

We're working on solutions for congested corridors.

I-405 COMPREHENSIVE MULTIMODAL CORRIDOR PLAN

Fall 2022



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CHAPTER 1.

CONTEXT

Preface

The Los Angeles County Metropolitan Transportation Authority (Metro) has long been committed to delivering multimodal options in Los Angeles (LA) County, as demonstrated by the various bus, rail, active transportation, managed lanes and highway operational improvements included in Measures R and M. Likewise, the State cemented its commitment to supporting a more robust multimodal transportation system throughout California with the passage of Senate Bill 1 (SB 1) in 2017. This landmark legislation established a new funding program known as the Solutions for Congested Corridors Program (SCCP) that is dedicated to constructing multimodal improvements for highly traveled and highly congested corridors.

SB 1 specifically identified the “Route 405 Corridor in the County of Los Angeles” as one of five examples of California’s highly traveled and highly congested corridors.¹ Metro is heeding the call and developing the I-405 Comprehensive Multimodal Corridor Plan (CMCP) to envision the possibilities for getting around and through one of the most congested corridors in LA County and the state.

The I-405 CMCP is a holistic and integrated vision with multilayer objectives to improve mobility and accessibility through safe and sustainable solutions, and to invest in infrastructure that supports our economy and provides greater access to opportunity and equitable outcomes for our communities.

Meeting the objectives set out in this plan will require partnership locally as well as with our state and federal partners. In pursuit of partnership, Metro intends to seek critical state funding made available through the SB 1 SCCP. To do so, Metro must first prepare a CMCP in accordance with the California Transportation Commission’s (CTC) Comprehensive Multimodal Corridor Planning Guidelines to qualify projects for funding eligibility. At a minimum, a CMCP must meet the statutory requirements in the California Streets and Highways Code [SHC] to:

- 1) Be designed to reduce congestion in highly traveled corridors by providing more transportation choices for residents, commuters, and visitors to the area of the corridor while preserving the character of the local community and creating opportunities for neighborhood enhancement projects. [SHC 2391]

- 2) Reflect a comprehensive approach to addressing congestion and quality-of-life issues within the affected corridor through investment in transportation and related environmental solutions. [SHC 2392]
- 3) Be developed in collaboration with state, regional, and local partners. [SHC 2392]
- 4) Evaluate the following criteria as applicable [SHC 2394]
 - Safety
 - Congestion
 - Accessibility
 - Economic Development and Job Creation and Retention
 - Air Quality and Greenhouse Gas Emissions Reduction
 - Efficient Land Use
- 5) Be consistent with the goals and objectives of the Regional Transportation Plan [SHC 2393].

The I-405 CMCP meets these statutory requirements and goes beyond to present a holistic corridor vision with clear improvement strategies that will help advance our progress on the plan’s five goals to improve mobility and accessibility, advance equity, support economic vitality, achieve sustainability and enhance safety. The CMCP consists of five key elements:

- 1) A corridor assessment that examines the conditions, challenges and needs of the Corridor’s multimodal transportation system and communities;
- 2) Defined plan goals that integrate and build on goals established by Metro and the state;
- 3) A comprehensive list of multimodal projects for the Corridor planned by Metro, California Department of Transportation (Caltrans) and other local partners;
- 4) A project evaluation that assesses projects against the CMCP goals as well as the criteria for SCCP; and
- 5) Improvement strategies that identify near-, mid-, and long-term actions that will guide the plan’s implementation upon adoption.

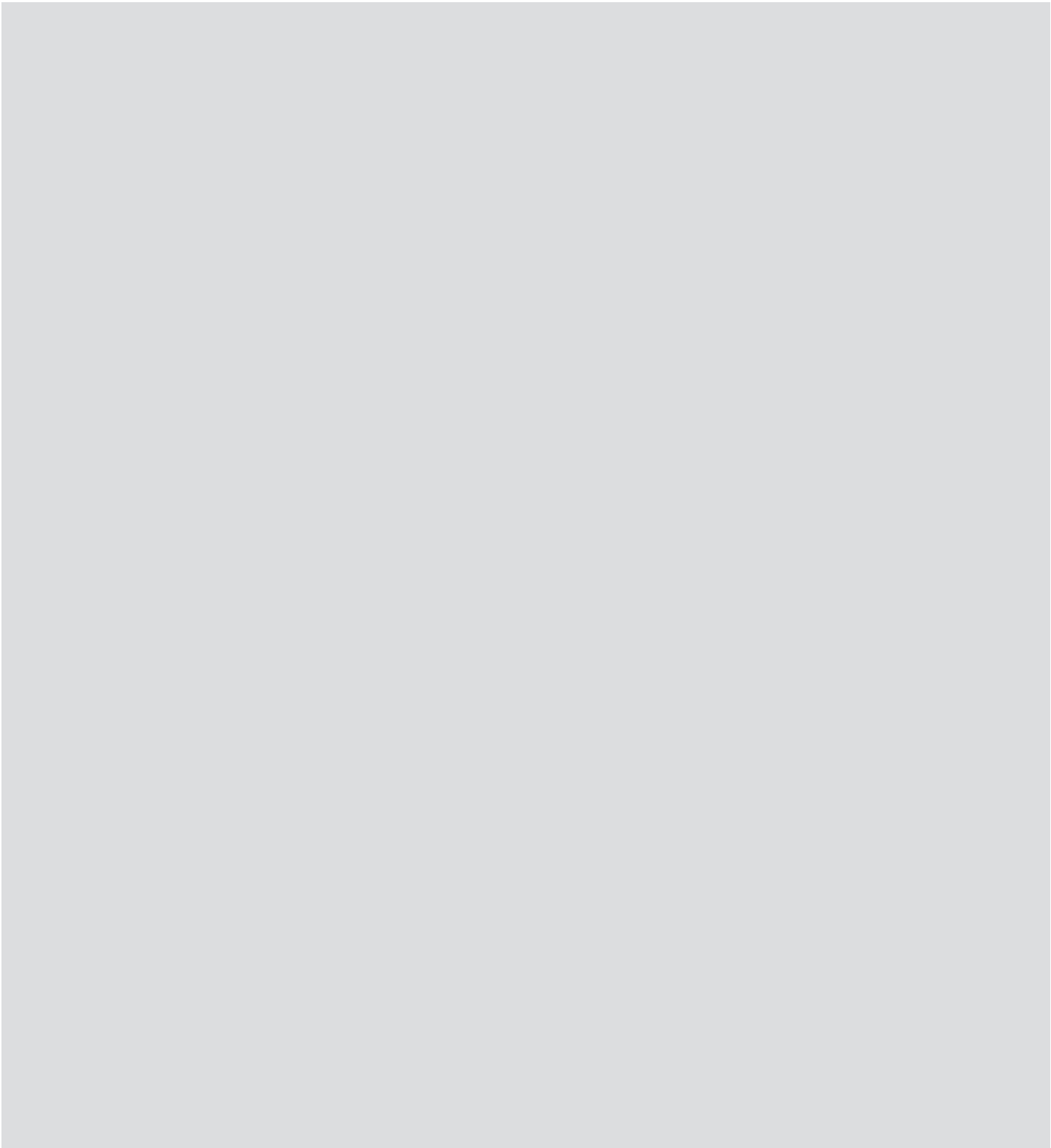
This plan will serve to identify and qualify SCCP candidates and also act as a resource for implementing projects funded by sources beyond SCCP.

The intent of the CMCP is to provide Metro and our partners with a plan to guide the collaboration and delivery and implementation of projects that will not only meet the demands of today and those anticipated in the future, but also solutions that will help us on our path to realizing a more equitable, sustainable, safe, efficient, and connected I-405 Corridor that serves its communities and all of LA County better.



Introduction and Background

CEO Letter



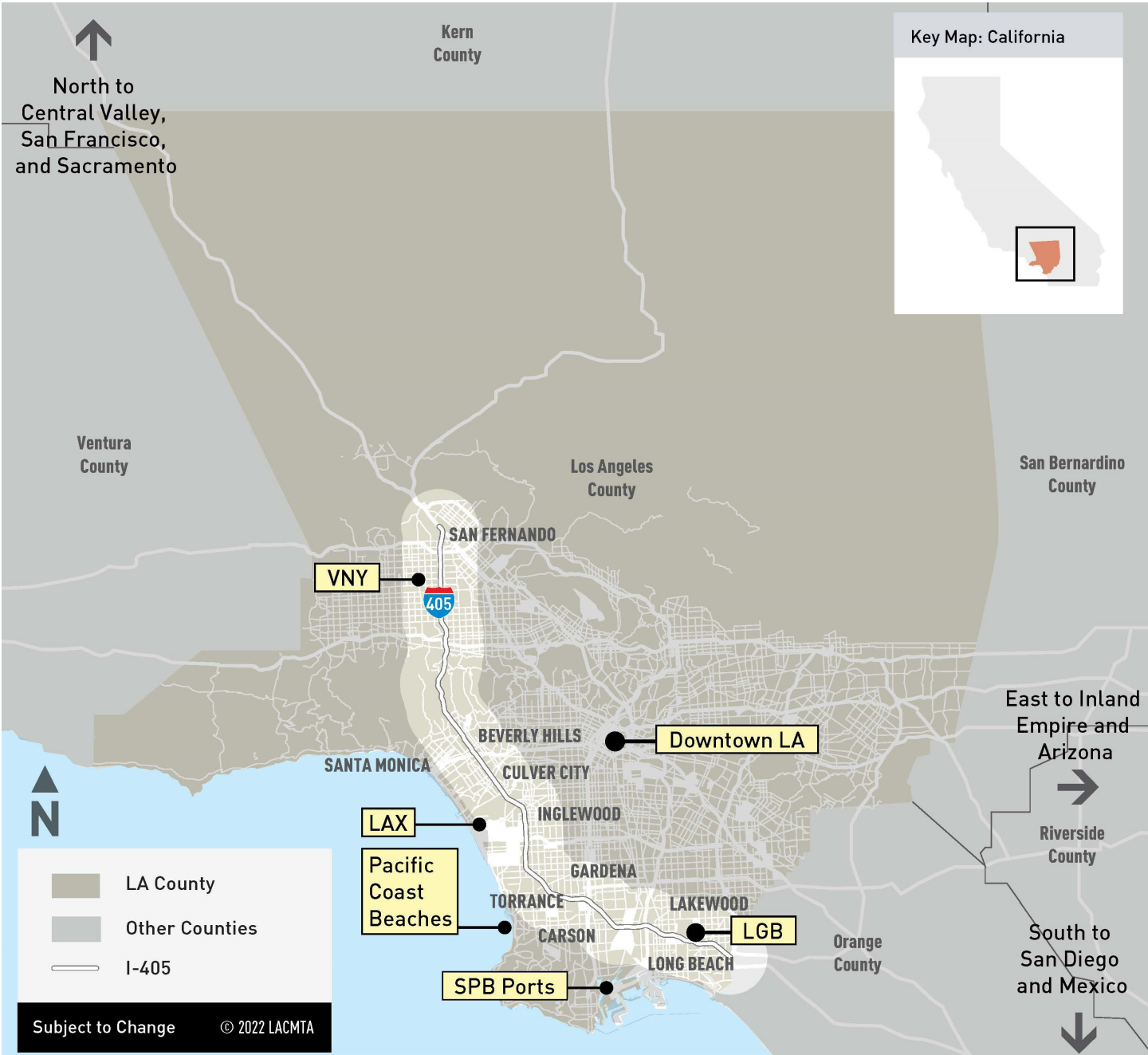
The I-405 Corridor in Context

Ask anyone in the country about Interstate 405 (I-405), or “the 405”, and they will tell you that this freeway is the iconic symbol of Los Angeles County’s car culture and chronic freeway congestion. And they would be right, as I-405 annually ranks as one of the most congested freeways in California and the US. The “405” is more than just a congested freeway—it also serves as a transportation corridor of local, regional, and national significance, linking critical gateways and trade hubs, including the San Pedro Bay (SPB) Ports of Los Angeles and Long Beach via I-710, Los Angeles International (LAX), and Long Beach Airports; and connecting trips that reach as far as

California’s Central Valley, the Mexican border, and the rest of the state (Figure 1). The I-405 freeway is equally important for commuters, residents, and visitors within the region. More than one-quarter of LA County’s population (nearly 2.8 million residents) live within 3 miles of the I-405 freeway—known as the I-405 Corridor—and about 28 percent of jobs in LA County (1.4 million) are located within those boundaries.² In providing essential connectivity for millions of people and goods, the Corridor carries high volumes of vehicles and suffers from the resulting congested conditions and traffic-related impacts that affect the quality of life of those traveling through and living within the Corridor and region.

Figure 1

PROJECT CONTEXT MAP



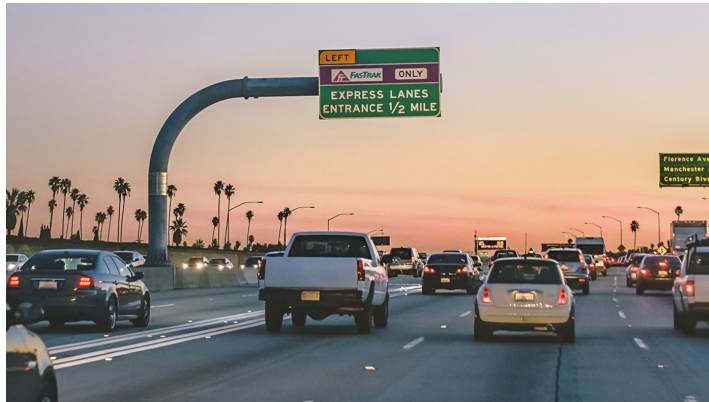
While the I-405 freeway functions as the anchor of the study area, the freeway is just one element of an integrated network of multimodal facilities. For this reason, the I-405 Corridor study area for the Comprehensive Multimodal Corridor Plan (CMCP) includes the full extent of the I-405 freeway in LA County—a total of 48.5 miles—as well as a travel “catchment area”³ of 3 miles on both sides of the freeway. In its entirety, the freeway spans a total of 72.4 miles in California from I-5 in the San Fernando Valley to Irvine, where it reconnects with I-5 at its southern terminus in Orange County. The 48.5 miles of freeway in the CMCP study area are bisected by more than 50 major arterial interchanges and 9 other freeway systems (I-605, I-710, I-110, I-105, SR-90, I-10, US-101, SR-118, and I-5). The freeway, which follows the coastline, operates east-west in the southern portion before turning north-south for much of the Corridor. Hemmed in by the Santa Monica Mountains at the Sepulveda Pass and by the Pacific Ocean on its western edge, the I-405 in many instances has no sustained alternate routes

for travelers because of these geographic constraints. Instead, these travelers depend on many parallel arterials, depending on the direction of I-405, to move through the Corridor except for where the freeway curves in the South Bay area.

In addition to the freeway and expansive arterial and local roadway network, the I-405 “system of systems” also includes transit, rail services, and complete streets infrastructure, such as bicycle and pedestrian facilities. Together, this multimodal network supports roughly 10.6 million daily trips—41 percent of all trips taken throughout LA County—for the people that live, work, visit, and play in LA County.⁴ Most of these trips are made in severely congested conditions where delays are frequent and travel times are long and unpredictable. The Corridor’s geographic constraints and lack of continuous alternative facilities make the I-405 the de facto route for much of this travel.

WHAT DOES IT MEAN TO BE “MULTIMODAL”?

A multimodal transportation network is one that provides a range of options in addition to highways for travelers, including public transportation; active transportation, such as biking, walking, and rolling; new and shared mobility; and carpooling and shared-ride options—this network also facilitates the movement of goods by truck, train, local delivery van, and even cargo bicycle.



The I-405 Corridor at a Glance

Nearly **2.8 million people** live within the I-405 study area—**more than one-quarter** of LA County’s population.

There are **1.4 million jobs** in the I-405 Corridor—an estimated **28 percent of the jobs** in LA County.

The I-405 Corridor area experiences **10.6 million daily trips**—approximately **41 percent of all daily trips** in LA County.

The I-405 freeway itself carries only **25 percent of daily vehicle miles traveled (VMT)** in the study area—14.4 million miles. **The other 75 percent—41.1 million miles**—occur on the other freeways and arterials in the study area.

Approximately **2.5 percent of total trips in the Corridor occur by transit**—a lower rate than the proportion of transit trips occurring countywide.

70 percent of trips that start in the Corridor stay in the Corridor—and **80 percent of these trips** are less than 5 miles.

An estimated **14 percent of trips** that originate in the Corridor are from Equity Focus Communities (EFC). **21 percent of the study area’s transit trips** originate within EFCs.

Bottlenecks along the I-405 collectively cause more than **22,500 hours of vehicle delay** annually—the equivalent of **2.5 years**.

By 2040, the I-405 Corridor study area will grow to house roughly 3 million people and 1.6 million jobs.⁵ It will need to move about 5 percent more goods every year to support this growth.⁶ This forecast will result in greater demand on the Corridor’s already congested infrastructure, creating further challenges to safety, reliability, sustainability, equity, and the general travel experience. Multimodal solutions that move more people within fewer vehicles—and within the existing, built-out footprint—are needed to address these challenges head on to support the future of the I-405 Corridor.

The Los Angeles County Metropolitan Transportation Authority (Metro) and its partners have long recognized that the I-405 Corridor must be a cornerstone of the future regional and statewide multimodal transportation network. Nearly \$5 billion in Measures R and M funding have been targeted for multimodal improvements directly within the I-405 Corridor area, with several billions in additional sales tax funding going to transportation projects serving the Corridor area [see below]. LA County sales tax measures are providing funding for near-term efforts like the Crenshaw/LAX (Metro K Line) and Airport Metro Connector (AMC)

LOCAL SALES TAXES PAY FOR TRANSPORTATION

LA County Residents have demonstrated their commitment to a better transportation future by taxing themselves through four different one-half-cent, non-sunsetting sales taxes dedicated to funding transportation improvements:

- > Proposition A (1980)
- > Proposition C (1990)
- > Measure R (2008)
- > Measure M (2016)

Together, these local sales taxes contribute over \$4 billion annually, and make up the largest share of revenues for Metro’s transportation capital and operating expenditures.

projects; and longer-term efforts like the Sepulveda Transit Corridor Project, the C Line (Green) Extension to Torrance, the G Line (Orange) Bus Rapid Transit (BRT) Improvements and I-405 ExpressLanes to improve multimodal mobility in, around, and through the Corridor.

While these and other complementary projects will help improve the overall condition and performance of the Corridor itself, an integrated planning approach is required to achieve collective mobility and accessibility, community, economic, and environmental goals. This new approach will provide a multimodal, system-level “big picture” examination of the entire transportation network within the I-405 Corridor. It will reflect the future of mobility on and beyond the freeway to include high-quality transit, active transportation, and new and shared mobility services; address the interplay among transportation investments and strategies, land use policies and technology applications in achieving regional goals; and be driven by and responsive to community needs and priorities.

Why a Comprehensive Multimodal Corridor Plan?

The I-405 CMCP provides a guiding vision for addressing congestion and its impacts through a menu of multimodal transportation solutions along the I-405 Corridor. It provides an opportunity to think boldly about linking transformative improvements that will help reimagine the possibilities for getting around and through one of the most congested corridors in LA County and the State of California. The CMCP will help identify top performing projects across all modes (transit, active transportation, roadways, goods movement, transportation systems management, and more) that once funded and implemented will help Metro and its partners make progress on collective mobility, safety, environmental, and equity goals.

This plan will serve as a qualifying element for projects that are submitted to the California Transportation Commission’s (CTC) Solutions for Congested Corridors Program (SCCP), which makes \$250 million available annually for transportation performance improvements [see callout].

SENATE BILL (SB) 1 AND SOLUTIONS FOR CONGESTED CORRIDORS

The Road Repair and Accountability Act of 2017 (SB 1) is a legislative package that invests \$54 billion over a 10-year period to fix roads, freeways, and bridges in communities across California and puts more dollars toward transit and safety.

SB 1 created the SCCP, a statewide, competitive grant program that funds the construction of transportation improvements that address some of the most traveled and congested corridors in the state. Projects must achieve a balanced set of transportation, environmental, and community access benefits.

SCCP makes \$250 million available annually statewide. To be considered eligible for these grant funds, projects must be included in a qualifying CMCP.

To be eligible for SCCP funding, the I-405 CMCP must be developed in concurrence with the CTC CMCP Guidelines [see sidebar]. Beyond meeting the statutory requirements, the CMCP Guidelines offer flexibility to ensure that individual CMCPs are context-specific and attuned to regional goals. As such, the I-405 CMCP has been developed to align with many of the plans and policies discussed in the following section.

The CMCP consists of five key elements:

- > A corridor assessment that examines the conditions, challenges, and needs of the Corridor’s multimodal transportation system and communities;
- > Defined plan goals that integrate and build on goals established by Metro and the state;
- > A comprehensive list of multimodal projects for the Corridor planned by Metro, California Department of Transportation (Caltrans), and other local partners;
- > A project evaluation that assesses projects against the CMCP goals, as well as the criteria for SCCP; and
- > Improvement strategies that identify near-, mid-, and long-term actions that will guide the plan’s implementation upon adoption.

The role of the CMCP is to capture the various multimodal projects planned for the corridor area and assess them based on their potential benefits as they relate to the goals of the CMCP. Importantly, the CMCP does not by itself directly advance projects, or make specific project scope and delivery determinations. All projects must separately go through their individual project development processes prior to construction that are led by their respective project implementing agencies, such as Metro, Caltrans, and local cities. This public process includes community engagement, planning, environmental review, engineering, and design. Inclusion in the CMCP does not take the place of these independent project development and community engagement processes. In the case of Metro-delivered projects, all will be developed in accordance with Metro’s Equity Platform, Multimodal Highway Investment Objectives, and other agency policies.

While the CMCP is a qualifying document for SCCP funding eligibility, the SCCP is just one of many funding opportunities that are geared toward multimodal investments. The State oversees numerous funding programs that support the delivery of transportation investments across different modes, including the Active Transportation Program (ATP), Local Partnership Program (LPP), Low Carbon Transit Operations Program (LCTOP), State Transportation Improvement Program (STIP), Trade Corridor Enhancement Program (TCEP), and Transit and Intercity Rail Capital Program (TIRCP). At the federal level, the Infrastructure Investment and Jobs Act (IIJA)/Bipartisan Infrastructure Law (BIL) allocates \$1.2 trillion for infrastructure between 2022 and 2026, including about \$550 billion for surface transportation (transit, highways, active facilities, freight, and intercity passenger rail). The BIL expanded funding for existing federal transportation programs, such as Rebuilding American Infrastructure with Sustainability and Equity (RAISE), Infrastructure for Rebuilding America (INFRA), Buses and Bus Facilities, and Low or No Emission Vehicle programs.

CMCP GUIDELINES

Metro is developing the I-405 Comprehensive Multimodal Corridor Plan in accordance with the CTC’s CMCP Guidelines. The Guidelines require that the I-405 CMCP evaluate projects included in the CMCP by specific criteria detailed in statute as follows:

- > Safety
- > Congestion
- > Accessibility
- > Economic Development and Job Creation and Retention
- > Air Quality and Greenhouse Gas Emissions Reduction
- > Efficient Land Use

The BIL also created new federal funding opportunities through the establishment of programs like the National Infrastructure Project Assistance Program. Through these funding opportunities, both our state and federal funding partners look to multimodal transportation solutions to generate broad benefits like those outlined in the SCCP program guidelines [see callout]. As the goal areas and criteria for these various state and federal funding programs overlap, this CMCP serves as a helpful guide to identify potential funding pathways beyond the SCCP for projects identified in the CMCP. Multimodal corridor visioning and planning will help to identify a slate of projects that can capture these funds and help realize multiple benefits for the I-405 Corridor and LA County.

As Metro leads with equity and promotes the multimodal, sustainable, and community-focused planning vision set forth by its Board, this CMCP reflects Metro’s desires to meet and exceed the CTC’s CMCP requirements by creating a stakeholder-guided, holistic, and multimodal vision that identifies not only the needed infrastructure investments of today, but also bold policy and program considerations that will be necessary to transform the Corridor tomorrow. This plan will guide the collaboration, delivery, and implementation of projects that will achieve the multiple objectives of the CMCP, and improve and better integrate the shared-use, multimodal transportation system in the I-405 Corridor area.

We Have a Vision for the I-405 Corridor

Metro’s mission is to provide a world-class transportation system that enhances quality of life for all who live, work, and play within LA County. Four key planning initiatives will guide Metro as the agency endeavors to achieve this broad mission countywide.

Vision 2028

Adopted by the Metro Board in June 2018, the Vision 2028 Strategic Plan presents the agency’s big picture plan for improving mobility across LA County. As outlined in the plan, Metro’s visionary outcome is to double the share of transportation modes other than solo driving. Its five goals underpin all of Metro’s activities, including the I-405 CMCP. Vision 2028 goals include the following:

- > Provide high-quality mobility options that enable people to spend less time traveling;
- > Deliver outstanding trip experiences for all users of the transportation system;
- > Enhance communities and lives through mobility and access to opportunity;
- > Transform LA County through regional collaboration and national leadership; and
- > Provide responsive, accountable, and trustworthy governance within the Metro organization.

2020 Long Range Transportation Plan (LRTP)

The 2020 LRTP lays out a vision and roadmap for bringing about a more mobile, sustainable, and vibrant future for LA County. Through extensive public outreach, Metro has distilled the region’s desires into four goals: Better Transit, Less Congestion, Complete Streets, and Access to Opportunity.

The 2020 LRTP outlines what Metro currently is doing and what Metro must do for LA County over the next 30 years to achieve these goals. In addition to aligning the I-405 CMCP goals with Metro’s LRTP, the LRTP was used as a starting point to identify projects, initiatives, and improvements for inclusion in this plan. The LRTP goals and framework are shown below.

We’re guided by our Strategic Plan goals.

Vision 2028 Strategic Plan

We’re creating

- 1 Faster Travel Options
- 2 Better Trips
- 3 Thriving Communities

Better Transit

Providing more transit options with improved quality and service

- Transit Projects
- Bus Improvements
- New Mobility Options

Less Congestion

Managing the transportation system to reduce the amount of time spent in traffic

- Roadway Improvements
- Congestion Management
- Improved and Efficient Goods Movement

Complete Streets

Making streets and sidewalks safe and convenient for everyone, to support healthy neighborhoods

- Bike and Pedestrian Projects
- Local Street Improvements
- Station and Stop Access Enhancements

Access to Opportunity

Investing in communities to expand access to jobs, housing and mobility options

- Workforce Initiatives
- Support for Local Businesses
- Transit Oriented Communities

Long Range Transportation Plan

We’re committed to

- 4 Leadership
- 5 Accountability

Collaboration Continuous Improvement

Customer Focus Innovation Inspired and Inclusive Workforce Safety

Customer Experience Plan COVID-19 Recovery Plan

We’re intentionally focused on

eliminating racial and socioeconomic disparities and advancing sustainable practices in everything we do.

Equity Sustainability

Equity Plan Moving Beyond Sustainability Plan

Metro’s Equity Platform Framework

Metro’s Equity Platform, adopted by the Board in February 2018, is a policy framework that defines steps for Metro to maximize its transportation authority as a lever to evaluate and address disparities in accessing opportunities that lead to upward social and economic mobility. The equity platform is structured around four pillars:

- I. Listen and Learn;
- II. Define and Measure;
- III. Focus and Deliver; and
- IV. Train and Grow.

Through the 2020 LRTP update process, Metro identified **EFCs** throughout LA County, which are those that are most heavily impacted by transportation investments. EFCs represent approximately 30 percent of the population of LA County and are defined as those census tracts where more than 80 percent of residents are non-white, and more than 40 percent of residents are low-income, or where 40 percent of residents are low-income and more than 10 percent of residents do not have access to a personal vehicle. In May 2022, the Metro Board approved an update of the EFC designation, moving from a binary classification to an index to better codify the degrees of need across the county. The 2022 definition uses the same 3 sociodemographic factors as the 2019 definition. The new index includes five tiers: Very High Need, High Need, Moderate Need, Low Need, and Very Low Need. Census tracts that are found to be “Very High Need” and “High Need” are designated EFCs. While many of the same EFCs are captured using the 2019 definition, the 2022 definition does result in some differences in EFC-designated census tracts. Regular updates to the CMCP are expected, and staff will update the Plan in 2023 using the new 2022 EFC index.

METRO’S DEFINITION OF EQUITY

Equity is both an outcome and a process to address racial, socioeconomic and gender disparities, to ensure fair and just access – with respect to where you begin and your capacity to improve from that starting point – to opportunities, including jobs, housing, education, mobility options and healthier communities. It is achieved when one’s outcomes in life are not predetermined, in a statistical or experiential sense, on their racial, economic or social identities. It requires community informed and needs-based provision, implementation and impact of services, and programs and policies that reduce and ultimately prevent disparities.

In August 2020, the Metro Board adopted an agency-wide definition for equity to guide Metro’s work in this space and create project-specific equitable outcomes [see sidebar].

In alignment with Metro’s Equity Platform, this plan recognizes the need to work intentionally to eliminate disparities that affect communities within the I-405 Corridor.

Multimodal Highway Investment Objectives

In June 2022, the Metro Board adopted Metro’s Objectives for Multimodal Highway Investments to re-align the agency’s highway system investment strategy with state and federal policies and funding opportunities that simultaneously support community improvement and equitable advancement for county residents, especially those most impacted by past, current, and future use of our region’s many highway facilities. The six objectives are as follows:

1. Advance the mobility needs of people and goods within LA County by developing projects and programs that support traffic mobility and enhanced safety, economic vitality, equitable impacts, access to opportunity, regional sustainability, and resiliency for affected local communities and the region.
2. Recognizing LA County’s history of inequitable highway investment policies and construction, work with local communities to reduce disparities caused by the existing highway system and develop holistic, positive approaches to maintain and improve the integrity and quality of life of those communities with minimal or no displacement during the implementation of highway improvements.
3. Ensure that local and regional investment in LA County’s highway system—particularly the implementation of Measures R and M priorities—is considered within the context of a countywide multimodal, integrated planning vision that reflects a holistic approach to meeting the needs of local communities, reducing disparities, creating a safer and well-maintained transportation system, and fostering greater regional mobility and access to opportunity.
4. Develop early, constructive, and meaningful public engagement processes and planning tools with subregional partners that foster engagement with a wide range of stakeholders, specifically people most directly impacted, with the goal of informing the planning, development, and implementation of subregional corridor investment strategies in LA County’s highway system aligning with local and subregional needs and priorities.

5. Partner with Caltrans and regional stakeholders to create an LA County multimodal highway strategic plan that is developed through a collaborative planning approach to improve the overall regional mobility of people and goods throughout the County safely and equitably, while taking action to reduce the negative environmental and climate impacts of car and truck travel.
6. Support the optimization of existing highway facilities by using technology and innovation that maximizes the throughput and travel time of people and goods, while supporting sustainable, resilient, and healthy outcomes, including reducing air pollutants and greenhouse gas emissions (GHG) generated from the use of the facilities.

Consistent with these objectives, the CMCP focuses on serving the mobility needs of people and goods within the I-405 Corridor area with a myriad of solutions that support mobility and enhanced safety, economic vitality, equitable impacts, access to opportunity, regional sustainability, and resiliency. This plan aims to offer an integrated planning vision that holistically approaches the multimodal transportation network in the I-405 area to better meet the needs of the local communities and the various users that depend on it.

The I-405 Corridor Vision

Building on the principles outlined in Vision 2028, the 2020 LRTP, the Equity Platform, and the Multimodal Highway Investment Objectives, five goals emerged for the I-405 CMCP through a combination of stakeholder engagement and thorough analysis of Corridor conditions and needs. These are shown below.

I-405 CMCP GOALS



Improve Mobility and Accessibility



Advance Equity



Support Economic Vitality



Achieve Sustainability



Enhance Safety

Vision: A more livable, accessible, equitable, sustainable, safe and vibrant I-405 Corridor.

These five goal areas align closely with a number of state, federal, and regional plans, policies, and requirements, including the CTP and Southern California Association of Governments’ (SCAG) Regional Transportation Plan (RTP), as well as existing Metro plans, priorities, processes, and Board policies (Figure 2). These goals were used to guide the development of specific project evaluation criteria, discussed in “We evaluated improvements to the I-405 Corridor.”

Figure 2

I-405 CMCP Guiding Programs and Policies

| |
|---|
| FEDERAL |
| > IIJA BIL |
| STATE |
| > CMCP Guidelines |
| > SCCP Guidelines |
| > Climate Action Plan for Transportation Infrastructure (CAPTI) |
| > CTP 2050 |
| > SB 350 |
| > California Sustainable Freight Action Plan 2016 |
| REGIONAL |
| > SCAG Sustainable Communities Strategy (SCS) |
| > LRTP |
| > Vision 2028 |
| > Equity Platform |
| > Multimodal Highway Investment Objectives |
| > Beyond Sustainability |

Consistent with Metro’s Equity Platform, the I-405 CMCP explicitly outlines “Advancing Equity” as a core goal. In the context of the I-405 Corridor, this includes expanding access to multimodal mobility options within EFCs and improving infrastructure that specifically serves EFC trips, reducing health impacts of transportation investments within EFCs, and lowering household transportation costs by making mobility options more affordable. All projects, strategies, and initiatives included in this plan were evaluated based on their ability to advance equity and support the other goal areas, in line with the Equity Platform’s “Define and Measure” pillar.

We Developed this Plan in Partnership

The I-405 CMCP was developed through a stakeholder-guided process to ensure that the plan is representative of and responsive to the needs of the vast and diverse Corridor communities and users.

Metro implemented a community engagement plan to encourage participation at every stage of the plan’s development—from establishing plan goals and evaluation criteria to providing feedback on the project list, evaluation and improvement strategies. Stakeholders from 87 different agencies and organizations were involved throughout the development of this plan, including community-based organizations (CBO), Councils of Government (COG), local jurisdictions, transit agencies, private sector stakeholders and more (see Figure 3 for a list of partners). Metro convened these partners across many different forums, including:

The I-405 CMCP Advisory Committee. The Advisory Committee serves as a forum for reviewing and refining the analysis and consideration that formed the basis of the CMCP. The CMCP Advisory Committee is comprises a group of key stakeholders representing a wide range of interests across the Corridor. California Transportation Commissioner Hilary Norton and then Caltrans District 7 Director Tony Tavares served as keynote speakers for the inaugural meeting. To-date, 5 Advisory Committee meetings have been held between May 2021 and August 2022. On average, 40 stakeholders across business associations, private industry, academia, non-profits, local/ regional officials, and public agencies have attended each of the meetings. The meetings provided an opportunity to share an overview of the project and gather feedback on the evaluation framework, preliminary project list, evaluation results, and improvement strategies. Following the adoption of the CMCP, Metro will continue to engage and update the Advisory Committee regarding CMCP implementation, initiatives, and updates.

Please see Appendix C for complete meeting summaries for all I-405 CMCP Advisory Committee meetings to-date.

Focus Groups. In October 2021, Metro convened two focus group discussions with CBOs to provide an overview of the project and gather feedback on key challenges, priorities, and projects in the study area. An additional focus group with municipal transit operators was held in October 2021 to gather input on key priorities, projects, and programs specifically related to transit. Representatives from nine transit providers,

as well as LA Metro Service Planning, attended. Key themes that emerged included prioritizing transit, enhancing east/ west movement across the I-405 freeway, improving access to key destinations, and integrating active transportation. Input received from these focus groups helped underpin Corridor challenges and CMCP priorities, and inform the nine improvement strategies included in the plan.

Please see Appendix C for summaries from all focus groups discussions conducted.

COGs Coordination. The COGs are joint powers authorities that focus on planning for their respective sub-region and serve as key partners with Metro on regional projects such as the CMCP. In August and September 2021, Metro hosted workshops and/or briefings with all four COGs in the project area (the Westside Cities, San Fernando Valley, South Bay Cities, and Gateway Cities), as well as North County Transportation Coalition, to provide a project overview, share findings on existing Corridor conditions, and gain feedback on the draft goals and evaluation framework. In March 2022, Metro also hosted a joint COG briefing with the Westside Cities, San Fernando Valley, and South Bay Cities COG staff to discuss and review the preliminary project list and evaluation. A separate meeting was held with the Gateway Cities COG to discuss the same issues and gather feedback. Following the adoption of the CMCP, Metro will regularly engage and update the COGs regarding CMCP implementation, initiatives, and updates.

Spotlight Interviews. In Fall 2022, Metro conducted spotlight interviews focused on key trip generators throughout the study area, including the University of California, Los Angeles (UCLA), the City of Inglewood, and Los Angeles World Airports (LAWA). These interviews were designed to gather information about key mobility challenges, as well as initiatives and opportunities to address those challenges. These discussions informed the Spotlight features included in the plan.

Please see Appendix F to view the CMCP Corridor Geographic Spotlights.

Key Stakeholder Engagement. Metro also presented to all four Metro Service Councils that cover the I-405 Corridor (Westside/ Central, San Fernando Valley, South Bay Cities, and Gateway Cities). In addition, presentations and/or briefings were given to Metro’s Technical Advisory Committee, elected offices, local jurisdictions, and industry organizations, such as FuturePorts and the Valley Industry Commerce Association (VICA).

Figure 3

Stakeholder Participation

| CATEGORY | ORGANIZATION | ADVISORY COMMITTEE | FOCUS GROUP AND/OR INTERVIEW WITH BRIEFING | COG COORDINATION |
|--------------------------|---|--------------------|--|------------------|
| COGS | Gateway Cities | ● | | ● |
| | Las Virgenes-Malibu | ● | | ● |
| | North Los Angeles County Transportation Coalition | ● | | ● |
| | San Fernando Valley | ● | ● | ● |
| | South Bay Cities | ● | | ● |
| | Westside Cities | ● | ● | ● |
| ELECTED OFFICIAL OFFICES | Office of Los Angeles Mayor Eric Garcetti | ● | ● | |
| | Office of Los Angeles County Supervisor Holly Mitchell, 2nd District | ● | ● | |
| | Office of Los Angeles County Supervisor Sheila Kuehl, 3rd District | | ● | |
| | Office of Los Angeles County Supervisor Janice Hahn, 4th District | ● | ● | |
| | Office of Los Angeles County Supervisor Kathryn Barger, 5th District | ● | | |
| | Office of City of Los Angeles City Councilmember Paul Krekorian, District 2 | ● | ● | |
| | Office of City of Los Angeles City Councilmember Bob Blumenfeld, District 3 | | ● | |
| | Office of City of Los Angeles City Councilmember Nithya Raman, District 4 | ● | | |
| | Office of City of Los Angeles City Councilmember Paul Koretz, District 5 | ● | | |
| | Office of City of Los Angeles City Councilmember Monica Rodriguez, District 7 | ● | | |
| | Office of City of Los Angeles City Councilmember Mike Bonin, District 11 | ● | ● | |

Stakeholder Participation (continued)

| CATEGORY | ORGANIZATION | ADVISORY COMMITTEE | FOCUS GROUP AND/OR INTERVIEW WITH BRIEFING | COG COORDINATION |
|-------------------------------|--|--------------------|--|------------------|
| LOCAL JURISDICTIONS | City of Carson | | ● | |
| | City of Compton | | ● | |
| | City of Culver City | ● | | |
| | City of Hawthorne | | | |
| | City of Inglewood | ● | ● | |
| | City of Lawndale | | | |
| | City of Long Beach | | | |
| | City of Los Angeles | ● | | |
| | City of Redondo Beach | ● | | |
| | City of Santa Clarita | ● | | |
| | City of Torrance | | ● | |
| | Los Angeles Department of Transportation (LADOT) | ● | | |
| | Los Angeles County Chief Sustainability Office | ● | | |
| | Los Angeles County Department of Public Works | ● | | |
| METRO COUNCILS AND COMMITTEES | Gateway Cities Service Council | | ● | |
| | San Fernando Valley Service Council | | ● | |
| | South Bay Cities Service Council | | ● | |
| | Westside/Central Service Council | | ● | |
| | Technical Advisory Committee | | ● | |
| COMMUNITY-BASED ORGANIZATIONS | Chrysalis | ● | | |
| | CiclaValley | ● | | |
| | Community Health Councils | ● | | |
| | LA 28 | ● | | |
| | Local Union 8 | ● | | |
| | Long Beach Gray Panthers | ● | | |
| | Los Angeles Bicycle Advisory Committee | | | |
| | Los Angeles County Bike Coalition | ● | ● | |
| | Move LA | ● | | |
| | Natural Resources Defense Council (NRDC) | ● | | |
| | Pacoima Beautiful | ● | ● | |
| | West Los Angeles Policy Advisory Board | ● | | |

| CATEGORY | ORGANIZATION | ADVISORY COMMITTEE | FOCUS GROUP AND/OR INTERVIEW WITH BRIEFING | COG COORDINATION |
|----------------------------------|--|--------------------|--|------------------|
| ECONOMIC & WORKFORCE DEVELOPMENT | FuturePorts | ● | | |
| | Harbor Trucking Association | ● | | |
| | LA County Economic Development Corporation | ● | | |
| | Los Angeles Area Chamber of Commerce | ● | | |
| | Los Angeles Cleantech Incubator | ● | | |
| | Pacific Merchant Shipping Association | ● | | |
| | VICA | | ● | |
| PRIVATE SECTOR | Northrup Grumman | ● | | |
| | United Parcel Service | ● | | |
| HOSPITALS | Cedars-Sinai | ● | | |
| | Valley Presbyterian Hospital | ● | | |
| PORTS/AIRPORTS | Long Beach Airport | ● | | |
| | LAWA | ● | ● | |
| | Port of LA | ● | | |
| | Port of Long Beach | ● | | |
| REGULATORY AGENCIES | South Coast Air Quality Management District (AQMD) | ● | | |
| RESEARCH/ACADEMIC | California State University, Long Beach | ● | | |
| | Loyola Marymount University | ● | | |
| | UCLA | ● | ● | |
| | University of Southern California (USC) | ● | | |
| TRANSIT AGENCIES | Access LA | ● | ● | |
| | Antelope Valley Transportation Authority (AVTA) | ● | ● | |
| | Beach Cities Transit | ● | ● | |
| | Big Blue Bus | ● | | |
| | Culver City Bus | | ● | |
| | Metro | | ● | |
| | LADOT Transit | | ● | |
| | Long Beach Transit | | ● | |
| | Metrolink | | ● | |
| | Santa Clarita Transit | | ● | |
| | Torrance Transit | ● | | |

Stakeholder Participation (continued)

| CATEGORY | ORGANIZATION | ADVISORY COMMITTEE | FOCUS GROUP AND/OR INTERVIEW WITH BRIEFING | COG COORDINATION |
|--|--|--------------------|--|------------------|
| TRANSPORTATION MANAGEMENT ORGANIZATION (TMO) | Go SaMo | ● | | |
| | Playa Vista Compass | ● | | |
| TRANSPORTATION PLANNING AGENCIES | Alameda Corridor Transportation Authority (ACTA) | ● | | |
| | California Transportation Commission (CTC) | ● | | |
| | Caltrans District 7 | ● | ● | |
| | Caltrans District 12 | | ● | |
| | SCAG | ● | | |

Survey. To raise awareness about the CMCP and gather perspectives from the general public regarding key issues and concerns in the I-405 Corridor, Metro conducted an online, bilingual survey from late April to early May 2022. The survey was promoted through social media advertising on Facebook and through in-person outreach at 8 high-traffic transit stations and bus stops throughout the study area. Two stations/stops were selected per subregion within the study area. Locations included Van Nuys/Victory, Van Nuys G Line (Orange) Station, Westwood/Lindbrook, Expo/Sepulveda E Line (Expo) Station, Aviation/LAX C Line (Green) Station, Harbor Gateway Transit Center, Willow Street A Line (Blue) Station and Cal State Long Beach. Bilingual outreach teams handed out materials during morning and afternoon peak travel periods reaching over 300 transit riders. In total, 428 surveys were completed, with approximately 30% surveys completed in Spanish. The majority of respondents stated that the most important transportation issues were heavy traffic on freeways and not enough frequent, reliable transit. They felt that shorter wait and travel times, better bus and rail stations, and more convenient access to bus stops/rail stations would improve transit trips near the 405 freeway. There was also strong support for bike lanes separated from vehicle traffic and safer crosswalks to improve bicycle and pedestrian trips. The majority of respondents indicated a high likelihood for embracing and utilizing improved transportation options. Survey input helped inform and refine the CMCP's improvement strategies to reflect these priorities and preferences for improvements.

See Appendix C for the complete survey results.

The draft CMCP was made available for a 31-day public review and comment period from May 11, 2022 to June 10, 2022. Below is an overview of engagement and notification efforts during the comment period.

Notification Efforts. To encourage participation in the virtual public meetings and submission of comments on the draft CMCP, Metro undertook extensive outreach with a particular focus on EFCs. A phone and texting campaign was conducted reaching nearly 88,000 landline and mobile phones within EFCs to inform residents about the CMCP and community meetings. Pre-recorded phone messages in English and Spanish were sent to 35,509 landline numbers, and bilingual MMS text messages were sent to 51,548 cell phones to reach EFCs throughout the Corridor. Eblasts were sent out to a project database of more than 2,500 stakeholders, including four meeting notices/reminders, 2 thank you eblasts after each public meeting, and 1 comment period reminder eblast with open rates around 35%. An outreach toolkit was also sent to elected officials/city staff, CBO contacts, and Advisory Committee members to encourage them to help share the information. In addition, a social media advertising campaign was conducted on Facebook from May 24 through June 1, 2022 to promote project and community meeting information. The advertising campaign, which targeted residents, workers, and commuters within the project study area, had a reach (total unique people who saw the ad) of 16,624 and total impressions (how many times the ads were visible to targets) of 33,137; and generated 70 event responses. A press release was also published on May 12, 2022 to notify the media about the project and upcoming community meetings. Metro also published articles on May 11, 2022, in its English and Spanish language blogs, The Source and El Pasajero, respectively.



35% Eblast Open Rate



160 Attendees at the Community Meetings



115 Comment Submissions Received

StoryMap. Metro created a Geographic Information System (GIS)-based microsite (StoryMap) that served as an executive summary of the Draft CMCP in English and Spanish. To-date, the English site has garnered 2,358 views and the Spanish site has received 130.

To view the StoryMap in English: <https://storymaps.arcgis.com/stories/7a5d3f2e53434e51bc52655019b33d26>

To view the StoryMap in Spanish: <https://storymaps.arcgis.com/stories/cad5d09eb5b6458b8e51a6caafa16cco>

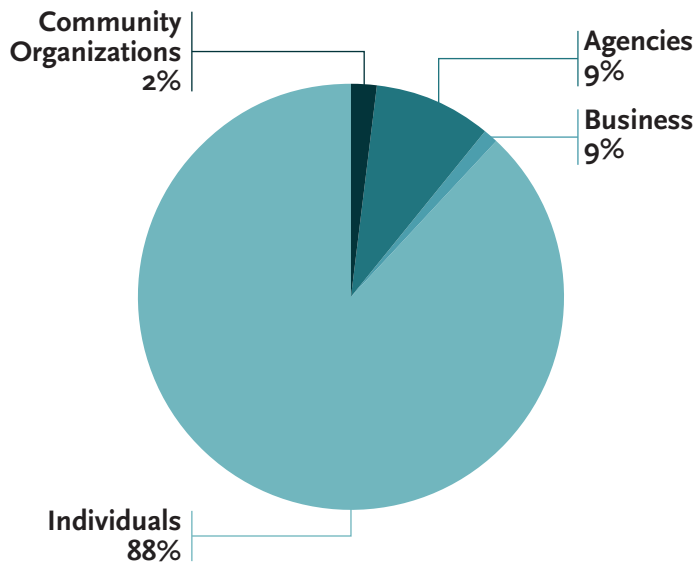
Public Meetings. Metro hosted two virtual public meetings via Zoom on May 25, 2022 at 5:30 pm and June 1, 2022 at noon. There were 70 attendees at the first meeting and 90 attendees at the second meeting. Representatives from the offices of Los Angeles County Supervisor Holly J. Mitchell, State Senator Sydney Kamlager and Congressman Ted Lieu attended the public meetings. In addition, representatives from 6 cities, along with 6 Neighborhood Councils and 8 homeowners' associations, were also in attendance. Each meeting consisted of a PowerPoint presentation, followed by a question and answer (Q&A) session. Spanish interpretation was made available at both meetings. The presentation included an overview of the purpose and goals of the plan, the development of the plan, and a review of the key projects, as well as how they were evaluated. The Q&A session addressed approximately 30 questions between the 2 meetings across a range of topics. These included interest in specific projects included in the plan, as well as the broader goals/process for the plan itself. In addition, there were general questions and comments about transit and highway projects and issues. Stakeholders were also very interested in the SCCP program and funding opportunities.

Please see Appendix C for public meeting summaries.

Public Comment. During the public comment period from May 11—June 10, 2022, Metro received 115 comments, of which 101 (88%) were from individuals, 10 were from agencies (8.7%), 3 were from community organizations (2.6%), and 1 was from a business (Figure 4). The comments were submitted via the online form (36%), Q&A function at the meetings (34%), and email (30%). Of those that included location information, comments were received primarily from the study area along the I-405, but there were also comments from Downtown Los Angeles, Burbank Glendale, and elsewhere throughout Los Angeles County.

Figure 4

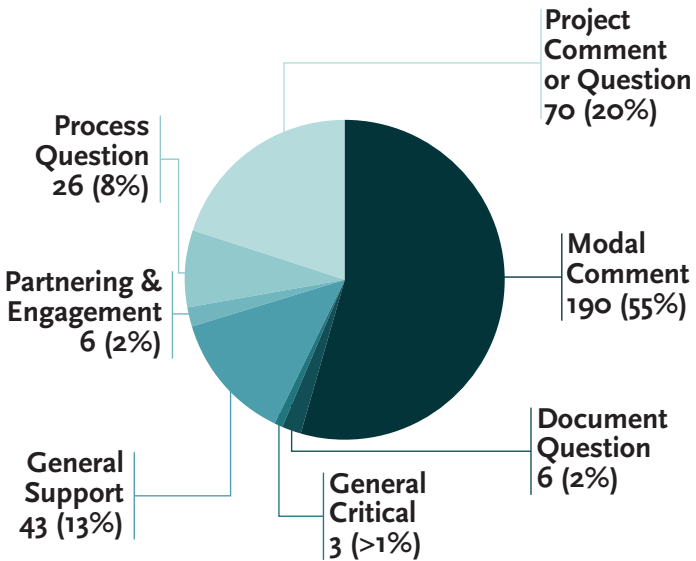
Public Comment Submission Source



Of the 115 submissions, 85 were unique and 30 were form letters. Those 115 were reviewed and categorized into more than 344 comment components (Figure 5).

Figure 5

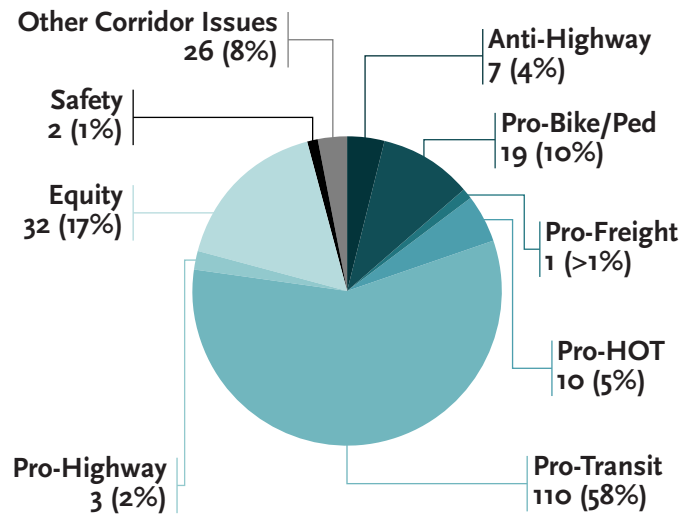
Public Comment Submission Categories



Of the 190 comments focused on modes, the majority were pro-transit.

Figure 6

Public Comment Modal Subcategories



Additional comments were received outside the public comment period. All comments received were considered and responded to. Many comments led to updates and refinements to the Final I-405 CMCP. Changes to the plan included updates to the project list, including the addition of projects and removal of projects, either in construction or projects no longer being pursued, as well as updates to individual project information. Additional clarifying language was included to explain the role of the CMCP and distinguish this planning process from individual project development processes required to approve and commit projects. Lastly, many of the comments resulted in refinements to the improvement strategies and their proposed actions.

Please see Appendix C for the full list of public comments received and responses.

> **Next Steps.** Metro will continue to engage the Advisory Committee and Corridor stakeholders on CMCP developments related to plan implementation and all future updates to the CMCP.

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CHAPTER 2.

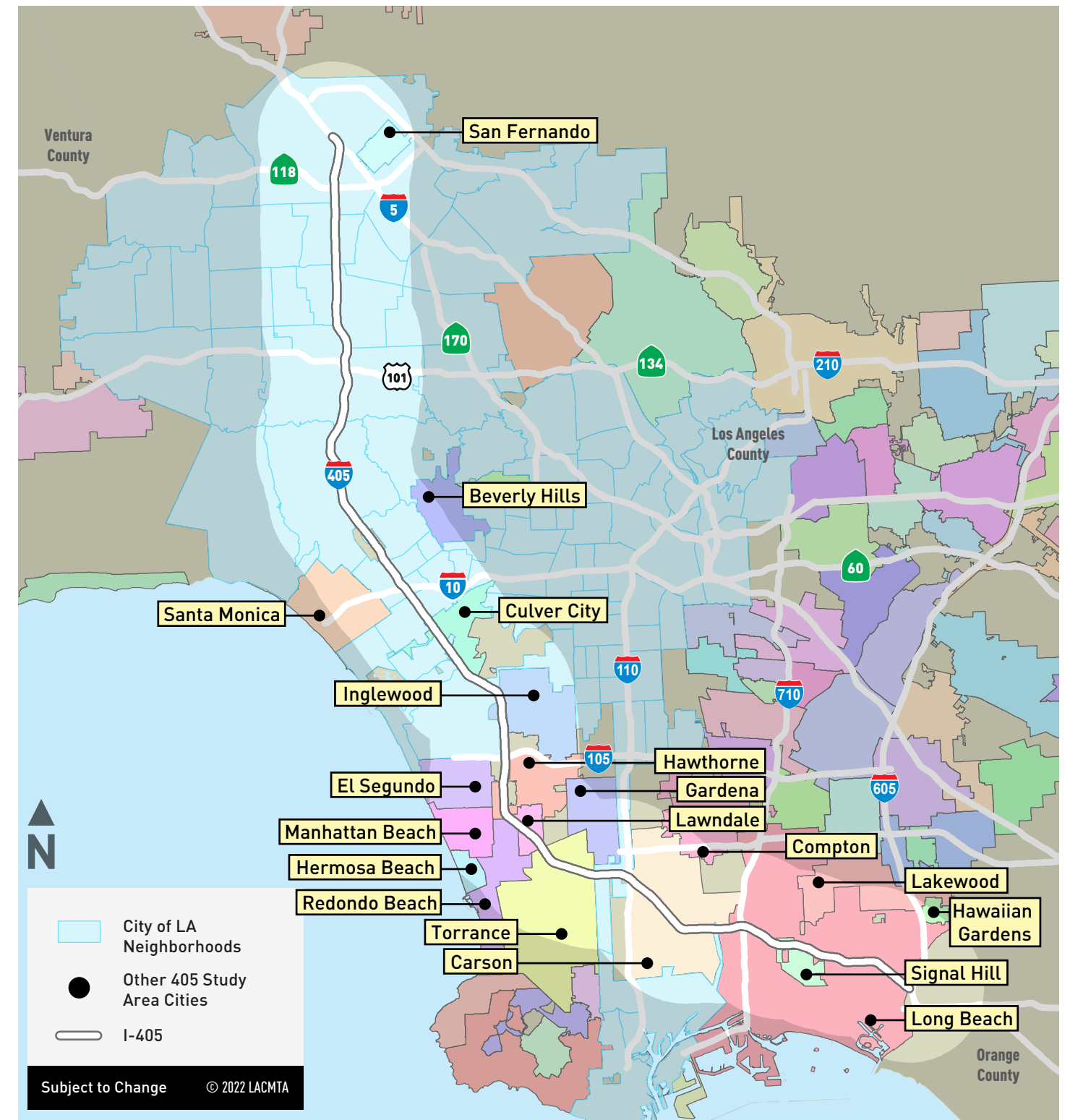
CORRIDOR CONDITIONS

The I-405 is More than Just a Freeway

The I-405 is more than just a freeway. It is a thread that weaves together four COGs, four LA County Supervisorial Districts, 20 individual cities, and over 40 neighborhoods in the City of LA as well as unincorporated communities of LA County. It serves some of LA County's most traveled-to destinations, including UCLA, LAX, The Inglewood Entertainment District, and the San Pedro Bay Ports or Ports of Los Angeles and Long Beach (SPB Ports); and connects the western regions of LA County to the rest of California and beyond. The I-405 Corridor is home to 2.8 million residents and 1.4 million jobs, and welcomes millions of visitors annually to its many attractions.⁷ In recognition that the Corridor functions as a link between numerous communities and destinations, the study area reaches beyond the highway and includes 3 miles on either side of the freeway.⁸ Spanning approximately 319 square miles, the study area captures the northern most portion of the Corridor in the San Fernando Valley, down to the Gateway Cities where the I-405 stretches onward into Orange County (Figure 7). The people and places within this area are vast and diverse, and so are their mobility needs.

Figure 7

PROJECT ORIENTATION MAP



People

Nearly 2.8 million people live within the I-405 study area—more than one-quarter of LA County’s population.⁹ As such, the study area presents a fairly representative cross section of the LA County population. While the Corridor has a diverse population overall, it is heavily segregated by race and income. It includes and juxtaposes some of the wealthiest and some of the most disadvantaged communities across the LA region.

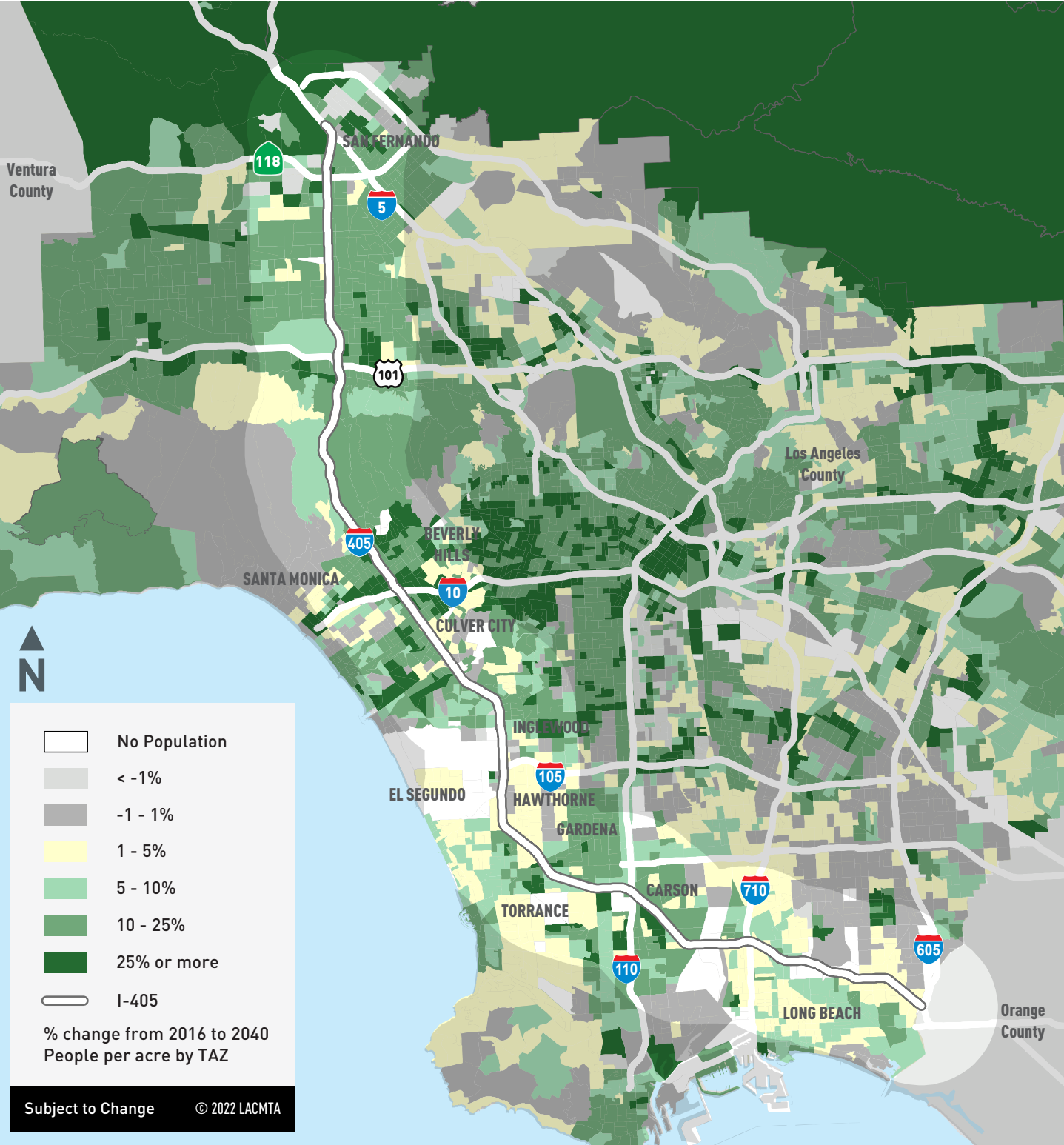
Population within the I-405 Corridor is expected to grow by a total of 12 percent by 2040 (0.4 percent annually), reaching nearly 3 million residents.¹⁰ Population growth will occur throughout the Corridor, with some of the higher concentrations of growth in the northern part of the San Fernando Valley, Culver City, Torrance, around the UCLA Campus, Inglewood, and portions of Long Beach (Figure 8). This growth is projected for parts of the Corridor, where there is already high population density. Population within the study area is expected to grow at a slightly slower rate than LA County and the six-county SCAG region as a whole, since most of the study area is already built out (Figure 8).¹¹

POPULATION

| 2022 | 2040 |
|------|------|
| 2.8M | 3.1M |



Figure 8
POPULATION GROWTH BY 2040



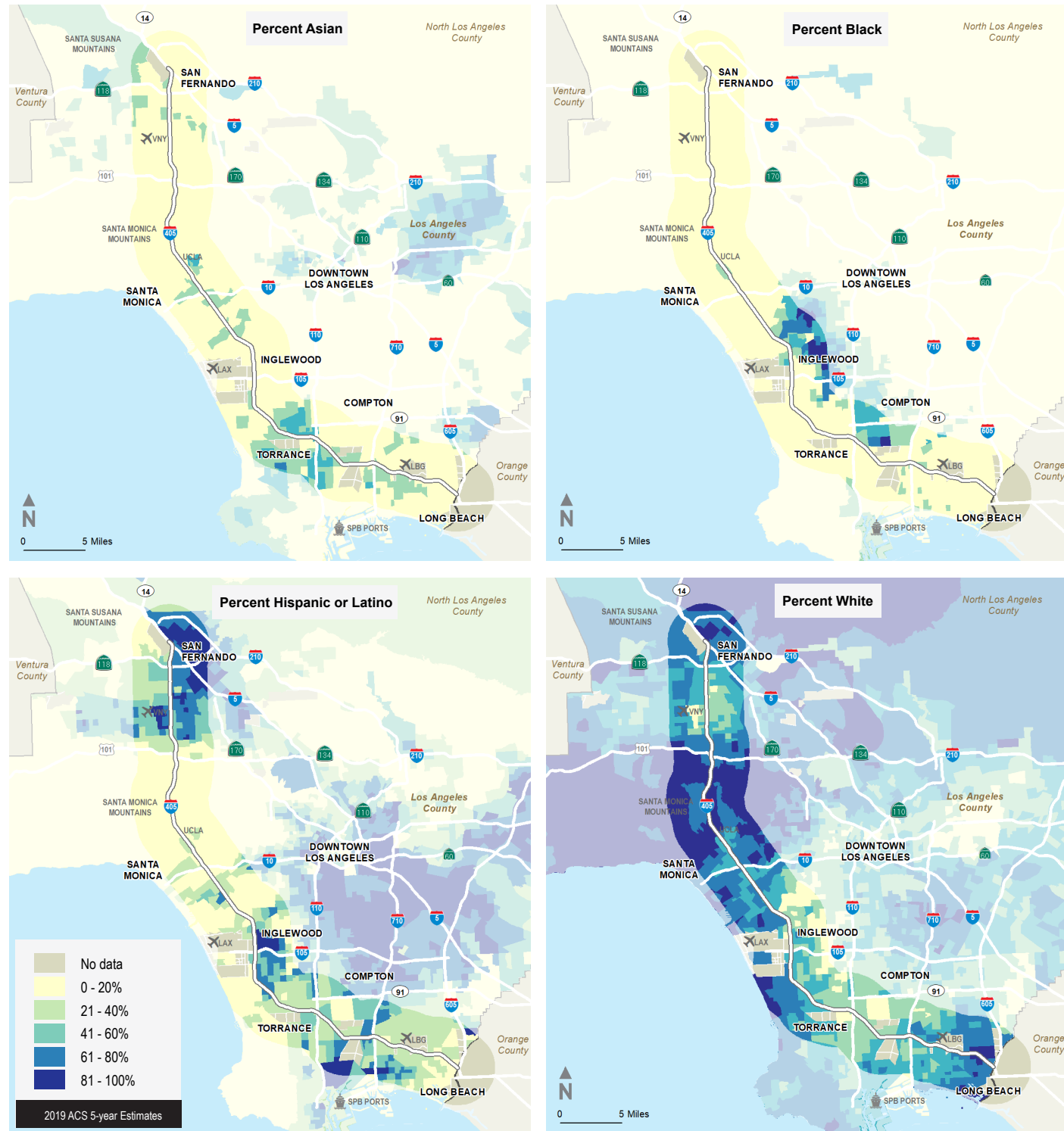
Source: LA Metro Travel Demand Model.

Like most metropolitan areas across the US, **communities along the I-405 Corridor are highly racially segregated**, as shown in Figure 9. This is primarily due to post-war era land use and transportation policies, such as redlining, restrictive covenants, and exclusionary zoning that put up barriers to housing for people of color—particularly Black and

African American residents—as well as major highway and development projects that caused widespread displacement. The legacy of those policies is apparent today in the disparities across health; housing; services; education; and access to safe, affordable, and reliable mobility.

Figure 9

RACE AND ETHNICITY ALONG THE I-405 CORRIDOR



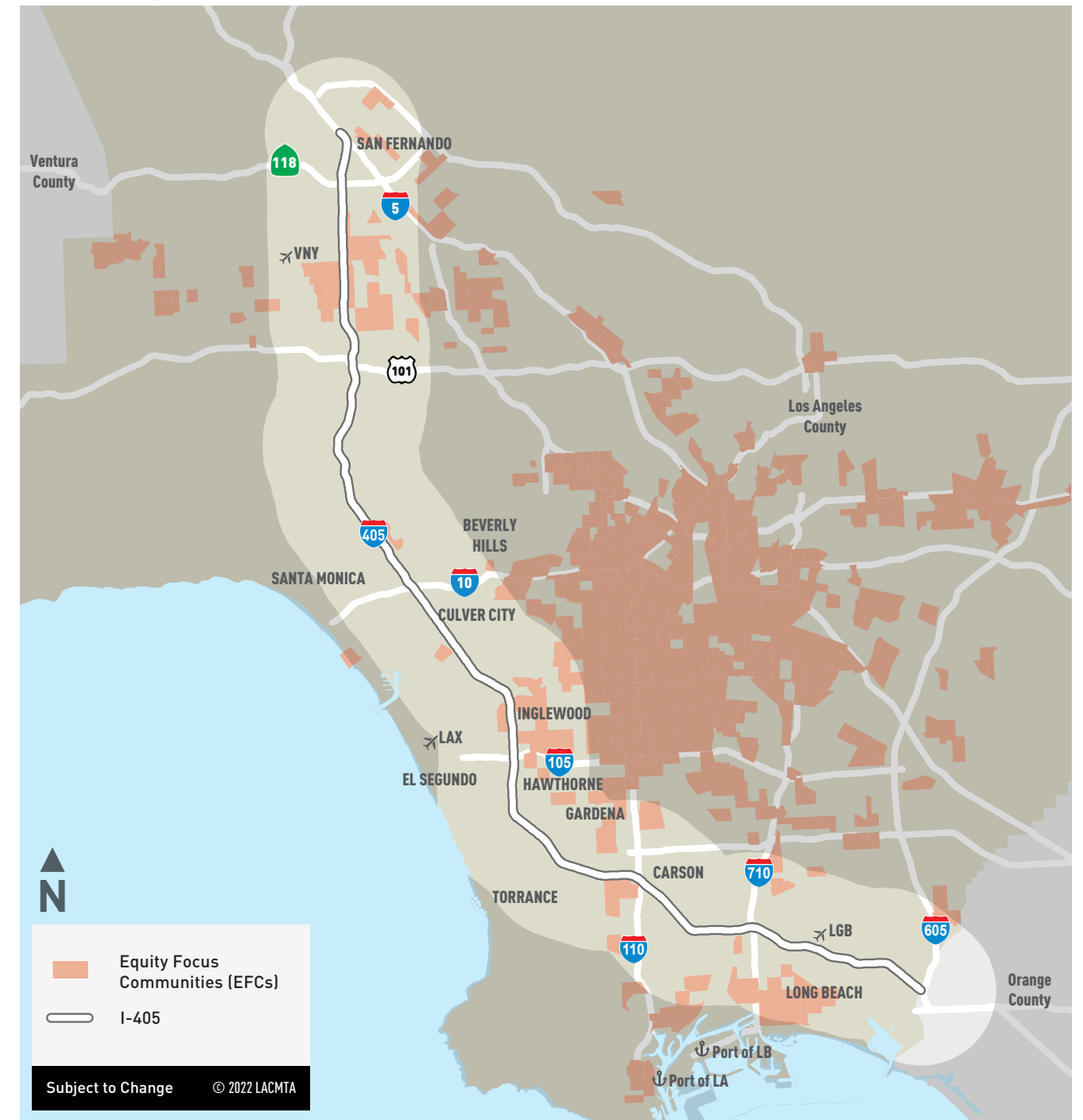
Source: US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

Like most urban areas across the US, there is a strong linkage between race/ethnicity and income within the I-405 Corridor study area, with pronounced disparities in income levels between white communities and communities of color. Communities of color within the study area have some of the lowest household incomes, highest levels of poverty, and lowest rates of auto ownership in the LA region. These areas include portions of the San Fernando Valley, Inglewood, Carson, and parts of Long Beach, where upwards of 80 percent of residents

identify as Black/African American or Hispanic/Latino and earn less than \$34,000 in annual household income—less than one-half the median household income in LA County.¹² In the Corridor's most affluent areas of Bel Air, Beverly Hills, Santa Monica, and Pacific Palisades—which are predominantly white—median household incomes exceed \$136,000.¹³ Figure 10 shows where EFCs, which are identified as low-income and majority non-white or low-income communities with limited vehicle access, are located throughout the Corridor.

Figure 10

METRO EQUITY FOCUS COMMUNITIES



Metro's Equity Focus Communities policy recognizes that one of the implications of these historical inequities is that within low-income communities of color, auto ownership rates tend to be lower, and transit usage tends to be higher. Almost 70 percent of Metro riders have an annual household income of less than \$35,000, and roughly one-half of riders lives below the federal poverty line.¹⁴ For many of these communities, car ownership is not a choice. Yet due to the Corridor's auto-oriented nature, getting around without a car can be challenging, if not impossible. Where transit options do exist, it can take up to 3 times longer than traveling by car.¹⁵ Furthermore, bicycle and pedestrian facilities are often unsafe, disconnected, or lacking altogether.

HOUSING AFFORDABILITY, GENTRIFICATION AND DISPLACEMENT

California's housing shortage is impacting where people can afford to live and what housing is available to them, including in LA County and communities along the I-405 Corridor. Growing demand for housing in urban areas has led to widespread gentrification and displacement, forcing many low-income residents and communities of color to move to more affordable areas that are often farther from jobs, retail, services, and high-quality affordable mobility options.

In 2018, the Urban Displacement Project highlighted Hawthorne, Gardena, and coastal areas in Long Beach as places experiencing “advanced gentrification”; and Compton, Inglewood, and inland parts of Long Beach (south of I-405) as places that are susceptible and/or experiencing ongoing displacement. These patterns of gentrification and displacement can lead to a mismatch in jobs and housing, which impacts travel demand.

While auto-ownership remains lowest in low-income areas of San Fernando Valley, Inglewood and Long Beach, SCAG's 2018 study on Falling Transit Ridership noted that declining transit ridership was primarily being caused by rising auto-ownership among lower-income households in these areas. The purpose of this CMCP must also support safe and efficient auto trips made by lower income residents that must drive to meet their daily needs for employment, healthcare, education, and recreation.

One of the trends that may also increase car ownership in I-405 Corridor communities is the general lack of affordable housing countywide. As formerly lower income, high-transit usage neighborhoods gentrify and become increasingly unaffordable, high-income workers who are more likely to own vehicles move in, while low-income community members of color who rely more heavily on transit are displaced to less transit-rich areas. As neighborhoods and communities throughout the study area continue to undergo rapid gentrification and displacement, LA County should consider aligning future transportation investments with local anti-displacement policies¹⁶ to ensure that those impacted by displacement have access to safe and affordable mobility options across all modes.

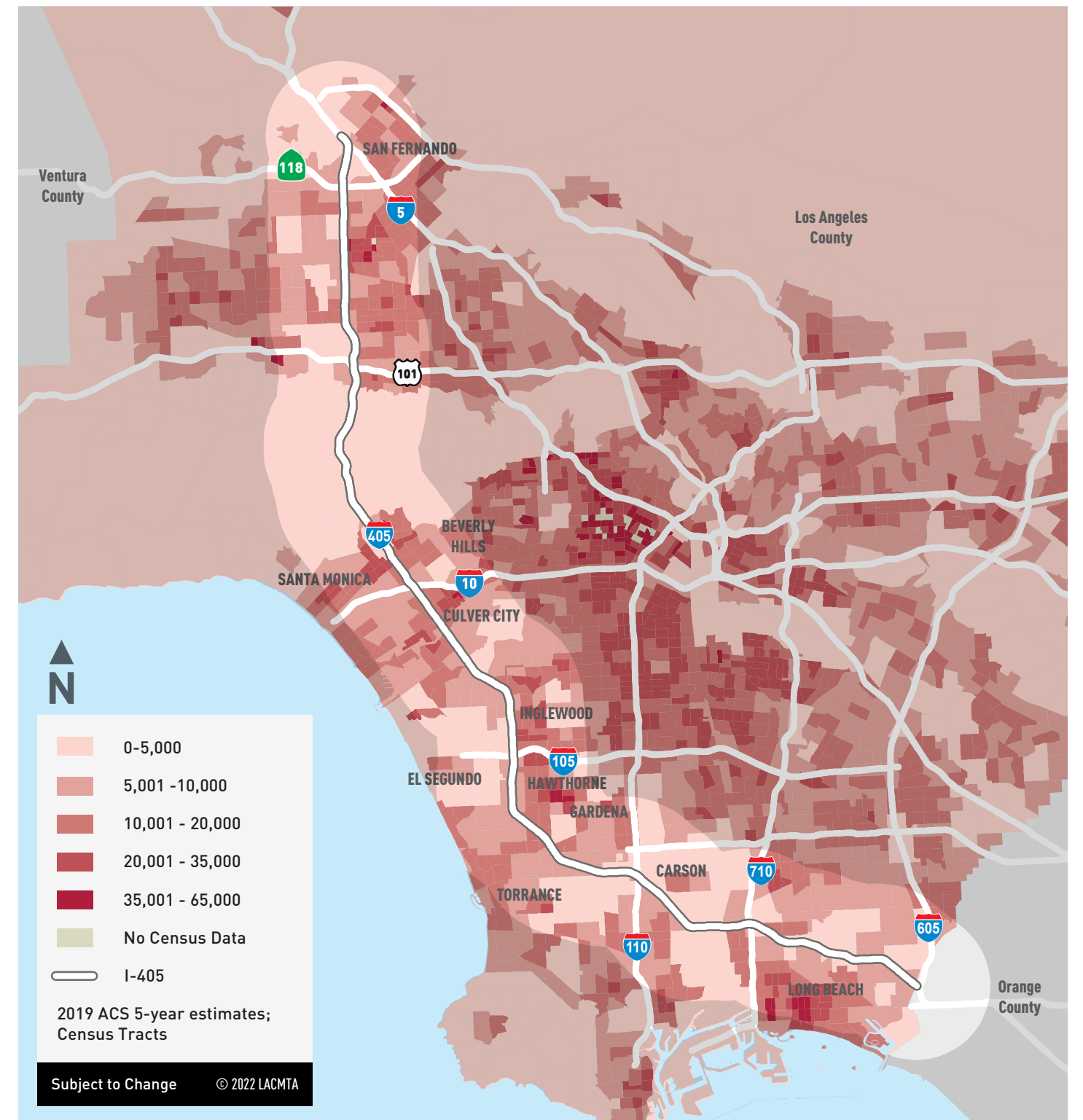
Places

Residents and major activity centers alike call the Corridor “home”. Some of LA County's largest international gateways and attractions are along the I-405 Corridor. Moreover, the Corridor is home to many large employers, schools, businesses, and entertainment venues. Key attractions include the Sepulveda Basin Recreation Area, the Getty Museum and Skirball Cultural Center, UCLA, the Santa Monica Pier, the Inglewood Entertainment District, LAX, the Aquarium of the Pacific, Long Beach Airport, Downtown Long Beach and many malls, universities, golf courses, parks, and medical centers. Just beyond the three-mile travel shed is the Pacific Ocean, whose beaches run parallel to the Corridor and similarly attract many residents and visitors.

The study area has a diverse set of land use types, but **nearly one-half of the land within the Corridor is residential**. Of this residential land, nearly 80 percent is zoned for single-family homes.¹⁷ The overall population density in the study area—approximately 7,300 residents per square mile—is similar to LA County as a whole. However, some neighborhoods, including portions of North Hills, Westwood, Culver City, Inglewood, Hawthorne, and Long Beach (Figure 11) have between 35,000 and 65,000 residents per square mile—denser than much of New York City.¹⁸ These high-density areas generate a lot of trips, and that significant travel demand is directly linked to the Corridor's high levels of traffic congestion. Areas where there are high densities of people and destinations are also some of the most conducive to trips that can be taken on foot, by bike, or by transit.

Figure 11

POPULATION DENSITY (PEOPLE/SQ MI)



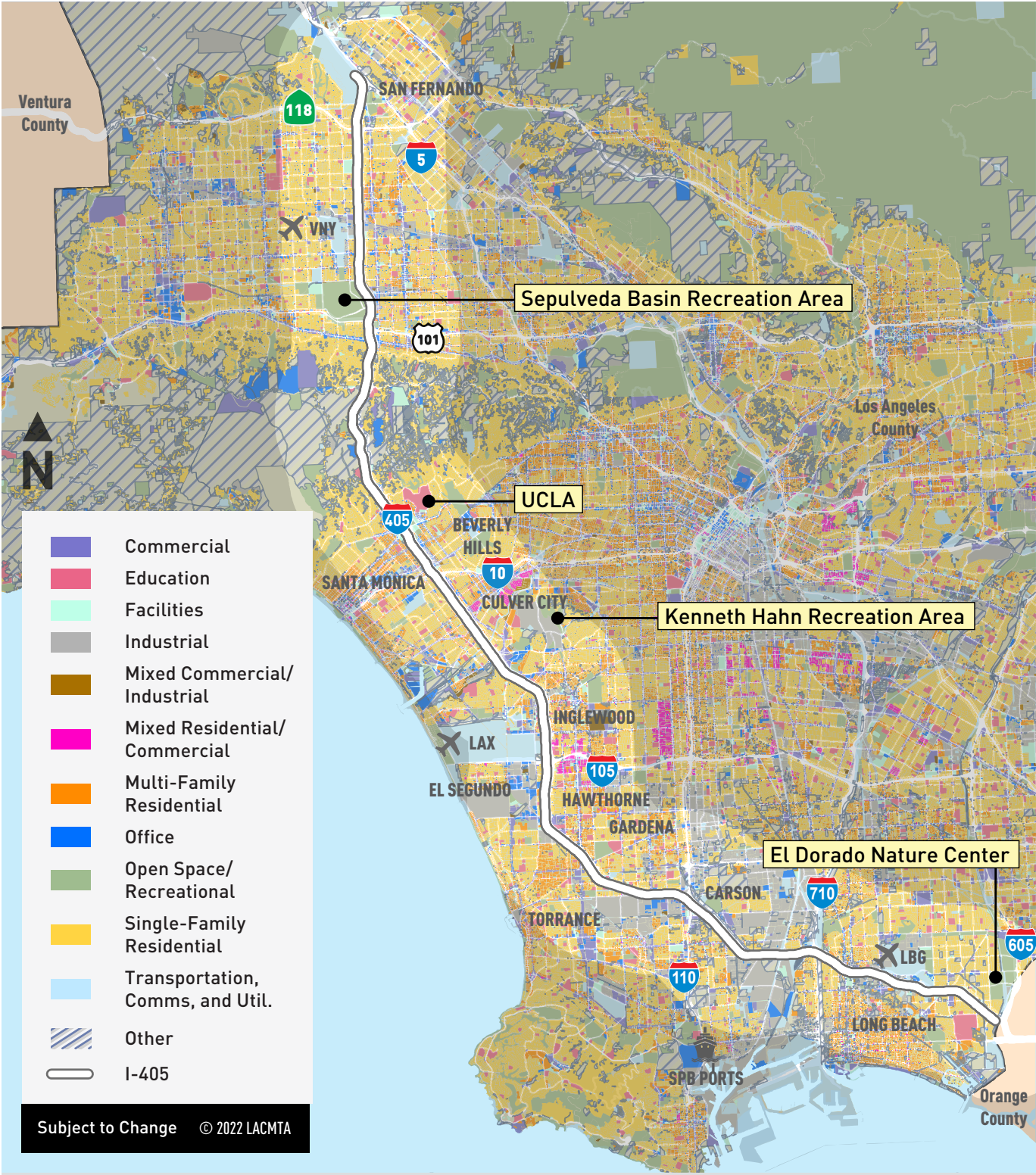
Source: US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019).

Industrial land uses tend to be clustered throughout the southern part of the Corridor (Figure 12). The I-405 freeway itself is an anchor for regional employment, with pockets of commercial and office development clustered around

off-ramps. The study area is predominantly zoned for future commercial, industrial, and/or mixed-use centers along key corridors, surrounded by single- and multi-family housing, mirroring the Corridor's existing land use patterns.

Figure 12

LAND USE



Source: SCAG; 2018.

Land use patterns dictate how we engage with and move through the built environment and influence how friendly, accessible, and safe spaces feel. More dense and varied land uses are typically more supportive of transit, biking, walking, and other low-carbon modes, while more spread out land uses are typically more easily accessed by car. Moreover, communities along the Corridor experience benefits and, in some cases, severe burdens as a result of how their neighborhoods were developed over time, as discussed in the previous section. This impacts not only people's mobility options, but access to jobs, goods, services, health care, education, and more.

Metro and partner agencies are engaged in many efforts to encourage more transportation-efficient and transit-friendly land use patterns in an equitable way. Metro's transit-oriented communities policy focuses on a combination of first-/last-mile access, systemwide design, and joint development efforts that will make it more convenient for those who live, work, and play within the Corridor to get around without a car. However, different solutions will be required to address the unique needs of the Corridor's vast and diverse people and places.

The San Fernando Valley

Located in the northern-most part of the study area—north of Mulholland Drive—this portion of the San Fernando Valley (SFV) includes the City of San Fernando and many neighborhoods of LA, including Sylmar, Granada Hills, Mission Hills, Northridge, North Hills, Arleta, Panorama City, Van Nuys, Sherman Oaks, Encino, Valley Glen, Lake Balboa, and Sepulveda Basin. This area is predominantly Hispanic/Latino, and is home to many disadvantaged communities as defined by CalEnviroScreen, the Healthy Places Index and Metro's EFCs (see Equity Focus Communities in the San Fernando Valley spotlight). Areas east of the I-405 freeway generally have a low to medium concentration of health, recreation, and educational facilities compared to other neighborhoods. Ventura Boulevard, a significant employment corridor, runs east-west along the southern part of the SFV. There are Metro Bus services throughout the SFV, including G Line (Orange) BRT service. Compared to other parts of the Corridor, this area is particularly lacking in high-quality bicycle and pedestrian infrastructure, yet has some of the highest rates of bicycle and pedestrian commuting.¹⁹



SPOTLIGHT—San Fernando Valley Equity Focus Communities

The northern-most segment of the I-405 Corridor runs through the most densely populated portion of the SFV and facilitates the movement of people and goods to this part of LA County. Out of over 200,000 people residing in the SFV spotlight area (outlined in blue to the right), more than one-third (36 percent) lives in areas designated as EFCs. These EFCs are located within parts of the North Hills, Panorama City, Reseda, and Van Nuys communities. Within the I-405 study area, this spotlight area has one of the highest concentration of EFCs.

Key Mobility Challenges

Nearly nine percent of workers living in this area walk, bike, or ride transit to get to their jobs, compared to six percent of workers countywide, indicating that residents of these areas are more likely to rely on transit, walking, bicycling, scooting, shared rides, and other shared mobility to access destinations and opportunities. At the same time, this area has some of the most apparent gaps in active transportation and transit infrastructure throughout the I-405 study area. One of the core gaps is a non-auto connection between the SFV, West LA, and beyond.

In addition to these gaps, the existing transportation system and limited amenities available place a greater burden on those that opt for alternatives to driving, and those who do not have access to a vehicle. The SFV also suffers from extreme heat, forcing residents that walk, bike, or wait for a bus to do so in high temperatures, and in some cases with little to no shade or shelter. Further, these travelers face safety challenges as several road segments are part of the City of LA's High-Injury Network (HIN), the subset of city streets where 70 percent of deaths and severe injuries for people walking have taken place.²⁰ Moreover, there are notably high bicycle and pedestrian collisions with vehicles in Van Nuys, especially along Van Nuys Boulevard, Vanowen Street, Sherman Way, and Sepulveda Boulevard.²¹ Together, these conditions indicate that this part of the SFV, its EFCs, and particularly its residents that travel by transit, walking, and biking have limited transportation options, and those options that they have are in many ways inhospitable.

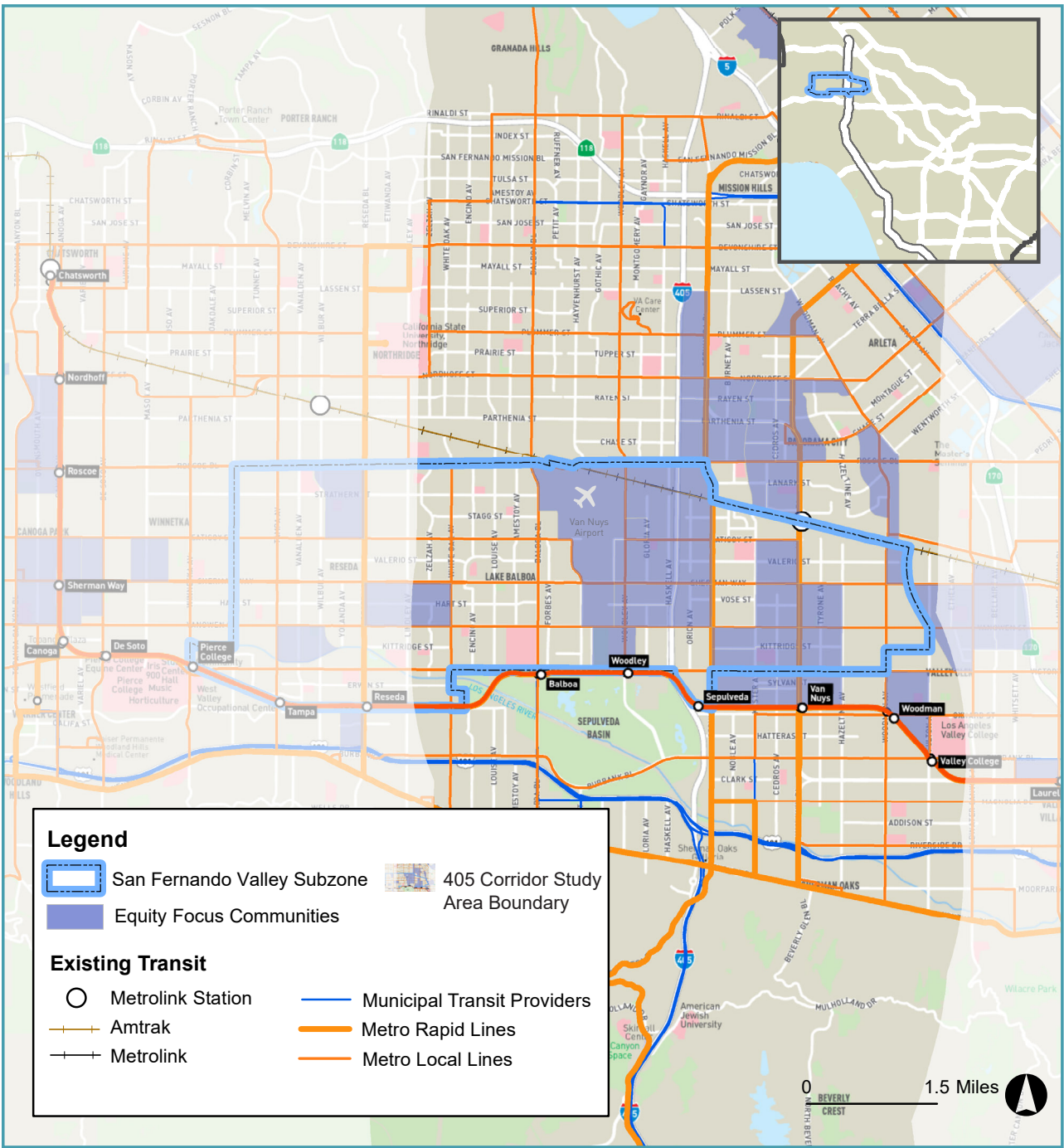
Initiatives and Opportunities

People who live in EFCs in the SFV spotlight area depend on walking, bicycling, and transit at higher rates than most other parts of the I-405 study area, yet experience many barriers to multimodal transportation and unmitigated impacts that affect public health, safety, and access. The following multimodal improvements have potential to improve access and remove barriers for people who live in the spotlight area:

- > **I-405 ExpressLanes** will improve travel through the Sepulveda Pass by moving more people in fewer vehicles and improving travel times for those driving over the pass.
- > **The Sepulveda Transit Corridor Project** will address the lack of north-south transportation alternatives to driving over the Sepulveda Pass by providing a high-capacity transit option that will improve connectivity between the SFV and West LA.
- > **Expanded transit options** will deliver better rail and bus service and improve connectivity to stations, including the North San Fernando Valley Transit Corridor Project, the East San Fernando Valley (ESFV) Light Rail Transit Project, and ESFV First-/Last-Mile Plan and first-/last-mile improvements around the Van Nuys Metrolink station.
- > **Safe and comfortable pedestrian and bicycle connections** and amenities (lighting, shade, seating, and wayfinding) across the I-405 study area, including projects like the LA River Bike Path that will expand active transportation access and safety. The addition of separated and protected bike facilities running north-south will solve for gaps where such facilities do not currently exist.
- > **Increased density and diversity of land uses around existing transit stations**, including Metrolink and future light rail that will bring jobs and destinations closer to this area.
- > **Electric Vehicle (EV) charging and affordable electric car share opportunities** such as BlueLA will increase sustainable mobility options for residents without vehicle access.

Figure 13

SAN FERNANDO VALLEY AREA



Source: Metro Equity Focus Communities and Transit Sub Zones.

Westside Cities

The Westside Cities include the cities of Beverly Hills, Santa Monica, Culver City, West Hollywood, and unincorporated areas such as Ladera Heights, and the Mar Vista, Venice, Palms, Del Rey, and Westchester neighborhoods of LA. These neighborhoods are generally located along the I-405 between I-10 and I-105. The residential communities in this area are typically much more affluent than LA County as a whole. This part of the Corridor includes a number of significant destinations and attractions, including the UCLA Campus (see the UCLA Campus and Community spotlight), the Getty Museum, the Ronald Reagan UCLA Medical Center, the Veterans Administration (VA) medical complex, and outdoor recreation areas in the Santa Monica Mountains. Santa Monica and Venice are beachside towns that draw more than 8 million visitors each year to attractions, such as the Santa Monica Pier, the Venice Canals, and beach areas.²² While the residents located in this part of the Corridor are more affluent, many commuters and visitors travel to this high-opportunity area to access jobs, services, education, and recreation opportunities.

THE IMPACTS OF COVID-19 ON TOURISM

The tourism industry experienced significant hardship during the COVID-19 pandemic. Hotel occupancy reached a nationwide low in April 2020, as both domestic and international travel plummeted. However, many indicators have nearly achieved pre-pandemic levels and travel is expected to return to 2019 levels by 2024, with domestic travel recovering slightly ahead of international.

To the north is the Sepulveda Pass, where the Santa Monica Mountains constrain both sides of I-405 for approximately six miles. There are few roadway and transit alternatives to the I-405 freeway over the mountains, making it hard to travel between the north and south parts of this area. The Sepulveda Pass and surrounding communities face the highest wildfire risk in the Corridor, making the freeway and the few alternative roadways important evacuation routes. To the south situated west of I-405 and abutting the South Bay is LAX airport, which draws people from the greater LA region for travel and employment (see LAX spotlight).

Transit in the Westside Cities is provided by a combination of the Santa Monica Big Blue Bus, Culver City Bus, and Metro. While riders have access to transit services, many may have to transfer services when making trips that cross jurisdictions.

SPOTLIGHT—UCLA Campus and Community

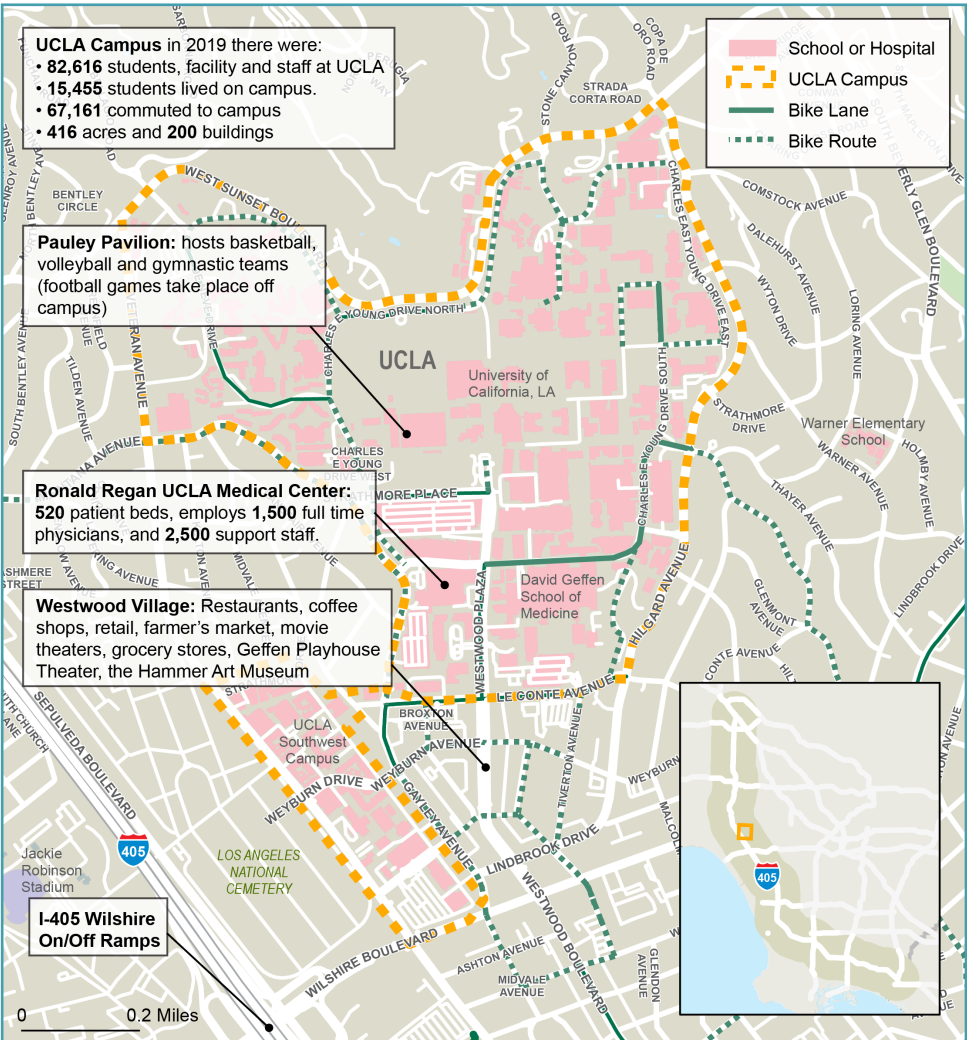
The UCLA campus is a hub of major activity along the I-405 Corridor. Located between the Sunset and Wilshire Boulevard exits of I-405, UCLA generates roughly 110,000 daily trips.²³ The campus minimizes daily auto trips through transportation demand management strategies so that most trips (over 63 percent) are made by transit, carpooling, biking, walking, and other alternatives to driving alone.²⁴ While it is served by multiple well-used bus lines (both Metro and municipal bus services), service coordination and connectivity to campus present challenges for operators and passengers alike. Robust and well-connected mobility options will be critical to managing demand now and into the future.

The UCLA Community

The UCLA campus has over 80,000 community members, including over 40,000 faculty and staff, and another 40,000 in students. A growing student body with limited on-campus housing—roughly 37 percent of students live on campus—requires many to either pay for very expensive housing in surrounding areas, or to live far from campus and commute longer distances. Thirty-one percent of students are first-generation, and around 34 percent are Pell Grant recipients—which means they come from a household that earns less than \$60,000 a year.²⁵ In addition to students and employees, campus facilities and venues attract visitors daily, and the Ronald Reagan Medical Center is supported by over 4,000 staff serving hundreds of patients a day.

Figure 14

UCLA CAMPUS AREA



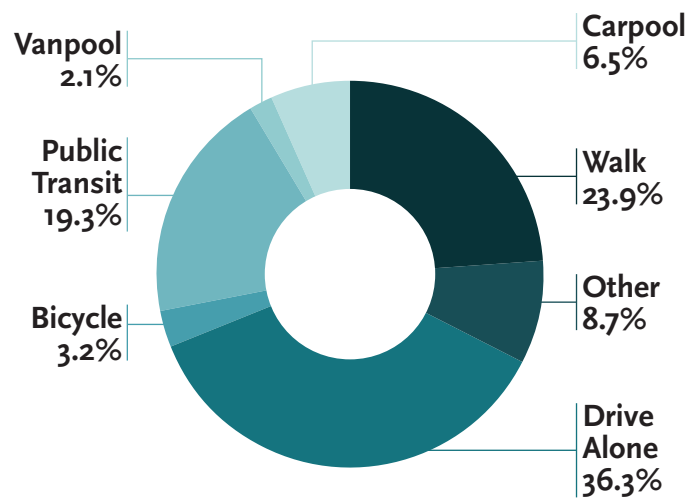
Sources: UCLA State of the Commute 2019, Ronald Regan UCLA Medical Center Fact Sheet 2020

SPOTLIGHT—UCLA Campus and Community *(continued)*

How People Travel to and from Campus

There are many existing mobility options serving the UCLA campus. There are 8 transit operators serving the campus, and on average there are 802 buses traveling to and from campus everyday. No rail currently serves the campus directly; however, the D Line (Purple) extension under construction will have a station in Westwood, and the Sepulveda Transit Corridor Project would provide transit service parallel to I-405. In 2019, the League of American Bicyclists awarded UCLA a gold-rating for being a bicycle-friendly campus, with multiple active transportation facilities to support the large number of people biking, walking, and rolling on the campus.

Figure 15
UCLA Commute Mode Split 2019
(Students and Employees)



Source: UCLA State of the Commute; 2019.

While driving is the dominant form of transportation in the I-405 Corridor making up roughly 98 percent of trips, mode split across students and employees who drive alone to campus is 36 percent, which is represented by 23 percent of students and 48 percent of employees.²⁶

Key Mobility Challenges

Housing costs near campus are high, and on-campus housing is limited, causing many people to live and commute from all over LA County. Twenty six percent of UCLA commuters come to campus from northern parts of the County. Many come from the SFV, where housing is more affordable, with some people traveling as far as Palmdale and Lancaster. Commuters from the SFV, who are disproportionately lower-income students and faculty, rely on the heavily congested Sepulveda Pass, which has limited non-auto mobility options, adding to their travel time and transportation costs. Other key transportation challenges include:

- > The I-405 is the main regional access route, and it is highly congested near campus. Key arterials such as Wilshire Boulevard, which is the main access route to campus, are also heavily congested;
- > Many commuters (roughly one-third) rely on a personal vehicle to access campus;
- > Overlapping transit services on Westwood Boulevard and a high volume of buses exacerbate the already congested roadway;
- > Connectivity via walking, biking, and other active transportation modes to the campus from the surrounding street system is challenging due to heavy auto traffic, narrow lanes shared with autos, and narrow sidewalks that hinder pedestrian safety;
- > The I-405 is a physical barrier for campus access from the west side, especially for people walking, biking, and rolling; and
- > Additional traffic and mobility obstacles related to the significant truck and delivery trips that support the operations of campus facilities and retail in Westwood Village.

Initiatives and Opportunities

The UCLA campus will continue to be a major travel destination along the I-405 Corridor. The campus population is more likely than most to opt for alternatives to driving alone, when those options are plentiful, convenient, and cost-effective. This presents a variety of opportunities to improve mobility and accessibility within the I-405 Corridor, as well as the campus itself:

- > **Continue transportation demand management strategies**, such as parking management and telework policies that occurred at the start of the COVID-19 pandemic to reduce trip-making to and from campus, while retaining a collaborative learning environment.
- > **Improve transit options.** As part of the D Line (Purple) extension, surrounding areas will need to accommodate high volumes of pedestrian travel as more people access campus by transit. In addition, there are opportunities for bus lanes on the I-405 freeway, and the Sepulveda Transit Corridor Project will provide a transit option for students and staff living in the SFV. In addition, improved coordination across the eight transit agencies serving the campus may help reduce bus congestion on Wilshire Boulevard while providing a similar level of service.
- > **Improve connectivity for active modes across the I-405 underpass.** Freeway interactions for people walking or rolling are unpleasant due to high traffic, noise, and unsafe conditions, even on mostly separated pedestrian facilities like the I-405 underpass. Better lighting, wider sidewalks, and protected crossings would help encourage more people to walk or bike to campus.
- > **Improve convenience for essential auto trips.** There are many people for whom transit, walking, or biking to and around campus is not an option, including custodial and maintenance staff that may need to work off-hours or travel long distances, or people with physical disabilities. Mode shift and congestion reduction strategies, such as the I-405 ExpressLanes project, will improve the ease of travel for individuals who must rely on a personal vehicle.
- > **Build more on-campus housing** to reduce housing and transportation burdens for the student body, especially for those that currently have to contend with high housing costs near campus, or are forced to commute long distances. UCLA has successfully reduced their trips generated for many years, in large part due to adding on-campus housing.



South Bay Cities

The South Bay Cities, generally located between I-105 and I-710, comprise multiple cities and employment centers that rely on the I-405 Corridor, including Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Manhattan Beach, Redondo Beach, Torrance, and unincorporated LA County communities. Major trip generators in this area include the new Inglewood Entertainment District and other sport complexes in the City of Inglewood, which can draw up to 90,000 people to the area on game days (see Inglewood and the SoFi Stadium spotlight).

While many South Bay Cities are predominantly residential, El Segundo and Torrance serve as significant employment centers, with major aeronautical facilities, such as Northrup-Grumman, Lockheed Martin, Raytheon, and Space X, clustered just southwest of the I-105/I-405 interchange. Carson, parts of Compton, and unincorporated areas, such as Rancho Dominguez, are home to many oil refineries, industrial

facilities, distribution centers, and intermodal freight facilities due to their proximity to the SPB Ports. Also located in Carson are Dignity Health Sports Park (home stadium for the LA Galaxy Major League soccer team), as well as the California State University Dominguez Hills campus; both of which are significant trip generators. During the summer, the beach is also a major activity center and attracts people from throughout the LA Basin.

Transit in this area is provided by a combination of Beach Cities Transit, GTrans, Torrance Transit, Long Beach Transit, Carson Circuit, PV Transit, LADOT, community shuttles and Metro, with less coverage on the west side of I-405. These routes provide transit connections to the Metro C Line (Green) rail stations. Limited bike infrastructure exists in this area, with most routes running north-south through the beach communities of Manhattan Beach and Redondo Beach.



SPOTLIGHT—Inglewood and the SoFi Stadium

Situated northeast of the I-405/I-105 interchange, the City of Inglewood has a population of approximately 100,000. New and planned developments are transforming the city into a major entertainment hub that will draw an increasing number of visitors from the LA Basin and beyond.

The Inglewood Entertainment District includes the 70,000-seat SoFi sports stadium—home of the LA Rams and Chargers football teams—that is adjoined by the 6,000-guest indoor YouTube Theater. Hollywood Park Casino and the Inglewood Forum (17,000 guests) are also major destinations. Forthcoming is the Intuit Dome (18,000 guests) that will be the new home of the LA Clippers in 2024, the Aria Hotel, and the Hollywood Park retail area.

Inglewood includes many EFCs. Fifty percent of residents identify as Hispanic or Latino, and 40 percent as Black or African American.²⁷ Poverty rates in the city are some of the highest in LA County. While new developments may bring jobs and greater economic activity, there is also high potential for continued gentrification and displacement of long-time residents. Managing the mobility needs of community members and visitors alike and expanding access to opportunities through safe and affordable transportation options will be critical for the city's long-term economic vitality and fostering a more livable community for its residents.

Mobility Options for Residents and Visitors

In addition to the I-405, I-105 and many large arterials and local roadways facilitate vehicle travel through Inglewood and to its many attractions. It is also served by the Metro C Line (Green), which runs parallel to the I-105 freeway. The city has a fairly consistent bus network provided by Metro, Long Beach, Torrance Transit, and LADOT, primarily on the main arterials, such as La Brea Boulevard, Century Boulevard, Manchester Boulevard, Inglewood Avenue, and others, with a bus transfer center in Downtown Inglewood. The area is also served by many new and shared mobility services, including bike-share, car-share, scooter-share, and transportation network companies, such as Lyft and Uber.

COMING ATTRACTIONS:

2023 College Football National Championship (CFP)

2026 FIFA World Cup

2028 Summer Olympics

Travel Patterns During Events

In February 2022, SoFi Stadium welcomed a crowd of 70,000 to see the LA Rams and Cincinnati Bengals in Super Bowl LVI-2022. Twenty thousand of those attendees reached the stadium through public transportation and parking shuttles provided by Metro, Municipal Operators, and special event shuttles through partnership with the Super Bowl Organization. Metro parking lots were comparably priced with rates implemented by the City of Inglewood and LAX area to strategically utilize the parking available while minimizing spillover impacts on surrounding neighborhoods.

To support game-day operations on Metro services and shuttles, Metro mobilized an event strike force consisting of members from Metro's System Security & Law Enforcement; Communications; Rail Transportation Operations Supervisors (RTOS); Vehicle Operations (VO) supervisors; Customer Information and Customer Care employees; and various field support staff, as well as People Assisting the Homeless (PATH) support. Deployment of these resources is necessary to successfully manage and transport event-attendees, preserve quality service for regular transit users, and reduce impacts on local streets and communities.

SPOTLIGHT—Inglewood and the SoFi Stadium *(continued)*

Key Mobility Challenges

There are many challenges associated with surges in travel demand that will only become worse if not addressed proactively. These include:

- > Wide and busy arterials with fast-moving vehicular traffic that poses safety risks to people biking, walking, and rolling;
- > Limited transit and other non-auto mobility options;
- > A lack of safe and connected bicycle and pedestrian facilities, especially first-/last-mile connections linking people to existing and future transit services;
- > Long block lengths with limited pedestrian crossing opportunities;
- > Coordination of Caltrans, Inglewood, LAWA, and other traffic management systems to ensure the most responsive traffic operations during peak event times, combined with LAX and other local travel demands; and
- > Parking and traffic overflow into residential neighborhoods.

Initiatives and Opportunities

Upcoming transportation improvements are primarily focused on improving multimodal access and increasing flexibility in infrastructure to accommodate game-day and other event-related traffic. These include:

- > **The Metro LAX Project (K Line)** will introduce three new rail stations within Inglewood (the Fairview Heights Station, the Downtown Inglewood Station, and the Westchester/Veterans station). Additionally, the Aviation/96th Street Station and the Aviation/Century Station will connect travelers from LAX to Inglewood.
- > **The Inglewood Transit Connector (ITC)**, a 1.6-mile elevated and automated transit system, will connect the K Line (at the Inglewood Downtown Station) to the Inglewood Forum, the SoFi Stadium, and Intuit Dome. The ITC is anticipated to open in 2027, in advance of the 2028 Olympic Games. Mobility enhancement projects that address event venue access and venue/community mobility conflicts should be prioritized.

- > **The Active Transportation and Safe Routes to School Plan** (soon-to-be-adopted) proposes a full network of bicycle facilities through the City of Inglewood. Three proposed bicycle facilities cross the I-405 freeway (on Florence Avenue, Hillcrest Boulevard, and Arbor Vitae Street).
- > **First-/Last-Mile Plans**, such as the Inglewood First-/Last-Mile Plan, Inglewood Mobility Plan, and Arbor Vitae Bike Plan will ensure that residents and visitors have safe, convenient, and reliable access to and egress from current and future transit services.
- > **Technology and Operational Improvements**, such as the Prairie Avenue Dynamic Lane project, Crenshaw Resurfacing project, Downtown Inglewood Intelligent Transportation Systems (ITS), Manchester/Prairie ITS, and Changeable Message Signs (CMS) and closed circuit television (CCTV) signs will reduce congestion and improve the flow of vehicular traffic throughout the City.
- > **Transit-Oriented Development Plans** in Downtown Inglewood, Fairview Heights, and Westchester/Veterans will locate more housing, shopping, and services near current and future transit services, reducing reliance on personal autos. This is a critical strategy to accommodate future growth while managing growing demands on the transportation system network.

Figure 16

SO-FI STADIUM AND SURROUNDING ATTRACTIONS



Source: City of Inglewood.

SPOTLIGHT—Los Angeles International Airport (LAX)

LAX, located directly west of I-405, draws travelers and employees from across the greater LA region and serves as a major cargo hub for domestic and international goods movement. In 2019, LAX was the second-busiest airport in the U.S., and third in the world, serving 88.1 million passengers and over 2.2 million tons of air freight.²⁸ Pre-pandemic, this significant movement of people and goods was supported by over 50,000 employees employed by LAWA and other LAX on and off-campus employers. Post-pandemic, the airport provided service to 48 million passengers for 2021, making it the fifth busiest in the world. Together, these passengers,

goods, and employees rely on the surrounding network of multimodal surface transportation infrastructure to access the airport in a convenient, safe, and reliable way.

Mobility Options for People Traveling to and from LAX
Freeway access to LAX is provided by the I-405, I-105, Pacific Coast Highway (PCH), and many large arterials including Sepulveda Boulevard, Century Boulevard, and PCH. The Metro C Line (Green) connects to LAX at the LAX/Aviation station. In 2024, LAX will open the Automated People Mover (APM) that will connect to Metro’s C Line (Green) and K Line

(Crenshaw/LAX) at the new Airport Metro Connector (AMC) Station. In addition, LAWA operates a FlyAway transit service that provides two express bus routes to and from LAX, Van Nuys, and Union Station. These FlyAway routes connect with regional transit at Union Station, including the Metro B (Red) and L (Gold) lines and the Metrolink system. LAWA is in the process of exploring expansion into new areas for the FlyAway service. LAWA, in partnership with the City of Inglewood, offers on-demand shuttle service to Inglewood and Lennox residents who work at LAX. Iride provides a free, fast, and efficient commute alternative for LAX badged employees. Additionally, LAWA collaborates with Metro to encourage and increase public transit use to LAX.

Traveling to and from LAX

A 2019 passenger survey indicated that 89 percent of passengers arriving to and/or departing from LAX use private transportation, such as a private vehicle, rental car, or taxi, or ridesharing services offered by Transportation Network Companies (TNC) such as Uber and Lyft. For those arriving by private transportation, 52 percent used the I-405 freeway to access LAX.²⁹ Ten percent used shared or scheduled services, such as shuttle vans, hotel courtesies vans, and Flyaway services; and only 1 percent used public transportation.³⁰

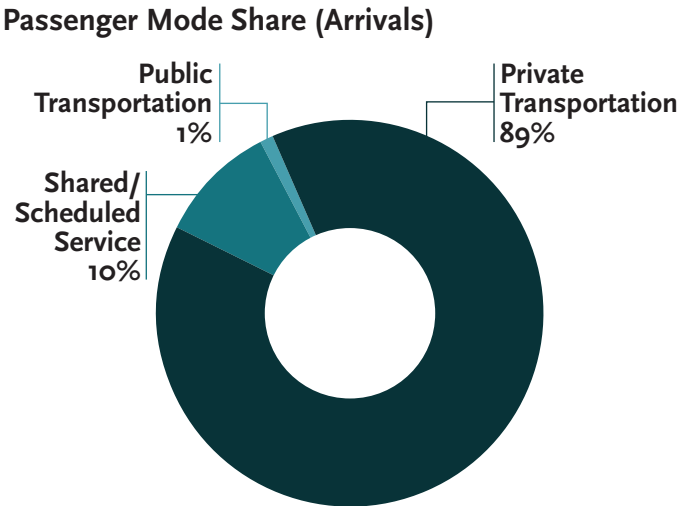
About one-half of LAWA’s 50,000 employees commutes regularly.³¹ Employees’ residences are most concentrated in Lenox, Inglewood, Hawthorne, the City of LA, and unincorporated areas of LA County. Only 27 percent live within 5 miles of the airport.³²

Trucks account for roughly five percent of all daily vehicle traffic into and out of LAX, though much of this traffic does not access the Central Terminal area, but rather cargo areas on the South and East sides of the airport.³³ The heavy truck routes serving the airport include Century Boulevard, Highway 1 (Lincoln Boulevard/Sepulveda Boulevard), Aviation Boulevard, Airport Boulevard, and Arbor Vitae Street.

Key Mobility Challenges

Currently, there are several bottlenecks within the airport complex and on the surrounding surface streets and highway corridors that connect trips to LAX. Core challenges include:

Figure 18



> Significant vehicle congestion within the airport’s Central Terminal Area (CTA) and on the adjoining ground transportation network to and from LAX, including on the I-405, Sepulveda Boulevard, Century Boulevard, I-105 off ramps to Sepulveda Boulevard, and the ramps leading to the arrival and departure terminals; and

> Limited transit options that connect directly to the airport and low transit use to and from the airport.

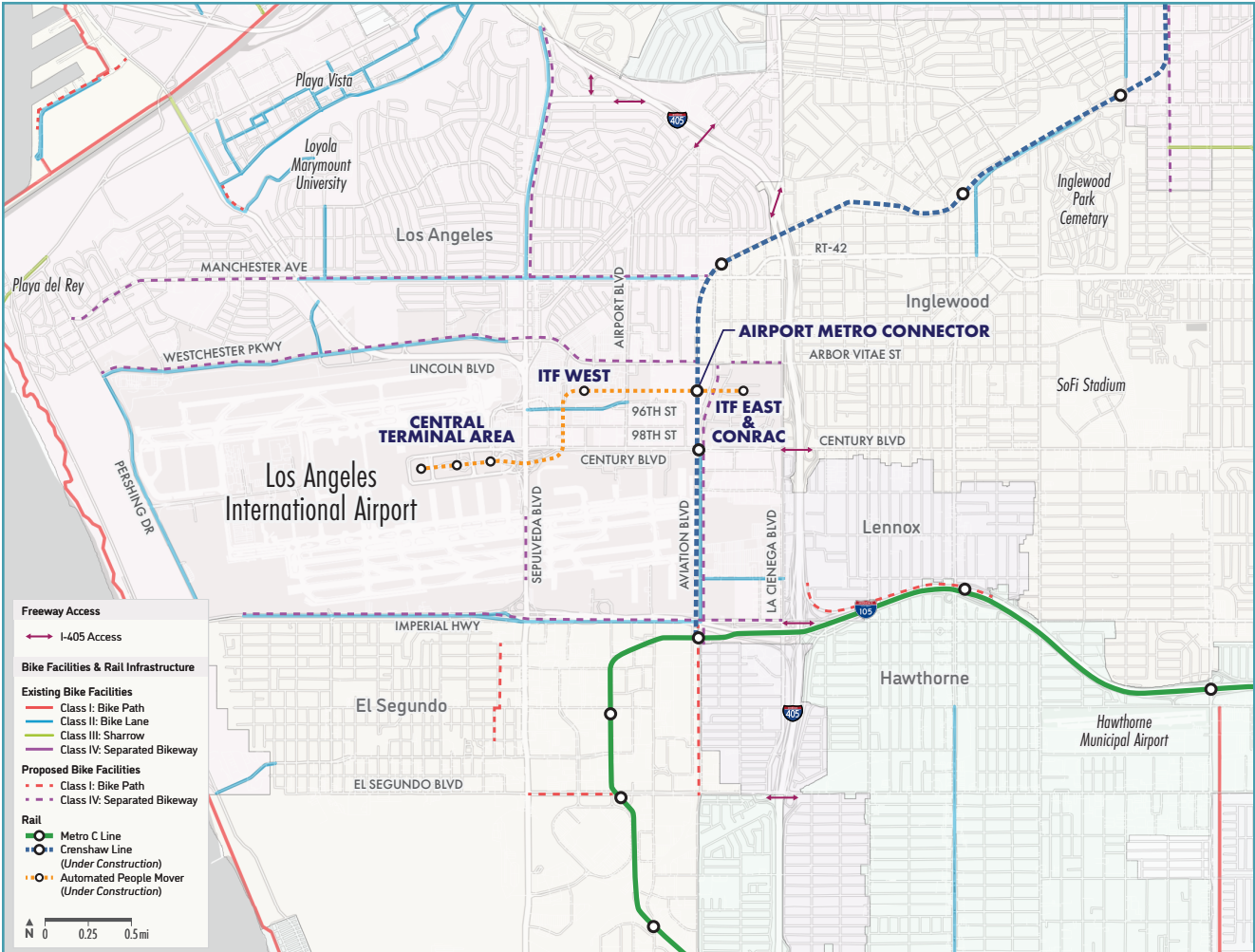
Initiatives and Opportunities

To address existing congestion and future growth, LAX has a large capital program underway to improve mobility and accessibility to and within the LAWA campus for goods movement and for people arriving and departing by vehicle, transit, and other modes. Key opportunities include:

> **The Landside Access Modernization Program (LAMP)** consists of several primary components tied together by the **APM**, an elevated train with six stations that will transport passengers between the Central Terminal Area (CTA) and the other main project components located to the east. These components include:

Figure 17

LOS ANGELES INTERNATIONAL AIRPORT TRANSIT AND BIKE ACCESS



Source: SCAG Bikeways; Metro Rail System.

SPOTLIGHT—Los Angeles International Airport (LAX) *(continued)*

- > The **Intermodal Transportation Facility West (ITF-W)** (located at 94th Street and Jetway Boulevard), will function as a new entry point to LAX outside of the CTA for passengers arriving and departing by automobile, TNC vehicles, taxis, and shuttles. ITF-W will have pick up/drop off curbs and a new 4,300 space parking structure named LAX Economy Parking. LAX Economy Parking opened in 2021 and will be served by shuttle bus to and from the terminals until the APM is operational. LAX Economy Parking is a modern garage with Smart Parking features, including a Parking Guidance System, 500 EV chargers, and the ability to Pre-Book your space. So far more than 60percent of passengers using the facility pre-book their space online. (LAX Official Airport Parking | Pre-book and Save flylax.com)
- > The **Intermodal Transportation Facility East (ITF-E)** (located at 96th St. and Aviation Boulevard) will be adjoined to the **Airport Metro Connector (AMC)** and will provide additional pick up/drop off curbs.
- > **The AMC** is being built by Metro and will provide a direct Airport connection via the APM to Metro's C Line (Green) and K Line (Crenshaw/LAX). The AMC will also provide an expansive 16-bay bus plaza with EV charging for the buses that will serve Metro and other municipal bus operators, including Santa Monica Big Blue Bus, Culver City Bus, Torrance Transit, GTrans (Gardena), and Beach Cities Transit.
- > **The Consolidated Rent-A-Car Facility (ConRAC)** will consolidate over 20 rental car operation locations currently spread across the surrounding area of LAX into one convenient location. At the ConRAC, customers will be able to pick up and drop off their rental car vehicles and access APM at the station in the facility, which will connect to the CTA in 10 minutes or less. Once open, the ConRAC facility will remove 3,200 daily rental car shuttles from the surrounding roads and CTA – helping reduce traffic congestion and free up critical curbside space.

- > **Improved traffic flow** related to roadway reconfigurations to provide access between the CTA, ITFs, ConRAC, and adjacent surface streets, including a new Jetway Boulevard, improvements to 96th Street, extension of 98th Street, and widening of eastbound Century Boulevard as part of the LAMP project.
- > **ITS** that optimize existing roadway networks by improving signal timing and directional wayfinding to respond to ongoing traffic.
- > **Improved FlyAway** service on current routes and expansion to new areas, as well as other transit improvements that provide better service coverage.
- > **Active transportation** access improvements associated with the AMC, including an expansion of the bike network, and bike storage which will be available to LAX employees and passengers wishing to take the APM for travel into and out of the CTA.
- > **Commute LAX, a Transportation Management Organization**, was formed in 2021 providing LAX-based employees with options and incentives to use carpools, vanpools, and mass transit to commute to LAX. Membership is required for LAX tenants and employers.
- > **A Transit Pass program** is in development to offer subsidized monthly transit passes (TAP cards) to LAX employees.

JOBS

| 2022 | 2040 |
|------|------|
| 1.4M | 1.6M |



Gateway Cities

The Gateway Cities, generally situated from I-710 to the Orange County Line, includes the cities of Long Beach, Signal Hill, and Lakewood, which are part of the Gateway Cities Council of Governments area. Like the South Bay Cities, there is a significant amount of industrial land in this area to support goods moving to and from the SPB Ports. While most of this area consists of single-family homes, downtown Long Beach is a major activity center that draws people from across the region. The Long Beach Airport handles more than 3.5 million passengers and over 20,000 metric tons of cargo annually, with the I-405 and adjacent facilities allowing travelers and goods to reach the airport.³⁴ Like Santa Monica, Downtown Long Beach is a tourist destination with shopping, restaurants, hotels, the Long Beach Aquarium, and beaches attracting six million annual visitors.³⁵ Long Beach Transit provides relatively thorough coverage and connectivity within the area, and Metro’s A Line (Blue) rail service terminates in downtown Long Beach and connects to Downtown LA.

Jobs and Industries

There are **approximately 1.4 million jobs in the study area**—an estimated 28 percent of the jobs in LA County.³⁶ Jobs are primarily concentrated along commercial corridors in the SFV and West LA, with LAX, Culver City, Hawthorne, El Segundo, Torrance, Gardena, Carson, and Long Beach also having some of the Corridor’s largest concentration of jobs (more than 30 jobs per acre). Major employers, such as UCLA, LAX, Amazon, Universal Studios, Lockheed Martin, Northrop Grumman, Space X, and the SPB Ports, rely on safe and reliable infrastructure so that employees can access their jobs; residents and visitors can shop, eat, and access services; and goods can be delivered in a timely and efficient manner.

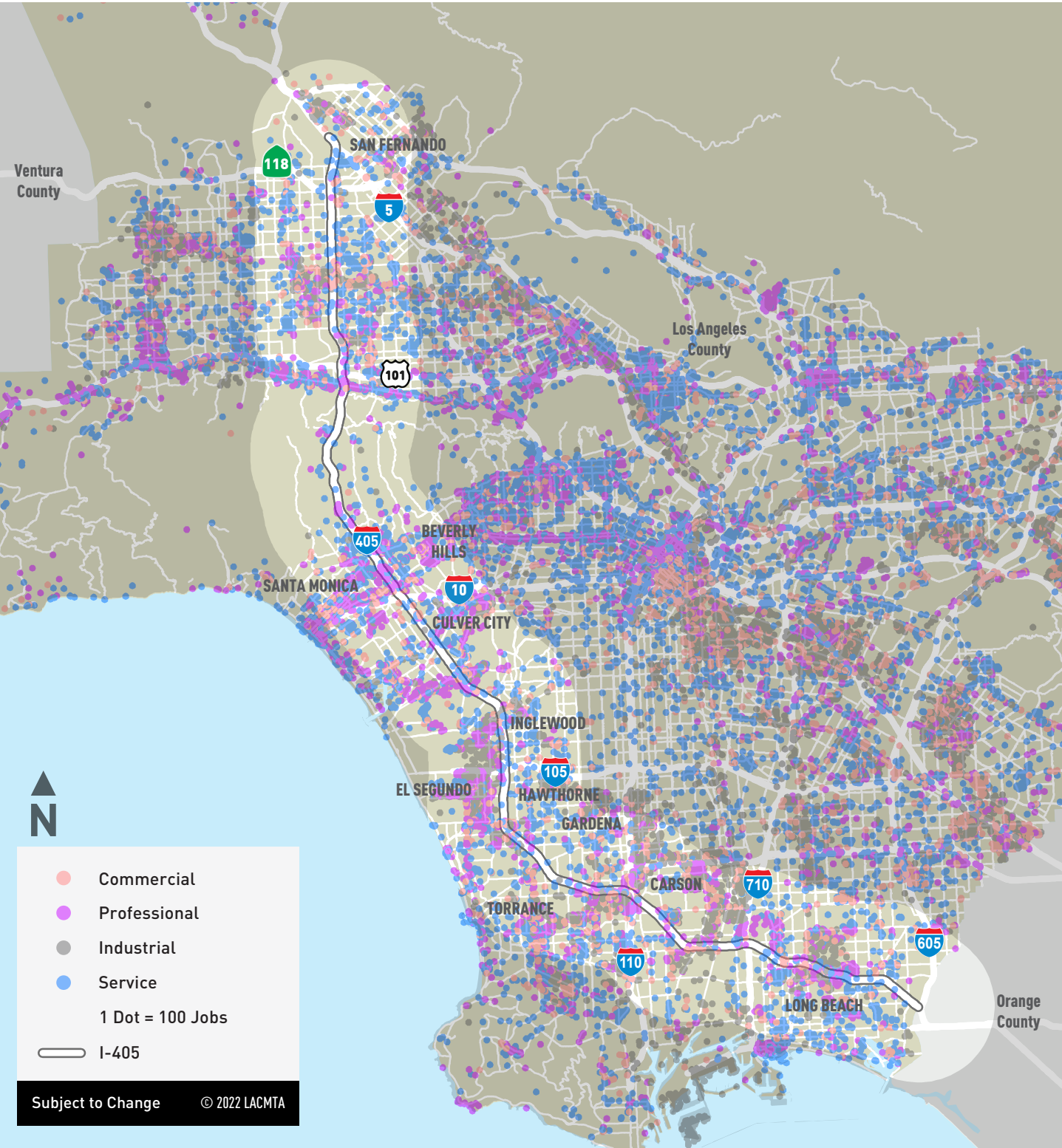
About one-third of jobs in the Corridor is in “professional” sectors, which includes finance and management, real estate, information technology, and other professional services (typically higher paying jobs).³⁷ Another one-third is in the service sector, which includes health care, education, retail, and food and accommodation services (typically lower paying jobs). This distinction is important as these sectors have different commuting and travel patterns. Professional sector jobs tend to have working schedules that adhere to an eight- or nine-hour work day (typically 9am to 5 pm), thus, paralleling typical commute hours. Jobs in this sector are more likely to accommodate teleworking arrangements. Service sector jobs tend to require in-person work and are less likely to operate on a nine-to-five schedule and, therefore, may require commuting outside typical commute peak periods. Furthermore, in addition to serving the jobs located within the study area, the I-405 Corridor provides access to an additional 2 million jobs across the entire region.³⁸

Industrial jobs, which make up 20 percent of the Corridor’s employment, tend to be concentrated in the southern one-half of the Corridor, where there are more port, industrial, and warehousing and warehousing land uses (Figures 12 and 19). These areas include portions of Long Beach, near LAX, Rancho Dominguez, and Carson. The communities surrounded by this higher concentration of industrial sectors are among the populations with the lowest incomes, higher poverty rates, and lowest rates of vehicle access within the study area. Since many industrial areas are difficult to access by transit due to more sparse land uses, commuting to these jobs can be an extra burden for the Corridor’s industrial sector workers who are often low-income.



Figure 19

JOBS BY SECTOR



Source: US Census Bureau; Longitudinal Employer-Household Dynamics; 2018.

Note: The commercial sector includes wholesale and retail trade; the industrial sector includes agriculture, forestry, fishing, and hunting, mining, quarrying, oil and gas extraction, utilities, construction, manufacturing, and transportation and warehousing; the professional sector includes information, finance and insurance, real estate and rental leasing, professional, scientific and technical services, management of companies and enterprises, administrative support and waste management, arts, entertainment and recreation, and public administration; and the services sector includes educational services, health care and social assistance, accommodation and food services, and other services.

Job growth within the I-405 Corridor is expected to occur at a faster rate than population growth, at about 0.7 percent per year.³⁹ The more than 1.6 million jobs forecast in the study area by 2040 represent nearly a 20-percent increase between 2016 and 2040 (Figure 20). Future job growth is clustered around existing commercial corridors within the study area. Historical data for the SCAG region shows that high-wage

jobs and low-wage jobs have both increased rapidly over the last 2 decades, while middle-wage jobs have decreased.⁴⁰ If this trend continues, the many inequities experienced today may be exacerbated. People who are unable to afford housing near their jobs may be forced to move further away, which will necessitate longer commutes and presumably more limited access to non-auto mobility options.

Figure 20
Summary of Population and Employment Trends

| | EXISTING (2016) | | FUTURE (2040) | | GROWTH | | GROWTH PER YEAR | |
|------------|-----------------|-----------|---------------|-----------|--------|-----|-----------------|------|
| | POP | EMP | POP | EMP | POP | EMP | POP | EMP |
| STUDY AREA | 2,660,841 | 1,342,792 | 2,976,537 | 1,604,420 | 12% | 19% | 0.4% | 0.7% |
| LA COUNTY | 9,922,486 | 4,246,081 | 11,514,426 | 5,225,707 | 16% | 23% | 0.6% | 0.8% |
| SCAG | 18,321,856 | 7,428,556 | 22,137,997 | 9,848,152 | 21% | 33% | 0.7% | 1.2% |

Source: SCAG Travel Demand Model.

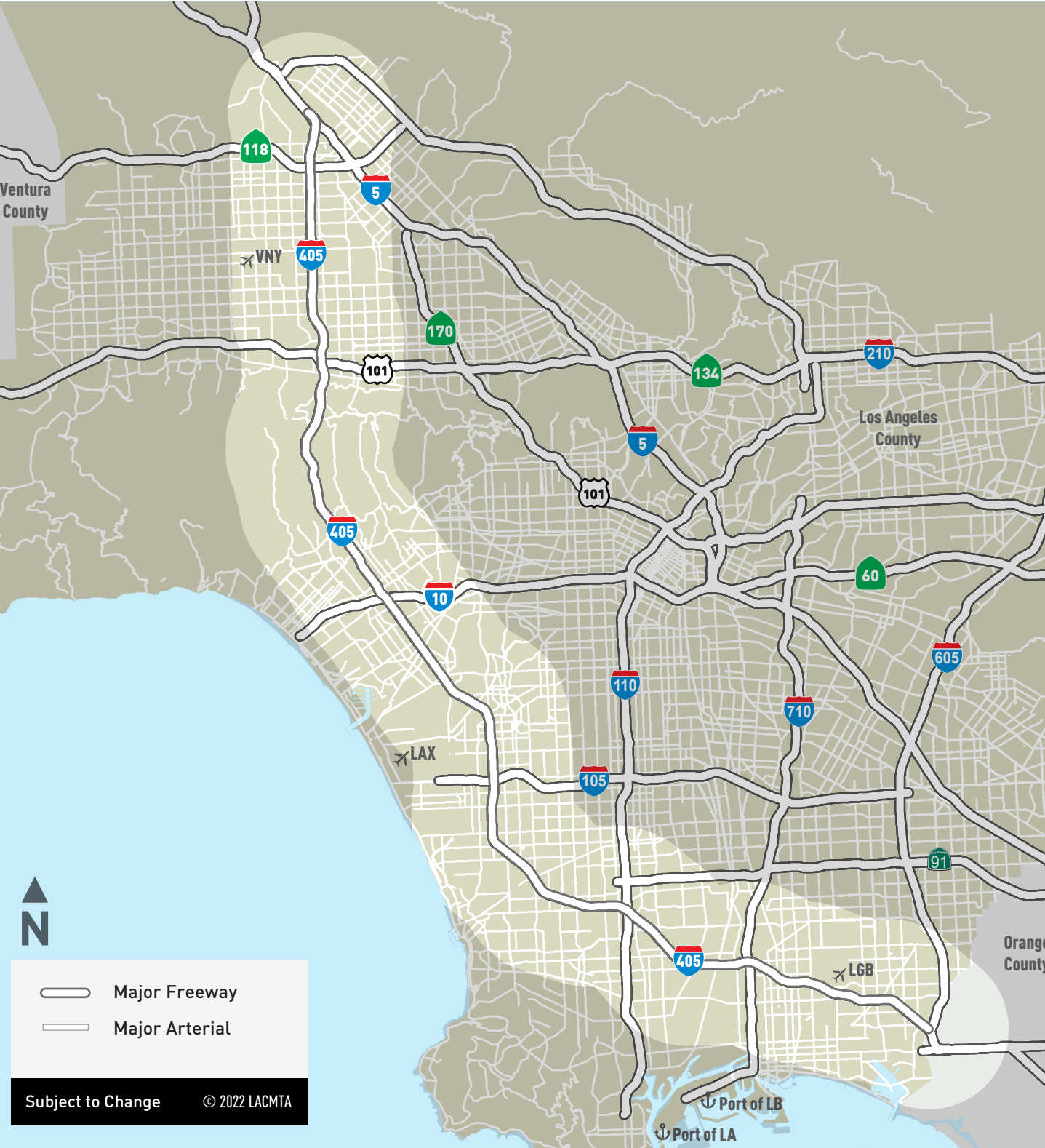
The jobs housing balance may also be impacted by long-standing land use policies, which continue to make single-family residences the predominant form of housing throughout the region. Connect SoCal describes the importance of integrating future transportation and land use investments, and prioritizing growth strategies, such as infill and mixed-use development that support more dense living, working, and traveling, thereby promoting non-auto travel and minimizing congestion. Recognizing that there is a strong interplay between land use and transportation, this plan includes a project evaluation criteria focused on each project’s ability to be conducive and complementary to infill development and transportation-efficient land use. Not prioritizing these types of investments may limit future economic growth in the Corridor.

Freeways and Arterials
The I-405 freeway itself carries only 25 percent of daily vehicle miles traveled (VMT) in the study area (14.4 million VMT).⁴¹ The other 75 percent of daily VMT (41.1 million) occur on the more than 50 arterial interchanges along the Corridor; the 9 freeway systems that intersect the I-405 (I-605, I-710, I-110, I-105, SR-90, I-10, US-101, SR-118, and I-5) (Figure 21); and portions of Metro’s Countywide Significant Arterial Network (CSAN) and Countywide Strategic Truck Arterial Network (CSTAN) that intersect and parallel the freeway. While the I-405 freeway is the central artery for travel throughout the Corridor, it experiences a high level of congestion in many locations and during many time periods. Several recurring bottlenecks are spread across the morning and afternoon commute periods (see “There are several bottlenecks” for more details on bottleneck locations).

There are Many Existing Travel Options

The I-405 freeway is the backbone of a larger, interconnected system. This system includes intersecting freeways, arterials, and local roadways; multiple rail and transit options; active transportation infrastructure for people walking, biking, and rolling; and shared mobility services, such as ride-hailing, car-share, bike-share, and scooter-share. Together, these mobility options—the I-405 “system of systems”—serve a staggering number of trips for residents and visitors throughout the region.

Figure 21
MAJOR FREEWAYS INTERSECTING THE I-405 CORRIDOR



Source: SCAG and California State Geodata.

The freeway and much of the surrounding arterial network are managed by different traffic management systems. Caltrans operates its Advanced Traffic Management System (ATMS) for the freeway system, while cities operate signals and ITS components through a city-monitored central Traffic Control System (TCS). Several jurisdictions operate their own TCS systems, independent of one another.⁴² Many of these arterials include traffic signals, traffic controllers, CCTV cameras, cameras, vehicle detection, and communications to manage traffic along the Corridor.

Also, the freeway facilities have ramp metering, CMS, CCTV cameras, and vehicle detection to manage and monitor traffic. For a corridor as large and complex as the I-405 study area, the coordination and integration across various traffic systems are limited and impact the ability to manage Corridor traffic on the arterials and the freeway. There have been efforts for signal synchronization on some arterials in the study area to help manage traffic between local jurisdictions. However, integration of systems between arterials and the freeway have not been initiated at this time. Countywide efforts are underway to integrate systems between local arterials and freeways using Integrated Corridor Management (ICM) concepts. While these measures will aid in managing the highways and arterials, their effectiveness will be limited due to the significant current congestion on both the roadway and highway network.

Transit
The study area is served by Metro Rail, Metrolink, Amtrak, and multiple municipal transit providers, including Metro. Three of Metro’s existing rail lines have stations in the I-405 study area. The Metro A Line (Blue) runs from Downtown Long Beach to Downtown LA (7th St/Metro Center station), with 7 of its 22 stations falling within the study area. The Metro C Line (Green) connects the City of Redondo Beach to the City of Norwalk and includes 7 (of 14) stations within the study area. Lastly, the Metro E Line (former Expo Line) runs from Santa Monica to Downtown LA, with 8 (of 19) stations within the study area.

Metrolink, the region’s commuter rail operator, serves 2 stations in the northern portion of the I-405 study area. The Van Nuys Metrolink station is an intermodal facility situated roughly 1.5 miles east of I-405 between Van Nuys and Panorama City; and the Sylmar/San Fernando Metrolink station in San Fernando serves the Antelope Valley Line (AVL). Both connect to LA Union Station in Downtown LA. The Amtrak Pacific Surfliner, which operates along the Los Angeles—San Diego—San Luis Obispo (LOSSAN) rail corridor, provides interregional passenger service along the Pacific Coast, with a station located at the Van Nuys Metrolink Station (Figure 22). As discussed in subsequent sections, **these existing rail services, while extensive, do not currently offer competitive alternatives for many of the vehicle trips taken in the study area.**



Figure 22

REGIONAL RAIL FACILITIES



Source: Metro and Metrolink.

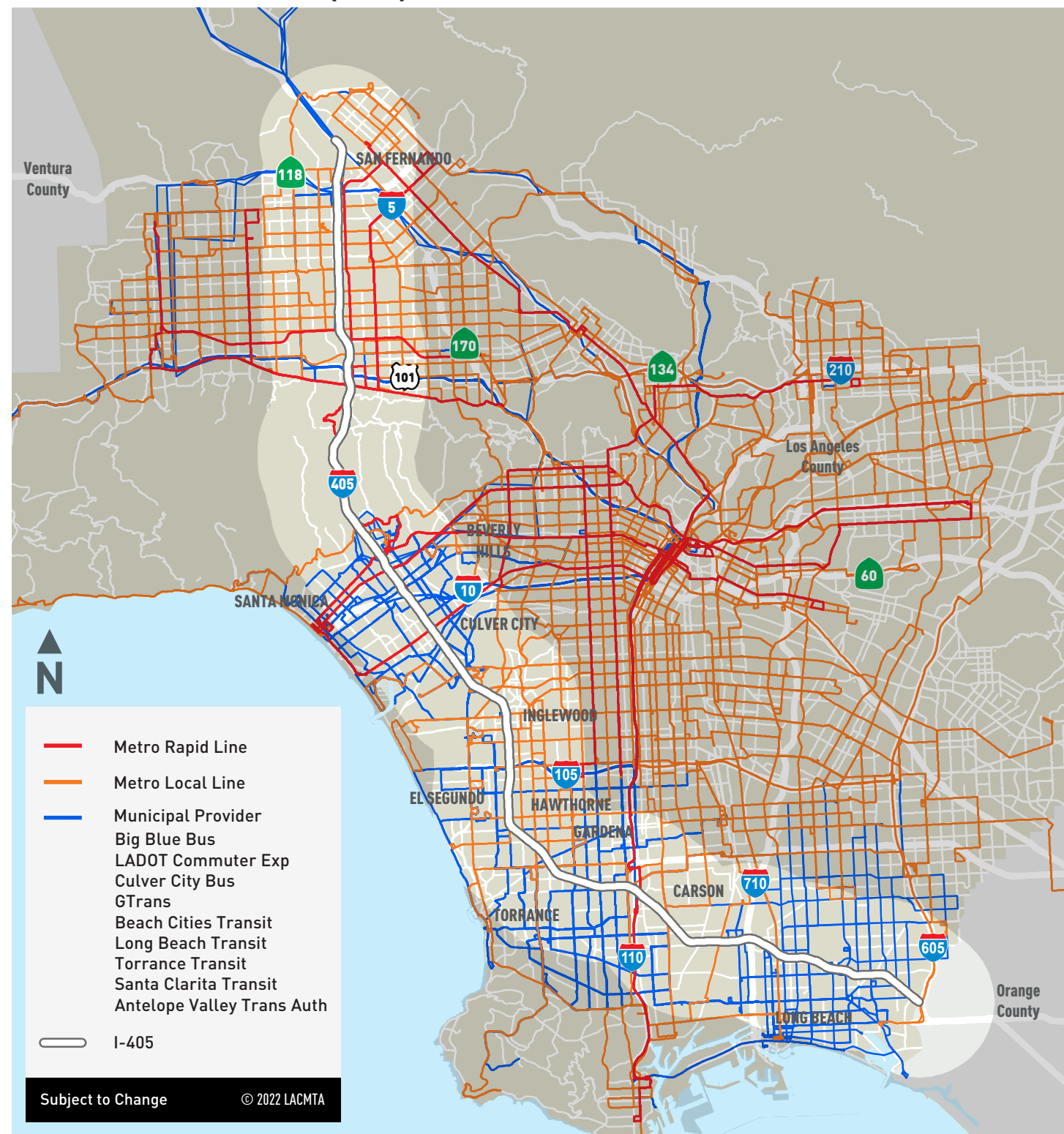
Metro operates bus service throughout LA County, including 70 routes that have at least one stop in the study area. There is a range of Metro service offerings within the study area, including local and circulator buses, Metro Rapid Lines (700 series), freeway express bus lines (500 series), the Metro J Line (Route 910 or former Silver Line), BRT with fixed guideway stations along I-110, and the Metro G Line (Orange), which is one of two Metro Bus routes that operate along dedicated lanes on freeways and surface streets. **This Metro service is complemented by several local and municipal transit operators that operate in the region** (Figure 23), including:

- > LADOT (City of Los Angeles)
- > Long Beach Transit (City of Long Beach)
- > Beach Cities Transit (City of Redondo Beach)
- > Antelope Valley Transit Authority (AVTA)
- > Culver City Bus (City of Culver City)
- > Big Blue Bus (City of Santa Monica)
- > GTrans (City of Gardena)
- > Torrance Transit (City of Torrance)
- > Santa Clarita Transit

Metro, LADOT, Culver City Bus, Big Blue Bus, GTrans, and Torrance Transit have implemented transit signal priority (TSP) on select bus routes to provide enhanced transit service and schedule reliability. Multiple other efforts, including Metro's NextGen Bus Plan, are targeted at improvements, such as transit-only lanes, all-door boarding, stop consolidation, curb extensions, and queue jumps, to help improve transit speed and reliability.

Figure 23

EXISTING BUS NETWORK (2019)



Source: Metro and Municipal Transit Providers.

Note: This map shows the Metro and Municipal network in 2019 and does not take into account service changes related to the NextGen Bus Plan.

Active Transportation

There are nearly 600 miles of bicycle infrastructure in the study area, predominantly concentrated in Santa Monica, Long Beach, and around UCLA. More than one-half of these bike facilities are marked on-street bike lanes, where bikes and motorized vehicles share the road, but the bike lane is separated by a painted stripe (Class 2). About one-quarter is “sharrows,” where the pavement is marked to indicate vehicles and people biking must share the road, but does not have a stripe to create a designated bike lane (Class 3). The remaining 20 percent are separated bike facilities (Class 1) or cycle-tracks (Class 4), which provide a physical separation between people biking and walking and vehicular traffic. Previous studies have highlighted significant gaps in

this system that hinder the ability of the bike network to offer realistic alternatives to driving. In particular, useful north-south connections are lacking. These gaps are most pronounced in the SFV and throughout the South Bay (Figure 24). Many of the east-west barriers to bicycling in the study area are caused by the I-405 freeway, as on- and off- ramps cause breaks in otherwise connected bicycle infrastructure. The multiple conflicts and safety risks faced by people biking, walking, and rolling in the Corridor are discussed in “There are multiple collision hotspots” section. Several cities, including LA and Long Beach (the two largest cities), have developed designated bike route system plans, but many gaps remain, and some cities have no bike or active transportation plans.

Figure 24

ACTIVE TRANSPORTATION FACILITIES



Source: SCAG Bikeways, 2020.

Note: The SCAG database is updated in coordination with the six County Transportation Commissions and only depicts bikeways that have been reported to SCAG; newly built or upgraded facilities that have not yet been submitted to SCAG are not shown.

Shared Mobility

Shared mobility options, such as ride-hailing, bike-share, car-share, and scooter-share (summarized in Figure 25), continue to make up a growing part of the mobility landscape throughout the LA region. These types of shared services can provide a cost-effective and flexible option for those who are unable or choose not to own a personal vehicle, and/or for whom travel needs are not adequately served by existing

transit options. However, there can be access challenges for low-income and/or unbanked populations that affect their ability to use these services. Existing services are especially popular in dense areas, such as the UCLA campus, downtown Santa Monica, and Venice Beach. It is important to note that TNCs and car share services also suffer from the same congestion on I-405 and the arterial roadway system; thus, they also experience significant delays during many hours of the day.

Figure 25

Shared Mobility Options in the Study Area

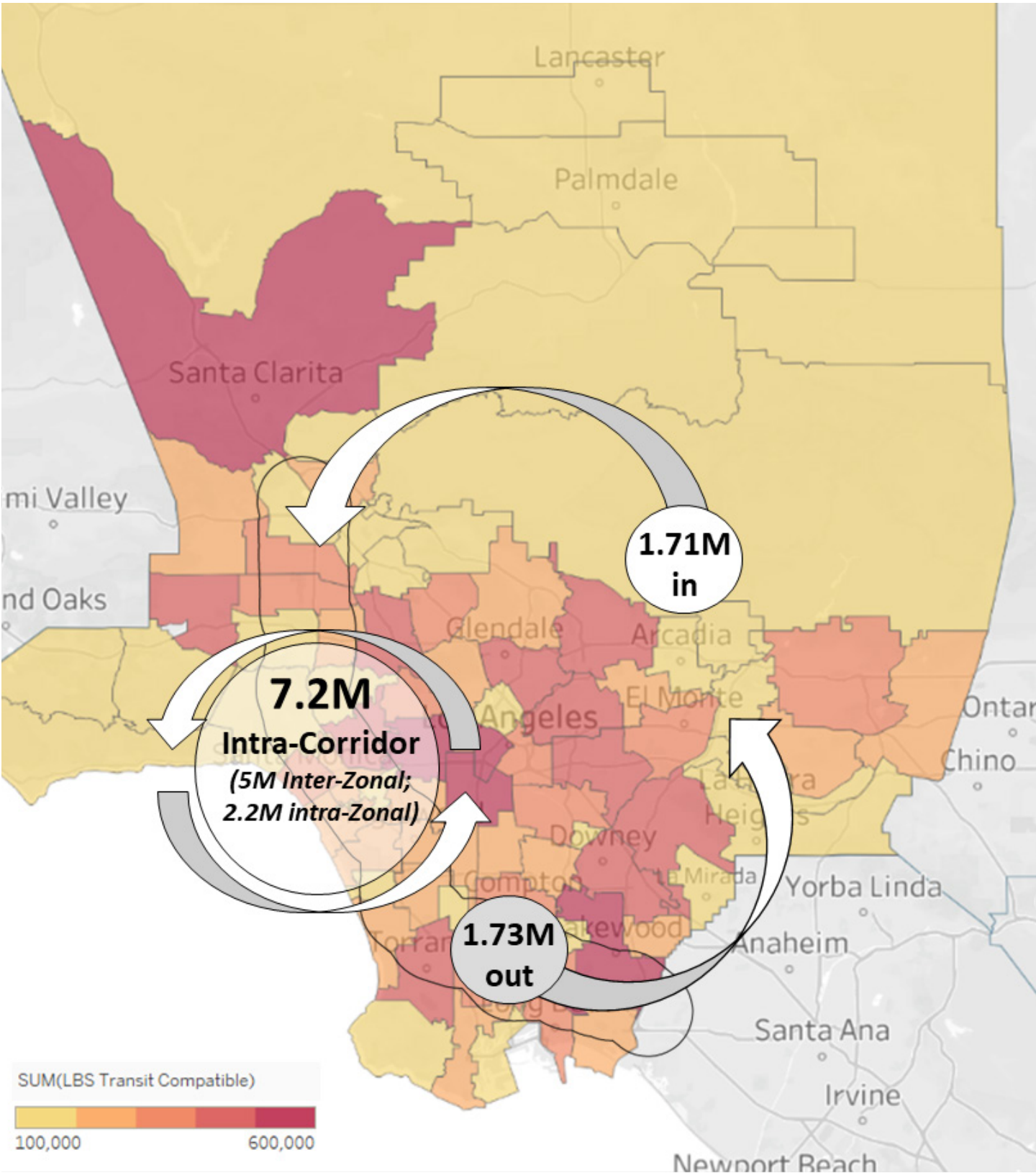
| SERVICE | OVERVIEW | AREA OF OPERATION |
|------------------------------|---|---|
| Electric Scooters | Pay-per-mile shared electric scooters hit the Corridor in 2018 when Bird launched from Santa Monica. | While COVID-19 significantly reduced operations, scooters are still operating throughout the Corridor. |
| Bike Share | There are a few public operators in the Corridor, including Metro Bike Share and Long Beach Bike Share. Santa Monica, UCLA, West Hollywood, and Beverly Hills operated complimentary bikeshare systems, but stopped operation everywhere in 2020 with the onset of the COVID-19 pandemic, except for Beverly Hills. Lyft e-bikes now operate in just the Santa Monica area. | Metro Bike Share has stations near the E Line (Expo) and beach path in LA. The Long Beach system is concentrated in downtown Long Beach, while Lyft operates from the beach to the I-405 and from San Vicente to Washington Boulevard. |
| Rideshare/Mobility on Demand | Private TNC operators like Uber and Lyft provide rideshare in the region. In addition, there are several mobility pilots that provide on-demand mobility options in certain areas. | LANow (LADOT) operates in Del Rey, Venice, Mar Vista, and Palms The Free Ride (Santa Monica) operates within Santa Monica city limits. Within the study area Metro Micro services Watts/ Compton, LAX/Inglewood, Northwest San Fernando Valley, and UCLA/Westwood/VA Medical Center |
| Car Share | There are private car sharing operators in the Corridor, such as Zipcar and Getaround. | These operate in the entire region. Stations for BlueLA, the City of LA's car-sharing program, are not located in the Corridor, but people could use them here before parking them elsewhere. |

Travel Patterns Vary in the I-405 Corridor

There are 10.6 million daily trips that start or end within the study area, making up 41 percent of the 25.6 million daily trips taken throughout LA County.⁴³ To highlight just how concentrated trip-making is within the I-405 Corridor, the study area (outlined in black in Figure 26) makes up only 7 percent of LA County by land area, and has 29 percent of the County's total

road lane miles. Figure 27 shows the average daily number of trips throughout LA County in different travel zones, with the darker red zones indicating higher levels of trip-making, and the yellow zones indicating less trip-making. The circular arrows around the I-405 Corridor show that there are 7.2 million daily trips that both start and end within the Corridor. This is nearly 70 percent of the 10.2 million total daily trips that start in the Corridor. The arrows in and out of the Corridor represent the other 30 percent of trips that go in and out of the study area.

Figure 26
AVERAGE DAILY TRIPS IN LA COUNTY

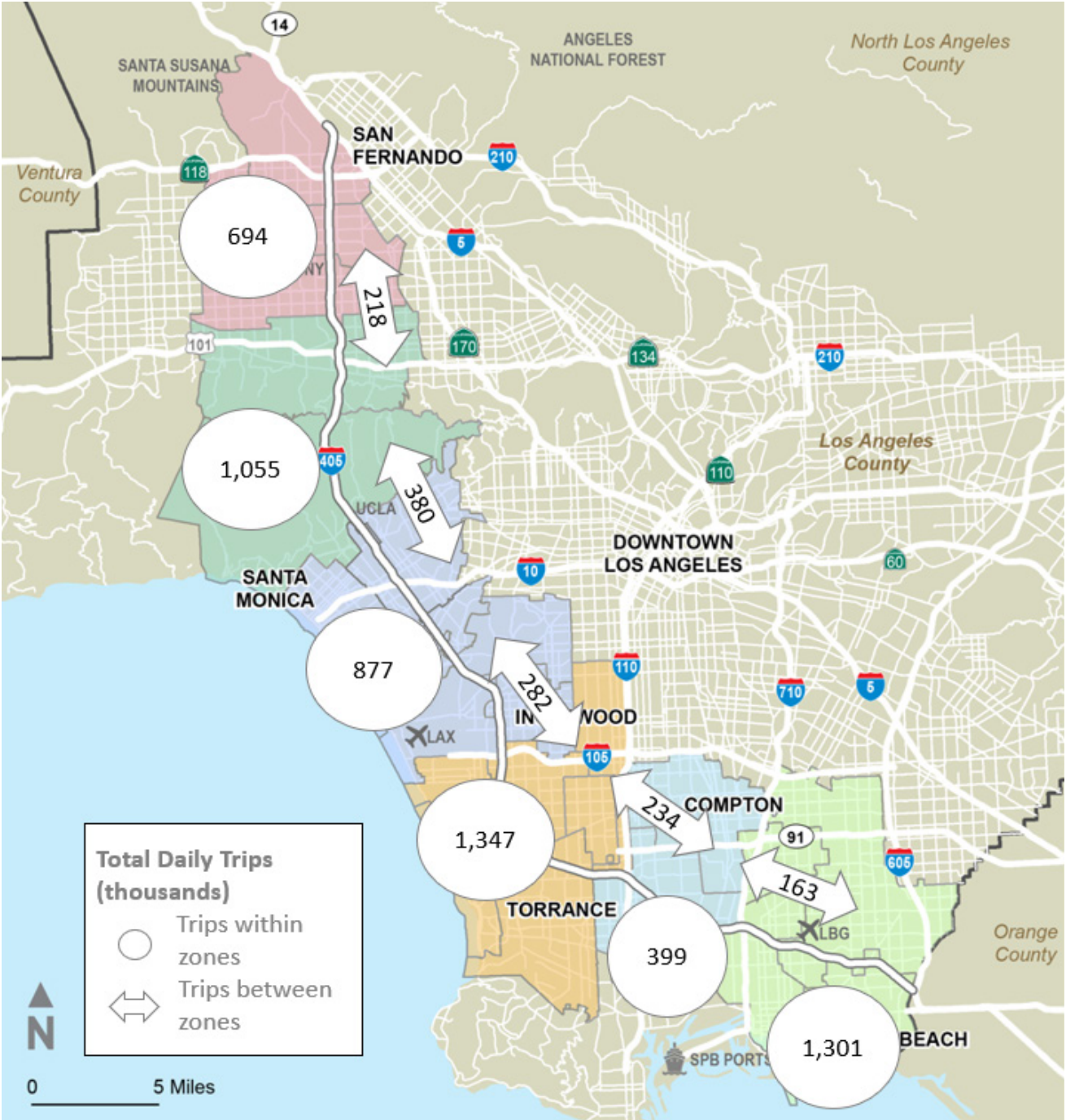


Source: Cambridge Systematics; LOCUS dataset; 2019.

Within the I-405 Corridor, most travel occurs locally (within the travel zones shown in Figure 22 or between neighboring zones—indicated by the arrows). Very few trips span the entirety of the Corridor (SFV to/from Long Beach). While it is typical for trip-making to occur more locally, high levels of traffic congestion along the I-405 likely discourages longer distance, discretionary trips along the Corridor. The highest volume of travel activity occurs in the Torrance, Gardena, and Hawthorne areas (shown in orange in Figure 27), with

the Sepulveda Pass (dark green) and Long Beach, Signal Hill, and Lakewood areas south of I-710 (light green) also having a large amount of travel activity. The areas of Santa Monica, West Los Angeles, Culver City, and Inglewood (light purple) experience the most travel between zones. Even where travel is happening between zones, the majority of that travel activity is between neighboring zones, demonstrating that most trips in the Corridor are short (see the Most Trips Are Short Section Below).⁴⁴

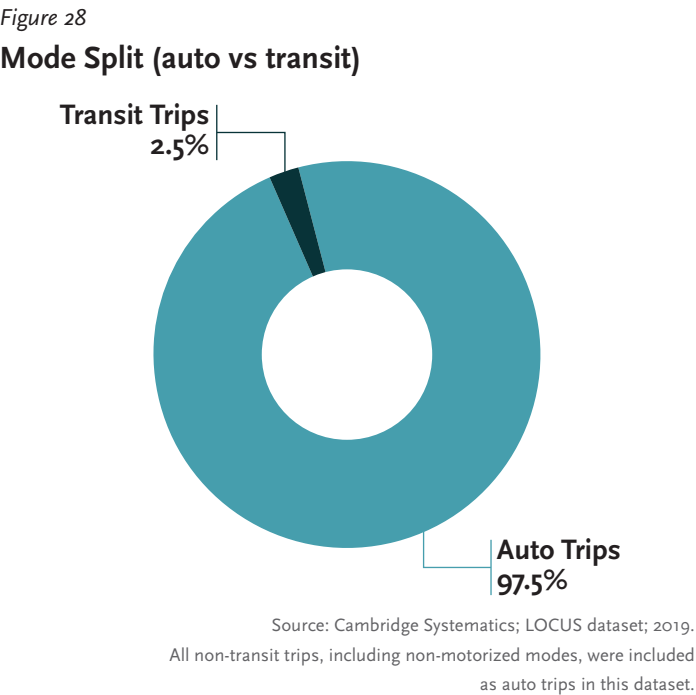
Figure 27
TRAVEL PATTERNS ALONG THE I-405 CORRIDOR



Source: Cambridge Systematics; LOCUS dataset; 2019.

The Corridor is Auto-oriented

As in the rest of the LA Basin, the personal auto is the mode of choice for people traveling within the I-405 Corridor. Approximately **2.5 percent of total trips in the Corridor occur by transit**—a lower rate than the proportion of transit trips occurring countywide (Figure 28).⁴⁵ Transit trips that start within the Corridor are concentrated in areas that tend to have higher population densities, and where residents and visitors have access to high-quality transit and rail options (Figure 28). Fewer transit trips originate in lower-density parts of the Corridor, and where there are more dispersed industrial land uses (Torrance and Carson). The section Transit Ridership Remains Low discusses the demographic and socioeconomic factors that impact transit ridership along the Corridor.



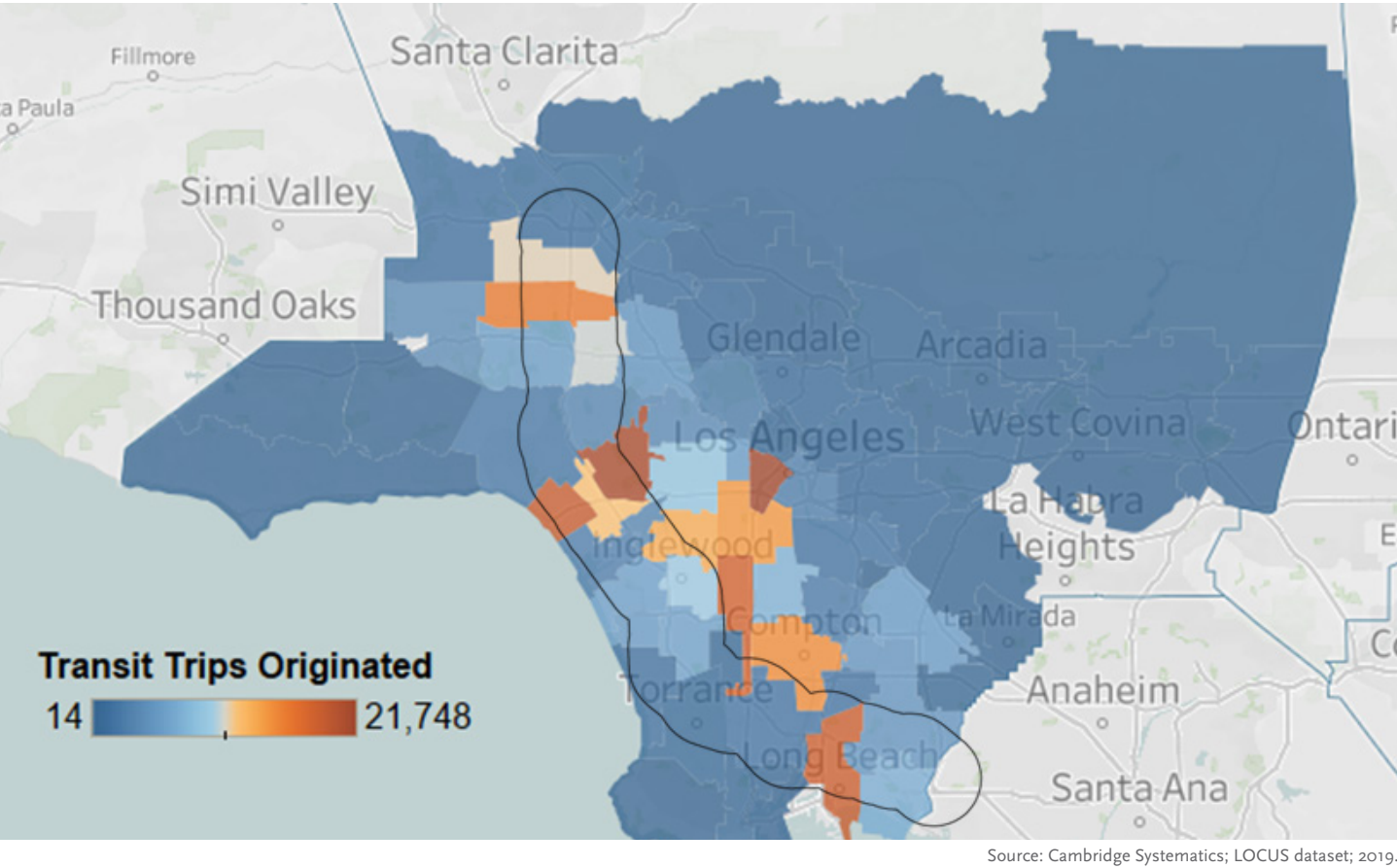
A NOTE ON METHODS

Location-based-services (LBS) data that aggregate anonymized cell-phone data were used to assess travel patterns within the Corridor. Data sources include the 2017 Travel Market Intelligence Dashboard (LOCUS and TAPCARD), the APC transit Dashboard, and the 2020 LOCUS Travel Tracker and LOCUS Traffic Footfall Tracker.

To examine trip origins and destinations along the Corridor for the I-405 CMCP, LA County was split into 78 “sub-zones” that are nested within the 20 travel districts used in previous analyses and consistent with the Regional Ridership Growth Action Plan (RGAP). These sub-zones are used to identify where the most trip-making activity is happening along the Corridor.

Figure 29

TRANSIT TRIP ORIGINS



People Travel Differently for Regular and Non-regular Trips

People are more likely to ride transit for regularly-occurring trips, such as commuting and school trips. **Within the I-405 Corridor, only 17 percent of trips are regularly-occurring.**⁴⁶ Non-regular travel includes trips, such as shopping and recreation. Of those regularly-occurring trips, transit usage is twice as high (5 percent) when compared to transit usage for all trip purposes (only 2.5 percent). In certain parts of the Corridor, more than 10 percent of commuters use transit to get to work. These include Sylmar/San Fernando, Van Nuys/Sherman Oaks, Westside Cities, Inglewood/Hawthorne, and Long Beach.⁴⁷ These areas also have some of the highest rates of bicycle and pedestrian commuting (upwards of 10 percent), and with the exception of the San Fernando Valley, some of the most extensive active transportation infrastructure in the study area, as discussed previously. In areas with high active transportation usage, but where safe and connected infrastructure is lacking, there is potential to rebalance investments to better serve those trips.

Moreover, while regularly-occurring trips make up only 17 percent of Corridor-wide trips, they tend to be longer distances compared to those non-regular, one-off trips.⁴⁸ More than 50 percent of regular trips are more than 5 miles (Figure 30).

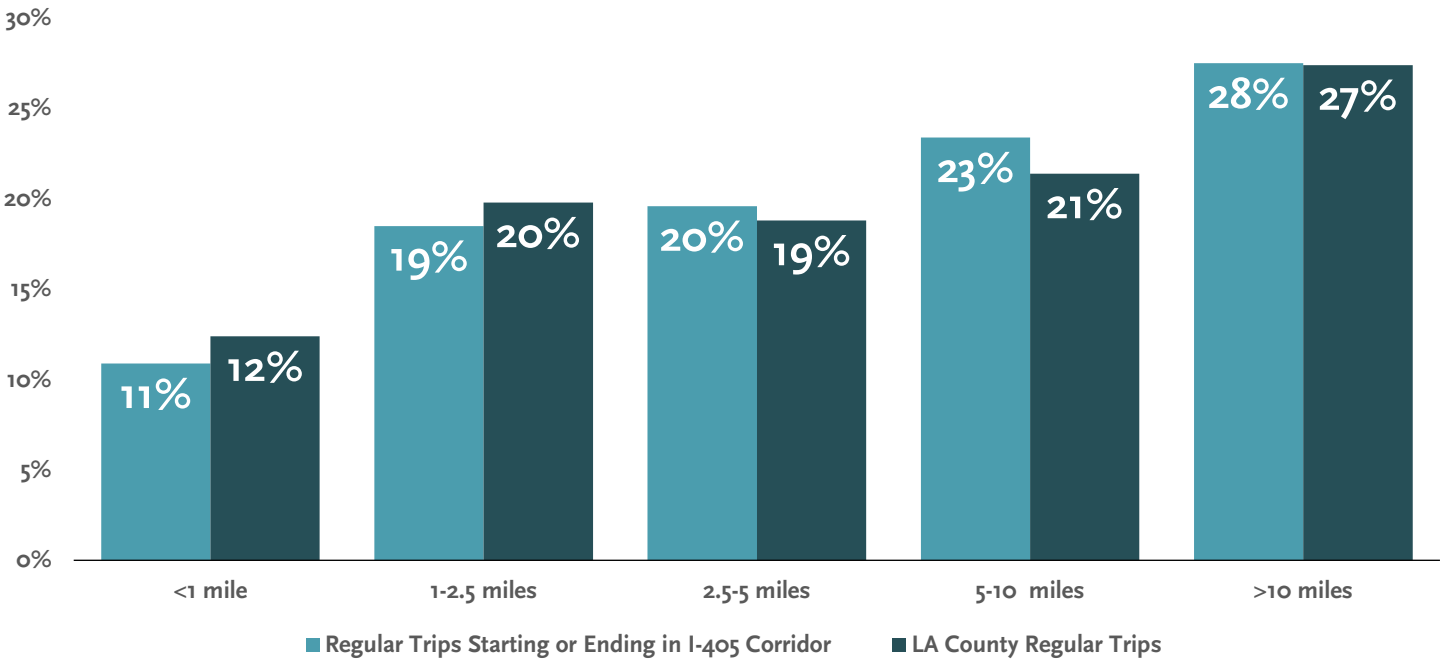
WHY DOES TRIP PURPOSE MATTER?

Understanding why these trips are occurring (“trip purpose”) is important because different types of trips have different characteristics, different impacts on the system, and often require different mobility solutions. Expanding multimodal mobility options for commuters may require additional focus on travel demand management strategies, such as ridesharing, vanpooling, express lanes, telework and commuter-focused rail and transit improvements; whereas, shorter non-work trips may be better served by investments in local bikeways, greenways, bike- and scooter-share programs, and other neighborhood-scale multimodal mobility services.

These regularly occurring trips are generally made during peak travel periods that follow work-day and school-day schedules. The confluence of longer travel distances paired with these regular trips that are conducted in peak travel periods contributes to the severe congestion on the I-405 freeway and surrounding arterials.



Figure 30
Trip Distances for Regularly-Occurring Trips



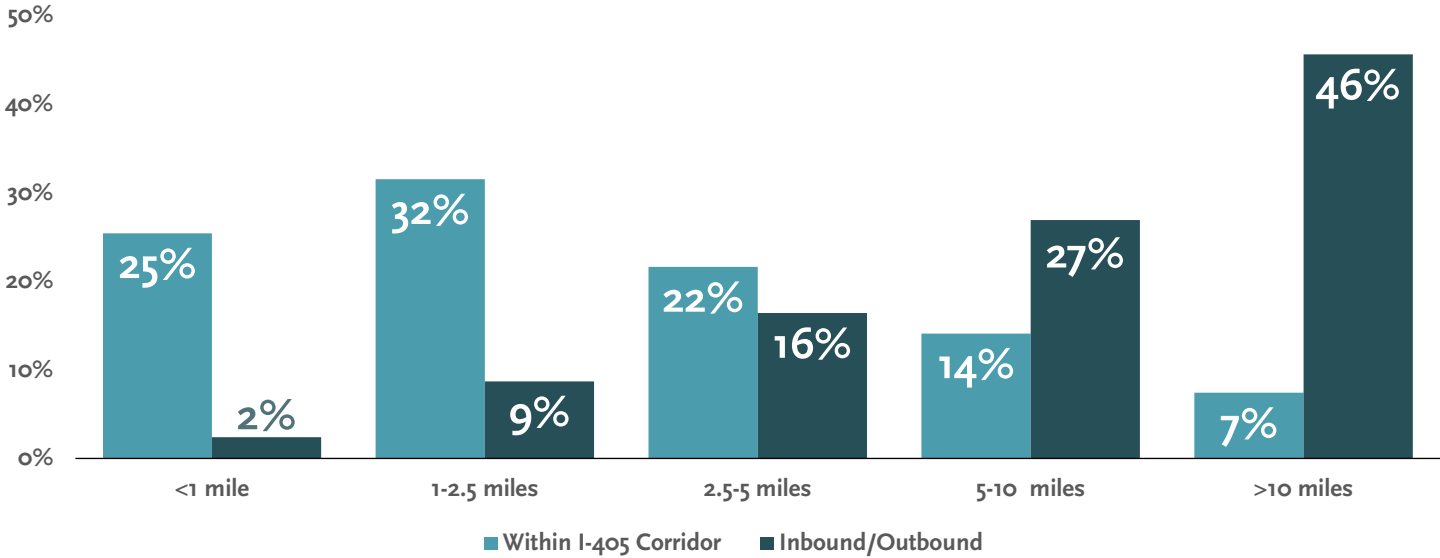
Source: Cambridge Systematics; LOCUS dataset; 2019.

Most Trips are Short

For the 7.2 million trips that start and end within the Corridor, one-quarter is less than 1 mile, more than 55 percent are less than 2.5 miles, and 80 percent are less than 5 miles (Figure 31). Research shows that the average walking trip is 0.7 mile, and the average cycle trip is 2.3 miles.⁴⁹ This suggests that there is significant potential to serve many trips in the Corridor through biking and walking, with the right type of investments in safe, connected, and high-quality active transportation infrastructure.

Trips that are coming in and going out of the I-405 Corridor (roughly 30 percent) tend to be much longer. Roughly one-quarter of these trips is more than 5 miles, and one-half is more than 10 miles. Many of these longer trips can be better served through transit—both by improving travel times, speeds, reliability, and experience on existing services; and by expanding transit coverage and connectivity within and beyond the Corridor.

Figure 31
Trip Distance for All Trip Purposes



Source: Cambridge Systematics; LOCUS dataset; 2019.

There are Unique Travel Patterns in Equity Focus Communities

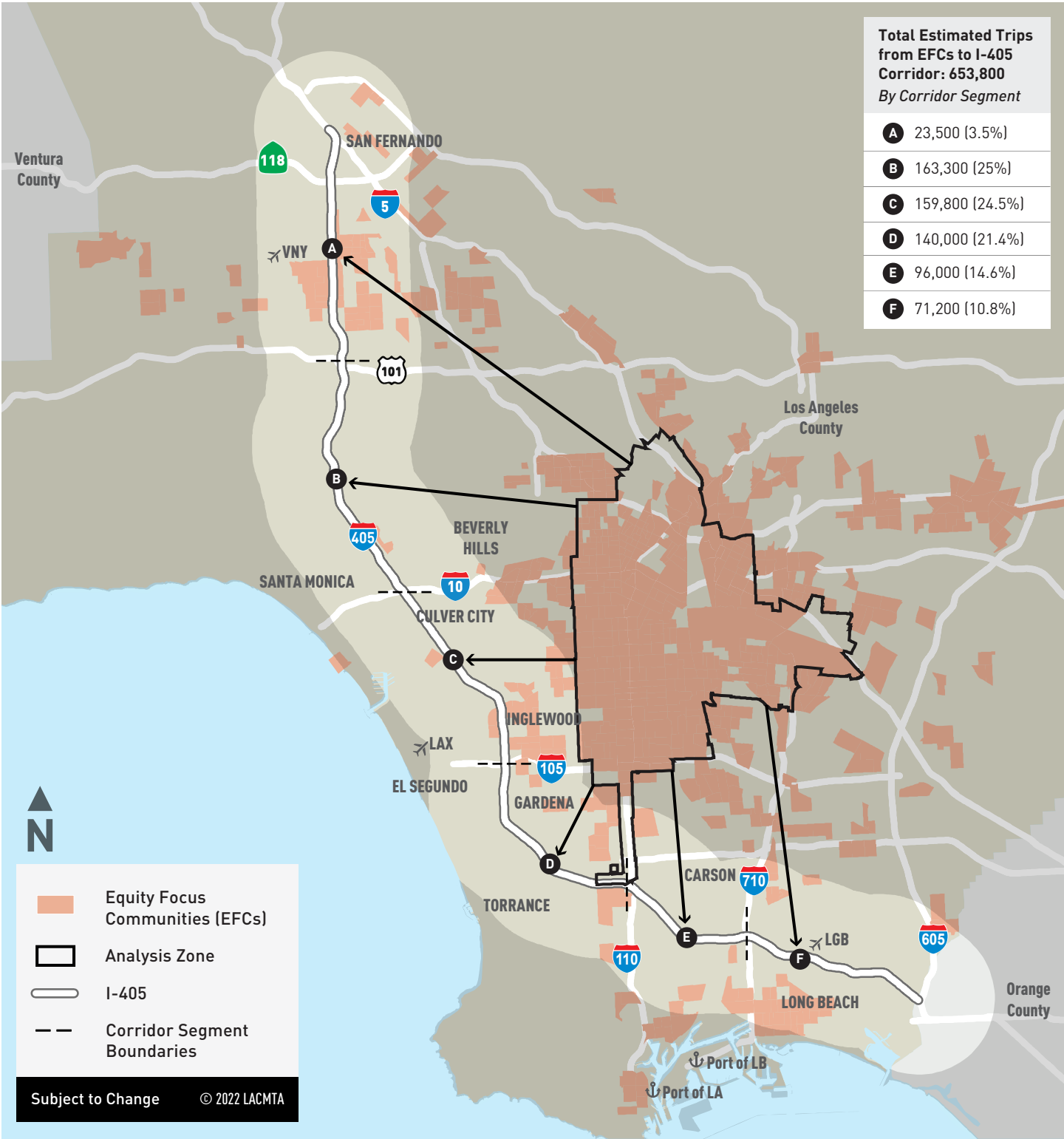
Within the I-405 study area, EFCs are mainly located throughout the SFV (Van Nuys/Reseda), Inglewood, and Central Long Beach (Figure 32). An estimated 14 percent of trips originating within the study area are from EFCs, and 21 percent of the study area's transit trips originate within EFCs.⁵⁰ For those trips that originate in EFCs within the Corridor, most (70 percent) are under 5 miles, and the majority are to and from directly adjacent neighborhoods.

However, most EFC travel activity within the Corridor is from EFCs located directly east of the study area, in Downtown LA and other parts of the Central City. Roughly 40 percent of all trips to and from the Corridor are from EFCs. The majority of these trips are destined for places along the Corridor that are high-opportunity areas, where jobs and activity centers are located, such as UCLA and Santa Monica, Inglewood and LAX, Torrance and Carson. Although these communities are not located within the study area, serving these trips with safe, convenient, and affordable mobility options is a central element of this plan.

Source: Metro Equity Focus Communities; Cambridge Systematics, LOCUS dataset; 2019

Figure 32

TRAVEL PATTERNS IN EQUITY FOCUS COMMUNITIES



Source: Metro Equity Focus Communities; Cambridge Systematics, LOCUS dataset; 2019.

Note: Travel from EFCs was estimated by identifying sub-zones outside the study that overlap significantly with the location of EFCs.

Goods Movement in the I-405 Corridor

Freight volumes on the I-405 freeway are generally lower than other freeways in LA County, making up only three to five percent of overall traffic, according to Caltrans.⁵¹ Although some trucks from the SPB Ports use the Corridor, most regional freight movements occur on other routes (such as I-710), as most of the key nodes in the Southern California supply and distribution chain are not along I-405. Nonetheless, the I-405 Corridor provides an important freight connection to regional population clusters and air cargo facilities at LAX, and is key to serving the many restaurants, retail establishments, and local delivery needs in the study area.

Despite lower-than-usual freight volumes on the I-405 freeway, certain stretches of the freeway carry more than 20,000 trucks per day, and several locations along the Corridor have been identified as high-priority freight bottlenecks.⁵² The I-710, a primary connection to the SPB Ports and one of the highest truck volume routes in the country, intersects the I-405 in the Gateway Cities region. Additionally, as the pandemic has spurred widespread adoption and growth in e-commerce, reliance on deliveries, instead of in-person visits to stores, will continue to increase the number of truck deliveries throughout the Corridor, exacerbating congestion on local roadways and arterials, and potentially reverberating throughout the supply chain.



SPOTLIGHT—Goods Movement at the I-405/I-710 Interchange

The I-405 Corridor has relatively typical truck volumes for an urban corridor; however, the southern part of the Corridor around the I-405/I-710 interchange has significantly more freight activity due to the nearby SPB Ports. In addition, the commercial land uses around the I-405/I-710 interchange are heavily logistics focused and include large areas of industrial facilities, warehousing, container storage, and intermodal yards, generating great volumes of heavy-duty trucks on the I-710 and parallel arterial roadways. Meanwhile, these industrial land uses and heavily utilized roadway facilities are located adjacent to residential areas, and present significant community health risks associated with poor air quality from port-related truck and equipment emissions, as well as other industrial activity that is not directly related to the ports. Many of the communities surrounding the I-405/I-710 interchange, particularly south of the I-405 freeway and northeast of the interchange, are Metro-designated EFCs.

Environmental Justice Issues

Transportation-related environmental impacts including pollution and other environmental stressors burden communities and create added hardships—particularly for low-income communities of color that also face other compounding conditions and challenges. Moving freight is responsible for generating large amounts of criteria pollutants, as defined by the Environmental Protection Agency (EPA), from diesel trucks and ships that negatively impact the health of communities near the SPB Ports and along major trade corridors like I-710.

Figure 33
PORTS OF LONG BEACH AND LOS ANGELES AND SURROUNDING LAND USES AND INTERMODAL FACILITIES



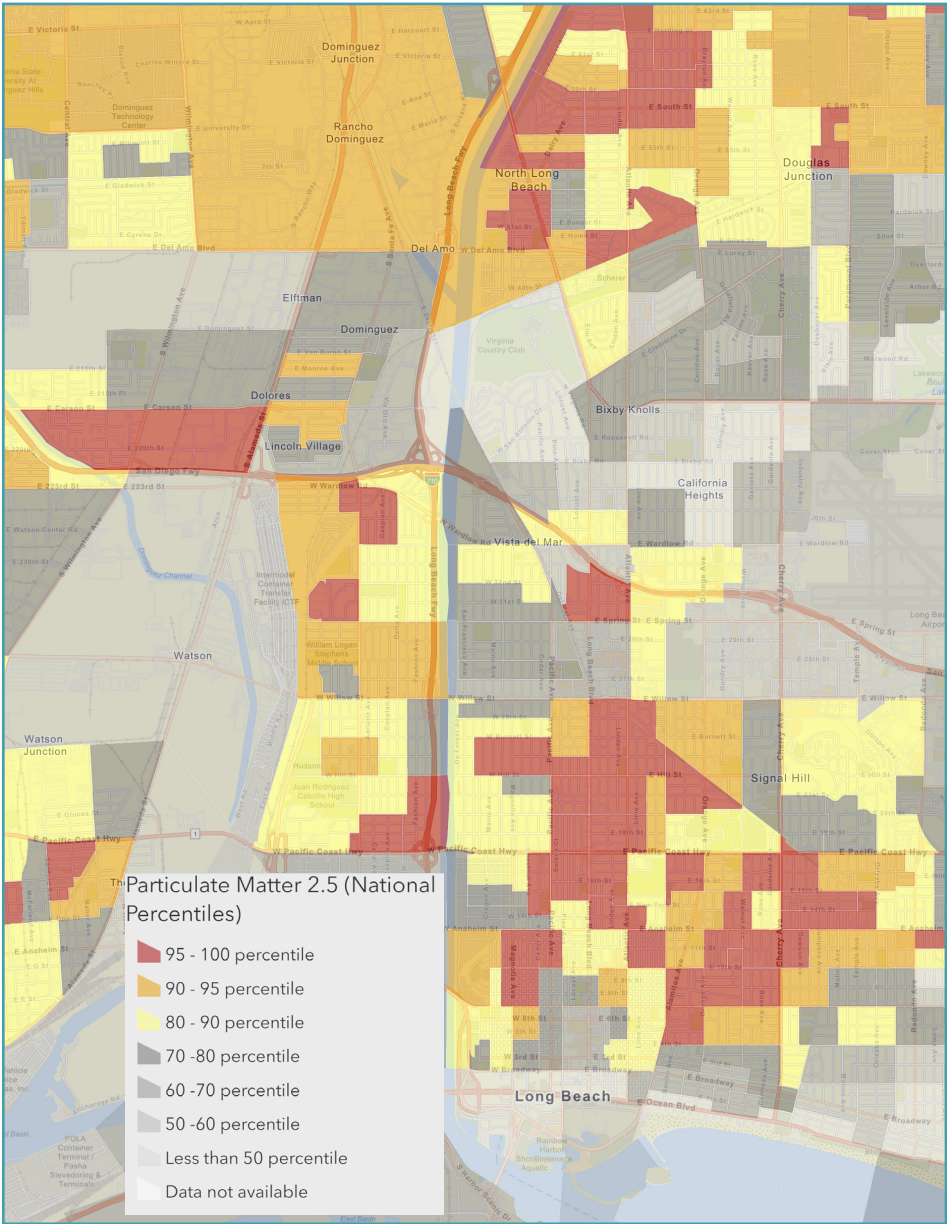
Source: SCAG Land Use.

Of the six criteria air pollutants, particulate matter (PM) and ozone pose the most widespread and significant health threats. PM is a complex mixture of aerosolized solid and liquid particles; and the solid particles in PM are known as diesel particulate matter (DPM). The particles in DPM can reach deep into the lungs, causing health problems, including heart and lung disease, asthma, and lung cancer. Children and the elderly are most sensitive to the effects of DPM. Levels of DPM are elevated near the Port of Long Beach and along the I-710 freeway. I-405 could see an increase in truck traffic delivering cargo in the future as capacity on I-710 diminishes and trucks divert to other north/south corridors such as I-605 and I-110, thus spreading these impacts more acutely to other communities within the Corridor.

High Truck-Involved Collision Rates and Safety Concerns

There is a significant number of truck-involved collisions along the I-710 and I-405/I-710 interchange. Truck collisions that result in serious injury and fatalities also occur on major streets that run parallel to these two freeways, particularly to the west of I-710 on Alameda Street/SR-47 and near the Intermodal Container Transfer Facility. The high crash frequency along the I-710 freeway is correlated with areas that also experience significant delay.

Figure 34
LEVEL OF PM2.5 NEAR PORTS. CALENVIROSCREEN 4.0 POLLUTION BURDEN: EXPOSURE INDICATORS, AIR QUALITY: PM2.5



Source: California Environmental Protection Agency – CalEnviroScreen 3.0.

SPOTLIGHT—Goods Movement at the I-405/I-710 Interchange *(continued)*

Initiatives and Opportunities

Several proposed projects identified in the I-405 CMCP can help improve goods mobility while addressing environmental justice concerns in the area:

> **Clean truck technologies** are an important component of the California Sustainable Freight Action Plan (2016), which includes a Zero Emission Technology Target. Under this initiative, the California Air Resources Board (CARB) has a vision for zero emission transportation where possible, and near-zero everywhere else. The first target is for over 100,000 freight vehicles and equipment capable of zero or near-zero emission in operation by 2030.

> **The I-710 Corridor Project** was reset by Caltrans and Metro in early 2021 due to concerns that the project would not meet desired outcomes for air quality, equity, mobility, and sustainability upheld by the EPA. Metro initiated the I-710 Task Force in late 2021 to reengage with local communities and regional stakeholders to develop a new approach to reduce disparities and improve mobility for communities adjacent to the I-710.

> **The Southern California International Gateway Project (SCIG)** would provide a new near-dock intermodal rail facility to handle containerized cargo transported through the SPB Ports. The proposed project is located southwest of the I-710/I-405 interchange in the neighborhoods of Westside in Long Beach. BNSF Railway proposes to construct and operate the facility that could handle cargo containers up to a maximum capacity of 2.8 million twenty-foot equivalents (TEU), or 1.5 million containers, per year. Most of the trucks currently traveling between the ports and Hobart intermodal railyard, near downtown LA, a journey of over 20 miles, would instead travel between the terminals and the SCIG facility, a distance of approximately four miles.

There are sensitive sites near the SCIG, including schools, where source emissions exceed standard levels. Concerns regarding these sites have impacted the environmental clearance of this project.

> **The Green Terminal Island (TI) Freeway Transition Plan** will transform a stretch of city-owned freeway on the western edge of Long Beach into a local serving road with an associated greenbelt with a linear park. The proposed project is based on extensive community input and considerations for the local history and environmental impact. The plan, as proposed, would help mitigate the environmental impacts of nearby polluting sources from the industrial land uses to the west of the project area.

Travel Impacts of COVID-19

The COVID-19 pandemic drastically altered how people live, work, play, and travel. At the onset of the pandemic, social distancing and shelter-in-place policies required people (who had the option) to shift to virtual work, school, and recreation almost overnight, nearly eliminating congestion and travel on roadways and devastating transit ridership. Overall, travel volumes within the I-405 Corridor declined by about 33 percent for people living in the Corridor, and by about 40 percent for people living elsewhere.⁵³ In addition, travel distances decreased by about 20 percent on average from nearly 14 miles pre-pandemic to 11.3 miles post-pandemic, likely reflecting the decline in longer commute trips.

At the onset of the pandemic, transit ridership across all Metro services dropped from roughly 30 million to 10 million monthly riders. Since then, it has increased back to between 13 million and 15 million monthly riders, still far short of pre-pandemic levels.⁵⁴ Metro and transit agencies in the region were faced with making even more challenging decisions regarding service levels, coverage, and equitable service delivery, all with significantly reduced fare revenues and operator shortages. Further, transit providers incorporated improved safety and sanitation measures for passengers and drivers, such as masks, hand sanitizers, and frequent cleaning regimens, increasing overall operating costs.

At the same time, there was a sharp uptick in active transportation both as a form of everyday transportation and for outdoor recreation. Online shopping led to a surge in e-commerce and deliveries, placing additional stress on supply chains already overburdened with distributing medical equipment, personal protective equipment, and other emergency supplies. With retail sales up 20 percent in March through July 2021 compared to 2019,⁵⁵ an unprecedented number of ships began to back up at the SPB ports, causing a domino effect on the transportation system and the economy at-large. The pandemic highlighted the vulnerabilities of existing port infrastructure and the importance of building toward a more resilient future supply chain.

Much of the world is now pivoting from pandemic response to pandemic recovery. Metro’s Board has committed to restoring service hours to pre-pandemic levels and has continued its implementation of the NextGen Service improvements. Many of those enhanced safety and sanitation measures on transit remain as LA County continues to manage COVID-19 case positivity. Many employers are now exploring or embracing a hybrid telework approach that would require employees to split their time working remotely and reporting into the office.

Although pandemic recovery is underway, the **long-term impacts of these trends are still highly uncertain.** Will people who are able continue to work from home do so? Will travelers continue to be apprehensive toward transit and shared modes? Will excitement about walking, biking and slow streets improvements continue? While it is unclear how the mobility landscape will shift over the long-term, the multimodal strategies developed as part of the I-405 CMCP will play a critical role in shaping how that future unfolds.

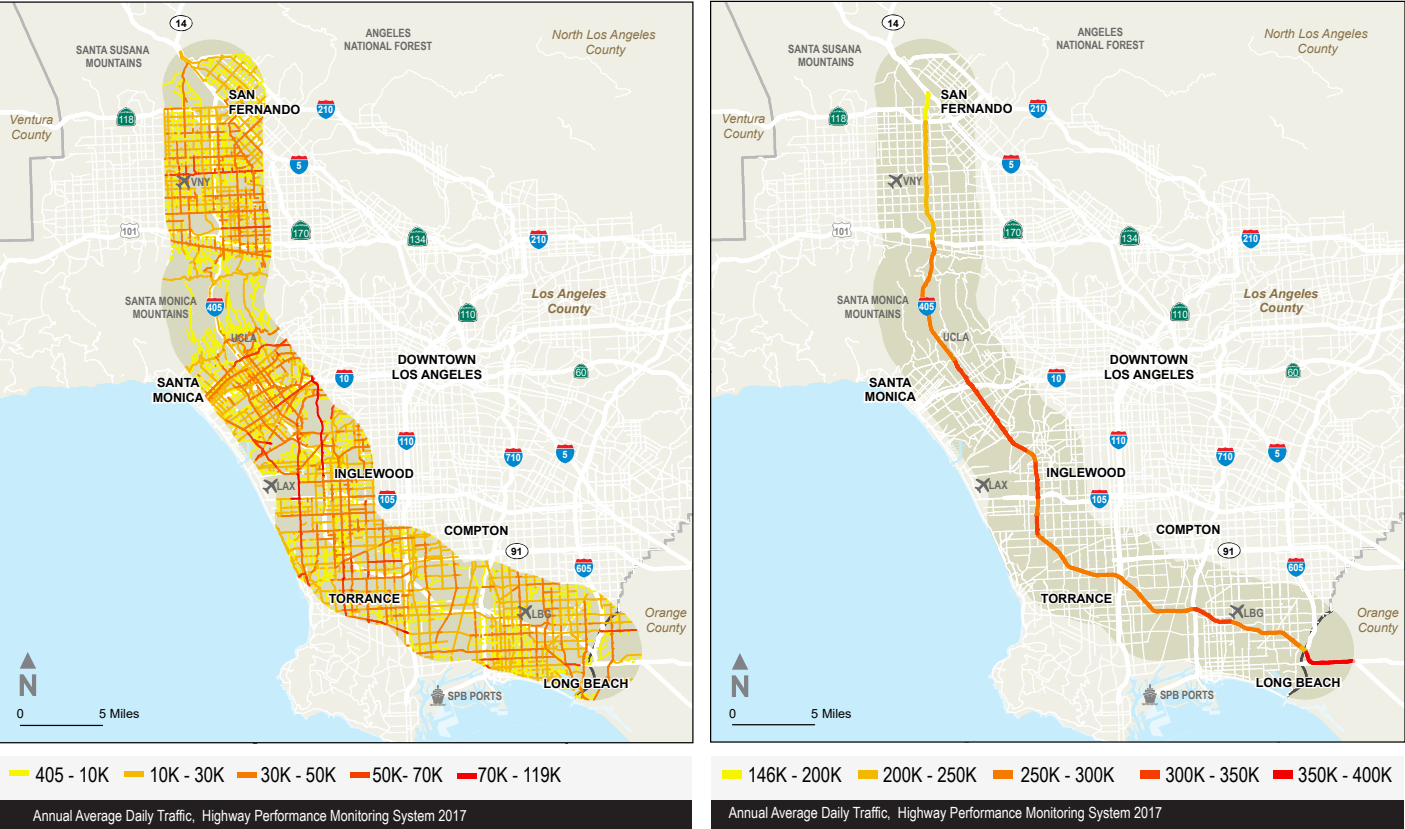
The Corridor Faces Many Challenges

The I-405 Corridor faces many challenges, including safety issues, poor air quality, public health concerns, deteriorating infrastructure assets, and inequitable access across the Corridor’s many communities. There are also many global forces at play, such as worsening climate change, changing political and economic conditions, and demographic trends that exacerbate these challenges. Many of these challenges are a byproduct of the staggering levels of traffic congestion, and while significant, multimodal improvements can play a role in shifting this dynamic and addressing these impacts head on.

Roadways are Heavily Congested

As discussed, the I-405 Corridor is highly auto-oriented, and therefore suffers from crippling traffic congestion and delay. **Nine out of the top 30 highest volume freeway segments in California are on I-405** within the study area.⁵⁶ Daily vehicular volumes are over 350,000 near the Orange County Line; over 300,000 near LAX and I-10; and over 200,000 near US-101 in the SFV (Figure 35). In 2013, the I-405 was named the busiest interstate in any US city.⁵⁷ According to INRIX, a nationwide provider of transportation data, **I-405 between I-105 and US-101 is now the 9th most congested freeway segment in the US.**

Figure 35
AVERAGE ANNUAL DAILY TRAFFIC ON I-405 AND SURROUNDING ARTERIALS



The Corridor’s arterials carry an even more significant volume of traffic—75 percent of total VMT within the study area.⁵⁸ La Cienega Boulevard, Sepulveda Boulevard, Burbank Boulevard, Santa Monica Boulevard, and Wilshire Boulevard each carries more than 60,000 daily vehicles. Arterials with the highest travel times, compared to free-flow conditions, are concentrated in the Westside Cities area between SR-90 and Sunset Boulevard, including Jefferson Boulevard, La Cienega Boulevard, Culver Boulevard, Slauson Avenue, Wilshire Boulevard, Santa Monica Boulevard, Olympic Boulevard,

and Pico Boulevard (Figure 36). Many of the Corridor’s arterials, especially the ones that parallel the freeway, serve as alternative routes when the freeway is heavily congested, yet these routes are also congested. Similarly, traffic jams on the freeway can spill onto on- and off-ramps along these arterials, causing a “ripple effect” of traffic jams impacting retail, commercial and residential areas. This highlights the critical importance of a holistic approach to congestion reduction that considers not just the I-405 freeway, but the Corridor’s heavily-traveled arterials as well.

Figure 36
ARTERIAL CONGESTION, DELAY, AND TRAVEL TIME INDEX



Source: Regional Integrated Transportation Information System (RITIS); 2018.

These extreme levels of congestion occur not just during peak travel periods, but around the clock, causing travelers to spend a significant amount of additional time in their cars. It is also linked to a range of negative impacts, including safety hazards,

environmental degradation, air pollution, and infrastructure deterioration; all of which place additional burdens on those that live around the Corridor and the many travelers locally, regionally, and from across the state who depend on it.

There are Several Bottlenecks

The I-405 freeway has several recurring bottlenecks spread across peak hours. The most severe bottleneck in terms of average delay in vehicle hours occurs in the southbound direction of the freeway at Howard Hughes Parkway. This bottleneck was active for 265 days in 2019 and caused an average delay of 4,939 vehicle hours during the PM peak period. I-405 northbound at Nordhoff street is also a significant bottleneck, causing 4,077 average hours of delay during the PM peak period.⁵⁹ The top 10 bottlenecks are shown in Figure 35. These bottlenecks collectively cause more than 22,500 hours of vehicle delay annually, the equivalent of 2.5 years.⁶⁰

HOV Lanes are Degrading

HOV lanes exist along the entirety of the I-405 freeway in the study area. In addition to vehicles with two or more occupants, some hybrid and zero-emission vehicles (those with an EV decal), motorcycles, and buses can also use the HOV lanes. Most vehicles using the I-405 HOV lanes are carpools and vanpools with 2+ people (82 percent), with EVs making up about 11 percent, motorcycles and single-occupancy vehicles making up 7 percent, and buses making up less than 1 percent.⁶¹

While these HOV lanes carry about twice the number of passengers per vehicle than general purpose lanes, the added

person-throughput does little to alleviate congestion. During peak periods, HOVs make up about 23 percent of all vehicles on the freeway and carry about 34 percent of travelers on the freeway.⁶² However, as of 2017, all segments of HOV lanes in both directions were classified as “extremely degraded,” meaning that peak commute hour speeds regularly dropped below 45 miles per hour, which lessens the incentive for users to shift to carpooling, transit, EVs, or other modes that can utilize the HOV lanes.⁶³

Transit Ridership Remains Low

Low levels of transit usage are not unique to the I-405 Corridor. Transit ridership has declined nationally year over year between 2012 and 2018.⁶⁴ In recent years, Metro has seen declines in ridership throughout the system, including along the lines that serve or connect to the I-405 Corridor. Even before the COVID-19 pandemic, total Metro Rail system ridership declined significantly across the system and on each of the lines serving the study area (Figure 37).⁶⁵

The Metro Bus system experienced similar declines, particularly on the G Line (Orange), which serves the SFV from the North Hollywood Red Line station to Chatsworth, and whose ridership has declined by approximately five percent annually between 2015 and 2019.

Multiple recent efforts have explored why transit ridership has remained low despite the multiple rail and transit services provided in the Corridor. These include Metro’s NextGen Transit Strategy, Metro’s Understanding How Women Travel report, and the Falling Transit Ridership Report (SCAG/UCLA ITS). These studies point to the following barriers to transit mode shift:

- > **Uncompetitive Transit Travel Times:** Increased roadway congestion causes slow speeds, poor reliability, and high transit travel times. A typical trip on transit takes more than three times longer than that same trip would take by car.⁶⁶ Lack of first-/last-mile access and long transfer times can also contribute to high transit travel times. Other design features, such as bus stop spacing, location, and routing, can also impact transit speed, reliability, and performance.
- > **Lack of Viable Alternatives:** Lack of viable transit alternatives can be caused by mismatches in existing transit service and demand (for example, infrequent service during non-commute hours, or overlapping Local, Limited, and Rapid services that compete with rather than complement each other).⁶⁷ Lack of fare integration, poor connectivity between services, and personal safety and security concerns can also make transit an infeasible option for many.
- > **Demographic and Displacement Trends:** Trends including increased immigration, rising car ownership among immigrants and low-income residents, and gentrification of formerly high-transit usage neighborhoods are collectively contributing to falling transit ridership.⁶⁸ Furthermore, gentrification and the rising cost of living are displacing many low-income residents within the study area—many of whom make up Metro’s core ridership—to outlying areas with fewer transit services, requiring them to rely on a vehicle to access jobs, goods, and services while more affluent residents moving into transit-oriented neighborhoods are using transit services less frequently.
- > **Network Gaps and Geographic Constraints:** As noted earlier, there are significant gaps in the bike network that hinder its ability to offer realistic alternatives to driving, and that deter people from using active modes as a first-/last-mile connection to transit. In addition, some segments of the I-405 Corridor have geographical features (i.e., the Santa Monica Mountains) and land use patterns that make transit and active transportation options unrealistic for many potential users.

There are Multiple Collision Hotspots

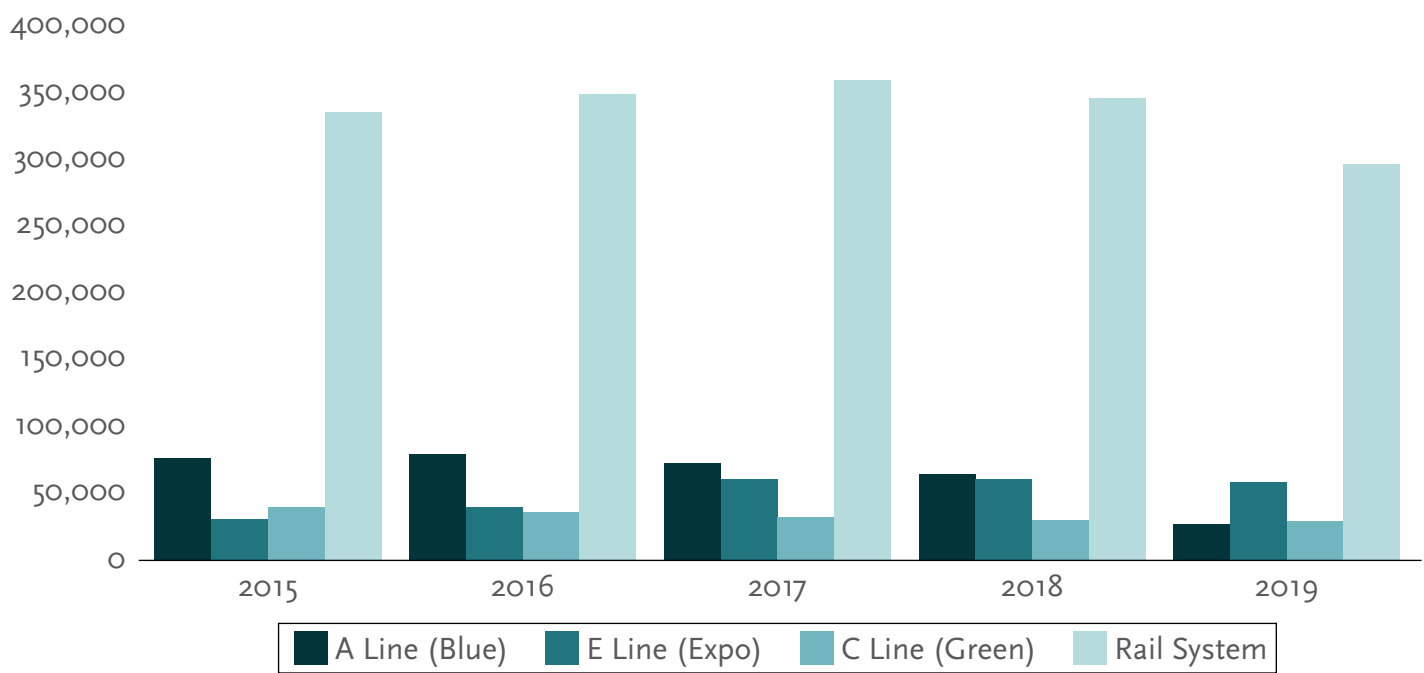
In 2018, there were nearly 2,000 fatal or injury collisions on the I-405 freeway; and nearly 10,000 on the arterial network in the three-mile CMCP study area.⁶⁹ Around 5 percent of both the collisions on the I-405 freeway and the arterial network resulted in a fatality or serious injury, and a disproportionate amount involved people biking or walking (the most vulnerable users of the system). Between 2014 and 2018, collisions on the I405 freeway grew from 1,400 to nearly 2,000—an increase of about 25 percent, or about 6 percent per year. During this same period, VMT grew at about one-half that rate—10 percent between 2014 and 2018.⁷⁰ This indicates crashes are occurring at a greater rate along the freeway despite sustained efforts at the statewide, regional, and local levels to improve safety.

Collisions are both a source and a product of congestion. Crash rates are often correlated with congestion, and typically over one-half of all congestion is caused by the back-ups resulting from crashes. Specifically, rear-end collisions, which are associated with congestion, are predominant on the I-405 freeway. Other common factors include sideswipe incidents when drivers attempt unsafe lane changes, speeding, and disobeying traffic signals and signs. On the I-405 freeway itself, collision hotspots are predominantly located at freeway and arterial interchanges. Hot spots are most concentrated along segments in the Westside Cities area and SFV (Figure 38). Thus, congestion causes certain types of collisions, and collisions cause non-recurrent congestion and bottlenecks throughout the system.

Bicycle and pedestrian safety is a critical issue in the Corridor. More than a hundred bicycle and pedestrian fatalities or serious injury collisions occurred directly along the I-405 freeway between 2014 and 2018.⁷¹ Bicycle and pedestrian collisions are most concentrated in portions of Long Beach, Santa Monica, Inglewood, and east of the I-405 in the SFV. Safety for people biking and walking was one of the gravest concerns voiced by stakeholders throughout the CMCP development process, with many noting that fast driving speeds, auto-oriented roadways, and a lack of continuous, connected, and protected infrastructure are the main reasons that people feel (and are) unsafe when biking and walking in the Corridor.

Figure 37

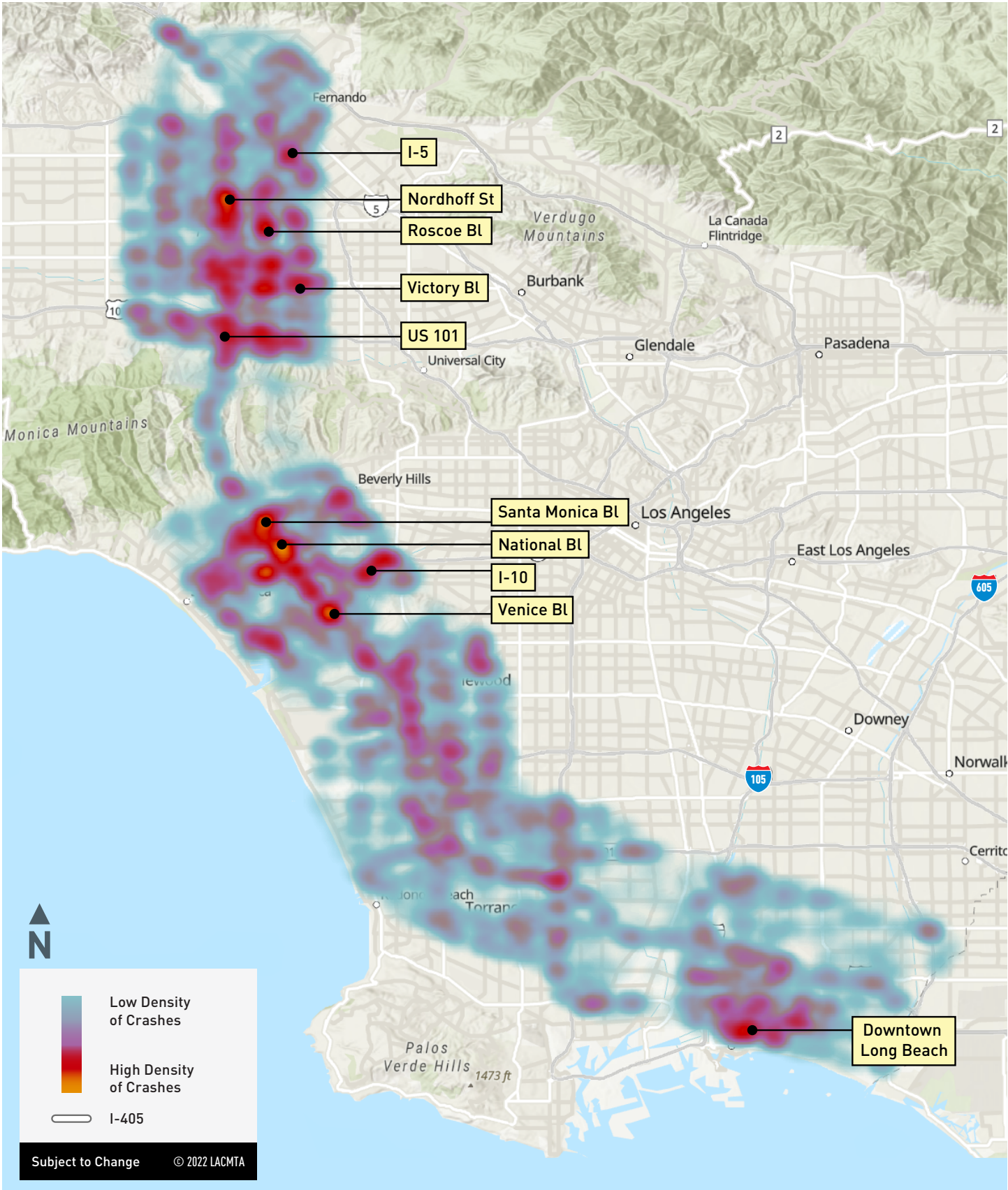
Metro Rail Average Weekday Boardings (2015 – 2019)



Source: Metro.

Note: Percentages show a change from the previous year. The significant decline in A Line (Blue) ridership was largely due to the line retrofit that occurred during this time period.

Figure 38
COLLISION HOT SPOTS



Source: Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley.

Air Quality and Climate Change Impacts Continue to Get Worse

High traffic volumes and associated tailpipe emissions, as well as harmful pollutants emitted from industrial facilities, cause **poor air quality conditions along much of the Corridor**. Regional and local transportation infrastructure investments have disproportionately impacted low-income communities and communities of color, who bear the greater share of pollution burden and environmental stressors. Poor air quality is associated with heightened rates of certain chronic conditions, including bronchitis, emphysema, asthma, cardiovascular disease, and higher mortality. It particularly affects children, older adults, people active outdoors, and outdoor workers. LA County is a nonattainment area for criteria pollutants regulated under the Clean Air Act’s National Ambient Air Quality Standards (NAAQS), including the two pollutants (Ozone and PM 2.5) associated with the most adverse health effects.

In addition to these air quality concerns, **the study area is vulnerable to the impacts of climate change, particularly rising temperatures, sea level rise, increased wildfires, and more frequent and severe extreme weather events**. By 2100, the Southern California coast is likely to experience a 1.8 to 3.6 foot increase in sea-level, unless drastic emissions reductions are implemented.⁷² With the potential for much higher levels of inland flooding during storm surges, this could create considerable issues where I-405 crosses the LA River in Long Beach and Ballona Creek in West LA. In Long Beach, inundation is expected to reach 0.5 meter.⁷³ These are areas with a large number of employers and commuters; high volumes of travel; and relatively high use of transit, bike, and walk modes; all of which would be impacted by this degree of sea level rise.

While **wildfire risk is generally low within the Corridor**, with the exception of the Santa Monica Mountains, smoke from more frequent and severe wildfires north and east of the Corridor is exacerbating air-quality-related health concerns and forcing residents to stay indoors.

“Urban heat island” effect is also a major environmental stressor for many communities throughout the Corridor, which refers to heightened temperatures in places that are more paved and have fewer trees and shade structures. Low-income and communities of color are most impacted by the urban heat island effect. In particular, “Valley Heat Inequity” refers to the significantly higher temperatures experienced throughout the SFV – which can surpass 100 degrees Fahrenheit in summer months. This, paired with wildfire smoke and generally more extreme weather, poses a significant barrier to people biking, walking, and rolling; and to supporting more people in switching to these modes.

Metro and its partners have many efforts underway to both mitigate and adapt to these growing climate change impacts. These include improving transportation and land use coordination to reduce GHG emissions, decarbonizing mobility options, encouraging trip reduction strategies, expanding system resiliency, and ensuring safe emergency response and evacuation routes and protocols.

Infrastructure Assets are Deteriorating

Many of the previously discussed factors—high traffic volumes, increased exposure to extreme weather, and significant auto-dependence—combine to negatively impact the condition of the study area’s infrastructure, particularly its pavement condition. In fact, **only 5 out of 13 cities in the study area have “good” pavement condition**, according to the Pavement Condition Index (PCI).⁷⁴ Between 2016 and 2018, pavement conditions in Carson and Redondo Beach fell from “Good” to “At Lower Risk” classification;⁷⁵ whereas, Long Beach and Lawndale are both classified as “At Higher Risk.”

In general, the I-405 freeway has better pavement quality than the local arterial system. However, segments near the Sepulveda Pass, LAX, South Bay, and Gateway Cities—where traffic volumes tend to be highest—have some of the poorest pavement quality. Throughout the Corridor’s arterial network, pavement quality tends to be worse in the Westside Cities areas and on many of the major arterials in the SFV. Pavement quality in the southern part of the Corridor is mostly in “Acceptable” condition. Similar to pavement condition on the freeway, these arterials typically have lower travel volumes and, therefore, less wear-and-tear.

The continued deterioration of pavement conditions in the study area has significant implications on congestion (poor pavement condition corresponds to lower speeds), safety (avoiding potholes can induce sudden lane changes), and use of alternative modes, particularly biking (poor condition of on-street/Class 2 bike lanes can inhibit mode shift). Metro, Caltrans, and local jurisdictions have specific programs in place, such as Caltrans’ State Highway Operations and Protection Program (SHOPP) to address maintenance and rehabilitation of transportation infrastructure assets within the Corridor.

SPOTLIGHT—Connecting to North Los Angeles County, the Central Valley, and the I-5/SR-14 Interchange

The I-5/SR-14 interchange is located along I-5, 3.75 miles north of the terminus of I-405. Known as the Newhall Pass interchange (officially Clarence Wayne Dean Memorial Interchange) or by locals as the “5-14 Split”, it serves as a major gateway from the LA Basin for people and goods to both central and northern California, as well as to the Santa Clarita and Antelope Valleys. Nearly one-third of the trips that travel through the interchange also goes through the I-405.⁷⁶ Simultaneously, the 5-14 Split is a critical goods movement gateway, and handles a large share of truck trips. This interchange is a key component of the only major north-south connection between the LA Basin and North LA County (and areas beyond such as the Central Valley), and as such it is a crucial and potentially vulnerable link in the network. This vital importance was demonstrated by two prior major closures that affected the interchange due to the 1971 Sylmar/San Fernando and 1994 Northridge earthquakes.

North LA County is projected to experience significant growth in jobs and housing, and the interchange and larger transportation network serving this part of the County will experience greater demand as a result of this growth. Meanwhile, the projected growth in regional goods movement could compound the demand on these facilities. Future improvements will need to expand options and offer high-capacity solutions to manage the movement of more people and goods.

Who Depends on the I-5/SR-14 Interchange?

Roughly 525,000 people reside in North LA County area—just over 5 percent of LA County’s population. There are approximately 213,000 residents in Santa Clarita Valley and 312,000 residents in Antelope Valley.⁷⁷ Santa Clarita is the third most populous city in LA County after the City of LA and Long Beach, while Lancaster ranks 5th and Palmdale 6th. These cities have a very large population that relies on this vital interchange.



While many North LA County residents both live and work in the area, a significant number also commute to the SFV, West LA, or even areas further south and east. Many of those commuters drive and must travel through the I-5/SR-14 interchange, and roughly one-third of those trips uses I-405 to reach their destination. Even those who commute via bus must use the interchange, and many non-commute trips are made by residents of both Valleys to the LA Basin for health care, recreation, and other purposes. Notably, Santa Clarita and Antelope Valley residents tend to have commutes longer in both distance and travel times, with nearly one-quarter commuting 60 minutes or more each way, compared to only 15 percent of LA County residents with similar commute lengths.⁷⁸ Given the long distances traveled, these North LA County residents rely more heavily on cars for these trips and commute less on other non-auto modes compared to other parts of the County. Auto ownership is high among these communities, even within those designated as EFCs, because despite the high costs associated with private vehicle ownership, cars provide critical access to destinations in LA where other alternatives are currently limited.

Key Mobility Challenges

As North LA County becomes a larger and more concentrated population center, so will the importance of the connectivity provided by these freeway facilities and parallel transportation facilities and services. Key mobility challenges in and around the 5-14 Split include:

Figure 39
THE I-5/SR-14 INTERCHANGE



Source: Caltrans Performance Measurement System.

SPOTLIGHT—Connecting to North Los Angeles County, the Central Valley and the I-5/SR-14 Interchange *(continued)*

- > Significant bottlenecks on I-5 both north and south of the interchange, generally during peak commute periods;
- > Southbound travel on I-5 experiences chokepoints in the morning peak period near the interchange at the junction with I-210 (just south of the interchange) and at Weldon Canyon in the evening (just north of the interchange) as people make their way to and from Southern California;
- > Limited roadway alternatives put travelers and businesses moving goods along this corridor at heightened risk of consequences caused by earthquakes and other natural disasters; and
- > Limited transit options connecting North County residents to the rest of LA County.

INFRASTRUCTURE IN DISTRESS

Portions of the interchange collapsed during the 1971 Sylmar/San Fernando earthquake and during the 1994 Northridge earthquake, two sections collapsed, causing the interchange to be impassable until repairs were made. During the 11-month closure, the parallel “Old Road” was used as bypass route, and Metrolink rail ridership increased significantly, from about 1,000 riders per day to over 22,000 riders per day.

Initiatives and Opportunities

Several improvements have been proposed around the I-5/SR-14 interchange that will enhance the movement of people and goods from the North County to the LA Basin. Some of the improvements will enhance operations of the interchange itself for both autos and trucks, while multimodal improvements will help reduce the reliance on auto travel from the LA Basin to North County, the Central Valley, and the rest of the state. For example, Metrolink improvements will enhance accessibility for commuters who currently need to make long commutes via auto, and future California High Speed Rail service would provide an alternative to driving through the interchange and

help reduce future congestion as demand for travel between LA and areas to the north increases. The proposed major improvements include:

- > **I-5 North County Enhancements Projects** will deliver operational and safety enhancements along the I-5 freeway from the SR-14 interchange in the Santa Clarita Valley to just south of Park Road in Castaic. Enhancements include the addition of an HOV lane, a truck lane between SR-14 and Calgrove Boulevard, ITS improvements between the I-405 and I-210 interchanges, and the addition of auxiliary ramps. The project, expected to be completed by 2026, will reduce congestion and provide a much faster and safer driving experience in the area for travelers.
- > **The AVL Capacity and Service Improvements Program** aims to improve service frequency and reliability along the 76.6-mile-long AVL commuter rail corridor between Lancaster and downtown LA to meet the mobility needs of residents, employees, and visitors throughout the region. The Project will be completed by the year 2028.
- > **Vista Canyon Metrolink Station and Parking Structure.** The new station and 750-space parking structure in the Canyon Country area of Santa Clarita will be completed by 2022.
- > **CA High Speed Rail** includes a proposed segment between Palmdale and Burbank that will pass by the I-5/SR-14 interchange.
- > **High Desert Corridor Rail Project.** High Desert Corridor Rail Project would provide a critical link to connecting the cities of Las Vegas and Los Angeles by way of a new high-speed intercity passenger rail service along a 54-mile east-west rail alignment from the future Brightline West Station in Victor Valley in San Bernardino County to the future Palmdale Multi-Modal High Speed Rail Station in Palmdale in LA County.

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The Impacts are Inequitably Distributed

The negative impacts of transportation, including congestion, poor air quality, safety risks, and infrastructure degradation, fall hardest on low-income communities, communities of color, people with disabilities, and other marginalized groups. These communities also face the greatest barriers to accessing jobs, goods, services, recreation, and mobility options within the Corridor, and are inordinately impacted by air quality issues stemming from transportation. Within the I-405 Corridor, communities with the highest exposure to environmental burdens (per CalEnviroScreen) are located throughout portions of the SFV, Inglewood, and Long Beach. There is significant overlap between areas that are Metro-defined EFCs and California Communities Environmental Health Screening Tool (CalEnviroScreen) Disadvantaged Communities (See Figure 40)

DISADVANTAGED COMMUNITIES (SB 535)

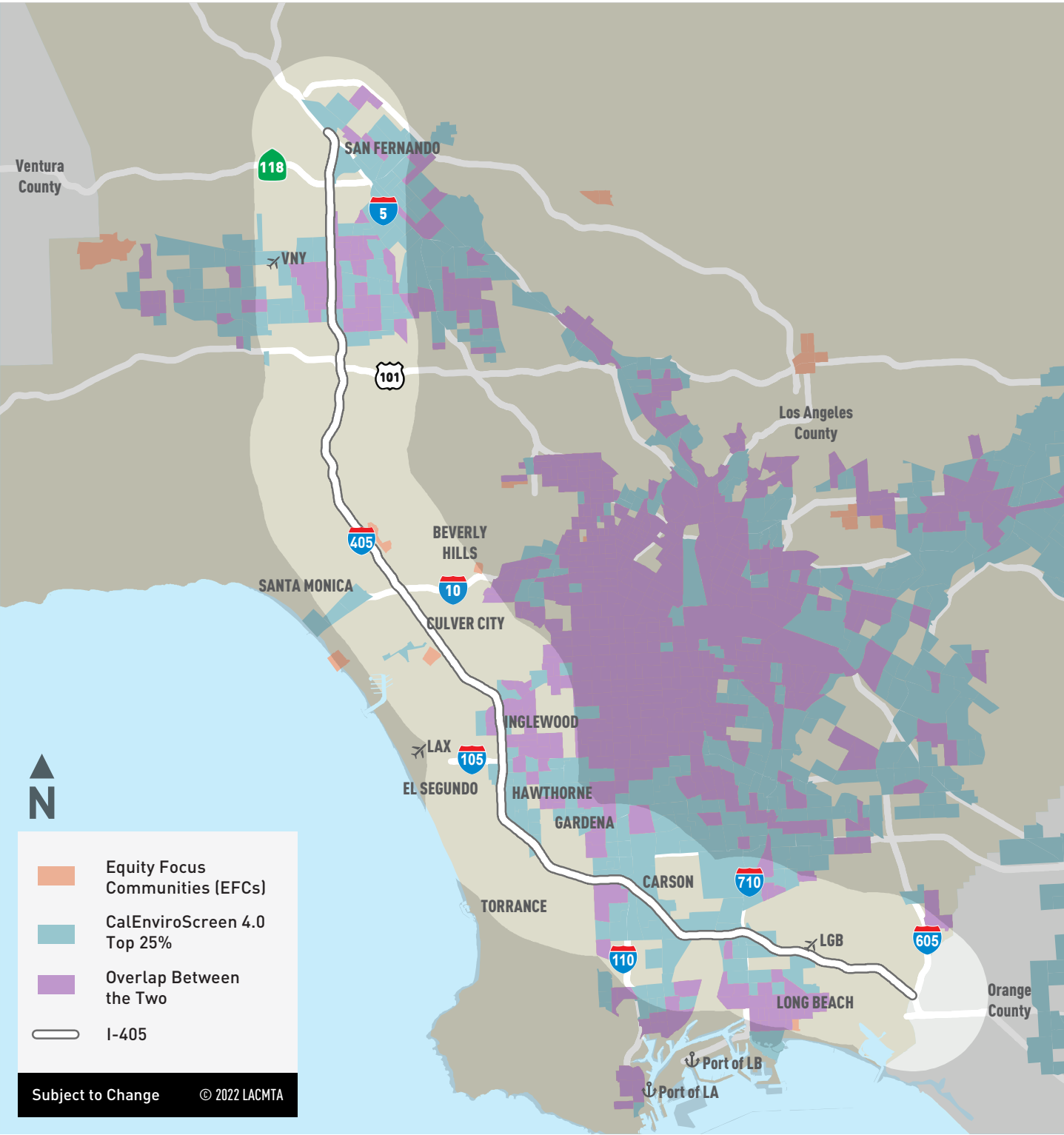
Pursuant to SB 535, the California Environmental Protection Agency (CalEPA) established criteria and a threshold for identifying disadvantaged communities throughout California. The California Communities Environmental Health Screening Tool (CalEnviroScreen) was created to layer geographic, socioeconomic, public health, and environmental hazard factors in order to consider both the population characteristics and pollution burdens at the census tract level in order to determine which communities experienced the most severe impacts statewide.. Those census tracts that comprise the top 25 percent most impacted in the state in terms of these criteria meet the state’s Disadvantaged Communities (DAC) definition. Per CalEPA, these communities may include, but are not limited to:

Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation.

Areas with concentrations of people that are of low-income, high unemployment, low levels of home ownership, high rent burden, sensitive populations, or low levels of educational attainment.

In recognition of the inequities that exist on a countywide level, Metro adopted the Equity Platform and identified EFCs to help direct resources to those with the most “need”, to correct for past injustices, and to prevent future disparities.

Figure 40
METRO EQUITY FOCUS COMMUNITIES AND CALENVIROSCREEN COMMUNITIES



Source: Metro EFCs; CalEnviroScreen 4.0

Growing Demand will Exacerbate these Issues

Without bold and transformative action, these challenges will continue to worsen. Increased VMT, congestion, and delay will force people to spend even more time in their vehicles, taking away time spent with family and friends, working and recreating, and crippling regional economic growth. Poor air quality, rising collisions, and infrastructure asset degradation will continue to impact health and quality of life, and those who already face the greatest burdens will be hit the hardest.

To understand how traffic conditions may worsen if we do nothing, Metro’s Travel Demand Model was used to assess future key performance indicators. These include VMT, vehicle hours traveled (VHT), vehicle hours of delay (VHD), and HOV lane usage. The 2047 LRTP Scenario shown in Figure 37 includes transportation projects defined in Metro’s LRTP and SCAG’s Regional Transportation Plan (RTP). The 2047

LRTP Scenario is the most aggressive of the four scenarios evaluated during the LRTP development process. It includes the Measure M funded capital projects, along with several bold policy initiatives, including a VMT fee, free transit, and faster bus speeds. However, even with the number of investments planned in the Corridor, **the performance of the system is expected to degrade.**

DAILY VEHICLE MILES TRAVELED

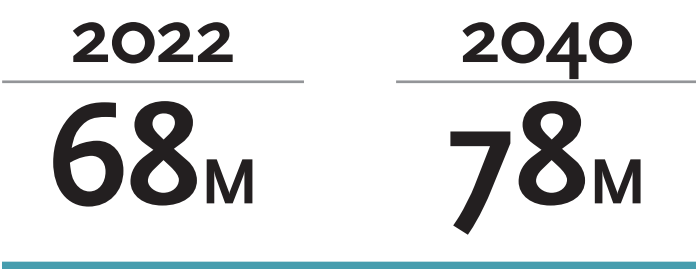


Figure 41
Future Performance on the I-405 Corridor

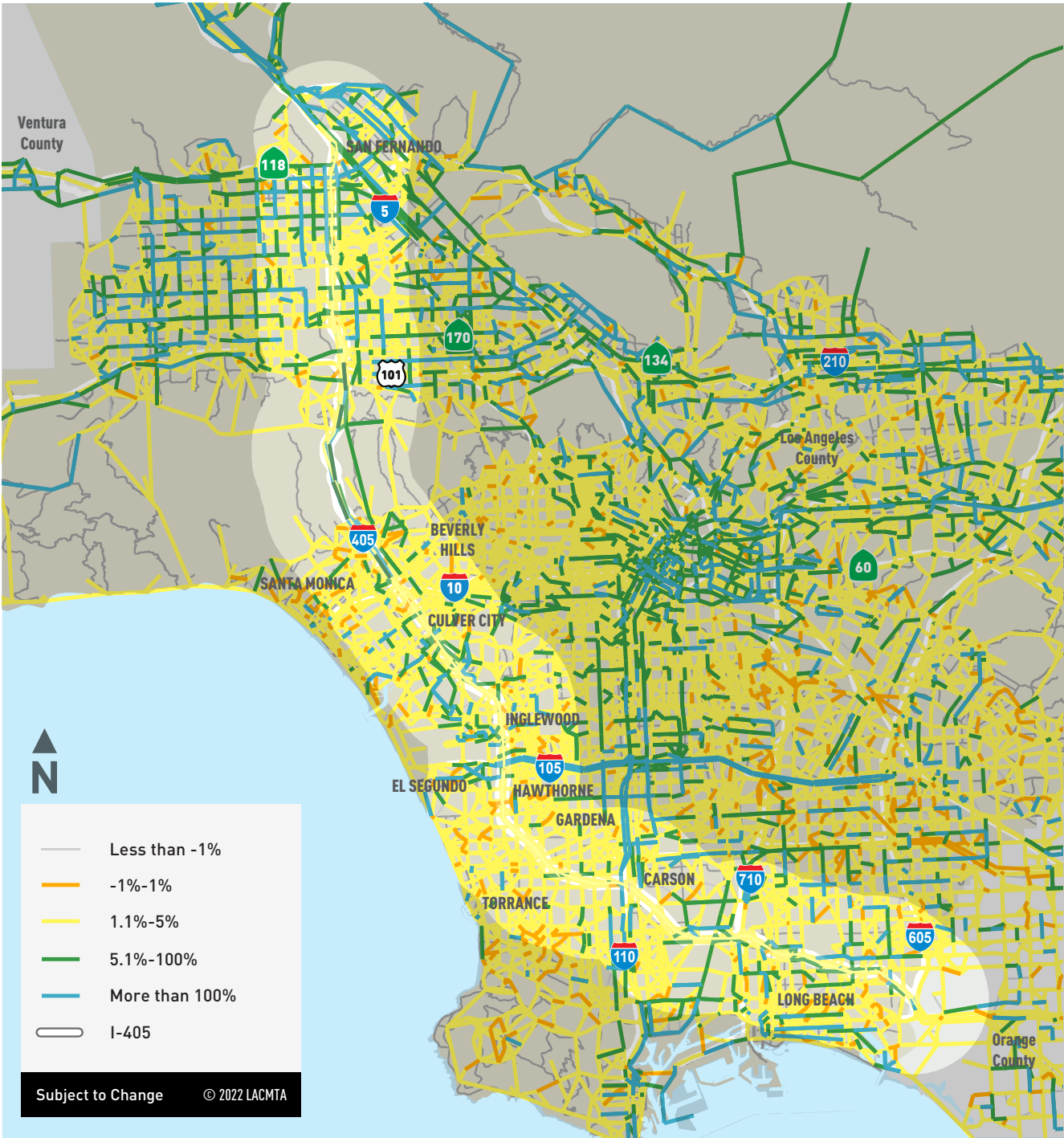
| MEASURE | LOCATION | 2017 | 2047 LRTP | TOTAL ADDED | % CHANGE | ANNUAL % CHANGE |
|--|------------------|-------|-----------|-------------|----------|-----------------|
| DAILY VMT (TOTAL OF AM, PM, MIDDAY, AND OVERNIGHT FOR AUTO AND TRUCK) | I-405 Study Area | 68M | 78M | 9.8M | 14.5% | 0.45% |
| | LA County | 235M | 281M | 46.7M | 19.9% | 0.61% |
| DAILY VMT PER CAPITA (TOTAL OF AM, PM, MIDDAY, AND OVERNIGHT FOR AUTO AND TRUCK) | I-405 Study Area | 25.58 | 26.18 | 0.61 | 2.4% | 0.08% |
| | LA County | 23.66 | 24.45 | 0.79 | 3.3% | 0.11% |
| DAILY VHT UNDER CONGESTION CONDITIONS (TOTAL OF AM, PM, MIDDAY, AND OVERNIGHT) | I-405 Study Area | 2.5M | 3.1M | 625K | 25.3% | 0.76% |
| | LA County | 8M | 10.7M | 2.6M | 32.9% | 0.95% |
| DAILY VHD (TOTAL OF AM, PM, MIDDAY, AND OVERNIGHT) | I-405 Study Area | 732K | 1.1M | 342K | 46.7% | 1.28% |
| HOV LANE USAGE (TOTAL OF VMT FOR AM, PM, MIDDAY, AND OVERNIGHT) | I-405 Study Area | 3.9% | 4.6% | 0.7% | 19.9% | 0.55% |
| | LA County | 3.3% | 3.8% | 0.5% | 15.2% | 0.47% |

Source: Metro Travel Demand Model

The number of miles that people are traveling, both on the I-405 Corridor and in LA County, is expected to increase. In 2017, VMT exceeded 68 million miles in the Corridor, and is expected to increase by 14.7 percent to nearly 78 million by 2047.⁷⁹ LA County VMT is expected to increase at a slightly faster rate of 0.61 percent per year due to additional population and job growth occurring outside the study area.

VMT growth is particularly pronounced in the SFV, along the I-105, and in areas north of the I-405 near the I-110 (Figure 42). The average person living in the I-405 Corridor drives 25.6 miles per day. By 2047, this will grow to 26.3 miles—an increase of 2.4 percent. This is slightly less than the average daily miles driven across LA County as a whole.

Figure 42
GROWTH IN VEHICLE MILES TRAVELED



Source: Metro Travel Demand Model.

Congestion will outpace the increase in VMT. In the I-405 Corridor, VHT under congested conditions is expected to grow from nearly 2.5 million hours in 2017 to just over 3 million hours in 2047—an increase of 25 percent. This equates to an annual increase of 0.76 percent per year, compared to a 0.45 percent increase in VMT per year. This is because delay increases exponentially under highly congested conditions; and adding more trips, more VMT, and worsening congestion will add even more vehicle and person delay to the Corridor.

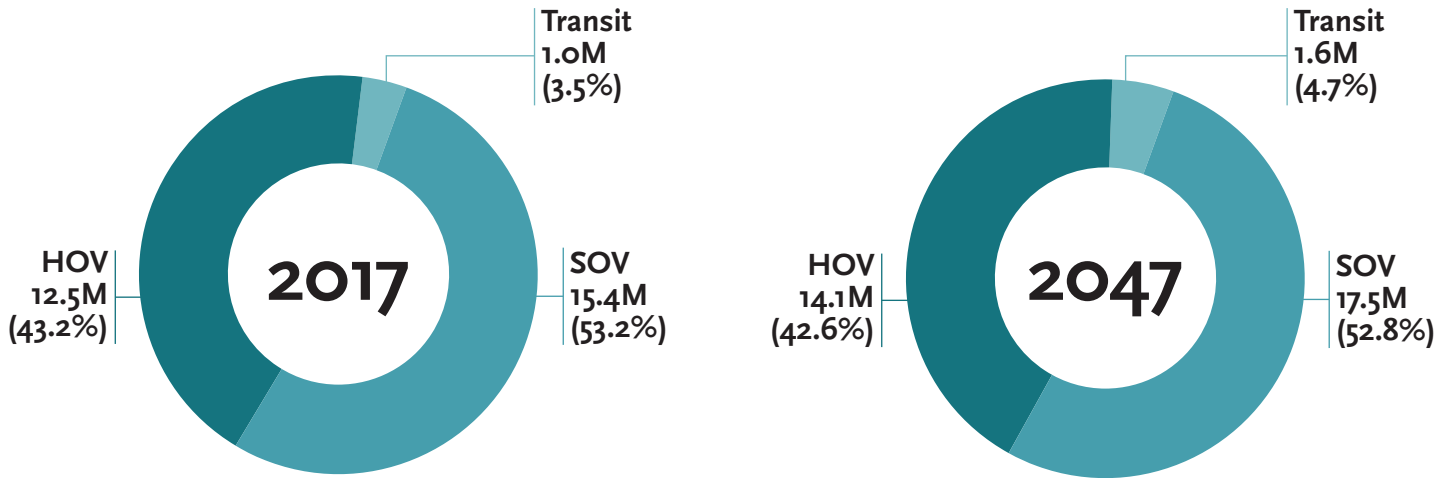
Hours of delay are expected to increase. Travelers on the I-405 Corridor experienced more than 730,000 VHT in 2017, with that number increasing to more than 1 million hours of delay in 2047. The projected increase in delay equates to an increase of more than 1 percent each year, over the next 30 years.

HOV Lane performance will continue to degrade. As discussed, as of 2017 all segments of HOV lanes in both directions on the I-405 were classified as “extremely degraded,” which lessens the incentive for users to shift to carpooling, transit, or other modes that can utilize the HOV lanes.⁸⁰ Preliminary traffic and revenue forecasts for 2035 indicate that degradation levels will worsen if the current HOV

2+ occupancy rate remains. Based on this forecast, a majority of the I-405 Corridor would experience degradation anywhere between 10 to 75 percent of PM peak periods, with areas around the Sepulveda Pass experiencing degradation more than 75 percent of the time.⁸¹ Adding ExpressLanes could be expected to mitigate the underperformance of existing lanes. Without management or further restrictions on usage, performance of the HOV system will continue to degrade and opportunities to move more people in carpools, vanpools, and buses through this facility will be lost.

Mode split will shift minimally. Roughly 95 percent of trips are expected to be made by auto in 2047, with the majority—53 percent—made by single-occupant vehicles (SOV) countywide. More than 15 million trips were made in 2017 by SOV; these are expected to increase to more than 17 million trips in 2047—an increase of 13 percent. Transit mode share is expected to increase by 1.2 percent, from 1 million trips in 2016 to 1.2 million trips in 2047. HOV trips are anticipated to increase at roughly the same rate as SOV trips—13 percent—but will decrease in mode share by about 0.5 percent (Figure 43). **This results from the assumption that many HOV trips will shift to transit between 2017 and 2047.**

Figure 43
Countywide Shift in Mode Split (2017 – 2047)



Source: Metro Travel Demand Model
Note: Estimated transit mode share differs slightly between Metro’s Travel Demand Model and the LOCUS Data due to differing methodologies.

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RECOMMENDATIONS

We Have an Opportunity to Address these Challenges

Addressing growing congestion and related impacts on safety, climate change, human and environmental health, and infrastructure condition while simultaneously addressing disparities in access and social equity is a challenge and a priority for Metro and its regional and statewide partners. In the coming decade, the I-405 Corridor and the surrounding communities will see a transformed transportation landscape, as major capital projects and large-scale policy initiatives take form. These include more competitive transit and shared mobility options; more connected and better protected active transportation infrastructure; better management of existing roadways, and better integration to serve the diverse travel needs across the Corridor.

Key Existing Projects

Projects that hold significant potential for improving multimodal mobility across the I-405 Corridor Include:

- > **I-405 Tier 1 ExpressLanes.** Metro’s 2017 Countywide ExpressLanes Strategic Plan Final Report identified the I-405 between the Orange County line and the US-101 as a Tier 1 ExpressLanes project corridor with Measure M funding identified for the US 101 to I-10 segment. The I-405 segment from US-101 to I-5 is a Tier 2 priority expected to be implemented in 15 years. ExpressLanes are expected to produce high mobility benefits and generate financial benefits that will support local investments in non-auto modes.⁸²
- > **Sepulveda Transit Corridor Project.** This project will connect the SFV and Westside with a high-capacity, high-speed transit line through the Sepulveda Pass. The project aims to attract a portion of the 400,000 people who travel through this area every day to use transit to commute or reach their destinations along and beyond the Corridor.
- > **Metro Rail Projects.** The Crenshaw/LAX Transit Corridor Project (K Line), nearing operation, connects the E Line (Expo) to the C Line (Green) with a station at the LAX that ties into the APM. The Purple (D Line) Extension along Wilshire Boulevard is also under construction, with Section 1 from Western Avenue to La Cienega Boulevard scheduled to

open in 2024. The East San Fernando Valley Transit Corridor Project, scheduled to open in 2028, is a light-rail system that will extend north from the Van Nuys Metro G Line (Orange) station to the Sylmar/San Fernando Metrolink Station.

- > **Metro C Line (Green) Extension.** This project, which is one of Metro’s four pillar projects, will connect this line to the proposed regional transit center in Torrance.
- > **Metro G Line BRT Improvements.** The G Line (Orange) was extended from Canoga Park to Chatsworth; in 2012 and is currently undergoing further enhancements to improve operating speeds, capacity, and safety by adding grade separations on major streets, closing minor streets, and providing better signal priority technology.
- > **NextGen Bus Plan.** Metro is redesigning its bus network to be faster, more frequent, and reliable, as well as integrated with other LA County transit services. The first significant system update in 25 years, Metro’s NextGen Bus Plan aims to reverse the recent declining ridership.
- > **LA River Bike Path.** The LA River Bike Path is an 8-mile bicycle and pedestrian path gap closure project between Elysian Valley and Maywood through Downtown LA. Another section in the SFV will connect the SFV to the existing path near Griffith Park. This 13-mile portion will help to complete a 52-mile continuous active transportation corridor that spans from Long Beach to Warner Center.
- > **First-/Last-Mile.** Metro is expanding first-/last-mile connectivity by collaborating with local and regional partners to improve access to transit by removing barriers to transit stations or destinations. Many projects have dedicated first-/last-mile planning ongoing, including the G Line (Orange) Sepulveda Station First-/Last-Mile Plan, the D Line (Purple) First-/Last-Mile Plan, and the East San Fernando Valley Transit Corridor Project First-/Last-Mile Plan.
- > **Measure M Multi-Year Subregional Programs and Local Return Programs.** Included are active transportation improvements, highway and roadway improvements and maintenance, transit improvements, technology, and transportation demand management solutions delivered with locally-controlled funds.
- > **I-405 Operational and Safety Improvements.** In cooperation with Caltrans District 7 and the South Bay Cities COG, Metro has ramp improvements underway between Western Avenue and Crenshaw Boulevard, as well as proposed auxiliary lanes in both the northbound and southbound directions of the I-405 from Artesia Boulevard to El Segundo Boulevard, and the I-110 to Wilmington Avenue. The planned auxiliary lane projects will bring improved peak period travel time

reliability and safety; will reduce person hours of travel time and VHD; and improve accessibility to major activity centers, such as SoFi Stadium, Dignity Health Sports Park, and transit terminals in Redondo Beach and Torrance.

Emerging Opportunities

At the same time, there are many emerging opportunities related to technology, sustainability, equity, and more. These have vast potential to improve the Corridor beyond what is already planned. These types of innovative solutions will play an important role in shaping the I-405 Corridor of tomorrow, and ensuring that people have a menu of options in addition to driving solo. These core opportunities include:

- > **Data and information technology.** As of 2019, 81 percent of Americans own a smartphone, with more than 98 percent of those smartphone owners having access to 4G Long-term Evolution (LTE) service.⁸³ Mobile devices are becoming increasingly vital to everyday travel needs, providing users with online routing, booking, payment options, and real-time traveler information. Smartphones enable access to shared mobility services—car-share, bike-share, scooter-share, and micro-transit. These services, along with other technology solutions such as broadband, are freeing many from the burden of car dependency. At the same time, these devices collect massive amounts of data, and, in turn, that data is transforming how transportation systems and services are planned and delivered.

CASE STUDY: SANTA MONICA ZERO-EMISSION DELIVERY ZONE

Through this effort, one-square mile in the city’s downtown, Main Street and Ocean Park neighborhoods will grant priority curb access for zero emission delivery vehicles in up to 20 loading priority curb areas. The concept was developed by Transportation Electrification Partnership (TEP), a coalition of local government officials, utilities, state regulators, automakers, industry leaders, labor, and startups. The TEP is working to accelerate transportation electrification and zero-emissions goods movement in advance of the 2028 Olympic and Paralympic Games.

- > **Zero-emission vehicles (ZEV).** California has mandated that all new vehicle sales be electric by 2035. Growth in full Battery Electric Vehicle sales and Plug-in Hybrid Electric Vehicles sales have risen by approximately 72 percent, on an annual average basis, from 2010 to 2020.⁸⁴ Electric truck and transit sales will also increase in the coming years using both fuel cell and battery technology. As electric vehicles become more commonplace across the LA region, the need for charging infrastructure will also increase. While the positive impact of ZEVs on emissions reduction is clear, the impact on traffic congestion is not. If non-auto mobility options and transportation demand management strategies are not adopted, traffic congestion will continue to rise, notwithstanding ZEV adoption.
- > **Sustainable freight technologies.** Automation and electrification of freight vehicles hold promise for reducing the negative impacts of freight, while supporting more safe and efficient movement of goods. While the I-405 Corridor is not a heavy freight corridor, goods movement typically has an outsized impact on emissions, congestion, and VMT; and the continued growth in e-commerce (which was amplified during COVID-19) could create additional demands for local deliveries in the study area that will be made by vehicles well-suited for ZEV conversion or replacement.
- > **Connected and Autonomous Vehicles (CAV).** CAVs could offer important safety and network performance benefits, such as congestion relief, optimization of roadway capacity, less demand for parking, and improved safety by eliminating human errors in driving. However, they could also make auto travel more convenient, enabling people to live further from their destinations and adding to traffic congestion. State policy guidance has been issued to support development and deployment of shared, electric CAVs that yield these benefits and mitigate the potential negative impacts.
- > **Integrated Corridor Management (ICM).** ICM brings together all the local agencies and stakeholders serving a corridor with a goal of minimizing the impact of traffic incidents, making travel safer and more efficient. ICM provides a unified vision for cooperation, innovation, and integration to use better technology and strategies that will improve travel throughout the whole Corridor.








The following Section discusses the full suite of projects and efforts currently being planned by Metro and partner agencies, and how those projects and efforts were evaluated.

We Evaluated Improvements to the I-405 Corridor

With the help of the I-405 Advisory Committee, local COGs along the Corridor, Caltrans, transit agencies, municipalities, CBOs, and other Corridor stakeholders, nearly 450 projects were identified that help address the Corridor’s most pressing challenges and achieve our collective goals (see “We have a vision for the I-405 Corridor”). An evaluation framework was developed to help assess projects against a common set of criteria and identify top performers that not only achieve multiple CMCP goals, but are ready or near ready for implementation. Per CTC’s CMCP Guidelines, an evaluation framework and project evaluation are a required element of a CMCP. The evaluation process is shown below, and each step is described in more detail in the following sections.

Develop Vision & Goals
“We have a vision for the I-405 Corridor” summarizes the process and the numerous voices that went into developing the corridor vision and distilling the corridor goals outlined in the plan. The five project goals include improve mobility and accessibility, advance equity, support economic vitality, achieve sustainability, and enhance safety. These goals were used to guide the development of a set of performance criteria used to assess potential CMCP projects. Performance criteria (shown below) were informed by the CTC’s CMCP Guidelines, the SCCP Program Guidelines (which includes required performance criteria for SCCP applications), and Metro’s 2020 LRTP, as well as input gathered through Advisory Committee meetings, interviews, and focus groups with Corridor stakeholders.

Performance Goals & Criteria

| CMCP Goal | Performance Metric | CTC | SCCP | Metro LRTP | Stakeholder Input |
|---|--|-----|------|------------|-------------------|
|  Improve mobility & accessibility | Minimizes vehicular miles traveled (VMT) | ✓ | ✓ | ✓ | ✓ |
| | Reduces person hours of delay | ✓ | ✓ | ✓ | ✓ |
| | Supports transportation-efficient land use principles | ✓ | ✓ | ✓ | ✓ |
| | Increases person throughput while reducing VMT | ✓ | ✓ | ✓ | ✓ |
| | Reduces travel time delay, and improve reliability | ✓ | ✓ | ✓ | ✓ |
| | Encourages use of non-auto modes, particularly for short trips | ✓ | ✓ | | ✓ |
| | Improves arterials and routes paralleling I-405 | | | | ✓ |
| | Encourages telework and other trip reduction strategies | | | | ✓ |
|  Advance equity | Closes critical infrastructure gaps in the corridor and enhances multimodal connectivity | ✓ | ✓ | ✓ | ✓ |
| | Expands safe and convenient mobility options for EFC trips | | ✓ | ✓ | ✓ |
| | Improves health and air quality in EFCs and/or CalEnviroScreen Disadvantaged Communities | ✓ | ✓ | ✓ | ✓ |
|  Support economic vitality | Reduces household transportation costs | | ✓ | ✓ | |
| | Creates well-paying jobs and supports ladders of opportunity | ✓ | ✓ | ✓ | ✓ |
| | Expands access to jobs and major destinations | ✓ | ✓ | ✓ | ✓ |
| | Facilitates deliveries to local residents and businesses | | | | ✓ |
| | Provides improvements along key goods movement corridors | ✓ | | | |
|  Achieve sustainability | Integrates elements of sustainable, low-carbon goods movement | | | | ✓ |
| | Generates local, regional, and/or statewide economic benefits | | | | ✓ |
| | Reduces GHG emissions and criteria air pollutants | ✓ | ✓ | ✓ | |
| | Encourages a shift to low-carbon modes of transportation | ✓ | ✓ | ✓ | ✓ |
|  Increase safety | Addresses heat island effect, sea level rise, extreme weather events, and other climate change-related events | ✓ | | | ✓ |
| | Protects natural habitats and ecosystems | | | | ✓ |
| | Addresses collision hotspots, particularly for people biking, walking, and rolling | ✓ | ✓ | ✓ | |
| | Includes safety components such as crosswalks, Leading Pedestrian Intervals (LPIs), refuge islands, lighting, etc. | ✓ | | ✓ | |
| | Includes educational elements that encourage safe travel behavior for all users | | | | ✓ |
| | Includes basic repairs, maintenance, and upkeep of infrastructure | | | ✓ | |

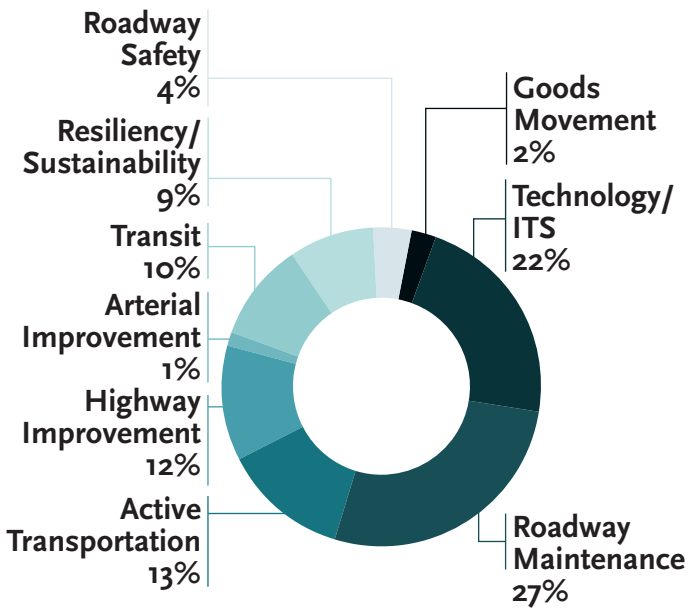
Compile & Categorize Projects

As mentioned above, nearly 450 projects were evaluated as part of the CMCP development process. These projects were sourced from Metro’s 2020 LRTP, Metro Measures R and M, Metro’s Strategic Project List (SPL), Metro’s 2028 Mobility Concept Plan (MCP), SCAG’s RTP/SCS, Caltrans Multimodal Operations non-State Highway Operations and Protection Program Transportation Equity Report (MONSTER), and Caltrans’ SHOPP. These projects were reviewed by the I-405 CMCP Advisory Committee, COGs, Caltrans, and multiple other Corridor stakeholders; who were also solicited to provide input on other strategies, ideas, and concepts for improving the I-405 Corridor that may not be captured in existing plans and programs.

A wide range of project types was evaluated, from highway and arterials improvements, to resiliency projects, to transit, active transportation, and goods movement projects (Figure 44). The projects included vary in scale, as some are specific location improvements, while others are system- or network-wide programs of improvements. While projects were separated by type to support the evaluation process, the CMCP strategies are multimodal in nature, and span multiple project types to leverage complementary benefits.

Figure 44

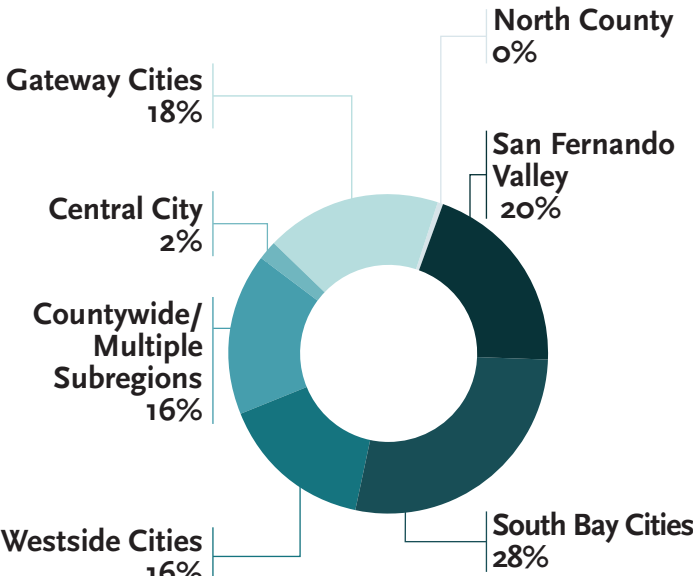
I-405 CMCP Project Types



Projects were relatively evenly distributed across the Corridor, with 69 projects that are countywide or span multiple I-405 study area regions. Figure 45 shows the geographic project distribution. While Central City and North County are not technically within the 3-mile study area boundary, select projects in these regions—such as the Antelope Valley Metrolink project—were included since they provide key operational continuities and facilitate travel between the many EFCs and other communities traveling to and from the I-405 Corridor.

Figure 45

I-405 CMCP Projects by Region



Evaluate Projects

To evaluate this wide array of projects, two parallel assessments were conducted. The first—a “shovel-worthiness” assessment—focuses on each project’s ability to support the goals and performance criteria. The second—a “shovel-readiness” assessment—focuses on how ready projects are for implementation, which is determined by inclusion in regional plans, level of stakeholder support, environmental clearance, timeframe, and funding match. These two assessments were combined to group projects into a set of tiers for the purpose of identifying top performers that should be included as core CMCP strategies, and that are strong grant application candidates. Each of these processes is discussed below, and more detail is provided in the Evaluation Framework Appendix D.

Project Evaluation

Shovel-Worthiness + Shovel-Readiness

What is the contribution to our shared goals?

Results of the project benefit analysis

Is the project ready for implementation?

In RTP/SCS?
Funded/match available?
Environmentally cleared?
Stakeholder supported?

Shovel-Worthiness

The shovel-worthiness assessment was conducted qualitatively, but leveraged quantitative data from existing plans, studies, and reports (including the Baseline and Future Conditions Assessments) to determine the level of benefit to each CMCP goal. The figure below shows the rating scale used to conduct the evaluation. This approach ensures that project performance is evaluated holistically, rather than ranking and scoring projects in a way that prioritizes certain goals over others. Project scoring ranges from significantly benefiting a goal area to those with disbenefit, such as a widening project that induces demand and increases VMT.

Project Rating Scale

| Rating | Does the project... | Examples |
|--------|--|--|
| | Significantly benefit the goal? | A large-scale transit investment would score Significant in Mobility & Accessibility, and a wide-scale transit electrification project would score Significant in Achieve Sustainability |
| | Somewhat benefit the goal? | A municipal intersection improvement program or targeted first-last mile project would receive a Somewhat score in Mobility & Accessibility |
| | Minimally benefit the goal? | A transit agency on-time performance improvement program would receive a Minimal score for Safety |
| | Have a neutral impact? | Projects that have no cumulative positive or negative impact on a specific goal. A wide-scale transit electrification project would score Neutral in Safety |
| | Have a negative impact or require mitigation? | Projects that could negatively impact a goal and would require mitigation. A project that increases truck traffic through an EFC would score Negative for Lead with Equity. |

Shovel-Readiness

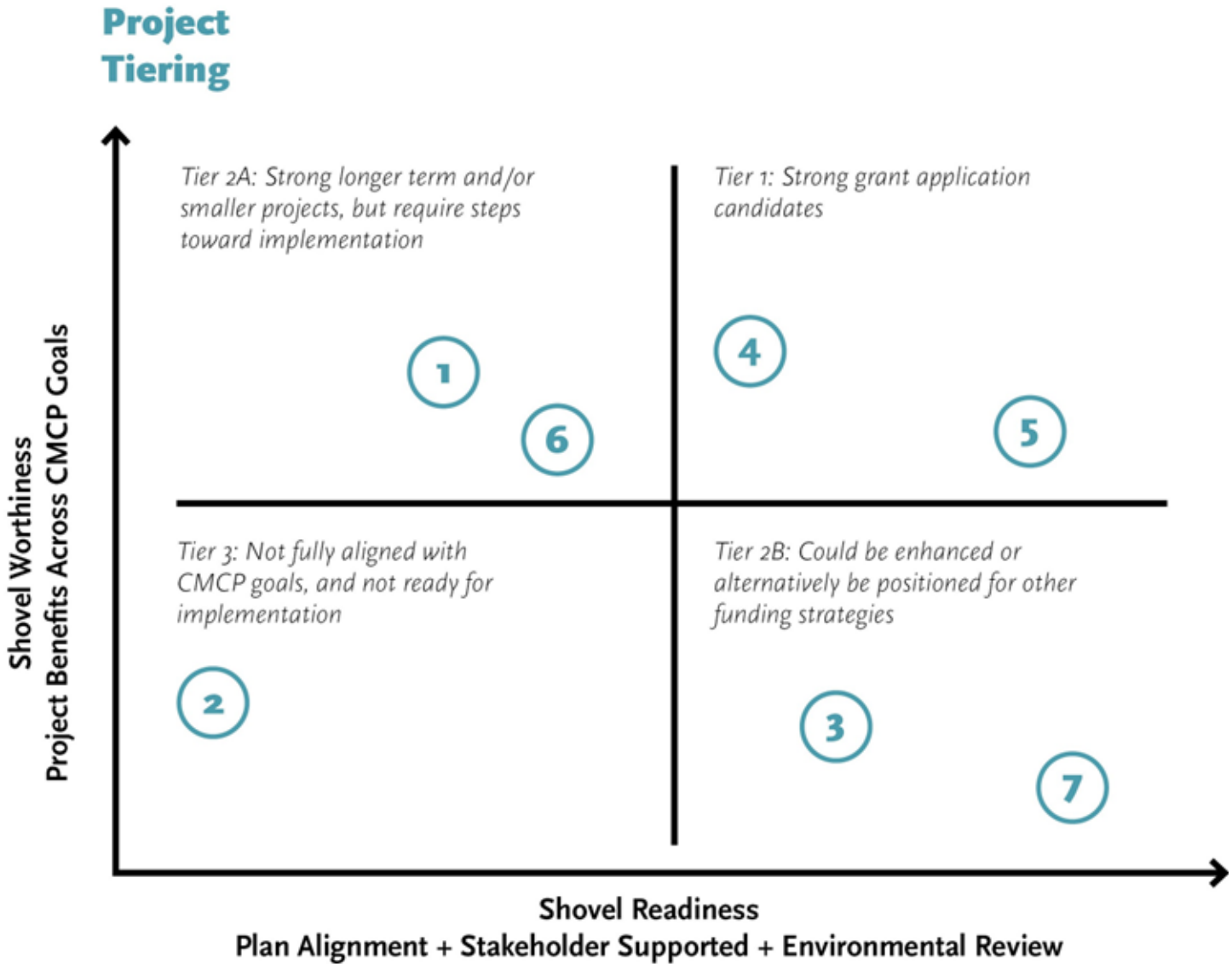
The shovel-readiness assessment is a critical step in identifying projects that are ready for implementation in the near-term, and that will be competitive at leveraging funding from state and federal grant programs. However, shovel-readiness is not a determining factor of top-performing projects in and of itself. There may be projects (such as roadway widening) that are ready for implementation, but that are not aligned with CMCP goals. The purpose of this assessment is to distinguish projects that yield significant benefits and are ready for implementation, including projects that hold significant promise, but need more time to develop. Projects that are generally considered more shovel-ready include those that:

- > Are included in the RTP/SCS;
- > Have begun or completed the environmental review process;

- > Have an approved Project Report (if it is a Caltrans project);
- > Are on a short- or mid-time frame (< 15 years to complete);
- > Have allocated match funding (this is not a requirement for SCCP and many other grant programs, but is desirable); and/or
- > Are capital projects, as SCCP will only fund the construction component of a capital project.

Project Tiering

The outcomes of the shovel-worthiness and shovel-readiness assessment were used to sort projects into a set of four tiers. Certain projects were not assigned a tier, and instead were scored “Not applicable” or “NA,” as they were deemed ineligible based on their current project definition. Please see Appendix E for the project list with project tiering.



- > **Tier 1:** These are projects that score highest in both shovel-worthy and shovel-ready evaluations, demonstrating significant benefits across multiple CMCP goals and readiness for implementation. This tier makes up the list of projects that are strong candidates for potential SCCP funding in the near-term, whether pursued by Metro or other agencies.
- > **Tier 2A:** These projects have significant benefits, but are not quite ready for implementation. They may require additional planning, environmental clearance, match funding, or further stakeholder review and engagement. Some of these projects may be good candidates for planning or pre-construction grants.
- > **Tier 2B:** These consist of projects that might need mitigation or modification to better align with CMCP goals, but are close to implementation. These projects could be those that keenly address a single objective (i.e., safety), but may not sufficiently address the other criteria. Such projects could be considered for other funding opportunities, where the criteria are more focused on specific objectives. These projects could be considered for SCCP, but only if they are able to be augmented or packaged to provide a more complete suite of benefits for SCCP consideration.
- > **Tier 3:** These projects do not fully support a range of CMCP goals nor are they ready for implementation. In some cases, these projects may only be supportive of a single objective. In other cases, these projects may not be fully defined yet or are extremely long-term.
- > **NA:** Highway general purpose lane expansion or widening projects were not tiered and instead assigned “Not Applicable” or “NA” as these projects are not eligible for SCCP funding.

Although the tiering was skewed specifically for the CMCP goals, SCCP criteria, and readiness factors, the tiering process also helps Metro and our partners identify ways to make existing projects more competitive, whether by combining with complementary projects, adding or removing elements, or simply moving through the environmental or stakeholder review process. In addition, while the tiers assess projects based on information available to-date, projects are constantly evolving, becoming more defined in scope, benefits, schedule, and cost. Metro will revisit the project list to update it with the latest project information on a regular basis, and in doing so, new projects could be included; existing projects could shift tiers; and other projects may be removed if a project has advanced into implementation, been completed, or is no longer being pursued by the implementing agency. Furthermore, while these tiers help inform what projects might be competitive and timely for SCCP, a more compre-

hensive approach is needed to solve the Corridor’s numerous challenges. SCCP is one tool to deliver specific, near-term transportation capital projects. However, a robust set of strategies will be necessary to support the multiple objectives of this CMCP.

Our Path Forward

Delivering Together

As the regional transportation planning agency and the predominant public transit operator for LA County, Metro plays an important role in providing multimodal solutions. Metro is at work on several Measures R and M-funded improvements that will significantly transform the multimodal network on and around the I-405—including the D Line (Purple) Extension, Crenshaw/LAX Transit Corridor, Airport Metro Connector/ 96th Street Station, Metro G (Orange) Line Improvements, C Line (Green) Extension to Torrance, I-405 ExpressLanes, Sepulveda Transit Corridor, and the LA River Bike Path, as well as the I-405 Highway Operational and Safety Improvements. Metro is also leading LA County through the development and implementation of its First-/Last-Mile, NextGen Bus, and Active Transportation Strategic Plans (ATSP). These efforts will help re-envision the transportation landscape of the Corridor—with a one-seat subway ride from Westwood to Downtown; a high-capacity transit connection between the SFV to the Westside; a light-rail connection between the E (Expo) Line to LAX that connects to the South Bay; a world-class bus system operating on ZEVs; a safe and seamless recreational bike path along the historic LA River, and quality transportation connections throughout the system.

Metro cannot do it alone. Delivering a more multimodal I-405 requires that all partners with a role in our shared-use transportation system— local cities and communities, transit and transportation operators, and regional and state agencies—work hand-in-hand. We will need all of our partners’ help to remake our roadways into more complete streets that can safely and effectively serve bikes, pedestrians, and transit, as well as personal and delivery vehicles. With coordination, we can offer a quality alternative to driving on the I-405 by making our transit system more efficient, reliable, and seamless across the County and throughout the Southern California region. Through collaboration we can create a safer, more sustainable, and more equitable highway system that effectively moves people and goods with fewer impacts. There is much work to be done now and into the future. We must **move forward together, in partnership.**

Our Roadmap

Solving the Corridor’s mobility challenges and staying on track to achieving our goals for greater accessibility, equity, economic vitality, sustainability, and safety requires a focused implementation approach. No single project or mode can do it alone. Our path to actualizing these goals includes near-, mid-, and long-term solutions organized into improvement strategies that integrate all modes of transportation across the I-405 Corridor.



What is a strategy? A strategy is a high-level approach to achieving one or more CMCP goals, and addressing our most pressing challenges. These strategies combine capital projects and bold policy initiatives that work together to address the urgent mobility needs and challenges the Corridor faces while simultaneously providing a path for achieving the CMCP goals. The actions outlined in the strategy are proposed for LA County to pursue. Some strategies Metro will lead, while others would be led by Corridor partners with Metro support.

Nine improvement strategies emerged during the CMCP’s development as a result of data analysis, stakeholder input, and goal-centering. Collectively, these bold and transformative strategies represent the path to a more accessible, sustainable, safe, equitable, and economically prosperous I-405 Corridor for all.

The figure below summarizes the nine proposed improvement strategies and how they correspond with the goals outlined in the CMCP. Each strategy is cross-cutting, meaning that it addresses multiple challenges and supports multiple goals. The following sections provide context and specific details on the types of investments and policy actions needed to support each strategy.

Strategies & Goals

- 1 Manage demand on the I-405 freeway and surrounding arterials
- 2 Connect communities along the corridor
- 3 Invest in high-quality transit options
- 4 Expand the active transportation network
- 5 Reduce racial and economic disparities in transportation benefits and burdens
- 6 Decarbonize mobility options
- 7 Facilitate efficient and sustainable goods movement and local deliveries
- 8 Leverage emerging technologies
- 9 Provide a safe, resilient, and well-maintained multimodal transportation system

|  Improve mobility & accessibility |  Advance equity |  Support economic vitality |  Achieve sustainability |  Increase safety |
|--|--|---|--|---|
| ✓ | | ✓ | | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | | ✓ | ✓ |
| ✓ | ✓ | | | ✓ |
| | ✓ | | ✓ | |
| ✓ | | ✓ | ✓ | |
| ✓ | | ✓ | ✓ | ✓ |
| ✓ | ✓ | | ✓ | ✓ |

Manage Demand on the I-405 Freeway and Surrounding Arterials

The I-405 freeway is one of the most congested in the country. Traffic is expected to increase through 2047, significantly impacting people’s quality of life and stymieing regional economic growth. In the survey conducted for the CMCP, forty-eight percent of respondents reported “heavy traffic on freeways” as being the most important transportation issue facing their communities. Using only the primary tool of the past – simply adding capacity by building more general purpose lanes – will neither solve the many mobility problems within the Corridor nor will it prove to be feasible in the long run, especially considering that widening will typically lead to residents and businesses being displaced from impacted communities adjacent to the nearly built-out I-405 right-of-way. **Creating more throughput within our existing highway facilities without expanding into neighboring communities is a challenge that requires us to manage our highway and arterial network within its existing footprint as part of a multimodal and equitable approach to improving mobility in the Corridor within the framework of Metro’s Multimodal Highway Investment Objectives.**

Metro and its partners have many actions underway to manage current and future vehicular demand on the I-405 and surrounding arterials within the existing right-of-way, including I-405 ExpressLanes, auxiliary lane improvements, ramp metering, signal synchronization, and other ITS improvements. These are intended to move more people in fewer vehicles within the existing freeway footprint. Further, optimizing the existing highway and roadways creates opportunities to move the transit services that operate on those facilities more efficiently. This strategy focuses on these improvements; and subsequent strategies focus on transit, active transportation, and other non-auto investments that are also critical to managing future demand.

| STRATEGY 1—MANAGE THE I-405 AND CORRIDOR ARTERIALS | | TIMELINE |
|--|--|----------|
| 1.7 | Build out HOV/Transit bypass lanes at intersections and ramps along the entirety of the I-405 freeway. | Mid |
| 1.8 | Reinvest HOT/ExpressLanes revenues in complementary high-quality transit services identified in Strategy 2. | Mid |
| 1.9 | Integrate the ExpressLanes and HOV networks through direct connectors between the I-405 and its bisecting freeways to make the ExpressLanes and HOV networks more seamless. | Mid |
| 1.10 | Build out I-405 ExpressLanes along the entirety of the Corridor. | Mid/Long |
| 1.11 | Develop and implement regional means-based congestion pricing strategies, such as VMT-based fees, cordon pricing, and full freeway tolling. | Long |
| 1.12 | Complete the full buildout of the Metro ExpressLanes Strategic Plan to have a comprehensive network of dynamically priced toll facilities to optimize travel time and person throughput on the network of freeways in LA County and beyond, tying into the tolled portion of the I-405 in Orange County. | Long |

| STRATEGY 1—MANAGE THE I-405 AND CORRIDOR ARTERIALS | | TIMELINE |
|--|---|----------|
| 1.1 | Implement technology and ITS solutions, such as dynamic corridor ramp metering and arterial traffic signal synchronization projects to improve vehicular flow and throughput within the existing right-of-way. | Near |
| 1.2 | Manage trip making and demand through Transportation Demand Management Strategies and supporting policies around remote work and services. Implement strategies such as carpooling, car-sharing, and other strategies aimed at reducing the number of trips and moving more people in fewer vehicles. Coordinate with local jurisdictions and employers along the Corridor to reduce trip-making through telework, telehealth, and other remote activities, and/or stagger work hours to alleviate peak-hour demand on the transportation system. | Near |
| 1.3 | Construct the I-105 ExpressLanes from I-405 to I-605 to complete an essential extension of the ExpressLanes Network. | Near |
| 1.4 | Increase HOV lane minimums to at least 3+, and explore additional increases depending on demand in order to move more people in fewer vehicles and to better manage the overall throughput of the HOV lanes, allowing commuter buses and other transit services on the Corridor to move more efficiently. | Near |
| 1.5 | Invest in infrastructure that supports mode shift options through the actions identified in Strategies 3 and 4. | Near |
| 1.6 | Study and pilot congestion pricing strategies. | Mid |

Connect Communities Along the Corridor

As an imposing, multi-lane facility that bisects dozens of cities and communities, the I-405 freeway physically walls off communities from one another, creating obstructions instead of access. Stakeholders noted these obstacles, voicing concerns about limited crossing options and unsafe infrastructure conditions across the I-405 freeway, particularly for those biking, walking, or rolling. Existing infrastructure gaps not only create unsafe conditions, but they also deter and prevent multimodal mobility within and between communities. Additionally, the geographic presence of the Santa Monica Mountains restricts the access of the SFV and North LA County to the rest of the Corridor, placing a significant demand on the freeway as driving on the I-405 over the Sepulveda Pass is currently the only viable travel option. In an effort to address the various mobility barriers that exist for the communities in and around the I-405, this strategy aims to close infrastructure gaps and create localized solutions to strengthen the fabric within and between our communities. Included is a range of projects that better connect communities along the I-405 Corridor, including regional rail and transit integration, fare integration, mobility hubs, regional active transportation

corridors, improved crossings for people biking and walking, coordinated ITS and active travel demand management strategies on key arterials, and more.

This strategy aligns with federal priorities for reconnecting communities and improving neighborhood access and equity that have been elevated through the BIL and the most recent Inflation Reduction Act. Local mobility solutions importantly help enhance and preserve neighborhood character. As the Corridor supports a significant amount of trips under five miles, improving multimodal connectivity of the local network and creating stronger linkages to neighboring communities will better serve those short-distance trips. Another aspect of this strategy requires that existing and future transit systems are well-connected and seamlessly integrated to improve transit speeds, reliability, affordability, and customer experience. Further, connecting the I-405 Corridor to major transit facilities outside the Corridor—in particular, the future High-Speed Rail access point at Burbank Station—will also critically improve community access through better integration with regional and multi-regional transportation connections.

| STRATEGY 2—CONNECT COMMUNITIES | | TIMELINE |
|--------------------------------|--|----------|
| 2.1 | Improve multimodal connectivity across the I-405 freeway (protected bicycle facilities, safe pedestrian crossing infrastructure, especially at on- and off-ramps). | Near |
| 2.2 | Improve safety and accessibility of existing freeway crossings (through landscaping, lighting, sound attenuation, sidewalk expansion, etc.). | Near |
| 2.3 | Implement holistic neighborhood connectivity projects, and improve multimodal connectivity between neighboring communities in the I-405 study area Corridor. | Near/Mid |
| 2.4 | Expand mobility hubs that help people move across the I-405 and between communities. | Mid |
| 2.5 | Work with the Corridor COGs and cities to implement their active transportation plans and projects, as outlined in Strategy 4. | Mid |
| 2.6 | Build out first-/last-mile improvements for stations immediately adjacent to or near the freeway. | Mid |
| 2.7 | Invest in regional bicycle connectivity projects between communities consistent with the ATSP. | Mid |
| 2.8 | Expand local transit connections. | Mid |
| 2.9 | Enhance multimodal accessibility through the Sepulveda Pass to connect communities in North LA County and SFV to those in the LA Basin | Long |
| 2.10 | Create new freeway crossings to expand crossing opportunities and remove barriers imposed by the freeway. | Long |

Invest in High-quality Transit Options

Investing in high-quality transit will further the reach of the transportation system, expanding access to and options for reaching the numerous Corridor area destinations. High-quality transit means transit that is frequent, reliable, fast, and affordable; and that is safe and pleasant to ride. Expanding service coverage will be just as critical as improving existing routes and services. Metro’s NextGen Bus Plan is already making many improvements to bus stop spacing, location, and routing to make transit travel more competitive—but to provide people with a true alternative to driving, we must do more.

This strategy focuses on new high-capacity transit connections (such as the North SFV BRT and Inglewood Transit Connector), rapid and express bus services, further improvements to local transit, expansion of transit centers

and mobility hubs, and other on-demand and paratransit services. Implementation of ExpressLanes would also benefit transit on the freeway by creating uncongested lanes that would allow transit service on the freeway to be competitive and, in fact, operate much faster than driving a SOV. One of the main impediments to achieving higher transit ridership is travel time, thus, combined strategies that not only provide more transit, but also higher quality and efficient transit that will attract many riders, is one of the keys to successfully combining projects into multimodal packages. Delivering on this strategy will provide better service for existing transit users and make new transit trips possible, expanding options for the traveling public and encouraging more people to ride transit. Stakeholders overwhelmingly emphasized an appetite and need for more transit options that can provide reliable and efficient alternatives.

| STRATEGY 3—INVEST IN HIGH-QUALITY TRANSIT | | TIMELINE |
|---|---|----------|
| 3.1 | Make improvements to existing rail stations and high-frequency bus stops (e.g., real-time signage, seating, new and improved shelters, etc.) to improve the ease and comfort of transit trips. | Near |
| 3.2 | Expand microtransit options and on-demand transit improvements to offer flexible transit alternatives that are well suited to the high volume of shorter trips within the Corridor area. | Near |
| 3.3 | Continue speed, frequency, and reliability upgrades to existing transit services, as outlined in the NextGen Bus Plan and 2028 MCP. | Near |
| 3.4 | Improve transit agency coordination across all providers serving the I-405 Corridor. | Near |
| 3.5 | Implement priority bus enhancements and dedicated lane infrastructure on key corridors throughout the I-405 Corridor, such as enhancements on the Games Route Network (GRN) in preparation for the 2028 Olympics. | Near/Mid |
| 3.6 | Build out BRT corridor projects in Metro’s BRT Vision & Principles Study, especially along heavily-traveled arterials, such as Santa Monica Boulevard, Sepulveda Boulevard and others. | Mid |
| 3.7 | Invest in Regional Commuter Rail improvements through the range of strategies identified in Metro’s LRTP. | Mid |
| 3.8 | Complete the build out of the planned rail system expansion to offer a more integrated and connected system across the Corridor and throughout the region. | Long |

Expand the Active Transportation Network

By expanding the active transportation network, people will have more options for using non-motorized modes for local trips within the I-405 Corridor—particularly short trips that are less than 5 miles, which make up 80 percent of trips within the Corridor. Active transportation includes walking, biking, scooters, skateboarding and other human-powered modes. Investing in active transportation is important not only because it reduces car trips, but because it is healthy, affordable, and fun. At the onset of the COVID-19 pandemic, active transportation—both for utilitarian and recreational travel—skyrocketed across LA County and the US. In response,

municipalities implemented “slow streets” to provide more space for people using active modes. However, the existing active transportation infrastructure within the I-405 Corridor is significantly lacking. Where infrastructure does exist, it is often disconnected and unprotected; for example, bike lanes without a buffer from high-speed vehicular traffic, and bike lanes that end at city boundaries and are not coordinated between jurisdictions or even throughout a subregion. This strategy aims to build on the growing excitement around active transportation and address these core challenges by investing in permanent, protected, safe, and continuous active transportation networks across the Corridor.

| STRATEGY 4—EXPAND THE ACTIVE TRANSPORTATION NETWORK | | TIMELINE |
|---|---|----------|
| 4.1 | Prioritize closing small, but critical, gaps in the active transportation network while expanding the network. | Near |
| 4.2 | Focus improvements in areas where there are few existing active transportation facilities and a high potential to expand active transportation commuting and utilitarian trips by connecting riders to businesses, schools, shopping, and other destinations. | Near |
| 4.3 | Invest in protected bicycle infrastructure (Class I and IV facilities) along key corridors. | Near |
| 4.4 | Invest in bicycle and pedestrian safety improvements at high-crash locations (new and enhanced crossings, Leading Pedestrian Intervals (LPI), adding buffers to bike lanes, etc.). | Near |
| 4.5 | Expand safe and secure bike parking and provide self-service bike maintenance facilities. | Near |
| 4.6 | Improve Americans with Disabilities Act (ADA) accessibility around transit and rail stations. | Near |
| 4.7 | Build out Complete Streets corridors, including complete streets improvements along the corridors of Imperial, Atlantic, Florence, Artesia, and Lakewood/Rosemead. | Mid |
| 4.8 | Invest in improvements recommended in the Metro Active Transportation Strategic Plan, and the City of Los Angeles’ Mobility Plan 2035 Enhanced Bicycle and Pedestrian Networks, the Great Streets Initiative, Safe Routes to School, and Vision Zero plans. | Mid |
| 4.9 | Expand first-/last-mile connections. | Mid |
| 4.10 | Work with COGs to implement the Gateway Cities Strategic Transportation Plan 50 bike corridors, the South Bay Cities Bicycle Master Plan and South Bay Local Travel Network, and the Westside Cities Pedestrian and Bike Network. | Mid |
| 4.11 | Complete the LA River Bike Path in the SFV Gap Closure Project. | Mid |
| 4.12 | Expand the trail network within the Corridor to promote active transportation for health and recreational purposes. | Mid |
| 4.13 | Assess opportunities to coordinate and create a seamless bike corridor across multiple subregions | Mid |

Reduce Racial and Economic Disparities in Transportation Benefits and Burdens

Multiple communities along the I-405 Corridor are highly racially segregated, with significant disparities across income, health, housing, services, education, and access to safe, affordable, and reliable mobility. While Metro’s Equity Platform serves as an important starting point for directing transportation investments to underserved, high-needs communities, stakeholders were clear that simply investing in infrastructure in EFCs is not enough. Improvements must target trips that are being taken by people who live in Metro-defined EFCs, such as those serving key job and activity centers (LAX, UCLA, large commercial corridors) in the I-405 Corridor. As noted previously, roughly 40 percent of all trips coming in and out of the Corridor are from EFCs in nearby Central City neighborhoods—directly east of the study area. Projects and programs that improve travel times, convenience, and affordability across all modes that serve these trips will be critical to advancing regional equity goals.

Additionally, as advancing equity requires that we not only deliver benefits, but also reduce burdens, remediating past harms and promoting environmental justice is an equally important element of this strategy. For example, investing in ZEV technology and other elements of sustainable transportation that improve health and well being, particularly for those who have been most harmed by transportation investments of the past, will help further environmental justice.

Equitable outcomes cannot be achieved simply by mitigating harms and directing investment, particularly if the investment is not centered around community voices and in service of actual community needs. Stakeholders noted that more support is needed for low-resourced communities to plan and develop transportation solutions that solve the mobility needs within their communities. Further, it is important that we create ladders of opportunity for our EFCs through our investment in the Corridor.

| STRATEGY 5—REDUCE RACIAL AND ECONOMIC DISPARITIES IN TRANSPORTATION BENEFITS AND BURDENS | | TIMELINE |
|--|---|----------|
| 5.1 | Increase bus service frequency, speed, and reliability along routes serving EFC trips within and to the I-405 Corridor (SFV, Inglewood, Long Beach, and to/from Downtown LA). | Near |
| 5.2 | Target active transportation investments and safety improvements in EFCs. | Near |
| 5.3 | Direct managed lane/ExpressLanes program subsidies to no- and low-income households and individuals within the Corridor. | Near |
| 5.4 | Coordinate with local municipalities on anti-displacement measures to pair with transportation investments, especially in areas like Inglewood that are rapidly undergoing gentrification and displacement. | Near |
| 5.5 | Work with low-resourced communities to support the planning and development of local transportation improvements | Near |
| 5.6 | Integrate workforce development opportunities into the delivery of transportation improvements through local hire initiatives and Project Labor Agreements, Metro’s Constructions Careers Policy, and other programs. | Near |
| 5.7 | Implement a fare-free transit program for no- and low-income transit riders. | Mid |
| 5.8 | Implement regional active transportation facilities that serve EFCs, such as the LA River Bike Path and the South Bay Open Space Corridor Multi-use Trail Plan. | Mid |
| 5.9 | Build out rail and transit projects that improve access within EFCs and for EFC trips (regional rail service and capital improvements). | Mid/Long |

Decarbonize Mobility Options

Investing in sustainable mobility options that are low or no-emissions is essential to reducing GHG emissions and improving air quality along the I-405 Corridor. California has some of the most aggressive targets and supporting legislation to move the state toward a zero-emission future. To achieve the electric/zero-emission vehicle adoption required to meet these policies and reach the 2030 target for reduced emissions levels, the California Air Resources Board (CARB) 2020 Mobile Source Strategy forecasts that the number of plugs needed to support fleet conversion would need to

increase by 40 times. Decarbonizing the transportation sector requires multiple pathways, including continued incentives and supportive infrastructure for vehicle electrification; electrifying transit systems; investing in truck, port, and other clean freight solutions; and developing of fuel-cell technologies and expansion of electric shared mobility options, such as e-bikes and e-scooters. While decarbonizing mobility options is essential to meeting our sustainability goals, vehicle electrification alone will not alleviate congestion. This strategy must be paired with demand management solutions that focus on more efficient ways to use our existing roadway space.

| STRATEGY 6—DECARBONIZE MOBILITY OPTIONS | | TIMELINE |
|---|--|----------|
| 6.1 | Grow EV charging infrastructure for personal and commercial vehicles traveling along the I-405 Corridor through investment, deployment, and partnership. Explore opportunities to collaborate and support the development of shared charging infrastructure for transit operators, such as a regional charging facility or on-route/opportunity charging. Work with communities to determine sites that pose minimal to no impact. | Near |
| 6.2 | Coordinate across jurisdictions to provide corridor-wide EV car-sharing options, including the expansion of the BlueLA EV carshare system. | Near |
| 6.3 | Develop a plan to ensure charging infrastructure and access to ZEVs is equitably distributed throughout Corridor communities. | Near |
| 6.4 | Support zero-emission short-trip travel modes, such as traditional active transportation, along with e-bikes, micro-mobility, and neighborhood electric vehicles. | Near |
| 6.5 | Continue transit fleet electrification (Metro and municipal transit providers) and charging infrastructure/clean energy generation. | Mid |
| 6.6 | Establish a VMT mitigation bank/exchange to achieve VMT reductions and reduce transportation associated GHGs. | Mid |
| 6.7 | Electrify truck fleets and port terminal equipment. | Mid |
| 6.8 | Work with utilities to plan for access to sufficient and reliable energy to support all ZE modes of travel. | Mid |

Facilitate Efficient and Sustainable Goods Movement and Local Deliveries

As noted, truck movements are expected to continue to increase due to expansion of the SPB ports, along with the anticipated growth in e-commerce and local deliveries. Without action, increased goods movement will exacerbate congestion and air pollution, with the Corridor’s most vulnerable populations facing the greatest burdens. Facilitating sustainable, efficient, and safer goods movement is a critical part of this plan. That will include measures, such as focused grade separations over rail, improvements along major goods

movement corridors where they connect to the I-405 (such as the I-710), investing in clean air vehicles and electric trucks, and more efficient curb management to accommodate the increased delivery of goods. Many of the improvements within the I-405 Corridor are located along Metro’s CSTAN, and are in alignment with Metro’s Goods Movement Strategic Plan, which focuses on five core initiatives, including equitable goods movement, expanding clean trucks and urban freight delivery, developing a Southern California Rail Investment Partnership, and building logistics and workforce competency.

| STRATEGY 7— FACILITATE SUSTAINABLE AND EFFICIENT GOODS MOVEMENT | | TIMELINE |
|---|---|----------|
| 7.1 | Implement applicable goods movement plan programs, policies, and projects, including the City of LA Mobility Plan 2035, the Metro Countywide Strategic Truck Arterial Network and the Goods Movement Strategic Plan, and freight Transportation Demand Management (TDM) strategies identified in the MCP. | Near |
| 7.2 | Develop truck route system plans at the county and local levels to manage impacts of truck movements. | Near |
| 7.3 | Promote programs that encourage pick-up centers, bike couriers, and other sustainable alternatives to truck last-mile deliveries. | Near |
| 7.4 | Implement grade separations in and near the Ports of LA and Long Beach, and other applicable locations to mitigate truck/train/auto/pedestrian and bike conflicts. | Mid |
| 7.5 | Electrify truck fleets and Port terminal equipment. | Mid |
| 7.6 | Implement curb management strategies to accommodate growing demand for e-commerce and urban freight delivery. | Mid |
| 7.7 | On-dock and near-dock railyard improvements to facilitate more efficient movement of cargo containers and reduction of drayage truck trips at both Ports, including the Pier B Railyard in Port of Long Beach. | Long |
| 7.8 | Improvements to major goods movement corridors where they intersect with the I-405 (such as the I-710 and the I-110). | Mid/Long |

Leverage Emerging Technologies

Technology will become increasingly important in integrating modes, maximizing the efficiency of our transportation system, and offering travelers choices in their trip-making. Technology solutions will continue to allow for dynamic management of our transportation facilities that is responsive to conditions on-the-ground. This approach is particularly important as LA County works towards making our existing highway and roadway capacity more efficient. Elements such as dynamic ramp meters with real-time traffic assignment based on congestion and bottlenecks, additional changeable message signs, and other improvements could be especially useful around Inglewood where special events cause surges in demand, and at LAX where traffic volumes are especially high. These technologies require high-speed data connections to bring about achieve efficiencies, and California’s Middle-Mile Broadband Initiative aims to bring high-speed internet to

communities via freeway corridors. Expanding communications capabilities not only allows for the management of the system, but also for more seamless connectivity between modes, and more reliable, real-time information that offers travelers a wider range of mobility options.

Additionally, in preparation for the introduction of CAVs, the I-405 Corridor will need to plan for, design, and implement the supportive infrastructure necessary. This includes improvements to signals and ITS infrastructure; and ICM strategies, such as advanced road markings, advanced traffic operations centers, signage readable by vehicles, improved wireless communications systems, road sensors, advanced parking systems, and many other roadway retrofits. While these may not be short-term improvements that will be competitive for funding in the immediate future, they must be planned as more CAV capabilities emerge.

| STRATEGY 8—LEVERAGE EMERGING TECHNOLOGY | | TIMELINE |
|---|--|----------|
| 8.1 | Upgrade and enhance communication systems along I-405 and connecting freeways and arterial interchanges, including ramp system improvements, transportation management systems improvements, and information systems such as enhanced dynamic messaging. | Near |
| 8.2 | Enhance the technological infrastructure through enhanced broadband capacity and other advances to reduce the digital divide, provide equitable access to technology, and facilitate trip reduction strategies through enhanced virtual services. | Near |
| 8.3 | Explore and pilot congestion pricing strategies that leverage innovative technologies, independent of ExpressLanes, to dynamically manage vehicle demand around the I-405 Corridor area. | Mid |
| 8.4 | Invest in new and enhanced infrastructure to support all five levels of vehicle automation, including enhanced lane markings, machine readable signage, fiber optic connections, sensors, smart traffic control devices, and smart parking infrastructure. | Long |

Provide a Safe, Resilient, and Well-maintained Multimodal Transportation System

Many of the previous strategies will not be possible if we do not maintain our existing multimodal infrastructure assets in a state-of-good-repair. In addition to traditional state of good repair improvements, such as re-paving, this means making safety-related improvements for all road users, and implementing Vision Zero and Safe Routes to School plans that are focused on the most vulnerable roadway users. Safety is also a critical element of congestion reduction (as 50 percent of freeway non-recurrent congestion are caused by crashes). While many safety projects are not primarily oriented toward congestion reduction, they are important projects that can be combined with others to enhance safety along the Corridor. Safety is critical for quality of life, and this strategy

aligns with the U.S. Department of Transportation’s National Roadway Safety Strategies (NRSS) to ensuring our approach addresses safety holistically and results in safer people, safer roads, safer vehicles, and safer speeds.

This strategy also includes projects that are focused on resilience, such as seismic improvements, stormwater management, wildfire prevention measures, and emergency response and evacuation. These will be essential as we face growing impacts of climate change. A core element of increasing resiliency is increasing the number of multimodal options that people can rely on. It also means investing in a robust goods movement network that keeps goods flowing in and out of the region, especially during unexpected events, such as the COVID-19 pandemic.

| STRATEGY 9—PROVIDE A SAFE, RESILIENT, AND WELL-MAINTAINED MULTIMODAL TRANSPORTATION SYSTEM | | TIMELINE |
|--|---|----------|
| 9.1 | Implement state-of-good-repair projects, such as repaving, rail and transit infrastructure upgrades, detection repairs, and rehabilitation along the I-405 freeway and Corridor arterials consistent with the Caltrans SHOPP. | Near |
| 9.2 | Rehabilitate signage and markings (pavement and otherwise) to improve accessibility and navigation within the Corridor. | Near |
| 9.3 | Develop a corridor-wide plan for “cool-off” centers for people walking, biking, and rolling during extreme heat events. | Mid |
| 9.4 | Build out drainage and other stormwater management projects along the Corridor to help cope with extreme weather events. | Mid |
| 9.5 | Implement seismic upgrades to prepare the Corridor for potential future earthquakes. | Mid |
| 9.6 | Larger-scale safety improvements projects and programs, such as regional Vision Zero programs and policies to advance the Safe Systems Approach. | Mid |
| 9.7 | Provide additional grade-separated crossings over the I-405 freeway that serve all Corridor users. | Long |

How We Will Implement the Plan.

The I-405 CMCP is focused on creating pathways for a balanced set of improvements across all modes while also addressing environmental, equity, and other concerns in the Corridor. Again, we will not be able to build our way out of congestion, but implementing this plan will result in better use of our existing transportation system, and more options to get around the Corridor in a way that is safe, accessible, and convenient. However, to be successful, the best projects must be implemented, and Corridor performance metrics must be monitored on an ongoing basis to ensure the plan is achieving the desired goals.

Comprehensive Multimodal Corridor planning is undertaken to help inform the decision-making process and outline the vision for the future of the Corridor that will guide and mobilize coordination between communities and project implementing agencies in the development and delivery of the future improvements necessary to meet the plan's goals. CMCPs are intended to be planning-level documents, and as such, they are not intended for programming of improvements nor for detailed project development. The implementation phase of the CMCP will include multimodal plan development and refinement, project programming, project development, and monitoring and reporting. Transitioning from planning to implementation will get us closer to achieving corridor goals and enhancing multimodal opportunities.

Multimodal Plan Development and Refinement – The I-405 CMCP is a living plan. Transportation system plans such as this plan and other multimodal plans cannot be developed once and then remain static. Corridor needs, conditions, technology, and regional priorities will continue to evolve, even after CMCP adoption. Events or other triggers may necessitate revision to the plan and a reassessment of strategies outside the regularly planned CMCP updates. Examples of conditions that may warrant revisiting the plan include technological disruptions or advancements, major new economic, population or environmental changes in the Corridor, significantly worsening congestion, or significant new regional or statewide planning initiatives. To remain relevant to and representative of the latest Metro policies and overall Corridor vision, updates will be prepared every five years, and more frequently on an ad-hoc basis. Updating the plan every five years is consistent with CMCP Guidelines.

Refinement to the CMCP's project list will need to be conducted as projects advance in their development, or new transportation needs emerge. While many of the projects described in the CMCP are very well-defined and are well along in both shovel-readiness and shovel-worthiness, others are less defined, but

still may be important projects for addressing the transportation needs of the Corridor. Those projects will evolve in terms of their readiness; and as more detail to those improvements emerge, their performance will change, and they may become more viable candidates for high-priority implementation. Metro will revisit and update the project list and evaluation every two years in parallel with and in advance of SCCP funding cycles.

In addition to updates and refinements to the CMCP and project list, other plans such as the SCAG Regional Transportation Plan; subregional agency plans (San Fernando, West Side Cities, South Bay Cities, and Gateway Cities); and local plans of the county and corridor cities continue to change over time. The plans and programs of all of these agencies were central to the development of the CMCP. The future changes and refinements to those plans will affect the Corridor and must be integrated with updates to the CMCP.

Ongoing stakeholder engagement will be required to support both CMCP implementation and plan updates. As Metro enters the implementation phase, close collaboration with partners and ongoing stakeholder guidance will be needed in the development and delivery of the projects and initiatives included in the improvement strategies. Metro will also work with project implementing agencies to further identify and develop Corridor improvements and CMCP-supportive solutions not identified in the plan's original list of projects. As regular project list updates occur, there will be opportunities to incorporate new projects and concepts needed in the Corridor into the CMCP.

Project Programming –Incorporation of a project or set of strategies in the CMCP does not ensure a project or improvement will be ready for implementation. The CMCP by itself is not a programming document. Project implementing agencies must formally program projects—at various levels, including through state, regional, and local programs—in order to move projects through planning all the way into implementation.

One outcome of the CMCP is a preferred list of transportation projects and programs that perform highest in shovel-readiness and shovel-worthiness. Agencies and jurisdictions can also include projects from this list in their local capital improvement plans or programs. Typically, these are short-range plans (usually four to 10 years) that identify capital projects and allocate capital funds as approved by the jurisdiction's elected officials. These plans and programs are where the projects get promoted for implementation—not through the CMCP alone.

Readying projects for implementation will require continued monitoring and coordination with all other stakeholder agency programming documents, such as the Statewide Transportation Improvement Program (TIP), Corridor city capital improvement programs (CIP), Corridor city General Plans, short- and long-range transit plans, Active Transportation Plans, Metro's LRTP, and other relevant programming documents. Inclusion in programming documents and the RTP is an important criterion for many funding programs. While a project may not be captured in an agency programming document now, it may be integrated in the future; and once it does so, it will be eligible and potentially competitive for funding. Integration with all applicable programming processes and documents will be critical for putting these projects on a path to be fully funded and delivered. This can work in both directions, with the CMCP evolving to match changing agency programming documents, as well as agency programs using the CMCP to determine which multimodal projects to include.

Project Development – All projects and strategies included in the CMCP will need to go through their respective project development and community engagement processes before advancing for project approval determinations and delivery. For studying alternatives and determining a project's scope, Metro and our partner agencies conduct a project review and

approval process that adheres to each agency's own guidelines and in accordance with local, state, and federal laws. Caltrans has a very detailed and clear project development process that must be followed for any projects on the state highway system, and local jurisdictions have their own processes they follow to first define a project concept and advance it for further development. Projects developed by Metro must be studied, developed, and implemented consistent with Metro policies, including the Equity Platform, Public Participation Plan, Multimodal Highway Investment Objectives, and others. Ultimately, ongoing stakeholder engagement in these processes will inform project scope determinations and ensure the intended benefits are responsive to the needs of communities they serve. Working through these processes with Corridor stakeholders and project delivery partners will put projects on track for implementation.

Part of the project development process is also securing all of the necessary funding needed for the projects or set of improvements. In addition to SB 1-related grant programs (SCCP and TCEP), funding for transportation improvements is available through a series of other federal, state and local sources. Depending on the source of funding, eligibility for funds varies from project type, scope, benefits, and phase. Some funding programs allocate resources through competitive grant processes or other discretionary means,



while other funds are distributed by formula to state, regional, or local governments. Once the CMCP is adopted, it can serve as the source for guiding the delivery of CMCP projects across a wide range of funding opportunities at all levels, and informing prioritization of projects for the most competitive funding opportunities.

Multi-layered consideration must be given when seeking competitive grant funding, including the assessment of project eligibility and readiness, merit, or competitiveness, as well as deliverability and risk. To be a viable grant candidate, projects will need to meet the grant funding program eligibility and criteria, timely milestone achievements that adhere to the funding program’s timeline, demonstrate quantifiable benefits, and have a feasible project delivery and funding plan. Projects in the CMCP span a long planning horizon and include those nearing construction, as well as projects that are conceptual or strategic and lack a clear path or schedule for implementation. As such, only a subset of the CMCP’s projects will meet these criteria in each grant funding cycle. While the CMCP’s project evaluation tiers identified those projects that are SCCP-competitive and more ready for implementation, further assessment that includes all these other considerations will be needed if we are to successfully position these projects for grant funding.

A winning grant strategy will depend on Metro and other project implementing agencies advancing projects through project development processes so that projects are not only ready to compete for funding, but also ready to draw down grant funds and deliver projects on time and on budget.

Monitoring and Reporting – The CMCP established a clear set of goals for the Corridor and improvement strategies that will help us reach them. Once in the implementation phase, ongoing monitoring of our progress and Corridor performance will be needed to evaluate the effectiveness of recommended projects and strategies over time. Regular monitoring and reporting on Corridor performance indicators (including those related to trip-making, mode usage, travel behavior, operational conditions, safety, etc.) and evaluating the effect of implemented projects and strategies on those indicators will be conducted with regular CMCP updates. Metro will develop and execute a CMCP monitoring plan and process that will allow for the results of the plan’s monitoring and reporting to guide regular CMCP updates.

These assessments provide an opportunity to determine whether our actions are achieving the desired outcomes. Regular monitoring and reporting, in conjunction with updates to the plan, will allow for the reassessment, refinement, and possible realignment of Corridor objectives, recommended projects, and strategies.

The development and adoption of the I-405 CMCP is just the starting point—the beginning of a collaborative process where agencies and community-based organizations continue to work together to deliver on this plan. Using this roadmap, Metro and our partners can get to work on these improvements that will not only meet the demands of today and those anticipated in the future, but also solutions that will help us on our path to realizing a more equitable, sustainable, efficient, and connected I-405 Corridor. Let’s get out of traffic and get moving together.

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Acronym List

ACTA – Alameda Corridor Transportation Authority
ADA – Americans with Disabilities Act
AMC – Airport Metro Connector
APM – Automated People Mover
AQMD – Air Quality Management District
ATMP – Airfield & Terminal Modernization Project
ATMS – Advanced Traffic Management System
ATP – Active Transportation Program
ATSP – Active Transportation Strategic Plan
AVL – Antelope Valley Line
AVTA – Antelope Valley Transportation Authority

BIL – Bipartisan Infrastructure Law
BRT – Bus Rapid Transit

CalEPA – California Environmental Protection Agency
CalEnviroScreen – California Communities Environmental Health Screening Tool
Caltrans – California Department of Transportation
CARB – California Air Resources Board
CAPTI – Climate Action Plan for Transportation Infrastructure
CAV – Connected and Autonomous Vehicles
CBO – Community-Based Organizations
CCTV – Closed Circuit Television
CFP – College Football Playoff
CIP – Capital improvement programs
CMCP – Comprehensive Multimodal Corridor Plan
CMS – Changeable Message Signs
COG – Councils of Governments
ConRAC – Consolidated Rent-A-Car Facility
CSAN – Countywide Significant Arterial Network
CSTAN – Countywide Strategic Truck Arterial Network
CTA – Central Terminal Area
CTC – California Transportation Commission
CTP – California Transportation Plan

DAC – Disadvantaged Communities
DEIR – Draft Environmental Impact Report
DPM – Diesel Particulate Matter

EFC – Equity Focus Communities
EPA – Environmental Protection Agency
ESFV – East San Fernando Valley
EVs – Electric Vehicles

FIFA – Federation Internationale de Football Association

GHG – Greenhouse Gas
GIS – Geographic Information System
GRN – Games Route Network

HIN – High-Injury Network
HOV – High-Occupancy Vehicle

I-405 – Interstate 405
ICM – Integrated Corridor Management
IIJA – Infrastructure Investment and Jobs Act
INFRA – Infrastructure for Rebuilding America
ITC – Inglewood Transit Connector
ITF-E – Intermodal Transportation Facility East
ITF-W – Intermodal Transportation Facility West
ITS – Intelligent Transportation Systems

LA – Los Angeles
LADOT – Los Angeles Department of Transportation
LAMP – The Landside Access Modernization Program
LAWA – Los Angeles World Airports
LAX – Los Angeles International Airport
LBS – Location-based-services
LCTOP – Low Carbon Transit Operations Program
LOSSAN – Los Angeles-San Diego-San Luis Obispo Rail Corridor
LPI – Leading Pedestrian Interval
LPP – Local Partnership Program
LRTP – Long Range Transportation Plan
LTE – Long-term Evolution (for example 4G LTE)

Metro – Los Angeles County Metropolitan Transportation Authority
MCP – Mobility Concept Plan
MONSTER – Multimodal Operations non-State Highway Operations and Protection Program Transportation Equity Report

NAAQS – National Ambient Air Quality Standards
NRDC – Natural Resources Defense Council
NRSS – National Roadway Safety Strategies

PATH – People Assisting the Homeless
PCH – Pacific Coast Highway
PCI – Pavement Condition Index
PeMS – Performance Measurement System
PM – Particulate Matter

Q&A – Question and Answer

RAISE – Rebuilding American Infrastructure with Sustainability and Equity
RGAP – Regional Ridership Growth Action Plan
RTOS – Rail Transportation Operations Supervisors
RTP/SCS – SCAG Regional Transportation Plan/ Sustainable Communities Strategy

SB – Senate Bill
SCAG – Southern California Association of Governments
SCCP – Solutions for Congested Corridors Program
SCIG – The Southern California International Gateway Project
SCS – Sustainable Communities Strategy
SFV – San Fernando Valley
SHC – Streets and Highways Code
SHOPP – State Highway Operations Protection Program
SOV – Single-Occupant Vehicle
SPB Ports – San Pedro Bay Ports or Ports of Los Angeles and Long
SPL – Strategic Project List
STIP – State Transportation Improvement Program
SR – State Route

TCEP – Trade Corridor Enhancement Program
TCS – Traffic Control System
TDM – Transportation Demand Management
TEP – Transportation Electrification Partnership
TEUs – Twenty-Foot Equivalent Unit
TI – Terminal Island
TIMS – Transportation Injury Mapping System
TIP – Transportation Improvement Program
TIMs – Transportation Injury Mapping System
TIRCP – Transit and Intercity Rail Capital Program
TMO – Transportation Management Organization
TNC – Transportation Network Company
TSP – transit signal priority

UCLA – University of California, Los Angeles
USC – University of Southern California

VA – Veterans Administration
VHD – Vehicle Hours of Delay
VHT – Vehicle Hours Traveled
VICA – Valley Industry Commerce Association
VMT – Vehicle Miles Traveled
VO – Vehicle Operations

ZEV – Zero-Emission Vehicle

Endnotes

1 SB 1 Chapter 2 SEC 43. (a) (5)

2 Population estimates are from the US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019). Employment estimates are from the US Census Bureau; Longitudinal Employer-Household Dynamics Survey; 2018

3 Three miles is the standard catchment area at which trips are attracted to a freeway.

4 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

5 Metro Travel Demand Model. Note: Population and employment forecasts from Metro’s Travel Demand model are consistent with the SCAG Travel Demand Model.

6 Port of Los Angeles freight market forecasts

7 Population estimates are from the US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019). Employment estimates are from the US Census Bureau; Longitudinal Employer-Household Dynamics Survey; 2018

8 Three miles is the standard catchment area at which trips are attracted to a freeway.

9 There are currently Metro efforts underway that characterize population and travel behavior within LA County and along parts of the I-405 Corridor, including the recent Sepulveda Feasibility Study, which cites a population of 7.7 million served by the Sepulveda Pass segment of the I-405 Corridor. The 2.8 million population within the I-405 CMCP Corridor includes only those who live within the 3-mile catchment area surrounding the freeway, according to the US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019).

10 Metro Travel Demand Model

11 Ibid.

12 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

13 Ibid.

14 Metro Fareless System Initiative Fact Sheet; 2021; https://media.metro.net/2020/fsi_fact_sheet_ENG.pdf

15 Cambridge Systematics, LOCUS dataset, 2019

16 UCLA Center for Neighborhood Knowledge; <https://knowledge.luskin.ucla.edu/2018/07/11/new-map-database-of-anti-displacement-policies/>

17 SCAG, 2018

18 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

19 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

20 Los Angeles Department of Transportation; 2021

21 Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley; 2021

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24 UCLA State of the Commute; 2019

25 UCLA admissions statistics, “Facts and Figures”

26 UCLA State of the Commute; 2019

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28 Ibid.

29 LAX Passenger Survey; 2019

30 Ibid.

31 LAWA 2019 Transportation Management Organization (TMO) Employee Commute Patterns Study; 2019

32 Ibid.

33 LAWA Airfield & Terminal Modernization Project (ATMP), DEIR Appendix G Transportation

34 Long Beach Airport” Flight Activity Report”, December 2019

35 Visit Long Beach “Long Beach Convention & Visitors Bureau.”

36 Corridor job estimate from the Longitudinal Employer-Household Dynamics Survey; 2018. LA County jobs from the California Employment Development Department ([https://www.labormarketinfo.edd.ca.gov/file/lfmonth/la\\$pds.pdf](https://www.labormarketinfo.edd.ca.gov/file/lfmonth/la$pds.pdf)).

37 US Census Bureau, Longitudinal Employer-Household Dynamics Survey; 2018

38 The Final Feasibility Report of the Sepulveda Transit Corridor Project (LA Metro 2019) indicates that approximately 3.37M jobs are served by the I-405 Corridor; our analysis indicates that 1.4M of those are located within boundaries of this study.

39 Metro Travel Demand Model

40 SCAG Demographics and Growth Forecast

41 Highway Performance Monitoring System; 2017

42 Metro Connect-IT, Connect and Integrate Transportation Technology, An ITS Infrastructure for the LA Region; <https://laconnect-it.com/wp-content/uploads/2019/01/LA-County-ITS-Architecture-FINAL-REPORT.pdf>

43 Cambridge Systematics, LOCUS dataset; 2019

44 Data is not available for travel to and from Orange County; however, freeway segments in this area have some of the highest volumes.

45 Cambridge Systematics, LOCUS dataset, 2019. Note: The LOCUS dataset used to assess I-405 travel patterns does not account for bicycle and pedestrian trips. American Community Survey data from the US Census Bureau is used to assess bicycle and pedestrian travel for commute trips.

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47 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

48 Cambridge Systematics, LOCUS dataset; 2019

49 Kuzmyak, Richard J. & Dill, Jennifer. Walking and Bicycling in the United States. TRB News; 2012. <https://onlinepubs.trb.org/onlinepubs/trnews/trnews-28owwww.pdf>

50 Cambridge Systematics, LOCUS dataset; 2019

51 Highway Performance Monitoring System; 2017

52 Connect SoCal Goods Movement Technical Report; SCAG; https://scag.ca.gov/sites/main/files/file-attachments/o9o3fconnectsocal_goods-movement.pdf

53 Cambridge Systematics, LOCUS Dataset; 2019

54 Metro Interactive Estimated Ridership Stats; <https://isotp.metro.net/MetroRidership>

55 Supply Chain Bottlenecks at US Ports. Congressional Research Service; 2021; <https://crsreports.congress.gov/product/pdf/IN/IN11800>

56 Caltrans Traffic Census; 2019

57 I-405 in LA Named Busiest Interstate in Any US City; CBS News; <https://losangeles.cbslocal.com/2013/08/20/i-405-in-la-named-busiest-interstate-in-any-us-city/#:~:text=According%20to%20the%20U.S.%20Department,the%20busiest%20interstate%20in%20America.>

58 Highway Performance Monitoring System; 2017

59 Caltrans defines a bottleneck as “a persistent and significant drop in speed between two locations on a freeway,” specifically where there has been a drop in speed of at least 20 mph between the current detector and the detector immediately downstream. This speed drop must persist for at least five out of any seven contiguous five-minute data points, and the speed at the detector must be below 40 mph. Recurring bottlenecks which cause large amount of delays were identified. The bottlenecks reported include bottleneck locations that were active on at least 50 percent of all days during the year and caused more than 100 vehicle hours of delay (VHD) per day.

60 Caltrans Performance Measurement System (PeMS); 2019

61 Caltrans 2018 Managed Lanes Annual Report: District 7 Los Angeles and Ventura Counties; April 2019

62 Ibid.

63 “2017 California High-Occupancy Vehicle Facilities Degradation Report and Action Plan.” Caltrans Division of Traffic Operations Office of System Operations; 2018

64 National Transit Database; 2018

65 Sharp decline in 2019 ridership is partially due to construction along Metro A Line that disrupted service.

66 Metro NextGen Transit Study

67 Metro NextGen Transit Study and How Women Travel Report

68 Falling Transit Ridership: California and Southern California (UCLA ITS/SCAG); 2018

69 Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley

70 Highway Performance Monitoring System; 2017

71 Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley

72 Rising Seas in California: An Update on Sea-Level Rise Science. California Ocean Science Trust (2017)

73 Ibid.

74 PCI provides an index of pavement distress based on levels of cracking, rutting, potholes, corrugations, and other signs of pavement deterioration.

75 City-reported Pavement Condition Index (PCI); 2018

76 Metro Travel Demand Model

77 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

78 US Census Bureau, American Community Survey, 5-year Estimates (2014 – 2019)

79 Metro Travel Demand Model

80 “2017 California High-Occupancy Vehicle Facilities Degradation Report and Action Plan.” Caltrans Division of Traffic Operations Office of System Operations. 2018

81 “LA Metro Countywide ExpressLanes Strategic Plan Final Report.”; 2017

82 Caltrans “I-405 In District 7 Multimodal Corridor Plan.”; 2020

83 Pew Research Center; Mobile Fact Sheet; 2019; <https://www.pewresearch.org/Internet/fact-sheet/mobile/>.

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