of all potential transportation projects/programs in the region. In preparation for a potential ballot measure and LRTP update (as described further below), the Westside Cities subregion should decide how it wants to prioritize these projects/programs assuming a constrained funding scenario.
- **Metro Ballot Measure Preparations** – Metro will continue working with the PDTs of all the Subregions; as it starts developing a potential ballot measure. Part of the ballot measure work would involve geographic equity determination, as well as determining the amount of funding available for each category of projects/programs and subregion of the County.
- **Metro LRTP Update** – The potential ballot measure would then feed into a future Metro LRTP update and be integrated into the LRTP Finance Plan. If additional funding becomes available through a ballot measure or other new funding sources or initiatives, the list of projects developed through the Mobility Matrix and any subsequent list developed by the subregion could be used to update the constrained project list for the LRTP moving forward.

6.0 APPENDICES

The following appendices provide further information on issues discussed in this document.

Appendix A: Meeting Matrix

Appendix B: Methodologies

Appendix C: Project Detail Matrix

Appendix D: Baseline Conditions Report

SUBREGIONAL MOBILITY MATRIX
WESTSIDE CITIES

Project No. PS-4010-3041-U-01

Meeting Matrix

Prepared for:

Metro

Prepared by:

Fehr & Peers
600 Wilshire Boulevard
Suite 1050
Los Angeles, CA 90017

March 2015

Meeting Matrix

Subregional Mobility Matrix
Westside Cities
PS-4010-3041-U-01

Prepared for:

Los Angeles County
Metropolitan Transportation Authority

Prepared by:
Fehr & Peers

In Association With:
Iteris, Inc
Arrellano Associates, LLC

Quality Review Tracking

Version	Date	Reviewer	Reviewer Signature
Internal Review Draft	2/9/15	FP Reviewer: Rachel Neumann	RMN
Draft		FP Reviewer: Sarah Brandenberg	

The following matrix documents coordination meetings and calls with cities, Project Development Team (PDT) members, and others as part of the Westside Cities Subregional Mobility Matrix Study.

Meeting Type	Date/Time	Meeting Location	Discussion Points
PDT Meeting #1	08/21/14 2:00 to 3:30 PM	Fehr & Peers Santa Monica Office, 201 Santa Monica Bl., Suite 500, Santa Monica	■ Provide Mobility Matrix background and process overview ■ Agree on PDT, Metro, and Project Team roles ■ Identify common Subregional Issues and shared Objectives ■ Obtain input on the Preliminary Project List ■ Agree on a regular meeting schedule
Check-ins with Individual Westside Cities	09/10/14 09/10/14 09/10/14 09/11/14 09/11/14 09/15/14 09/15/14 10/9/14	County of Los Angeles City of West Hollywood City of Santa Monica City of Los Angeles Big Blue Bus City of Culver City City of Beverly Hills County of Los Angeles	■ Preliminary Project List
PDT Meeting #2	09/17/14 1:00 to 2:30 PM	Culver City City Hall – Dan Patacchia Room, 1st Floor, 9770 Culver Bl., Culver City, CA 90232	■ Obtain Project Development Team (PDT) feedback on the updated preliminary project list ■ Conduct an initial discussion about Subregional goals and objectives ■ Discuss initial approaches and options for performance metrics

Meeting Type	Date/Time	Meeting Location	Discussion Points
PDT Meeting #3	10/22/14 10:00 to 11:30 AM	Beverly Hills City Hall, Conference Room A, City of Beverly Hills, 455 N. Rexford Dr., Beverly Hills, CA 90210	Obtain consensus and feedback on the following issues: ■ Goals, Objectives, and Performance Measures ■ List of projects and programs ■ Preliminary Baseline Conditions ■ Regional Category of the Mobility Matrix
Westside COG Board Meeting	11/15/14		Obtain approval of: ■ Preliminary Project List ■ Goals and Objectives
PDT Meeting #4	12/3/14 1:00 to 2:30 PM	West Hollywood City Hall – Community Conference Room, 1st Floor, 8300 Santa Monica Bl., West Hollywood, CA 90069	■ Provide an update on the relationship between the Mobility Matrix, LRTP Update, and Ballot Measure processes Obtain feedback and consensus on the following issues: ■ Updated Project and Programs List ■ Review Goals and Objectives ■ Initial discussion of Performance Measures and Project Categorization ■ Review Baseline Conditions Report
Check-ins with Individual Westside Cities	1/15/15 1/15/15 1/16/15 1/16/15 1/19/15 1/21/15	County of Los Angeles City of West Hollywood City of Santa Monica City of Los Angeles Westside Cities COG City of Culver City	■ Program Evaluation ■ Project Categorization ■ Cost Estimation ■ Caltrans Projects

Meeting Type	Date/Time	Meeting Location	Discussion Points
PDT Meeting #5	01/21/15 1:00 to 2:30 PM	Culver City City Hall – City Hall Patio Conference Room, 3rd Floor, 9770 Culver Bl., Culver City, CA 90232	Obtain feedback and consensus on the following issues: ■ Baseline Conditions Report ■ Updated Project and Programs List ■ Performance Analysis ■ Project Categorization ■ Cost Estimation Overview ■ Relationship to Ballot Measure/Metro LRTP
PDT Meeting #6	02/25/15 1:00 to 2:30 PM	Beverly Hills City Hall – Room 280-A, City of Beverly Hills, 455 N. Rexford Dr., Beverly Hills, CA 90210	■ TBD
Westside COG Board Meeting	March 2015	TBD	Approve Final Report

SUBREGIONAL MOBILITY MATRIX
WESTSIDE CITIES

Project No. PS-4010-3041-U-01

Methodologies

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Metro

Prepared by:

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Quality Review Tracking

Version	Date	Reviewer	Reviewer Signature
Internal Review Draft	2/9/15	FP Reviewer: Rachel Neumann	RMN
Draft		FP Reviewer: Sarah Brandenberg	

Table of Contents

1.0 INTRODUCTION

The following document describes the methodologies used for the performance evaluation, project categorization, and cost estimating exercises under Metro's Subregional Mobility Matrix studies.

2.0 PROGRAM EVALUATION METHODOLOGY OVERVIEW

This document outlines the context and approach for evaluating projects/programs submitted for consideration in the subregional Mobility Matrices.

2.1 Background & Context

The Mobility Matrices are intended as a preliminary input into Metro's forthcoming Long Range Transportation Plan (LRTP) update process. The Mobility Matrix effort has involved collecting improvement projects and defining subregional improvement programs, defining subregional goals and objectives, analysis of baseline conditions, and a high-level evaluation of programs submitted for consideration. This document outlines the approach for evaluation of subregional projects and programs.

The Mobility Matrix process does not involve any prioritization. Rather, the Mobility Matrix is intended as a screening tool and a starting point in the Metro 2017 LRTP update process. It is also a tool to assist subregions in reaching consensus on goals and objectives and unmet transportation needs.

The intent of the Mobility Matrix process is to identify subregional projects and programs with the potential to address subregional and countywide transportation needs and goals for later quantitative analysis.

Metro and the Mobility Matrix consultant teams investigated the potential for a quantitative screening evaluation process, but this proved infeasible for the following reasons:

- **Inconsistent project details**. Most cities in Los Angeles County did not have the resources or staff available to provide detailed data on their project concepts within the Mobility Matrix development timeframe. Performing quantitative analysis on inconsistent project lists would result in skewed evaluations.
- **Insufficient time and scope to fill in all data gaps**. The condensed time frame and limited scope of Mobility Matrix process was deemed insufficient to warrant a detailed outreach to all 89 jurisdictions to collect all the data and project details necessary for a rigorous quantitative evaluation.

Due to the limited time frame for completion and largely incomplete and inconsistent project/program details and data, the Mobility Matrix evaluation is qualitative in nature, focusing on each program's potential to address countywide and subregional goals and objectives. This was done to ensure a consistent, holistic county-wide approach.

2.2 Countywide Mobility Matrix Themes

Six broad themes guide the development of the Mobility Matrices, as shown in Figure 2-1. These themes were developed based on the Metro LRTP and are shared among all subregions in the county. Each program considered in the Mobility Matrices receives one score for each of these six themes.

Figure 2-1. Common Countywide Themes for All Mobility Matrices

The themes are defined as:

- **Mobility:** Develop projects and programs that improve traffic flow, reduce travel times, relieve congestion, and enable residents, workers, and visitors to travel freely and quickly throughout Los Angeles County.
- **Safety:** Make investments that improve access to transit facilities; enhance personal safety; or correct unsafe conditions in areas of heavy traffic, high transit use, and dense pedestrian activity where it is not a result of lack of normal maintenance.
- **Sustainability:** Ensure compliance with sustainability legislation (Senate Bill [SB] 375) by reducing greenhouse gas emissions to meet the needs of the present without compromising the ability of future generations to meet their own needs.
- **Economy:** Develop projects and programs that contribute to job creation and business expansion resulting from improved mobility.
- **Accessibility:** Invest in projects and programs that improve access to destinations such as jobs, recreation, medical facilities, schools, and others. Provide access to transit service within reasonable walking or cycling range.
- **State of Good Repair:** Ensure funds are set aside to cover the cost of rehabilitating, maintaining, and replacing transportation assets.

Although many of the projects/programs do not necessarily require repair or maintenance, State of Good Repair is included as a Mobility Matrix theme because it is a priority for Metro and local jurisdictions. The federal bill Moving Ahead for Progress in the 21st Century Act (MAP-21) calls for a renewed focus on ensuring transportation infrastructure is maintained in good conditions. The State of Good Repair theme is included in the Mobility Matrix to ensure its compliance with this renewed federal attention to system preservation, and it also highlights projects and programs that help Los Angeles County achieve its countywide goal of maintaining a state of good repair on transportation infrastructure.

2.3 Subregional Goals and Objectives

Through the Mobility Matrix process, each Metro subregion developed a set of subregion-specific goals and objectives associated with the six countywide themes above. A program's score is determined by its potential to contribute to one or more of these subregional goals and objectives.

2.4 Subregional Performance Metrics

The Mobility Matrix processes also included the development of subregional performance metrics associated with the six countywide themes identified in Section 1.2. These performance metrics are intended to inform future evaluation through the 2017 LRTP update process.

2.5 Evaluation Scores

The qualitative screening evaluation of projects and programs was intended to be easy to understand, qualitative in nature, and logical and consistent across all subregions. The evaluation methodology shown in Table 1-1 represents a collaborative effort spanning many months, and incorporates input from subregional representatives across the County.

Projects and programs were evaluated based on submitted project descriptions and attributes, and the potential of these to address subregional goals related to the Countywide Mobility Matrix Themes reported in Section 1.2.

To Achieve the following score in a single theme:	Project must meet the corresponding criterion:
● **HIGH BENEFIT**	■ Significantly benefits one or more theme goals or metrics on a subregional scale
◑ **MEDIUM BENEFIT**	■ Significantly benefits one or more theme goals or metrics on a corridor or activity center scale
◔ **LOW BENEFIT**	■ Addresses one or more theme goals or metrics on a limited/localized scale (e.g., at a single intersection)
○ **NEUTRAL BENEFIT**	■ Has no cumulative positive or negative impact on theme goals or metrics
— **NEGATIVE IMPACT**	■ Results in cumulative negative impact on one or more theme goals or metrics

Table 1-1. Evaluation Methodology

3.0 PROJECT CATEGORIZATION METHODOLOGY OVERVIEW

This document outlines the approach for categorizing the potential implementation timeframes for projects and programs submitted for consideration in the subregional Mobility Matrices.

3.1 Background & Context

The Mobility Matrices are intended as a preliminary input into Metro's forthcoming Long Range Transportation Plan (LRTP) process. The Mobility Matrix effort has involved collecting improvement projects and defining subregional improvement programs, defining subregional goals and objectives, analysis of baseline conditions, and a high-level evaluation of programs submitted for consideration. This document outlines the approach for categorizing the projects and programs into short-, mid- and long-term implementation timeframes.

The Mobility Matrix process does not involve any prioritization. Rather, the Mobility Matrix project/program categorization process is intended as an informational tool for use by subregions.

3.2 Categorization Timeframes

A 20-plus timeframe was used as the basis for categorizing projects. As shown below, three timeframes were developed into which projects and programs could be categorized, with breakpoints at the ten and twenty year timeframes. The timeframes correspond to when the projects are completed and in operation.

Short-Term 0-10 years (2015-2024) Projects can be in completed and in operation in less than ten years.
Mid-Term 11-20 years (2025-2034) Projects can be completed and in operation in 11 to 20 years.
Long-Term 20+ years (After 2035) Projects can be completed and in operation in more than 20 years.

3.3 Categorization Factors

Projects and programs were categorized into the three different timeframes based on a number of factors, including their readiness, need, funding availability or potential, and phasing, as described below:

- **Project Readiness** – What initial steps have been completed to-date or are in progress for the project or program – environmental documentation, project study report, alternatives analysis, feasibility study, engineering, inclusion in an approved plan or document, etc? What steps are needed before the project can be implemented? If a project has a number of these steps in progress

or completed, it can more appropriately be placed in the short- or mid-term categories. A project with little or no progress to-date is more likely to be placed in the mid- or long-term categories.

- **Project Need** – Does the project or program serve a known deficiency, immediate need, or transportation problem that exists today (e.g., bottleneck, safety, etc.)? If the need is immediate, a project can more appropriately be placed in the short-term category. Projects fulfilling future needs (for example, in support of a major development planned 15 years from now) will likely fall into the mid- or long-term categories

- **Project Funding** – Has any funding been identified to date for the project or program? What is the overall project cost and in what timeframe will funding potentially be available? Projects with some funding available will be easier to categorize as short-term, as well as projects with lower cost values. Projects with large funding gaps or large cost estimates may need to be categorized as mid- or long-term to reserve the funding needed for implementation.

- **Project Phasing** – Is the project or program single or multi-phased? Are there other phases or projects/programs that need to be completed first before this project or program or next phase can move forward? Many programs or large projects will likely cover more than one timeframe.

3.4 Categorization Process

Metro, Mobility Matrix consultants, PDT members, cities and other stakeholders worked collaboratively to determine project implementation timeframes. For projects or programs located in only one jurisdiction, that jurisdiction was given the first opportunity to define a feasible timeframe for its projects and programs. Subregional projects were categorized in conjunction with affected jurisdictions, and any conflicts between category suggestions by the affected jurisdictions were discussed and determined as a group. Project categorizations will be approved as part of the Final Subregional Mobility Matrix Report.

4.0 COST ESTIMATION METHODOLOGY OVERVIEW

This section outlines the context and approach for estimating rough order-of-magnitude capital cost estimate ranges for transportation projects and programs included in the subregional Mobility Matrices.

4.1 Purpose

The Mobility Matrices are intended as preliminary input into Metro's forthcoming Long Range Transportation Plan (LRTP) update process. The Mobility Matrix effort has involved collecting transportation improvement projects and defining subregional improvement programs, defining subregional goals and objectives, analysis of baseline conditions, and a high-level screening evaluation of transportation programs submitted for consideration. The purpose of this document is to outline the approach for preparing rough order-of-magnitude capital cost estimates, not including vehicles, operating, maintenance and financing cost, for the unfunded transportation projects and programs in each subregion.

Some projects and programs on the Mobility Matrix lists contained capital cost estimates, while others did not. Furthermore, some projects submitted by stakeholder jurisdictions had defined scope and limits, while other projects were less defined or programmatic in nature.

Due to variations in project scope and available cost data, costs estimated for use in the Mobility Matrix are not intended to be used for future project-level planning. Rather, the cost ranges developed via this process constitute a high-level, rough order-of-magnitude planning range for short-, mid-, and long-term subregional funding needs for the Mobility Matrix effort only. More detailed analysis will be conducted in the LRTP process, which may necessitate refinement of project/program and associated cost estimates.

4.2 Cost Estimation Methodology

This section explains the process by which consistent transportation improvement project cost minimum/maximum range estimates were developed at the program level.

4.2.1 Major Transit Project Cost Estimates Developed by Metro

Metro's Cost Estimating Department provided parametric unit cost estimates for major transit projects such as bus rapid transit, light rail transit, heavy rail transit, and maintenance and operations facilities, based on Metro historical project costs.

4.2.2 Major Freeway Project Cost Estimates Developed by Caltrans

The California Department of Transportation (Caltrans) provided unit cost estimates for major freeway and highway projects. If Caltrans did not provide highway/freeway project cost estimates, they were left blank for the purposes of the Mobility Matrix.

4.2.3 Projects With Cost Estimates Provided by Jurisdictions

If available, jurisdictions submitted cost estimates for their transportation improvement projects and programs. For some, jurisdictions submitted specific cost estimates, while for others, jurisdictions submitted minimum and maximum cost estimate ranges. Given the high-level planning nature of the Mobility Matrix process, and in the interest of subregional consistency, a minimum/maximum cost range was developed for each project or program:

- **Capital projects** submitted with minimum/maximum cost ranges were left unchanged. Projects submitted with specific cost estimates were expanded to a minimum (20 percent below specific estimate) and maximum (20 percent above specific estimate) cost range.
- **Program ongoing** costs were assumed to continue throughout the Mobility Matrix categorization periods, or throughout the short, medium and long term period, if duration was unknown. Again, cost estimates were adjusted to include a minimum range (20 percent below) and maximum range (20 percent above) around each annual cost estimate.

4.2.4 Projects or Programs Without Cost Estimates

Projects or programs submitted without costs were assigned cost estimates based on per-unit or per-mile industry standard factors by project or program type, or on the average per-unit or per-mile costs of comparable projects/programs with cost information submitted for consideration in the Mobility Matrix.

The following methods were used to develop these placeholder cost estimates:

1. Using Comparable Mobility Matrix Project Costs

First, Mobility Matrix projects or programs with similar characteristics were sorted by type, and average costs were calculated based on per mile or per unit costs. For any projects or programs with similar characteristics, these average per mile and per unit costs were applied. This estimate was expanded to a minimum (20 percent below) and maximum (20 percent above) cost range.

2. Using Research Literature

In some cases, industry standard cost estimates were available in research literature on a per-mile or per-unit basis. If no comparable costs were submitted through the Mobility Matrix project or program lists, these studies were utilized to develop cost estimates. Specific cost estimates were expanded to a minimum (20 percent below) and maximum (20 percent above) cost range.

3. Estimating Remaining Project Costs by Project Type

For remaining projects, the average total cost of other projects in the same program was used to approximate project cost.

For example, if 15 out of 20 pedestrian program projects have cost estimates that total $15 million, the remaining five pedestrian improvement projects were assumed to have similar average costs ($1 million per project). In this example, if the original value of the 15 known projects was $15 million, the assumed cost of the full program of 20 projects would be $20 million.

4.2.5 Program Level Estimates

Cost ranges developed through this process are for high-level planning purposes only, and should not be used in project-specific planning. In the interest of consistency, project-level cost estimates were rolled-up to the program level and not reported at the project-specific level.

4.2.6 All Project Costs Are in Year 2015 Dollars

For consistency, all estimated project and program costs are in year 2015 dollars, as this is the base year of the 2009 Long Range Transportation Plan update process. Project cost estimates from prior years were escalated to year 2015 dollars at a three-percent annual rate.

4.2.7 Metro Cost Estimating Department Reviewed Major Cost Estimates

As a final step to ensure consistency with Metro's cost estimating processes, the Metro Cost Estimating Department provided a high-level review of transit cost estimates to ensure consultant estimates were consistent with Metro practices.

SUBREGIONAL MOBILITY MATRIX
WESTSIDE CITIES

Project No. PS-4010-3041-U-01

Project Detail Matrix

Prepared for:

Metro

Prepared by:

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600 Wilshire Boulevard
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Quality Review Tracking

Version	Date	Reviewer	Reviewer Signature
Internal Review Draft	2/9/15	FP Reviewer: Rachel Neumann	RMN
Draft		FP Reviewer: Sarah Brandenberg	

The following matrix documents the Preliminary Project List as developed for the Westside Cities subregion during the Mobility Matrix process.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Bicycle Program	257	LA County	Centinela Av; Green Valley Cir to La Tijera Bl; Class II Bike Lanes
		258	LA County	Fairfax Av; Stocker St to 57th St; Class II Bike Lanes
		260	LA County	Marina Del Rey - Class I Bike Trail; Marina Limit - N to Marina Limit - S; Construct continuous Class I Bike Path through Marina del Rey
		261	LA County	Marvin Braude Bicycle Trail; Washington Bl to 0.1 mi s/o Yawl St; Class 1 Bike Path
		262	LA County	Sepulveda Channel; Washington Bl to Ballona Creek; Class I Bike Path
		263	LA County	Stocker St; Fairfax Av to Santa Rosa Av; Class II Bike Lanes
		339	LA City	Ballona Creek Bike Path Mid-City Segment: Design and construction of a Class I Bike Path along Ballona Creek from Fairfax Av to Venice Bl, providing enhanced bike access to transit.
		516	Culver City	Ballona Creek Bike Path Extension: This project would study and create plans to extend the bike path further east along Ballona Creek between Syd Kronenthal Park and Fairfax
		524	Culver City	Overland Bike Facilities: This project will add bike facilities on Overland between Venice and Playa.
		544	Santa Monica	Michigan Av Bicycle Facility: Connects beach, civic center, high school, Santa Monica College, Expo Line Stations and Bergamot Center with a high-quality bikeway parallel to I-10 and provides an I-10 crossing at 20th St
		592	Culver City	Develop a bikeway along Culver Boulevard west of Elenda Street that could extend to Marina Del Rey; Develop a Class II bike lane east of Elenda Street to Downtown
		593	Culver City	Develop a bikeway loop connecting Ballona Creek Path to downtown (Class II bicycle lane along Overland Avenue, Culver Boulevard, and Washington Boulevard through downtown connecting to Ballona Creek and Exposition right-of-way)
		621	Santa Monica	Construct the 7th St bike/pedestrian bridge over I-10 freeway

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Bicycle Program	645	Santa Monica	Complete Stewart Street bike connection
		652	Santa Monica	Extend Broadway bike lane – 6th to Ocean
		653	Santa Monica	Improve bike lanes on Arizona Av, 6th and 7th Sts
		710	Santa Monica	Implement citywide bikeshare coordinated with Westside Cities
		790	LA City	Priority Bikeways: Mark bikeways in the West Adams-Baldwin Hills-Leimert Community Plan with appropriate signage
		795	LA City	Reclaimed Land for Bikeways: Coordinate with other agencies to designate and develop mountain bike trails in the Kenneth Hahn State Recreation Area that complement and connect to the Baldwin Hills Park Master Plan trail system
		881	LA City	Culver Bl - Proposed Bike Lane: Culver Bl from McConnell Av to Playa del Rey
		912	LA City	Centinela Creek - Proposed Multi-Use Path from Centinela Creek path from Ballona Creek to Centinela Av east of the I-405 Planned Multi-Use Path
		926	LA City	Lincoln Bl - Proposed Cycle Track: Lincoln Bl from Jefferson Bl to Fiji Way. This project would be a feature of the reconstruction of the Lincoln Bl Ballona Creek Bridge project proposed as an element of the Westside Mobility Plan.
		927	LA City	Beethoven St - McConnell Av - Proposed Multi-Use Path Connector
		933	LA City	McConnell Av - Proposed Enhanced Bike Friendly St
		937	LA City	Beethoven St - Proposed Enhanced Bike Friendly St
		940	LA City	Washington Bl - Proposed Cycle Track: Washington Bl from Admiralty Way to Pacific Av
		947	LA City	Venice Bl - Proposed Cycle Track: Venice Bl from Beach to Robertson
		948	LA City	Venice Wy - Proposed Bike Lane
		952	LA City	McLaughlin Av - Proposed Enhanced Bike Friendly St
		961	LA City	Palms Bl - Proposed Enhanced Bike Friendly St
		964	LA City	Walgrove Av - Proposed Enhanced Bike Friendly St

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Bicycle Program	970	LA City	Military Av - Proposed Enhanced Bike Friendly St
		971	LA City	Gateway Bl - Proposed Bike Lane
		973	LA City	Barrington Av - Proposed Enhanced Bike Friendly St
		985	LA City	Veteran Av - Proposed Enhanced Bike Friendly St
		999	LA City	La Grange Tunnel - Proposed Multi-Use Path grade separated at I-405
		1004	LA City	Santa Monica Bl - Proposed Cycle Track: Santa Monica Bl in the "parkway" section east of Sepulveda Bl
		1013	LA City	Ohio Av - Proposed Enhanced Bike Friendly St
		1030	LA City	VA Campus - Proposed Bike Path/Multi-Use Path
		1034	LA City	Montana Av - Proposed Enhanced Bike Friendly St
		1037	LA City	Gayley Av - Proposed Enhanced Bike Friendly St
		1046	LA City	Bikesharing: Provide public bicycle rental in "pods" located throughout the city.
		1058	LA City	Gateway Bl to Ocean Park Bike Lane gap closure
		1288	LA County	Make more bicycle parking available throughout Marina del Rey
		1296	LA County	Provide a direct separated facility through the Marina that links to regional bike facilities
		1306	LA County	Mindanao Way – Bike lanes are planned on Mindanao Way west of Admiralty Way
		1307	LA County	Bali Way – Bike lanes are planned on Bali Way west of Admiralty Way
		1308	LA County	Via Marina/Via Dolce – A bike route is planned on a portion of Via Marina, continuing on Via Dolce, between the channel and Washington Boulevard.
		1315	LA County	Enhance bicycle facilities on the east side of the Marina
		1317	LA County	Implement bicycle crossing enhancements to improve the bike path's crossing of Mindanao Way
		1318	LA County	Preserve right-of-way to facilitate slower bicycle travel along a future multi-use waterfront promenade, and a future dedicated bicycle side path adjacent to Admiralty Way

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Bicycle Program	1319	LA County	Implement Parcel 44 bicycle enhancements
		1320	LA County	Implement enhancements for the bike crossing of Bali Way, and the treatment of the bike path through the parking lot of Parcel UR.
		1321	LA County	Implement enhancements for the bike crossing of Admiralty Way between Yvonne B. Burke Park and the library, as well as treatments for the library parking lot to minimize conflicts between bikes on the path and motorists using the parking lot.
		1322	LA County	Implement Washington Boulevard Gateway Enhancements to improve the wayfindng and visibility of the gateway to the Marvin Braude Bike Path where it meets Washington Boulevard
		1323	LA County	East-West Bicycle Connections (i.e. bike path adjacent Admiralty Way or shared bicycle and pedestrian promenade)
		1324	LA County	Potential implementation of on-street bike lanes on Via Marina (options include buffered bike lane or wider sidewalk and bike lane); Restripe Via Marina to provide on-street bike lanes and two travel lanes in each direction as funding is available.
		1368	Santa Monica	Install bicycle parking citywide
		1401	Santa Monica	Collaborate with Santa Monica College to identify a bicycle route in the 17th Street corridor through the college campus and promote cycling for college students.
		1480	Santa Monica	Real-time bike parking availability information
		1588	West Hollywood	Install bicycle parking in underserved areas along transit corridors
		3357	Culver City	Proposed Class III bikeway on Hannum Av
		3358	Culver City	Proposed Class III bikeway on Bristol Pky
		3359	Culver City	Proposed Class III bikeway on Green Valley Cir
		3361	Culver City	Proposed Class III bikeway on Duquesne Av
		3369	Culver City	Sign Class II and III bikeways on Washington, Jefferson, and Sepulveda Boulevards, Overland and Duquesne Avenues, Washington Place, Playa Street and any future adopted routes.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Bicycle Program	3489	West Hollywood	Beverly Bl: Install dedicated bike lanes (eastbound and westbound)
		3536	COG	Implement Westside Cities COG Bike Share Program
		3537	Culver City	Provide bike lockers and staging areas for public use in safe and convenient locations within commercial corridors.
		3562	Beverly Hills	Bicycle Planning: Implement bikeshare and install bicycle parking city-wide.
		3563	Beverly Hills	Implement revised Beverly Hills Bicycle Master Plan
		3595	LA County	Establish a County-wide bike share program that interacts with the Metro transit system.
		3638	Culver City	Develop a Class II bicycle connection between Expo/Culver City Station and Downtown Culver City (Washington Bl between National Bl and Ince Bl); enhance pedestrian environment to encourage pedestrian movement between Expo and Downtown.
		3639	Santa Monica	Construct separated bicycle and pedestrian facilities on the beach north of the Santa Monica Pier.
		3654	COG	WSCCOG Bicycle Infrastructure Priority Gap Closure - Five Corridors: 1. 1. Expo Light Rail Bike Path/Bikeway (from La Brea Blvd. to the western terminus of Phase 2) 2. Santa Monica Blvd./Broadway (from La Brea Blvd. to Ocean Ave.) 3. San Vicente Blvd. (from Sunset Blvd. to La Brea Blvd.) 4. Barrington Ave./McLaughlin Ave./Slauson Ave. (from Sunset Blvd. to the Ballona Creek Bike Path) 5. Beverly Dr./Beverwil Dr./Duquesne Ave./Jefferson Blvd./Overland Ave.(from San Vicente to Westfield/Culver City Transit Center)
	Citywide Bicycle Master Plan Program	2042	LA City	Implement the projects identified in the Bicycle Plan for the City of LA
		3162	LA City	Implement the Bicycle Enhanced Network as defined in the City of LA Mobility Plan 2035
		3526	Santa Monica	Implement Santa Monica Bicycle Plan (5-year and 20-year projects)
		3528	West Hollywood	Implement West Hollywood Bicycle Plan
		3551	LA City	Implement the programs identified in the City of LA Mobility Plan 2035

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Citywide Bicycle Master Plan Program	3552	LA City	Implement the programs identified in the 2010 Bicycle Plan for the City of Los Angeles (See Appendix for detail)
	Livable Boulevards and Streetscapes Program	609	Santa Monica	Close bike and ped gaps – Pier to Beach, Broadway to Ocean and Expo
		610	Santa Monica	Bike and pedestrian bridge improvements and connections across I-10 at 4th St, PCH, 11th St, 14th St, 17th St, 20th St, and Cloverfield.
		628	Santa Monica	Lincoln Bl: Implement streetscape plan to address pedestrian and bus facilities, 1-10 intersection, roadway.
		634	Santa Monica	Implement Ocean Av Streetscape Plan from Wilshire to Pico Bl, including consideration to widen sidewalk from Broadway to Ocean Av to accommodate pedestrian surges at Ocean and Colorado Avs
		635	Santa Monica	Wilshire Bl (Ocean Av to 4th St): Construct medians and widen sidewalk
		638	Santa Monica	Expo Downtown Santa Monica Station access: widen 4th St bridge for bike and pedestrian facilities
		654	Santa Monica	Improve pedestrian and bicycle access for Pier
		701	Santa Monica	Design and construct Stanford streetscape
		705	Santa Monica	Centinela Streetscape - Expo bike/ped crossing
		708	Santa Monica	Cloverfield Streetscape - Expo bike/ped crossing
		709	Santa Monica	Olympic Streetscape - Stewart to 26th South Side - Expo
		714	Santa Monica	Nebraska Streetscape - from Centinela to Stewart: design and construct Flex St (1,350') and Shared St (350') types
		716	Santa Monica	Design and construct Stewart Streetscape (Including bike lanes from Colorado to Exposition)
		717	Santa Monica	Design and construct 26th Streetscape (Including bike lanes from Colorado to Olympic)
		719	Santa Monica	Design and construct Exposition Streetscape (Including sharrows from Centinela to Stewart)
		722	Santa Monica	Design and construct Berkeley streetscape
		762	LA City	Implement Mayor's "Great Streets Program"

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Livable Boulevards and Streetscapes Program	792	LA City	Priority Pedestrian Routes: Implement streetscape plans for Crenshaw Bl (between Santa Monica Freeway and Florence Av. as well as within the district boundaries of the following CPIO areas: Crenshaw/Expo TOD, La Brea/Farmdale TOD, Jefferson/La Cienega TOD, Venice/National TOD, Crenshaw/Slauson TOD, West Bl TOD, and Hyde Park Industrial Corridor
		808	LA City	Streetscapes: Implement streetscape plans for the Neighborhood Districts along Robertson and Washington Bl, as well as Leimert Park Village and the Crenshaw/Slauson Area as identified, as well as the Transit Oriented Development Areas along the Mid-City Exposition and Crenshaw/LAX transit Corridors
		859	LA City	Abbot Kinney Livable Bl from Main St to Venice Bl
		860	LA City	Centinela Livable Bl from SR 90 to Washington Bl
		861	LA City	National Bl Streetscape Enhancements from Castle Heights Av to Motor Av
		862	LA City	Palms Bl Streetscape Enhancements from Motor Av to National Bl
		863	LA City	Motor Av Streetscape Enhancements from Palms Bl to Rose Av
		865	LA City	Sepulveda Bl Streetscape Enhancements from Olympic Bl to National Bl
		866	LA City	Pico Bl Streetscape Enhancements from Centinela Av to Barrington Av/405 Fwy & Sawtelle Bl/405 Fwy to Patricia Av
		867	LA City	Pico Bl Green St Project: transform a 1/2-mile section of Pico Bl between Barrington Av and Sawtelle Bl in West Los Angeles into a green street. This will be accomplished through the planting of green solutions for storm water management and aesthetic improvements
		868	LA City	Bundy Dr Streetscape Enhancements from Missouri Av to Pico B
		869	LA City	Olympic Bl Streetscape Enhancements from Centinela to Barrington
		870	LA City	Sawtelle Livable Bl from Olympic Bl to Santa Monica Bl
		871	LA City	San Vicente Livable Bl from Bundy Dr to Bringham Av
		1292	LA County	Signage/Wayfinding: Improve throughout Marina del Rey for vehicles, parking, pedestrians, cyclists

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Livable Boulevards and Streetscapes Program	1314	LA County	Mole Roads Improvements: Recommend implementing paving treatments in combination with striping treatments to differentiate the pedestrian space from the shared vehicle/bicycle space.
		1334	Santa Monica	Implement Complete Streets throughout the Memorial Park district.
		1335	Santa Monica	Expo to SMC and Hospital Access: Develop a 17th St Bikeway and Cycle Track: Develop 17th St as a complete transit-oriented street with bicycle infrastructure integrated with the Expo bikeway and the Michigan Av Neighborhood Greenway (MANGo), transit stops for buses, comfortable and safe sidewalks, streetscape and lighting from Wilshire Bld to Pico Bl.
		1342	Santa Monica	Industrial Preservation Area Street Connections: 10th and 12th Sts are proposed potential ped/bicycle connections or shared streets providing linkages at disconnected streets between Olympic Bl and Colorado Av.
		1369	Santa Monica	Complete Streets enhancements along Colorado Av (North Side) from Lincoln Bl to 20th St
		1370	Santa Monica	Complete Streets enhancements along Colorado Av (South Side) from Lincoln Bl to 11th St
		1371	Santa Monica	Complete Streets enhancements along Colorado Av (South Side) from 11th St to 17th St
		1373	Santa Monica	Colorado Blvd (North Side) Sidewalk Extensions 15th Ct to 17th St
		1382	Santa Monica	Create a plan to enhance alleys citywide to create a Shared St environment. In the Downtown areas, evaluate the creation of "Arts Alleys" as described in Creative Capital, the City's cultural master plan.
		1416	Santa Monica	Establish design standards for "living streets" where pedestrians, bicycles and low speed motor vehicles safely share the streets, especially in the neighborhoods directly south of the Pier and Ocean Park.
		3121	LA City	This project will provide for sidewalk and landscaping improvements in the Westchester area of the City of Los Angeles on the west side of Sepulveda Bl between 80th St and 84th Pl.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Livable Boulevards and Streetscapes Program	3171	Culver City	Streetscape improvements (street trees, landscaping, street furniture, special lighting, decorative paving, screening walls) and facade improvements along commercial corridors that complement each focus area and improve the physical environment.
		3490	West Hollywood	Melrose Av: Install sharrows; widen sidewalks
		3491	West Hollywood	Robertson Bl: Install sharrows; widen sidewalks
		3533	LA City	Implement Complete Streets Enhancements along key arterials in the City of LA as defined in the Mobility Plan 2035
		3574	Beverly Hills	Implement Street Tree Master Plan
	Mobility Hubs Program	3529	LA City	Implement Mobility Hubs: Install a full-service mobility hub at or adjacent to Metro Stations & satellite hubs strategically located surrounding each station, including secure bike parking, car share, bike share, and ride share (including casual carpooling) to bridge the first/last mile gap of a transit user's commute.
	Education & Encouragement Program	1410	Santa Monica	Provide classes on bicycle safety and awareness that targets different populations such as seniors, children and commuters.
		1412	Santa Monica	Participate and organize events to promote bicycling, such as National Car Free Day and Bike-to-Work Day with events throughout the City.
		1413	Santa Monica	Work with the Convention and Visitors Bureau to provide bicycle rentals and information about cycling at hotels and popular tourist attractions and market Santa Monica as a cycling destination.
		1471	Santa Monica	Educational videos, Bicycle Campus Opening, Classes offered through City Bike Center, Additional City TV Episodes, Bike Training for adults and additional training for youth and targeted groups like Seniors.
		1472	Santa Monica	Develop Core Educational Programming, Ongoing Bicycle Training, Bicycle Repair Skills.
		1473	Santa Monica	Bike to Work Day, Bike It! Day, Bike to Park Day, Presence at special events (Glow, Marathon), Technical support for events with bike element (i.e. Tour da Arts)

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Education & Encouragement Program	3223	Culver City	Develop an outreach program to educate those who live or work in Culver City about transit and encourage their use of it.
		3224	Culver City	Encourage public transit links to sites of high trip-generating uses to maximize transit use by patrons and employees.
		3538	Culver City	Promote public education programs regarding bicycle safety and the City's bicycle resources.
		3543	Culver City	Promote public education programs regarding the City's pedestrian resources and pedestrian safety, especially the use of pedestrian signals at street intersections.
		3582	West Hollywood	Implement public information and incentive program to encourage use of alternative transportation by local residents and employees.
	First-Last Mile Program	419	LA City	Pico Bl Transit/Bicycle Enhancements: Installation of pedestrian & bicycle enhancements including street trees and wells, bicycle racks, information kiosks, wayfinding signs, new bikeway striping and bus stop lighting to promote multi-modal access to transit systems.
		507	Beverly Hills	Beverly Hills Park Wayfinding System
		590	West Hollywood	Wayfinding program for peds and bikes: Directional signage with destination, direction and distance for key corridors
		632	Santa Monica	Reinforce 4th St station connections through sidewalk and streetscape improvements– Broadway to Olympic Dr.
		646	Santa Monica	Create opportunities to access Expo Station by bike, such as through 4th Ct
		698	LA City	Develop a System-wide Urban Greening Plan to improve placemaking, increase environmental stewardship, and create livable streets around transit stations with funds awarded by the State Strategic Growth Council.
		712	Santa Monica	Design and construct pedestrian improvements at Olympic near Expo: Two new pedestrian crossings and sidewalks along Olympic
		726	Santa Monica	Design and construct bike center at Bergamot Expo Station
		767	LA City	Access Management: Creation of adequate drop-off areas for schools, day care, health care, and other uses with intensive passenger drop-off demand

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	First-Last Mile Program	1045	LA City	Bicycle Transit Centers: Bike transit centers that offer bicycle parking, bike rentals, bike repair shops, lockers, showers and transit information and amenities
		1278	LA County	Park Once Facilities – Mobility Hubs located in or adjacent to a centralized parking facility that can serve adjacent uses. Potential locations: the Marina Beach Area (District 1), the "Restaurant Row" area along Admiralty Way on the north side of the Marina (District 2), Chace Park/Waterside Shopping Center area (District 3), and the Fisherman's Village area (District 4).
		1279	LA County	Include co-locating transit stops (both ground and water) at Mobility Hubs with clear wayfinding and good schedule coordination to ensure easy transfers between transit modes. If financially feasible, improving service frequency is recommended so the beach shuttle can better serve public parking lots in the Marina.
		1330	Santa Monica	Develop linkages and open space infrastructure that connect the Memorial Park plan area and the 17th St/SMC Expo station to neighborhoods to the east and west and north and south, including the Pico neighborhood, Santa Monica College, and the hospital districts.
		1331	Santa Monica	Design and construct bike center at Memorial Park (17th/SMC) Expo Station
		1394	Santa Monica	Develop and implement a beach access bikeway signage and wayfinding system.
		1457	Santa Monica	Implement Safe Access to Transit Program to provide safer bicycle and pedestrian access to transit stops.
		1938	LA City	Expo/Bundy Station Multi-Modal Connectivity Enhancements: Bike lanes, bulb outs, enhanced crosswalks, new trees, new concrete sidewalks and roundabouts
		3530	LA City	Implement pedestrian and bicycle connectivity improvements at every existing and planned Metro rail and subway station by providing enhanced sidewalk amenities such as landscaping, shading, lighting, directional signage, shelters, curb-extensions, mid-block crosswalks, ADA ramps, lead-pedestrian interval signal phases, etc.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	First-Last Mile Program	3553	LA City	Implement the Metro First/Last Mile Strategic Plan
		3567	Beverly Hills	Implement the Metro First/Last Mile Strategic Plan (eg, La Cienega Bl, Beverly Dr)
		3568	Beverly Hills	Implement pedestrian and bicycle connectivity improvements at Metro subway stations.
		3569	Beverly Hills	Wayfinding program for peds and bikes
		3621	LA City	Implement the City of Los Angeles First & Last Mile Transit Plan
	Pedestrian Program	264	LA County	Marvin Braude Pedestrian Walkway Gap Closure; Palisades Park to California Av; Construct Pedestrian Walkway Paralleling Marvin Braude Bike Trail
		267	LA County	Pedestrian Improvements; Construct New Sidewalks
		513	Beverly Hills	Construct controlled midblock crossings on Wilshire Bl/Palm Dr
		594	Santa Monica	Pedestrian Scramble Network, including intersections on 2nd & 4th Sts between Wilshire Bl and Colorado Av and the intersections of Ocean Av/Colorado Av and 3rd St/Wilshire Bl
		625	Santa Monica	Ocean Av: Link the Pier to the Expo station, Civic Center and Downtown through the Colorado Esplanade, Tongva Park and an expanded sidewalk on the east side of Ocean Av, between Colorado and Broadway.
		633	Santa Monica	Install pedestrian scaled lighting in phases throughout the Downtown
		766	LA City	Pedestrian Access: Implementation of several Community Plan Implementation Overlay sub-districts that contain enhanced pedestrian standards as well as include preliminary streetscape plans that call for enhancement of public realm for pedestrians as well as other non-vehicular modes of transportation

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Pedestrian Program	1040	LA City	Enhance Pedestrian Access to Major Transit Stations: Implement pedestrian connectivity improvements at major Metro transit stations by providing enhanced sidewalk amenities, such as landscaping, shading, lighting, directional signage, shelters, curb extensions, enhanced crosswalks, as feasible. - Green Line Extension & Crenshaw Station (Century Bl/LAWA Streetscape Plan underway) - Sepulveda Bl - BRT/LRT Stations in Coastal Area - Lincoln Bl - BRT/LRT Stations in Coastal Area - Expo Phase II Stations - Westside Subway Extension Stations - Sepulveda Bl - BRT/LRT Stations in West LA Area - Lincoln Bl - BRT/LRT Stations in West LA Area
		1281	LA County	Implement additional signalized pedestrian crossings, as well as wider sidewalks, and design treatments on shared-mode roads to improve the pedestrian experience in Marina del Rey. On the southern end of Via Marina and on Admiralty Way, it is recommended to implement mid-block crossings with pedestrian-actuated rectangular rapid flashing beacons (RRFBs) and high-visibility crosswalk striping
		1285	LA County	Provide for a multi-use waterfront promenade that can serve the Marina. Widen to the County's design standard and run uninterrupted around the Marina, including around Marina Beach, to improve connectivity and the pedestrian experience.
		1287	LA County	Resolve locations where pedestrians and bicycles conflict (e.g., on promenade and other pathways)
		1312	LA County	Potential enhancements to existing intersection crossings include reducing crossing distances by constructing curb extensions, narrowing travel and turn lanes to a maximum of 10 feet to 12 feet to facilitate curb extensions and/or sidewalk widening, removal of line-of-sight and other obstructions in sidewalks, especially at the approach to intersections, and the installation of high-visibility crosswalks on all legs of signalized intersections.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Pedestrian Program	1339	Santa Monica	To facilitate connectivity between the industrial conservation area to the south of Colorado Av and communities to the north, the City will continue to work with Metro to facilitate the construction of safe south-north ped crosswalks along the light rail right-of-way at the following intersections: - 10th St and Colorado Av - 12th St and Colorado Av - Euclid St and Colorado Av
		1375	Santa Monica	16th St and Olympic Median Break
		1379	Santa Monica	Implement a destination-oriented pedestrian wayfinding signage program.
		1578	West Hollywood	Continue to implement a street furniture program to manage various pedestrian amenities
		1581	West Hollywood	Enhance pedestrian crossings of arterials and other barriers, as identified in the Enhanced Crossings Priority List and citywide crosswalk study.
		3231	Culver City	Continue efforts to eliminate barriers to wheelchairs in the public and private pedestrian rights-of-way.
		3542	Culver City	Establish pedestrian access across existing barriers such as freeways, Ballona Creek, and long, uninterrupted blocks, and require pedestrian links across potential future access barriers
		3544	LA City	Implement Pedestrian Enhanced Districts as defined in the City of LA Mobility Plan 2035.
		3571	Beverly Hills	Construct controlled midblock crossing on Bedford Dr
		3617	Santa Monica	Pedestrian improvements along Wilshire Bl and Santa Monica Bl
		3618	Santa Monica	Pedestrian improvements on bridges over I-10 including 4th St, Lincoln Blvd, 17th St, and 20th St.
		3620	Santa Monica	Implement Santa Monica Pedestrian Action Plan
	Safe Routes to School Program	1385	Santa Monica	Construct pedestrian improvements identified through the Safe Routes to School programs.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Active Transportation	Safe Routes to School Program	1386	Santa Monica	Develop self-supporting Safe Routes to School programs such as "walking school buses," walking audits, classroom instruction and promotional events. Educate parents about the benefit of walking children to school and emphasize the high levels of safety in Santa Monica.
		1462	Santa Monica	Work with School District to identify and improve good bicycle routes to each school and to provide information about these routes to school communities and neighbors of schools.
		1482	Santa Monica	Safe Routes to School (Samohi, Middle School bicycle training, Middle and Elementary encouragement), Mobile School Bike Training, Bike Friendly Business Recognition, Support Buy Local, Encourage Bike Local bike to business discounts, Car-Free Tourism support, TMA Formation Planning, Bike Pooling, Partner with SMC on programming
		1582	West Hollywood	Pursue public and private grant funding sources for Safe Routes to Schools programs and street improvements
		3535	LA City	Implement Los Angeles Safe Routes to School Initiative to provide targeted safety improvements at schools with high collision rates. Improvements may include new traffic signals, curb extensions, wider sidewalks, new crosswalks, traffic calming measures, etc.
		3572	Beverly Hills	Participate and implement recommendations of the SRTS program.
		3635	Culver City	Develop Safe Routes to School plans. Implement construction projects around various school sites in Culver City
	Sidewalk State of Good Repair Program	145	LA County	Sidewalk, Curb, Parkway Preservation; Repair and Reconstruction
		3573	Beverly Hills	Repair and construct sidewalk, curb, parkways, transit ameneties on major corridors.
		3634	Culver City	Repair and construct sidewalk, curb, parkways, transit amenities on major corridors.
Arterial	Capacity Enhancement Program	123	Culver City	Sepulveda Bl - Flyover from NB Sepulveda Bl to WB Centinela Av
		129	Culver City	Centinela Bl- Sepulveda Bl to La Cienega Bl – Improve by adding travel lane in peak direction

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Capacity Enhancement Program	134	Beverly Hills	Wilshire Bl- Regional street corridor capacity enhancements at appropriate intersections such as Wilshire/Santa Monica in Beverly Hills
		181	Multi Jurisdiction	HOV/transit bypass lanes at intersections/ramps
		446	LA City	Widen and restripe 111th St from Aviation Bl to La Cienega Bl to accommodate two through lanes in each direction
		449	LA City	Aviation Bl from Arbor Vitae St to Imperial Hwy: Widen and restripe to accommodate three through lanes in each direction
		450	LA City	Bundy Dr Widening - Wilshire Bl to Santa Monica Bl: Widen Bundy Dr to full secondary standards.
		451	LA City	Culver Bl Corridor: Improve traffic flow along Culver Bl between Centinela Av and I-405 Freeway including providing left-turn lanes at key signalized intersections (ex Inglewood Bl)
		455	LA City	Imperial Hwy between Sepulveda Bl and Pershing Dr: Widen to provide continuous three through lanes in each direction
		456	LA City	La Cienega Bl from Arbor Vitae St to 111 St: Widen and restripe to accommodate three through lanes in each direction
		457	LA City	La Tijera Bl between Airport Bl and La Cienega Bl: Widen and restripe to provide continuous three through lanes in each direction
		463	LA City	Sepulveda Bl Street Widening: Widen to major highway standard and increase number of through lanes from two to three lanes
		470	LA City	Beverly Glen Bl Widening (Beverly Glen Bl and Mulholland Dr): Widen south leg of Beverly Glen Bl to create a right turn only lane; ROW acquisition needed
		475	LA City	Laurel Canyon Bl & Mulholland Dr: Widen the west side of Laurel Canyon Bl south of Mulholland Dr to carry 2 SB lanes through the intersection
		506	Beverly Hills	Olympic/Beverly/Beverwil intersection improvements
		521	Culver City	Add a left-turn phase at Duquesne/Hughes and Washington Bl.
		525	Culver City	Overland/Washington Bl Intersection Improvements: Add dual left turns for eastbound and westbound traffic on Washington and add a right turn only lane for westbound to northbound traffic.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Capacity Enhancement Program	530	LA City	Improve Traffic Flow Along Centinela Av: Improve the Centinela Av corridor from Sepulveda Bl to La Cienega Bl (i.e. add a travel lane during peak periods) to relieve traffic congestion along Slauson Av.
		577	West Hollywood	Add a SB exclusive right turn lane and add a protective/permissive phase at Fairfax and Fountain
		579	West Hollywood	Provide a protected/permissive phasing at various locations to improve traffic flow
		585	West Hollywood	Provide protected/permissive phasing for NB and SB movements at the intersection of San Vicente and Beverly
		596	Santa Monica	Use curb lanes on Santa Monica Bl eastbound (5th St to Ocean) and Olympic Drive between (4th St to Ocean) for vehicle traffic
		603	Santa Monica	New streets and signals: Olympic Drive extension, Expo station site, potentially BBB property
		623	Santa Monica	Create a 9th street 1-way northbound connection between Olympic Bl and Colorado Av
		647	Santa Monica	Create new 5th St signalized intersection to facilitate temporary centralized bus facility on TOD site
		650	Santa Monica	Use curb lane for vehicle traffic on Olympic Drive between 4th and Ocean (additional east and westbound through-lanes)
		658	Santa Monica	Create new street through the transit oriented design site adjacent to Expo station
		659	Santa Monica	Build new street through the Big Blue Bus site connecting 5th to 6th Sts (bus and local only)
		660	Santa Monica	Pursue additional connections across the freeway between 4th St and Main St including potential coordination with the Expo Station and Sears sites
		668	Santa Monica	Improve access to Downtown Santa Monica via Lincoln (Including new parking locations)
		715	Santa Monica	Design and construct Nebraska/Olympic/Stewart intersection
		718	Santa Monica	Design and construct Pennsylvania Streetscape - two-way conversion

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Capacity Enhancement Program	724	Santa Monica	Design and construct new "A" St from Olympic to Nebraska
		725	Santa Monica	Design and construct Nebraska Extension from Stewart to 26th
		727	Santa Monica	Construct Olympic Crossing at "H" St (New Roads) with bus stops
		729	Santa Monica	Design and construct new road "E" Av
		845	LA City	Olympic Bl Traffic Operations Improvement at I-405: Implement traffic operational improvements such as managed lanes on Olympic Bl immediately adjacent to the I-405
		1049	LA City	Major Intersection Improvements: Funding for spot intersection improvements, such as turn-lane or safety improvements
		3160	LA City	Implement Vehicle Enhanced Network as defined in the City of LA Mobility Plan 2035.
		3566	Beverly Hills	Improve traffic flow and capacity at City intersections to improve traffic flow along major arterials (eg. Wilshire Bl, North Santa Monica Bl.)
	Complete Streets Program	138	County of Los Angeles	Lincoln Bl.; Jefferson Bl to Fiji Wy; Conduct a study for widening to increase capacity, allow for bike lanes, and potentially future light rail.
		425	LA City	Sepulveda Bl Tunnel at Mulholland Dr Phase I: Project includes structural rehabilitation and widening of the tunnel to add an additional northbound lane, improve sidewalk and bike path to promote multi-modal access to transit systems.
		526	Culver City	Washington Bl Median Re-Configuration: The proposed project is the redesign and rehabilitation of Washington Bl between National Bl and Fairfax Av in order to improve the roadway pavement, provide left-turn pockets, and increase roadway width in order to accommodate bike facilities.
		697	LA City	Develop a Sustainable Transportation Demonstration Program to support city partners in implementing innovative capital or operations improvements that apply guidance from the policy. Seek funding from SCAG, AQMD, State Strategic Growth Council, and federal/state grants.
		995	LA City	Westwood Bl Bicycle & Transit Corridor
		1286	LA County	Provide better access and connectivity to the various modes of travel to ensure ease of movement through the Marina on foot, bicycle, car, and boat.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Complete Streets Program	1336	Santa Monica	Colorado Av Multimodal Enhancements - Develop Colorado Av, the City's Expo light-rail corridor, as a complete street safe and comfortable for light-rail use, pedestrians, and vehicles and serves businesses and residents along it. Between 14th St and Lincoln Bl on the north side, add'l curbside parking may be provided in future if building entries are relocated from Colorado Av to north/south streets. If new development occurs on the north side of Colorado Av, sidewalks will be widened with sidewalks extensions into cross streets to reduce crossing distance. Where sidewalks are widened, existing parkways will be expanded to better infiltrate runoff from sidewalks and allow street trees to mature. If new development occurs on the south side of Colorado Av, sidewalks will be widened. Between 14th St and 11th St, existing parkways, street trees, irrigation and street lights will be relocated south to accommodate a two-way bicycle path along the curb. The new parkway will separate the bike path from the pedestrian walkway.
		1337	Santa Monica	16th St Shared Street – improve 16th Street to facilitate pedestrian use, comfort and east to west mid-block crossing, increased curbside parking for Memorial Park users, maintenance of vehicular access to and parking for adjoining properties and enhanced drop-off for the 17th Street/SMC Expo Station.
		1343	Santa Monica	Colorado Av Multimodal Improvements: Between 20th St and 17th St, sidewalks will be widened in conjunction with new development, including continuous landscaped parkways that infiltrate runoff from sidewalks and planted with street trees. Street lights to match those installed in conjunction with the Expo Line will be added to unify the district.
		1344	Santa Monica	Colorado Av Multimodal Improvements: Adjacent to the Metro station and Memorial Park, between 15th Ct and 17th St, the sidewalk on the north side of the street may be extended into the street to provide space for pedestrian activity or, if the sidewalk is not widened, the curbside parking lane may be designated for loading only or short-term parking with enhanced paving in the curbside parking lane.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Complete Streets Program	1346	Santa Monica	14th St First-Last Mile Improvements: To improve park access, mid-block roadway striping and signage will be altered to provide drop-off space along the curb. The southbound lane will be modified to include a 7' parking lane, 5' bike lane with 2' buffer from the adjacent travel lane. Northbound, the bike lane buffer will be moved to the east side of the lane to buffer cyclists from vehicles and park users in the adjacent drop-off lane; the drop-off lane will be 9' wide to facilitate loading and unloading of park users and equipment along the sidewalk. One 12' travel lane will remain in each direction. The east sidewalk will include a 12' paved area including a 6' pervious paving zone with connected tree wells and tree grates to facilitate auto access to Memorial Park. To the north of the drop-off zone, parallel parking and a Big Blue Bus transit stop would be provided.
		1347	Santa Monica	Olympic Bl Memorial Park Access Improvements: Add drop-off space for park users on the park's south side between 14th - 16th Sts by converting the parking lane on the north side of Olympic into a short-term parking and drop-off lane. To accomodate drop-off, the existing sidewalk and tree lawn would be converted into an 8' sidewalk along the southern border of Memorial Park. On the south side of Olympic Bl a break in the median to accommodate a left turn pocket for a new northbound left turn at 16th St will be provided.
		1348	Santa Monica	16th Street Memorial Park and Light Rail Access Improvements: Alter existing striping and signage to make 16th St one-way northbound and provide angle parking on the west side and designated drop-off, transit zones and curbside parking on the east side. Corner bulb-outs and a raised mid-block "speed table" crosswalk would improve pedestrian conditions and help calm traffic on the street. A new median break at 16th Street and Olympic Boulevard would allow westbound traffic to enter 16th St, removing turning movements from the more congested 17th St and Olympic Bl intersection. When this improvement is undertaken, one Coral tree will be relocated to another location in the existing Olympic Bl median.
		1372	Santa Monica	Complete Streets enhancements along Colorado Av (South Side) from 17th St to 20th St

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Complete Streets Program	3353	Culver City	Improve aesthetic, safety and traffic conditions in the area between La Cienega Bl and Fairfax Av and between La Cienega and Ballona Creek.
		3363	Culver City	Develop location and directional signage for areas of the City with skewed and discontinuous streets, such as the Jefferson-Sepulveda Bl intersections.
		3364	Culver City	Provide signs at major City gateways to indicate arrival into Culver City and to indicate the direction to heavily frequented destinations and points of interest, such as the Fox Hills Mall and the Civic Center.
		3614	West Hollywood	La Cienega Corridor Enhancement: Develop consensus between Electeds of affected jurisdictions on desire to take a comprehensive look at opportunities to improve the La Cienega Corridor. Once consensus is developed, and with approved WSCOG funding plan, engage consultant and/or local school design students to develop recommendations to improve physical appearance, traffic movement, transportation, and pedestrian orientation along La Cienega Blvd
	ITS Program	158	LA City	Corridor-wide – I-10- Santa Monica Smart Corridor System Phase II: Implement direction-based traffic signal coordination on arterials connecting to I-10, arterial reconfiguration to facilitate directional flow such as reversible lanes, restripe various arterials for turn pockets and additional lanes, install CCTV and other communications systems
		159	West Hollywood	ITS/Traveler Information Systems Operation and Maintenance in West Hollywood
		160	Santa Monica	Real time traffic and parking improvements: Direct drivers to public parking with the most availability, with first priority as soon as they enter the Downtown area, with Signage located at all entrances into the Downtown, including: Lincoln Bl freeway off ramp, 4th/5th St Freeway off-ramp.
		174	Culver City	Highway Local; Signal upgrade/improvements/modification in Culver City
		176	LA County	Traffic Signal Improvements; Operational Upgrades
		233	West Hollywood	Implement a Sub-Regional Traffic Management Center
		315	Culver City	Intelligent Transportation Systems (new system/ maintenance/ upgrade)

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	ITS Program	485	LA City	CMP Monitoring Station #49 (Lincoln Bl and Marina Expressway (SR90)): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		487	LA City	CMP Monitoring Station #55 (Pacific Coast Highway and Chautauqua Bl): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		488	LA City	CMP Monitoring Station #57 (Pacific Coast Hwy and Sunset Bl): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		489	LA City	CMP Monitoring Station #59 (Santa Monica Bl and Bundy Dr): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		490	LA City	CMP Monitoring Station #62 (Santa Monica Bl and Westwood Bl): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		491	Santa Monica	CMP Monitoring Station #63 (Santa Monica Bl and Lincoln Bl): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		492	LA City	CMP Monitoring Station #70 (Venice Bl and Centinela Av): Install a CCTV camera and necessary infrastructure (including fiber optic & interconnect) to improve DOT's ability to monitor and respond to real-time traffic conditions
		495	LA City	Traffic Signal System Upgrades: Implement traffic signal system upgrades throughout subregion including signal controller upgrades, left-turn phasing at key intersections, sensor loops, additional CCTV cameras to improve LADOT's ability to monitor and respond

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	ITS Program	546	Santa Monica	Santa Monica Wayfinding: Create a comprehensive multimodal wayfinding system that includes real-time trip planning, parking reservations and dynamic signage.
		587	West Hollywood	Improve timing at up to 50 traffic signals in West Hollywood.
		786	LA City	Priorities for Capacity Enhancements: Provide information to motorists about alternative routes and modes of travel using changeable message signs, highway advisory radio, or other appropriate traffic management techniques.
		1048	LA City	ITS Signal Upgrades: Install signal upgrades as part of the next evolution of ATSAC; Install right-turn detector loops for traffic volume data and monitoring; 211 signalized intersections in CTCSP Area
		1434	Santa Monica	Implement an Advanced Traffic Management System to improve signals.
		1435	Santa Monica	Develop a Traffic Management Center to optimize motor vehicle flow throughout the City.
		3215	Culver City	Relieve artery congestion due to freeway ramp metering through methods such as signage and diverters which direct traffic to alternative routes.
		3365	Culver City	Continue to support the Smart Corridor Demonstration Project along Washington Bl and Washington Place.
	State of Good Repair Program	3109	LA City	Palisades Bluff stabilization project
		3577	Beverly Hills	Maintain and annually update the CIP Action Plan to effectuate roadway improvements.
		3578	Beverly Hills	Develop traffic management techniques to identify, review and implement appropriate neighborhood traffic management.
	Traffic Calming Program	1051	LA City	Neighborhood Protection Program: The objective of this Program shall be to discourage through-traffic from using local streets and to encourage, instead, use of the arterial street system. The Program shall establish measures to make the primary arterial routes more attractive and local routes less attractive for through-traffic, and establish measures designed to facilitate vehicular and pedestrian egress from local streets in the adjacent neighborhoods onto the primary arterial street and highways system.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Arterial	Traffic Calming Program	3534	LA City	Implement roadway enhancements that enhance mobility and safety for all and strive toward the City of Los Angeles "Vision Zero" goal of zero traffic fatalities by 2025.
		3611	LA City	Identify and implement pedestrian safety and bicycle countermeasures at the 10 corridors with the highest severe injuries and collisions.
Goods Movement	Goods Movement Program	779	LA City	On-site Loading: Collaborate with business owners/operators in industrial districts to identify deficiencies in access, loading and parking on streets
TDM	Technology Program	3570	Beverly Hills	Improve citywide operations of existing and future signal controls, real-time parking availability, and real-time transit information.
		3591	Culver City	Region-wide (southern California) real-time transit arrival information web portal and smart phone app.
		3592	COG	Region-wide smart parking management technology at the rail station parking lots, including a smart phone app and web portal allowing people to see and reserve available parking spaces before arriving at the parking lot.
	Parking Program	330	Beverly Hills	Development of a Parking Master Plan and funding tools for implementation incl. parking assessment districts & congestion pricing
		483	LA City	Wilshire Park-and-Ride Facilities: Provide parking for transit users at or near existing and planned metro rail station along Wilshire Bl.
		496	LA City	Westwood ExpressPark (Westwood Bl between Pico Bl and UCLA): Implement an on-street intelligent parking program that includes vehicle sensors, dynamic demand-based pricing and a real-time parking guidance system to reduce VMT, congestion and to improve flow for cars/buses.
		580	West Hollywood	West Hollywood parking shuttles: implement parking shuttles along Santa Monica Bl and Sunset Bl
		581	West Hollywood	West Hollywood parking utilization improvements: TDM - develop an online system for real-time parking information including GIS database and mapping. Improve parking and wayfinding and guidance throughout commercial areas
		663	Santa Monica	Install parking meters on 5th, 6th and 7th Sts to ensure turnover and availability near businesses

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
TDM	Parking Program	664	Santa Monica	Enable the phased development of up to 800 public parking spaces in peripheral locations to address future demand without incentivizing additional vehicle trips in Downtown
		784	LA City	Performance-Based Parking Supply: Where parking needs assessments indicate excess potential, implement a parking program similar to the Eagle Rock Community Pilot Project that encourages use of "pooled" parking resources to satisfy parking requirements for change of use projects.
		1053	LA City	Strategic Parking Program: Implement a Westside parking program and update parking requirements to reflect mixed-use developments, shared parking opportunities, and parking needs at developments adjacent to major transit stations.
		1055	LA City	Parking Utilization Improvements & Reduced Congestion: Develop an on-line system for real-time parking information, including GIS database and mapping. Improve parking and wayfinding and guidance throughout commercial areas.
		1290	LA County	Locate year-round dinghy docks near restaurants to promote travel within the Marina by boat
		1303	LA County	Provide convenient parking for boaters/trailers, focusing on short-term parking needs for loading/unloading supplies
		1350	Santa Monica	Establish a 17th Street/SMC Expo gateway and Memorial Park Station Plaza: The 17th Street/SMC light rail station includes a planned Park & Ride lot on the south side of Colorado Avenue between 15th Court and 17th Street. A plaza area is proposed that is intended to serve several functions such as a major crossroads of pedestrian and bicycle activity, as well as facilitates the mobility experience for community members and transit patrons, while creating a sense of identity and place for the Memorial Park neighborhood.
		1567	West Hollywood	Develop requirements for alternative fuel vehicle dedicated parking spaces
		3236	Culver City	Reduce pressure on on-street parking through provision of private and public off-street parking facilities.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
TDM	Parking Program	3554	LA City	Implement Park Once / Universal Valet Parking Programs throughout major retail centers in the City, as appropriate, including the use of City owned parking facilities
		3557	LA City	Expand the park & ride network in Los Angeles County to meet the current and latent demand of discretionary transit riders to use regional public transportation services.
	Shared Ride Program	508	Beverly Hills	Beverly Hills Rideshare Program
		772	LA City	Alternatives to Automobile: Coordinate with other agencies that conduct demonstration programs for Local Use Vehicles and identify areas where these vehicles can be used to reduce greenhouse gas emissions, air pollution and gasoline consumption.
		1054	LA City	Rideshare Toolkit: The Toolkit would develop an online Transportation Demand Management (TDM) Toolkit with information for transit users, cyclists, and pedestrians as well as ridesharing. It would include incentive programs for employers, schools, and residents. Additionally, it would be specific to City businesses, employees, and visitors and would integrate traveler information. It would also include carpooling/vanpooling and alternative work schedules.
		1429	Santa Monica	Work with large employers to expand and enhance shared ride access, such as through regional vanpool programs to supplement transit service.
		1454	Santa Monica	Evaluate the possible implementation of a Carsharing Program.
		1596	West Hollywood	Develop relationships with car share companies to expand carsharing to West Hollywood
		1598	West Hollywood	Identify locations for community ride share stations and develop appropriate infrastructure
		2998	LA County	LA County rideshare services; provide commute info, employer assistance and incentive programs through core & employer rideshare services & MTA incentive programs

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
TDM	TMA Program	1056	LA City	Transportation Demand Management (TDM) Program: The program would provide start-up costs for Transportation Management Organizations/ Associations (TMOs/TMAs). It would also provide guidance and implementation of a TDM program.
		1284	LA County	Mobility enhancements for Boaters: Provide high-quality dedicated facilities (such as parking), avoid conflicts with other modes at boat launch areas and locations where privately-owned vehicles haul trailers, provide opportunities for using small watercraft for personal mobility within the Marina by providing dinghy docks, waterside wayfinding, and other improvements.
		1366	Santa Monica	Memorial Park District Parking Facility. A multi-level subterranean parking facility will be constructed in Memorial Park.
		1450	Santa Monica	Create Transportation Management Organizations (TMOs), Business Improvement Districts, or other organizations to help manage vehicle trips at a local level.
		3201	Culver City	Reduce automobile travel by establishing a context for TDM programs, capitalizing on the CityBus transit system and the Ballona Creek Bike Path, and studying appropriate limits on the number of parking spaces for specific uses and areas.
		3579	Beverly Hills	Develop TDM to reduce single-occupant motor vehicle travel in the City by improving effeciency of existing transportation networks.
		3580	West Hollywood	Implement update of Transportation Demand Management program.
		3616	Santa Monica	Implement TDM programs as part of the neighborhood plans for Downtown, Memorial Park, and Bergamot Station.
Transit	Crenshaw Line extension to West Hollywood/Hollywood	22	Multi Jurisdiction	Crenshaw Bl Corridor Extension (beyond segment funded by Measure R) all the way to West Hollywood/Hollywood
	Sepulveda BRT/LRT	282	LA City	I-405/Sepulveda Pass - Alternative multimodal linkage from the Westside to the San Fernando Valley and LAX, taking pressure off of the I-405
		850	Multi Jurisdiction	Sepulveda BRT: Center running BRT on Sepulveda Bl from Wilshire to LAX.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	Sepulveda BRT/LRT	3547	Multi Jurisdiction	Sepulveda LRT: Potential future upgrade to rail transit in the long term from BRT from Wilshire to LAX.
	Purple Line extension to Downtown Santa Monica	119	Multi Jurisdiction	Metro Purple Line Extension Westwood/VA to City of Santa Monica
		3633	Multi Jurisdiction	Metro Purple Line Extension to Westwood/VA
	Purple Line West Hollywood Extension	23	Multi Jurisdiction	Metro Purple Line Extension West Hollywood Extension
	Lincoln Bl BRT/LRT	458	LA City	Partnering with Caltrans and LA County, improve Lincoln Bl between Jefferson Bl and Fiji Way, incl. removing existing bottleneck by replacing existing bridge to provide a wider bridge with an additional SB lane, transit lanes, and on-street bike lanes.
		3548	Multi Jurisdiction	Lincoln Bl BRT: Center running BRT from Santa Monica Blvd to LAX.
		3549	Multi Jurisdiction	Lincoln Bl LRT: Potential future upgrade to rail transit in the long term from BRT from Santa Monica to LAX.
		3619	Santa Monica	Implement additional transit facilities along Lincoln Bl for a Transit Enhanced Network.
	BRT Program	292	Multi Jurisdiction	Implement Rapid Bus Transit Improvements along major arterials (Lincoln Bl, Sepulveda Bl, Pico Bl, and Washington Bl).
		655	Santa Monica	Find ways to prioritize rapid buses (queue jumpers, stop relocation, curb extension)
		847	LA City	Olympic Rapid Improvements: Extension of the Metro Rapid 728 from current terminus in Century City to the Metro Expo Line station at Westwood Bl
		848	LA City	Pico Rapid Improvements: General Rapid enhancements (i.e. increased frequency, stop improvements, and construction) on Big Blue Bus Rapid 7, construction of a new stop in Century City.
		849	Multi Jurisdiction	Santa Monica Bus Rapid Transit: Curb-running bus-only lanes on Santa Monica Bl from the border of the City of Santa Monica to the border of the City of Beverly Hills

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	BRT Program	853	LA City	Venice Rapid Upgrades: Rapid enhancements & Venice Beach branding of existing Rapid Line. Rebrand existing Metro Rapid 733 service to serve Venice Beach area, increased service frequency, implement stop improvements.
		3161	LA City	Implement Transit Enhanced Network as defined in the City of LA Mobility Plan 2035.
	Bus/Shuttle Program	294	Multi Jurisdiction	I-405- Express Bus Improvements (e.g., peak period shoulder lane) on I-405
		297	LA City	Implement cross mountain bus service along Coldwater Canyon Dr, Beverly Glen Bl, Benedict Canyon Dr.
		300	Multi Jurisdiction	Robertson Bl – Increase headways to Airport bus service between Beverly Hills, West Hollywood and LAX.
		301	LA City	Sepulveda Pass – Increase express bus service over Sepulveda Pass, with collector/feeder service throughout West LA and the San Fernando Valley.
		306	COG	Increase bus capital and operating funding
		575	West Hollywood	Expand local transit service (CityLine) to include up to 4 new buses
		657	Santa Monica	Establish a circulator that provides trips at a competitive price per passenger and coordinated with Big Blue Bus service planning
		793	LA City	Priority Transit Routes: Coordinate CityRide transit services and Los Angeles County ACCESS transit services with social service centers
		846	LA City	Century City Local Circulator: Circulator service to serve Century City and the planned Century City Metro Purple Line Extension Station.
		851	LA City	Sawtelle Circulator: Circulator service on Sawtelle Bl from Wilshire Bl to the Metro Expo Line Sepulveda Station.
		852	LA City	Bundy Circulator: Circulator service on Bundy Dr from Wilshire Bl to the Santa Monica Airport.
		855	LA City	Marina-Playa-Fox Hills Circulator/Fox Hills to Venice Circulator: Circulator bus/shuttle would connect activity centers to major transit stations.
		856	LA City	Loyola Circulator: Provide circulator service to connect to/from Loyola Marymount University and future BRT/rail stations on Lincoln Bl.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	Bus/Shuttle Program	857	LA City	Palms Circulator: Circulator service to connect Palms neighborhood activity centers to Metro Expo Line Palms Station.
		1289	LA County	Improve frequency and service duration of water transit
		1291	LA County	Link parking lots to destinations with shuttles that run around the entire Marina
		1310	LA County	To provide increased Marina Beach Shuttle service that would support a Park Once Marina del Rey, it is recommended a service standard of 15-minute headways or better during peak days to be implemented in the long term as the park once system is implemented. Also it is recommended to run some of the Beach Shuttle routes in the Marina only, rather than routing all shuttles to Playa Vista and Playa del Rey, unless ridership demand in those areas is sufficient to warrant the 15-min service frequency
		1311	LA County	Implement a scheduled WaterBus service with defined routing and stop location co-located with Mobility Hubs.
		1357	Santa Monica	Big Blue Bus Crosstown Ride Re-Route: Re-route the Crosstown ride to provide bi-directional service on 14th and 20th Streets, with detours from both streets to serve 17th Street/SMC Station.
		1420	Santa Monica	BBB will regularly update the Service Improvement Plan, with an emphasis on service efficiency and improved regional connections.
		2992	Culver City	Culver City funding for articulated bus to expand the passenger capacity of the current Culver City Bus Line
		2993	Culver City	Culver City Bus Operation Assistance
		3220	Culver City	Expand Culver CityBus routes and service levels to address new potential markets and levels of demand (Capital Funding – Buses)
		3230	Culver City	Expand City Dial-A-Ride services and enhance coordination with adjacent jurisdictions.
		3522	West Hollywood	PickUp Line Ridership Feasibility and Needs Assessment Study - Potential expansion of the weekend transportation service, the PickUp Line, for additional days, hours, or an extended route to the Eastside of the City

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	Bus/Shuttle Program	3555	LA City	Purchase new DASH shuttle buses and expand LADOT DASH operations to enhance intra-community "first mile/last mile" transit connections to regional transit centers.
		3560	Multi Jurisdiction	Improved year-round regional transit connection between Malibu and Santa Monica along PCH, including improved headways for existing bus service
		3561	Multi Jurisdiction	Malibu: seasonal shuttle program to connect Malibu and Westside
		3588	Culver City	Culver City - Citywide Bus Stop Improvement Project. The improvements include some or all of the following: 1) Replace/add/lengthen bus pads, 2) Improve sidewalk conditions or extend the sidewalk, 3) Next bus arrival information system, 4) Enhanced lighting, and 5) Bus stop furniture
		3589	Culver City	Culver CityBus: Implement Culver CityBus Line 1 Rapid service - operation funding and new buses.
	Bus/Rail Integration Program	314	Culver City	Expo Line- Enhance transit technology for interface with Expo Line
		528	Culver City	Culver CityBus: Implement Culver CityBus System-wide Service Change/Expansion to provide new service and enhance subregional connectivity to/from Expo Light Rail and other rail lines (Operations Funding)
		536	Culver City	Culver CityBus: Sepulveda Bus Line Expansion Project - Purchase of 6 buses to enhance the capacity of Line 6/Rapid 6 on Sepulveda from UCLA to LAX and Green Line Aviation Station.
		1304	LA County	Better integrate the Marina into the regional transit network through improved span of service and service frequency on transit lines
		3583	Culver City	Culver CityBus: procure electric buses and construct associated charging infrastructure for service expansion/exhancements to Expo Light Rail and future subway extension.
		3585	Culver City	Culver CityBus Maintenance Facility/Yard Expansion: Fund property acquisition and facility expansion to accommodate additional buses for service expansion to Exposition Light Rail stations and future subway extension.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	Bus/Rail Integration Program	3586	Culver City	Improve Bus Stops in the Area (Culver City & City & County LA) for feeder service to Expo Light Rail: The improvements include some or all of the following: 1) Replace/add/lengthen bus pads, 2) Improve sidewalk conditions or extend the sidewalk, 3) Next bus arrival information system, 4) Enhanced lighting, and 5) Bus stop furniture
	Transit Technology Program	1421	Santa Monica	Update transit technology systems to maximize use with communication technology.
		1423	Santa Monica	Expand the existing transit stop improvement program, including real-time bus arrival displays and schedule information.
		3310	Culver City	Implement the Smart Bus Upgrade Project
		3590	Culver City	Integrated real-time next bus/train arrival information signs at and around all rail stations.
	Rail Program	316	Multi Jurisdiction	Green Line Extension on Florence Av/ BNSF Railway - Build rail to connect Harbor and Crenshaw Corridors to LAX utilizing existing BNSF rail line
		3550	LA City	Venice Long Range Streetcar: The enhancement to the Metro Rapid Line 733 on Venice Bl could be transitioned to streetcar to provide a fixed branded connection from the Metro Exposition Line station in Culver City to Venice Beach, with a loop on Abbot Kinney Bl.
	State of Good Repair Program	312	Culver City	Preventive maintenance/rehabilitation of transit (bus)
		320	COG	Preventive Maintenance/Rehabilitation of Transit (Bus & Rail)
		3556	LA City	Program to fund conversion of existing transit fleet in Los Angeles County to meet goal of 25% zero-emission or near zero-emission buses by 2025
		3558	LA City	Program to purchase new transit operations / maintenance facilities, and upgrade existing facilities, with the capacity to accommodate new zero emission and near zero emission buses.
		3559	LA City	Program to maintain a state of good repair for public transit programs including the replacement and refurbishment of transit vehicles, facilities, and other transit infrastructure.
		3584	Culver City	Culver CityBus: Procure buses to replace existing buses that will reach the end of their useful life cycle.

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Transit	State of Good Repair Program	3636	Culver City	Study materials and methods to address overweight bus issues
		3637	Culver City	Install enhanced pavement in lanes heavily used by transit buses to address overweight bus issues
	Bus Station/Stop Improvement Program	310	Culver City	Bus stop improvements (sidewalk, furniture, and dynamic-message signs)
		538	Culver City	Westside Transit Center: Conduct a feasibility study, prepare environmental documents, design, and construct a multimodal transit center to replace the existing Westfield Culver City Transit Center (located on private property). This transit center will serve as a major transit hub on the Westside for riders transferring bus lines.
		639	Santa Monica	Create bus pullouts on 4th St near Expo station
		702	Santa Monica	Santa Monica Transit Center in Downtown at Expo Station
		723	Santa Monica	Design and construct Bergamot Art Center Station Plaza
Freeway	I-10 Robertson Interchange Program	3022	Multi Jurisdiction	I-10 Fwy - Robertson/National Ramps: Final design, engineering and construction of on/ramp system improvements for the I-10 freeway and Robertson/National Bl ramps to improve access and circulation
	I-10 Carpool Lanes (Lincoln Bl - I-5)	101	Multi Jurisdiction	I-10 Carpool Lanes: Lincoln Bl to I-5
	ITS Program	203	Multi Jurisdiction	I-405- I-405 Add connector metering at I-105 and SR-90 interchanges
		221	Multi Jurisdiction	I-405- Throughout I-405 corridor – Expand operations of Freeway Service Patrol
		224	Multi Jurisdiction	I-10- Install CCTV and other communications systems
		225	Multi Jurisdiction	I-10- Upgrade Surveillance System
		3597	LA City	PCH: Install CCTV & Communications System from Temescal Canyon Road to Malibu Rd (Malibu Seafood) (Post Mile 38.11-49.72)
		3631	Santa Monica	Implement SCAG congestion pricing pilot program
	Main Line Program	111	Multi Jurisdiction	SR-90- Extension from Lincoln Bl to Admiralty Way
		112	Multi Jurisdiction	I-10- Add WB auxiliary lane from Cloverfield to Centinela Av
		179	Multi Jurisdiction	I-405- Add auxiliary lanes from SR-90 to I-105

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Freeway	Main Line Program	182	Multi Jurisdiction	I-10- Add #5 lane to EB through LA Brea Av interchange
		185	Multi Jurisdiction	I-10- Corridor-wide – Redesign on-ramp shoulders to accommodate Express Bus service
		212	Multi Jurisdiction	Create a connection from the westbound SR-90 to SB I-405
		215	Multi Jurisdiction	I-10- Add WB lane to I-10 from Harcourt Av to Overland Av
		288	Multi Jurisdiction	I-10 - I-10 Busway
		3372	Multi Jurisdiction	Work with Caltrans to continue soundwalls along I-405.
		3632	Santa Monica	I-10 soundwalls
	Ramp Program	122	LA City	Lincoln Bl- Flyover from NB Lincoln Bl to WB Washington Bl
		124	Culver City	Slauson Av- Flyover from WB Slauson Av to WB SR-90
		184	Multi Jurisdiction	I-10- Centinela Av ramps improvement
		187	Multi Jurisdiction	I-10- Improve I-10 and I-405 interchange
		189	Santa Monica	I-10- Lincoln Bl off-ramp and bridge improvements to provide vehicle, bike and pedestrian accommodations.
		196	Santa Monica	I-10- Realign and widen WB off-ramp at Cloverfield Bl
		198	Multi Jurisdiction	I-10- Realign and widen WB off-ramp to National
		199	Multi Jurisdiction	I-10- Widen EB Barrington on-ramp
		201	Multi Jurisdiction	I-405- Add additional lane at National on-ramp
		205	Multi Jurisdiction	I-405- Modify NB and SB collector/distributor from SR-90 off-ramp to SR-90 on-ramp
		206	Multi Jurisdiction	I-405- NB on-ramp from Jefferson Bl – Widen and extend 2 meter lanes and 1 HOV metered lane and lengthen merging length
		213	Santa Monica	I-10 interchange improvements of sub-regional importance including Cloverfield Boulevard, Lincoln Boulevard and 4th/5th Street ramps
		218	Multi Jurisdiction	I-405- Construct new NB collector-distributor road at Jefferson Bl ramps
		227	Multi Jurisdiction	I-405- SB off-ramp to WB Jefferson Bl – add acceleration lane to WB Jefferson Bl for free right-turn move

Program	Subprogram	MM Project ID	Jurisdiction[1]	Description
Freeway	Ramp Program	228	Multi Jurisdiction	Reconfigure EB SR-90 ramp from NB Sepulveda Bl to wrap under and around SR-90; raise over Sepulveda Bl to create new ramp to NB I-405
		471	Multi Jurisdiction	Bundy Drive / I-10 Ramp Improvement: Reduce congestion on Bundy by reconfiguring the I-10 WB ramps (consolidate to one ramp location accommodating both the on and off ramps with new signal)
		608	Santa Monica	Olympic Crossover – replace existing I-10 westbound off -ramp at 4th St to consolidate freeway entrance and exit to one signalized intersection at Olympic Drive
		620	Santa Monica	Streamline and improve operations of motor vehicles at the Lincoln Bl interchange with the Santa Monica Freeway through a major capital investment in a different design

[1] "Jurisdiction" may refer to the lead project sponsor, the jurisdiction where the project exists, or the agency that proposed the addition of the project. Projects without specified jurisdictions were sourced from other planning documents (e.g. Metro Long Range Transportation Plan and others) where no lead or proposing agency was listed."

SUBREGIONAL MOBILITY MATRIX
WESTSIDE CITIES SUBREGION

Project No. PS-4010-3041-U-01

Baseline Conditions

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Metro

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March 2015

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Subregional Mobility Matrix
Westside Cities
PS-4010-3041-U-01

Prepared for:

Los Angeles County
Metropolitan Transportation Authority

Prepared by:
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In Association With:
Iteris, Inc.

Quality Review Tracking

Version	Date	Reviewer	Reviewer Signature
Internal Review Draft	11/20/14	Rachel Neumann	
Draft	11/24/14	Sarah Brandenberg	

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List of Terms and Acronyms

Acronyms	Definitions
Caltrans	California Department of Transportations
CMP	Congestion Management Plan
COG	Council of Governments
CSTAN	Countywide Strategic Truck Arterial Network
EJ	Environmental Justice
ITS	Intelligent Transportation Systems
LRTP	Long Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
SB	Senate Bill
WC	Westside Cities

1.0 INTRODUCTION

1.1 Study Background

The Los Angeles County Metropolitan Transportation Authority (Metro) initiated the development of seven subregional Mobility Matrices to provide consistent countywide corridor performance criteria to be used to identify and evaluate transportation improvements to address subregional needs. These matrices will provide a high-level performance evaluation framework to identify short-, mid- and long-term projects through a subregional collaborative process. It is envisioned that these matrices will assist the subregions in identifying projects for future transportation funding as well as future updates to the Metro Long Range Transportation Plan (LRTP).

In February 2014, the Metro Board approved the holistic countywide approach for preparing Mobility Matrices for the San Gabriel Valley Council of Governments (SGVCOG), Central Los Angeles, Westside Cities COG, San Fernando Valley COG (SFVCOG), Las Virgenes/Malibu COG, North County Transportation Coalition, and South Bay Cities COG. For the purposes of the Mobility Matrix work effort, Westside Cities COG subregional boundaries were revised to reflect a simplified border with the Central Los Angeles subregion, in which the border roughly follows La Brea Avenue from north to south. The Westside Cities boundary with the South Bay Cities COG was also revised to reflect a proposed change to the Metro Subregional Planning Area Boundary for the South Bay Cities to align with the South Bay Cities Council of Government Boundaries. Additionally, cities with membership in two COGs were given the opportunity by the Board to select one COG in which to participate. Specifically, the Arroyo Verdugo Cities' local jurisdictions are included in both the SGVCOG and SFVCOG and that subregion decided to have the cities of La Cañada Flintridge, Pasadena and South Pasadena included in the SGVCOG, while Burbank and Glendale are included in the SFVCOG. The City of Santa Clarita opted to be included in the San Fernando Valley COG instead of North County. The Gateway Cities COG is developing its own Strategic Transportation Plan which will serve as their Mobility Matrix. The subregional boundaries as defined for the Mobility Matrices, with the exception of the change reflecting the new South Bay Mobility Matrix subregion, will be used in the analysis of existing conditions, as of the end of 2014. The change to the South Bay Mobility Matrix subregion occurred following the analysis included in this report, and will only be reflected in future reports.

The Westside Cities Council of Governments (COG), develops and implements subregional policies and plans that are unique to the Westside Cities (WC) subregion, and voluntarily and cooperatively resolves differences among the participating agencies. An overview of the Metro Mobility Matrix subregional boundaries including all the changes described in the preceding paragraph is shown in Figure 1-1, while a detailed view of the Westside Cities Mobility Matrix subregion not including the changed boundary with the South Bay Mobility Matrix subregion is presented in Figure 1-2. The long-term goal for the COG is to build consensus on a vision for a future transportation system that embraces efficiency and innovation for continuous improvement of the quality of life in the subregion. To accomplish this goal, a mobility matrix will be developed for the WC subregion as part of this project that identifies and applies screening criteria to

corridors in the subregion to develop a framework for potential transportation improvements.

1.2 Report Purpose and Structure

This document establishes baseline conditions in the Westside Cities Mobility Matrix subregion. It includes a list of projects recently completed, under construction, or funded, and an overview of the study area's demographics, as well as develops a high-level inventory of the transportation facilities being evaluated, including freeways, arterials, transit, bike/pedestrian, and goods movement.

Section 2.0 describes the existing projects and plans in the Mobility Matrix subregions as of the end of 2014 and their relationship to the Mobility Matrix goals. The demographics of the study area are covered in Section 3.0. Section 4.0 contains an overview of existing travel patterns as of the end of 2014. Section 5.0 analyzes the freeways and arterials, Section 6.0 provides an overview of bicycle and pedestrian facilities, and Section 7.0 describes transit service in the area. Finally, Section 8.0 provides a summary and a discussion of next steps.

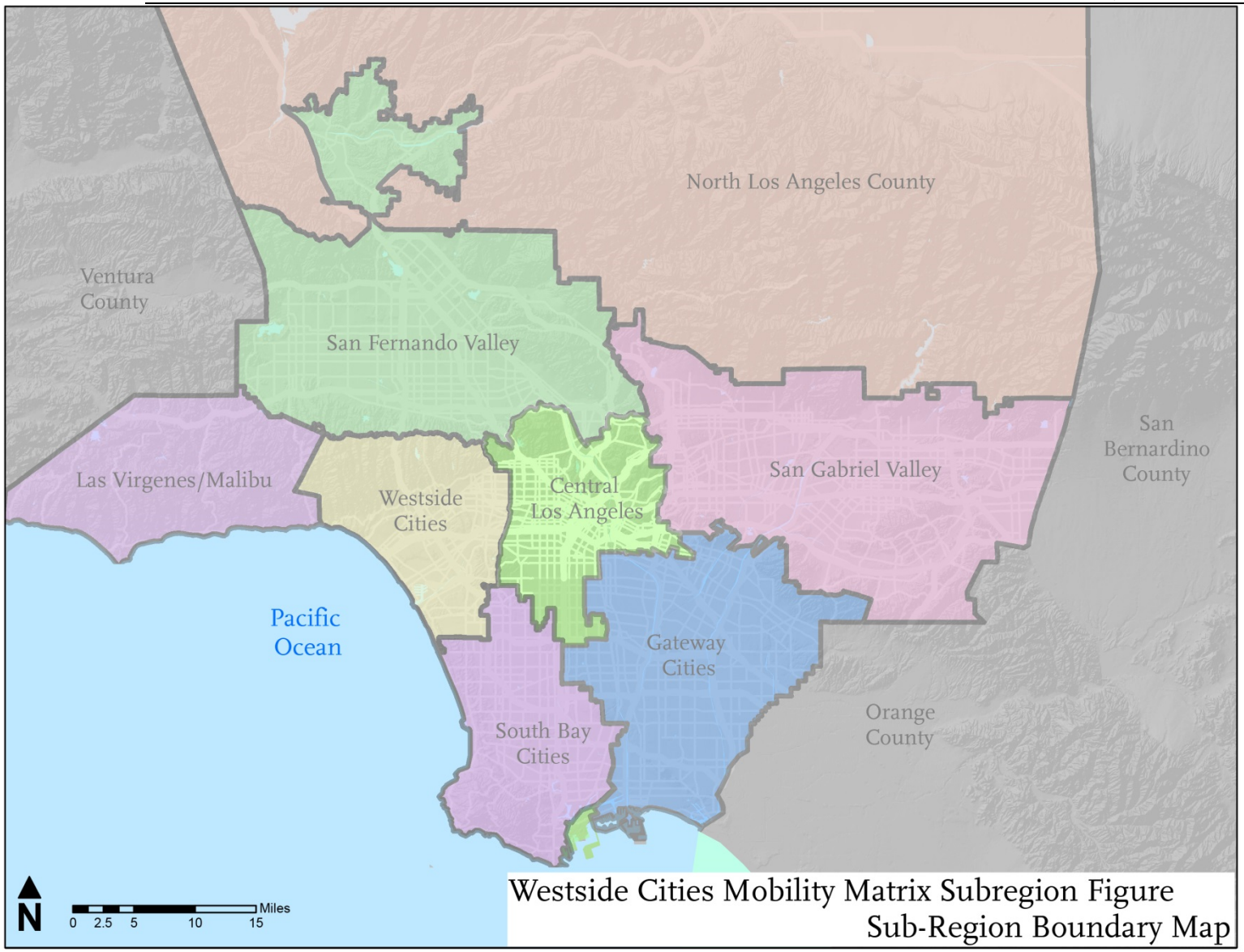

Figure 1-1: Sub-Region Boundary Map

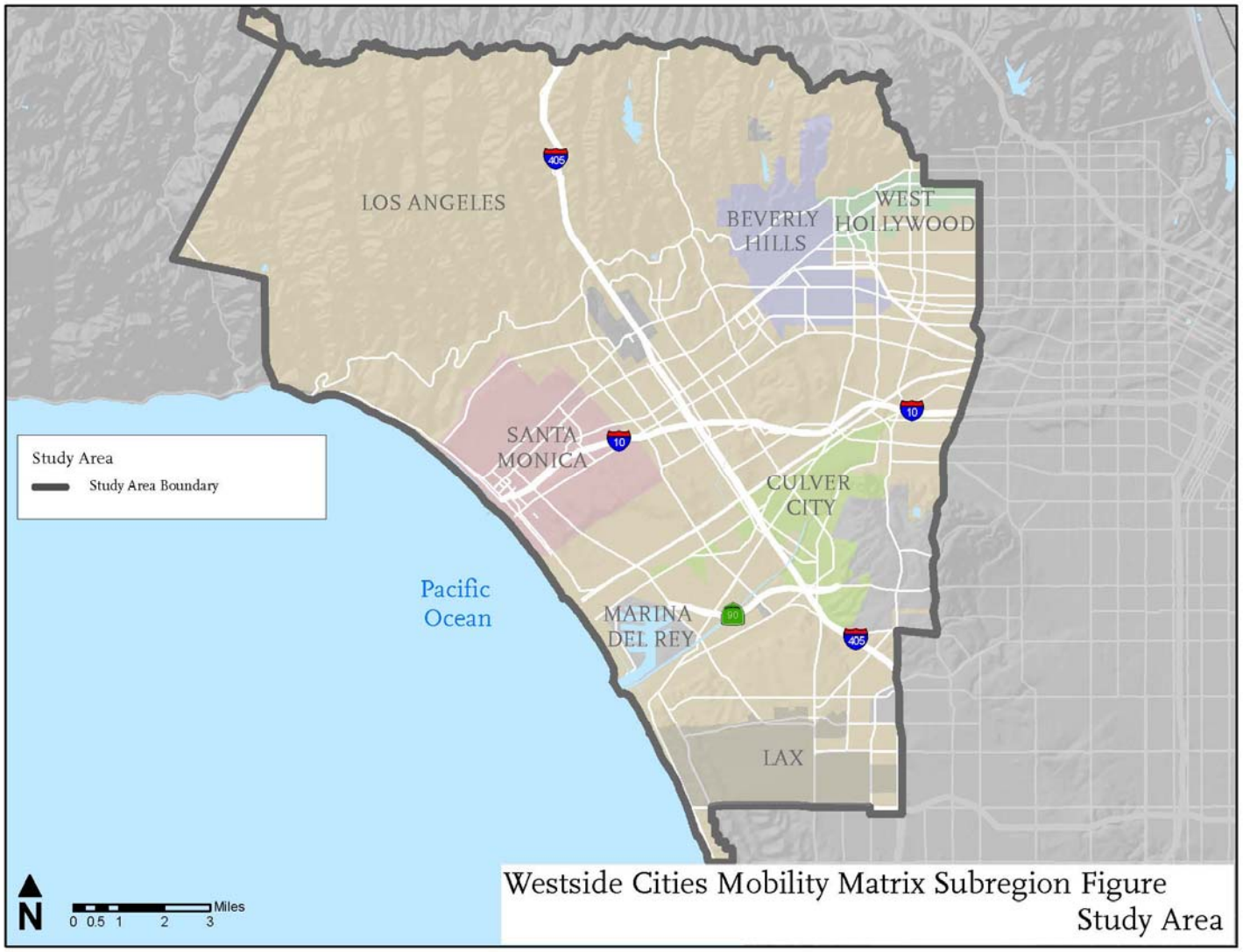

Figure 1-2: Study Area

2.0 EXISTING PROJECTS AND STUDIES

At the onset of the Mobility Matrix, a literature review was conducted which included a variety of sources such as the cities' General Plans, Metro's Call for Projects, and other regional planning documents. The result of the literature review was a list of projects and programs planned by each jurisdiction in the COG.

2.1 Completed or Fully Funded Projects

After meeting with representatives from each jurisdiction, 45 of the projects were identified as completed or fully funded. These projects include arterial capacity enhancements, bridge improvements, and active transportation improvements such as pedestrian amenities and bicycle facilities. These 45 projects are listed in Table 2-1. List of Completed or Funded Projects.

Table 2-1. List of Completed or Funded Projects

City/Corridor	Project	Status	Ref. ID
City of Culver City	Upgrade 11 existing traffic signals to ATSAC standards in the Fox Hills area of Culver City (Jefferson Blvd, Slauson Ave, Centinela Ave, Bristol Pkwy, and Sepulveda Blvd).	Complete	172
	Develop a Class I bike path within the Exposition right-of-way in Culver City.	Complete	591
	Construct a Culver City Aerial Station for Exposition Light Rail Station.	Complete	2991
	Complete the Fox Hills area traffic signal synchronization effort and city-wide auto traffic signal control and monitoring project, including incorporating 11 signalized intersections into an adaptive traffic control system.	Complete	3080
	Install pedestrian improvements for intersections with bus stops, including safety and aesthetic-related pedestrian improvements at intersections along major arterials with high transit ridership and pedestrian activities.	Complete	3111
	Implement Culver CityBus BRT service on Sepulveda Boulevard.	Complete	296
	Plan, design, and construct required maintenance facility enhancements to accommodate the maintenance and parking of CNG articulated buses on the Rapid 6 (Sepulveda South) bus line.	Fully funded	515
	Widen Culver Blvd and narrows the frontage road to add capacity to Culver Boulevard and allow for the construction of wider through lanes, left turn lanes, traffic signal and pedestrian crosswalk modifications, and other improvements.	Fully funded	518
	Upgrade traffic signal synchronization in Culver City.	Fully funded	164
	Construct a bike ramp from Ballona Creek bike path to the Higuera Bridge.	Fully funded	519
	Design, develop and install wireless bus signal priority system on Culver CityBus fleet and at intersections to increase operation efficiency and travel time savings.	Fully funded	3054
	Provide a real-time information system to communicate and guide motorists to available parking spaces in selected parking structures in Culver City.	Fully funded	3115
	Widen Sepulveda Boulevard to add a third southbound lane within existing right-of-way between Jefferson Boulevard/Playa Street to Green Valley Circle, and re-stripe Sepulveda Boulevard from Sawtelle Avenue to Jefferson Boulevard/Playa Street.	Fully funded	3117
City of Los Angeles	Conduct a First-Last Mile Strategic Plan to explore opportunities to increase ridership through access improvements adjacent to transit stops.	Complete	700
	Work with Metro to complete the Union Station Master Plan.	Complete	1184
City of Los Angeles	Provide Wilshire Bus Rapid Transit upgrades such as queue jumpers, signal upgrades, street striping changes, etc. to improve service reliability, travel time and convenience, between Centinela Avenue and 500 feet west of Whittier Blvd.	Complete	504

City/Corridor	Project	Status	Ref. ID
	Construct Exposition Light Rail Transit Project Phase I to Venice-Robertson Station.	Complete	3008
	Establish a Bicycle Plan Implementation Team comprised of City staff, members of the Bicycle Authority Committee, as well as representation from the bicycling community to provide implementation support and oversight of ongoing programs.	Complete	2038
	Review and update all existing Transit Oriented District Plans to include bicycle access and amenities.	Underway	1979
	Design and construct 2.5 miles of Class I bikeway, including lighting, landscaping, and intersection improvements, along Exposition Boulevard right-of-way.	Fully funded	3075
	Install one mile of bike lanes and reduce island median along Manchester Boulevard between Sepulveda Boulevard and Osage Avenue.	Fully funded	876
	Implement sidewalk improvements, decorative crosswalks, median island, curb ramps, pedestrian lighting, shelters, benches, trash receptacles, and street trees in Century City.	Fully funded	3055
	Widen both sides of Lincoln Boulevard north and south of Venice Boulevard to provide an additional lane in each direction during weekday peak commute hours.	Fully funded	3098
	Implement Bike Friendly Streets (BFS) with traffic calming measures and shared lane markings to feed neighborhood streets into the regional transportation network. BFS would provide enhanced bike access to arterials and the transit systems.	Fully funded	348
	Implement a series of streetscape improvements designed to enhance connectivity and community access to the new Florence/West Boulevard Station on Metro's planned Crenshaw Transit Corridor Light Rail Line. Elements include stamped crosswalk legs, street furniture such as benches, trash receptacles and bicycle racks, pedestrian security lighting, bicycle sharrows, landscaping and wayfinding signage.	Fully funded	1933
	Widen the north side of Venice Boulevard from David Avenue to Chariton Street to provide an additional full-time west-bound through lane at La Cienega Boulevard.	Fully funded	3107
	Widen the west side of Overland Avenue bridge over the I-10 from National Boulevard & I-10 Westbound Ramps to National Boulevard & National Place.	Fully funded	3154
City of Santa Monica	Complete Olympic Drive extension from Main Street to Ocean Avenue.	Complete	643
	Develop a bicycle master plan, including a discussion of the feasibility of specific measures and facilities and prioritization of the recommended measures and facilities.	Complete	1414
City of Santa Monica	Construct a pedestrian promenade on Colorado Avenue to connect the Expo light rail terminus station at 4th street with the beach.	Under construction	3059

City/Corridor	Project	Status	Ref. ID
	Create bike network linkages to Exposition light rail including bike network enhancements, increased safety and convenience with signal detection, highly visible lane markings and new bike racks. The project area is located throughout the city of Santa Monica, within two miles from the Exposition light rail line stations.	Fully funded	3049
	Improve connectivity between the heart of Downtown, the Expo Station and the Civic Center along the southern portion of 4th Street Downtown, with higher quality streetscape and improvements to the 4th Street Bridge over the I-10 Freeway.	Fully funded	627
	Develop a 'no net new trips' rideshare toolkit with online multi-modal mobility information, bike accommodations, 300 walking-rolling carts, 75 bike lockers & incentive programs for employers, schools & neighborhoods.	Fully funded	3039
	Install Santa Monica real-time beach parking signs to make information regarding beach parking available to motorists destined for Santa Monica beach parking lots.	Fully funded	3058
	Install communication and signal modifications in order to bring intersections onto the signal control system along the Ocean Park Boulevard, Main Street, and Neilson Way corridors, including 26 intersections.	Fully funded	3157
City of West Hollywood	Update the Bicycle and Pedestrian Master Plan.	Fully funded	1586
	Complete comprehensive update of TDM Program	Fully funded	3580
Los Angeles County	Purchase, install, and integrate Opticom priority control system to existing traffic controllers at various locations.	Complete	3114
	Construct bike and pedestrian improvements along Fiji Way from Lincoln Boulevard to Ballona Creek.	Fully funded	554, 555
	Replace 3-lane bridge with new 4-lane bridge on Higuera Street over Ballona Creek between Eastham Drive and Jefferson Boulevard.	Fully funded	3052
	Implement ITS and intersection improvements in and near LAX, which may include restriping, signal phase changes, and the addition of ITS equipment.	Fully funded	3092
	Upgrade and replace under capacity communication system hardware in order to provide a viable and cost effective communication link between traffic corridors and the LA County information exchange network.	Fully funded	3090
Highway	Construct northbound HOV lane on I-405 from SR-90 to I-10.	Complete	102
Highway	Add HOV lane northbound on I-405 between I-10 and US-101.	Complete	7

3.0 STUDY AREA DEMOGRAPHICS

The following section describes general demographic characteristics for the Westside Cities Mobility Matrix subregion. Characteristics examined include land use patterns, population and employment, and impacted communities.

3.1 Land Use

Land across the Westside Cities Mobility Matrix subregion area is predominantly zoned residential (more than 50% overall) with high density commercial centers and a small amount of industrial. Land use patterns are somewhat similar from city to city; however, there are key differences. West Hollywood has no industrial land use, while other cities have industrial land use proportions ranging from 1% (Beverly Hills) up to 15% (Culver City). The commercial land uses per city range from 9% (Los Angeles) up to 25% (Culver City and West Hollywood). Open space is relatively similar among the cities, with the exception of Los Angeles, which has 40% open space, inclusive of the Santa Monica Mountains. Beverly Hills has the highest proportion of residential, representing 79% of the City's land uses. The Mobility Matrix subregion's land uses are shown in Table 3-1 and Figure 3-1: Land Use. Data and land use categories are taken from the 2008 SCAG land use database.

Table 3-1. Land Uses in Study Area

Table 3-1. Land Uses in Study Area (By Zoning)

	Low Density Residential	Medium/High Density Residential	Rural Residential	Commercial	Public Facilities/ Institutions	Industrial	Transportation/ Utilities	Mixed Use	Open Space	Miscellaneous
Los Angeles	29%	8%	0%	9%	4%	2%	7%	0%	40%	1%
West Hollywood	14%	52%	0%	25%	4%	0%	0%	0%	2%	3%
Culver City	0%	42%	0%	25%	9%	15%	4%	1%	3%	1%
Santa Monica	32%	27%	0%	15%	9%	4%	6%	1%	7%	0%
Beverley Hills	31%	48%	0%	12%	3%	1%	1%	0%	4%	0%
Unincorporated	0%	57%	0%	10%	12%	4%	2%	13%	2%	0%
Westside Study Area	27%	15%	0%	11%	5%	3%	6%	1%	33%	0%

Notes: The land use data in Table 3-1 is from the LA County GIS Land use shapefile used by all subregions. 867 acres out of the 1,020 residential acres in the City of Culver City (85%) are allocated to a single land use code. That code is #1111 High Density Single Family residential, which was allocated to the "medium density" category. The description is as follows: "This category contains single family detached residential units with a unit density of >2 units/acre. These units are typically found in modern urban and suburban subdivisions."

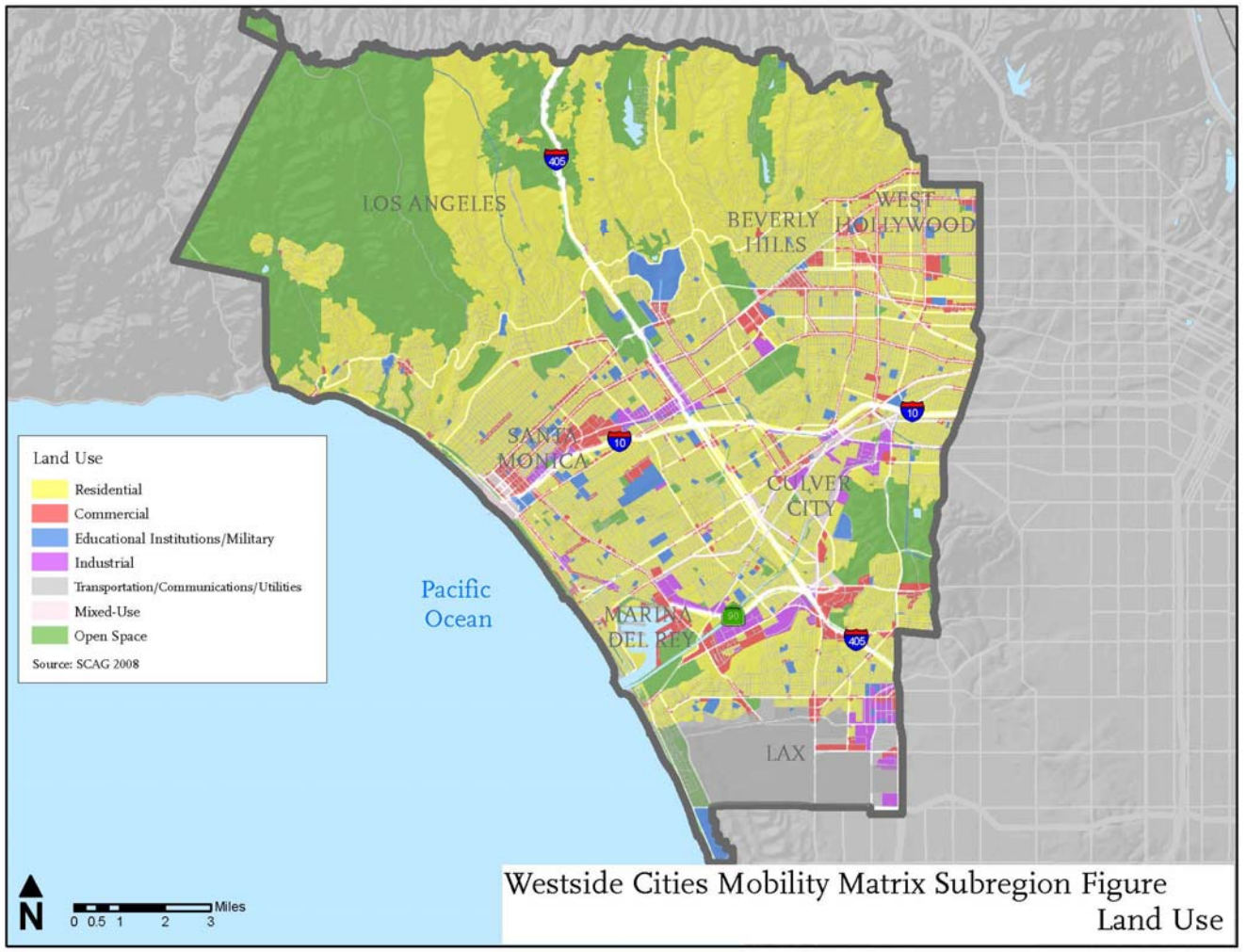

Figure 3-1: Land Use

3.2 Population and Employment

The Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was used to assess the possible change in population and employment in the Mobility Matrix subregion between 2014 and 2024. This analysis provides an indication of where additional trips may occur due to growth in the Mobility Matrix subregion. Figure 3-2 shows the forecasted change in population and employment, with each color point indicating an added 20 jobs (blue dot) or 20 residents (green dot) at that location. As shown in Figure 3-2, most of the increases in housing and jobs are well distributed across the southern 75% of the Mobility Matrix subregion. Some of the highest growth in employment is projected to occur in West Hollywood, Beverly Hills, Century City, and areas near UCLA. The map shows that there are no noticeable concentrations of projected population growth in a particular area, although the area in and near the UCLA campus does show somewhat denser population change.

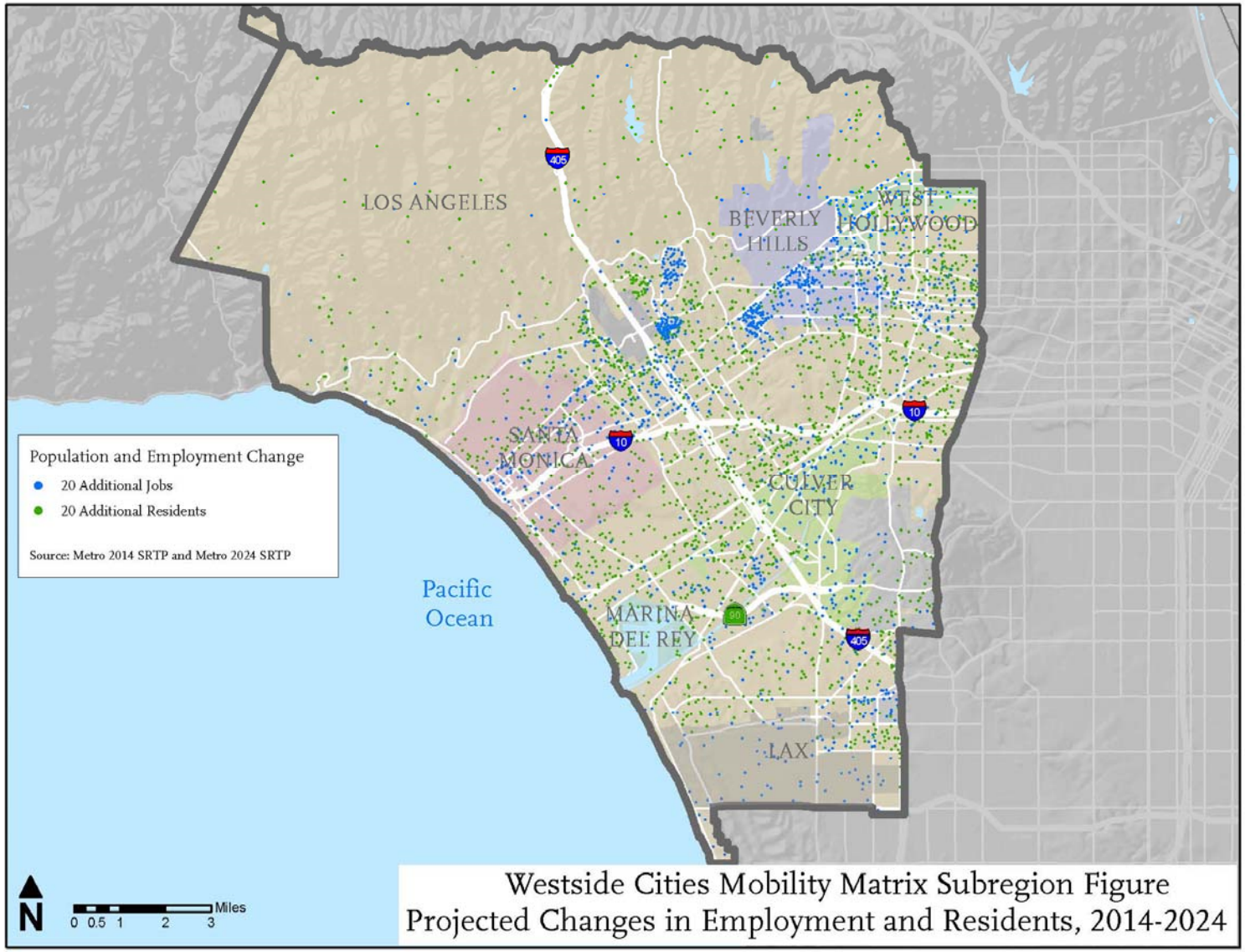

Figure 3-2: Projected Changes in Employment and Residents, 2014-2024

Source: Iteris, 2014; Fehr & Peers, 2014; Metro 2014 SRTP. Note: Based on input from the PDT, planned growth in the City of Santa Monica will be more focused around the Expo Phase II stations currently under construction.

3.3 Environmental Justice Communities

Concentrations of minority and low-income communities were identified using the California Environmental Health Hazard Screening Tool (CalEnviroScreen). This tool aggregates variables that indicate certain types of socioeconomic vulnerability or physical exposure, such as low income, low education attainment, linguistic isolation, pollution exposure, hazardous waste exposure, or traffic exposure. The resulting indexed score shows the communities most disproportionately burdened by multiple types of exposure and risk, with a high score indicating higher levels of exposure and risk.

Component Group	Maximum Score
Pollution Burden	
Exposures and Environmental Effects	10
Population Characteristics	
Sensitive Population and Socioeconomic Factors	10
CalEnviroScreen Score	**Up to 100 (= 10 x 10)**

The overall CalEnviroScreen score is calculated by multiplying the Pollution Burden and Population Characteristic scores. Since each group has a maximum score of 10, the maximum CalEnviroScreen Score is 100. Figure 3-3 illustrates the CalEnviroScreen scores in the Westside Cities Mobility Matrix subregion.

Compared to other subregions, the Westside Cities Mobility Matrix subregion shows generally lower CalEnviroScreen scores overall. The area with the highest CalEnviroScreen score is an area in the eastern portion of the subregion, generally running between Rodeo Road and I-10, and La Cienega Boulevard and La Brea Avenue. The score in this area falls into the 51 – 90 range. Surrounding this area are parcels with scores in the 36 to 50 range. Other areas with scores from 36 to 50 include UCLA and portions of the east side of Santa Monica near I-10. The remainder of the subregion experiences scores of 35 or below.

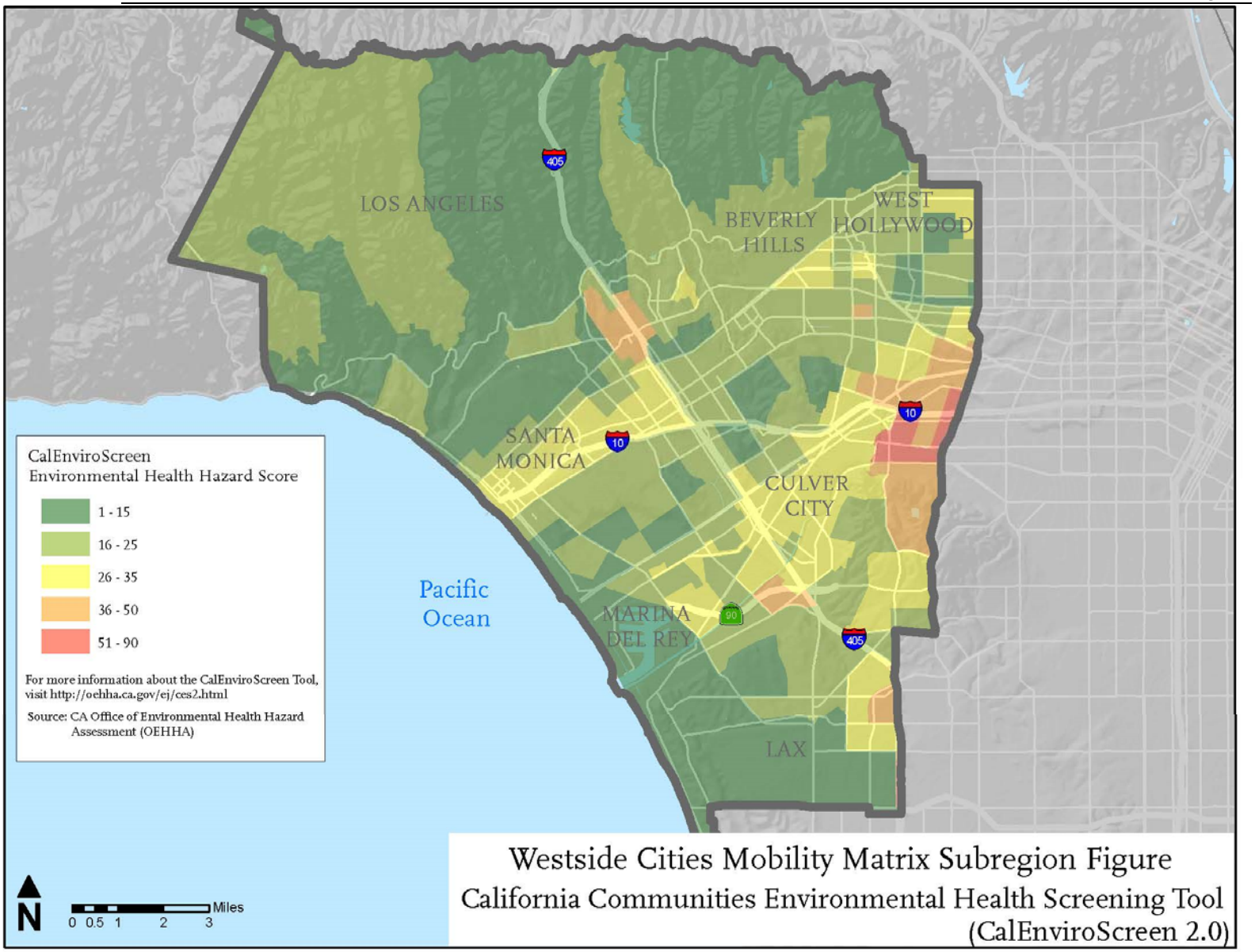

Figure 3-3: California Communities Environmental Health Screening Tool (CalEnviroScreen 2.0)

4.0 TRAVEL MARKETS

4.1 Subregional Trip Patterns

Subregional trip patterns were developed for the Westside Cities Mobility Matrix subregion study area using the Metro model (year 2014). The model data were summarized for two conditions: Total Daily Person Trips, and AM Peak Hour Home-Based Work Person Trips. Person trips represent vehicle occupants (drivers and passengers), transit trips, and non-motorized trips. The model was used to determine the number of trips to and from the Mobility Matrix subregion to other Mobility Matrix subregions within Los Angeles County as well as to adjacent subregions. This provides a general understanding of the major patterns of trip movements associated with people who live and work in the Westside Cities Mobility Matrix subregion.

Some basic definitions that apply to trips as described in this section are as follows:

- Trip: One-way journey or movement from a point of origin to a point of destination.
- Home-based trip: When the home of the trip maker is either the origin or destination of the trip.
- Non-home based trip: Neither end of the trip is the home of the trip maker.
- Trip Production: Home end (origin or destination) of a home-based trip, or origin of a non-home-based trip.
- Trip Attraction: Non-home end (origin or destination) of a home-based trip, or destination of a non-home based trip.
- Net Trip Attractions: Trip attractions minus trip productions.
- Percent Net Attractions: Percentage of trips the subarea attracts from a particular subregion versus generates from the same subregion. For example: the Westside Cities Mobility Matrix subregion attracts 210% more trips from the San Gabriel Valley than it generates to the San Gabriel Valley.

The plots and data provided show daily person trips which include all trips made for any reason throughout the day; and home-based work trips which are trips from home to work (with the reverse trip from work to home occurring at the end of the workday).

Figure 4-1 illustrates the daily person trips using bandwidths to visually show the magnitude of the trip patterns, and colors to illustrate the outbound (blue) and inbound (green) direction of the trips. That data is also shown in Table 4-1.

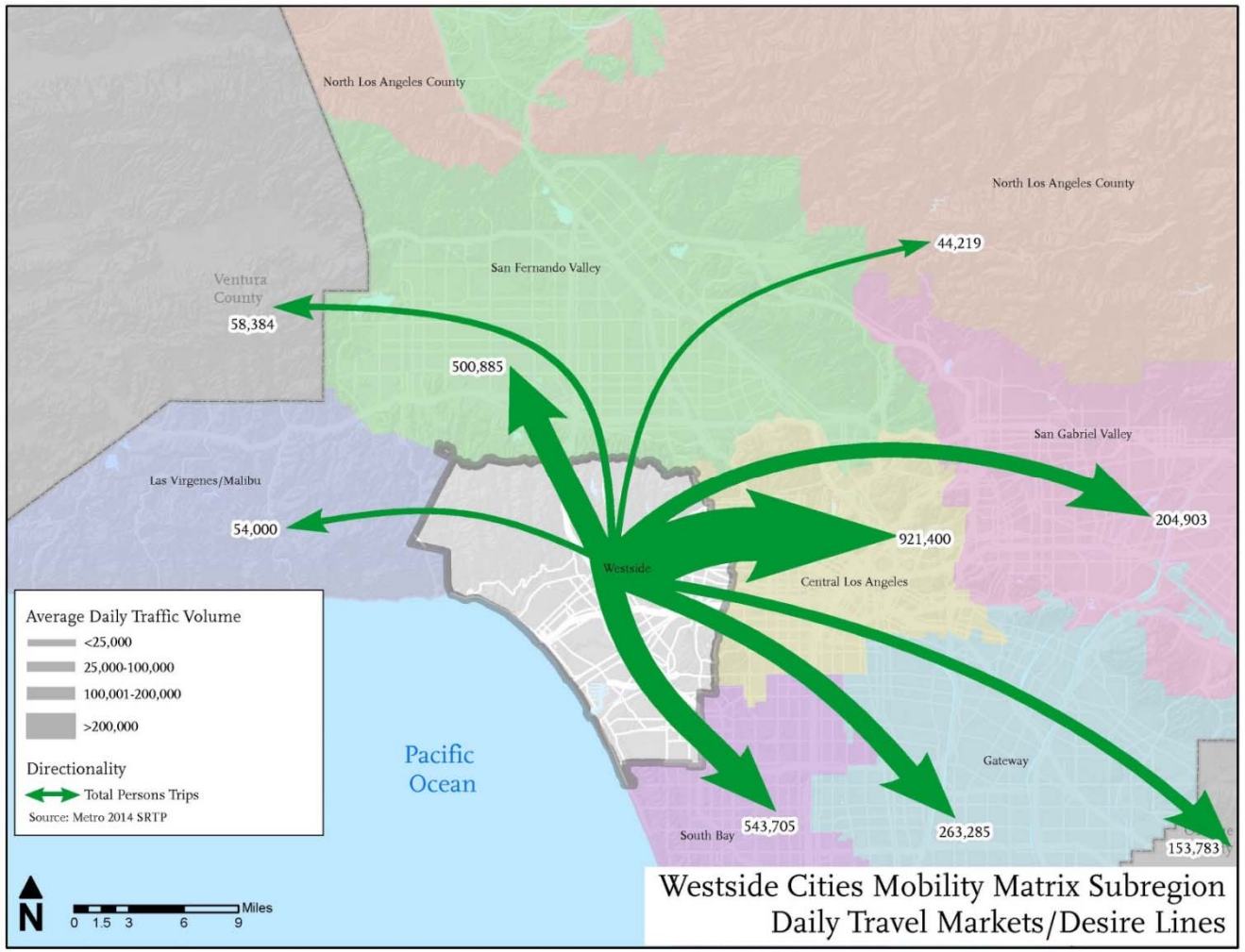

Figure 4-1: Daily Travel Markets/Desire Lines*

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 Short Range Transportation Plan (SRTP) formatted by Los Angeles County subregional boundaries, as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro Long Range Transportation Plan (LRTP) subregional boundaries.

Table 4-1. Daily Trip Productions and Attractions (2014)

ID	To/from Sub-region	Productions	% Productions	Attractions	% Attractions
1	Central Los Angeles	325,724	9%	595,676	13%
2	Gateway Cities	84,555	2%	178,730	4%
3	North County	10,417	0%	33,802	1%
4	San Fernando Valley	173,019	5%	327,866	7%
5	San Gabriel Valley	50,020	1%	154,883	3%
6	Malibu/Las Virgenes	22,120	1%	31,880	1%
7	South Bay	151,144	4%	392,561	9%
8	**Westside Cities**	**2,538,518**	**74%**	**2,538,518**	**57%**
9	Ventura Co	15,441	0%	42,943	1%
10	Orange Co.	44,022	1%	109,761	2%
11	Riverside Co.	12,411	0%	17,014	0%
12	San Bernardino Co.	15,348	0%	33,451	1%
	Total	**3,442,739**	**100%**	**4,457,085**	**100%**

Overall, based on the daily person trip patterns, nearly three quarters of all the trips produced by the Westside Cities Mobility Matrix subregion stay in (are attracted to) the subregion, and over half of all trips attracted to the Westside Cities Mobility Matrix subregion are produced within the subregion. The percentage of internal trips varies because the overall number of attractions (inbound trips) in the Westside Cities Mobility Matrix subregion is greater than the productions.

For the Westside Cities Mobility Matrix subregion, the highest trip producer and attractor area is the Central Los Angeles subregion. Approximately 325,000 daily trips, or nine percent of all trips produced by the Westside Cities Mobility Matrix subregion go to the Central Los Angeles Mobility Matrix subregion on an average day; and nearly 596,000 daily trips, or 13% of all trips that come into the Westside Cities Mobility Matrix subregion come from the Central Los Angeles subregion.

Of the approximate 3.4 million total daily trips produced by the Westside Cities Mobility Matrix subregion, almost 75%, or 2.5 million trips stay within the subregion. Of the 4.5 million daily trips attracted to the Westside Cities Mobility Matrix subregion, nearly 60%, or 2.5 million trips come from within the subregion, and 40% come from other subregions.

Figure 4-2 illustrates the home-based work person trips to and from the area during the AM peak hour, and also uses bandwidths to visually show the magnitude of the trip flows, and colors to illustrate the outbound (blue) and inbound (green) direction of each trip. The data is also shown in Table 4-2. These data describe trips that have the home at one end and work at the other.

Again, as with daily trips, the greatest overall trip interaction during the AM peak hour occurs with Central Los Angeles. Of the 417,400 AM peak hour home-based-work trips produced by the Westside Cities Mobility Matrix subregion, over 58,400 AM trips go to Central Los Angeles (14% of the total); and over 111,500 of the 733,900 AM peak hour home-based-work trips (15% of the total) entering the Westside Cities Mobility Matrix subregion come from the Central Los Angeles subregion. However, a slightly higher number of trips are attracted to the Westside Cities Mobility Matrix subregion from the San Fernando Valley, which has about 115,700 or 16% of trip attractions.

Of the approximate 417,400 AM peak hour home-based-work trips produced, and the 733,900 AM peak hour home-based-work trips attracted, about 65% of the productions and 35% of the attraction trips stay within the Mobility Matrix subregion.

Table 4-2. AM Peak Hour Home-Based-Work Trip Patterns

ID	To/from Sub-region	Productions	% Productions	Attractions	% Attractions
1	Central Los Angeles	58,426	14%	111,511	15%
2	Gateway Cities	15,883	4%	47,245	6%
3	North County	1,173	0%	13,416	2%
4	San Fernando Valley	36,996	9%	115,708	16%
5	San Gabriel Valley	11,002	3%	41,078	6%
6	Malibu/Las Virgenes	3,134	1%	11,002	1%
7	South Bay	24,584	6%	90,588	12%
8	**Westside Cities**	**257,641**	**62%**	**257,641**	**35%**
9	Ventura Co.	1,928	0%	13,889	2%
10	Orange Co.	4,713	1%	19,095	3%
11	Riverside Co.	1,006	0%	4,295	1%
12	San Bernardino Co.	892	0%	8,396	1%
	Total	**417,378**	**100%**	**733,864**	**100%**

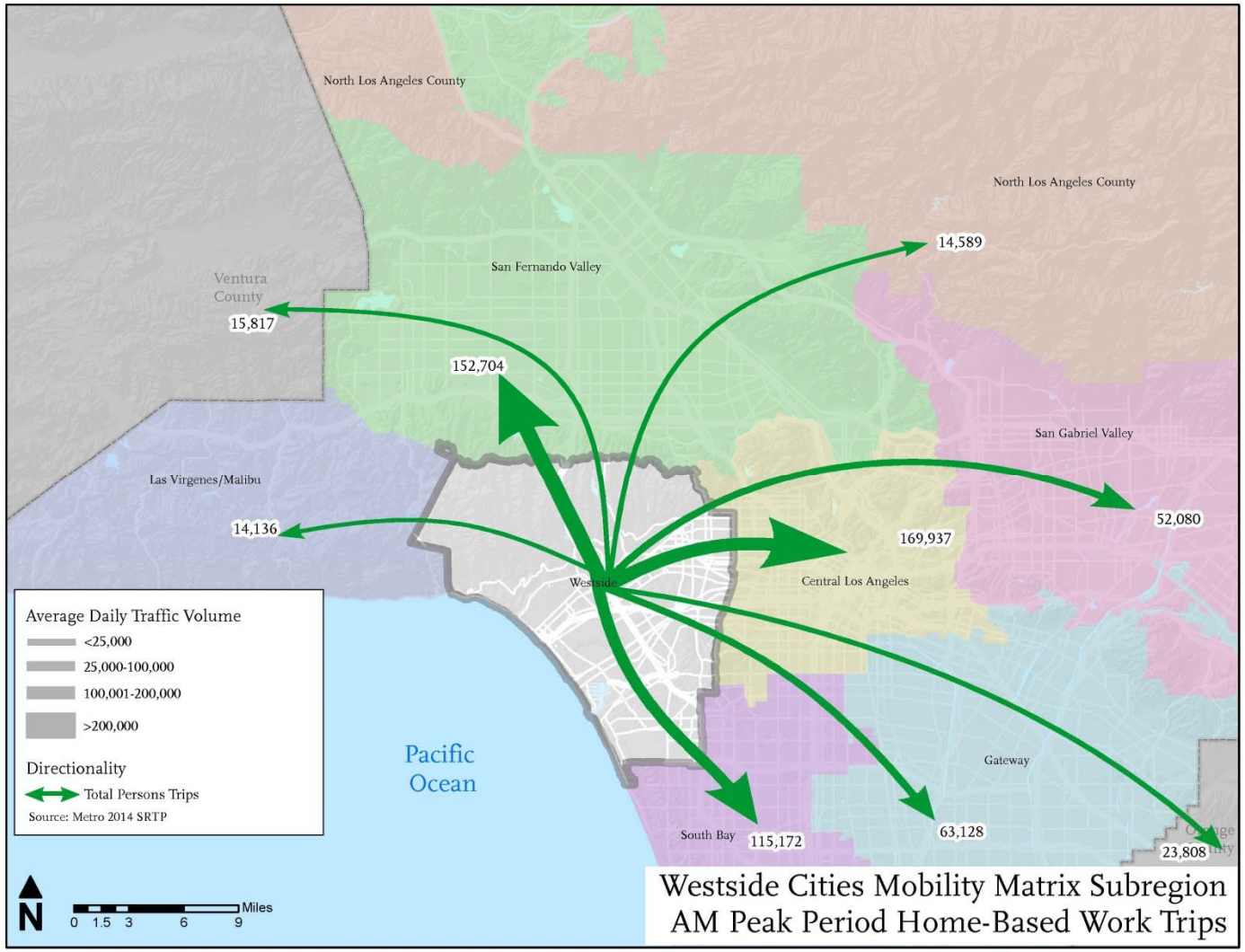

Figure 4-2: AM Peak Period Home-Based Work Trips*

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 Short Range Transportation Plan (SRTP) formatted by Los Angeles County subregional boundaries, as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro Long Range Transportation Plan (LRTP) subregional boundaries.

5.0 FREEWAYS AND ARTERIALS

This section describes the existing, as of the end of 2014, and future condition and performance of the Westside Cities Mobility Matrix subregion's freeways and arterials. Travel demand modeling analysis and a review of speeds were used to determine 2014 baseline conditions and future conditions on the freeways and key arterial roadways. For the freeway system, Caltrans Freeway Performance Monitoring System (PeMS) was used to assess freeway volumes and speeds. The PeMS system is a joint effort of Caltrans and the University of California's Berkeley (UC Berkeley) Institute for Transportation Studies. PeMS uses the vast amount of data generated by the thousands of loop detectors deployed throughout the state on freeways. PeMS is used by Caltrans for performance analysis, including monitoring of traffic flow, congestion monitoring and estimating travel time reliability. PeMS allows the uniform and comprehensive assessment of the performance of the freeway network. Within the study area, Caltrans PeMS monitoring locations were available through the freeway system at various locations.

5.1 Freeways

Using PeMS data, typical daily freeway traffic volumes were determined as shown on Figure 5-1. As shown, the daily freeway volumes in the Westside Cities Mobility Matrix subregion are:

- A portion of I-405 through the subregion has very high volumes ranging between 300,000 and 350,000 vehicles per day generally between I-105 and Florence Avenue; and from Sepulveda Boulevard to Wilshire Boulevard.
- The remaining portions of I-405 in the subregion experience volumes of approximately 250,000 to 300,000 vehicles per day.
- I-10, east of I-405 generally has volumes ranging between 200,000 and 300,000 vehicles per day.
- The remaining freeways in the subregion generally have volumes under 200,000 vehicles per day, including I-10 west of I-405, I-105 west of I-405 and SR-90.

Using the PeMS database, average speeds were extracted for locations in the study area. October 2013 speed data were reviewed to understand typical peak hour operating speeds on the freeway system in the subregion. October was chosen as a typical month because it lacks major holidays, all schools are in session, it avoids peak vacation times such as during the summer when volumes tend to be lower. Only typical weekdays (non-holiday Tuesdays, Wednesdays and Thursdays) were used as a basis for the average speed data extraction. The granularities of the data were hourly, and speeds were extracted over the 24 hours of every weekday, with the peak hours chosen based on the slowest observed speeds during the peak commute period.

The PeMS speed profile data shows where congestion currently occurs, as illustrated by actual slow speeds and mainline delay. The specific areas of slowing on the network indicate some type of geometric or operational issue (or both) on the system, which result in systemic speed reduction and vehicle delay at specific freeway locations. Causes of slowing could include inadequate mainline weaving areas, ramp/mainline merge or diverge locations with inadequate operating conditions, existing geometric alignment constraints such as

curvature or sight distance, or simply too much travel demand and too many vehicles for the available freeway capacity.

Figures 5-2 and 5-3 illustrate the AM and PM peak hour freeway speeds respectively in the Westside Cities Mobility Matrix subregion.

As seen in the AM peak hour, many segments of I-405, generally approaching I-10 and also leaving the San Fernando Valley southbound, south of SR-101, experience speeds of less than 30 mph. The same is seen on portions of I-10 westbound approach Santa Monica and eastbound approaching I-405, and both directions of I-105 west of I-405. I-405 southbound south of I-10 generally has operating speeds of 40 mph or greater.

During the PM peak hour I-405 experiences speeds less than 30 mph both north and south of I-10. The entire portion of northbound I-405 through the Sepulveda Pass between West Los Angeles and SR-101 experiences very slow speeds during the PM peak hour. I-10 continues to experience slow speeds eastbound during the PM peak hour, all the way from Santa Monica to Downtown Los Angeles, and I-105 again experiences slow speeds in both directions west of I-405.

Figure 5-1: Average Daily Traffic Volumes, Freeways and State Highways

Figure 5-2: AM Peak Hour Speed, Freeways and State Highways

Figure 5-3: PM Peak Hour Speed, Freeways and State Highways

5.2 Arterials

Unlike the freeway PeMS system, there is no single comprehensive source of daily traffic flow information on arterial roadways. Many cities do not regularly collect traffic counts or only do so for special studies or as needed in selected locations. Thus, it is not possible to develop a traffic volume flow profile for arterial roadways using actual traffic count data analogous to the PeMS database.

As such, the Metro STRP 2014 Model was used to identify daily volumes on selected key arterial corridors. While these are not actual measured volumes, they are computer model representations of 2014 traffic flows, which were validated to generally replicate existing conditions. The model is a useful tool to assess the overall magnitude of arterial traffic flow and to understand which roadways and segments carry the highest amount of traffic in the Westside Cities Mobility Matrix subregion.

The corridors shown on Figure 5-3 include arterial roadways and other key regionally-significant corridors that were selected for the study. These arterial facilities form the backbone of surface streets for the Westside Cities Mobility Matrix subregion.

As shown in Figure 5-4, some of the highest arterial volumes of over 40,000 vehicles per day are seen along the following corridors:

- Lincoln Boulevard from Marina del Rey north into Santa Monica
- Wilshire Boulevard from Sepulveda Boulevardand extending into the Century City area and Beverly Hills
- Santa Monica Boulevard from Sepulveda Boulevard and extending into the Century City area, Beverly Hills and West Hollywood
- Venice Boulevard east of I-405
- Sepulveda Boulevard at the south end of the subregion
- La Cienega Boulevard extending nearly the entire length of the subregion
- Slauson Avenue east of I-405
- Sunset Boulevard at the east end of the subregion in West Hollywood
- Portions of Olympic Boulevard and Pico Boulevard
- La Brea Avenue on the eastern border of the subregion with the Central area
- Pacific Coast Highway from the terminus of the I-10 freeway and to the north

Several other corridors are shown to experience volumes from 20,000 to 40,000 per day, including portions of Venice Boulevard, Wilshire Boulevard, Santa Monica Boulevard, Lincoln Boulevard, Pico Boulevard, Olympic Boulevard, Sunset Boulevard, Culver Boulevard, Centinela Avenue, Beverly Glen Boulevard and Aviation Boulevard.

In addition to the assessment of arterial roadway volumes, peak hour traffic speeds on study area arterial roadways were also analyzed through the use of iPeMS system. IPeMS gathers vehicle probe data along arterials and then delivers real-time and predictive traffic analytics. The vehicle probe data comes from cell phones and fleet (truck/taxi/bus/other) GPS units which are observed and their position and speed are

used to determine average speeds occurring throughout the day and during peak periods on the arterial system.

For this analysis, vehicle probe data were assessed for the months of January through April 2013, and for the hours of 7:30 to 8:30 AM and 4:30 to 5:30 PM. Similar to freeway PeMS, the data can be used to assess points of slowing on the arterial system.

Using the collected data, vehicle speeds were posted on study area arterial roadways for both the AM and PM peak hours. These are shown in Figures 5-4 and 5-5.

Figure 5-5 shows that during the AM peak hour slowing occurs on portions of eastbound Wilshire Boulevard between Pacific Coast Highway and I-405, significant portions of Santa Monica Boulevard, Sepulveda Boulevard northbound between Jefferson Boulevard and Wilshire Boulevard, Sepulveda Boulevard southbound as it parallels I-405 between Bel Air and Sunset Boulevard; portions of Lincoln Boulevard near I-10 and to the south, and Beverly Glen Boulevard as to goes from Ventura Boulevard south to Sunset Boulevard.

PM peak hour arterial slowing on the arterial system is significantly greater in the Westside Cities Mobility Matrix subregion than during the AM peak hour. Similar patterns to the AM peak hour are seen, but sometimes in the opposite directions. Significant PM peak hour slowing occurs along portions of Wilshire Boulevard, Santa Monica Boulevard and Lincoln Boulevard. Severe slowing also occurs along Wilshire Boulevard at the I-405 interchange. Northbound Sepulveda Boulevard parallel to I-405 experiences slowing from Wilshire Boulevard north to Bel Air; and Beverly Glen Boulevard experiences northbound slowing between Sunset Boulevard and Ventura Boulevard. During the PM peak hour slow vehicle speeds are also experienced along Venice Boulevard in the eastbound direction where it closely parallels I-10 as well as at I-405.

It should be noted that intersection service level estimates do not always correlate well with the observed slow speeds. In some locations, the level of service of an individual intersection may be reported at an acceptable level, while the roadway speeds are slow. This is likely due to the methodology employed for the Congestion Management Plan (CMP) analysis, which measures the number of vehicles passing through the intersections and the intersection volume/capacity ratio. In an area such as the Westside Cities Mobility Matrix subregion, this method may not accurately reflect real conditions since vehicles are not able to flow freely through the intersections due to severe bottlenecks along the corridor that constrain vehicular flows. Review of the CMP data would imply that level of service is good because volumes are low, but volumes are low because slow speeds are constraining the number of vehicles that can pass through. In this area the actual vehicle speeds provide a better indication of local arterial operating conditions.

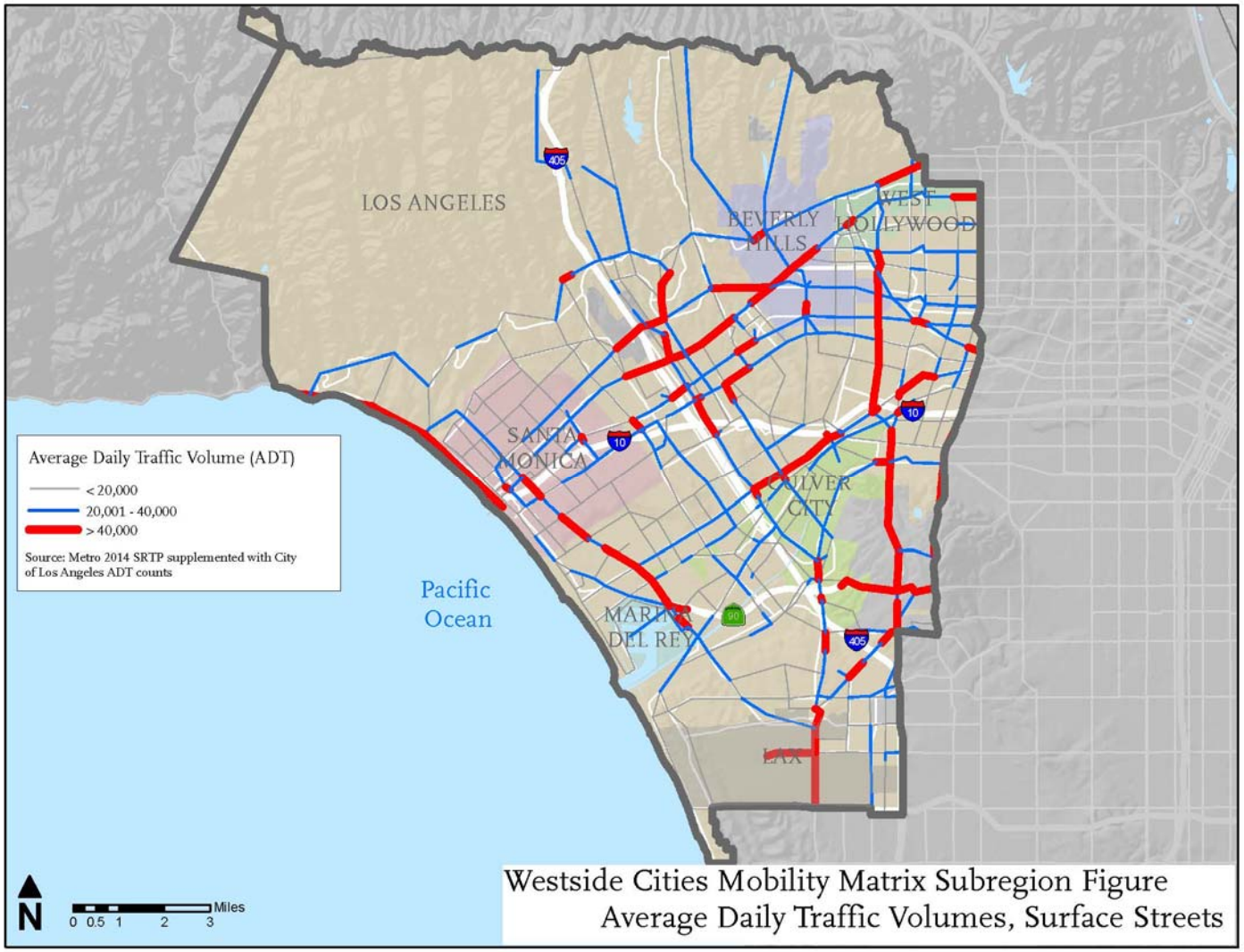

Figure 5-4: Average Daily Traffic Volumes, Surface Streets

Note: Based on input from PDT, Santa Monica Boulevard through West Hollywood has upwards of 50,000 ADT.

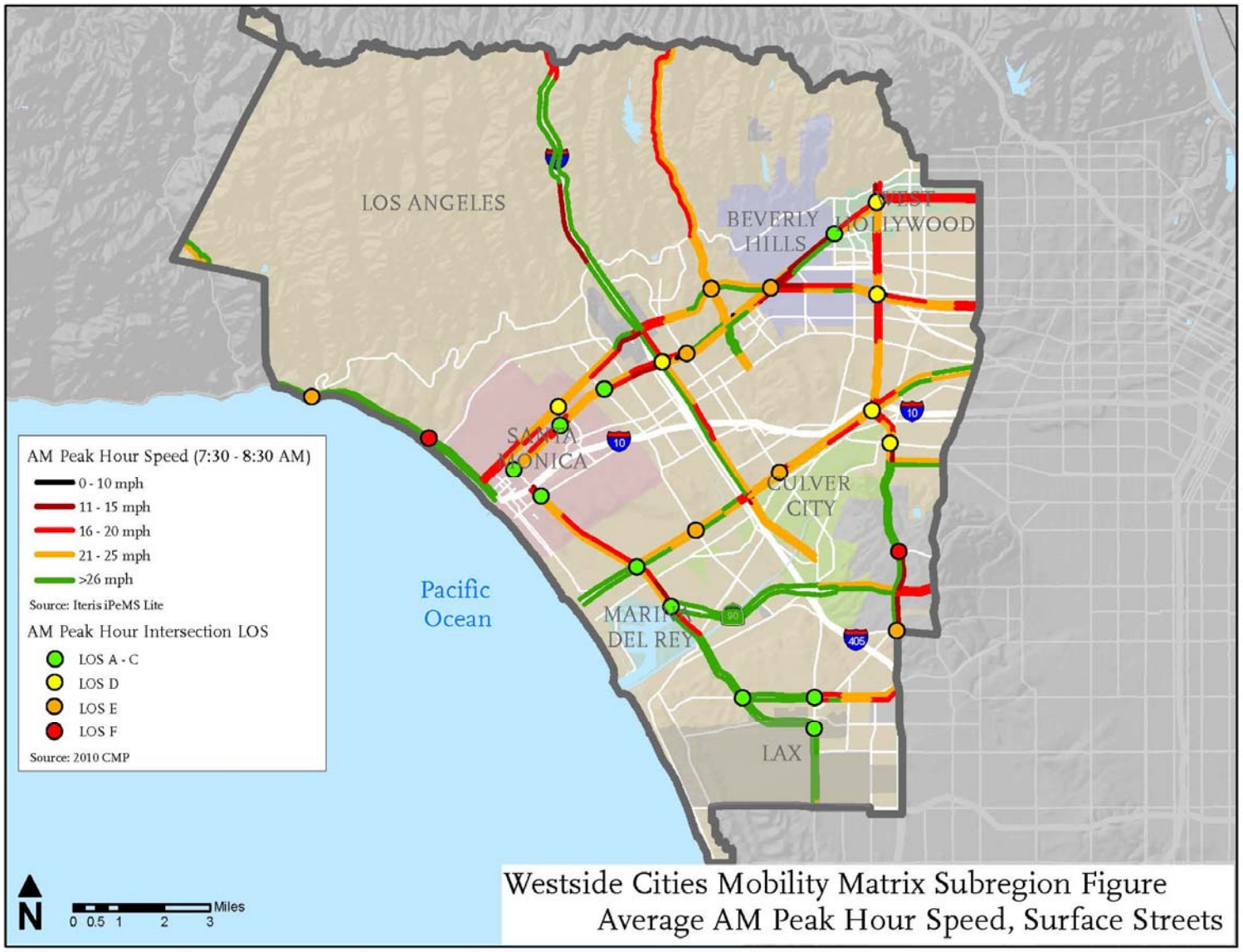

Figure 5-5: Average AM Peak Hour Speed, Surface Streets

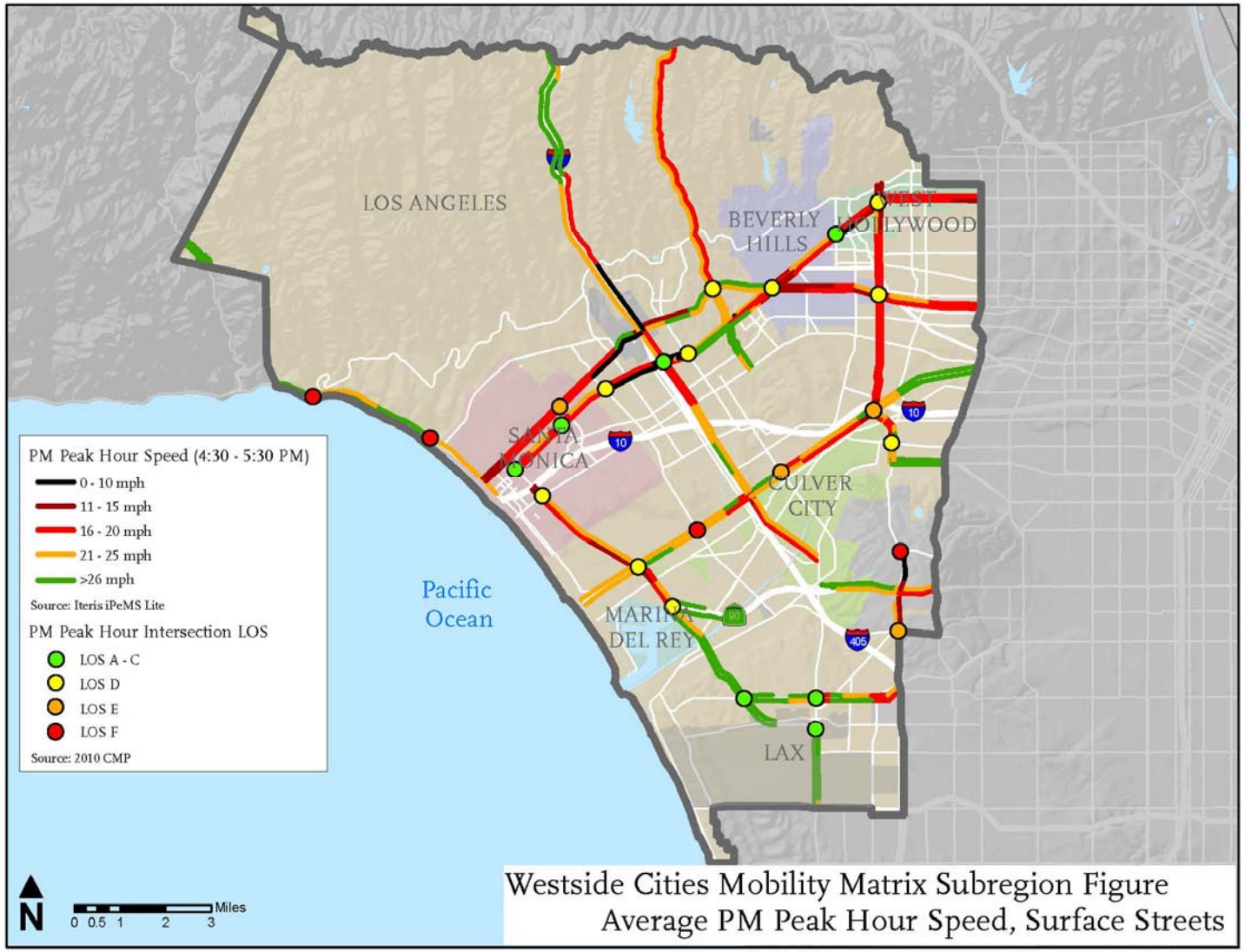

Figure 5-6: Average PM Peak Hour Speed, Surface Streets

5.3 Goods Movement

Figure 5-7 illustrates the designated truck route system in the Westside Cities Mobility Matrix subregion. The routes shown are the designated truck routes as adopted by the cities within the subregion. These routes are designated for use by trucks, including non-local "through" trucks which do not have a local destination. Trucks making local deliveries can legally use the entire arterial system, unless specifically prohibited by ordinance. Non-local through trucks must use the designated truck route system, as shown. In the Westside Cities Mobility Matrix subregion, the designated truck routes include multiple roadways in Santa Monica and Beverly Hills, along with roadways that serve LAX and the Inglewood area. Other routes include Jefferson Boulevard, La Cienega Boulevard, and Washington Blvd. Caltrans Surface Transportation Assistance Act (STAA) truck routes mainly follow state routes and include Lincoln Boulevard, Pacific Coast Highway and Venice Boulevard.

Figure 5-7 also shows the DRAFT Los Angeles Countywide Strategic Truck Arterial Network (CSTAN). This is a strategic goods movement arterial plan network of facilities designated by Metro. The CSTAN is intended to ultimately help with the development of goods movement policies for the Countywide arterial system through Metro's Long- and Short-Range Transportation Plans. The CSTAN will also be used to assist Metro and local jurisdictions in the identification of regional goods movement priorities for the Call for Projects. In the Westside Cities Mobility Matrix subregion, the CSTAN consists of much of the City designated truck route networks as identified in the various City General Plan elements and it also includes some other key arterial routes which provide connectivity to the regional system. In the Westside Cities Mobility Matrix subregion, the Draft CSTAN includes the following key north-south routes: Lincoln Boulevard, Sepulveda Boulevard, La Cienega Boulevard, and La Brea Boulevard; and key east-west routes: Santa Monica Boulevard, Olympic Boulevard, Venice Boulevard, Jefferson Boulevard, Washington Boulevard, and Slauson Avenue.

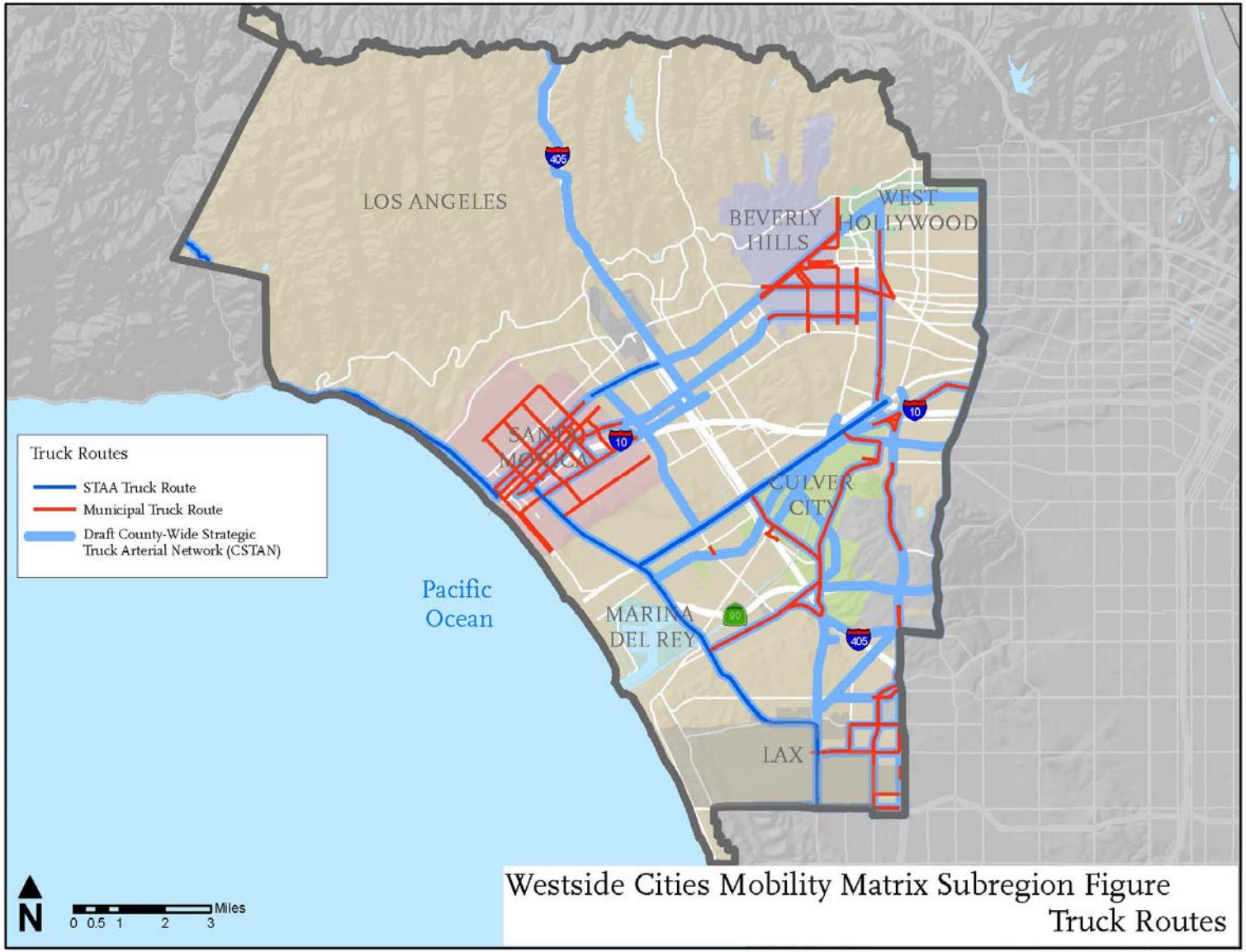

Figure 5-7: Truck Routes

6.0 ACTIVE TRANSPORTATION

6.1 Commute Mode Share

Bicycling and walking currently represent a relatively small proportion of commute modes in the Westside Cities Mobility Matrix subregion, at less than 4% combined. A little less than 70% of commuters drive alone to work. Carpooling represents just over 10%, transit 12% and work at home 5%. Table 6-1 shows the Commute Modes in the Westside Cities Mobility Matrix subregion, with data from the 2010 Census.

Table 6-1. Commute Modes in Subregion

Mode	Mode Share
Bicycling	1%
Walking	3%
Carpooling	12%
Transit	12%
Drive Alone	67%
Other (with work at home)	5%

Source: Census, 2010

6.2 Bicycle Facilities

Bicycle Paths (Class I) – Class I Bike Paths are exclusive car-free facilities that are typically not located within a roadway area.

Bicycle Lanes (Class II) – Class II Bicycle Lanes are on-street facilities dedicated for bicycles and identified by a striped lane separating vehicle lanes from bicycle lanes.

Bicycle Routes and Bicycle-Friendly Streets (Class III) – Bicycle-Friendly Streets and Bicycle Routes (Class III) are in-road bikeways where bicycles and motor vehicle share the roadway. They are typically intended for streets with low traffic volumes, signalized intersections at crossings or wide outside lanes.

Figure 6-1 shows the 2014 bikeways for the study area. As shown, each of the cities within the study area has some designated bike routes, although network coverage varies widely. The most extensive system is in Santa Monica, which has a comprehensive system of Class III routes, supplemented with many Class II routes and bicycle friendly streets. Culver City has three existing Class I bike paths, including Ballona Creek bike path, Expo bike path, and Culver Boulevard bike path. All three bike paths provide connections to bike facilities in the City of Los Angeles. In addition, Culver City has some Class II and Class III bike facilities that also provide direct connection to bike facilities in the City of Los Angeles. The bikeway system in West Hollywood is comprised of both Class II and Class III bike facilities. Beverly Hills has a more limited system with a Class II and a Class III route. The City and County of Los Angeles also have routes within the subregional study area in Marina del Rey in the County and around and connecting to UCLA in the City. The Westside Cities Mobility Matrix subregion also has the Coastal Bike Path that runs along the beach both north and south of LAX/Marina del Rey.

6.3 Bicycle Collisions

The Statewide Integrated Traffic Records System (SWITRS) is a database that collects and processes data gathered from a collision scene. SWITRS data for the period from 2008 – 2011 were analyzed to identify the locations of bicycle-involved and pedestrian-involved collisions. Figure 6-2 illustrates the number of bicycle-involved collisions over the period of 2008 to 2011.

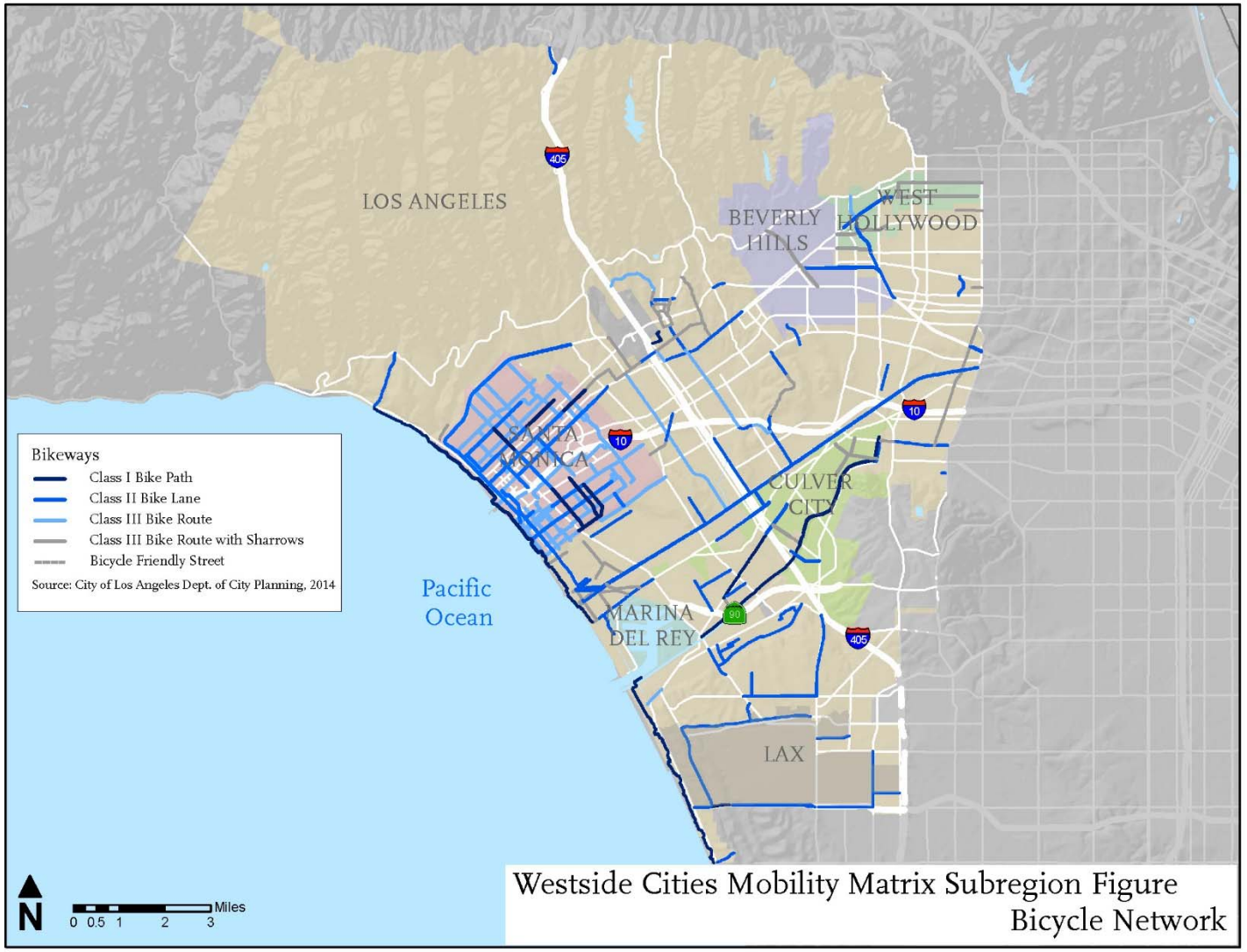

Figure 6-1: 2014 Bicycle Network

6.4 Pedestrian Collisions

Figure 6-3 shows the results of the pedestrian-involved collision analysis for 2008 to 2011, also with data from SWITRS. Pedestrian-involved collisions are shown by collilocation on a relative scale. Locations with 1 to 5 pedestrian involved collisions are shown in shades of green, while those with six or more pedestrian collisions are shown in shades of blue.

6.5 Safety

SWITRS data for the Cities of Beverly Hills, Culver City, Santa Monica, West Hollywood, and the entire City of Los Angeles for the period from 2008 and 2011 were analyzed to reveal additional information about bicycle-involved and pedestrian-involved collisions.

In the four year period analyzed, a total of 13,250 collisions occurred in Beverly Hills, Culver City, Santa Monica, and West Hollywood. Of those, approximately 820, or 6% of the total involved a bicyclist. Almost all bicycle collisions resulted in a complaint of at least some pain (93%), with 3% suffering severe injuries. Less than 1% of bicycle-involved collisions were fatal. Pedestrian-involved collisions accounted for 7% of all collisions. Of these, 95% resulted in a report of at least some pain, and 8% suffered severe injuries. One percent of pedestrian-involved collisions were fatal.

In the entire City of Los Angeles during the analyzed period (including, but not limited to the Westside Cities Mobility Matrix Subregion), approximately 141,500 collisions occurred, with 7,360, or 5% of the total, involving a bicyclist. Of the collisions involving a bicycle, 96% resulted in a report of at least some pain, and 6% suffered severe injuries. Less than 1% of bicycle-involved collisions in the City of Los Angeles were fatal. Pedestrian-involved collisions accounted for 7% of all collisions. Of these, 99% resulted in a report of at least some pain, and 12% suffered severe injuries. Three percent of pedestrian-involved collisions were fatal.

Collision statistics for each city, including data on common collision types and factors, are presented in Table 6-2, below.

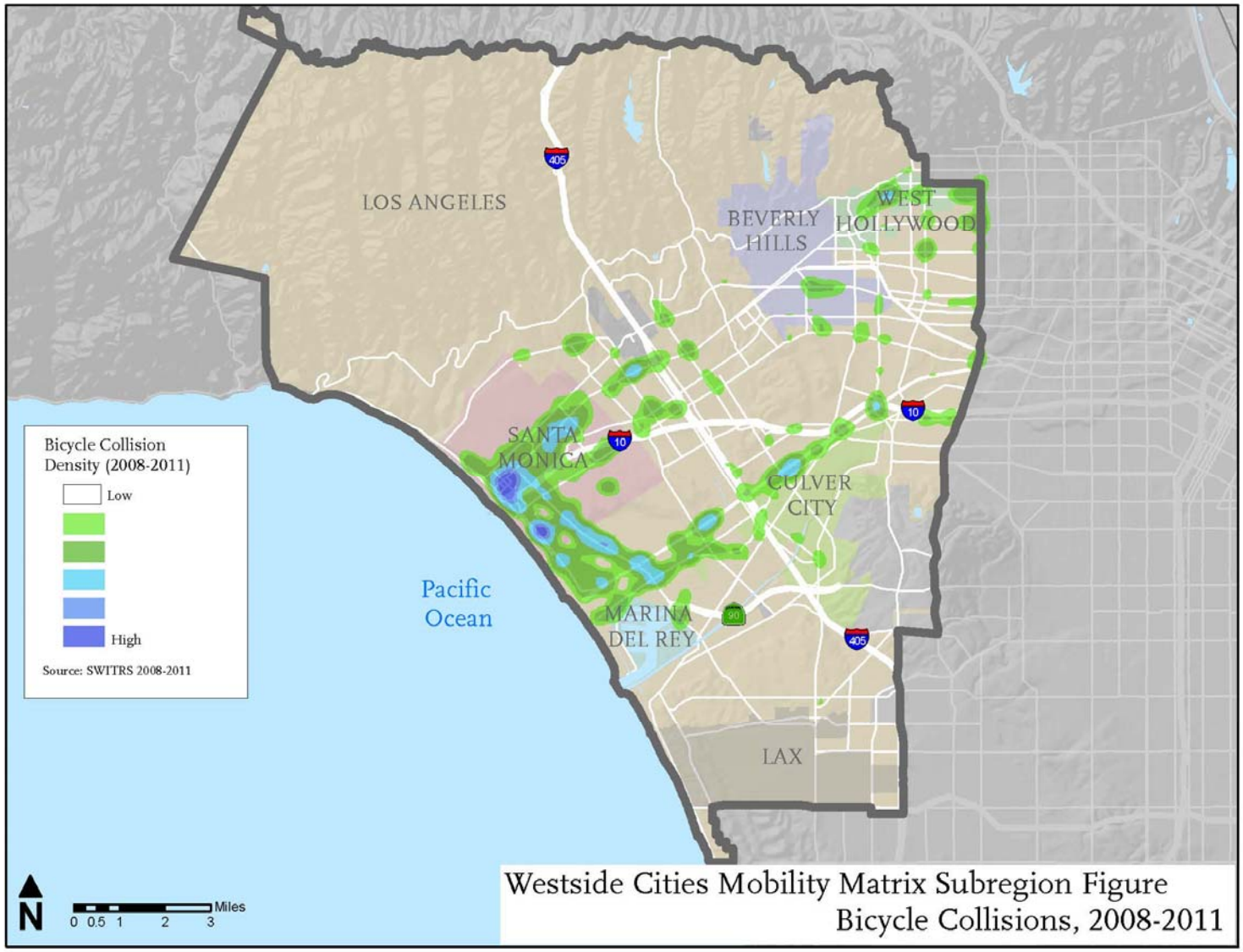

Figure 6-2: Bicycle Collisions, 2008-2011

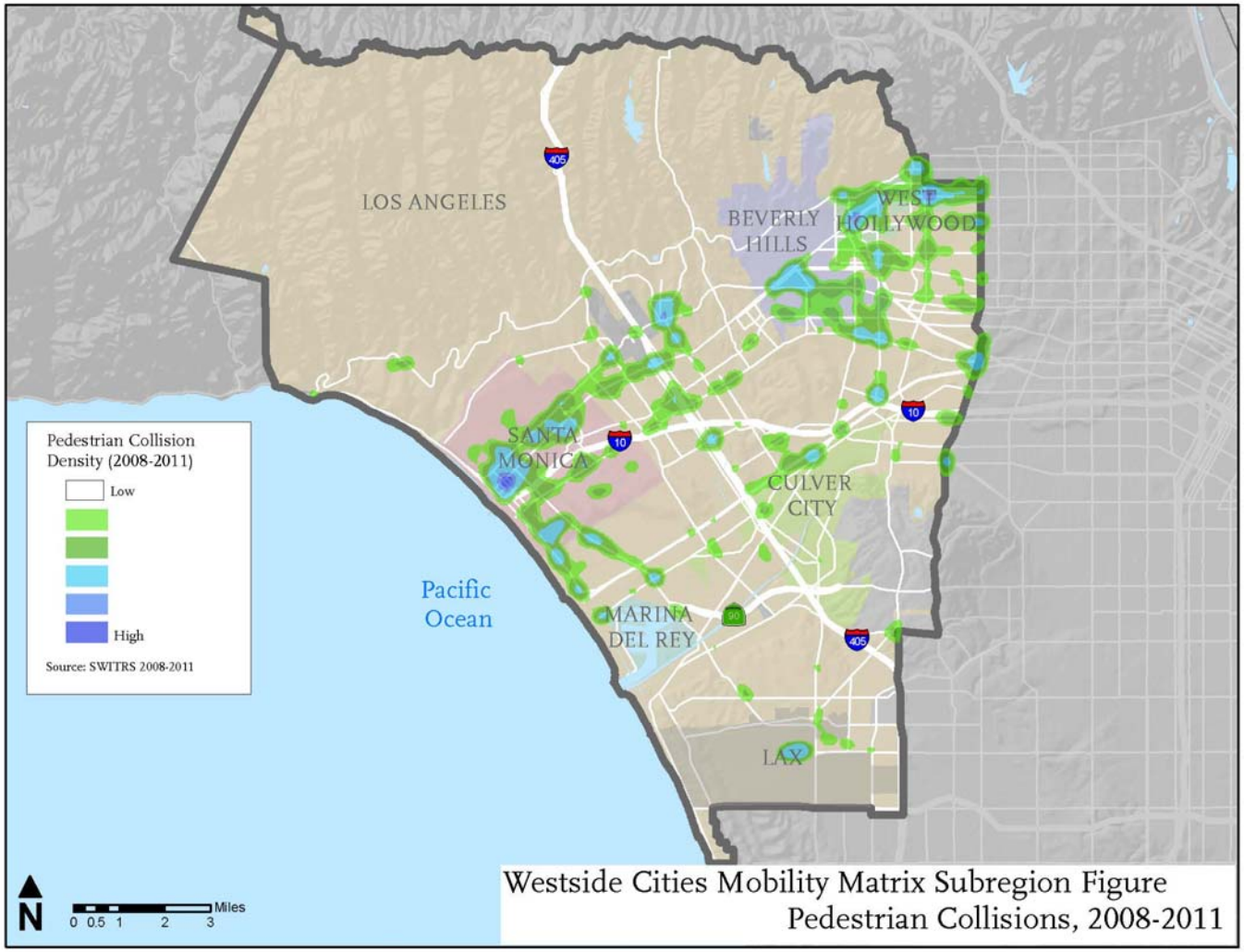

Figure 6-3: Pedestrian Collisions, 2008-2011

Table 6-2: SWITRS Statistics, 2008 – 2011

Cities of Beverly Hills, Culver City, Santa Monica, and West Hollywood		
Total Collisions	13,250	
	Bicycle	Pedestrian
Number of Collisions	821	889
Percent of City Total	6%	7%
Collision Severity		
Fatal	<1%	1%
Severe	40%	8%
Other Visible Injury	48%	39%
Complaint of Pain	3%	47%
Property Damage Only	8%	5%
Collision Type		
Broadside	48%	5%
Head On	4%	3%
Hit Object	1%	0%
Not Stated	4%	1%
Other	19%	1%
Overturned Vehicle	<1%	0%
Rear End	6%	1%
Sideswipe	16%	3%
Vehicle/Pedestrian	2%	85%

Table 6-3: SWITRS Statistics, 2008 – 2011 (Continued)

Cities of Beverly Hills, Culver City, Santa Monica, and West Hollywood		
	Bicycle	Pedestrian
Collision Factors		
Auto Right of Way	19%	2%
Following Too Closely	1%	<1%
Hazardous Parking	0%	<1%
Impeding Traffic	0%	<1%
Improper Passing	2%	1%
Improper Turning	15%	3%
Lights	<1%	0%
Not Stated	4%	4%
Other Hazard	12%	<1%
Other Improper Driving	1%	1%
Other Than Driver	1%	1%
Ped Right of Way	1%	42%
Ped Violation	<1%	25%
Traffic Signals & Signs	8%	2%
Under the Influence	2%	1%
Unknown	6%	8%
Unsafe Lane Change	2%	<1%
Unsafe Speed	3%	2%
Unsafe Starting/Backing	1%	5%
Wrong Side of Road	22%	1%

Table 6-4: SWITRS Statistics, 2008 – 2011 (Continued)

City of Los Angeles		
Total Collisions	141,518	
	Bicycle	Pedestrian
Number of Collisions	7,364	10,170
Percent of City Total	5%	7%
Collision Severity		
Fatal	< 1%	3%
Severe	6%	12%
Other Visible Injury	47%	39%
Complaint of Pain	43%	45%
Collision Type		
Broadside	51%	5%
Head On	5%	4%
Hit Object	1%	0%
Not Stated	4%	1%
Other	21%	1%
Overturned	0%	0%
Rear End	4%	1%
Sideswipe	12%	3%
Vehicle/Pedestrian	4%	85%

Table 6-5: SWITRS Statistics, 2008 – 2011 (Continued)

City of Los Angeles		
	Bicycle	Pedestrian
Collision Factors		
Auto Right of Way	24%	3%
Following Too Closely	1%	0%
Improper Passing	2%	1%
Improper Turning	8%	1%
Not Stated	3%	4%
Other Hazard	6%	1%
Other Improper Driving	2%	2%
Other Than Driver	1%	1%
Ped Right of Way	1%	38%
Ped Violation	1%	31%
Traffic Signals & Signs	10%	3%
Under the Influence	1%	1%
Unknown	3%	4%
Unsafe Lane Change	3%	0%
Unsafe Speed	5%	5%
Unsafe Starting/Backing	2%	4%
Wrong Side of Road	28%	1%

7.0 TRANSIT

Figure 7-1 illustrates the 2014 passenger rail transit network in the Westside Cities Mobility Matrix subregion as well as the daily weekday boardings at the station locations. These data provide an indication of the overall usage of passenger rail transit within the Westside Cities Mobility Matrix subregion. Passenger rail service in the area is provided by the Expo Line, which has three stations located in the Cities of Culver City and Los Angeles, and the Green Line, whose terminal Aviation/LAX station is located on the border between the Westside Cities and Southbay Mobility Matrix subregions. Data is from Metro 2012 Rail Ridership.

The daily weekday boarding data indicate that the highest ridership on the Expo Line occurs at the La Cienega/Jefferson station, where there are between 1,000 and 2,500 boardings per day. The other two Expo Line stations experience less than 1,000 boardings per day. The Green Line Aviation/LAX station has daily boardings of approximately 3,500 per day.

Since the compilation of the Countywide daily boardings summary based on Metro 2012 Rail Ridership data that was used by all the Mobility Matrix Subregions, the Westside Cities PDT has provided more recent information on ridership at the Culver City Expo station. Data obtained in January 2015 indicates that the Culver City Expo station has the highest number of daily boardings (approximately 4,180 daily weekday boardings) followed by the La Cienega/Jefferson station (approximately 1,660 daily weekday boardings).

Additionally, several express bus services run by Metro, Santa Monica Big Blue Bus, Culver CityBus, and other services are operated within the Westside Cities Mobility Matrix subregion, along with a grid network of local bus services which serve the subregion's cities as well. Table 7-1 and 7-2 list the Metro and municipal bus routes within the subregion as of the end of 2014, and Figure 7-2 illustrates the bus transit network in the subregion as of the end of 2014. Data was provided by Metro.

Countywide, regional, and local bus systems provide important connections to other transit systems, such as Metrolink and Metro rail lines, as well as access to key activity centers throughout the Westside Cities Mobility Matrix subregion. Rapid bus service is provided along many of the major arterials in the Westside, and the rapid service is supplemented by local services and connectors. The following describes the bus services available in the subregion.

- Los Angeles Metro – Metro currently operates 35 bus routes within the subregion (two commercial circulators, seven Rapid/BRT routes, 11 local CBD routes, one limited/express route, and 14 non-CBD routes).
- Antelope Valley Transit (AVT) – AVT currently operates one commuter express route, Route 786, within the subregion.
- Beach Cities Transit (BCT) – Beach Cities Transit currently operates one bus route, Route 109, within the subregion.
- Culver CityBus – Culver CityBus currently operates eight bus routes within the subregion.

- Gardena Bus Lines – Gardena Bus Lines currently operates one bus route, Route 5, within the subregion.
- LADOT Commuter Express – LADOT currently operates seven Commuter Express routes within the subregion.
- LADOT DASH – LADOT currently operates three DASH routes within the subregion.
- Santa Clarita Transit – Santa Clarita Transit currently operates two express routes, Route 792 and 797, within the subregion.
- Santa Monica Big Blue Bus – Santa Monica Big Blue Bus currently operates 16 bus routes within the subregion.
- Torrance Transit – Torrance Transit currently operates one bus route, Route 8, within the subregion.
- West Hollywood City Line – The West Hollywood City Line is a free shuttle that operates one bus route within the subregion.
- West Hollywood PickUp Line – West Hollywood PickUp line is a free trolley service that operates one route within the subregion.

Table 7-1: 2014 Metro Bus Routes

Metro	Route	Peak Headway
Metro - Commercial Circulator	607	55
	625	20-30
Metro - Rapid/BRT	704	10-15
	705	10-20
	720	2-10
	728	10-12
	733	7-15
	761	10-20
	780	10-12
Metro - Local CBD	2	5-15
	4	9-12
	10	8-15
	14	5-8
	16	3-8
	20	6-15
	28	6-15
	30	6-12
	33	6-15
	35	12
	40	7-12
Metro - Limited/Express	534	10-30
Metro Non-CBD	102	36
	105	10-16
	108	8-15
	110	10-20
	111	9-20
	115	4-12
	117	20-23
	120	30-40
	212	10-12
	217	12-20
	218	30-35
	220	60
	232	12-20
	233	12-15

Table 7-2: 2014 Municipal Bus Routes

Municipal Provider	Route	Peak Headway
Antelope Valley Transit	AVT-786	4 AM/PM Daily Runs
Beach Cities Transit	BC-109	30-40
Culver CityBus	CC-1	12-15
Culver CityBus	CC-2	60
Culver CityBus	CC-3	20
Culver CityBus	CC-4	30
Culver CityBus	CC-5	1-2 AM/PM Runs
Culver CityBus + Rapid	CC-6 (CC-R6)	15-20 (15 for Rapid)
Culver CityBus	CC-7	30
Gardena Bus Lines	GA-5	30
LA DOT Commuter Express	CX-430	*
LA DOT Commuter Express	CX-431	25-35
LA DOT Commuter Express	CX-437	15-30
LA DOT Commuter Express	CX-438	7-30
LA DOT Commuter Express	CX-534	20-30
LA DOT Commuter Express	CX-573	10-15
LA DOT Commuter Express	CX-574	25-30
LA DOT DASH	DA-CRE	30
LA DOT DASH	DA-FAI	30
LA DOT DASH	DA-MID	30
Santa Clarita Transit	SC-792	4-5 AM/PM Daily Runs
Santa Clarita Transit	SC-797	6-7 AM/PM Daily Runs
Santa Monica's Big Blue Bus	SM-1	10
Santa Monica's Big Blue Bus	SM-2	15-20
Santa Monica's Big Blue Bus	SM-3	10-30
Santa Monica's Big Blue Bus	SM-4	30
Santa Monica's Big Blue Bus	SM-5	15-30
Santa Monica's Big Blue Bus	SM-6	25 M - 1.5 H
Santa Monica's Big Blue Bus	SM-7	12-20
Santa Monica's Big Blue Bus	SM-8	10-20
Santa Monica's Big Blue Bus	SM-9	15-30
Santa Monica's Big Blue Bus	SM-10	20
Santa Monica's Big Blue Bus	SM-11	12-15
Santa Monica's Big Blue Bus	SM-12	*
Santa Monica's Big Blue Bus	SM-13	4 AM/PM Daily Runs
Santa Monica's Big Blue Bus	SM-14	15-20
Santa Monica's Big Blue Bus	SM-41	20
Santa Monica's Big Blue Bus	SM-44	15-25
Torrance Transit	TT-8	30
West Hollywood City Line	WH-City	30
PickUp Line	WH-City	15

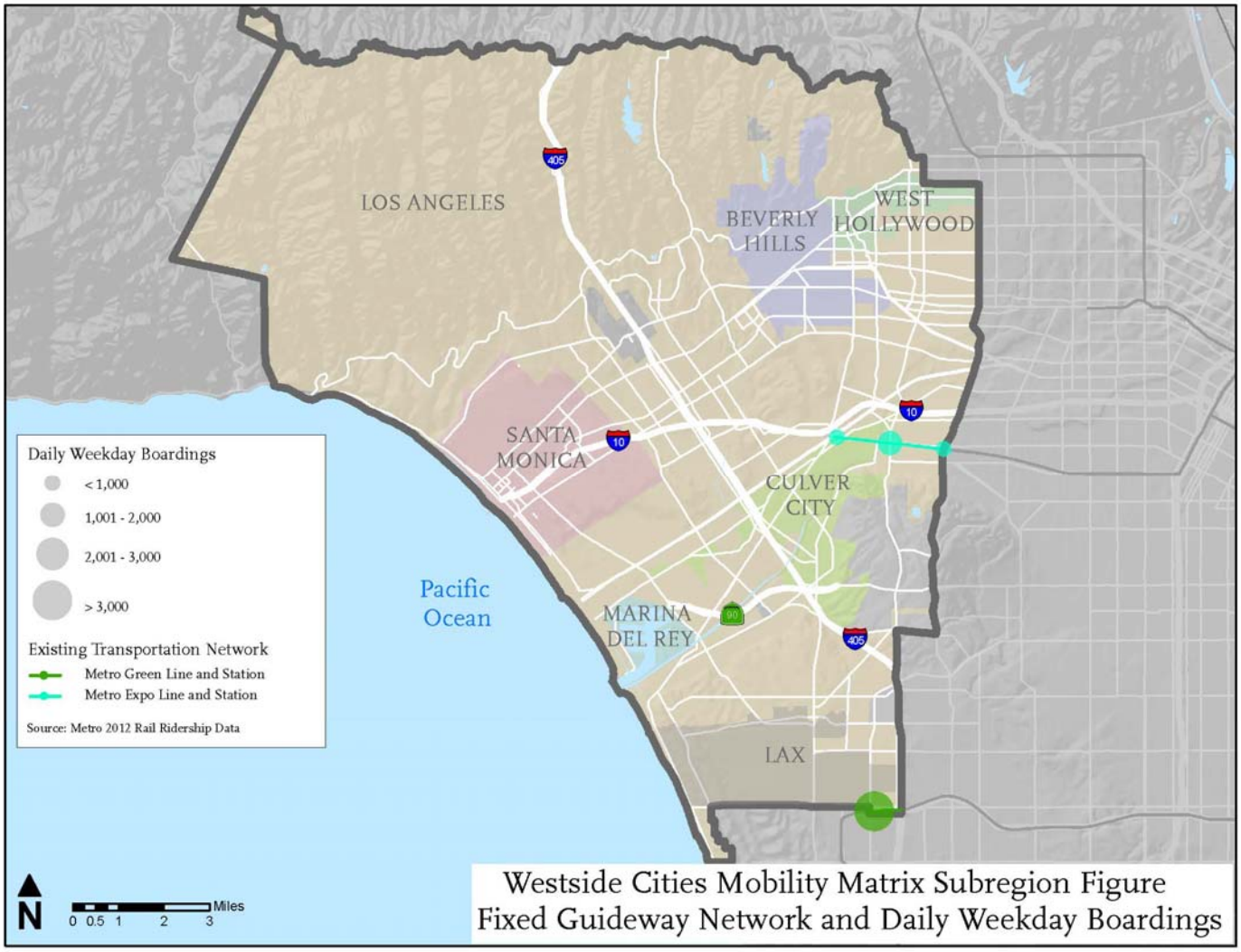

Figure 7-1: 2014 Rail Network and Daily Weekday Boardings

Source: Iteris, 2014; Fehr & Peers, 2014; Transit boardings data is from Metro 2012 Rail Ridership.

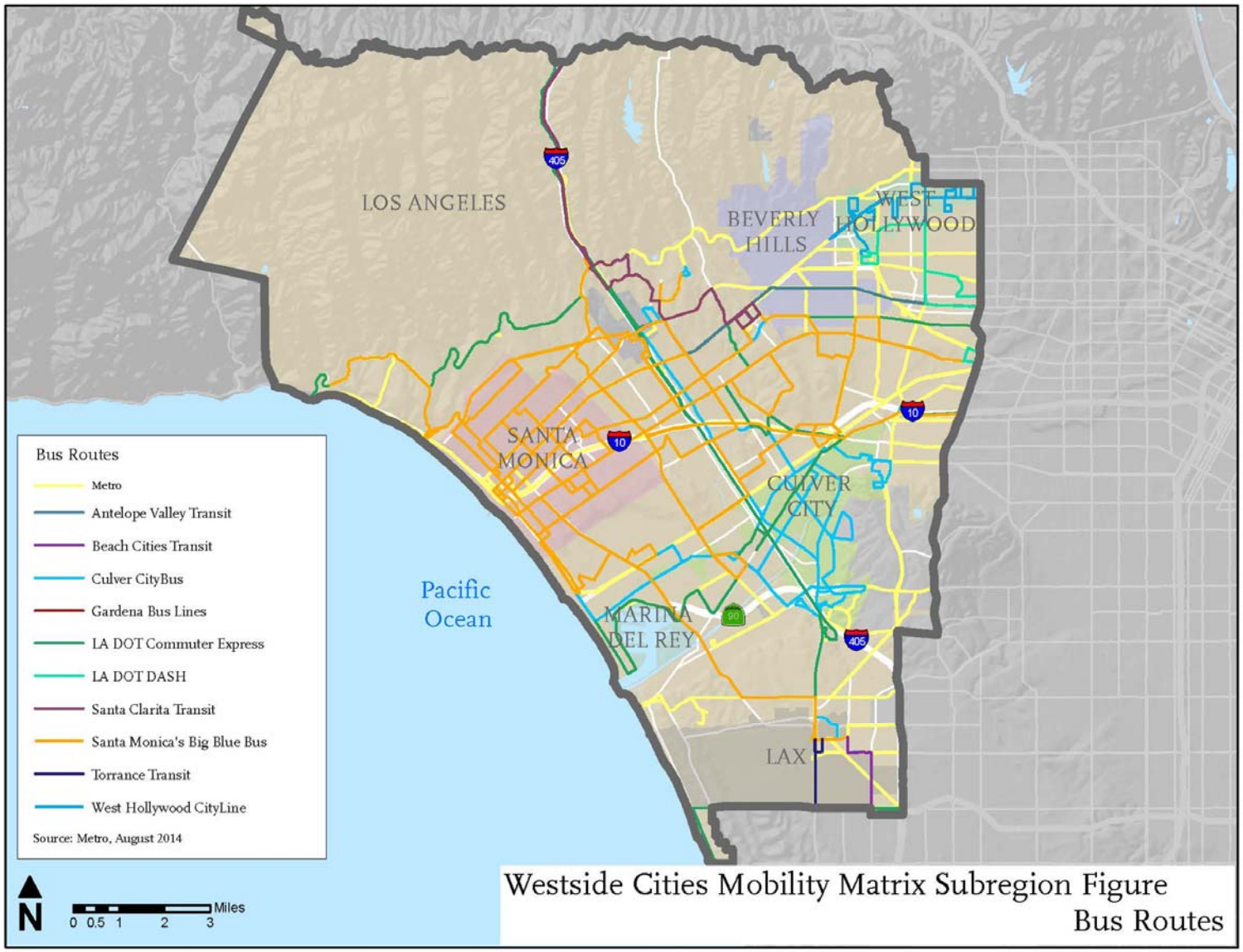

Figure 7-2: 2014 Bus Routes

8.0 SUMMARY/CONCLUSIONS

This document presents an overview of 2014 baseline transportation conditions within the Westside Cities Mobility Matrix subregion. It provides key information, at the subregional level, that can be used to understand the major transportation conditions and issues in the area, and will be used to assist in the subregional needs assessment as well as project level assessment.

The following information has been assessed as part of this baseline conditions analysis effort:

- Existing projects and studies;
- Demographics;
- Land Uses in the subregion;
- Population and Employment change projected from 2012 to 2024;
- Environmental Justice measures: socioeconomic vulnerability or physical exposure, such as low income, low education attainment, linguistic isolation, pollution exposure, hazardous waste exposure, or traffic exposure;
- Travel Markets: including an assessment of the magnitude of trip origins and destinations to and from the subregion from other subregions;
- Goods Movement: designated truck routes per the Draft City Mobility Plan, STAA, and the Draft CSTAN within the area;
- Freeways;
- Freeway average daily traffic flow;
- Freeway AM and PM peak hour speeds;
- Arterial Roadways;
- Arterial roadways daily traffic flow;
- Arterial roadways AM and PM peak hour speeds;
- Active Transportation;
- Bicycle routes and bicycle-involved collisions;
- Pedestrian-involved collisions;
- Transit: passenger rail routes, stops and average daily boardings at each stop;

By reviewing this information, a summary of the Westside Cities Mobility Matrix subregion's transportation conditions can be determined. The following summarizes the results of the research and analysis in each topical area that has been assessed for the Mobility Matrix baseline conditions analysis.

8.1 Land Use

The Westside Cities Mobility Matrix Subregion as a whole is predominantly zoned residential (over 50% residential overall) with higher density commercial and a small amount of industrial uses. The land use patterns are somewhat similar from city to city, however, there are some key differences. The commercial land uses per city range from 9% (Los Angeles) up to 25% (Culver City and West Hollywood). Open space is relatively similar among the cities, with the exception of Los Angeles, which has 40% open space, which represents the Santa Monica Mountains area.

8.2 Population and Employment

Most of the projected increases in housing and jobs are well distributed across the Westside Cities Mobility Matrix subregion. Some of the highest pockets of growth in employment are projected to occur in West Hollywood, Beverly Hills, and Century City and areas near UCLA.

8.3 Environmental Justice

The Westside Cities Mobility Matrix subregion overall shows generally lower (i.e., better) CalEnviroScreen scores than some other subregions such as Central Los Angeles. The only location with a CalEnviroScreen score higher than 50 is an area in the eastern portion of the subregion, generally running between Rodeo Road and I-10, and La Cienega Boulevard and La Brea Avenue. Surrounding this area are parcels with scores in the 36 to 50 range. Other areas with scores from 36 to 50 include UCLA and portions of the east side of Santa Monica near I-10. The remainder of the subregion experiences scores of 35 or below.

8.4 Travel Markets

The highest trip producer and attractor for the Westside Cities Mobility Matrix Subregion is the Central Los Angeles Mobility Matrix subregion. Approximately 325,000 daily trips, or nine percent of all trips produced by the Westside Cities Mobility Matrix Subregion go to the Central Los Angeles Mobility Matrix subregion on an average day; and nearly 596,000 daily trips, or 13% of all trips that come into the Westside Cities Mobility Matrix subregion come from the Central Los Angeles subregion. Almost 75%, or 2.5 million daily trips stay within the subregion. As with daily trips, the greatest overall trip interaction during the AM peak hour occurs with Central Los Angeles. Almost 14% of the AM peak hour home-based-work trips produced by the Westside Cities Mobility Matrix subregion go to Central Los Angeles and about 15% of the AM peak hour home-based-work trips attracted to the Westside Cities Mobility Matrix Subregion come from the Central Los Angeles subregion. However, a slightly higher number of trips are attracted to the Westside Cities Mobility Matrix subregion from the San Fernando Valley, which has about 115,000 or 16% of trip attractions.

About 65% of the work trip productions and 35% of the work trip attraction trips stay within the subregion.

8.5 Freeways

The daily freeway volumes in the Westside Cities Mobility Matrix subregion are:

- A portion of I-405 through the subregion has very high volumes of between 300,000 and 350,000 vehicles per day generally between I-105 and Florence Avenue; and from Sepulveda Boulevard to Wilshire Boulevard.
- The remaining portions of I-405 in the subregion experience volumes of approximately 250,000 to 300,000 vehicles per day.
- I-10, east of I-405 generally has volumes ranging between 200,000 and 300,000 vehicles per day.
- The remaining freeways in the subregion generally have volumes under 200,000 vehicles per day, including I-10 west of I-405, I-105 west of I-405 and SR-90.

In terms of freeway operations, many segments of I-405 experience very slow AM peak hour speeds and congestion, including the portions generally approaching I-10 and also leaving the San Fernando Valley southbound (south of SR-101) experience speeds of less than 30 mph. The same is seen on portions of I-10 eastbound approaching I-405, and both directions of I-105 west of I-405. I-405 southbound south of I-10 generally has operating speeds of 40 mph or greater during the AM peak hour.

During the PM peak hour I-405 experiences speeds less than 30 mph both north and south of I-10. The entire portion of I-405 through the Sepulveda Pass between West LA and SR-101 also experiences very slow speeds during the PM peak hour. I-10 continues to experience slow speeds eastbound during the PM peak hour, all the way from Santa Monica to Downtown Los Angeles, and I-105 experiences slow speeds in both directions west of I-405.

8.6 Arterial Roadways

Some of the highest arterial volumes of over 40,000 vehicles per day are seen along the following corridors:

- Lincoln Boulevard from Marina del Rey north into Santa Monica
- Wilshire Boulevard from Sepulveda Boulevard and extending into the Century City area and Beverly Hills
- Santa Monica Boulevard from Sepulveda Boulevard and extending into the Century City area, Beverly Hills, and West Hollywood
- Venice Boulevard east of I-405
- Sepulveda Boulevard at the south end of the subregion
- La Cienega Boulevard extending nearly the entire length of the subregion
- Slauson Avenue east of I-405
- Sunset Boulevard at the east end of the subregion in West Hollywood
- Portions of Olympic Boulevard and Pico Boulevard
- La Brea Avenue on the eastern border of the subregion with the Central area
- Pacific Coast Highway from the terminus of the I-10 freeway and to the north

Several other corridors are shown to experience volumes from 20,000 to 40,000 per day.

During the AM peak hour slowing occurs on portions of eastbound Wilshire Boulevard between Pacific Coast Highway and I-405, significant portions of Santa Monica Boulevard, Sepulveda Boulevard northbound between Jefferson Boulevard and Wilshire Boulevard, Sepulveda Boulevard southbound as it parallels I-405 between Bel Air and Sunset Boulevard; portions of Lincoln Boulevard near I-10 and to the south, and Beverly Glen Boulevard as it goes from Ventura Boulevard south to Sunset Boulevard.

PM peak hour arterial slowing on the arterial system is significantly greater in the Westside Cities Mobility Matrix subregion than during the AM peak hour. Similar patterns to the AM peak hour are seen, but generally in the opposite directions. PM peak hour slowing occurs along significant portions of Wilshire Boulevard, Santa Monica Boulevard and Lincoln Boulevard. Severe slowing occurs along Wilshire

Boulevard at the I-405 interchange. Northbound Sepulveda Boulevard parallel to I-405 experiences slowing from Wilshire Boulevard north to Bel Air; and Beverly Glen Boulevard experiences northbound slowing between Sunset Boulevard and Ventura Boulevard. During the PM peak hour slowing is also experienced along Venice Boulevard in the eastbound direction where it closely parallels I-10 as well as at I-405.

8.7 Arterial Roadways Trucks

In the Westside Cities Mobility Matrix Subregion, the designated truck routes include many roadways in Santa Monica and Beverly Hills, along with roadways that serve LAX and the Inglewood area. Other routes include Jefferson Boulevard, La Cienega Boulevard, and Washington Boulevard. STAA truck routes mainly follow state routes and include Lincoln Boulevard, Pacific Coast Highway and Venice Boulevard.

The DRAFT CSTAN is intended to ultimately help with the development of goods movement policies for the Countywide arterial system through Metro's Long- and Short-Range Transportation Plans. In the Westside Cities Mobility Matrix subregion, the Draft CSTAN includes the following key north-south routes: Lincoln Boulevard, Sepulveda Boulevard, La Cienega Boulevard, and La Brea Boulevard; and key east-west routes: Santa Monica Boulevard, Olympic Boulevard, Venice Boulevard, Jefferson Boulevard, Washington Boulevard and Slauson Avenue.

8.8 Bicycles

Each of the cities in the Westside Cities Mobility Matrix Subregion area provides some designated bike routes, although the extent of the network coverage varies widely. The most extensive system is in Santa Monica.

8.9 Transit

Passenger rail service in the Westside Cities Mobility Matrix Subregion area is provided the Expo and Green Lines. Several express bus services run by Metro, Santa Monica Big Blue Bus, Culver CityBus Bus and other services are operated within the subregion, along with a grid network of local bus services.

8.10 Summary and Conclusions

In summary, the Westside Cities Mobility Matrix subregion is expected to experience relatively low growth overall as compared to other subregions, but with pockets of moderate growth projected in portions of West Hollywood, Beverly Hills, and Century City and areas near UCLA. This growth will add to the current significant congestion that already exists in the subregion, both on the freeways that serve the area as well as the key arterial roadways. The Westside Cities Mobility Matrix subregion freeways are well travelled and experience severe congestion and low speeds during both peak periods, with the PM peak period experiencing the slowest speeds overall. Several key arterial roadways already carry over 40,000 vehicles per day and many of the key arterial routes experience significant slowing, again with the PM peak experiencing the worst slowing and congestion. The bicycle network is growing due to implementation of bike plans and projects in several cities. A mix of multi-modal solutions and projects would help address the various transportation issues and conditions such as congestion, slow speeds, and high volumes as shown in this baseline conditions report.