

SUBREGIONAL MOBILITY MATRIX NORTH COUNTY

Project No. PS-4010-3041-F-01-TO2

Final Report

Prepared for:



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Subregional Mobility Matrix North County PS-4010-3041-F-01-TO2

Prepared for:



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List of Terms and Acronyms

Acronyms	Definitions
AB	Assembly Bill
ADT	Average Daily Traffic
BRT	Bus Rapid Transit
CalEnviroScreen	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
L RTP	Long Range Transportation Plan
LVMCOG	Las Virgenes/Malibu Council of Governments
MAP-21	Moving Ahead for Progress in the 21 st Century Act
Metro	Los Angeles County Metropolitan Transportation Authority
MPO	Metropolitan Planning Organization

Acronyms	Definitions
OPR	Governor's Office of Planning and Research
NCTC	North County Transportation Coalition
PCH	Pacific Coast Highway
PDT	Project Development Team
PeMS	Caltrans Freeway Performance Monitoring System
SB	Senate Bill
SBCCOG	South Bay Cities Council of Governments
SCS	Sustainability Communities Strategy
SFV	San Fernando Valley
SFVCOG	San Fernando Valley Council of Governments
SGVCOG	San Gabriel Valley Council of Governments
S RTP	Short Range Transportation Plan
STAA	Surface Transportation Assistance Act
TDM	Transportation Demand Management
TSM	Transportation Systems Management
VMT	Vehicle miles traveled
WCCOG	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 (WCCOG) (see Figure ES-1). The Gateway Cities COG is developing its own Strategic Transportation Plan which will 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. Boundaries between the WCCOG and Central Los Angeles, and the WCCOG and SBCCOG, were modified based on Metro Board direction in January 2015.

In January 2015, the Metro Board created the Regional Facilities category. Regional Facilities include projects

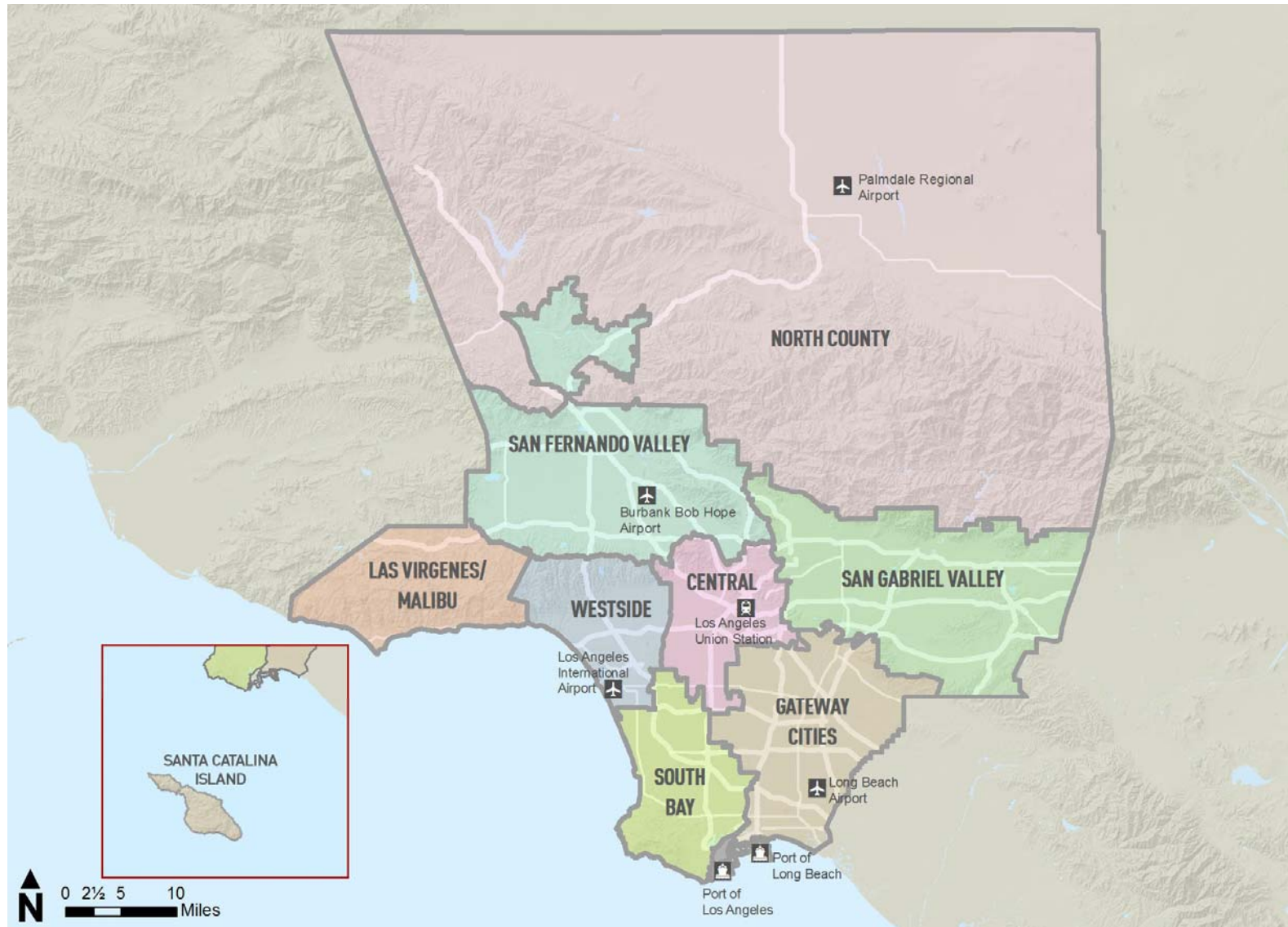
and programs related to Los Angeles County's four commercial airports (Los Angeles International Airport, Burbank Bob Hope Airport, Long Beach Airport, and Palmdale Regional Airport), the two seaports (Port of Los Angeles and Port of Long Beach), and Union Station. The projects/programs related to Regional Facilities have been removed from the subregional Mobility Matrices.

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 North County 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 (2015-2024), mid-term (2025-2034) and long-term (2035-2045) 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



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Process

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 North County PDT consisted of representatives from the following jurisdictions and stakeholder agencies: City of Lancaster, City of Palmdale, Los Angeles County Department of Public Works, Antelope Valley Transit Authority (AVTA), California Department of Transportation (Caltrans), Metrolink, Safe Routes to School National Partnership, and Southern California Association of Governments (SCAG). The PDT met five times over the eight-month study period to guide the creation of strategic goals and objectives, determine a subregional priority 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.

Subregional Overview

The NCTC was formed in 1995 and consists of membership from the Cities of Lancaster, Palmdale, Santa Clarita and the County of Los Angeles. Its purpose is to improve the movement of people and goods in the North Los Angeles County subregion. Its duties include the development of policies and strategies that directly lead to the implementation of projects and programs that address critical North County transportation issues, promote economic development, and maximize transportation funding opportunities for member jurisdictions. The City of Santa Clarita has elected to participate in the SFVCOG Mobility Matrix.

The Baseline Conditions Report, included as Appendix D, identified several key findings regarding the transportation system for the North County Mobility Matrix Subregion, including but not limited to:

- Very high rates of growth are expected in North County, which will place greater burdens on its multimodal system in the years to come. North County believes actual growth in population and employment may outpace SCAG projections.
- The study area features a larger population of at-risk residents, but better air quality than the County average.
- Residents face long commute travel times with few alternatives to driving other than infrequent Metrolink trains and commuter express buses operated by AVTA.
- While overall vehicle collisions have steadily decreased over the last several years, collisions involving pedestrians and bicyclists are gradually rising.

Goals and Objectives

Members of the PDT helped define the goals and objectives for the North County Mobility Matrix Subregion. The goals are consistent with the county’s overall framework, which consists of six broad themes common among all subregions (see Figure ES-2). The goals also reflect subregional priorities, and are based on recent studies, cities’ general plans, and discussions with city staff. The North County PDT developed goal statements intended to address transportation needs, to guide the evaluation of proposed projects/programs, and ultimately to inform Metro’s forthcoming LRTP update.

North County Mobility Matrix Goal Statements

- Increase Multimodal Mobility Options for North County Residents, Visitors, and Businesses.
- Make Transportation Investments that Address Current Needs and Anticipate Future Opportunities.
- Coordinate Implementation of Multimodal Improvements that Support Subregional Economic Development Goals.
- Ensure that Investments Balance Mobility, Environmental Sustainability, and Quality of Life.
- Maintain and Preserve the Transportation System.

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



Subregional Projects and Programs

An initial North County 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 356 transportation improvement projects were identified for the North County Mobility Matrix subregion. Many of the smaller projects were combined or grouped together 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 North County.

Table ES-1. North County Transportation Programs

Mobility Matrix Program	Total Projects
Active Transportation	123
Arterials Program	146
Goods Movement Program	1
Highway Program	29
Multimodal Program	5
Transit Program	52

The North County project list includes transportation improvement priorities identified in countywide planning documents and by local jurisdictions. Arterial improvements and programs compose about one-third of the project list and active transportation projects make up nearly another third. Highway and transit projects make up a significant portion of the remaining project list.

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

- Addresses subregional demand for commute travel from the Antelope Valley to the Los Angeles Basin, including proposed enhancements on Metrolink’s Antelope Valley Line, increased commuter and shuttle bus service, expanded park-and-ride facilities, and travel time and reliability upgrades to the SR 14 corridor.
- Facilitates more robust transportation system demand management through technology applications and multimodal improvements such as high-occupancy vehicle (HOV) lanes, intelligent transportation systems (ITS), park-and-ride facilities, circulation improvements for transit access, and expanded transit services.
- Improves subregional active transportation options through over one hundred bicycle and pedestrian projects, including bicycle routes, lanes, paths, and pedestrian treatments.

- 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.

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 a limited timeframe for project 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 rigorous 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 larger scale received a higher benefit rating. Note that cost effectiveness was not considered in the application of performance evaluation scores.

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

		Mobility	Safety	Sustainability	Economy	Accessibility	State of Good Repair
North County Mobility Matrix Projects and Programs	#Projects	*Improves mobility and multimodal options for residents and visitors *Increases inter- and intra-regional connectivity *Improves commute travel times	*Improves multimodal system safety	*Reduces environmental impacts *Increases energy efficiency *Improves quality of life	*Increases job access options for employees *Promotes efficient goods movement *Promotes economic development with an emphasis on creating local jobs	*Provides improved access to the system for underserved users to reach critical destinations *Provides new transit access, complete streets or other alternative travel options	*Keeps system operating in state of good repair
Active Transportation	123						
Active Transportation Program	123	●	●	●	●	●	●
Arterials Program	146						
ITS Program	12	●	●	●	●	○	○
Arterial Capacity Enhancement Program	113	●	●	–	●	○	●
Grade Separation and Crossing Program	12	●	●	●	●	○	○
State of Good Repair Program	9	●	●	●	●	○	●
Goods Movement Program	1						
Regional Inland Port	1	●	○	–	●	○	○
Highway Program	29						
High Desert Corridor	3	●	●	●	●	●	○
I-5 Improvements: Pico Canyon to Kern County Line	3	●	●	●	●	○	●
SR 138 improvement: I-5 to SR 14	1	●	●	○	●	○	●
SR 14 Improvements: I-5 to Kern County Line	5	●	●	○	●	○	●
Highway Capacity Enhancement Program	5	●	●	–	●	○	●

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

		Mobility	Safety	Sustainability	Economy	Accessibility	State of Good Repair
North County Mobility Matrix Projects and Programs	#Projects	*Improves mobility and multimodal options for residents and visitors *Increases inter- and intra-regional connectivity *Improves commute travel times	*Improves multimodal system safety	*Reduces environmental impacts *Increases energy efficiency *Improves quality of life	*Increases job access options for employees *Promotes efficient goods movement *Promotes economic development with an emphasis on creating local jobs	*Provides improved access to the system for underserved users to reach critical destinations *Provides new transit access, complete streets or other alternative travel options	*Keeps system operating in state of good repair
Highway Program (continued)							
ITS Program	6	●	◐	◑	◑	○	○
Highway Interchange and Ramp Program	5	●	◑	○	◑	○	◑
Pearblossom Highway State of Good Repair Project	1	◑	◑	◑	◑	○	●
Multimodal Program	5						
Lancaster Regional Hospital District Mobility Network	1	◑	◑	◑	◑	●	○
Neighborhood transit centers program	1	◑	◑	◑	◑	●	○
Park-and-Ride/ Station Access Program	3	●	◑	◑	◑	◑	○
Transit Program	52						
AVTA Bus Rapid Transit Project: Palmdale Bl and 10 th St W	1	●	◑	●	◑	●	○
Bus Service Program	9	●	◑	●	◑	●	○
Metrolink Antelope Valley Line improvements	41	●	◑	●	◑	◑	◑
Metrolink Extension to Kern County	1	◑	◑	◑	◑	◑	○

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Findings

The North County Mobility Matrix addresses each of the six countywide themes:

- **Mobility.** Highway and arterial capacity enhancement, transportation system management, and managed-lane programs help to relieve congestion or create redundancy for primary subregional roadways. Transit expansion programs provide improvements to travel times and system reliability. Active transportation and locally oriented improvements provide moderate benefit to subregional mobility, while individual multimodal projects close identified gaps in modal connectivity.
- **Safety.** Grade separation and active transportation score highly under the safety theme by separating user groups and eliminating conflict potential. Many proposed bicycle facilities, including those in the Safe Routes to School program, address areas with high incidents of collisions involving bicyclists and pedestrians. State of good repair projects, transit and roadway improvement projects enhance vehicular safety and improve reliability by eliminating dangerous or unpredictable road surfaces.
- **Sustainability.** The Mobility Matrix contributes to reduced greenhouse gas emissions, improved air quality, and greater quality of life in the study area. Active transportation 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. Other improvements such as the ITS program and specific bottleneck

mitigations contribute to reduced delay and associated emissions at specific intersections.

- **Economy.** The proposed Regional Inland Port provides the greatest potential to create lasting direct and indirect employment and development in the study area. Grade separations and new highway capacity benefits subregional goods movement and job access
- **Accessibility.** Increased transit and commuter rail improvements and new multimodal access programs identified through the Mobility Matrix effort offer improved access to transportation for North County's large underserved population.
- **State of Good Repair.** The North County Mobility Matrix includes pavement, bridge, and sidewalk preservation programs that address subregional state of good repair. Other projects included repaving, transit asset management, or other elements that contribute to longer life of transportation assets.

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.

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 vehicles, 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.

Since the list was compiled from various sources, some of the projects in the list overlap in scope or purpose, leading to duplicative costs in the cost matrix. 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 North County transportation projects and programs that require funding. 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:

- **North County 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 NCTC 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.

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

Type/ Category	Arterial	Goods Movement	Highway	Active Transportation	Transit	Multimodal	Total
Short-Term (0-10 years)	63 Projects \$1.18 B to \$1.78 B	N/A	20 Projects \$TBD	41 Projects \$95 M to \$143 M	36 Projects \$483 M to \$724 M	3 Projects TBD Cost	163 Projects \$ TBD
Mid-Term (11-20 years)	41 Projects/ TBD \$1.18 B to \$1.78 B	N/A	9 Projects \$TBD	41 Projects \$95 M to \$143 M	7 Projects \$1.13 B to \$1.69 B	1 Project \$1 M to \$1.5 M	99 Projects \$ TBD
Long-Term (>20 years)	41 Projects/ TBD \$1.18 B to \$1.78 B	1 Project \$32 M to \$48 M	8 Projects \$TBD	41 Projects \$95 M to \$143 M	11 Projects \$893 M to \$1.69 B	1 Project \$48 M to \$72 M	103 Projects \$ TBD
Total	146 Projects \$3.55 B to \$5.34 B	1 Project \$32 M to \$48 M	29 Projects \$TBD	123 Projects \$285 M to \$429 M	52 Projects 2.50 B to \$3.75 B	5 Projects \$49 M to \$74 M	356 Projects \$ TBD

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 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 (WCCOG) (see Figure ES-1). The Gateway Cities COG is developing its own Strategic Transportation Plan which will 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. Additionally, in response to Metro Board's direction in January 2015, the boundary between the WCCOG and the Central Los Angeles subregion was revised to roughly follow La Brea Avenue from north to south. The border between the WCCOG and the SBCCOG was revised to transfer a small portion of the City of Inglewood from the WCCOG subregion to the

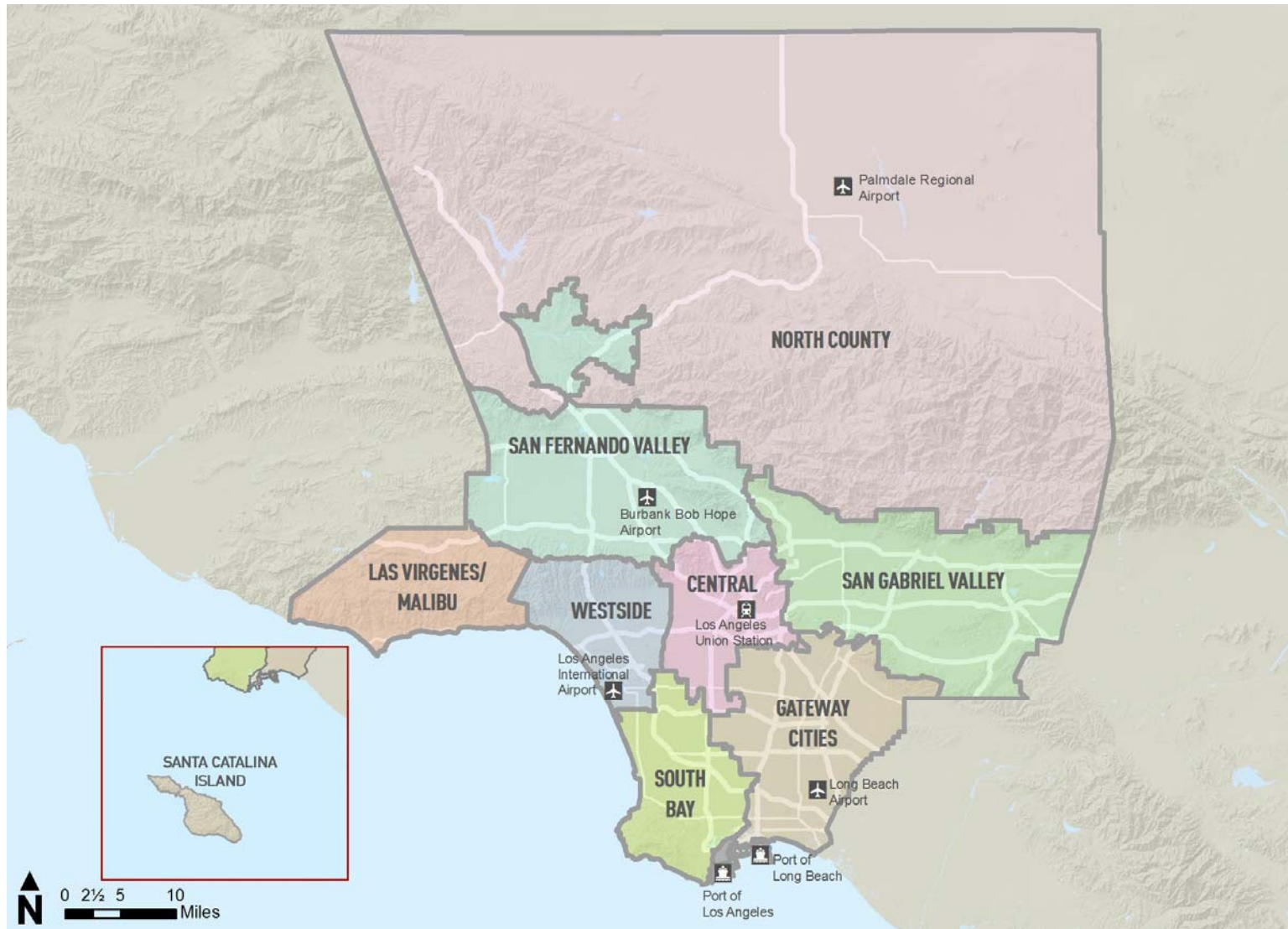
SBCCOG. The border between the Central Los Angeles subregion and the SBCCOG was revised to transfer an area of South Los Angeles from the SBCCOG to the Central Los Angeles subregion. The North County Mobility Matrix Subregion, also referred to as the study area in this document, is presented in Figure 1-2.

In January 2015, the Metro Board also 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 been removed from the subregional Mobility Matrices and will be included in a separate report.

1.2 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 North County 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

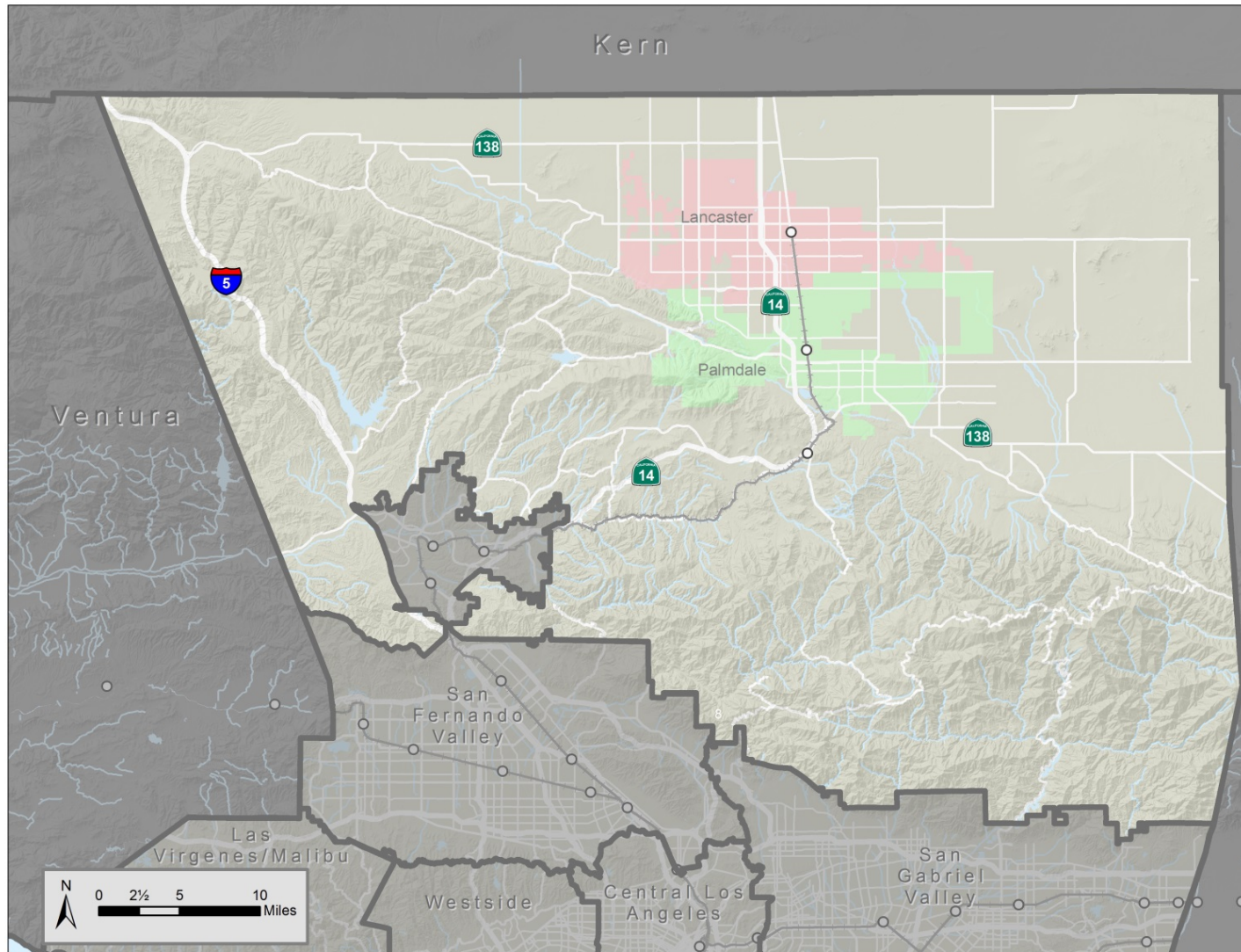
Figure 1-1. Los Angeles County Mobility Matrix Subregions



Source: STV, 2015

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 1-2. North County Mobility Matrix Study Area



Source: Cambridge Systematics, Inc., 2015

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

assessment of anticipated investment needs and project and program implementation over the short-term (2015-2024), mid-term (2025-2034), and long-term (2035-2045) timeframes. The Mobility Matrix does not prioritize projects, but rather serves as a strategic transportation plan for future transportation investments over the next 20 plus years..

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 North County PDT consisted of representatives from the following jurisdictions and stakeholder agencies:

- City of Lancaster
- City of Palmdale
- Los Angeles County Department of Public Works
- Antelope Valley Transit Authority (AVTA)
- California Department of Transportation (Caltrans)
- Metrolink
- Safe Routes to School National Partnership
- Southern California Association of Governments (SCAG)

The PDT met five 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. 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. All coordination activities for this project 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 project and programs.** The Mobility Matrix provides a list of projects and

programs approved by the subregion intended to address transportation system deficiencies and needs.

- **Draft cost ranges and implementation timeframes.** Based on project/program readiness and high-level, rough order-of-magnitude planning estimate project cost ranges, the Mobility Matrix presents the subregional draft investment needs to be considered in the LRTP update 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

- **MAP-21 (2012)**, the Federal Transportation Authorization Bill, places a greater emphasis on performance-based planning for metropolitan planning organizations (MPO), 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, slated for completion in 2017.

- **Local Option Sales Tax Measures.** Los Angeles County voters have approved three one-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 North County 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 goals and objectives to guide subregional transportation investments in North County.
- **Chapter 4.0 – Subregional Mobility Matrix.** An initial screening of subregional priority projects and programs for consideration in the LRTP.
- **Chapter 5.0 – Implementation Timeline and Cost Estimation.** An initial categorization of project and program implementation into 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, methodology memorandums, a full project list, and the full Baseline Conditions Report.

2.0 SUBREGIONAL OVERVIEW

The North County Transportation Coalition (NCTC) was formed in 1995 and consists of membership from the Cities of Lancaster, Palmdale, and Santa Clarita, and the County of Los Angeles. Its purpose is to improve the movement of people and goods in the North Los Angeles County region. Its duties include the development of policies and strategies that directly lead to the implementation of projects and programs that address critical North County transportation issues, promote economic development, and maximize transportation funding opportunities for member jurisdictions. For the purposes of the Metro Mobility Matrix, the City of Santa Clarita elected to conduct this study with the San Fernando Valley Council of Governments, and is not included as part of the North County study area.

This chapter presents an overview of 2014 baseline transportation conditions within the North County Mobility Matrix subregion, and forecasted conditions for year 2024. It provides an understanding of the major transportation conditions and issues in the subregion, and provides an overview of subregional needs. This chapter summarizes results of the subregional Baseline Conditions Report, an interim work product which assessed the following:

- **Existing projects and studies;**
- **Demographics.** Land uses, population and employment change projected from 2014 to 2024, and environmental justice measures (transit-dependent communities and disadvantaged/at-risk communities, such as pollution burden, poverty, asthma, education rates, etc.);

- **Travel patterns.** An assessment of trip origins and destinations to, from, and within the subregion, as well as subregional commute travel mode choice;
- **Vehicle travel.** Countywide Strategic Arterials Network (CSAN) facilities within the area, vehicle hours traveled and average trip times, designated truck routes per the Draft Countywide Strategic Truck Arterial Network (CSTAN), and motor vehicle and truck collisions;
- **Transit.** Transit mode share, Metrolink service including weekday boardings, and bus routes; and
- **Active transportation.** Active transportation mode share, existing bikeways, and bicycle/pedestrian-involved collisions.

The Baseline Conditions Report identified several key findings regarding the transportation system for the North County Mobility Matrix Subregion, including, but not limited to, the following:

- Very high rates of expected growth are expected in North County, which will place greater burdens on multimodal system in the years to come. North County believes actual growth in population and employment may outpace SCAG projections.
- The region features a larger population of at-risk residents but better air quality than the county average.
- Residents face long commute travel times with few alternatives to driving other than infrequent Metrolink trains and commuter express shuttles operated by AVTA.

- While overall vehicle collisions have steadily decreased over the last several years, collisions involving pedestrians and bicyclists are gradually rising.

2.1 Land Use and Demographics

The North County Mobility Matrix subregion has demographic and land use characteristics that are unique in Los Angeles County.

2.1.1 Land Use

The North County study area features the largest concentration of rural and undeveloped land in Los Angeles County. The majority of the region is zoned residential, while the SR 14 corridor through the Cities of Lancaster and Palmdale features pockets of commercial and industrial activity.

2.1.2 Population and Employment

North Los Angeles County is one of the few areas in the County that feature large swaths of undeveloped land and the potential for significant growth. Compared to the rest of the County, the average population density is low, but according to SCAG population and employment estimates and forecasts used in the 2014 Metro SRTP, the study area is expected to grow from about 470,700 residents in 2014 to more than 600,000 by 2024, an increase of 28 percent. Employment in the region is expected to grow by 24 percent over the same period. This represents the largest forecasted growth rate of any region in the County, far above the forecasted countywide average growth forecasts of 8 percent (residents) and 5 percent (jobs). The majority of the growth is concentrated in and around the Cities of Lancaster and Palmdale and the unincorporated areas in the Santa Clarita Valley and the

Quail Lake region near the SR 138/I-5 Interchange (see Figure 2-1).

2.1.3 Environmental Justice

Concentrations of minority and low-income communities were identified using U.S. Census Bureau American Community Survey (ACS) data (2012). Table 2-1 provides an overview of the minority and economic characteristics for Palmdale and Lancaster, compared to the Los Angeles County average.

Table 2-1. Summary of Ethnic and Economic Characteristics

City	Percentage Total Minority	Median Household Income	Percentage Population Living Below Poverty Level
Lancaster	65.8%	\$51,719	21.0%
Palmdale	75.5%	\$54,277	19.4%
LA County Average	72.8%	\$56,241	17.1%

Source: U.S. Census Bureau, American Community Survey, 2012.

In 2012, Lancaster and Palmdale’s population featured a large minority population, defined as nonwhite (including Hispanic) residents. Lancaster’s minority population was 65.8 percent, while Palmdale’s minority population was slightly larger than the county average, at 75.5 percent. The Cities of Lancaster and Palmdale both exceed the county average for percentage of residents living below the poverty line in Los Angeles County.

Disadvantaged 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. In North County, higher risk areas are located around Palmdale and Lancaster. The study area is home to many at-risk population factors, but the CalEnviroScores are offset by comparably low levels of pollution compared to the rest of the County.

2.2 Travel Patterns

2.2.1 Interregional Travel Patterns

Figure 2-2 illustrates the 2014 average weekday trips produced and attracted (all modes) between the study area and neighboring subregions based on the Metro 2014 Short-Range Transportation Plan (SRTP) Travel Demand Model, including trips both to and from the study area. Trip productions are defined as the home end (origin or destination) of a home-based trip, or origin of a non-home based trip. Trip attractions are defined as the nonhome end (origin or destination) of a home-based trip, or destination of a nonhome-based trip. North County’s largest subregional travel market is the San Fernando Valley (including Santa Clarita), featuring 328,300 two-

way person-trips on an average weekday, followed by San Bernardino County (52,300 trips); Westside (44,200); and Central Los Angeles (40,100).

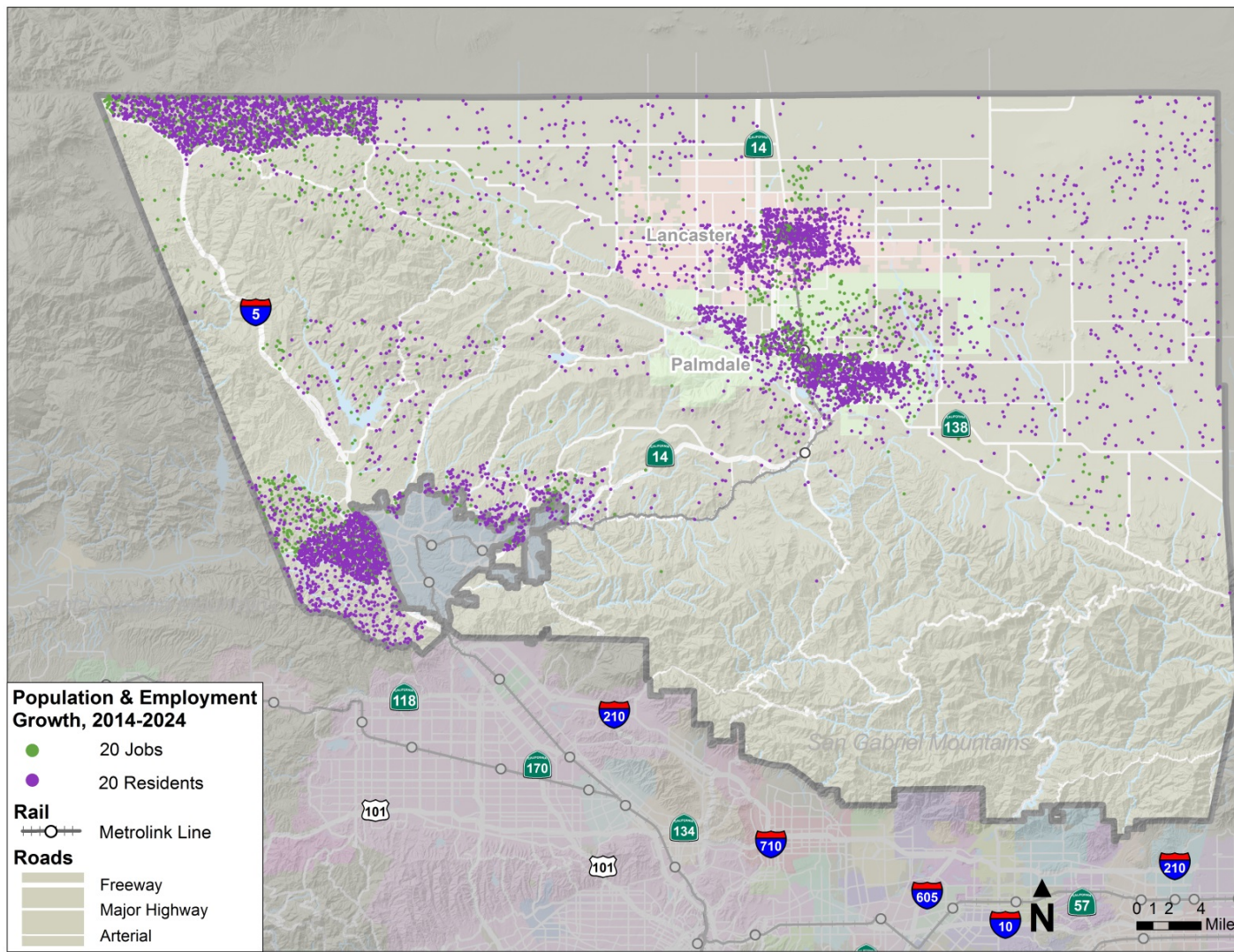
2.2.2 Commute Travel Modes

Table 2-2 presents subregional commute travel mode share by jurisdiction alongside County average. The motor vehicle is the travel mode of choice for more than 90 percent of study area commuters. While the region commutes via auto somewhat more than the county average, it features a higher rate of carpooling (15 percent). Limited transit options and comparably long distances to work make transit and active transportation alternatives more difficult for North County residents than those in the Los Angeles basin.

Table 2-2. 2012 Commute Travel Mode Share

Commute Mode	Lancaster	Palmdale	Unincorporated	Study Area	LA County Average
Drive Alone	81.2%	74.1%	77.6%	77.6%	72.4%
Carpool	13.4%	17.7%	13.8%	15.2%	10.5%
Transit	1.7%	2.8%	1.1%	2.0%	7.2%
Bike/Ped	1.1%	0.9%	0.9%	1.0%	3.8%
Telework	2.0%	3.8%	5.8%	3.5%	5.0%
Other	0.6%	0.7%	0.8%	0.7%	1.2%

Source: U.S. Census, ACS 3-year estimate, 2012.

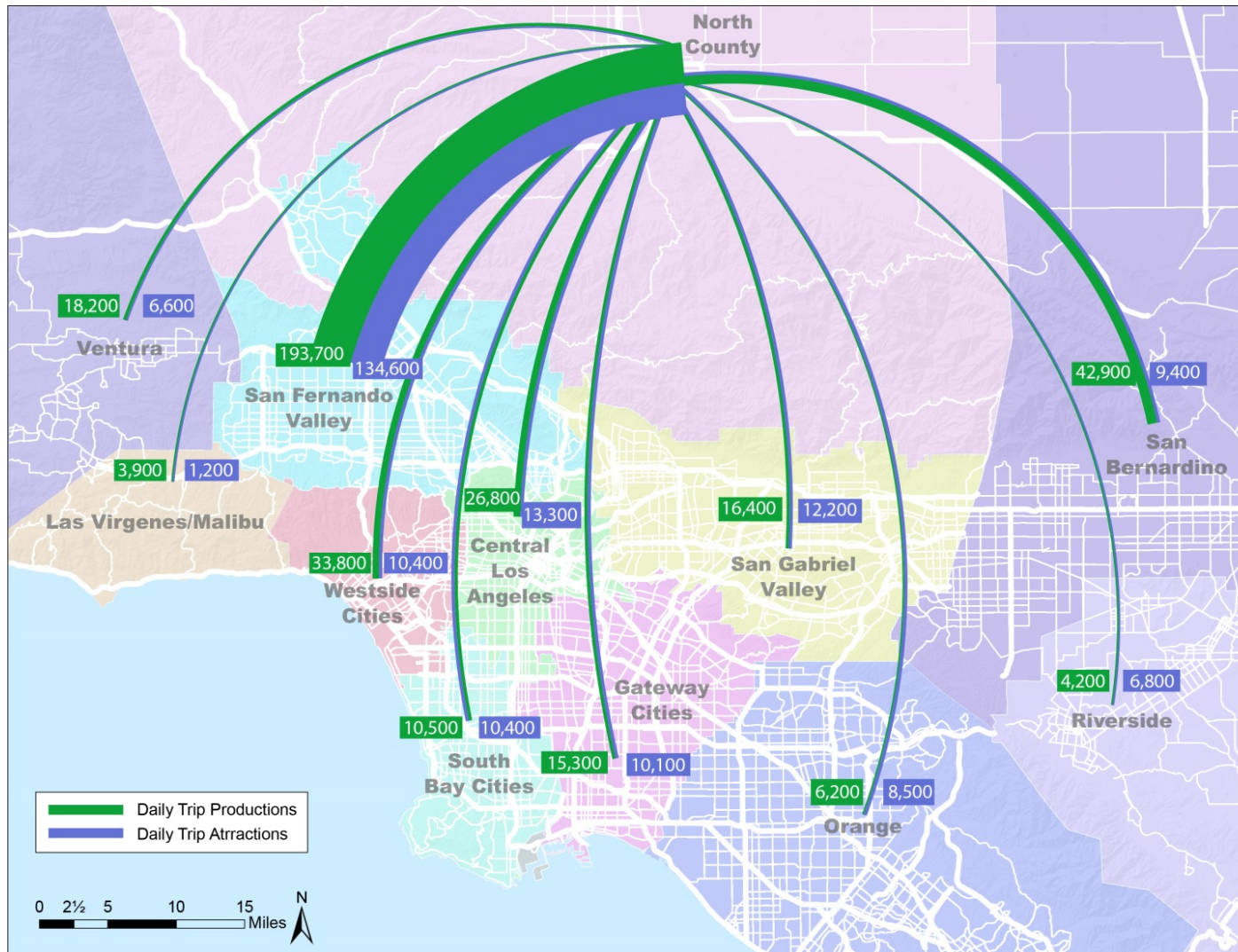
Figure 2-1. Projected Changes in Employment and Residents, 2014 to 2024


Source: Metro 2014 SRTP

Note: The data from the Metro 2014 SRTP Travel Demand Model was formatted by Los Angeles County subregional boundaries as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro LRTP subregional boundaries.

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 2-2. 2014 Average Daily Trips to/From North County Mobility Matrix Subregion



Source: Metro 2014 SRTP

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 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 LRTP subregional boundaries. Values rounded to the nearest hundred.

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

2.3 Vehicle Travel

The North County Mobility Matrix subregion contains three primary highways:

1. **SR 14.** The primary artery for vehicle travel from the Antelope Valley toward the Los Angeles Basin, which meets I-5 in the Santa Clarita valley;
2. **I-5.** Critical interregional route passing through the western edge of the study area, which connects Southern California and the Central Valley and points north; and
3. **SR 138.** Primary east-west travel corridor providing access from I-5 in the west to I-15 in San Bernardino County.

Figure 2-3 shows primary arterials in the region as captured in the CSAN, as amended by subregional stakeholders through the Metro Congestion Management Program (CMP).

According to data from the Statewide Integrated Traffic Record System (SWITRS), total vehicle collisions fell by 27 percent between 2007 and 2011, from 2,692 to 1,968 collisions. Additionally, fatal crashes fell 16 percent, from 62 in 2007 to 52 in 2011 and severe injury crashes fell 23 percent, from 961 in 2007 to 630 in 2011.

2.3.1 Passenger Vehicle Travel Demands

Due largely to significant regional population growth over the coming 10 years, vehicle trips originating

and/or terminating in the study area are forecasted to grow by 23.6 percent, from 1.8 million in 2014 to 2.3 million in 2024. Table 2-3 provides an estimate of average weekday vehicle travel both to and from the study area and neighboring regions in 2014, and forecasted growth by 2024.

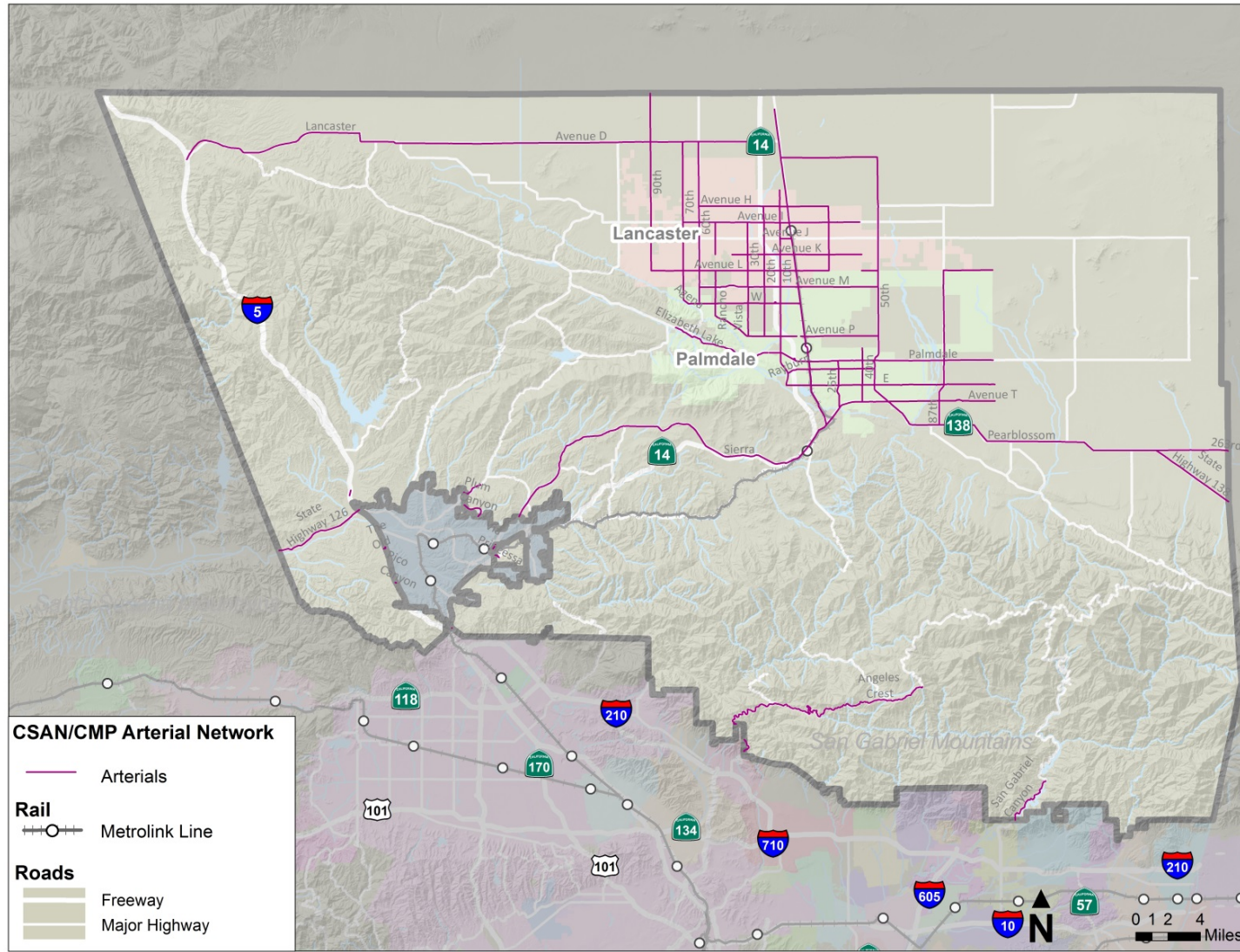
Table 2-3. Vehicle Travel Volumes to/from North Count Mobility Matrix Subregion, 2014 to 2024

Subregion	2014 Vehicle Trips	2024 Vehicle Trips	Δ Trips (2014- 2024)	% Growth
Within North County	748,800	934,700	185,900	25%
Central Los Angeles	16,600	17,400	800	5%
Gateway Cities	10,300	10,800	500	5%
San Fernando Valley	140,200	177,700	37,500	27%
San Gabriel Valley	12,300	13,700	1,400	11%
Las Virgenes/Malibu	2,500	3,300	800	32%
South Bay Cities	6,900	7,200	300	4%
Westside Cities	21,900	24,100	2,200	10%
Ventura County	10,900	13,900	3,000	28%
Orange County	2,900	3,300	400	14%
Riverside County	1,800	2,800	1,000	56%
San Bernardino County	20,100	24,600	4,500	22%
Total	995,200	1,233,500	238,300	24%

Source: Metro 2014 SRTP

Note: Trip patterns are based on aggregation of trip table data from the Travel Demand Model utilized for the Metro 2014 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 LRTP subregional boundaries.

Figure 2-3. CSAN/CMP Network of Regionally Significant Arterials in Study Area



Source: Metro, 2014

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

2.3.2 Driving Times

While North County roadways do not feature the same consistent level of severe congestion seen in other built-out regions of the County, the region features some of longest average vehicle trip times and hours of travel in the County, due in part to long commute distances to and from destinations in the San Fernando Valley, Westside, and Central Los Angeles (see Table 2-4).

Table 2-4. Peak-Period Vehicle Hours of Travel and Average Trip Time, 2014

	Vehicle Hours of Travel	Average Trip Time (Minutes)
Within North County	112,800	9
Central Los Angeles	36,226	131
Gateway Cities	28,285	165
San Fernando Valley	142,776	61
San Gabriel Valley	27,118	132
Las Virgenes/Malibu	5,767	139
South Bay Cities	19,388	170
Westside Cities	52,348	143
Ventura County	19,220	106
Orange County	9,353	196
Riverside County	4,394	196
San Bernardino County	36,854	110
Total	494,529	30

Source: Metro 2014 SRTP.

Note: The data from the Metro 2014 SRTP Travel Demand Model was formatted by Los Angeles County subregional boundaries as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro LRTP subregional boundaries.

2.3.3 Goods Movement

The study area contains several routes of critical importance to regional goods movement, as designated by jurisdictions and identified through the draft CSTAN.

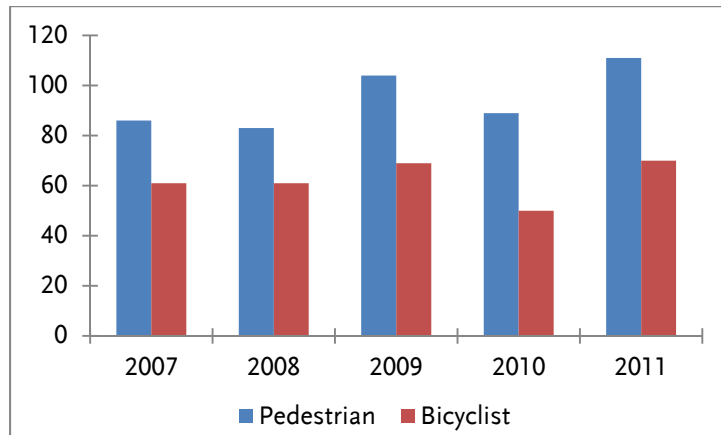
Consistent with all vehicle collisions, accidents involving trucks declined between 2007 and 2011, from a total of 108 to 73.

2.4 Active Transportation

Though its existing active transportation network is relatively limited with the exception of central Lancaster, North County has expressed a goal of expanding the subregional bicycle network, as indicated in local circulation elements and bicycle plans, such as the *City of Lancaster Master Plan of Trails and Bikeways* (2012) and *Los Angeles County Bicycle Master Plan* (2012). The subregion shares a common vision of completing system gaps and improving access to transit and activity centers for nonmotorized modes, with the goal of increasing the number of travelers who choose to walk, bike, or take transit rather than driving. However, in 2012, bicycling and walking together represented approximately 1.0 percent of all commute trips in the study area.

Unlike vehicle collisions, crashes involving bicyclists and pedestrians increased between 2007 and 2011 (see Figure 2-4). Collisions involving pedestrians were more frequent and were more likely to result in severe injuries (23 vs. 10 percent) and fatalities (13 vs. 1 percent). Figure 2-5 highlights bicycle and pedestrian collision density in the study area from 2009 to 2011.

Figure 2-4. Bicycle and Pedestrian Collisions in Study Area, 2007 to 2011



Source: SWITRS, 2014.

2.5 Transit

The study area features commuter rail service to Los Angeles provided by Metrolink, and local bus and commuter services provided primarily by AVTA.

Due in part to long commute times and limited existing transit options and service frequencies beyond the study area, transit commute trips account for only 2.0 percent of regional commute trips, compared to a countywide average of 7.2 percent.

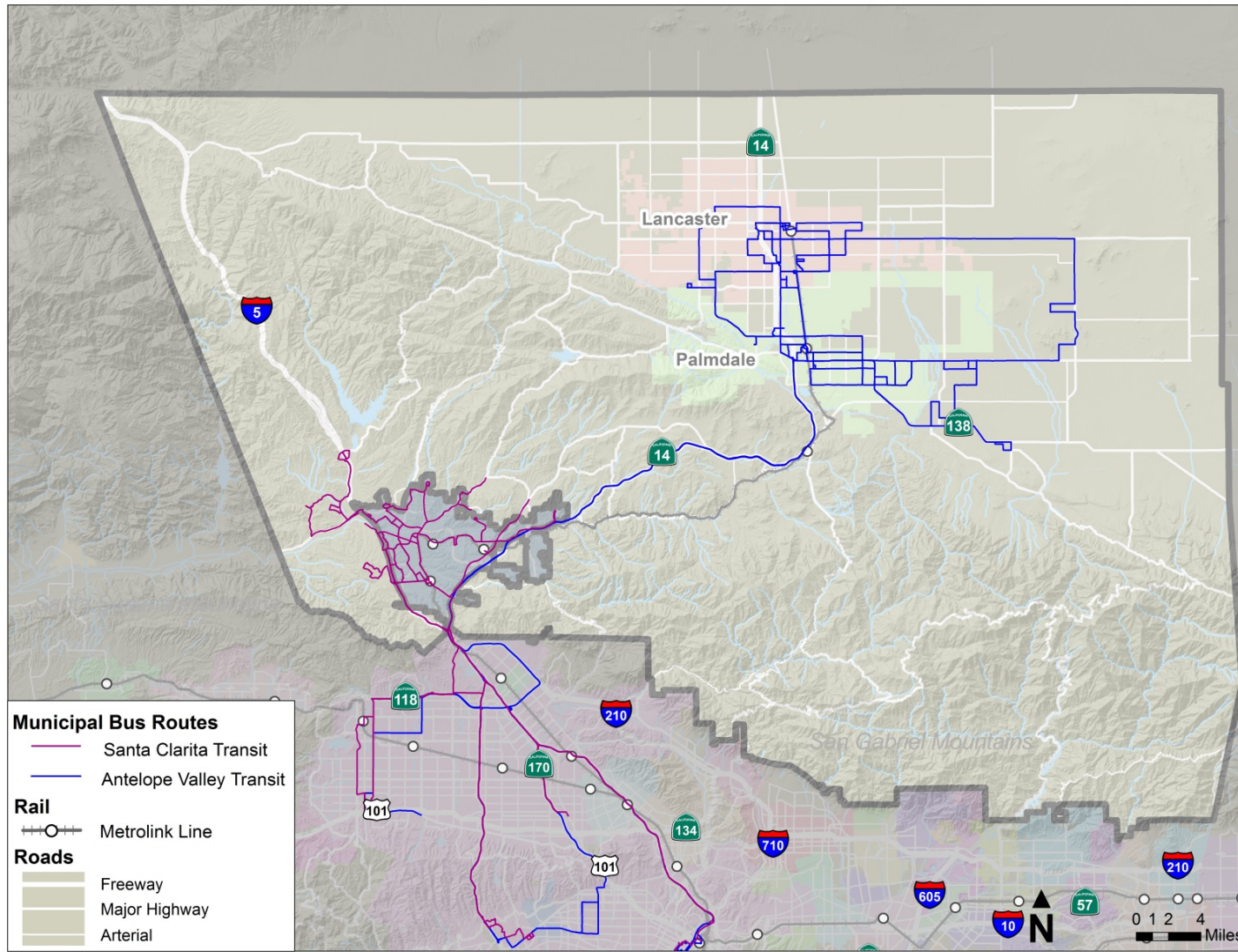
The Metrolink Antelope Valley corridor provides limited commuter rail service between the study area and Los Angeles Union Station, offering 9 inbound and outbound weekday trains from Lancaster and 10 weekday trains to and from Palmdale. In the second quarter of 2014, the study area featured an average of 1,070 weekday Metrolink boardings.

Figure 2-6 highlights the local bus service routes within the study area. AVTA provides local transit service in the study area, including:

- About 12 local bus routes;
- At least two supplemental routes serving high schools;
- About three commuter services serving downtown Los Angeles, Century City/West Los Angeles, and the Western San Fernando Valley; and
- Dial-a-ride services.

Santa Clarita Transit provides service within the Santa Clarita Valley, including portions of Unincorporated Los Angeles County.

Figure 2-6. Transit Service in Study Area



Source: Metro, 2014

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

3.0 GOALS AND OBJECTIVES

This chapter describes the goals and objectives for the North County 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 subregional priorities and are based on recent studies, local jurisdictions’ general plans, and discussions with city and stakeholder staff.

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 receives one evaluation score for each of the six themes.

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 conditions. MAP-21 included national performance measures for interstate highway conditions, and a requirement that state and metropolitan plans indicate how project selection helps achieve these targets. 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. Table 3-1 identifies goals the North County PDT developed for each theme.

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



Table 3-1. Subregional Transportation Issues Identified by the North County PDT

Metro Theme	Subregional Transportation Issues
Mobility	<p>Improved commute travel times. Importance of commute travel to address large share of residents commuting outside of subregion for work</p> <p>Capacity enhancements. A focus on strategic capacity enhancements, for all modes, to accommodate future demand</p> <p>Multimodal connectivity and options. Emphasis on integration and connectivity of existing systems and enhanced capacity of alternatives to single-occupant vehicle (SOV) travel</p>
Safety	<p>Improve safety. Balance mobility needs with the imperative to reduce collisions and improve personal safety</p>
Sustainability	<p>Livability and complete streets. Attention to impacts on quality of life, including public health and safe access for all users</p> <p>Improved and coordinated land use. Recognition that future development should be cognizant of impacts to the transportation system</p>
Economy	<p>Economic development. Focus on creating and maintaining local jobs to address the jobs-housing imbalance, and of facilitating efficient goods movement</p> <p>Acting proactively. Aim towards preventing future deficiencies before they become problematic</p>
Accessibility	<p>Accessibility. Emphasis on connectivity to regional transportation facilities and providing increased access to the system for underserved users to reach critical destinations</p>
State of Good Repair	<p>State of good repair, preservation, and maintenance. Importance of continued maintenance along with system performance and capacity enhancements</p>

3.2 Subregional Priorities

The PDT was asked to consider the six Mobility Matrix themes and develop goals and objectives for each theme that reflected subregional priorities.

In response to the above transportation issues and needs, stakeholders from the subregion developed a series of goal statements to help guide local and subregional transportation planning efforts.

North County's subregional goal statements will help guide how proposed transportation projects are assessed in the Mobility Matrix evaluation process and inform subregional needs in Metro's forthcoming LRTP update.

Table 3-2 lists the goals and performance measure for each goal.

3.2.1 North County Goal Statements

Goal #1. Increase Multimodal Mobility Options for North County Residents, Visitors, and Businesses

North County's transportation investments and policies should focus on maximizing mobility options to improve both inter- and intraregional connectivity.

Goal #2. Make Transportation Investments that Address Current Needs and Anticipate Future Opportunities

North County should take advantage of its unique geographic location, population and development characteristics, and industry clusters to address existing needs and position the region for future opportunities.

Goal #3. Coordinate Implementation of Multimodal Improvements that Support Subregional Economic Development Goals

North County should encourage coordination, communication, and collaboration among subregional stakeholders to ensure that investment decisions are coordinated and reflect subregional transportation, land use, and economic development goals.

Goal #4. Ensure that Investments Balance Mobility, Environmental Sustainability, and Quality of Life

North County should implement fiscally responsible transportation improvements that improve safety, capacity, energy efficiency, and connectivity, while minimizing impacts to the natural environment and overall quality of life.

Goal #5. Maintain and Preserve the Transportation System

North County should continue to develop and implement projects and programs that protect its existing investments and allow the transportation system to operate in a state of good repair.

Table 3-2. Goals and Performance Measures for the North County Mobility Matrix Subregion

Theme	Goal	Performance Measure
Mobility	Improves mobility and multimodal options for residents and visitors	Increases the number of people who travel by transit, walking, biking, or local use vehicles.
		Increases the number of people, as opposed to the number of vehicles, that pass through a given facility in a certain amount of time.
	Increases inter- and intraregional connectivity	Reduces or eliminates system gaps. Connects parts of the transportation system that were previously unconnected. May refer to intermodal connections or connections within a single mode.
		Improves commute travel times
Reduces an individual's time spent traveling.		
Safety	Improves multimodal system safety	Reduces the rate of incidents and/or severity of collisions.
		Improves safety through design features and facility treatments.
Sustainability	Reduces environmental impacts	Reduces the overall VMT in SOVs.
	Increases energy efficiency	Reduces the amount of GHG emissions created by the transportation sector.
	Improves quality of life	Improves the quality of life in a community, including, but not limited to, green streets, travel choices, and eliminating neighborhood traffic intrusion.
Economy	Increases job access options for employees	Improved productivity for businesses and households as they reduce their expenditures for the movement of goods and commuting; regional economic benefits from construction spending and improvements to mobility.
	Promotes efficient goods movement	
	Promotes economic development with an emphasis on creating local jobs	Creates and/or retains jobs either locally or regionally, beyond the jobs associated with the construction of the project.
Accessibility	Provides improved access to the system for underserved users to reach critical destinations	Increases access to transportation services or facilities for people who are required to spend a high proportion of their household income on transportation-related expenses, and/or in neighborhoods with a high level of transit-dependence.
	Provides new transit access, complete streets, or other alternative travel options	Increases the number of people who have access to different transportation options to reach their destination.
		The extent to which the project facilitates access and removes barriers to transit stations/stops.
State of Good Repair	Keeps system operating in state of good repair	Increases the number of viable years before transportation assets need to be replaced or updated.

4.0 SUBREGIONAL MOBILITY MATRIX

An initial North County 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 North County 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 356 projects and programs were identified for the North County Mobility Matrix subregion, including projects with detailed descriptions and defined geographic boundaries and broad categorical programs or ongoing transportation investments. Due to the subregional scale of the study, many of the smaller projects were combined or grouped together into larger programs or consolidated improvements for ease of analysis, while some of the larger improvements were maintained as individual projects. The 356 projects and programs are divided into six program types and further grouped into 21 subprograms for the purposes of the project evaluation

described later in this section. The six program types include:

- Active Transportation Program
- Arterial Program
- Goods Movement Program
- Highway Program
- Multimodal Program
- Transit Program

The North County Mobility Matrix project list includes a wide variety of transportation improvements that are consistent with the priorities identified in Chapter 3.0.

The project list includes projects from countywide planning documents and from local jurisdictions, including the Cities of Lancaster and Palmdale, the Los Angeles County Department of Public Works, AVTA, Caltrans, and Metrolink. Arterial improvements and programs compose about one-third of the project list and active transportation projects make up nearly another third. Highway and transit projects make up a significant portion of the remaining project/program list.

The project/program list includes improvements that address both existing deficiencies in the system, as well as future transportation needs. For instance, it includes improvements to Pearblossom Highway, an important east-west freight corridor that is in need of rehabilitation and enhancement. Additionally, the list contains many improvements that seek to mitigate future bottlenecks before they become problematic, such as new arterials and road widening projects. North County’s population growth rate is higher than any other subregion in the

County, and stakeholders in the subregion are committed to proactively ensuring the transportation system can support the expected growth.

The North County Mobility Matrix project/program list addresses the subregional demand for commute travel from the Antelope Valley to the Santa Clarita Valley and the Los Angeles Basin. This includes 41 proposed enhancements on the Metrolink Antelope Valley Line, increased commuter and shuttle bus service, expanded park-and-ride facilities, and upgrades to the SR 14 corridor for improved vehicular travel times and reliability. The upgrades are intended to keep the transportation system functioning smoothly in the future so that the subregion can retain and attract business and development.

The North County Mobility Matrix list seeks to increase sustainability and improve the quality of life through the expansion of the multimodal transportation network. North County's project/program list places an emphasis on increasing facilities for bicycle and pedestrian travel, collectively referred to as Active Transportation. The subregion benefits from more available land than other parts of the County. Local jurisdictions submitted many proposed bicycle routes, lanes, and paths; and expressed a desire to build out a comprehensive bicycle network before road widths and land uses become limiting. Increasing pedestrian accessibility and safety is a priority of the subregion. The list contains specific pedestrian treatments and ongoing programs to improve walkability within the subregion.

Also included are projects and programs that manage system demand through technology applications and multimodal improvements. These include high-

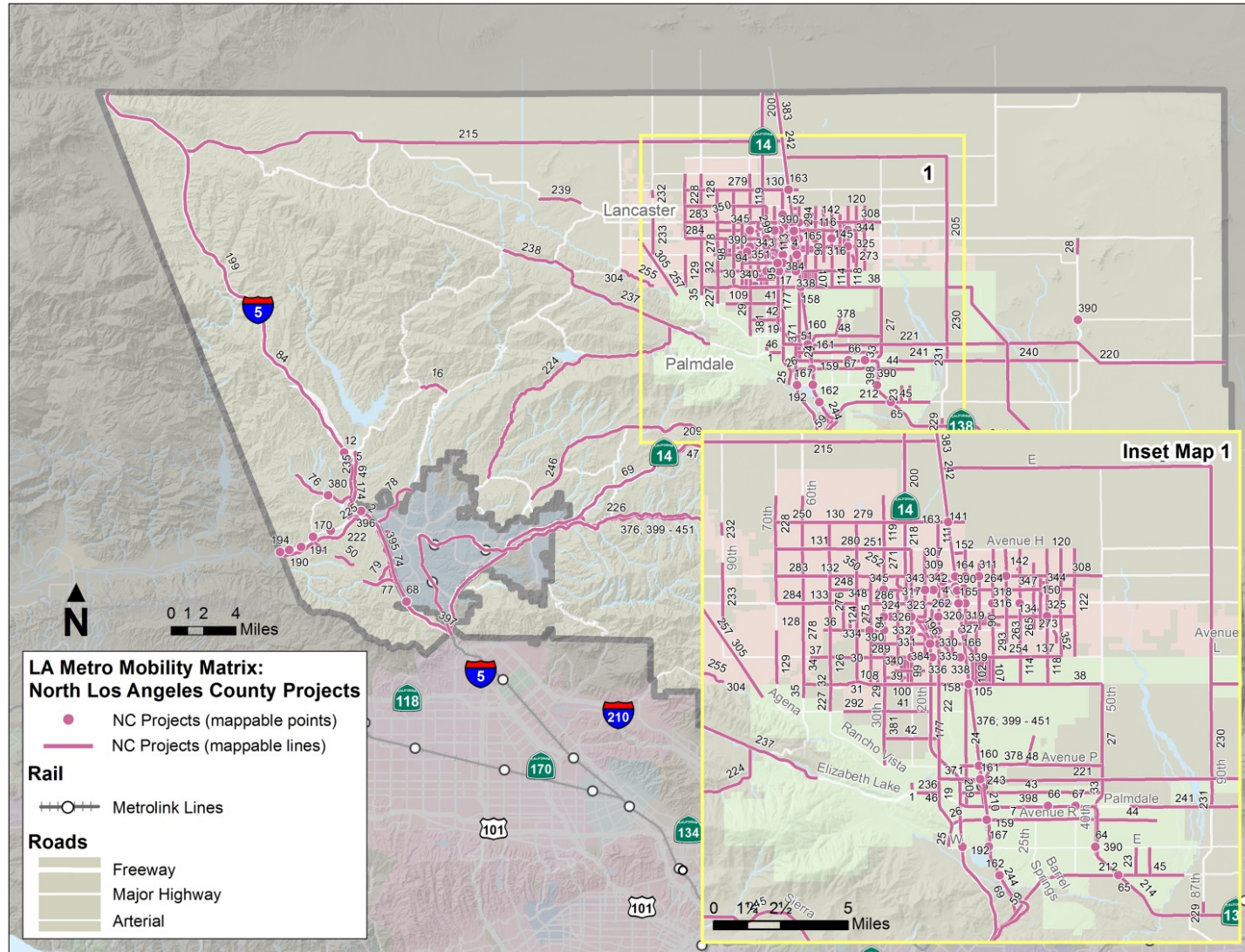
occupancy vehicle (HOV) lanes, intelligent transportation systems (ITS), park-and-ride facilities, circulation improvements for transit access, and expanded transit services.

The list includes state of good repair projects and programs that address the subregional, and countywide, priority to preserve the existing transportation system and infrastructure and to extend the life of existing and future transportation assets.

A prior iteration of the list contained one project, the People Mover to the Palmdale Regional Airport, which has been removed from the North County Mobility Matrix list and added to the Regional Facilities report.

A full list of the projects and programs can be found in Appendix C. Figure 4-1 presents a map of the North County Mobility Matrix projects and programs, where sufficient information was available to map. The numbers on the map correspond to the Project ID in Appendix C.

Figure 4-1. North County Mobility Matrix Projects and Programs



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

4.2 Evaluation

The evaluation contained in this section is intended as a high-level analysis to identify subregional projects and programs that have the potential to address subregional and countywide transportation goals for later quantitative analysis in the Metro LRTP update. The Mobility Matrix does not prioritize the projects, but rather serves as a preliminary screening tool and a starting point in the Metro LRTP update process. The evaluation is qualitative in nature, due to the limited timeframe for completion and largely incomplete and inconsistent project/program details and data. The evaluation methodology shown in Table 4-1 represents a collaborative effort spanning many months, and incorporates input from subregional representatives across Los Angeles County.

A full description of the evaluation methodology can be found in Appendix B.

4.2.1 Evaluation Matrix

The evaluation assigns ratings at the larger program or consolidated improvements level for each of the six Mobility Matrix themes.

As mentioned in Chapter 3.0, state of good repair is a priority for Metro and local jurisdictions, so it is a theme for the Mobility Matrix effort. However, since most new projects or programs included for consideration do not necessarily require or include maintenance or preservation, it was recognized that most projects and programs would not achieve significant benefits under the

State of Good Repair theme. As such, it has been listed last for the evaluation results.

As discussed in Chapter 3.0, the North County Mobility Matrix subregion has developed a set of subregion-specific goals and objectives associated with the six countywide themes. A project or program score is determined by its potential to contribute to one or more of these subregional goals and objectives. The evaluation 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. Performance Evaluation – Summary by Subprogram

		Mobility	Safety	Sustainability	Economy	Accessibility	State of Good Repair
North County Mobility Matrix Projects & Programs	#Projects	*Improves mobility and multi-modal options for residents and visitors *Increases inter- and intra-regional connectivity *Improves commute travel times	*Improves multimodal system safety	*Reduces environmental impacts *Increases energy efficiency *Improves quality of life	*Increases job access options for employees *Promotes efficient goods movement *Promotes economic development with an emphasis on creating local jobs	*Provides improved access to the system for underserved users to reach critical destinations *Provides new transit access, complete streets or other alternative travel options	*Keeps system operating in state of good repair
Active Transportation	123						
Active Transportation Program	123	●	●	●	●	●	●
Arterials Program	146						
ITS Program	12	●	●	●	●	○	○
Arterial Capacity Enhancement Program	113	●	●	-	●	○	●
Grade Separation and Crossing Program	12	●	●	●	●	○	○
State of Good Repair Program	9	●	●	●	●	○	●
Goods Movement Program	1						
Regional Inland Port	1	●	○	-	●	○	○
Highway Program	29						
High Desert Corridor	3	●	●	●	●	●	○
I-5 Improvements: Pico Canyon to Kern County Line	3	●	●	●	●	○	●
SR 138 improvement: I-5 to SR 14	1	●	●	○	●	○	●
SR 14 Improvements: I-5 to Kern County Line	5	●	●	○	●	○	●
Highway Capacity Enhancement Program	5	●	●	-	●	○	●

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

North County Mobility Matrix Projects & Programs	#Projects	Mobility	Safety	Sustainability	Economy	Accessibility	State of Good Repair
		*Improves mobility and multi-modal options for residents and visitors *Increases inter- and intra-regional connectivity *Improves commute travel times	*Improves multimodal system safety	*Reduces environmental impacts *Increases energy efficiency *Improves quality of life	*Increases job access options for employees *Promotes efficient goods movement *Promotes economic development with an emphasis on creating local jobs	*Provides improved access to the system for underserved users to reach critical destinations *Provides new transit access, complete streets or other alternative travel options	*Keeps system operating in state of good repair
Highway Program (continued)							
ITS Program	6	●	◐	◐	◐	○	○
Highway Interchange and Ramp Program	5	●	◐	○	◐	○	◐
Pearblossom Hwy State of Good Repair Project	1	◐	◐	◐	◐	○	●
Multimodal Program	5						
Lancaster Regional Hospital District Mobility Network	1	◐	◐	◐	◐	●	○
Neighborhood transit centers program	1	◐	◐	◐	◐	●	○
Park-and-Ride/Station Access Program	3	●	◐	◐	◐	◐	○
Transit Program	52						
AVTA Bus Rapid Transit Project: Palmdale Bl and 10 th St W	1	●	◐	●	◐	●	○
Bus Service Program	9	●	◐	●	◐	●	○
Metrolink Antelope Valley Line improvements	41	●	◐	●	◐	◐	◐
Metrolink Extension to Kern County	1	◐	◐	◐	◐	◐	○

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

4.3 Findings

Overall, most projects and programs perform well under one or two Mobility Matrix themes, while also providing some secondary benefits in other themes. Some projects and programs have multiple neutral/no benefit scores, but that does not mean they do not provide benefits; rather, those projects or programs tend to be tightly focused on one theme. The Mobility Matrix evaluation does not involve any prioritization, but is intended as a preliminary screening tool only, for use as a starting point in the Metro LRTP update process. The intent of this evaluation is to simply identify subregional projects and programs with the potential to address subregional and countywide transportation goals for later quantitative analysis.

4.3.1 Mobility

Most of the North County transportation improvement programs subprogram score well under the Mobility theme. The primary purpose of many transportation projects is to relieve congestion or provide alternative travel options to improve travel times or system reliability. The highway and arterial capacity enhancement, transportation system management (TSM), and managed lane programs help to relieve congestion or create redundancy for the primary subregional roadways. The transit expansion programs provide improvements to travel times and system reliability. Active transportation and locally oriented improvements provide moderate benefit to subregional mobility. Individual projects may close gaps in modal connectivity, and taken as a whole, these improvements will provide important mobility benefits to a diverse group of users in North County.

4.3.2 Safety

Improved safety is often a byproduct of projects and programs with mobility goals. Grade separation and active transportation score high benefits under the safety theme by separating user groups and removing the potential for conflicts. Many of the proposed bicycle facilities are in areas with high incidents of collisions involving bicyclists and pedestrians. Additionally, the active transportation program includes the Safe Routes to School Programs, the only safety-specific projects on the project list. State of good repair projects and roadway improvement projects enhance vehicular safety by eliminating dangerous or unpredictable road surfaces.

4.3.3 Sustainability

Projects that reduce GHG emissions or improve air quality score positively under the Sustainability theme. Active transportation and transit programs receive high scores in Sustainability because they facilitate travel by modes other than SOV. Similarly, programs receiving a moderate benefit score offer alternatives to SOV travel, but do not offer the breadth of impact of the transit and active transportation programs. Other projects received low benefit scores owing to decreased emissions from reduced vehicle idling.

4.3.4 Economy

Increased economic development and fiscal sustainability are high priorities for the North County Mobility Matrix subregion. Transportation investments can increase economic activity by connecting people to jobs or by improving the flow of goods or services. The only project to score a high benefit under the Economy theme is the Regional Inland Port, which, if deemed economically

viable, has the potential to create many long-term direct and indirect jobs. Other projects and programs received moderate benefits scores in Economy by increasing job access and improving travel times for commuters and goods.

4.3.5 Accessibility

Projects that allow underserved users to access critical destinations scored well under the Accessibility theme. Increasing transit services by expanding the transit network or reducing transit headways provide a high

benefit to subregional accessibility goals. Projects and programs that facilitate more safe and convenient access to transit on an area or corridor level received moderate benefit scores (e.g. station access programs).

4.3.6 State of Good Repair

The projects and programs specifically intended for maintaining existing assets are the only two programs that scored a high benefit for the State of Good Repair theme. Within the State of Good Repair subprogram, there are pavement, bridge, and sidewalk preservation programs. Projects that added new capacity without rehabilitation of existing assets received neutral scores.

5.0 IMPLEMENTATION TIMEFRAMES

The projects and programs described in Chapter 4.0 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 10- and 20-year timeframes. The timeframes correspond to when the projects are anticipated to be completed and in operation. Some projects/programs span multiple timeframes, particularly those involving ongoing operations or maintenance.

Metro, Mobility Matrix consultants, PDT members, local jurisdictions, and other stakeholders worked collaboratively to determine project implementation timeframes. Table 5-1 presents the categorization for the North County project/program categories. A full description of the categorization methodology can be found in Appendix B.

The larger, stand-alone projects have been categorized into the likely timeframe of completion, or phased across multiple timeframes. Most of the subprograms in the North County are categorized for short-, mid-, and long-term implementation timeframes. Most of the projects identified within those subprograms are short-term improvements intended to address existing deficiencies. For Arterials Capacity Enhancement, Grade Separations, and Active Transportation, the number of projects and costs were spread across all three time periods. For other subprograms, it was assumed that there would be additional mid- and long-term projects identified in future years. The emphasis on the shorter term is partially a

result of the bottoms-up approach; whereby local jurisdictions submitted projects/programs intended to address their immediate needs.

Table 5-1. North County Subregional Mobility Matrix Projects and Programs Categorization Summary

North County Mobility Matrix Projects and Programs	Number of Projects	Project Categories		
		Short Term (0-10 Years)	Mid Term (20 Years)	Long Term (20+ Years)
Active Transportation Program	123			
Active Transportation	123	✓	✓	✓
Arterials Program	146			
ITS Program	12	✓	✓	✓
Arterial Capacity Enhancement Program	113	✓	✓	✓
Grade Separation and Crossing Program	12	✓	✓	✓
State of Good Repair Program	9	✓	✓	✓
Goods Movement Program	1			
Regional Inland Port	1			✓
Highway Program	29			
High Desert Corridor	3	✓	✓	✓
I-5 Improvements: Pico Canyon to Kern County Line	3		✓	✓
SR 138 improvement: I-5 to SR 14	1		✓	
SR 14 Improvements: I-5 to Kern County Line	5		✓	✓
Highway Capacity Enhancement Program	5	✓	✓	✓
ITS Program	6	✓	✓	
Highway Interchange and Ramp Program	5	✓	✓	
Pearblossom Hwy State of Good Repair Project	1	✓		
Multimodal Program	5			
Lancaster Regional Hospital District Mobility Network	1			✓
Neighborhood transit centers program	1		✓	
Park-and-Ride/Station Access Program	3	✓	✓	✓

North County Mobility Matrix Projects and Programs	Number of Projects	Project Categories		
		Short Term (0-10 Years)	Mid Term (20 Years)	Long Term (20+ Years)
Transit Program	52			
AVTA Bus Rapid Transit Project: Palmdale Bl and 10th St W	1		✓	
Bus Service Program	9	✓	✓	
Metrolink Antelope Valley Line improvements	41	✓	✓	✓
Metrolink Extension to Kern County	1			✓

5.1 Cost Estimates

This chapter contains the North County 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. For the most part, these estimates do not include vehicles, 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.

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. A full description of the cost estimation methodology can be found in Appendix B.

Since the list was compiled from various sources, some of the projects in the list overlap in their scope or purpose, leading to some duplicative costs in the cost matrix. 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.

Table 5-2 shows the estimated cost ranges for each North County subprogram, divided into the three time periods. For subprograms with many projects on the project list, such as Arterials Capacity Enhancement and Active Transportation, the project costs on the list were spread across all three time periods. For other subprograms with needs anticipated in future timeframes, such as Arterial ITS and State of Good Repair, the short-term project costs have also been applied to future years.

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 indicates which programs have low cost estimate range values due to unavailable cost data. Project costs were provided or estimated for all subprograms except for SR 14 Improvements: I-5 to Kern County Line, Pearblossom Highway State of Good Repair Project, and the Park-and-Ride/Station Access Program. Table 5-3 summarizes the range of cost estimates, by time period and project type.

Table 5-2. North County Mobility Matrix Program Cost Estimate Ranges and Categorizations

North County Mobility Matrix Projects & Programs	Total Projects	Projects with Estimated Costs	Projects with Original Costs	Short Term (0 to 10 Years)		Mid Term (11 to 20 Years)		Long Term (20 plus Years)	
				Low	High	Low	High	Low	High
Active Transportation	123	123	120						
Active Transportation Program	123	123	120	\$95,000,000	\$143,000,000	\$95,000,000	\$143,000,000	\$95,000,000	\$143,000,000
Arterials Program	146	146	139						
Arterial ITS Program	12	12	10	\$71,700,000	\$108,000,000	\$71,700,000	\$108,000,000	\$71,700,000	\$108,000,000
Arterial Capacity Enhancement Program	113	113	108	\$266,000,000	\$400,000,000	\$266,000,000	\$400,000,000	\$266,000,000	\$400,000,000
Grade Separation and Crossing Program	12	12	12	\$136,000,000	\$203,000,000	\$136,000,000	\$203,000,000	\$136,000,000	\$203,000,000
State of Good Repair Program	9	9	9	\$719,000,000	\$1,080,000,000	\$719,000,000	\$1,080,000,000	\$719,000,000	\$1,080,000,000
Goods Movement Program	1	1	1						
Regional Inland Port	1	1	1	\$0	\$0	\$0	\$0	\$32,000,000	\$48,000,000
Highway Program	29	25	20						
High Desert Corridor	3	3	2	\$1,987,000,000	\$2,980,000,000	\$1,987,000,000	\$2,980,000,000	\$1,987,000,000	\$2,980,000,000
I-5 Improvements: Pico Canyon to Kern County Line	3	3	3	\$0	\$0	\$1,120,000,000	\$1,680,000,000	\$1,120,000,000	\$1,680,000,000
SR 138 improvement: I-5 to SR 14	1	1	1	\$0	\$0	\$320,000,000	\$480,000,000	\$0	\$0
SR 14 Improvements: I-5 to Kern County Line	5	2	2	\$0	\$0	\$820,000,000	\$1,230,000,000	\$820,000,000	\$1,230,000,000
Highway Capacity Enhancement Program	5	5	5	\$195,000,000	\$292,000,000	\$195,000,000	\$292,000,000	\$195,000,000	\$292,000,000
Highway ITS Program	6	6	3	\$18,700,000	\$28,100,000	\$18,700,000	\$28,100,000	\$0	\$0
Highway Interchange and Ramp Program	5	5	4	\$132,000,000	\$197,000,000	\$132,000,000	\$197,000,000	\$0	\$0
Pearblossom Hwy State of Good Repair Project	1	0	0	Under Development	Under Development	Under Development	Under Development	Under Development	Under Development
Multimodal Program	5	2	2						
Lancaster Regional Hospital District Mobility Network	1	1	1	\$0	\$0	\$0	\$0	\$48,000,000	\$72,000,000
Neighborhood transit Centers program	1	1	1	\$0	\$0	\$1,000,000	\$1,500,000	\$0	\$0
Park-and-Ride/Station Access Program	3	0	0	Under Development	Under Development	Under Development	Under Development	Under Development	Under Development

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

North County Mobility Matrix Projects & Programs	Total Projects	Projects with Estimated Costs	Projects with Original Costs	Short Term (0 to 10 Years)		Mid Term (11 to 20 Years)		Long Term (20 plus Years)	
				Low	High	Low	High	Low	High
Transit Program	52	52	48						
AVTA Bus Rapid Transit Project: Palmdale Bl and 10 th St W	1	1	1	\$0	\$0	\$12,000,000	\$18,000,000	\$0	\$0
Bus Service Program	9	9	6	\$56,300,000	\$84,400,000	\$56,300,000	\$84,400,000	\$0	\$0
Metrolink Antelope Valley Line improvements**	41	41	41	\$427,000,000	\$640,000,000	\$1,059,000,000	\$1,588,000,000	\$878,000,000	\$1,317,000,000
Metrolink Extension to Kern County*	1	1	0	\$0	\$0	\$0	\$0	\$15,300,000	\$22,900,000
Total	369	362	343	\$4,303,700,000	\$6,456,500,000	\$7,176,700,000	\$10,766,000,000	\$6,631,000,000	\$9,948,900,000

Notes: Estimated costs in 2015 dollars.

*The Metrolink Extension to Kern County project costs are based on the Los Angeles County share of the estimated annual operating costs of service to Rosamond, California.

**The Metrolink Antelope Valley Line improvements include projects submitted by Metrolink as well as other projects in the study area identified in the Antelope Valley Line Strategic plan

These estimates underrepresent the operations and maintenance costs due to limited available data. Costs may also 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.

Table 5-3. North County Mobility Matrix Summary of Rough Order of Magnitude Cost Estimates and Categorizations

Type/ Category	Arterial	Goods Movement	Highway	Active Transportation	Transit	Multimodal	Total
Short-Term (0-10 yrs)	63 Projects \$1.18B to \$1.78B	N/A	20 Projects \$TBD	41 Projects \$95 M to \$143 M	36 Projects \$483 M to \$724 M	3 Projects TBD Cost	163 Projects \$ TBD
Mid-Term (11-20 yrs)	41 Projects/ TBD \$1.18B to \$1.78B	N/A	9 Projects \$TBD	41 Projects \$95 M to \$143 M	7 Projects \$1.13 B to \$1.69 B	1 Project \$1 M to \$1.5 M	99 Projects \$ TBD
Long-Term (>20 yrs)	41 projects/ TBD \$1.18B to \$1.78B	1 Project \$32M to \$48M	8 Projects \$TBD	41 Projects \$95 M to \$143 M	11 Projects \$893 M to \$1.69 B	1 Project \$48 M to \$72 M	103 Projects \$ TBD
Total	146 Projects \$3.55B to \$5.34B	1 Project \$32M to \$48M	29 Projects \$TBD	123 Projects \$285 M to \$429 M	52 Projects 2.50 B to \$3.75 B	5 Projects \$49 M to \$74 M	356 Projects \$ TBD

Estimated costs in 2015 dollars.

Some highway and transit projects are counted in multiple time frames, 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 may also 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.

5.2 Financing the Transportation System

2009 Long Range Transportation Plan and Identified Additional 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.

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.

5.3 What's Next?

The Mobility Matrix is the first step in identifying North County 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.

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.

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

- **North County 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 NCTC 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,

6.0 APPENDICES

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

Appendix A: Meeting Matrix

Appendix B: Methodology Memorandums

Appendix C: Project Detail Matrix

Appendix D: Baseline Conditions Report

APPENDIX A MEETING MATRIX

The following matrix documents PDT coordination meetings as part of the North County Subregional Mobility Matrix Study.

Table A-1. North County Mobility Matrix PDT Meetings and Approvals

Meeting Type	Date/Time	Meeting Location	Meeting Objective
NCTC TAC Meeting	07/21/14 2:00 PM to 3:30 PM	City of Palmdale Development Services Conference Room 38250 Sierra Highway Palmdale, CA 93550	The Mobility Matrix was informally introduced to the NCTC TAC members at this meeting, many of whom are on the Mobility Matrix Project Development Team (PDT).
PDT Meeting #1	08/13/14 2:00 PM to 3:30 PM	City of Palmdale Development Services Conference Room 38250 Sierra Highway Palmdale, CA 93550	The goal of this meeting was to gain consensus on the Mobility Matrix guiding principles, schedule, approach; develop a schedule to update project list previously submitted with PDT members; and develop a better understanding of Subregional goals and objectives.
PDT Meeting #2	09/15/14 1:00 PM to 2:30 PM	City of Palmdale Development Services Conference Room 38250 Sierra Highway Palmdale, CA 93550	The goal of this meeting was to obtain PDT feedback on the updated candidate project list, document the PDT comments and edits on the subregional goals and objectives, and discuss initial approaches and options for performance metrics and categorization process.
PDT Meeting #3	10/20/14 1:00 PM to 2:30 PM	City of Palmdale Administration Training Room 38250 Sierra Highway Palmdale, CA 93550	The goal of this meeting was to obtain consensus on the final revisions to goals, objectives, and performance measures, to document PDT comments on the baseline conditions report (focusing specifically on identifying system gaps), and obtain PDT approval to analyze projects on the approved project list.
Adjacent Subregion/COG Meeting		Los Angeles County Metropolitan Transportation Authority MTA Headquarters Video Conference	Stakeholders from the North Count Mobility Matrix PDT and the San Fernando Valley PDT met to discuss projects that overlap subregional boundaries.

Meeting Type	Date/Time	Meeting Location	Meeting Objective
PDT Meeting #4	11/17/14 1:00 PM to 2:30 PM	City of Palmdale Administration Training Room 38250 Sierra Highway Palmdale, CA 93550	The goals of this meeting were to review the revised subregional project list, finalize subregional goals and objectives, review the draft baseline conditions analysis, review performance metrics and evaluation approach, and discuss categorization. Metro also presented on the LRTP update and proposed ballot measure as well.
PDT Meeting #5	02/02/15 1:00 PM to 2:30 PM	City of Palmdale Administration Training Room 38250 Sierra Highway Palmdale, CA 93550	The goal of this meeting was to finalize the baseline conditions report to discuss the initial performance analysis and categorization of the projects, and to discuss cost estimation process.
Individual Phone Calls and Communications with PDT Members	Ongoing	NA	Members of the North County Mobility Matrix consultant team communicated in person, via email, and phone on a regular basis with Project Development Team members to refine the preliminary project list, to update project costs, and to update project descriptions.

APPENDIX B METHODOLOGY MEMORANDUMS

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.

Program Evaluation Methodology Overview

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

Background and 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.



Countywide Mobility Matrix Themes

Six broad themes guide the development of the Mobility Matrices, as displayed below. 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.



- **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.

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.






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.

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 B-1 represents a collaborative effort spanning many months, and incorporates input from subregional representatives across the County.

Table B-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

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 listed above.

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.

Background and 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.

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.

Figure B-1. Categorization Timeframes

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

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.

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.

Cost Estimation Methodology Overview

This document 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.

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.

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.

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.

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.

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.

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:

- **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.
- **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.

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

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.

All Project Costs Reported 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.

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.

APPENDIX C PROJECT DETAIL MATRIX
Table C.1 North County Mobility Matrix – Preliminary Project List

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Active Transportation	Active Transportation Program	222	County of Los Angeles	Trails and Bikeways; Santa Clara River Bike Trail - Ventura County Line, along Henry Mayo Dr/SR 126 to The Old Road, 800' N/o Rye Cyn Rd (Newhall Ranch Regional River Trail)
		223	County of Los Angeles	Trails and Bikeways; Various streets in County incorporated area; Construct bikeways (Local)
		224	County of Los Angeles	Trails and Bikeways; Bouquet Cyn Road - Vasquez Cyn Rd to Elizabeth Lake Rd
		225	County of Los Angeles	Trails and Bikeways; Henry Mayo Dr - Commerce Center Dr to The Old Rd
		226	County of Los Angeles	Trails and Bikeways; Soledad Canyon Rd - Mammoth Lane to Youngs Canyon Road
		227	County of Los Angeles	Trails and Bikeways; 50th Street West - Ave M-2 to Ave N ; Install Bike Route
		228	County of Los Angeles	Trails and Bikeways; 70th Street West - Avenue F to Avenue J; Install Bike Route
		229	County of Los Angeles	Trails and Bikeways; 87th Street East - Avenue U to Pearblossom Hwy ; Construct Bike Lane
		230	County of Los Angeles	Trails and Bikeways; 90th Street East - Avenue M to Avenue Q; Install Bike Route
		231	County of Los Angeles	Trails and Bikeways; 90th Street East - Avenue Q to Palmdale Blvd; Construct Bike Lane
		232	County of Los Angeles	Trails and Bikeways; 90th Street West - Avenue G to Avenue G-8; Install Bike Route
		233	County of Los Angeles	Trails and Bikeways; 90th Street West - Avenue H-8 to Avenue K; Install Bike Route
		234	Palmdale	Trails and Bikeways; Bicycle connectivity and Gap Closure
		235	County of Los Angeles	Trails and Bikeways; Castaic Creek - Lake Hughes Road to Henry Mayo Drive
		236	County of Los Angeles	Trails and Bikeways; Elizabeth Lake Road - 10th Street West to Dianron Rd; Construct Bike Lane
		237	County of Los Angeles	Trails and Bikeways; Elizabeth Lake Road - Lake Hughes Road to 0.3 mi E/o Cherry Tree Ln; Install Bike Route
238	County of Los Angeles	Trails and Bikeways; Elizabeth Lake Road - Lake Hughes Road to Munz Ranch Road; Construct Bike Lane		
239	County of Los Angeles	Trails and Bikeways; Lancaster Road - 160th Street West to 134th Street West; Install Bike Route		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Active Transportation (continued)	Active Transportation Program (continued)	240	County of Los Angeles	Trails and Bikeways; Palmdale Blvd - 110th Street East to 170th Street East; Install Bike Route
		241	County of Los Angeles	Trails and Bikeways; Palmdale Blvd - 60th Street East to 110th Street East; Construct Bike Lane
		242	County of Los Angeles	Trails and Bikeways; Sierra Hwy - Avenue G to Avenue A; Construct Bike Lane
		243	County of Los Angeles	Trails and Bikeways; Sierra Hwy - Avenue P-8 to Avenue Q; Construct Bike Lane
		244	County of Los Angeles	Trails and Bikeways; Sierra Hwy - Avenue S to Pearblossom Hwy; Construct Bike Lane
		245	County of Los Angeles	Trails and Bikeways; Sierra Hwy - Steele Ave to Pearblossom Hwy; Construct Bike Lane
		246	County of Los Angeles	Trails and Bikeways; Sierra Hwy - Vasquez Cyn Rd to Steele Ave
		247	County of Los Angeles	Trails and Bikeways; Soledad Canyon Rd - Youngs Canyon Road to Sierra Highway; Construct Bike Lane
		248	Lancaster	Trails and Bikeways; 40th Street West Bike Path, Ave J to Ave H
		249	Lancaster	Trails and Bikeways; Amargosa Creek Bike Path, Ave L to Ave I
		250	Lancaster	Trails and Bikeways; Avenue G Bike Path, 70th West to 50th West
		251	Lancaster	Trails and Bikeways; Avenue H Bike Path, 20th West to 35th West
		252	Lancaster	Trails and Bikeways; Avenue I, Lancaster Blvd, 35th Street West, 50th Street West Loop Multipurpose Path
		254	Lancaster	Trails and Bikeways; Avenue L Bike Path, Business Center Pkwy to 35th East
		255	Lancaster	Trails and Bikeways; California Aqueduct Bike Path, 90 West to 110th West
		256	Lancaster	Trails and Bikeways; Sierra Highway Bike Path, Ave H to Ave I
		257	Lancaster	Trails and Bikeways; Utility Corridor Bike Path along SCE utility corridor approximately 100th St W and 78th St W between Ave J and M
		258	County of Los Angeles	Trails and Bikeways; Santa Clara River Bike Trail - South Fork Trail bridge to Bark Park
		259	Palmdale	Trails and Bikeways; Citywide Bicycle Trail Construction
		260	Lancaster	Trails and Bikeways; 45th Street West, Ave J to Ave K
		261	Lancaster	Trails and Bikeways; 10th Street West On-street bikeway, Ave M to Ave H
		262	Lancaster	Trails and Bikeways; 12th Street West On-street bikeway, Ave K-8 to Ave J-4
		263	Lancaster	Trails and Bikeways; 15th Street East On-street bikeway, Ave K-8 to Ave I
		264	Lancaster	Trails and Bikeways; 15th Street West On-street bikeway, Ave H to Ave J-8
		265	Lancaster	Trails and Bikeways; 20th Street East On-street bikeway, Ave L to Ave I
		266	Lancaster	Trails and Bikeways; 20th Street West On-street bikeway, Ave L to Ave H
267	Lancaster	Trails and Bikeways; 25th Street East On-street bikeway, Ave I to Ave J		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Active Transportation (continued)	Active Transportation Program (continued)	268	Lancaster	Trails and Bikeways; 25th Street West On-street bikeway, Ave L to Lancaster Blvd.
		269	Lancaster	Trails and Bikeways; 27th Street East On-street bikeway, Ave K to Ave I
		270	Lancaster	Trails and Bikeways; 30th Street East On-street bikeway, Ave I to Ave L
		271	Lancaster	Trails and Bikeways; 30th Street West On-street bikeway, Ave M to Ave H
		272	Lancaster	Trails and Bikeways; 32nd Street West On-street bikeway, Ave J to Lancaster Blvd.
		273	Lancaster	Trails and Bikeways; 35th Street East On-street bikeway, Ave J-8 to Ave K
		275	Lancaster	Trails and Bikeways; 40th Street West On-street bikeway, Ave L to Ave J
		276	Lancaster	Trails and Bikeways; 50th Street West On-street bikeway, Ave I to Ave K-8
		277	Lancaster	Trails and Bikeways; 5th Street East On-street bikeway, Ave H-8 to Ave K
		278	Lancaster	Trails and Bikeways; 60th Street West On-street bikeway, Ave I to Ave M
		279	Lancaster	Trails and Bikeways; Avenue G On-street bikeway, 50th West to 25th West
		280	Lancaster	Trails and Bikeways; Avenue H On-street bikeway, 70th West to 30th East
		282	Lancaster	Trails and Bikeways; Avenue H-8 On-street bikeway, Division St to Sierra Highway
		283	Lancaster	Trails and Bikeways; Avenue I On-street bikeway, 70th West to 35th East
		284	Lancaster	Trails and Bikeways; Avenue J On-street bikeway, 70th West to 40th East
		286	Lancaster	Trails and Bikeways; Avenue J-8 On-street bikeway, 35th West to 10th West
		287	Lancaster	Trails and Bikeways; Avenue K On-street bikeway, 40th West to 30th East
		288	Lancaster	Trails and Bikeways; Avenue K-8 On-street bikeway, 35th West to 10th West
		289	Lancaster	Trails and Bikeways; Avenue L On-street bikeway, Business Center Pkwy to 40th West
		291	Lancaster	Trails and Bikeways; Avenue M On-street bikeway, 30th West to Sierra Highway
		292	Lancaster	Trails and Bikeways; Avenue N On-street bikeway, 30th West to 45th West
		293	Lancaster	Trails and Bikeways; Challenger Way On-street bikeway, Ave L to Ave I
		294	Lancaster	Trails and Bikeways; Division Street On-street bikeway, Ave H to Ave K
		295	Lancaster	Trails and Bikeways; Fern Avenue On-street bikeway, Ave I to Ave J
		296	Lancaster	Trails and Bikeways; Fig Avenue On-street bikeway, Lancaster Blvd to Ave J
		297	Lancaster	Trails and Bikeways; Lancaster Boulevard On-street bikeway, 32nd West to 40th East
		299	Lancaster	Trails and Bikeways; Valley Central Way On-street bikeway, Ave I to Lanc Blvd
		300	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Various streets in County unincorporated area; Pedestrian Improvement project (Local)
		301	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Various streets in Palmdale area - Pedestrian Improvement project (Local)
		302	Lancaster	Trails and Bikeways; Jogging Trail Loop 1: 35th Street West, Avenue K-8, Sierra Highway, Avenue J
		303	Lancaster	Trails and Bikeways; Amargosa Creek Trail, Ave I to Ave L
		304	Lancaster	Trails and Bikeways; California Aqueduct Trail, 90th West to 110th West
		305	Lancaster	Trails and Bikeways; Utility Corridor Trail along SCE utility corridor approximately 100th St W and 78th St W between Ave J and M
306	Lancaster	Trails and Bikeways; 30th Street East Btwn Lancaster Blvd and Avenue I Pedestrian Improvements		
307	Lancaster	Trails and Bikeways; Avenue H-8/10th Street West Pedestrian Improvements		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Active Transportation (continued)	Active Transportation Program (continued)	308	Lancaster	Trails and Bikeways; Avenue I Pedestrian Improvements: South side of Ave I from 35th East to 50th East
		309	Lancaster	Trails and Bikeways; Avenue I/10th Street West Pedestrian Improvements
		310	Lancaster	Trails and Bikeways; Avenue I/15th Street East Pedestrian Improvements
		311	Lancaster	Trails and Bikeways; Avenue I/5th Street East Pedestrian Improvements
		312	Lancaster	Trails and Bikeways; Avenue I/Division Street Pedestrian Improvements
		313	Lancaster	Trails and Bikeways; Avenue I/Fern Avenue Pedestrian Improvements
		314	Lancaster	Trails and Bikeways; Avenue I/Sierra Highway Pedestrian Improvements
		315	Lancaster	Trails and Bikeways; Avenue J/10th Street West Pedestrian Improvements
		316	Lancaster	Trails and Bikeways; Avenue J/20th Street East Pedestrian Improvements
		317	Lancaster	Trails and Bikeways; Avenue J/20th Street West Pedestrian Improvements
		318	Lancaster	Trails and Bikeways; Avenue J/Challenger Way Pedestrian Improvements
		319	Lancaster	Trails and Bikeways; Avenue J/Division Street Pedestrian Improvements
		320	Lancaster	Trails and Bikeways; Avenue J/Fig Avenue Pedestrian Improvements
		321	Lancaster	Trails and Bikeways; Avenue J/Sierra Highway Pedestrian Improvements
		322	Lancaster	Trails and Bikeways; Avenue J-8/10th Street West Pedestrian Improvements
		323	Lancaster	Trails and Bikeways; Avenue J-8/20th Street West Pedestrian Improvements
		324	Lancaster	Trails and Bikeways; Avenue J-8/27th Street West Pedestrian Improvements
		325	Lancaster	Trails and Bikeways; Avenue J-8/30th Street East Pedestrian Improvements
		326	Lancaster	Trails and Bikeways; Avenue J-8/30th Street West Pedestrian Improvements
		327	Lancaster	Trails and Bikeways; Avenue J-8/Sierra Highway Pedestrian Improvements
		330	Lancaster	Trails and Bikeways; Avenue K/10th Street West Pedestrian Improvements
		331	Lancaster	Trails and Bikeways; Avenue K/20th Street West Pedestrian Improvements
		332	Lancaster	Trails and Bikeways; Avenue K/30th Street West Pedestrian Improvements
		334	Lancaster	Trails and Bikeways; Avenue K/Yew Street Pedestrian Improvements
		335	Lancaster	Trails and Bikeways; Avenue K-8/10th Street West Pedestrian Improvements
		336	Lancaster	Trails and Bikeways; Avenue L (eastbound-/CA-14 Northbound off-ramp Pedestrian Improvements
		337	Lancaster	Trails and Bikeways; Avenue L (westbound-/CA-14 Northbound off-ramp Pedestrian Improvements
		338	Lancaster	Trails and Bikeways; Avenue L Eastbound On-ramp (west of railroad-/Sierra Highway Pedestrian Improvements
		339	Lancaster	Trails and Bikeways; Avenue L Eastbound/Sierra Highway on- and off-ramp Pedestrian Improvements
		340	Lancaster	Trails and Bikeways; Avenue L/20th Street West Pedestrian Improvements
		341	Lancaster	Trails and Bikeways; Jackman Avenue/Fern Avenue Pedestrian Improvements
		342	Lancaster	Trails and Bikeways; Lancaster Boulevard/12th Street West Pedestrian Improvements
		343	Lancaster	Trails and Bikeways; Lancaster Boulevard/15th Street West Pedestrian Improvements
		344	Lancaster	Trails and Bikeways; Lancaster Boulevard/30th Street East Pedestrian Improvements
345	Lancaster	Trails and Bikeways; Lancaster Boulevard/30th Street West Pedestrian Improvements		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Active Transportation (continued)	Active Transportation Program (continued)	346	Lancaster	Trails and Bikeways; Lancaster Boulevard/Sierra Highway Pedestrian Improvements
		347	Lancaster	Trails and Bikeways; Jogging Trail Loop 2: Lancaster Blvd, 30th Street East, Soccer Center, Avenue J-8, 5th Street East
		348	Lancaster	Trails and Bikeways; 35th Street West Paved Multipurpose Path, Ave L to Lancaster Blvd.
		350	Lancaster	Trails and Bikeways; Lancaster Blvd/Avenue I Loop Paved Multipurpose Path south side of Ave I from 35th to 50th; east side of 50th St W from Ave I to Lancaster Blvd, north side of Lancaster Blvd from 50th St W to 35th St, west side of 35th St W from Lancaster Blvd to Ave I
		351	Lancaster	Trails and Bikeways; Avenue K-8 from 30th Street West to 15th Street West Trail
		352	Lancaster	Trails and Bikeways; Drainage Channel Trail: along drainage channel on 33rd St E from Ave L to Ave K
		393	Palmdale	Palmdale Safe Routes to School Program
		394	Lancaster	Lancaster Safe Routes to School Program
Arterial Program	Arterial Capacity Enhancement Program	1	Palmdale	Highway Corridor/Gap Closure/Goods Movement; 20th Street West Bridge construction
		2	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; The Old Rd - 700 feet n/o Magic Mountain Pkwy to Tumberry Ln; Henry Mayo Dr - The Old Rd to the SR 126 hook ramps; Rye Cyn Rd - The Old Rd to Ave Stanford; and Skyview Lane - The Old Rd to Entertainment Dr; Road and bridge widening project
		5	County of Los Angeles	I-5 Parker Road - Intersection Improvements including bridge widening and lane additions
		7	Palmdale	Avenue R- Widen from 5th St. E to 20th St E
		12	County of Los Angeles	I-5 Lake Hughes Rd- Intersection improvements and widening to provide additional lanes on EB and WB Approaches
		16	County of Los Angeles	Castaic Cutoff (New Road); Lake Hughes Rd/San Francisquito Canyon Road
		17	Lancaster, Palmdale	Columbia Wy/Av M Corridor Improvements; Capacity & interchange improvements at SR 14 from 10th St W to 15th St W, serving major industrial centers & Courthouse
		19	Palmdale	Tierra Subida Av/10th St W Improvement Project; Capacity improvements betw SR 14/10th St W & SR 14/Av S
		22	Palmdale	Highway Corridor/Gap Closure/Goods Movement; 10th Street West roadway construction between Elizabeth Lake Road and Avenue M.
		23	Palmdale	Highway Corridor/Gap Closure/Goods Movement; 62nd/70th Streets East widening, extension to Avenue T.
		24	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Division Street roadway construction between SR 138 and Avenue M.
		25	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Tierra Subida Avenue roadway widening between Rayburn Road and Avenue S.
26	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Rayburn Road widening between Division Street and Tierra Subida Avenue		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Arterial Program (continued)	Arterial Capacity Enhancement Program (continued)	27	Palmdale	Highway Corridor/Gap Closure/Goods Movement; 50th Street East widening between SR138 and Avenue M
		28	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 170th St East - Avenue J to Avenue N; Reconstruction/Widening project
		29	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 30th St W-Avenue M to Avenue O-12; Widening project
		30	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 40th St W-Avenue K-4 to Avenue K-12; Widening project
		31	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 40th St W-Avenue L to Avenue M; Widening project
		32	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 50th St W-Avenue K to Avenue N; Widening project
		33	Palmdale	Highway Corridor/Gap Closure/Goods Movement; 50th Street East Connector Arterial for E-220 to SR 138/ Palmdale Blvd Roundabout
		34	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 60th St W-Avenue L-4 to Avenue L-8; Widening project
		35	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; 60th St W-Avenue M to Avenue M-8; Widening project
		36	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue K - 40th St W to 52nd St W; Widening project
		37	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue L-40th St W to 57th St W; Widening project
		38	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Avenue M widening between SR14 and 50th Street East
		39	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue M-30th St W to Antelope Valley Freeway; Widening project
		40	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue M-40th St West/60th St West; Widening project
		41	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue N-45th St W to SR 14; Widening project
		42	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Avenue O-30th St W to 10th St W; Widening project
		43	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Avenue Q widening between SR14 and 50th Street East
44	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Avenue R roadway construction between Division and 70th Street East		
45	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Avenue T roadway construction between Fort Tejon Road and City Limit at 80th St. East		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Arterial Program (continued)	Arterial Capacity Enhancement Program (continued)	46	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Elizabeth Lake Road - Foxholm Drive to Ocotillo Drive; Widening project
		47	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Escondido Cyn Rd-Norcross Dr/Puritan Mine Rd; Widening project
		48	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Rancho Vista Boulevard / Avenue P roadway construction between Fairway Drive and 50th Street East
		49	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; The Old Road - Hillcrest Parkway to Lake Hughes Road; Widening project
		50	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Valencia Blvd from the future Homestead Village Entrance to Magic Mountain Parkway; Widening project
		51	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Technology Drive roadway construction between SR14 and Sierra Highway
		63	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Various streets in Palmdale area - Intersection improvement projects (Local)
		64	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Avenue S at 47th Street East/SR 138 Intersection Widening
		65	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Fort Tejon Road/SR 138 at Avenue T Intersection Widening
		66	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Palmdale Blvd at 30th Street East Intersection Widening
		67	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Palmdale Blvd at 40th Street East Intersection Widening
		88	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 36th St West from Avenue J-8 to Avenue J-10
		89	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 37th St West from Avenue J-8 to Avenue J-10
		90	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 6th St East from Avenue J-10 to Avenue J-11
		91	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 7th St East from Avenue J-10 to Avenue J-11
		92	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 8th St East from Avenue J-10 to Avenue J-11
		93	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Yucca Avenue from Avenue J-11 to 1100 feet north of Ave J-11
		94	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 35th West, Ave J-10 to Ave J-12
		95	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 22nd St West from Avenue L to Avenue L-8
		96	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 5th St East, Ave J to Ave J-8
		97	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 8th St East from Avenue J-6 to Avenue J-8
98	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 42nd St West, Ave K to Ave J-10		
99	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 21st Street West from Avenue L to Avenue M		
100	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 23rd St West from Avenue L-4 to Avenue M		
101	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 32nd St West from Avenue L-8 to Avenue M		
102	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 3rd Street East from Avenue L to Avenue M		

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Arterial Program (continued)	Arterial Capacity Enhancement Program (continued)	104	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 5th Street East from Avenue L to Avenue M
		105	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 6th Street East from Avenue L to Avenue M
		106	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 7th Street East from Avenue L to Avenue M
		107	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 8th Street East from Avenue L to Avenue M
		108	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue M, 40th West to Challenger Way
		109	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue N, 30th West to 45th West
		110	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 10th Street East Corridor, Ave H to Ave M
		111	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 10th Street West Corridor, Ave G to Ave M
		112	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 15th Street East Corridor, Ave H-8 to Ave K-4
		113	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 15th Street West Corridor, Ave H to Ave L
		114	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 20th Street East Corridor, Ave H to Ave M
		115	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 20th Street West Corridor, Ave H to Ave M
		116	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 25th Street East Corridor, Ave H-8 to Ave K
		117	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 25th Street West Corridor, Ave J to Ave L-2
		118	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 30th Street East Corridor, Ave H to Ave M
		119	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 30th Street West Corridor, Ave F to Ave M
		120	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 35th Street East Corridor, Ave H to Ave L
		121	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 35th Street West Corridor, Ave I to Ave M
		122	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 40th Street East Corridor, Ave H to Ave L
		123	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 40th Street West Corridor, Ave G to Ave M
		124	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 45th Street West Corridor, Ave J to Ave K
		125	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 4th Street East Corridor, Ave K to Ave M
		126	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 50th Street West Corridor, Ave G to Ave M
		127	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 5th Street West Corridor, Ave K to Ave L
		128	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 60th Street West Corridor, Ave F to Ave M
		129	Lancaster	Highway Corridor/Gap Closure/Goods Movement; 70th Street West Corridor, Ave K to Ave M
		130	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue G Corridor, 60th West to Division St
		131	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue H Corridor, 60th West to 50th East
		132	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue I Corridor, 60th West to 40th East
		133	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue J Corridor, 65th West to 40th East
		134	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue J-8 Corridor, Division St to 40th East
		135	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue K Corridor, 50th West to 40th East
		136	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue K-8 Corridor, 35th East to 10th West
		137	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue L Corridor, 4th East to 35th East
		138	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue L-8 Corridor, 15th West to 26th West
		139	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Division Street Corridor, Ave K-8 to Ave H
		140	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Lancaster Boulevard Corridor: Yucca Avenue to Division St

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description	
		Project ID	Jurisdiction*		
Arterial Program (continued)	Arterial Capacity Enhancement Program (continued)	141	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Sierra Highway Corridor, Ave M to Ave G	
		142	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue H-12 from 18th Street East to 20th Street East	
		143	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue J-12 from 7th Street East to 8th Street East	
		144	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue J-12 from Division to 12th Street East	
		145	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue J-4 from 26th Street East to 27th Street East	
		146	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue K-4 east of Gadsden to 5th Street West	
		147	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue K-6 east of Gadsden to 5th Street West	
		148	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue L-12 from 20th Street West to 30th Street West	
		149	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue L-4 from 20th Street West to 27th Street West	
		150	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Kettering St from 27th Street East to 30th Street East	
		151	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Oldfield St from Fern Ave to Genoa Street	
		152	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue H-2 From Division Street to Railroad Right-of-way	
		153	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Avenue H-8 from 6th Street East to Challenger Way	
		154	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Business Center Parkway, Ave K-8 to Ave L	
		155	Lancaster	Highway Corridor/Gap Closure/Goods Movement; Valley Central Way, Ave I to Lancaster Blvd.	
		380	County of Los Angeles	Hasley Canyon Road at Del Valle Road	
		392	Palmdale	Palmdale Intersection Improvement Program	
	397	Caltrans	The Old Road: Widen The Old Road to provide continuous 4 lanes between Sierra Highway to north of Weldon Canyon Road in Santa Clarita.		
		Arterial ITS Program	70	County of Los Angeles, Lancaster, Palmdale, Santa Clarita	SR 14- Install Traffic Signal Synchronization and Other Improvements along major arterial roads serving SR 14 (Sierra Highway, Agua Dulce Canyon Rd, San Canyon Rd, Soledad Canyon Rd, San Fernando Rd)
			74	County of Los Angeles	The Old Road - Hasley Cyn to Pico Cyn
	76		County of Los Angeles	Hasley Cyn Rd/Commerce Center- Burlwood Dr to I-5 Fwy	
	77		County of Los Angeles	Pico Canyon Rd - Dead Horse Cyn to I-5 Fwy	

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Arterial Program (continued)	Arterial ITS Program	78	County of Los Angeles	Rye Canyon Rd/Copper Hill Rd- The Old Road to McBean Pkwy
		79	County of Los Angeles	Stevenson Ranch Pkwy- Pico Cyn to I-5 Fwy
		80	County of Los Angeles	Traffic Signal and Signal Synchronization; Various streets in County unincorporated area; Traffic Signal Improvement projects (Local)
		81	Lancaster	Traffic Signal and Signal Synchronization; Various streets in Lancaster area; Traffic Signal Improvement projects (Local)
		82	Palmdale	Traffic Signal and Signal Synchronization; Various streets in Palmdale area - Traffic Signal Improvement projects (Local)
		381	County of Los Angeles	30th Street W - West Avenue I to Rancho Vista Bl.
		382	County of Los Angeles	Wireless Communications System for North County/Antelope Valley Area (Various Locations)
		398	Caltrans	SR 138 from Jct. 14 to Avenue T in Palmdale: Install fiberoptic signal interconnect.
	Grade Separation and Crossing Program	4	Lancaster	Grade Separation; Milling Street Grade Separation
		156	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Various streets in Palmdale area - At Grade Rail Crossing Improvements
		158	Palmdale	Grade Separation; Avenue M at Sierra Highway Grade Separation (UPRR and Metrolink)
		159	Palmdale	Grade Separation; Avenue R at Sierra Highway Grade Separation (UPRR and Metrolink)
		160	Palmdale	Grade Separation; Rancho Vista Boulevard at Sierra Highway Grade Separation (UPRR and Metrolink)
		161	Palmdale	Grade Separation; Sierra Highway at the Alignment of Avenue P-8 (UPRR and Metrolink)
		162	County of Los Angeles	Grade Separation; Barrel Springs RD at SCRRRA
		163	Lancaster	Grade Separation; Avenue G Grade Separation
		164	Lancaster	Grade Separation; Avenue I Grade Separation
		165	Lancaster	Grade Separation; Avenue J Grade Separation
	166	Lancaster	Grade Separation; Avenue K Grade Separation	
	State of Good Repair Program	52	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Various streets in County unincorporated area; Bridge Rehabilitation project (Local)
		53	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Various streets in Palmdale area - Bridge Rehabilitation projects (Local)
		54	Lancaster	Operation and Maintenance; Various streets in Lancaster area; Overlay, sidewalk, curb & Parkway Preservation projects (Local)
		55	Palmdale	Operation and Maintenance; Various streets in Palmdale area - Overlay, sidewalk, curb & Parkway Preservation projects (Local)

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description	
Arterial Program (continued)	State of Good Repair Program (continued)	56	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Various streets in County unincorporated area; Aesthetics and Beautification project (Local)	
		57	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Various streets in Palmdale area - Aesthetics and Beautification project (Local)	
		58	County of Los Angeles	Operation and Maintenance; Various streets in County unincorporated area; Sidewalk, curb & Parkway Preservation projects (Local)	
		60	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Various streets in County unincorporated area; Pavement Preservation project (Local)	
		61	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Various streets in County unincorporated area; Pave dirt road and drainage improvement project (Local)	
Goods Movement	Regional Inland Port	386	Lancaster, Palmdale	Regional Inland Port (Location TBD)	
Highway Program	High Desert Corridor	205		HDC N-S. SR 14 to HDC SR 138 – Add 2 lanes	
		220	County of Los Angeles	High Desert Corridor (Phase 2) - Design and construction of the multi-purpose corridor including highway, high-speed train, green energy, and bicycle elements. Assumes P-3 delivery method.	
		221	Palmdale	Freeway and Interchange; High Desert Corridor - Phase 1 from SR 14 to 110th Street East	
	Highway Capacity Enhancement Program	170	County of Los Angeles	Grade Separation; Long Canyon Road/Chiquito Canyon Road going underneath a 6-lane SR126 overpass ; grade separated interchange	
		210	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Sierra Hwy widening between Avenue M and Pearblossom Hwy	
		211	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Long Canyon Road from SR 126 to the future Homestead Village entrance (excludes bridge); Roadway Capacity (construct 6-lane major highway)	
		212	Palmdale	Highway Corridor/Gap Closure/Goods Movement; Pearblossom Hwy widening between SR14 and Fort Tejon Road/Avenue T intersection.	
		214	Palmdale	SR138 roadway improvements from SR14 to Fort Tejon/Pearblossom/Avenue T intersection and additional unfunded segments to San Bernadino County Line	
		Highway Interchange and Ramp Program	68	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Calgrove and I-5 onramp improvements; Widening project
			191	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; SR 126 and San Martinez Grande Canyon Road; Intersection Improvement (new 3-way intersection)
	192		Palmdale	Freeway and Interchange; Avenue S at SR 14	
	384		Lancaster	Avenue K-8 Interchange at State Route 14	
		396	Caltrans	I-5 at SR 126: Construct NB I-5 to WB SR 126 direct connector. Existing NB 5 Off to SR 126 is beginning to approach capacity.	

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Highway Program (continued)	Highway ITS Program	69	County of Los Angeles, Lancaster, Palmdale	SR 14- Deployment of 4 ITS projects along the proposed SR 14 HOV lanes. I-5 to Avenue P along SR 14
		84	LA, Lancaster, Palmdale, Santa Clarita	I-5- In Los Angeles, SR 14 to Kern County Line. Install CCTV and Communications System from SR 14 to the Kern Co. line
		190	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; SR 126 and future Homestead Village entrance; Intersection Improvement (new 3-way intersection)
		193	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; SR 126 and Wolcott Way; Intersection Improvement and widen median to allow double left-turns
		194	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; SR 126 and County Line; Intersection Improvement
		217	County of Los Angeles, Lancaster, Palmdale, Santa Clarita	SR 14- Expansion of Freeway Service Patrol (FSP- Throughout the SR 14 corridor
	I-5 Improvements: Pico Canyon to Kern County Line	174	County of Los Angeles, Santa Clarita	I-5- SR 126 West to Lake Hughes Rd– Add 1 Truck Climb and 1 HOV
		199	County of Los Angeles	I-5- Lake Hughes Rd to Kern County Line – Add 1 Truck Climb
		395		I5 from Pico Canyon to SR 126: Add 1 truck lane and 1 HOV lane in each direction
	Pearblossom Hwy State of Good Repair Project	59	Palmdale	Pearblossom Hwy Improvement Project; Corridor improvements betw SR 14 & SR 138 to commuter/trucking route
	SR 138 Improvement: I-5 to SR 14	215	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; SR 138 from I-5 to SR 14; Corridor Improvement
	SR 14 Improvements: I-5 to Kern County Line	177	County of Los Angeles, Lancaster, Palmdale	SR 14- Avenue P to Avenue L – Add 1 mixed flow lane and 1 HOV
		196		SR 14: I-5 to Kern County Line (Mixed-flow improvements)
		200	County of Los Angeles, Lancaster	SR 14- Avenue L to Kern Co Line – Add 1 mixed flow lane

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Highway Program	SR 14 Improvements: I-5 to Kern County Line (continued)	209	Palmdale	Freeway and Interchange; SR 14 Widening and gap closure to provide a consistent 3 lanes and HOV lane in each direction from Sand Canyon Rd to Rancho Vista Boulevard/Avenue P. Consider adding additional HOV or Truck climbing lane
		218	Lancaster	Freeway and Interchange; Context Sensitive Solutions (SR 14, Avenue M to Avenue G)
Multimodal Program	Lancaster Regional Hospital District Mobility Network	385	Lancaster	Regional Hospital District Mobility Network: Multi-modal network of roadways, bikeways, and transit access around Antelope Valley Hospital: 20th St W, Avenue J, 15th St W, and Avenue J-8
	Park-and-Ride/Station Access Program	353	Palmdale	SR 138/HDC E-W- Park-and-ride. 11 new lots 4,000 total spaces
		354		SR 14- SR 14 Corridor. Add and/or expand park-and-ride facilities
		391	Palmdale	Palmdale Transportation Center Area Improvements Program- new CA-HSR and Xpress West multimodal station will require significant surface improvements in the area of the station.
People Mover to Palmdale Airport	378	Palmdale	Transit; People mover from the Palmdale Transportation Center to the Palmdale Regional Airport	
Transit Program	AVTA Bus Rapid Transit Project: Palmdale Bl and 10th St W	371	AVTA	Transit; AVTA Bus Rapid Transit Project (Palmdale Bl and 10th St W)
	Bus Service Program	355		I5 Corridor - Long haul bus service expansion program
		357	County of Los Angeles, Lancaster, Palmdale	Increase Shuttle service from Metrolink Stations to employment destinations in Lancaster and Palmdale
		359	Palmdale	Local and express buses on High Desert Corridor (east/west routes)
		367	Lancaster	Lancaster Bus Stop Improvement Program, Phases 1 and 2
		368	Palmdale	Transit; Bus Stop Upgrades for ADA Compliance
		369	Lancaster	Transit; Balance of Bus Stop Improvement Program
		387	AVTA	Expand transporter (790) bus service
		388	AVTA	Expand commuter bus services
	389	AVTA	Electric bus expansion program	
	Metrolink Antelope Valley Line Improvements	376	Palmdale	Transit; Metrolink Improvements as identified in the AV Line Study Conducted by Metro
		399	Metrolink	EMF Additional Storage Tracks: Increase storage capacity at EMF by extending the length of the existing storage tracks and adding a middle crossover.
		400	Metrolink	EMF SKI Tracks: Add 2 SKI tracks at EMF. Install dump stations and potable water.
		401	Metrolink	Locomotives (for base case growth of locomotives and cars): This is the amount needed for the "organic" growth (irrespective of 30 min. service) and is not counted as part of the 30 min. growth scenario
403		Metrolink	Palmdale Passing Siding : Construct 2,000 foot passing siding between MP 69.3 and MP 69.9	

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Transit Program (cont.)	Metrolink Antelope Valley Line Improvements (cont)	405	Metrolink	Soledad Cyn Crossing to Robbins Nest Crossing Double Track : MP 47.1 - MP 48.3: Construct 2400 TF, 1500 TF shift, 1 EA 10', 3 EA 8', and 1 EA 6' bridge MP 48.3 - 50.5: Construct 9050 TF, 1800 TF shift, 2 EA 6' bridges MP 50.5 - MP 50.9: 1500 TF shift, 2 EA 8' bridges
		406	Metrolink	Thousand Trails Road to CP Harold Track Construction and Improvements: MP 54.3- MP 54.6: 1200 TF shift MP 54.6- MP 55.4: 280 TF shift, Construct 1200 TF MP 55.4-MP 55.9: Construct 2020 TF MP 55.9-MP 57.4: 250 TF shift MP 57.4-MP 60.0: 4000 TF shift, construct 4300 TF, 400 FT concrete wall MP 60 - MP 61.2: 400 TF shift, construct 1500 TF, shift 1 EA turnout MP 61.2-MP 62.2: 2000 TF shift, construct 7100 TF, shift 1 EA turnout MP 62.2-MP 64.7: Construct 11660 TF, 1 EA 190' bridge * 5580' MSE Wall MP 64.7-MP 66.3: Construct 2930 TF MP 66.3-MP 67.4: Construct 3490 TF
		407	Metrolink	Track Modifications (Tunnels 18 & 19): MP 45.9 - 46.9: 1750 TF shift MP 46.9 - 47.1: 1000 TF shift
		409	Metrolink	Palmdale Station (platform extension): Extend platform to allow for operation of 8-car trains and improve station design
		413	Metrolink	Vincent Station Platform Extension: Extend platform to allow for operation of 8-car trains and improve station design
		414	Metrolink	Another CMF level facility for heavy maintenance (for 30 min. service expansion): Need 100% size of CMF in approximately 2017. Will include the administrative offices from existing CMF, a run-through progressive car and loco shop, S&I, storage tracks, fuel system, train wash, shop machinery, and expanded warehouse capacity
		415	Metrolink	Expanded layover facility in Palmdale (30 min Expansion): Build out is 5 tracks, fuel, lighting, sewer connections and potable water.
		416	Metrolink	Locomotives (for 30 min. service Expansion): To get to a 30 minute headway, 26 additional locomotives will be needed. The cost of rail cars is assumed to be \$7 M/unit. For the "base case" (i.e. non 30 min. service), another 26 locomotives would be needed. The costs for the base case are shown separately.
		417	Metrolink	Rail Cars (for 30 min. service expansion): To get to a 30 min. headway, 90 additional rail cars will be needed. The cost of passenger car is assumed to be #3M/unit. For the "base case" (i.e. non 30 min. service), another 90 passenger cars would be needed. The costs for the base case are shown separately.
		418	Metrolink	Reconfiguration of existing CMF: Relocate admin office to new CMF location and improve capacity by building a run-through progressive car and loco shop at existing CMF

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM Project ID	Jurisdiction*	Description
Transit Program (continued)	Metrolink Antelope Valley Line Improvements (continued)	419	Metrolink	Santa Clarita - Acton Double Track (30 min expansion): Track work, increased signal spacing, additional crossover capability and improvements at certain stations. The unit cost for track and signals is \$6000/foot
		420	Metrolink	Rehab -Short Term: Includes rehab of rail, ties, OTM, structures, communication, Central Train Control (CTC), grade crossing signals, facilities & equipment, vehicles, rolling stock (locomotives & cars)
		421	Metrolink	Rehab -Mid Term: Includes rehab of rail, ties, OTM, structures, communication, Central Train Control (CTC), grade crossing signals, facilities & equipment, vehicles, rolling stock (locomotives & cars)
		422	Metrolink	Rehab -Long Term: Includes rehab of rail, ties, OTM, structures, communication, Central Train Control (CTC), grade crossing signals, facilities & equipment, vehicles, rolling stock (locomotives & cars)
		423	Metrolink	Rehab - Expansion (for 30 min. service on all Metrolink lines): Includes rehab of rail, ties, OTM, structures, communication, Central Train Control (CTC), grade crossing signals, facilities & equipment, vehicles, rolling stock (locomotives & cars)
		424	Metrolink	1000 Trails Road Crossing Improvements: Install additional track through crossing, relocate existing facilities to accommodate new track, potentially install exit gate in Northwest quadrant with raised median extending from intersection to crossing, install right turn only restrictive median on drive access in Southeast quadrant
		426	Metrolink	Aliso Canyon Road Crossing Improvements: Signage and striping; install additional track through crossing, relocate existing facilities to accommodate new track, install 100 ft median channelization to both approaches of the crossing
		427	Metrolink	Avenue J Crossing Improvements: Enhance at-grade crossing
		428	Metrolink	Avenue K Crossing Improvements: Enhance at-grade crossing
		429	Metrolink	Avenue R Crossing Improvements: Enhance at-grade crossing
		430	Metrolink	Avenue S Crossing Improvements: Signage and striping (review for sight distance and crossing time, potentially upgrade treatment); Install additional track through crossing, relocate existing facilities to accommodate new track
		431	Metrolink	Avenue S Grade Separation (HSR): Grade Separation
		432	Metrolink	Barrel Springs Road Crossing Improvements: Signage and striping; install additional track through crossing, relocate existing facilities to accommodate new track, install 100 ft median channelization to both approaches of the crossing

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Program	Subprogram	MM		Description
		Project ID	Jurisdiction*	
Transit Program (continued)	Metrolink Antelope Valley Line Improvements (continued)	433	Metrolink	Bring 1 grade crossing to new SCRRRA Standards (including active warning devices and civil improvements) 5 xings/yr * 5 years * \$2M per xing = \$50M Systemwide*: Bring 1 grade crossing to new SCRRRA Standards (including active warning devices and civil improvements) 5 xings/yr * 5 years * \$2M per xing = \$50M Systemwide*
		434	Metrolink	Cameras at Grade Crossings: Install cameras at grade crossings
		435	Metrolink	Canyon Park Blvd Crossing Improvements: Signage and striping; install additional track through crossing, relocate existing facilities to accommodate new track, install exit gates on Northwest quadrant
		436	Metrolink	Columbia Way (formerly Avenue M) Crossing Improvements: Enhance at-grade crossing
		437	Metrolink	Crown Valley Road Crossing Improvements: Signage and striping; install additional track through crossing, relocate existing facilities to accommodate new track, install 100 ft median channelization to both approaches of the crossing
		440	Metrolink	Lancaster Blvd Crossing Improvements: Enhance at-grade crossing
		441	Metrolink	Lang Station Crossing Improvements: Signage and striping; install lights, gates, 100 ft median channelization on both approaches
		444	Metrolink	Palmdale Blvd Crossing Improvements: Enhance at-grade crossing
		445	Metrolink	Palmdale Blvd Grade Separation (HSR): Grade separation
		447	Metrolink	Rancho Vista Blvd (formerly Avenue P) Crossing Improvements: Enhance at-grade crossing
		448	Metrolink	Rancho Vista Blvd (formerly Avenue P) Grade Separation: Grade separation
	450	Metrolink	Sierra Highway Crossing Improvements: Signage and striping; relocate existing facilities to north and install new track on north side of crossing, install 100 ft median channelization on both approaches	
	451	Metrolink	Sierra Highway Grade separation (HSR): Grade separation	
	Metrolink Extension to Kern County	383	Metrolink/Palmdale	Extend Metrolink to Kern County
	Neighborhood transit centers program	390	AVTA	Neighborhood transit centers program (Antelope Valley College , 47th and Ave S, Lake Los Angeles, Lancaster Station)

* "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.

APPENDIX D **BASELINE CONDITIONS REPORT**

The North County Baseline Conditions Report is attached as Appendix D.



SUBREGIONAL MOBILITY MATRIX

North Los Angeles County

Project No. PS-4010-3041-F-01-TO2

Baseline Conditions - Final Report

Prepared for:



Prepared by:

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January 2015

Baseline Conditions – Final Report

Subregional Mobility Matrix North Los Angeles County PS-4010-3041-F-01-TO2

Prepared for:



Metro

Los Angeles County

Metropolitan Transportation Authority

Prepared by:

Cambridge Systematics, Inc.

Quality Review Tracking

Version #	Date	Reviewer Signature	Description/Comments
Internal Review Draft	11/12/2014	Michael Snavely	
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List of Terms and Acronyms

Acronyms	Definitions
AB	Assembly Bill
ACS	American Community Survey
AVTA	Antelope Valley Transit Authority
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportations
CEQA	California Environmental Quality Act
CMP	Congestion Management Plan
COG	Council of Governments
CSAN	Countywide Significant Arterial Network
CSTAN	Countywide Significant Truck Arterial Network
ITS	Intelligent Transportation Systems
L RTP	Long Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
NCTC	North County Transportation Coalition
OPR	Office of Planning and Research
SB	Senate Bill
SCAG	Southern California Association of Governments
S RTP	Short Range Transportation Plan
SWITRS	Statewide Integrated Traffic Records System

1.0 INTRODUCTION AND SUMMARY

1.1 Study Background

In February 2014, the Los Angeles County Metropolitan Transportation Authority (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 Council of Governments (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, 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. These subregional boundaries, as defined for the Mobility Matrices, will be used in the analysis of existing conditions. Figure 1-1 presents the Mobility Matrix subregions

The Los Angeles County Metropolitan Transportation Authority (Metro) has initiated the development of seven subregional mobility matrices to provide consistent countywide corridor performance criteria to be used to identify and evaluate projects, programs, and policies that address subregional needs. These matrices will provide a comprehensive performance evaluation methodology to identify short-, mid-and long-term projects through a regional 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 Metro's Long Range Transportation Plan (LRTP).

The North County Transportation Coalition (NCTC) was formed in 1995 and consists of membership from the Cities of Lancaster, Palmdale, Santa Clarita, and the County of Los Angeles. Its purpose is to improve the movement of people and goods in the North Los Angeles County region. Its duties include the development of policies and strategies that directly lead to the implementation of projects and programs that address critical North County transportation issues, promote economic development, and maximize transportation funding opportunities for member jurisdictions.

For the purposes of the Metro mobility matrix projects, the City of Santa Clarita has elected to conduct this study with the San Fernando Valley Council of Governments and is removed from the North Los Angeles County study area. An overview of the North Los Angeles County Mobility Matrix subregional borders, also referred to as the "study area" for purposes of this document, is shown in Figure 1-2.

This document establishes baseline transportation conditions in the study area, including high-level assessments of land use,

demographics, travel patterns, and transportation system and facility conditions in the study area and neighboring regions. It also contains a draft map of proposed Mobility Matrix improvements proposed for consideration in the Metro LRTP.

1.2 Report Purpose and Structure

This document establishes baseline transportation conditions in the North County subregion. It includes a list of projects recently completed, under construction, or funded, gives an overview of the study area’s demographics, and presents a high-level inventory of the transportation facilities being evaluated, including highways, arterials, transit, bike/pedestrian, and goods movement.

Section 2.0 describes the existing projects and plans in the subregion. The land uses and demographics of the subregion are covered in Section 3.0. Section 4.0 contains an overview of existing travel patterns. Sections 5.0, 6.0, and 7.0 analyze the freeways and arterials, transit, and the bicycle and pedestrian facilities in the subregion, respectively. Finally, Section 8.0 provides a summary and discussion of next steps.

1.3 Land Use and Demographics

North Los Angeles County is one of the few areas in the County that feature large swaths of undeveloped land and the potential for significant growth. Compared to the rest of the County, the average population density is low, but according to the Southern California Association of Governments (SCAG) population and employment estimates and forecasts used in the 2014 Metro Short-Range Transportation Plan (SRTP), the study area is expected to grow from about 470,700 residents in 2014 to more than 600,000 by 2024, an increase of 28 percent. Employment in the region is expected to grow by 24 percent over the same period. This represents the largest forecasted growth rate of any region in the County, far above the forecasted countywide average growth forecasts of 8 percent (residents) and 5 percent (jobs).

The transportation issues raised by stakeholders at the Project Development Team meetings reinforced the notion that North County has the ability and responsibility to be proactive with transportation investments to avoid future problems before they arise.

1.4 Multimodal Transportation System

This report provides a high-level analysis of existing conditions on the multimodal transportation system. Section 3.0 outlines subregional travel markets in the study area.

Commuters in the study area are somewhat more dependent upon vehicle travel than the county average. About 77.6 percent of area residents commuted by single-occupant vehicle in 2012, followed by carpooling (15.2 percent), telework (3.5 percent), transit (2.0 percent), active transportation (1.0 percent), and other (0.7 percent). Subsequent sections address mode-specific facility performance, including safety and state of good repair.

1.4.1 Vehicle Travel

Section 4.0 provides an overview of vehicle travel in the study area, including passenger vehicles and heavy trucks. The region contains three primary highways:

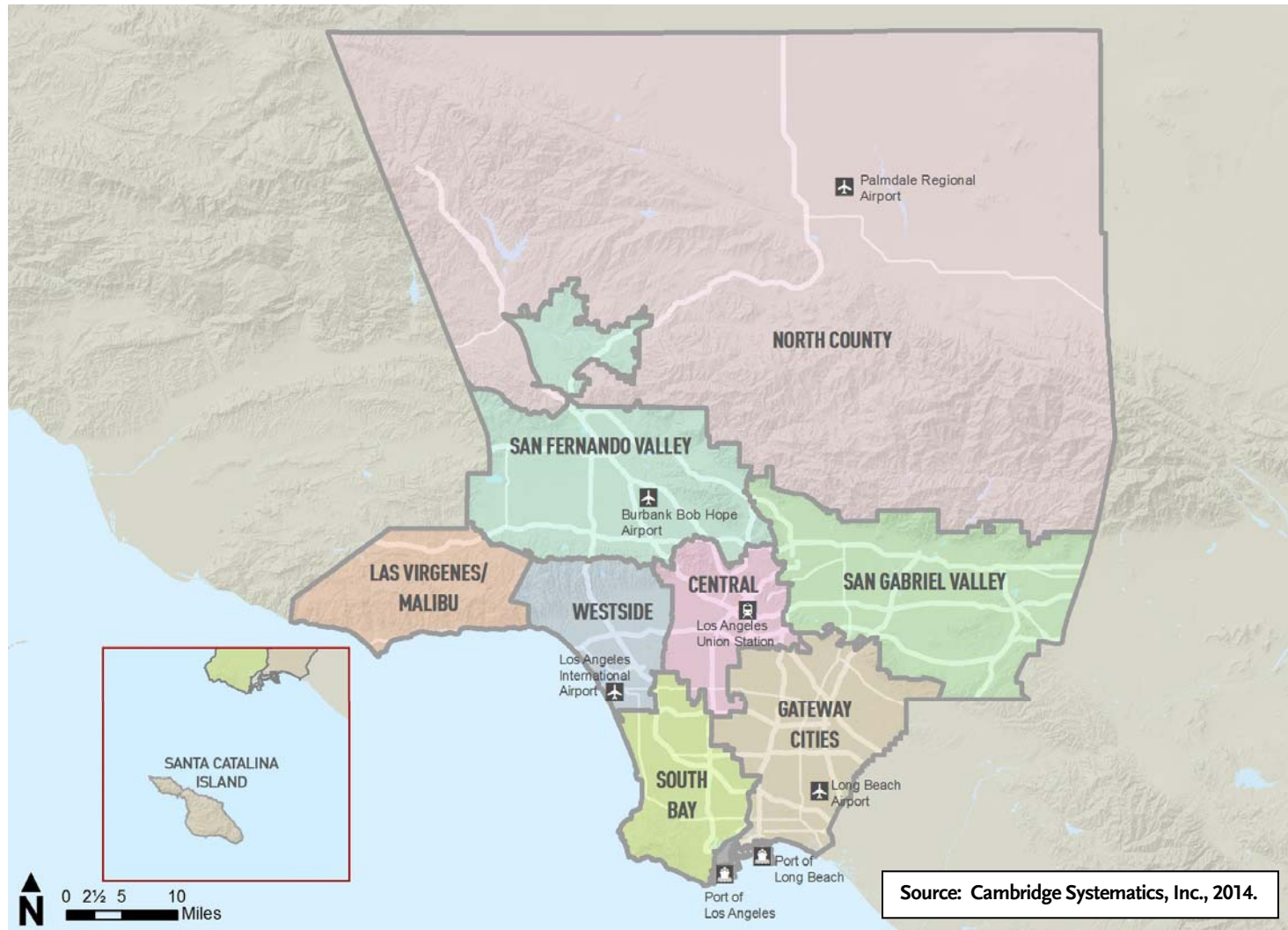
- **SR-14.** The primary freeway artery for vehicle travel from the Antelope Valley toward the Los Angeles Basin, which meets I-5 in the Santa Clarita Valley.
- **I-5.** Critical interregional route passing through the western edge of the study area, which connects Southern California and the Central Valley and points north.
- **SR-138.** Primary east-west travel corridor providing access from I-5 in the west to I-15 in San Bernardino County.



The region is also served by several subregional arterial roadways, including routes of importance to regional goods movement, as designated by jurisdictions and identified through the draft Countywide Strategic Truck Arterial Network (CSTAN). A subset of local goods movement routes includes:

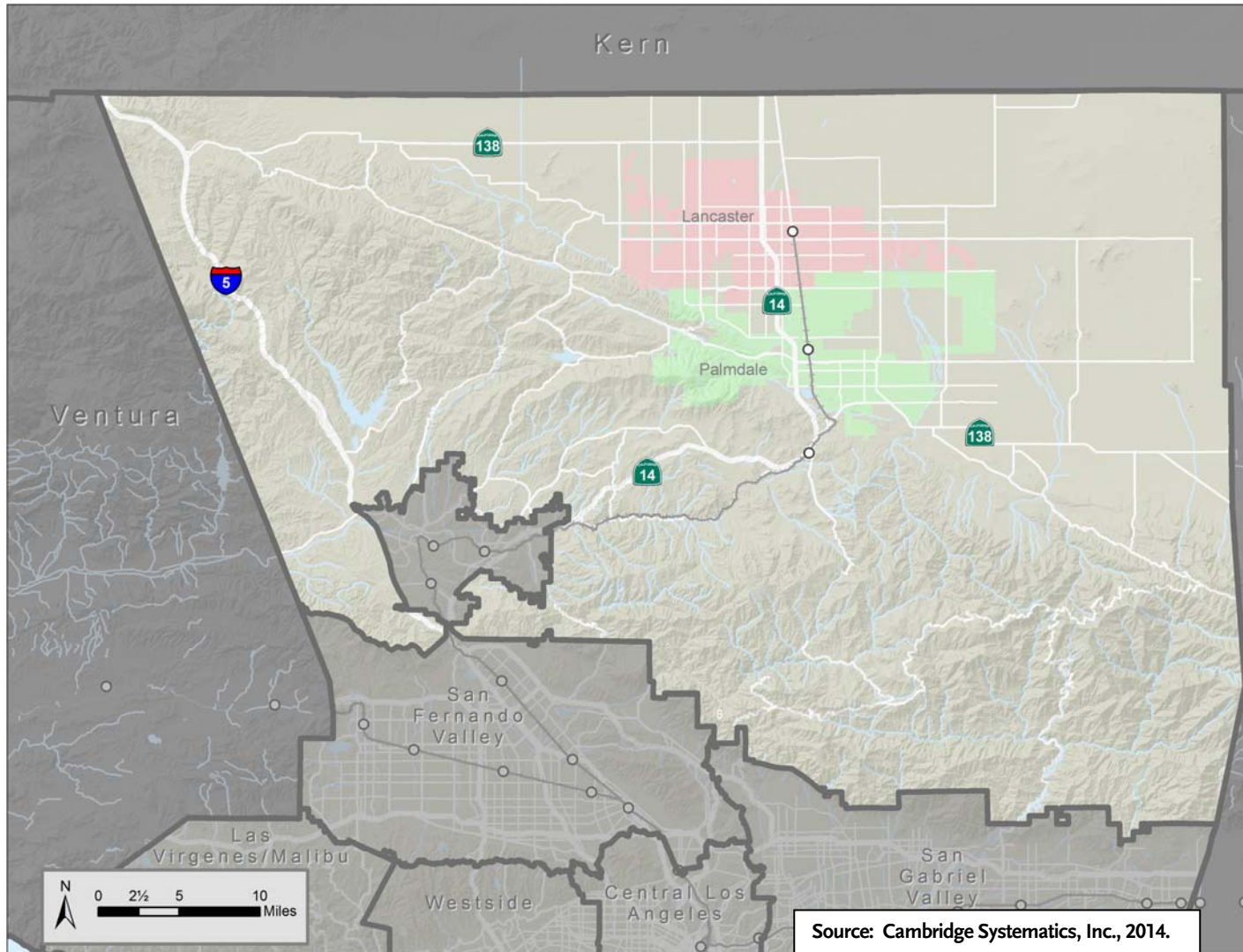
- West Ave D from I-5 to SR-14;
- Sierra Hwy from East Ave M to SR-14;
- East Ave M from 10th St West to 50th St East;
- East Ave P from 10th St West to 50th St East;
- Pearblossom Hwy;
- SR-138;
- 90th St East from East Ave O to East Ave T; and
- Portions of East Palmdale Blvd.

Figure 1-1. Los Angeles County Mobility Matrix Subregions



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 1-2. North Los Angeles County Mobility Matrix Study Area



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

1.4.2 Transit and Passenger Rail

Section 6.0 provides an overview of subregional transit and passenger rail opportunities. North Los Angeles County includes the following critical transit and commuter infrastructure:

- **Metrolink.** Commuter rail connecting the Antelope Valley with the Los Angeles Basin
- **Antelope Valley Transit Authority (AVTA).** Subregional bus service operating a network of 12 bus routes, 2 supplemental routes, 3 commuter services to the Los Angeles Basin, and dial-a-ride services.

1.4.3 Active Transportation

The study area is home to a limited, but growing network of bicycle facilities. Section 7.0 addresses active transportation facilities and performance in the subregion, with a focus on safety.

2.0 EXISTING PROJECTS AND STUDIES

Through a detailed literature review and targeted outreach to stakeholder jurisdictions in late 2014, the consultant team has identified hundreds of North County projects and programs to evaluate in the mobility matrix.

The initial set of projects consisted of Metro’s December 2013 subregional project lists, which included: unfunded Long Range Transportation Plan (LRTP) projects; unfunded Measure R scope elements; and subregional needs submitted in response to a request by Directors Dubois and Antonovich.

Through the stakeholder outreach process a number of projects on the initial project list were removed because they were identified as completed, in construction, fully funded, redundant with another project in the subregion, or no longer desired by the subregion. Table 2-1 contains a list of projects from the initial list that were removed because they are funded, in construction, or completed.

Table 2-1. Funded, In Construction, and Completed Projects in North County

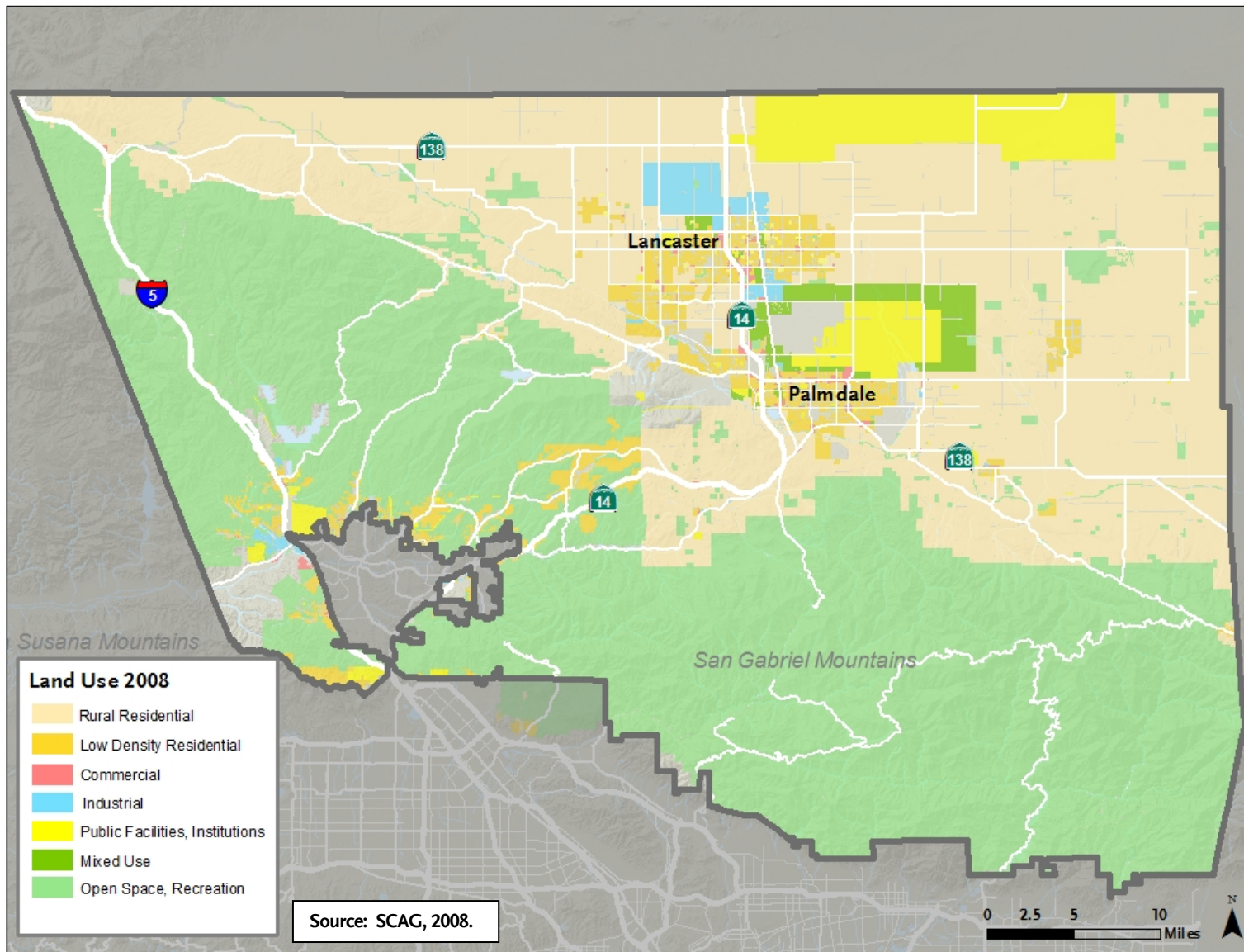
Status	ProjectType	Agency	Description	Project ID
Fully funded	Arterial	County of Los Angeles	Highway Corridor/Gap Closure/Goods Movement; Golden Valley Road and SR-14; Roadway Capacity & Intersection Improvement (bridge widening and signals)	21
		North County Transportation Coalition	Av G Corridor Improvements; Interchange improvements between SR-14 & 25th St for access to William J. Fox Airport	62
	Highway	Lancaster	Project Route: SR-14- Avenue G and SR-14. Construct interchanges with High Desert Corridor at the subregional level by the City of Lancaster at Avenue G and SR-14	181
			Project Route: SR-14- Avenue L and SR-14 Interchange. Construct interchanges with High Desert Corridor at the sub-regional level by the City of Lancaster at Avenue L and SR-14	180
		Palmdale	Project Route: 10th St W/SR-14- Interchange Upgrade	184
			Project Route: Avenue N/SR-14- Interchange Upgrade	185
In Construction	Arterial	North County Transportation Coalition	SR-126 Commerce Corridor Improvement Project; Intersection improvements & widening between Commerce Ctr Dr & County Line	18
	Highway	County of Los Angeles	Project Route: SR 126/Commerce Center Drive- Widening and Interchange Reconfiguration	188
Construction complete	Highway	County of Los Angeles	Project Route: I-5- Weldon Canyon Rd to SR-14. Add mixed-flow lane on I-5	202
			Project Route: I-5- SR-14 to Calgrove Av – Add 2 Truck and 2 HOV lanes	173
	Transit	County of Los Angeles, Santa Clarita	Additional local bus routes serving the Castaic Lake area and SR-126	358

3.0 STUDY AREA DEMOGRAPHICS

3.1 Land Use

Figure 3-1 indicates estimated land use throughout North County according to 2008 SCAG figures. The study area features the largest concentration of rural and undeveloped land in Los Angeles County. The majority of the region is zoned residential, while the SR-14 corridor through the Cities of Lancaster and Palmdale features pockets of commercial and industrial activity.

Figure 3-1. Land Uses in Study Area



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

3.2 Population and Employment

According to SCAG population and employment estimates and forecasts used in the 2014 Metro SRTP, the study area is expected to grow from about 470,700 residents in 2014 to more than 600,000 by 2024, an increase of 28 percent. Employment in the region is expected to grow by 24 percent over the same period.

This represents the largest forecasted growth rate of any region in the County, far above the forecasted countywide average growth forecasts of 8 percent (residents) and 5 percent (jobs). While the study area population in 2014 represents 5 percent of total county population, its forecasted growth accounts for 18 percent of total growth projected throughout the County.

Table 3-1 summarizes the changes in population and employments in the cities and in the subregion. Figure 3-2 shows existing population and employment in 2014, and Figure 3-3 shows the location of forecasted growth in jobs and residents from 2014 to 2024.

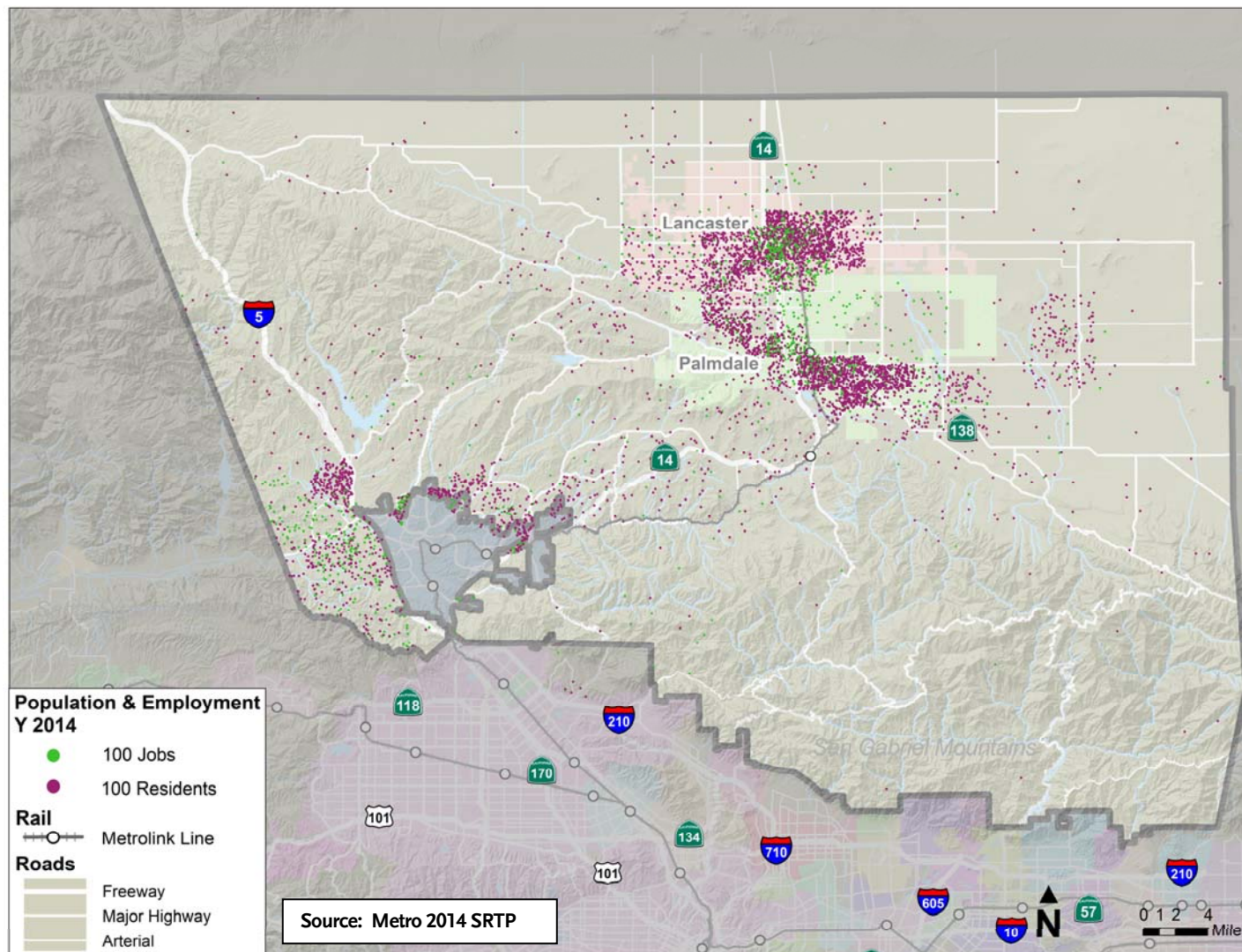
According to SCAG forecasts, population and employment growth is anticipated across the study area with concentrated growth in and around Lancaster, Palmdale and the Santa Clarita Valley, and the Quail Lake region near the SR-138/I-5 interchange.

Table 3-1. Forecasted Population and Employment Growth by Jurisdiction (2014 to 2024)

		2014	2024	% Change
Lancaster	Residents	157,700	179,400	14%
	Jobs	47,600	49,700	4%
Palmdale	Residents	147,700	173,000	17%
	Jobs	28,200	32,900	17%
Unincorporated North County	Residents	165,300	250,600	52%
	Jobs	50,000	73,400	47%
Total Study Area	Residents	470,700	602,900	28%
	Jobs	125,800	156,000	24%
Total LA County	Residents	9,771,300	10,522,100	8%
	Jobs	4,336,000	4,567,500	5%

Source: Metro 2014 SRTP. Values rounded to nearest hundred.

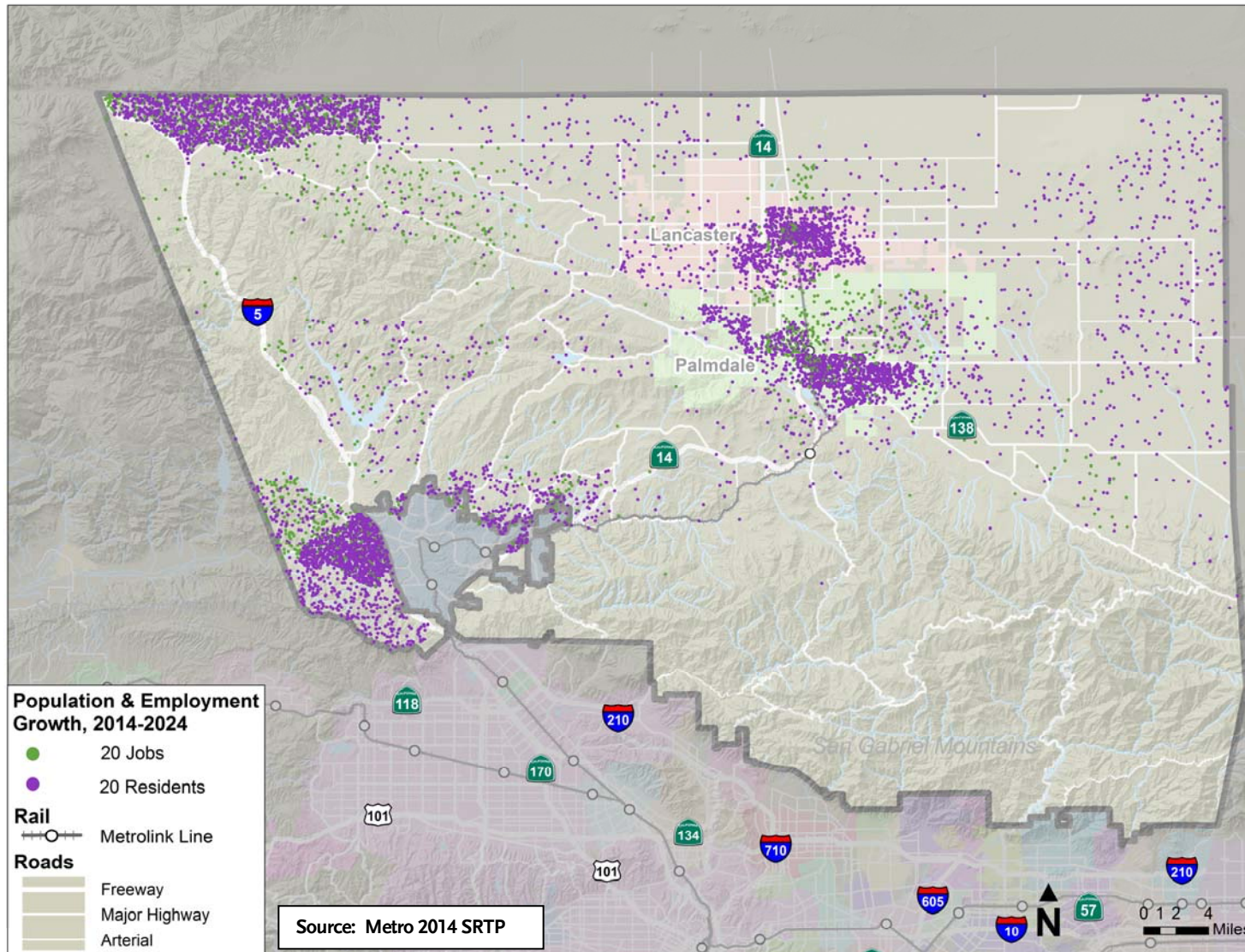
Note: The data from the Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was formatted by Los Angeles County subregional boundaries as depicted in the Mobility Matrix work effort, which do not exactly correspond to the 2009 Metro Long Range Transportation Plan (LRTP) subregional boundaries.

Figure 3-2. 2014 Population and Employment in Study Area


Note: The data from the Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was 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.

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 3-3. Population and Employment Change in Study Area, 2014 to 2024



Note: The data from the Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was 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.

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

3.3 Environmental Justice Communities

Concentrations of minority and low-income communities were identified using U.S. Census Bureau American Community Survey (ACS) data (2012).

Table 3-2 provides an overview of the minority and economic characteristics for Palmdale and Lancaster, compared to the Los Angeles County average.

In 2012, Lancaster and Palmdale’s population featured a large minority population, defined as nonwhite (including Hispanic) residents. Lancaster’s minority population was 65.8 percent, while Palmdale’s minority population was slightly larger than the County average, at 75.5 percent.

The percentage of residents living below the poverty line in Los Angeles County was 17.1 percent in 2012. The Cities of Lancaster and Palmdale both exceed the county averages for those living below the poverty level.

Figure 3-4 shows the location of transit-dependent communities in the study area based on data from Metro’s 2014 SRTP. Transit dependent zones are those where one or more of the following criteria are met:

- At least 11 percent of the population is aged 65 or older and median household income is less than \$53,762;
- About 26.7 percent or more of households have an annual income of less than \$25,000; and
- About 10 percent or more of households are zero vehicle households.

Table 3-2. Summary of Ethnic and Economic Characteristics

City	Percentage Total Minority	Median Household Income	Percentage Population Living Below Poverty Level
Lancaster	65.8%	\$51,719	21.0%
Palmdale	75.5%	\$54,277	19.4%
LA County Average	72.8%	\$56,241	17.1%

Source: U.S. Census Bureau, American Community Survey, 2012.

The California Communities Environmental Health Screening Tool (CalEnviroScreen) was developed by CalEPA to identify disadvantaged communities in California that are eligible for designated state funding. The tool gives a combined score by census tract based on two factors:

1. Pollution burden, based on 25 pollution characteristics, including particulate matter, drinking water quality, and hazardous waste; and
2. A series of 14 at-risk population characteristics, including poverty, asthma, and rates of education.

The maximum score, denoting the highest possible at-risk communities, is 100. Figure 2-5 indicates CalEnviroScreen scores for the study area. In North County, higher risk areas are centralized around Palmdale and Lancaster. The study area is home to many at-risk population factors, but the CalEnviroScores are offset by comparably low levels of pollution compared to the rest of the County.

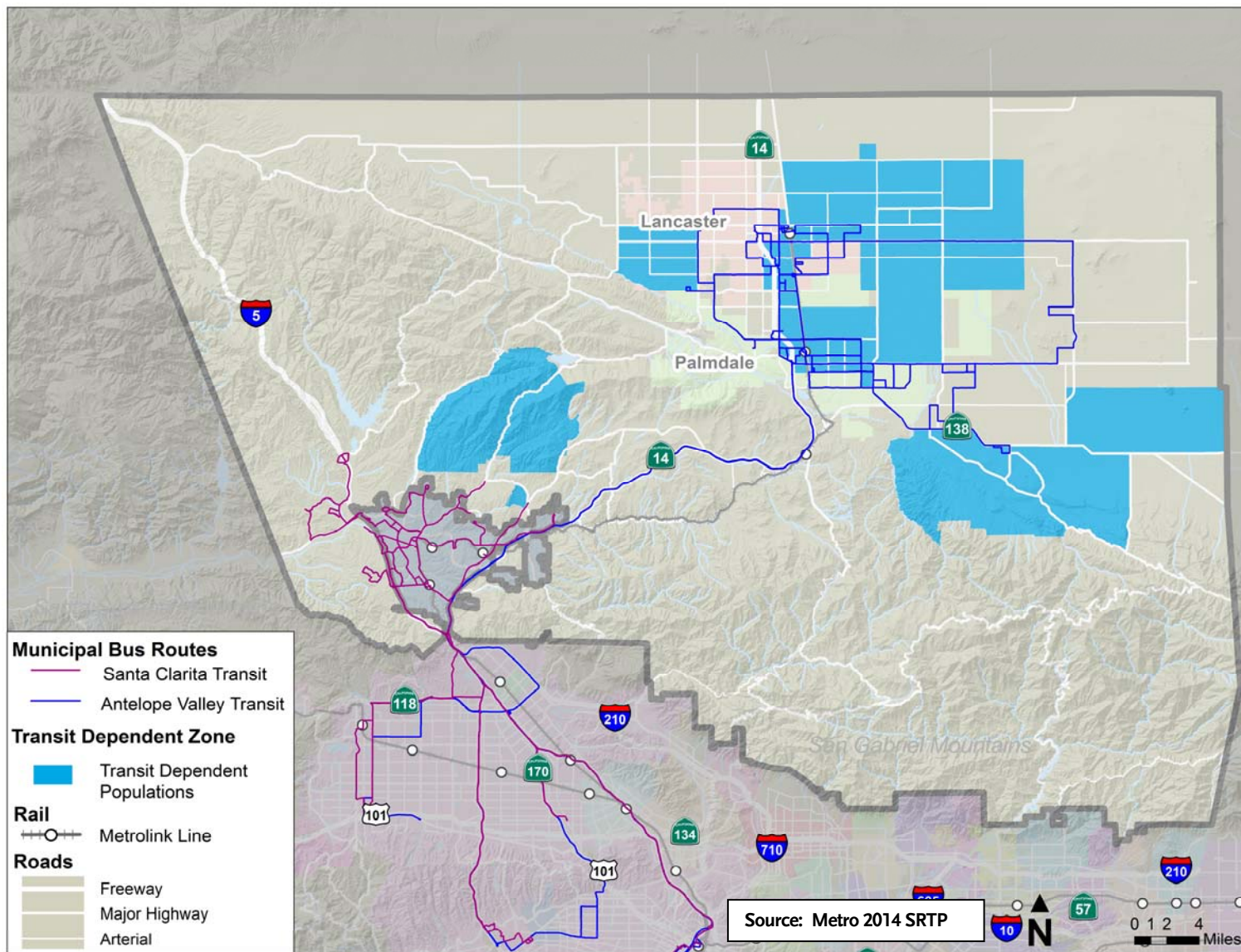
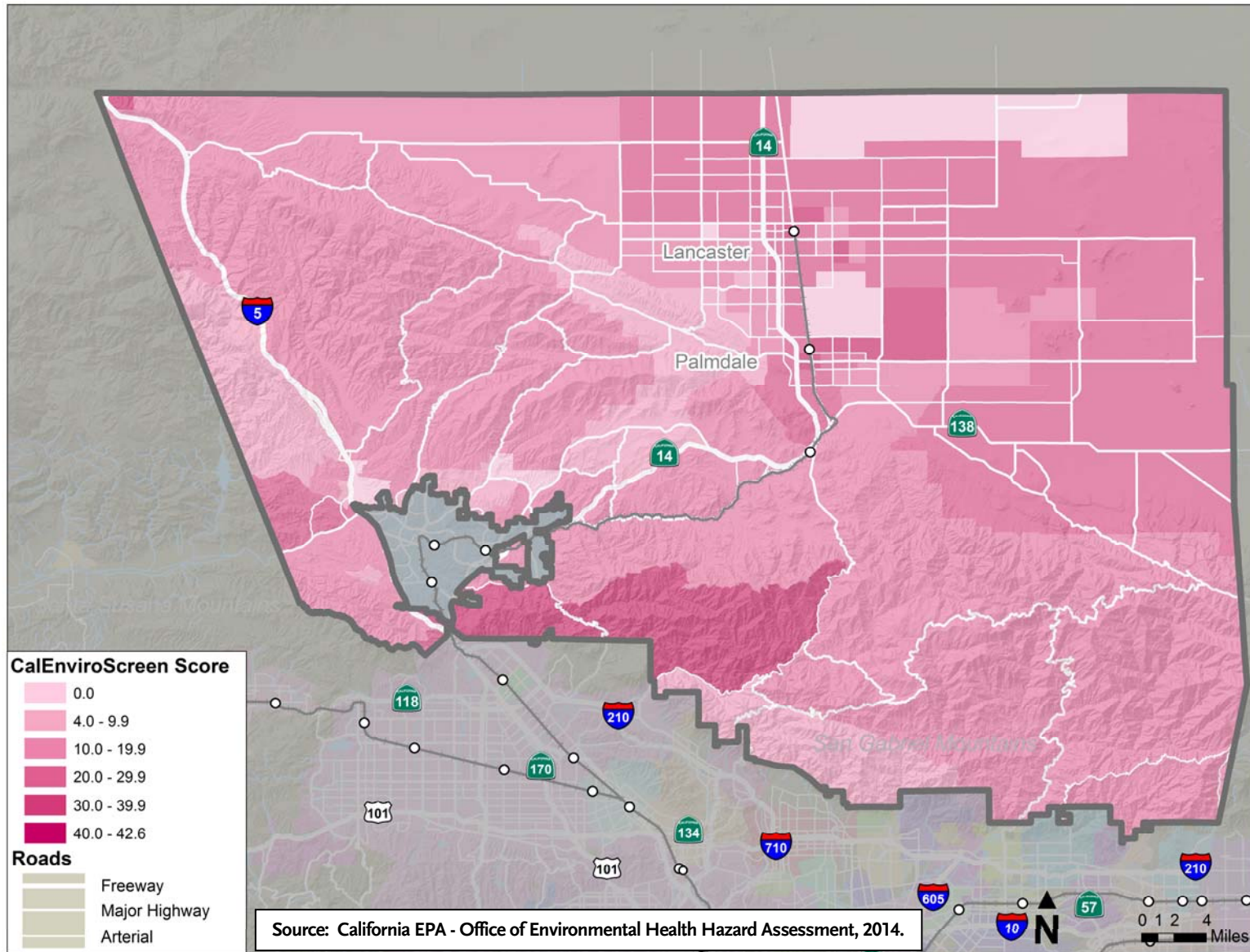
Figure 3-4. Transit-Dependent Communities in Study Area

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 3-5. CalEnviroScreen Environmental Justice Scores



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

4.0 TRAVEL PATTERNS AND PREFERENCES

This section describes general travel patterns within the study area and between neighboring subregions.

4.1 Interregional Travel Patterns

Figure 4-1 indicates estimated year 2014 average weekday trips produced and attracted (all modes) between the study area and neighboring subregions based on data from the Metro 2014 Short Range Transportation Plan (SRTP), including trips both to and from the NC Mobility Matrix subregion. Trip productions are defined as the home end (origin or destination) of a home-based trip, or origin of a non-home based trip. Trip attractions are defined as the non-home end (origin or destination) of a home-based trip, or destination of a non-home based trip. North Los Angeles County’s largest subregional travel market is the San Fernando Valley (including Santa Clarita) featuring 328,300 two-way person-trips on an average weekday, followed by San Bernardino County (52,300 trips); the Westside (44,200); and Central Los Angeles (40,100).

Table 4-1. North County Daily Trip Productions and Attractions, 2014

To/From Subregion	Trips Produced	% of Produced Trips	Trips Attracted	% of Attracted Trips
North County	1,172,927	76%	1,172,927	84%
Central LA	26,789	2%	13,315	1%
Gateway Cities	15,324	1%	10,112	1%
San Fernando Valley	193,705	13%	134,642	10%
San Gabriel Valley	16,388	1%	12,195	1%
Las Virgenes / Malibu	3,859	0%	966	0%
South Bay Cities	10,537	1%	10,395	1%
Westside Cities	33,803	2%	10,417	1%
Ventura Co.	18,179	1%	6,626	0%
Orange Co.	6,194	0%	8,499	1%
Riverside Co.	4,218	0%	6,805	0%
San Bernardino Co.	42,935	3%	9,354	1%
Total	1,544,858	100%	1,396,253	100%

Source: Metro 2014 SRTP

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.

4.2 Commute Travel Modes

Table 4-2 presents subregional commute travel modes by jurisdiction alongside County average. The motor vehicle is the travel mode of choice for more than 90 percent of study area commuters. While the region commutes via auto somewhat more than the county average, it features a higher rate of carpooling (15 percent). Limited transit options and comparably long distances to work make transit and active transportation alternatives more difficult for North County residents than those in the Los Angeles basin.

Table 4-2. 2012 Commute Travel Mode Share

Commute Mode	Lancaster	Palmdale	Unincorporated	Study Area	LA County Average
Drive Alone	81.2%	74.1%	77.6%	77.6%	72.4%
Carpool	13.4%	17.7%	13.8%	15.2%	10.5%
Transit	1.7%	2.8%	1.1%	2.0%	7.2%
Bike/Ped	1.1%	0.9%	0.9%	1.0%	3.8%
Telework	2.0%	3.8%	5.8%	3.5%	5.0%
Other	0.6%	0.7%	0.8%	0.7%	1.2%

Source: U.S. Census, ACS 3-year estimate, 2012.

4.3 Passenger Vehicle Travel Demands

Table 4-3 provides an estimate of average weekday vehicle travel both to and from the study area and neighboring regions in 2014 and forecasted growth by 2024. Key findings include:

- Of nearly one million vehicle trips either originating or terminating in the study area in 2014, about 75 percent are trips entirely within North County.

- Between 2014 and 2024, vehicle trips in the region are expected to grow by about 24 percent (an additional 238,300 trips each weekday).
- The San Fernando Valley (including Santa Clarita) is the largest neighboring travel market in 2014 (140,200 daily trips), followed by the Westside, San Bernardino County and Central Los Angeles.

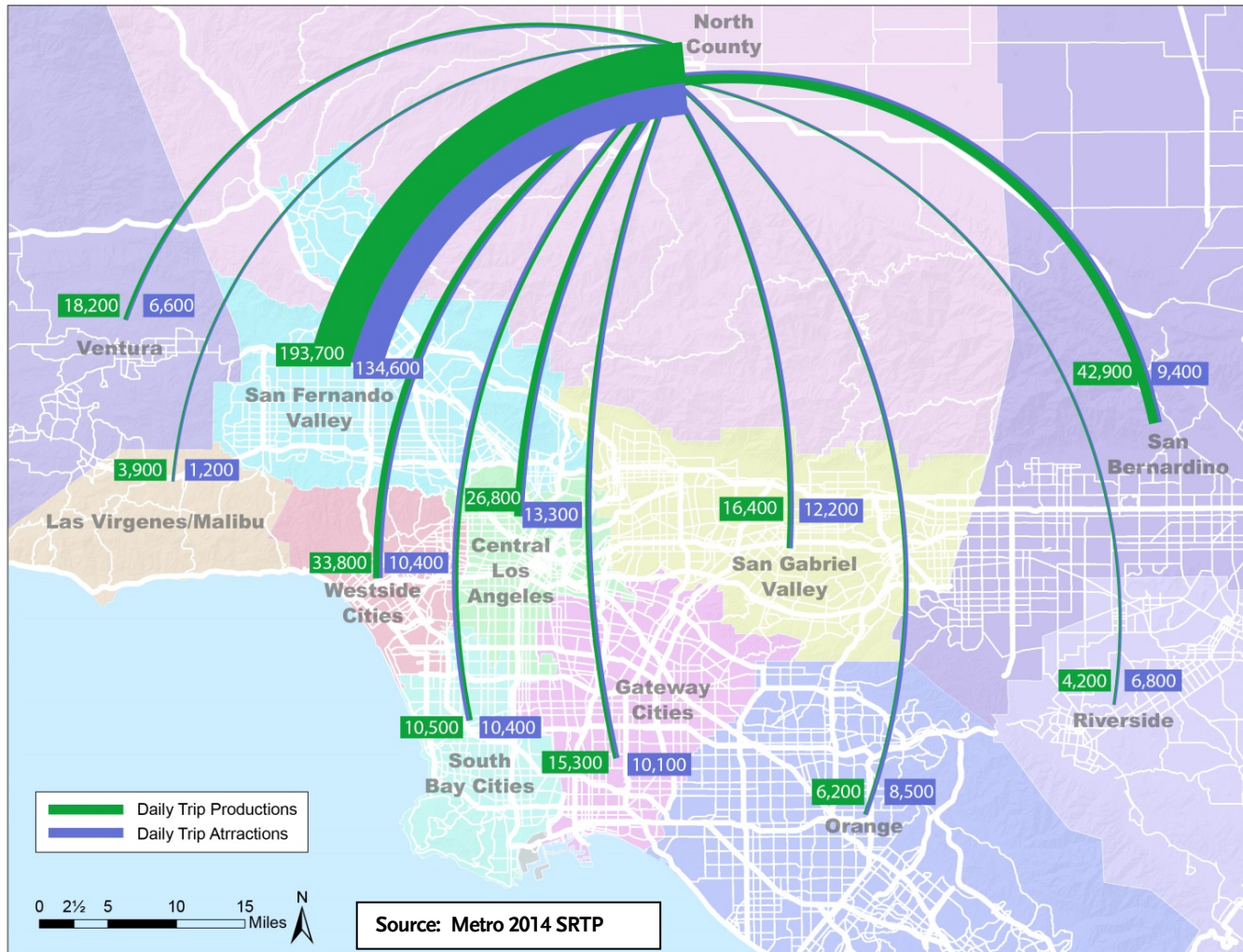
Table 4-3. Vehicle Travel Volumes to/from North Count Mobility Matrix Subregion, 2014 to 2024

Subregion	2014 Vehicle Trips	2024 Vehicle Trips	Δ Trips (2014-2024)	% Growth
Within North LA County	748,800	934,700	185,900	25%
Central Los Angeles	16,600	17,400	800	5%
Gateway Cities	10,300	10,800	500	5%
San Fernando Valley	140,200	177,700	37,500	27%
San Gabriel Valley	12,300	13,700	1,400	11%
Las Virgenes/Malibu	2,500	3,300	800	32%
South Bay Cities	6,900	7,200	300	4%
Westside Cities	21,900	24,100	2,200	10%
Ventura County	10,900	13,900	3,000	28%
Orange County	2,900	3,300	400	14%
Riverside County	1,800	2,800	1,000	56%
San Bernardino County	20,100	24,600	4,500	22%
Total	995,200	1,233,500	238,300	24%

Source: Metro 2014 SRTP

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.

Figure 4-1. 2014 Average Weekday Person Trips to/from North County (All Modes)



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. Values rounded to the nearest hundred

SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

4.4 Passenger Vehicle Through Trips

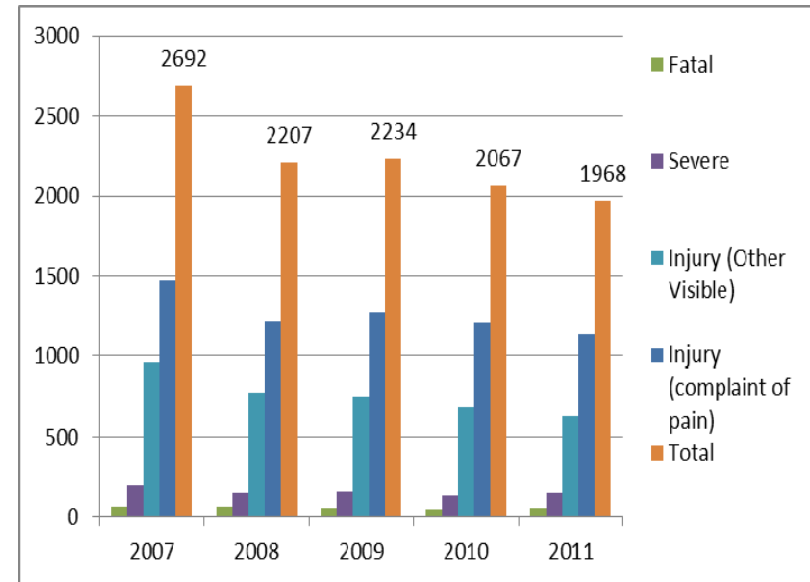
Under existing conditions, the Metro Travel Demand Model estimates about 14,000 vehicle trips travel through the region on the average weekday between the Los Angeles Basin and points north. By 2024, the Model forecasts an 11 percent growth in vehicle thru-trips, or about 15,600 vehicle trips passing through the region each weekday.

4.5 System Safety

A timeline of reported collisions across all travel modes by severity in the study area can be viewed in Figure 4-3. Collision statistics are provided by the Statewide Integrated Traffic Record System (SWITRS). Generally speaking, collisions of all severities consistently declined from 2007 to 2011, reflecting broader countywide and national trends in improvements to vehicle safety. Key findings include:

- Total collisions fell 27 percent, from 2,692 in 2007 to 1,968 in 2011;
- Fatal crashes fell 16 percent, from 62 in 2007 to 52 in 2011; and
- Severe injury crashes fell 23 percent, from 961 in 2007 to 630 in 2011.

Figure 4-2. North County Vehicle Collisions, 2007 to 2011



Source: SWITRS, 2014.

5.0 VEHICLE TRAVEL

5.1 Vehicle Travel Facilities

The North County Mobility Matrix subregion contains three primary highways:

1. **SR-14.** The primary artery for vehicle travel from the Antelope Valley toward the Los Angeles Basin, which meets I-5 in the Santa Clarita valley;
2. **I-5.** Critical interregional route passing through the western edge of the study area, which connects Southern California and the Central Valley and points north; and
3. **SR-138.** Primary east-west travel corridor providing access from I-5 in the west to I-15 in San Bernardino County.

Figure 4-1 shows primary arterials in the region as captured in the Countywide Strategic Arterials Network (CSAN), as amended by subregional stakeholders through the Metro Congestion Management Program (CMP).

5.2 Driving Conditions

5.2.1 Vehicle Volumes

Due largely to significant regional population growth over the coming 10 years, vehicle trips originating and/or terminating in the study area are forecasted to grow by 23.6 percent, from 1.8 million in 2014 to 2.3 million in 2024.

5.2.2 Driving Times

While North County roadways do not feature the same consistent level of severe congestion seen in other built-out regions of the County, the region features some of longest average vehicle trip times and hours of travel in the County, due in part to long commute distances to destinations in the San Fernando Valley, Westside, and Central Los Angeles (see Table 5-1).

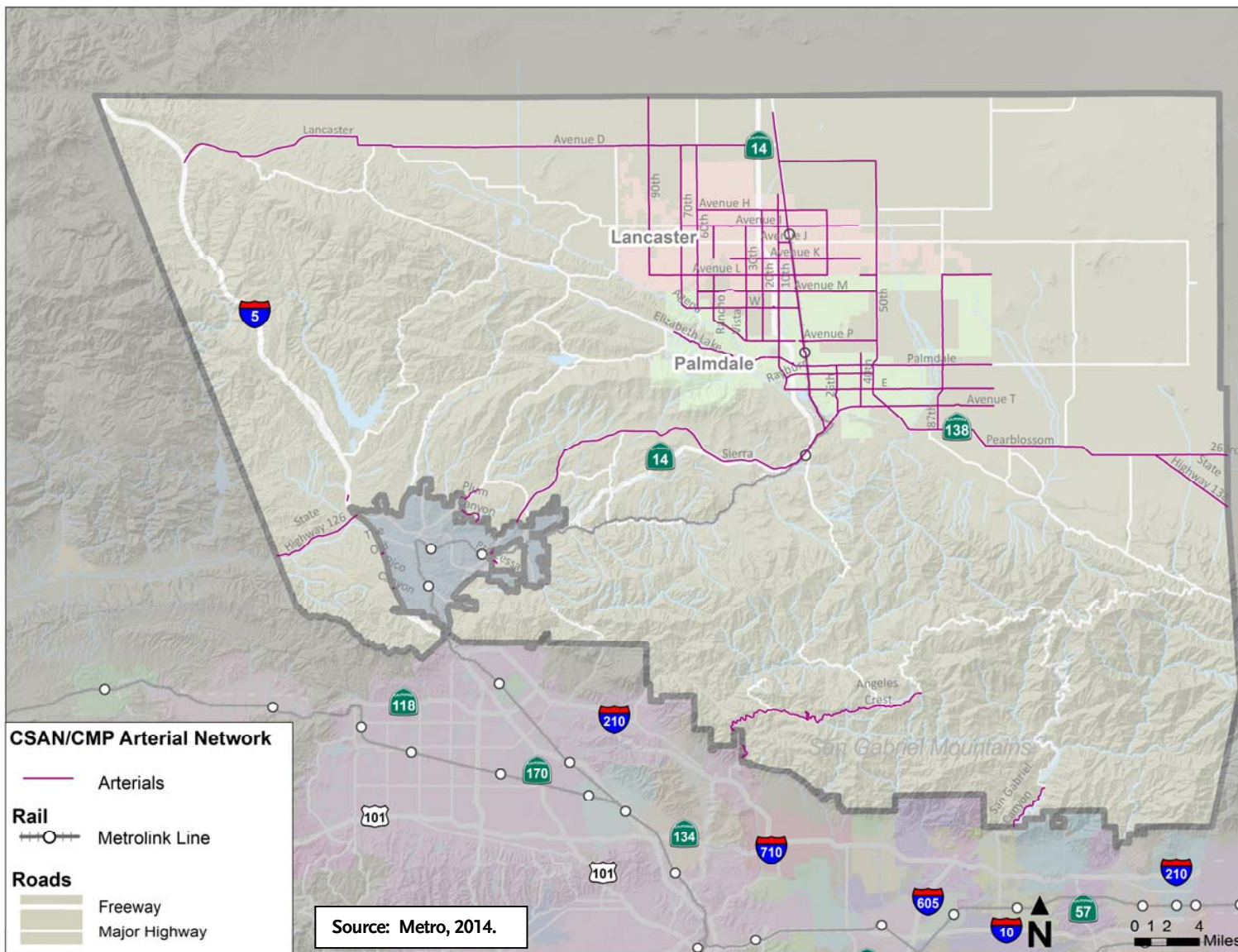
Table 5-1. Peak-Period Vehicle Hours of Travel and Average Trip Time, 2014

	Vehicle Hours of Travel	Average Trip Time (Minutes)
Within N LA County	112,800	9
Central LA	36,226	131
Gateway Cities	28,285	165
San Fernando Valley	142,776	61
San Gabriel Valley	27,118	132
Las Virgenes/Malibu	5,767	139
South Bay	19,388	170
Westside Los Angeles	52,348	143
Ventura County	19,220	106
Orange County	9,353	196
Riverside County	4,394	196
San Bernardino County	36,854	110
Total	494,529	30

Source: Metro 2014 SRTP

Note: The data from the Metro 2014 Short Range Transportation Plan (SRTP) Travel Demand Model was 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.

Figure 5-1. CSAN/CMP Network of Regionally Significant Arterials



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

5.3 Goods Movement Vehicle Travel

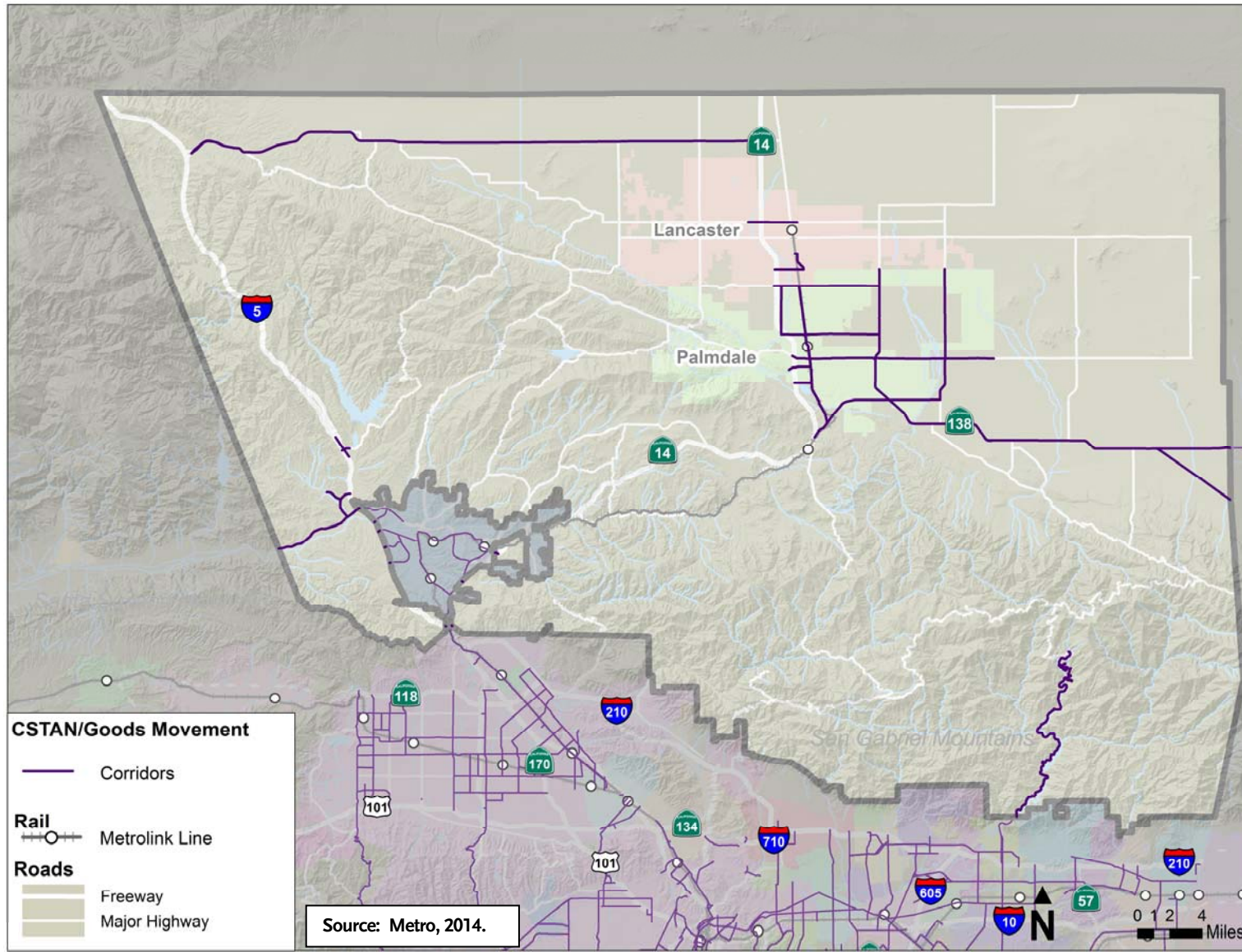
The study area contains several routes of critical importance to regional goods movement, as designated by jurisdictions and identified through the draft Countywide Strategic Truck Arterial Network (CSTAN). Figure 5-2 indicates the draft CSTAN truck route network in the North County study area.

5.4 Vehicle Safety

5.4.1 Motor Vehicle Collisions

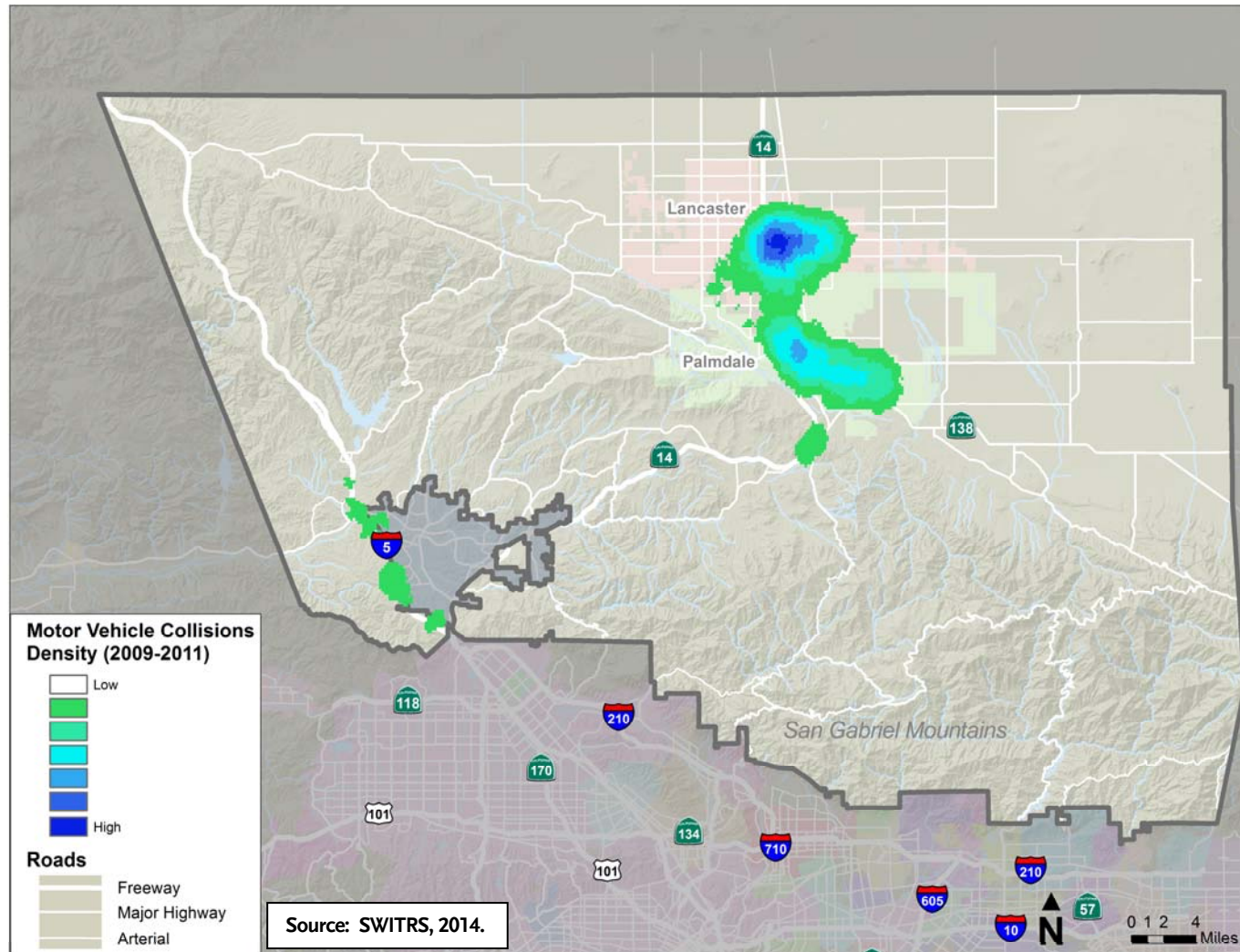
Figure 5-3 shows the density of location of motor vehicle collisions in the study area from 2009 to 2011.

Figure 5-2. Draft Countywide Strategic Truck Arterial Network



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 5-3. Motor Vehicle Collisions, 2009 to 2011

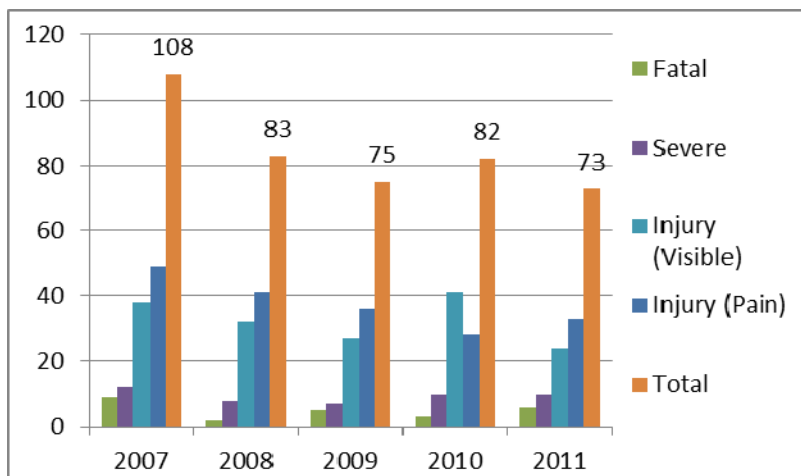


SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

5.4.2 Truck Collisions

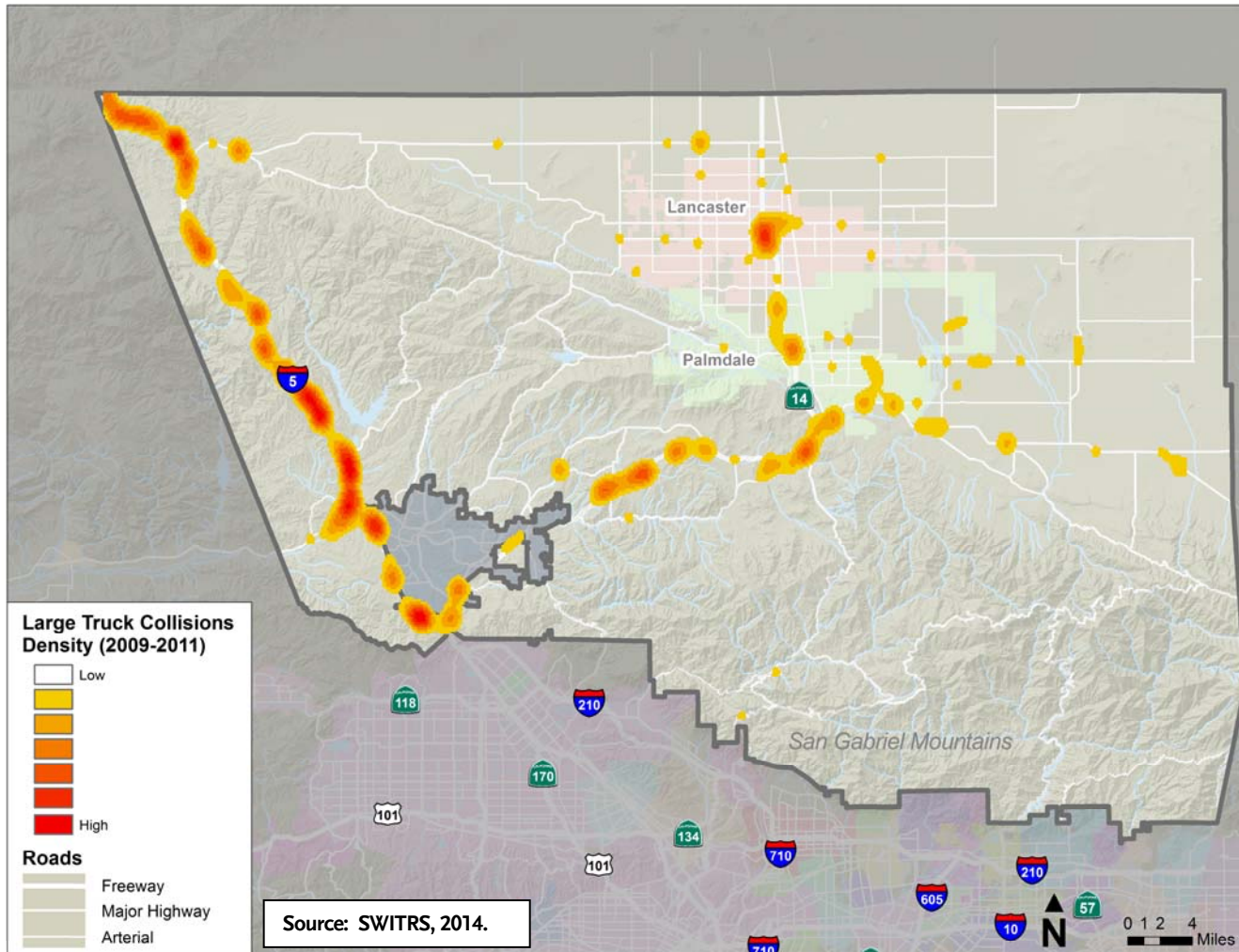
Figure 5-4 illustrates trends in collisions involving trucks by severity, from 2007 to 2011. The region has seen an overall downward trend in truck collisions over the five-year period. Figure 5-5 shows the location of truck collisions in the study area from 2009 to 2011.

Figure 5-4. Trends in Collisions Involving Trucks, 2007 to 2011



Source: SWITRS, 2014.

Figure 5-5. Truck Collisions, 2009 to 2011



6.0 TRANSIT

The study area features commuter rail service to Los Angeles provided by Metrolink, and local bus and commuter services provided primarily by Antelope Valley Transit Authority (AVTA).

Due in part to long commute times and limited existing transit options and service frequencies beyond the study area, transit commute trips account for only 2.0 percent of regional commute trips, compared to a countywide average of 7.2 percent. Table 6-1 indicates transit mode share by jurisdiction, alongside drive alone commute mode share.

Table 6-1. Transit Commute Mode Share, 2012

	Lancaster	Palmdale	Unincorporated North County	North LA County	County Average
Bus	1.4%	1.8%	0.7%	1.4%	6.5%
Rail	0.3%	1.0%	0.4%	0.6%	0.7%
Total Transit Share	1.7%	2.8%	1.1%	2.0%	7.2%
Drive Alone	81.2%	74.1%	77.6%	77.6%	72.4%

Source: ACS, 2014

6.1 Passenger Rail Service

The Metrolink Antelope Valley corridor provides limited commuter rail service between the study area and Los Angeles Union Station. Table 6-2 indicates the number of weekday and weekend trains serving each of the three stations in the study area.

Table 6-2. Metrolink Train Service By Station

Station	Weekday Trains		Weekend Trains	
	To LA	From LA	To LA	From LA
Lancaster	9	9	6	6
Palmdale	10	10	6	6
Vincent Grade/Acton	8	9	6	6

Source: Metrolink, November 2014.

In the second quarter of 2014, the study area featured an average of 1,070 weekday Metrolink boardings in the study area (see Figure 5-1).

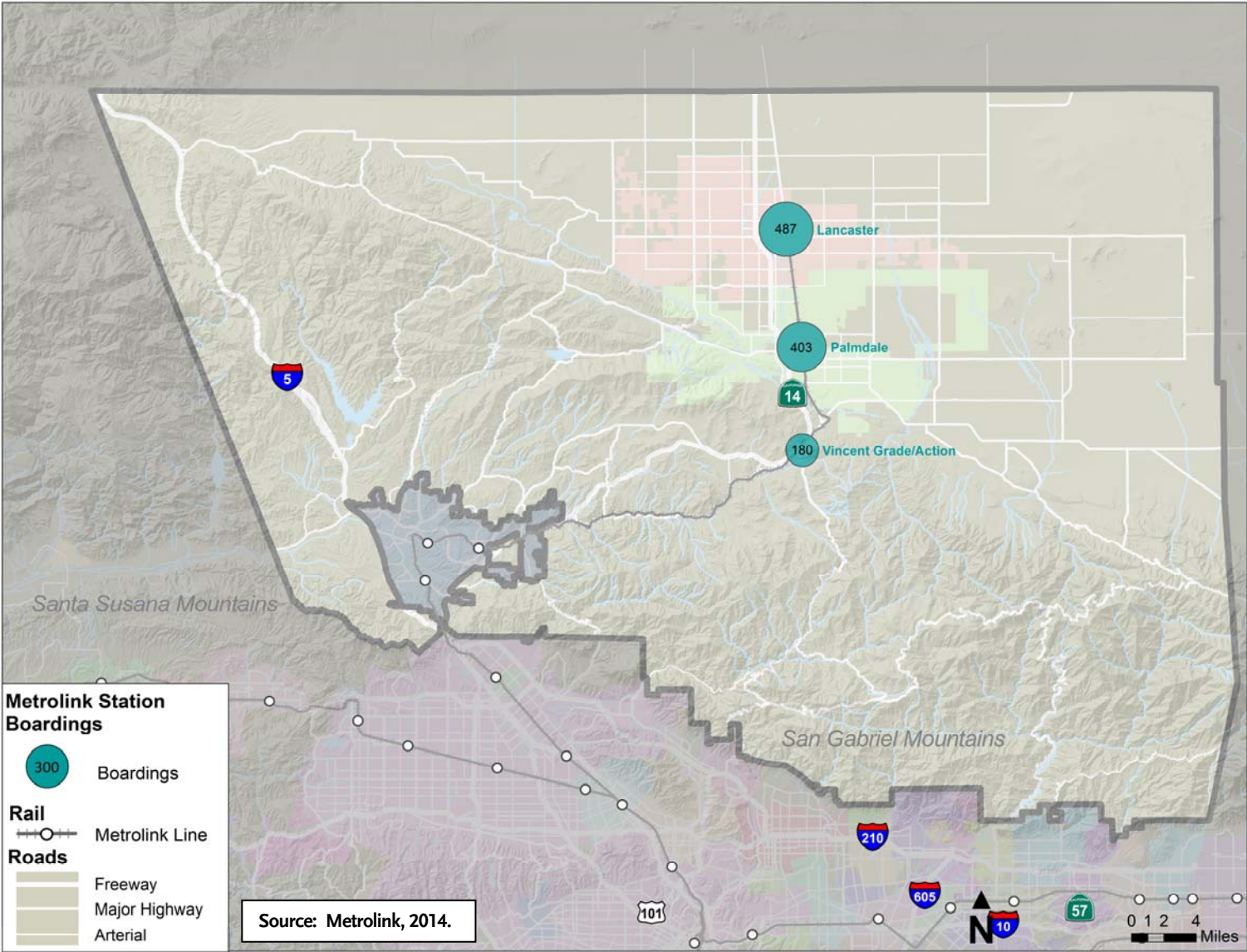
6.2 Bus Service

See Figure 6-2 for local bus service routes within the study area. AVTA provides local transit service to the study area, including:

- About 12 local bus routes;
- At least two supplemental routes serving high schools;
- About three commuter services serving downtown Los Angeles, Century City/West Los Angeles, and the Western San Fernando Valley; and
- Dial-a-ride services.

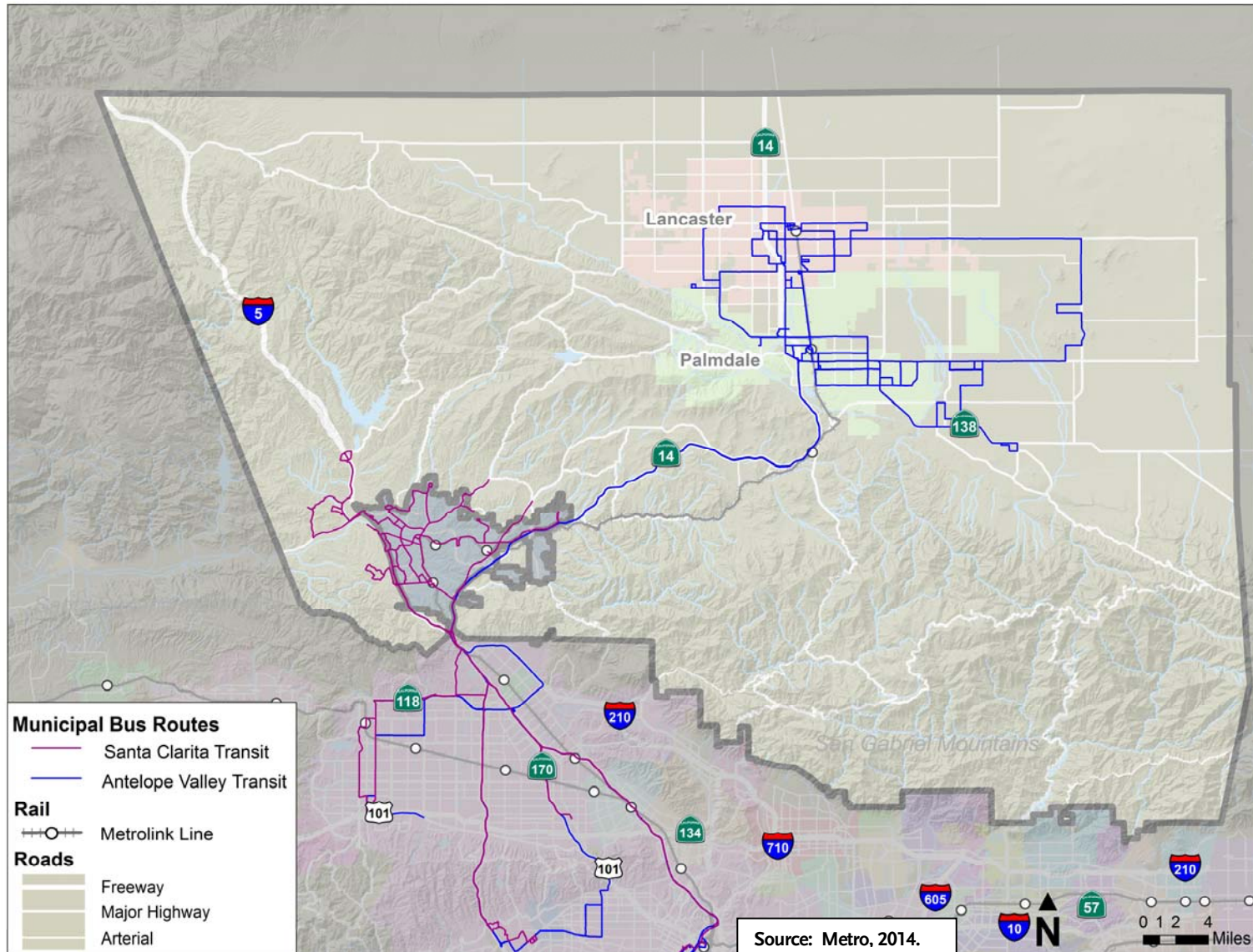
Santa Clarita Transit provides service within the Santa Clarita Valley, including portions of Unincorporated Los Angeles County.

Figure 6-1. Metrolink Average Weekday Boardings (Second Quarter, 2014)



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

Figure 6-2. North County Bus Service



SUBREGIONAL MOBILITY MATRIX – NORTH COUNTY

7.0 ACTIVE TRANSPORTATION

Though its existing active transportation network is relatively limited, with the exception of central Lancaster, members of the North County Mobility Matrix subregion has expressed a goal of expanding the subregional bicycle network, as indicated in local circulation elements, and bicycle plans such as the *City of Lancaster Master Plan of Trails and Bikeways* (2012) and *Los Angeles County Bicycle Master Plan* (2012). The subregion shares a common vision of completing system gaps and improving access to transit and activity centers for nonmotorized modes, with the goal of increasing the number of travelers who choose to walk, bike, or take transit rather than driving.

7.1 Commute Mode Share

Together, bicycling and walking currently represent approximately 1.0 percent of all commute trips in the study area. More than three-quarters of North County commuters drive alone to work.

Table 7-1. Commute Mode Share in Study Area

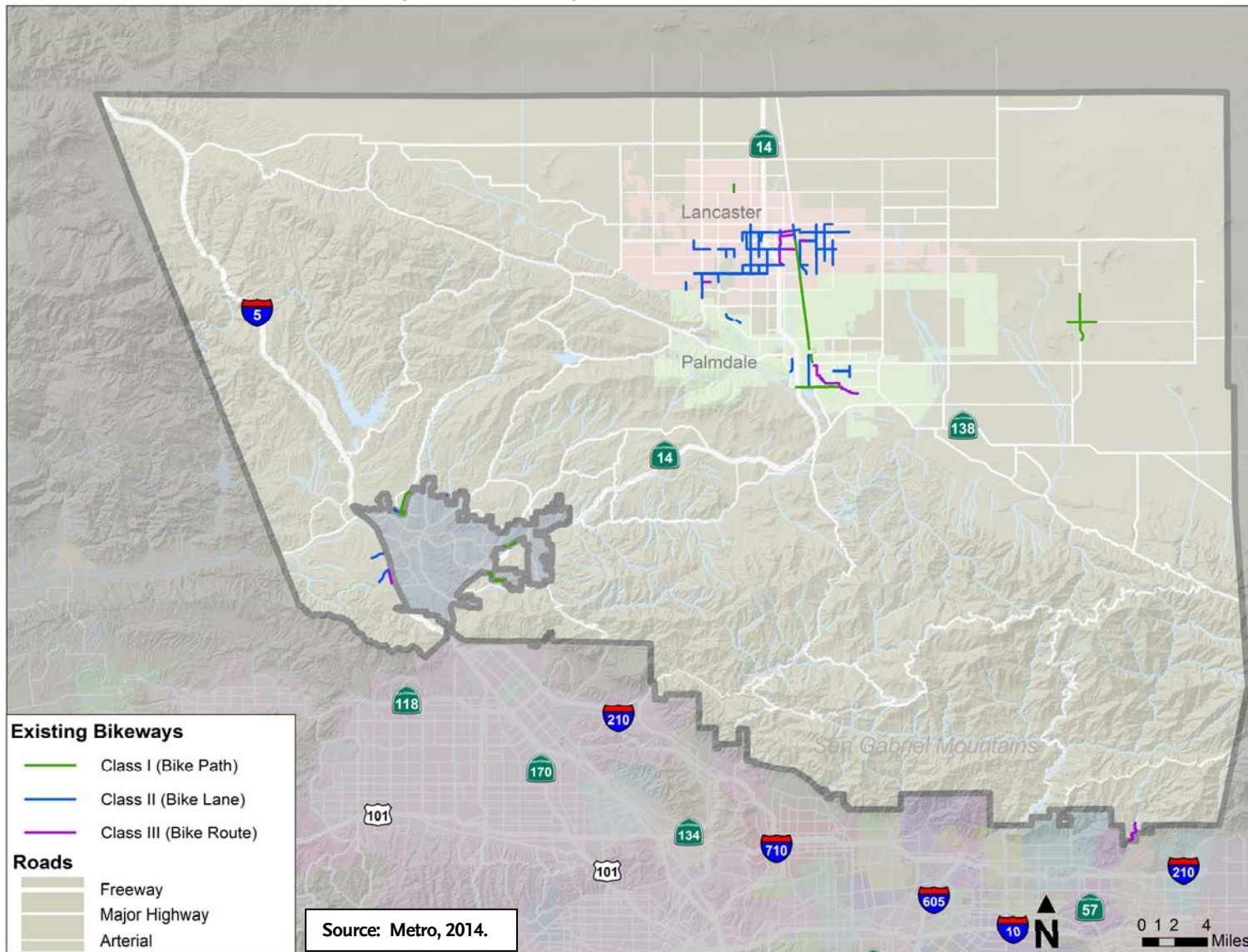
Mode	Mode Share
Bicycling	0.1%
Walking	0.9%
Drive Alone	77.6%

Source: ACS, 2012 (three-year estimate).

7.2 Bicycle Facilities

Existing bicycle facilities in the study area are concentrated in the central cities of Lancaster and Palmdale (see Figure 7-1).

Figure 7-1. Existing Bikeways in Study Area, 2014

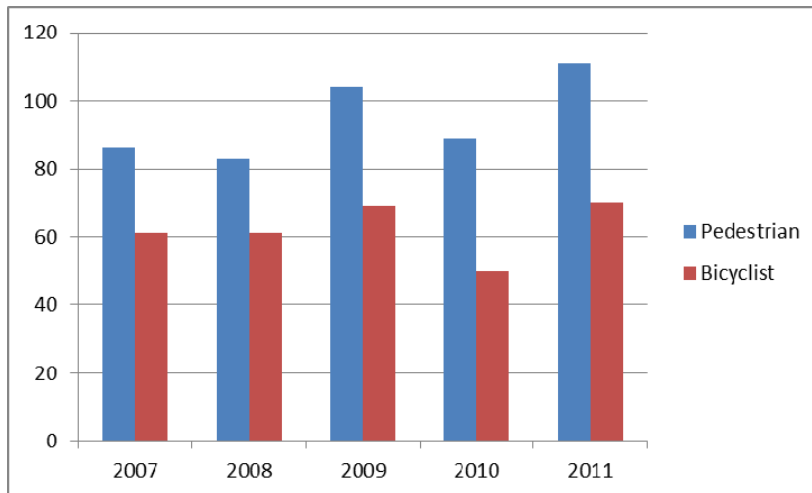


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7.3 Safety

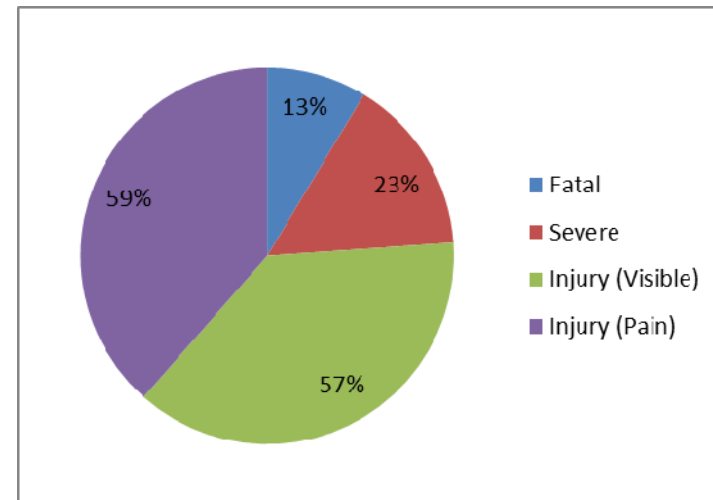
In contrast to general collisions and collisions involving trucks, bicycle and pedestrian collisions have risen by a total of 23 percent from 2007 to 2011, averaging 157 bicycle or pedestrian collisions per year (see Figure 7-2). Pedestrian collisions consistently outnumber bicyclist collisions during the five-year period and were more likely to be fatal (see Figures 7-3 and 7-4). A majority of collisions result in moderate or minor injuries, but about 6 percent of total collisions have been fatal. Figure 7-5 displays the bicycle and pedestrian collision density in North County from 2009 to 2011.

Figure 7-2. Bicycle and Pedestrian Collisions, 2007 to 2011



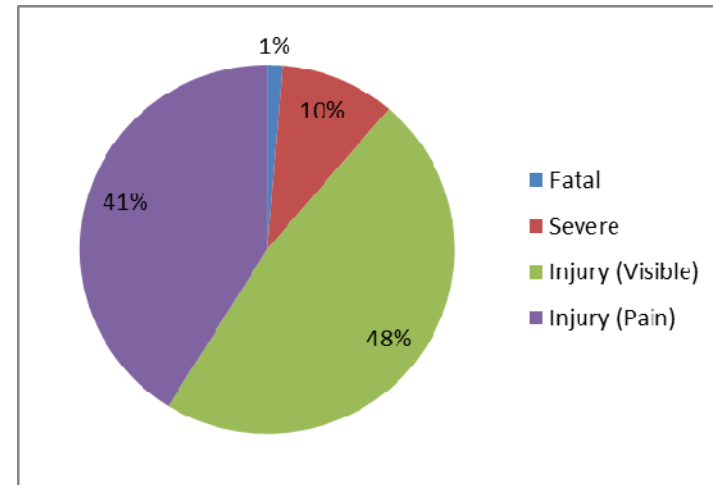
Source: SWITRS, 2014.

Figure 7-3. Pedestrian Collisions by Severity, 2007 to 2011



Source: SWITRS, 2014.

Figure 7-4. Bicyclist Collisions by Severity, 2007 to 2011



Source: SWITRS, 2014.

8.0 CONCLUSIONS AND NEXT STEPS

This report identifies several key findings regarding existing transportation system, including but not limited to:

- Very high rates of expected growth are expected in North County, which will place greater burdens on multimodal system. North County believes actual growth in population and employment will outpace SCAG projections.
- The region features a larger population of at-risk residents but better air quality than the County average.
- Residents face long commute travel times with few alternatives to driving other than infrequent Metrolink trains and commuter express shuttles operated by AVTA.
- While overall vehicle collisions have steadily decreased over the last several years, collisions involving pedestrians and bicyclists are gradually rising.

The final subregional mobility matrix report, expected in February 2015, will include high-level evaluation of the projects and programs proposed in Section 7.0 of this document. This effort is intended to serve as critical input for the Metro Long Range Transportation Plan process.