

Active Transportation Strategic Plan

Volume I

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Metro

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ACRONYMS AND ABBREVIATIONS

AB 32 – The California Global Warming Solutions Act of 2006
AB 1358 – California Complete Streets Act of 2008
ACS – US Census' American Community Survey
ADA – Americans with Disabilities Act
AHSC – California Affordable Housing and Sustainable Communities grant
ATP – Caltrans' Active Transportation Plan
ATSP – Metro's Active Transportation Strategic Plan
The BLVD – A downtown revitalization effort along Lancaster Blvd in Lancaster, California
BMP – Bicycle Master Plan
CAC – Community Advisory Committee
CalEnviroScreen – California Communities Environmental Health Screening Tool
Caltrans – California Department of Transportation
CMAQ – Congestion Mitigation and Air Quality Improvement Program
COG – Councils of Government
EPA – US Environmental Protection Agency
FAST – Fixing America's Surface Transportation Act
FHWA – Federal Highway Administration
GHG – Greenhouse Gas Emissions
HDM – Highway Design Manual
HSIP – Highway Safety Improvement Program
JD – Metro's Joint Development program
LADOT – Los Angeles Department of Transportation
LOS – Level of Service
MTA or Metro – Los Angeles County Metropolitan Transportation Authority
NCHRP – National Cooperative Highway Research Program
NYDOT – New York Department of Transportation
RSTP – Regional Surface Transportation Program
RTP – Regional Transportation Plan
SB 375 – Sustainable Communities and Climate Protection Act of 2008
SCAG – Southern California Association of Governments
SCS – Sustainable Communities Strategy
SHSP – Strategic Highway Safety Plan
STP-L – Surface Transportation Program – Local
SWITRS – Statewide Integrated Traffic Records System
TIGER – Transportation Investment Generating Economic Recovery
TIMS – Transportation Injury Mapping System
TOD – Transit-Oriented Development
USDOE – United States Department of Energy
VMT – vehicle miles traveled

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EXECUTIVE SUMMARY



CicLAvia in Los Angeles

The reach of and vision for Metro's investments support all Los Angeles County residents, whether they choose to walk, bike, take transit, or drive. As a steward of public resources, Metro's aim is to create and maintain a world-class transportation system that focuses on the best customer experience possible and enhancing the quality of life for those who live, work, and play within the County. The reality is that this means different things for different people based on where they work or live or how they get around, which can differ based on length of the trip and the final destination. As transportation planner and coordinator, designer, funder, builder and transit operator, Metro is constantly working to deliver a regional system that supports increased transportation options and associated benefits, such as improved:

- mobility options
- air quality
- health and safety
- access to goods and services
- quality of life

While Metro will continue to serve the County's transportation network for all the ways people travel, this Active Transportation Strategic Plan (Plan) focuses on enhancing access to transit stations and developing a regional network for people who choose to take transit, walk, and/or bike. Such improvements

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ultimately benefit all users of the transportation system by providing more transportation choices. Surveys of travelers in LA County have found that approximately half of all trips are three miles or less, which is generally a distance that can be biked. Approximately one quarter of trips are under one mile, which is generally a distance that can be walked. Over a third of trips one mile or less are currently driven.

Without the resources or real estate to "build" our way out of congestion, we need to rethink how we use our public space and resources to develop a transportation system that enhances the viability of all travel options. Metro initiated this process with the Bicycle Transportation Strategic Plan in 2006 and is following-up with this effort. A lot has changed since 2006 in Los Angeles County, particularly with increases in biking and walking and community-driven efforts to improve safety and local access for people regardless of how they travel.

There are three main components to this plan that will help Metro and partners work to plan, implement, and improve the overall quality of our active transportation network:

- First last mile station area access improvements
- Regional Active Transportation Network
- Support Programs, including performance metrics and monitoring

Working toward this vision is not without its challenges. It is important to note that walking or biking may not be desired or viable in a number of communities based on topography, land use, preferences, or other factors. The intent of this effort is not to force people to travel differently but to provide that option to all users. This dynamic highlights the importance of Metro's partners, which include, but are not limited to, local agencies, residents, regional/state agencies, community groups, non-profits, and local advocates. Since Metro does not control the local roadways in most instances, Metro is dependent on partnerships and collaboration with local agencies.

This plan serves as a roadmap for stakeholders and partners to help identify transportation concepts and changes they'd like to see in their community and how all can work together to make that a reality. These "Complete Streets" efforts also help the region respond to regional and state regulations for the development of the transportation system and reductions in greenhouse gas emissions.

As defined by Caltrans, a Complete Street is "a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including people who bike, walk, ride transit, or drive, appropriate to the function and context of the facility. Complete street concepts apply to rural, suburban, and urban areas." This policy is supported by laws and guidance at various levels of government, including Federal law requiring safe accommodation for all users, State law requiring that Caltrans provide an integrated multi-modal system, state Assembly

Bill 1358 requiring cities to plan for Complete Streets in their General Plan, and Metro has an adopted Complete Streets Policy. Ultimately, the regional transportation system should strive to meet the varied needs of multi-modal trips and travelers, such as the many people who live, work, and play in the County of Los Angeles and exhibit a wide range of travel patterns and modes (walking, biking, using transit, and driving).

The vision for this Plan is to enhance the environment for all road users and balance future policies and investments to reflect local values and conditions. For instance, many local cities do not currently have any designated bicycle facilities, while having a number of constituents who walk or bike, or being in a very walkable or bikeable area (within one to three miles) from key destinations such as schools, parks, retail corridors, civic facilities, and local/regional transit corridors. The following statistics, most of which are unique to LA County, highlight the conditions making it ripe for planning and delivering active transportation infrastructure for our region:

- From 2006 to 2014 bicycle commute trips in Los Angeles County rose by 81%
- Among Metro Orange Line park-n-ride survey respondents, 39% reported using the Orange Line Bus Bikeway Path
- The Spring 2015 Metro Customer Survey found that 83% of bus riders and 68% of train riders begin their trip by walking
- Metro surveys reveal that 35% of train riders and 18% of bus riders had a car available to drive, but chose to take transit
- Studies in a number of cities have found that the average spent per month at local businesses was greatest amongst people who walk and bike compared to other ways of traveling, thus generating local economic development.

The Active Transportation Strategic Plan Volume I includes four chapters:

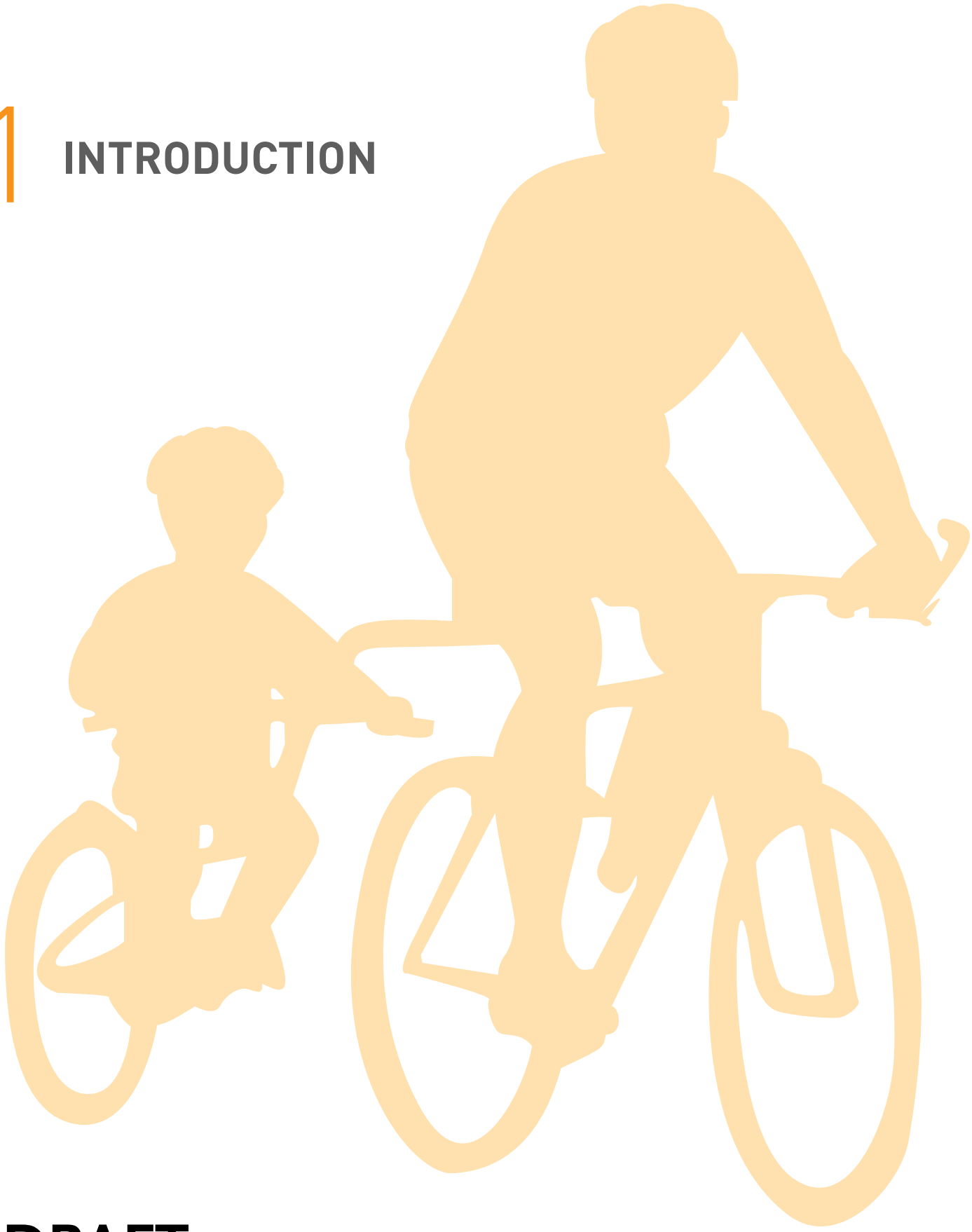
- **Chapter 1 – Introduction** describes the purpose and need for the Active Transportation Strategic Plan and defines its goals and objectives.
- **Chapter 2 – The Role of Active Transportation f**rames active transportation within a broader policy context. It describes the benefits of active transportation investment, and it discusses the numerous existing related planning and implementation efforts occurring countywide. The chapter concludes with a summary of barriers and opportunities to implementing active transportation projects.
- **Chapter 3 – Implementation** explains the framework and resources available for delivering active transportation projects. It defines stakeholder roles and provides multiple implementation approaches

spanning a breadth of planning and funding scenarios. The chapter discusses innovations, showcases example projects, and details performance metrics for project evaluation. Financial considerations, including project cost estimates, funding strategies, and funding sources, are also discussed. Finally, the chapter lists Metro, city, and community programs that facilitate active transportation implementation and concludes with Metro's next steps to implementation.

> **Chapter 4 – Countywide Active Transportation Network** presents a vision for an interconnected active transportation network consisting of two pieces: 1) first last mile active transportation improvements to 661 major transit station areas and 2) the Regional Active Transportation Network. It describes the process for developing the network, the ways in which stakeholders have helped shape the network, and the projects comprising the Countywide Active Transportation Network.



1 INTRODUCTION



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Multi-modal travel in Los Angeles

WHAT IS THE ACTIVE TRANSPORTATION STRATEGIC PLAN?

The Active Transportation Strategic Plan (ATSP) demonstrates Metro's ongoing commitment to improving mobility in the region for people who walk, bike, and take transit as well as creating safer streets that benefit all roadway users. Many of Metro's recent investments and projects are a reflection of how the agency can work with local partners to serve the region, maximize the return on investment on our county's extensive and growing transportation network, and support the public's interest in more travel choices.

"Active Transportation" refers to any non-motorized mode of travel, including walking, bicycling, rolling, skating, or scooting. The ATSP will serve as Metro's overall strategy for funding and supporting implementation of active transportation infrastructure and programs in Los Angeles County. It identifies strategies to improve and grow the active transportation network, to expand the reach of transit, and develop a regional active transportation network to increase personal travel options. It is intended to provide guidance to Metro and partner organizations, including local jurisdictions, regional government, and other stakeholders, in setting regional active transportation policies and guidelines to meet transportation goals and targets established in our local, regional, state, and federal plans.

In most instances, Metro does not own or operate many elements of the public right of way, including pedestrian and bicycle facilities beyond the agency's station footprint. However, effective walking and bicycling infrastructure are critical elements to facilitate first last mile connectivity to the agency's extensive public transit network. Beyond the connection to transit, a high-quality, safe, low-stress regional active transportation network can provide more transportation options and improve mobility. The ATSP builds on local and sub-regional planning already underway in the region to weave a cohesive strategy for our county and identify opportunities for Metro to support local partners in achieving implementation.

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GOALS & OBJECTIVES

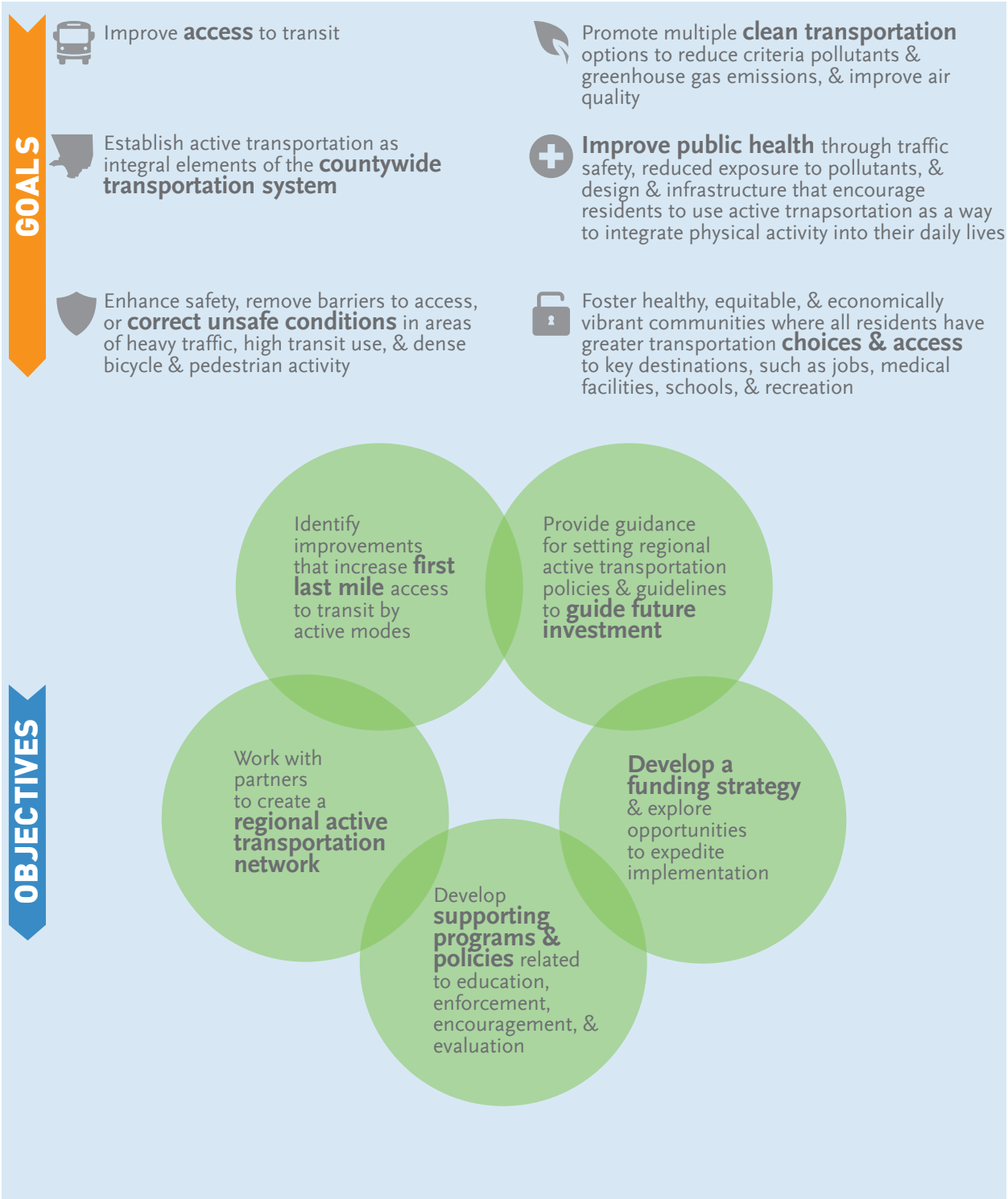


Figure 1.1: Goals and Objectives of ATSP

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Plan Goals

The Active Transportation Strategic Plan (ATSP or Plan) goals were crafted to reflect the overarching vision of the active transportation planning process at Metro. The goals in Figure 1.1 are a synthesis of goals outlined in previous Metro documents that informed the development of the ATSP, updated to reflect Project Technical Advisory input. Though these goals were developed to specifically relate to active transportation, many of the goals are multi-modal in nature and will result in benefits for all users of the transportation system throughout Los Angeles County.

Plan Objectives

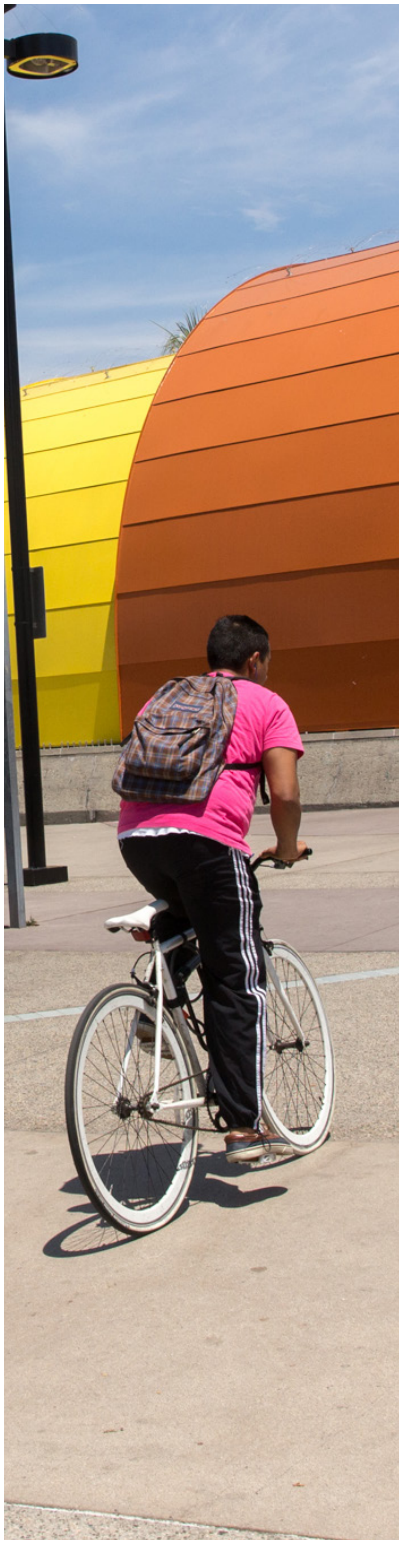
The objectives were crafted to identify the specific ways in which the scope of the ATSP supports the overarching vision outlined by the goals above. Compared to the goals, which are aspirational in nature and may be affected by other Metro efforts or other trends outside Metro's control, the objectives are more specific to this Plan and the actions that Metro can take related to the implementation of the Plan. The objectives speak to all of the goals articulated in Metro's guiding policies and plans (further discussed in Chapter 2 of this plan).

Component Parts

This Plan is presented in three chapters following this introductory chapter. Chapter 2 outlines the overall purpose of the Active Transportation Strategic Plan, including the benefits of active transportation and the need for active transportation planning in Los Angeles County. This chapter also reviews the previous work that has been done at Metro to set policies and initiate plans that improve access and safety across the county for people walking and biking.

Chapter 3 discusses implementation of active transportation projects. Throughout the process of developing this Active Transportation Strategic Plan, a key comment from stakeholders was that more support, technical advice, and guidance is needed to navigate the complex process of conceiving, planning, funding, constructing, and maintaining a project. Chapter 3 is intended to provide guidance and examples of how to navigate through the available options to implement successful active transportation projects.

Chapter 4 presents the recommended Countywide Active Transportation Network, comprised of two key components: 1) first last mile active transportation improvements to 661 transit station areas and 2) the Regional Active Transportation Network.



The ATSP builds off the framework of the Metro First Last Mile Strategic Plan and includes improvements for people walking and biking to 661 transit station locations, which include existing and under construction Metro Rail, Metro Rapid, Metrolink, and high ridership local bus stops served by Metro and municipal transit operators. These first last mile improvements are intended to improve regional access by connecting people to the extensive and growing transit network, and to maximize the benefits from transit investments that are being made across the county.

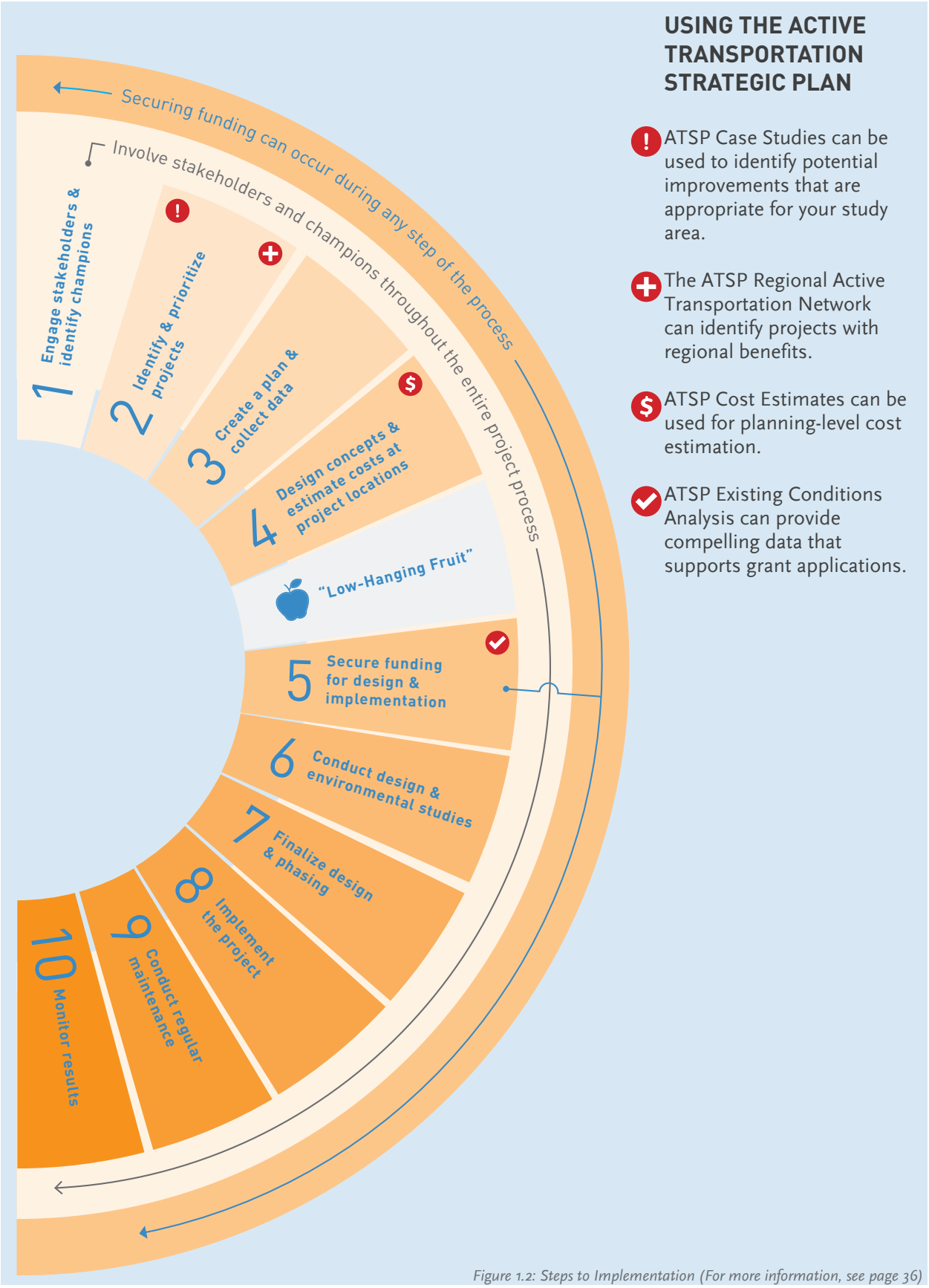
The Regional Active Transportation Network includes high-quality facilities for bicycling and walking that connect key regional origins and destinations across the county. The Regional Active Transportation Network is intended to improve regional access for people biking, walking, or rolling, and includes projects which close gaps between existing high-quality bicycling and walking facilities, as well as new corridors that take advantage of available waterways, utility corridors, and right-of-way that can be developed into high-quality walking and biking facilities.

Using the Active Transportation Strategic Plan

Figure 1.2 provides an overview of the steps to implementation for active transportation projects. For some of the steps, portions of the ATSP have been identified which can provide support to a local jurisdiction going through the implementation process. For example, “Step 2: Identify and prioritize projects” can be supported by the ATSP Volume II: Case Studies, which offers ideas for potential improvements to challenges that occur across the county. These case studies can help a local jurisdiction identify their own challenges and develop projects to address these challenges.



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USING THE ACTIVE TRANSPORTATION STRATEGIC PLAN

- ATSP Case Studies can be used to identify potential improvements that are appropriate for your study area.
- The ATSP Regional Active Transportation Network can identify projects with regional benefits.
- ATSP Cost Estimates can be used for planning-level cost estimation.
- ATSP Existing Conditions Analysis can provide compelling data that supports grant applications.

Figure 1.2: Steps to Implementation (For more information, see page 36)

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2 THE ROLE OF ACTIVE TRANSPORTATION



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POLICY CONTEXT

Federal

Federal, state, regional, and local policies have echoed the need for accommodating all users of the roadway. The U.S. Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations supports the development of fully integrated active transportation system networks, which foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. The policy encourages transportation agencies to go beyond the minimum requirements and to proactively provide convenient, safe, and context-sensitive facilities that accommodate people of all ages and abilities, including people too young to drive, people who cannot drive, and people who choose not to drive. Furthermore, Federal Transit Law specifies that all pedestrian improvements located within one-half mile and all bicycle improvements located within three miles of a public transportation stop or station have a de facto physical and functional relationship to public transportation.

FAST

Signed into law at the conclusion of 2015, Fixing America's Surface Transportation Act (FAST Act) is the first Federal law in over ten years to provide long-term funding certainty for surface transportation. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 to improve the nation's surface transportation infrastructure, including roads, bridges, transit systems, and passenger rail network. The FAST Act also aims to enhance federal safety programs for highways, public transportation, motor carriers, hazardour materials, and passenger rail. With its enactment, States and local governments can move forward with critical transportation projects, knowing they will have a Federal partner over the long term.

The FAST Act largely maintains current program structures and funding shares between highways and transit. It increases funding by 11 percent over five years, but still falls short of the amount needed to meet the increasing demands on our transportation systems in general, and does not address much of the unmet need for bicycle and pedestrian infrastructure throughout the country. The law also makes changes and reforms to many Federal transportation programs, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects.

State and Regional

The State of California enacted the California Complete Streets Act of 2008 (AB 1358), which requires that when cities or counties make substantive revisions to the circulation elements of their general plans, they identify how they will provide for the mobility needs of all users of the roadways. The California Department of Transportation's Deputy Directive 64-R2 emphasizes all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and

recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system. The California Global Warming Solutions Act of 2006 (AB 32) sets a mandate for the reduction of greenhouse gas emissions in the state, and the Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires emissions reductions through coordinated regional planning that integrates transportation, housing, and land-use policy. Achieving the goals of these laws will require significant increases in travel by public transit, bicycling, and walking. Strategies to support greenhouse gas emissions targets in support of SB 375 were adopted by the Southern California Association of Governments in the 2012-2035 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), which is currently being updated at the time this Plan is written. In 2013, the State enacted SB 743, which eliminates requirements for level of service (LOS) metrics for projects within Transit Priority Areas. Under SB 743, the Governor's Office of Planning and Research has been tasked with developing alternative criteria to LOS. Particularly within areas served by transit, the alternative criteria must promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

The Metro Board has been a champion for sustainability and supportive of federal and state policy initiatives to address climate change and promote sustainable transportation. The development of an Active Transportation Strategic Plan is a continuation of the agency's commitment to supporting an integrated multimodal transportation system. The ATSP supports a number of Metro Board-adopted policies and directives, including, but not limited to, the following:

- Complete Streets Policy, October 2014;
- Developing an Active Transportation Finance Strategy Motion, July 2014;
- First Last Mile Strategic Plan and Planning Guidelines, April 2014;
- Countywide Sustainability Planning Policy and Implementation Plan, December 2012;
- Metro/ SCAG Joint-Work Program, July 2012 (updated May 2015);
- Active Transportation Agenda, November 2011;
- Health and Active Transportation Motion, April 2011 (Item #17);
- Enhanced MTA Bicycle Policies and Programs Motion, September 2010; and
- Bicycle Transportation Strategic Plan, June 2006.

Local Jurisdictions

Within Los Angeles County, a number of local jurisdictions and sub-regions have adopted bicycle and pedestrian plans, Safe Routes to School plans, mobility plans, or adopted policies or resolutions to improve the mobility and safety of the streets for people who walk, bicycle, and take transit, and to advance the health, safety, welfare, economic vitality, and environmental well-being of their communities, as shown in Appendix B.

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BENEFITS OF ACTIVE TRANSPORTATION

If you build it...

The decision to walk or ride a bicycle (instead of driving) hinges on the presence of safe and convenient active transportation infrastructure, such as protected bicycle lanes and sidewalks. When this infrastructure is provided, people use it: in 2006, federal funding for active transportation increased more than 60 percent to almost $1 billion per year (up from $360 million previously). Eight years later, the number of people riding bicycles to work in the United States had increased by 60 percent. A similar trend occurred in Los Angeles County, where bicycle commute trips grew 81 percent over the same time period.

Simply put, more people choose to walk and ride their bicycles when infrastructure investment enables them to do so safely and easily. A majority (53 percent) of Americans now say that they would like to bicycle more than they currently do. They are bringing to light a powerful latent demand for healthy and economical travel options.

Mobility Benefits

First Last Mile Connections

Active transportation investment enables better connectivity between modes – particularly for transit. Many people who could potentially take transit choose to drive instead when transit stops are not conveniently located at their starting points and final destinations. These situations require "first last mile" connections. Enabling people to walk or ride a bicycle to or from transit expands the menu of transportation choices and makes taking transit convenient and accessible. It creates a seamless travel experience that improves the transit experience. Better active transportation connections makes it possible for more riders to use transit easily, particularly in areas of Los Angeles County with fewer or less frequent transit routes. Integrating walking, biking, and rolling travel with transit expands the effective reach of the transit network and adds value to Metro's ongoing capital investments around the county.

Congestion

Americans wasted $124 billion sitting in traffic in 2013, costing families an average of $1,700 per year in wasted time (opportunity cost). Los Angeles County accounted for nearly a fifth of the total opportunity cost of congestion nationwide, at $23.2 billion annually. Travelers in the greater Los Angeles area spend an average of 80 hours per year in traffic.

Parking

With the high rate of car ownership in Los Angeles County, there is a perceived scarcity of parking spaces. An increase in people walking and bicycling offsets motor vehicle trips, reducing demand for motor

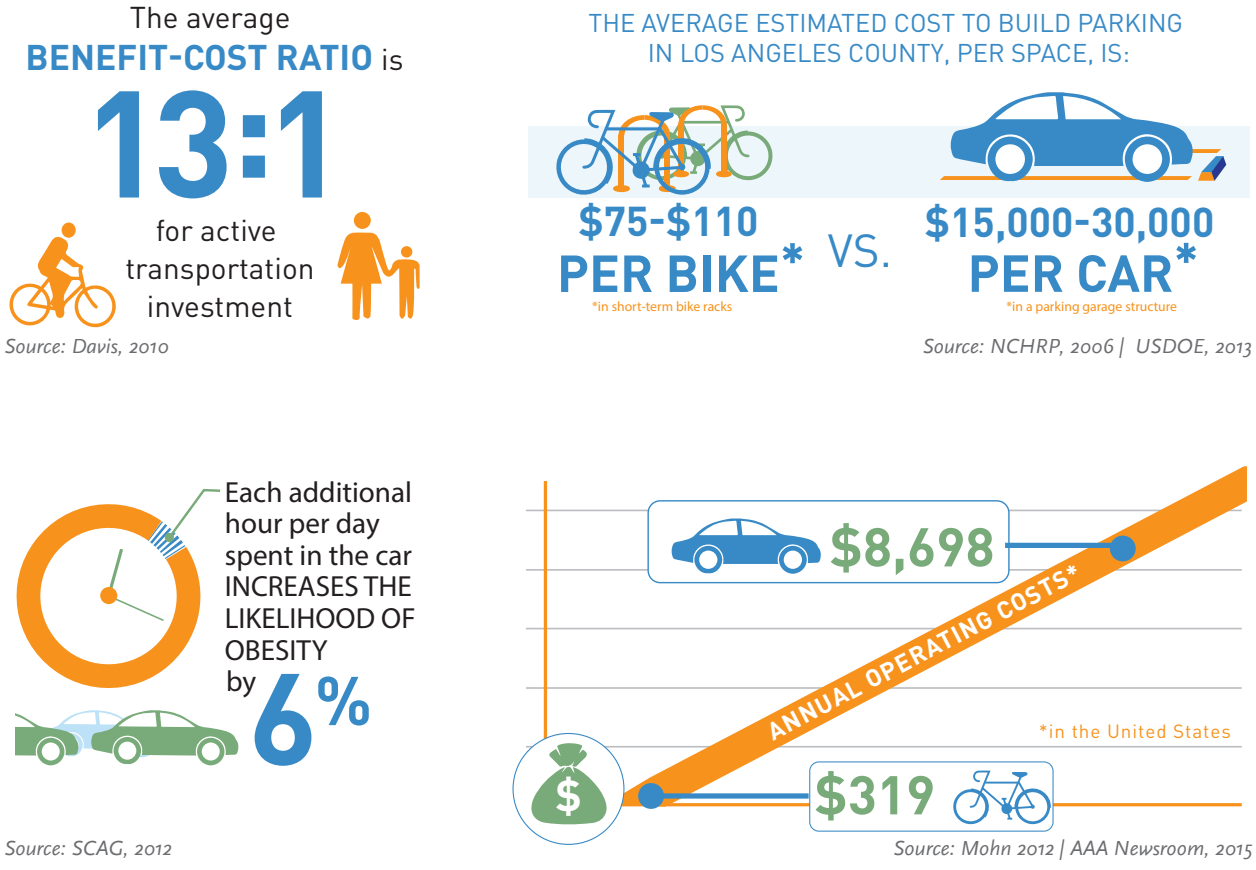


Figure 2.1: Benefits of Active Transportation

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vehicle parking. This can potentially increase parking space availability and reduce cost for both users (lower prices) and developers (fewer parking spaces needed in new buildings).

People riding bicycles also require parking space, but bicycle parking is more efficient than vehicle parking in terms of both space and cost. Up to ten bicycles can fit in a parking space originally designed for a motor vehicle, and the cost per vehicle is 200 to 300 times lower.

Economic Benefits

Affordability

Active transportation is the most affordable means of transportation available in Los Angeles County, where moderate-income residents spend 27 percent of their salaries on transportation. Replacing vehicle trips with walking and bicycle trips offers immediate financial relief for households struggling with transportation costs. Saving money on transportation gives people more disposable income to use for income-generating investments, rather than gasoline and maintenance.

Active transportation is the most affordable means of transportation available in Los Angeles County

Local Economic Development

People who arrive at local businesses by walking and bicycling spend more money than those arriving by car. For instance, a Portland study found that, compared to people who drive, people who bicycle spend 30 percent more at local establishments (restaurants, convenience stores and bars) and people who walk spend 7 percent more.

As part of The BLVD, a downtown revitalization effort, Lancaster, California re-designed its main street, Lancaster Boulevard. The re-design included a road diet, a pedestrian-only plaza, wider sidewalks and landscaping. After a $10.6 million public investment, the project helped attract nearly $125 million in private investment, resulting in a 26 percent increase in sales tax revenue and 800 new jobs.

People who arrive at local businesses by walking and bicycling spend more money than those who arrive by car

Job Creation

Active transportation infrastructure has an economic impact on local economies through increased retail activity (sales and rentals) and tax revenues. It can also result in direct job creation through the design and construction of non-motorized infrastructure.



In the City of Baltimore, every $1 million spent on bicycle and pedestrian infrastructure projects created 11 to 14 jobs, compared to only 7 jobs for each $1 million in roadway infrastructure. This estimate includes direct jobs (engineering and construction), indirect jobs (related to engineering and construction) and induced effects (impacts on other industries, such as retail).

Active transportation infrastructure has an economic impact on local economies through increased retail activity and tax revenues

Health Benefits

Disease Prevention

Regular aerobic activity (i.e. 30 minutes per day, 5 days per week) improves health by lowering the risk of heart attack and stroke. Active transportation increases opportunities to meet this minimum threshold of aerobic activity, reducing the prevalence and cost of obesity and associated health conditions.

Sickness

Enabling people to ride bicycles to work can improve the health of the workforce. In the United Kingdom and the Netherlands, people who regularly bicycle to work take, on average, one to two fewer sick days annually.

Environmental Benefits

Physical Environment

Many of the factors contributing to LA County's low health outcomes are related to physical environment, such as air quality, access to recreation and exercise opportunities, long commutes and a high percentage of residents who drive alone. All of these factors can be improved with active transportation investment.

Pollution and Greenhouse Gases

Reducing vehicle miles traveled (VMT) in fossil fuel-burning vehicles is a pillar of efforts to reduce airborne pollutants and greenhouse gases (GHGs). Active transportation plays a role in reducing VMTs by offering a transportation alternative that enables people to leave their cars at home.

The transportation sector is a significant source of air and water pollution in Los Angeles County, accounting for 37 percent of (GHG) emissions. The American Lung Association places the Los Angeles Basin and California's Central Valley as the areas with the nation's highest levels of ozone and fine particle pollution. Los Angeles topped the list of cities with the worst smog in the nation, violating federal health standards for ozone an average of 122 days per year.

Safety Benefits

People walking and riding bicycles account for a disproportionate number of fatalities on the streets of Los Angeles County - 19 percent of all trips, but 40 percent of traffic fatalities.

In Los Angeles County, the financial loss due to active transportation fatalities is more than $1 billion per year - a figure that does not include the emotional cost to the families and friends of these victims.

Road diets have been found to be effective at reducing collisions for all road users in a variety of urban contexts. Road diets provide refuge for turning vehicles, which reduces side-swipe and rear-end collisions. They also have traffic calming effects, reducing the opportunity to speed or drive recklessly by eliminating excess capacity and repurposing it for people on bicycles or people on foot. Meanwhile, long-term statistics support the "safety in numbers" principle, which holds that walking and bicycling becomes statistically less dangerous when more people walk and ride bicycles.

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Metro Bus in Downtown Los Angeles

EXISTING CONDITIONS

The existing conditions analysis is a key component of the process of developing the Active Transportation Strategic Plan. The data included in the analysis is intended to help communities and stakeholders plan for the specific needs and conditions around their station area of interest, to better position applicants for grant funding opportunities, to assist communities in targeting resources to those areas that need it most, and to add value to the tremendous transit investments occurring across the county.

The analysis covers 661 transit station areas across the county, including Metro Rapid and Metro Rail service, Metrolink service, and high ridership bus stops serviced by Metro Local or municipal transit providers. Not all municipal transit providers contributed the ridership data necessary to assess the stop-level activity for inclusion into the set of high-ridership stops. For a full description of the process and the municipal transit providers included in the analysis, please see Appendix D.

The existing conditions analysis provides a snapshot of key data around the station area, within a half-mile walkshed and a three-mile bikeshed. These sheds are based on the network connectivity and slope, and are therefore smaller than a simple circle with a half mile or three mile radius; they are more reflective of the realities of walking and biking in Los Angeles. The data available in this analysis are explained on the following page, with an example of the analysis layout for one station area.

Additionally, much of the existing conditions data are used to set the baseline for the performance evaluation discussed in Chapter 3. Viewing this data station-by-station in the existing conditions analysis shows the variation that exists around the county, emphasizing the need to identify metrics and set benchmarks at the county level as well as at the project level. A more extensive discussion of performance evaluation is included in Chapter 3, along with the selected metrics and the benchmarks against which this Plan will be measured.

To explore existing conditions around the full set of 661 station areas, visit http://gis.fehrandpeers.com/metroatsp/

UNDERSTANDING THE ATSP EXISTING CONDITIONS ANALYSIS

As part of the ATSP, Metro uses several methods to capture data that the First Last Mile Strategic Plan identifies as important to planning a comprehensive first last mile analysis. The ATSP online portal, available at http://gis.fehrandpeers.com/metroatsp, is a publicly-accessible resource, home to existing conditions analysis for the 661 transit stations and stops. Each station area location may consist of multiple bus stops and rail stations that are close to each other - this enabled stops that are on opposite sides of the streets, rail stations that have bus stops nearby, or stations that have more than one portal, to be treated as one area rather than multiple areas with duplicate analysis. Figure 2.2 is an example of an existing conditions analysis summary.

The summaries visually present information and analysis on elements including:

- extents of the analysis area
- points of interest
- land uses
- jobs/housing diversity
- bicycle facilities
- ridership activity
- CalEnviroScreen Score
- collisons by mode
- population and employment
- age demographics
- Walk Score
- Bike Score
- Transit Score
- route directness
- intersection density
- journey to work

The existing conditions analysis summaries help identify stations or stops in your local jurisdiction with need for first last mile connectivity improvements. The analysis focuses within a half-mile walkshed and a three-mile bikeshed. The information presented in these summaries is based on the most recent available data for each source; therefore, it is important to supplement this with site visits and other data sources, when a specific station area planning effort begins.

The ATSP online portal, available at http://gis.fehrandpeers.com/metroatsp, is a publicly-accessible resource, home to existing conditions analysis for the 661 transit stations and stops.

The following section provides a detailed overview of the existing conditions analysis conducted for the 661 station areas, the data presented, and the sources utilized to prepare the analyses. The data presented will be particularly helpful for initiating first last mile planning near station areas or presenting relevant data requested in grant applications to pursue funding for implementation of pre-existing plans and projects that help complete local and regional active transportation networks or address first last mile challenges.

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Metro Active Transportation Strategic Plan

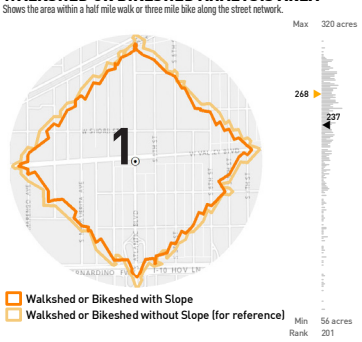
Transit Station or Stop Name

Walkshed or Bikeshed Analysis - Existing Conditions



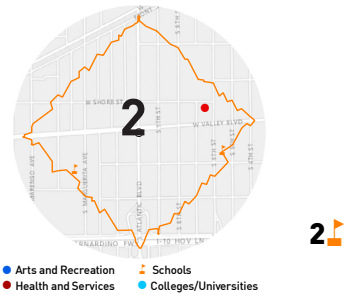
WALKSHED OR BIKESHED ANALYSIS AREA

Shows the area within a half mile walk or three mile bike along the street network.



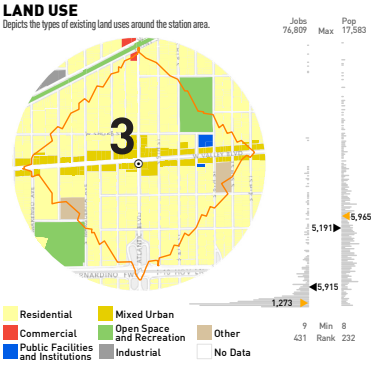
POINTS OF INTEREST

Shows the location of key community destinations and the number of schools in the walkshed or bikeshed.



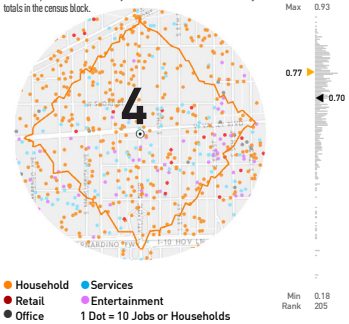
LAND USE

Depicts the types of existing land uses around the station area.



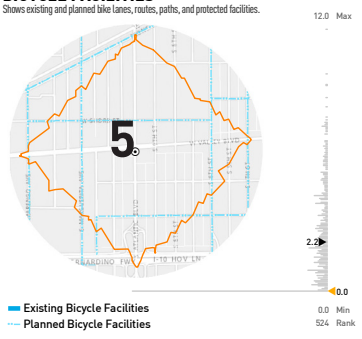
JOBS/HOUSING DIVERSITY

Each dot represents a household or job in the area. Dots are shown randomly in the area based on the totals in the census block.



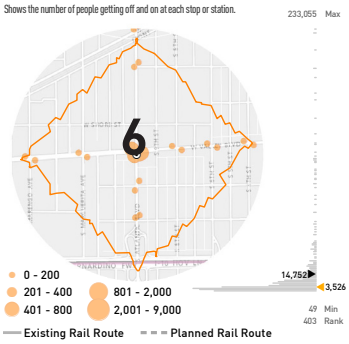
BICYCLE FACILITIES

Shows existing and planned bike lanes, routes, paths, and protected facilities.



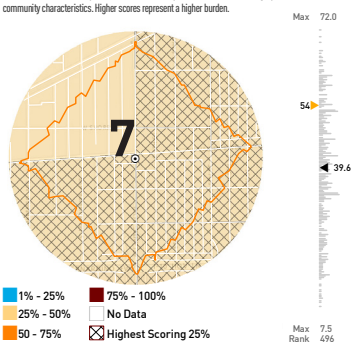
RIDERSHIP ACTIVITY

Shows the number of people getting off and on at each stop or station.



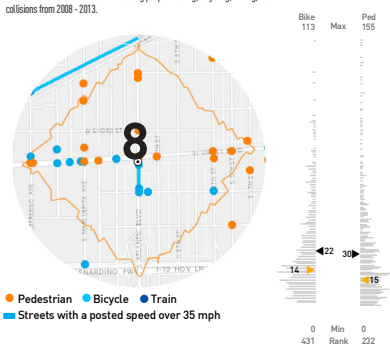
CALENVIROSCREEN SCORE

CalEnviroScreen Scores represent a combination of pollution levels and demographic community characteristics. Higher scores represent a higher burden.



COLLISION BY MODE

Shows locations of all collisions including people walking, bicycling, driving, and train collisions from 2008 - 2013.



POPULATION AND EMPLOYMENT

Population and employment in walkshed or bikeshed.

5,965 Population
232 Rank

1,273 Employment
431 Rank

AGE

Displays the number and %s of people under 18 and over 64 in the walkshed or bikeshed.

1,161 Under 18
19.5%

756 Over 64
12.7%

WALK SCORE (1-100)

Reports the Walk Score for the station area.

78

BIKE SCORE (1-100)

Reports the Bike Score for the station area.

21

TRANSIT SCORE (1-100)

Reports the Transit Score for the station area.

34

ROUTE DIRECTNESS

Represents the amount of out of direction travel needed to get to destinations in the walkshed or bikeshed. Higher scores are more direct.

4.4

INTERSECTION DENSITY

Number of intersections in walkshed or bikeshed.

105 Count
35 Score (1 - 100)

JOURNEY TO WORK

Shows the percentage of people who live in the walkshed or bikeshed and how they get to work.

2.3% Walk
0.2% Bike
0.0% Rail
7.2% Bus
13.0% Carpool
77.2% Drive Alone
0.1% Other

COLLISION BY MODE // KSI

Shows the total number of collisions in the walkshed or bikes and the number of collisions resulting in someone being killed severely injured (KSI) from 2008-2013.

Total	KSI	
15	3	Pedestrian
14	0	Bike
0	0	Train
101	1	Auto

FEHR PEERS

Figure 2.2: Existing conditions analysis summary

1. Bikeshed/Walkshed Analysis Area

Definition: The area is defined by the bikeshed/walkshed, or the distance a person is willing to travel biking or walking to or from a transit station or stop based on the existing street grid. The sheds are presented with and without the slope taken into account and are based on the travel distance on the street network, which is not necessarily in a straight line. All data are presented for the sheds with slope; the sheds without slope are presented for reference only.

Source: Metro's Bike Model Roadway Network.

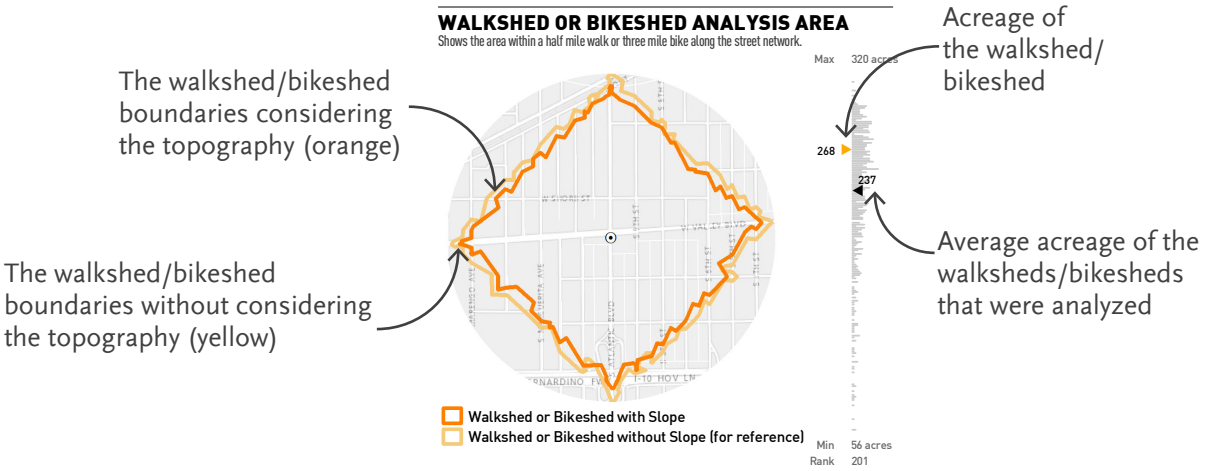


Figure 2.3

2. Points of Interest

Definition: The locations of important community or regional destinations that people might travel to/from the transit station or stop. The number of schools is also presented in this graphic.

Source: Thomas Brothers (2010)

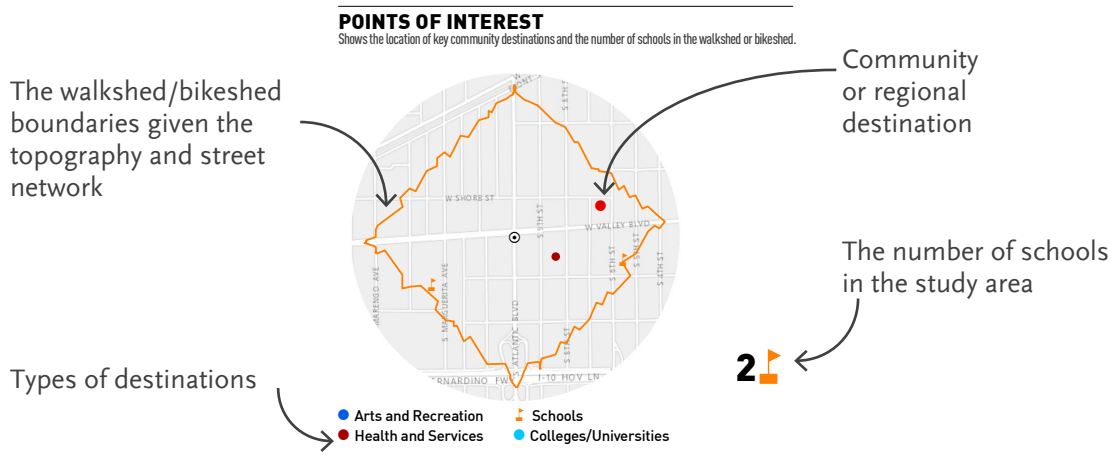


Figure 2.4

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3. Land Use

Definition: The types of existing land uses that define the study area.

Source: Southern California Association of Governments (SCAG) (2010)

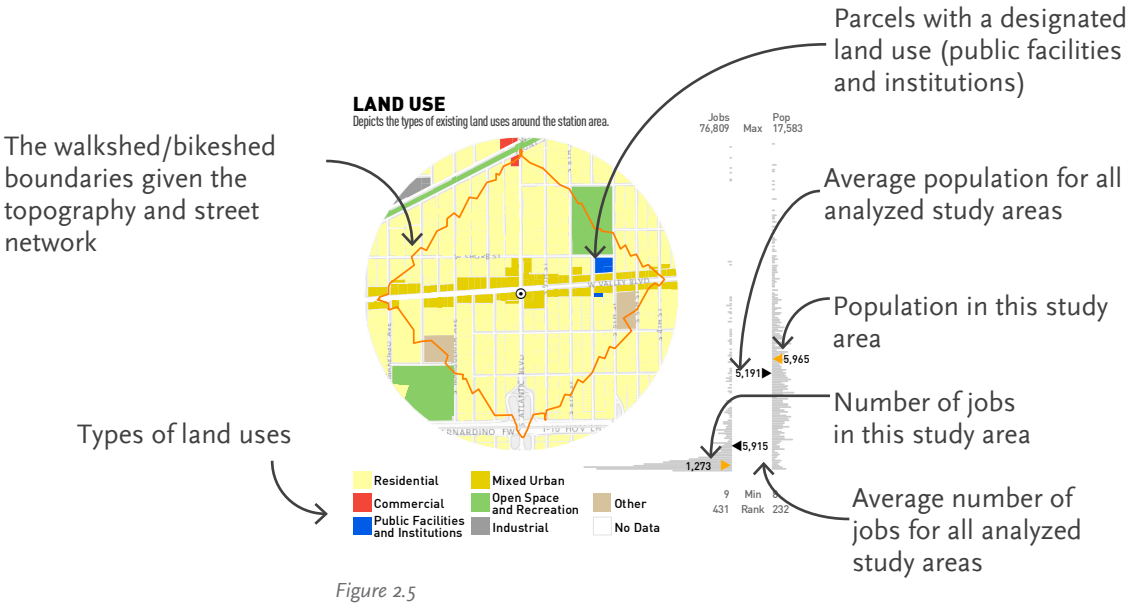


Figure 2.5

4. Jobs/Housing Diversity

Definition: The number of households and jobs in the study area based on Census block totals.

Source: Environmental Protection Agency (EPA) Smart Location Database (Census 2010)

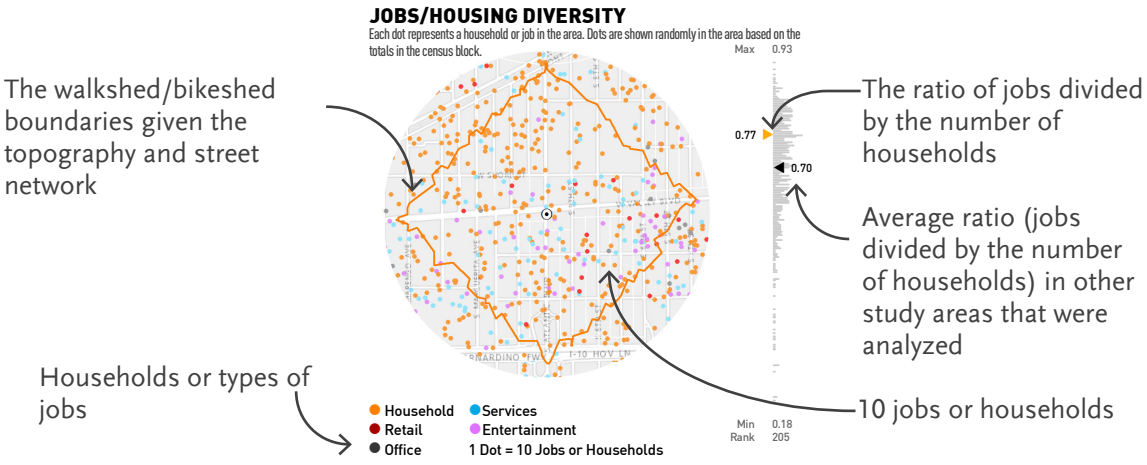


Figure 2.6

5. Bicycle Facilities

Definition: The location of existing and planned bikeways, including bike lanes, routes, paths, and protected facilities.

Source: Metro (2015), Alta Planning (2015), Various Local Jurisdictions within Los Angeles County

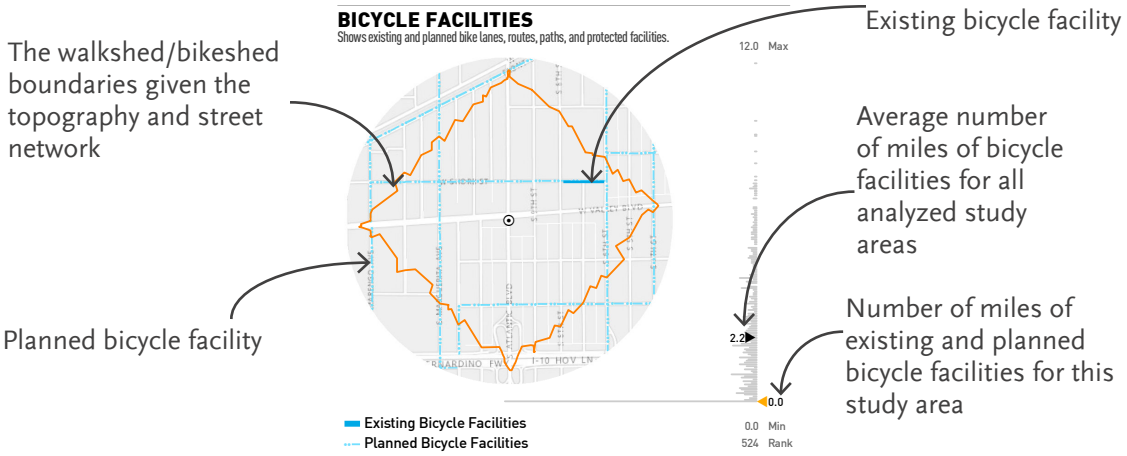


Figure 2.7

6. Ridership Activity

Definition: The number of people getting on and off at each transit stop or station within the study area.

Source: Metro, Culver City Bus, Foothill Transit, City of Los Angeles Department of Transportation (LADOT), Gardena Transit, Long Beach Transit, Montebello Bus, Santa Clarita Transit, Santa Monica Big Blue Bus. Numbers were normalized to reflect average daily boardings and alightings per stop.

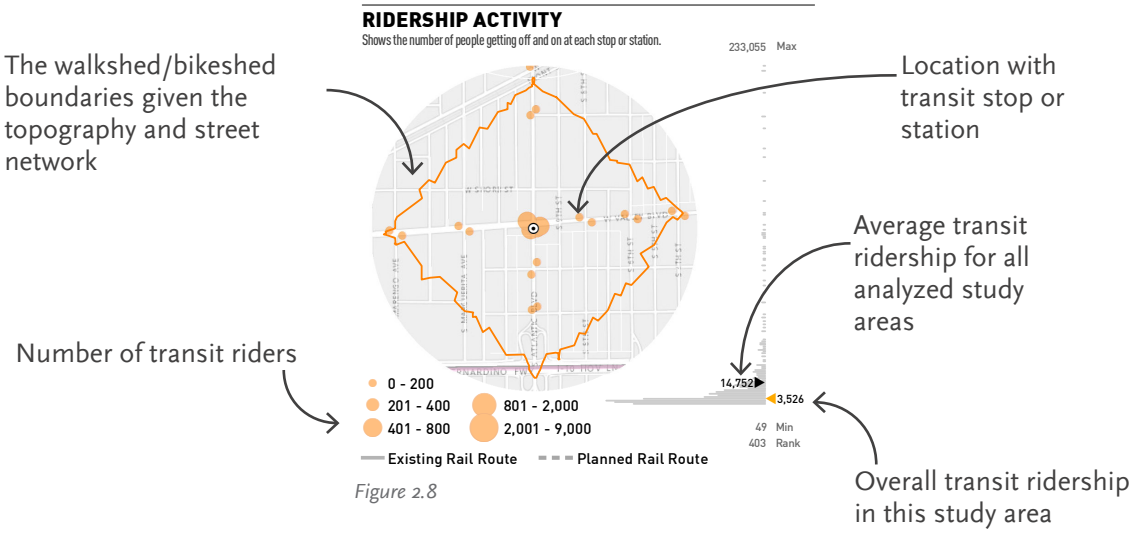


Figure 2.8

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7. CalEnviroScreen Score 2.0

Definition: The score given to represent the overall quality of public health, considering a combination of pollution types and demographic community characteristics. Higher scores represent a greater burden.

Source: Office of Environmental Health and Hazard Assessment (OEHHA) (2014)

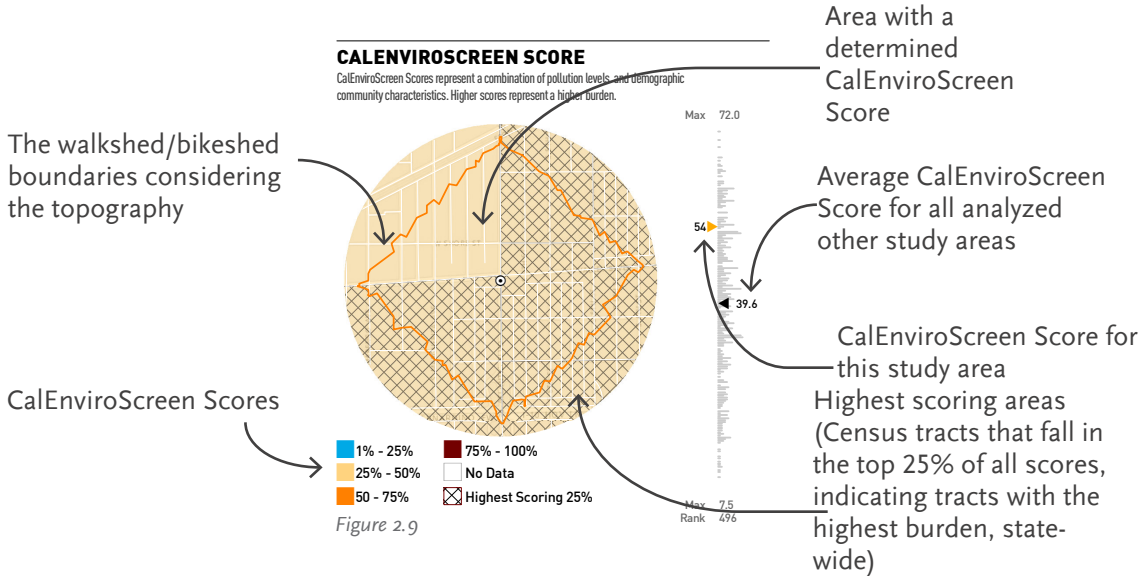


Figure 2.9

8. Collision by Mode

Definition: The locations of collisions involving people walking, bicycling, driving, and train collisions from 2008-2013.

Source: Statewide Integrated Traffic Records System (SWITRS) (2008-2013)

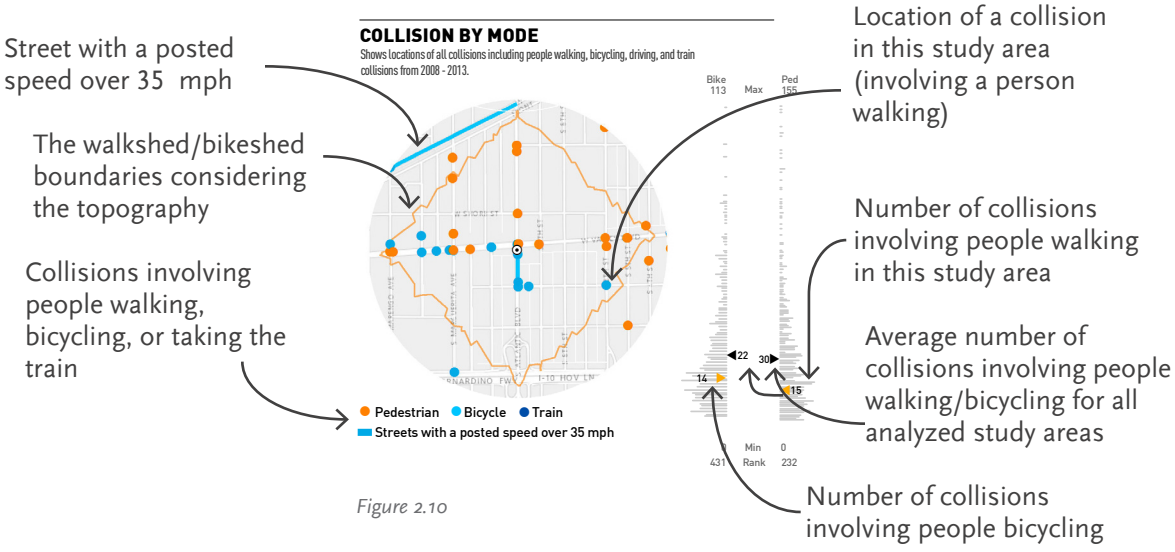


Figure 2.10

Population and Employment

Definition: The number of people living and working in the study area.

Source: U.S. Census Bureau (2010)



POPULATION AND EMPLOYMENT
Population and employment in walkshed or bikeshed.

5,965	Population
232	Rank
1,273	Employment
431	Rank

Age

Definition: The number and percentage of people under the age of 18 and over the age of 64 in the study area.

Source: U.S. Census Bureau (2010)



AGE
Displays the number and %s of people under 18 and over 64 in the walkshed or bikeshed.

1,161	Under 18
19.5%	
756	Over 64
12.7%	

Walk Score

Definition: The score given to represent the walkability in an area. Scores range from 1 (bad) to 100 (excellent).

Source: WalkScore.com (2015)



WALK SCORE (1-100)
Reports the Walk Score for the station area.

78

Bike Score

Definition: The score given to represent the bikeability in an area. Scores range from 1 (bad) to 100 (excellent).

Source: WalkScore.com (2015)



BIKE SCORE (1-100)
Reports the Bike Score for the station area.

21

Transit Score

Definition: The score given to represent the transit-friendliness in an area. Scores range from 1 (bad) to 100 (excellent).

Source: WalkScore.com (2015)



TRANSIT SCORE (1-100)
Reports the Transit Score for the station area.

34

Route Directness

Definition: The amount of out-of-direction travel needed to get to destinations in the study area. The Route Directness Index ranges from 1-5; higher scores are more direct.

Source: Fehr & Peers, Thomas Brothers (2010)



ROUTE DIRECTNESS
Represents the amount of out of direction travel needed to get to destinations in the walkshed or bikeshed. Higher scores are more direct.

4.4

Intersection Density

Definition: The number of intersections within a study area. Higher scores indicate more intersections. Scores range from 1-100.

Source: Thomas Brothers (2010)



INTERSECTION DENSITY
Number of intersections in walkshed or bikeshed.

105	Count
35	Score (1 - 100)

Journey to Work

Definition: The percentage of people in the study area who commute to work by each mode.

Source: U.S. Census (2010)



JOURNEY TO WORK
Shows the percentage of people who live in the walkshed or bikeshed and how they get to work.

2.3%	Walk
0.2%	Bike
0.0%	Rail
7.2%	Bus
13.0%	Carpool
77.2%	Drive Alone
0.1%	Other

Collision by Mode //KSI

Definition: The number of collisions and the number resulting in someone being killed or severely injured (KSI) from 2008-2013 in the study area.

Source: SWITRS (2008-2013)



COLLISION BY MODE // KSI
Shows the total number of collisions in the walkshed or bikeshed and the number of collisions resulting in someone being killed or s[illegible] from 2008-2013. m 2008-2013.

Total	KSI	
15	**3**	Pedestrian
14	**0**	Bike
0	**0**	Train
101	**1**	Auto

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Entrance to North Hollywood Station on the Metro Red Line



Cyclist near Tongva Park in Santa Monica



Biking and walking in downtown Los Angeles

BARRIERS TO IMPLEMENTATION

During the development of the Active Transportation Strategic Plan, Metro and the project team engaged numerous stakeholders through the Project Technical Advisory Committee, meetings with Councils of Governments, and stakeholder outreach meetings. A consistent theme throughout these discussions focused on implementation, and associated challenges and opportunities. The following section outlines and summarizes much of the feedback that stakeholders provided, focusing on the key challenges and barriers discussed. The ATSP is intended to help stakeholders address barriers and seize opportunities for the development and implementation of active transportation infrastructure. Appendix C provides more details on the outreach process that informed the development of this Plan.

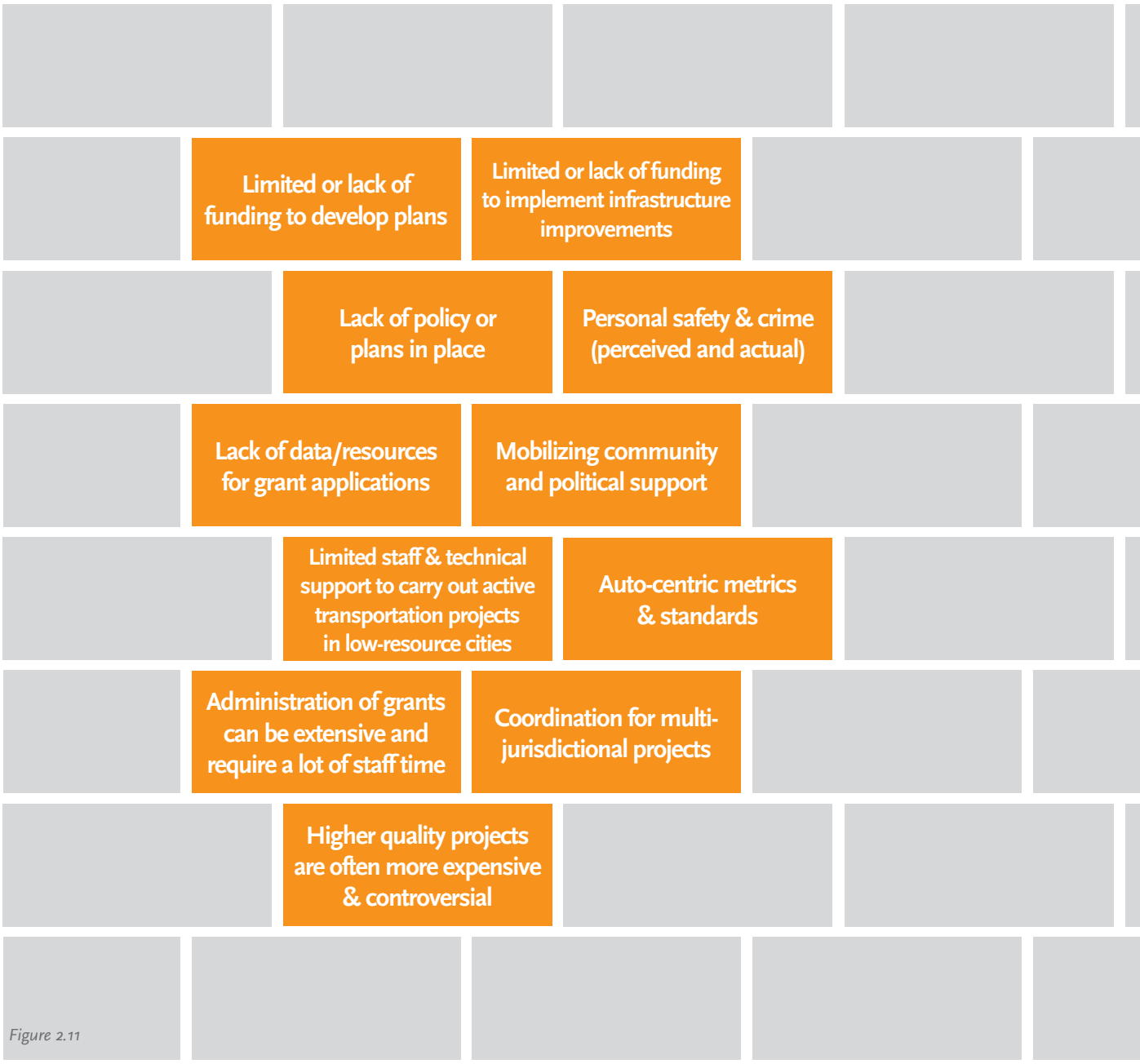
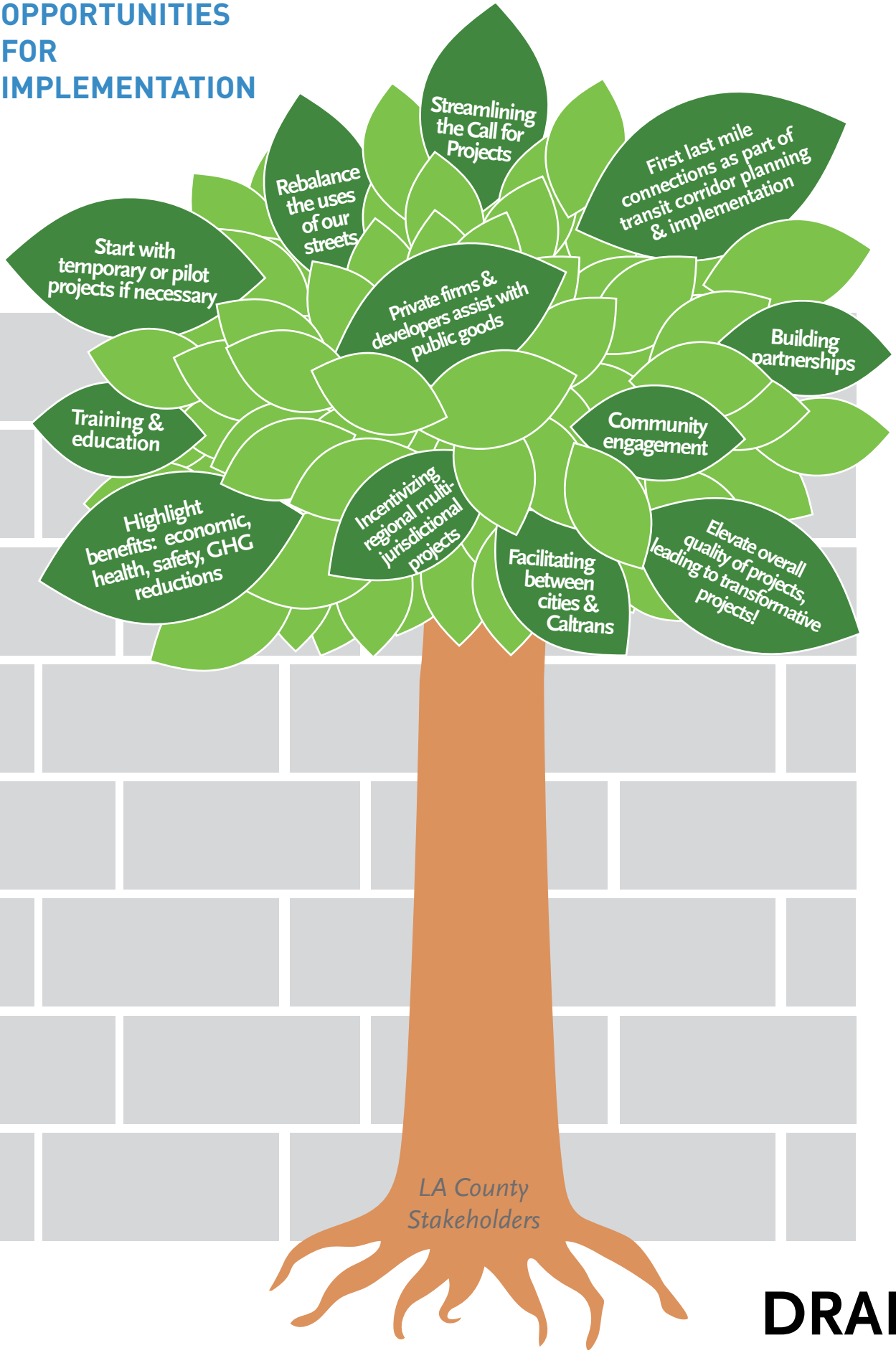


Figure 2.11

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OPPORTUNITIES FOR IMPLEMENTATION



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3 IMPLEMENTATION

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OVERVIEW

This chapter helps identify the steps towards getting a project on the ground. It highlights the areas where various stakeholders can get involved, as well as the components that are supported by the Active Transportation Strategic Plan.

In order to make improvements that are beneficial to all stakeholder groups, it is vital that applicable groups are involved in the process when appropriate. However, this process could differ from city to city, project to project, or with different agencies.



Impromptu high-fives at CicLAvia South LA

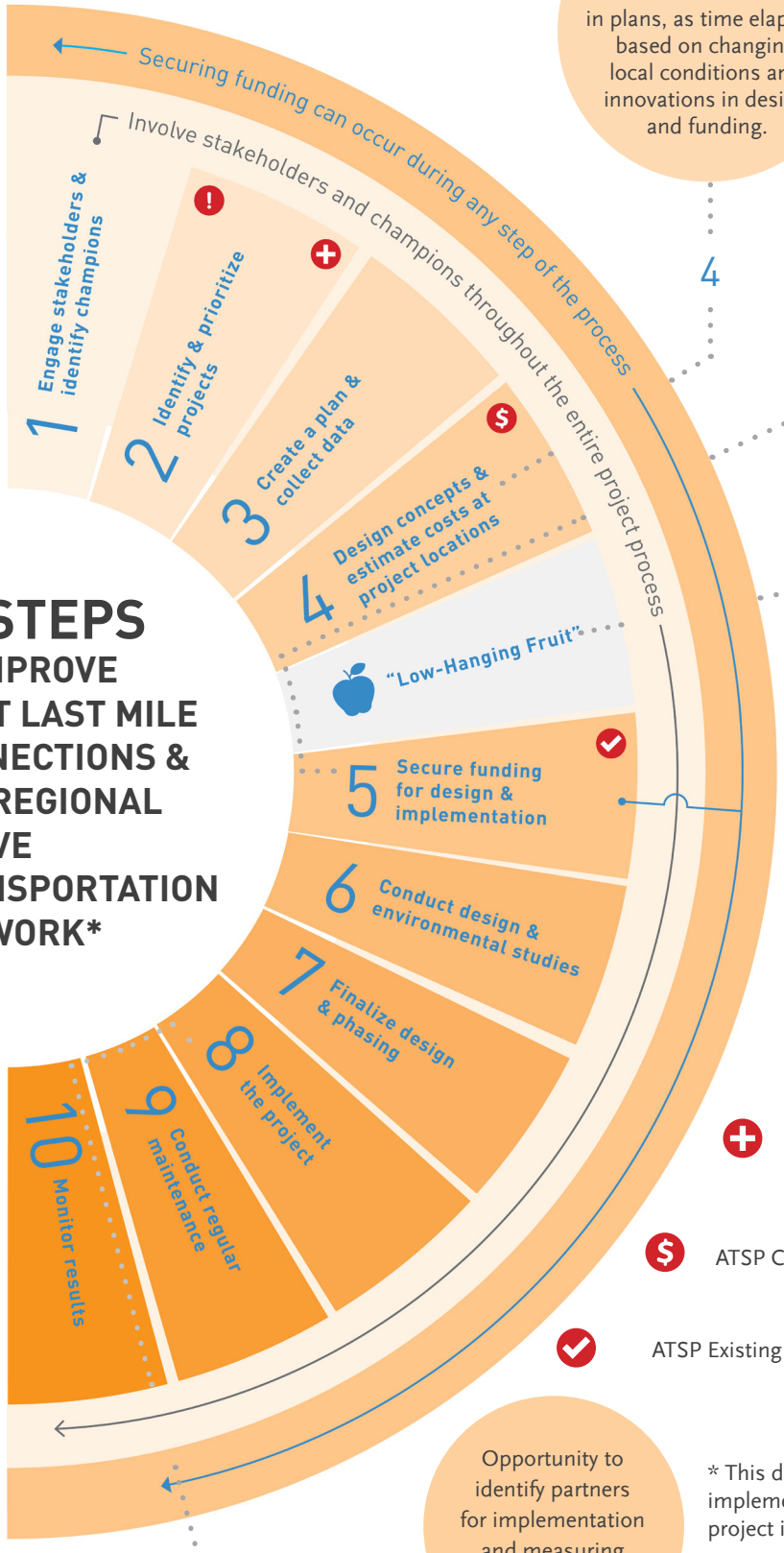


Wayfinding helps guide pedestrians outside Union Station



Bike riding at CicLAvia South LA

STEPS TO IMPLEMENTATION



Review corridors and treatments identified in plans, as time elapses, based on changing local conditions and innovations in design and funding.

4

Use ATSP as a starting point for planning and grant materials.

4 & 5

May include implementation options such as installing bicycle or pedestrian facilities with restriping or capital improvement projects, or facilities built in conjunction with private development projects.

Opportunity to identify partners for implementation and measuring impacts of projects.

8 & 10

10 STEPS TO IMPROVE FIRST LAST MILE CONNECTIONS & THE REGIONAL ACTIVE TRANSPORTATION NETWORK*

USING THE ACTIVE TRANSPORTATION STRATEGIC PLAN

ATSP Case Studies can be used to identify potential improvements that are appropriate for your study area.

The ATSP Regional Active Transportation Network can identify projects with regional benefits.

ATSP Cost Estimates can be used for planning-level cost estimation.

ATSP Existing Conditions Analysis can provide compelling data that supports grant applications.

* This diagram represents a typical process to implement an active transportation project. Each project is unique. Actual process steps may vary.

Figure 3.1

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MORE INFORMATION

Stakeholder Outreach

- Stakeholders provide first-hand insight on priority projects and should be engaged early in the process.
- Potential champions and stakeholders include: neighborhood organizations, community groups, elected officials, council districts, municipal departments, residents, schools, non-profit organizations, faith-based organizations, large- and small- scale businesses, neighboring municipalities, and celebrities.
- Utilize technology, social media, and other non-traditional strategies to attract diverse groups of stakeholders to participate.
- Produce appropriate outreach material for people of varying ages, language needs, educational levels, etc.
- Consider developing a community advisory committee (CAC) comprised of local stakeholders to encourage ownership of the project.
- Stakeholders can help champion plans for final approval.
- Consider reaching out to the community to help install and maintain the project, and collect subsequent data for evaluation.
- Consider having education and support programs that teach lawful and safe behaviors and the importance of maintenance and evaluation.

"Low-Hanging Fruit"



- Low-hanging fruit includes easy and immediate opportunities that are implemented before or during long-term projects to capitalize on existing resources.
- These easy and immediate improvements can include things like: adding landscaping, shade, lighting, and signage; enhancements to bus waiting areas; restriping lanes and crossings; adding time-to-station signage, street furniture, and bicycle parking.
- Consider coordinating Complete Streets improvements with private development roadway repaving, re-striping, and maintenance planned or underway. A Complete Streets approach views all transportation improvements as opportunities to create safe, more accessible public streets for all users.

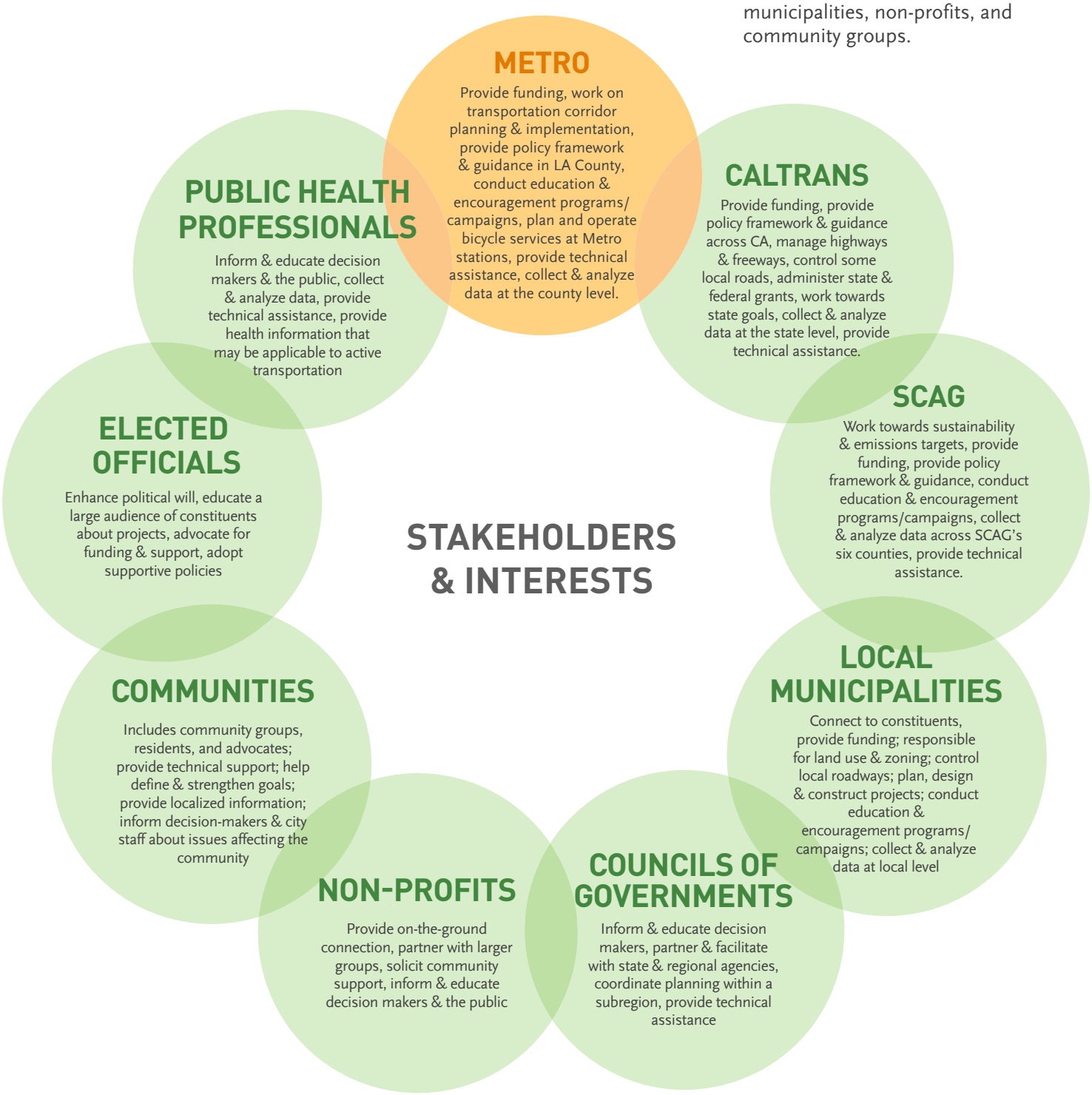
Helpful Tips

- Typical Complete Streets-related plan types include: Pedestrian Plans, Bicycle Plans, Active Transportation Plans, Community Plans, Transportation Plans, and Complete Streets Plans.
- Consider consulting with non-profit and private organizations that can offer their expertise in outreach, planning, cost estimation, grant writing, design, environmental review, implementation, and maintenance.
- Prioritize projects that provide greater safety, environmental and long-term benefits.
- Consider using new technologies and social media to collect data and track results.
- Consider first piloting the project using temporary and affordable materials.
- Create branding schemes and creative outreach mechanisms to attract and retain project supporters.
- Potential funding sources include: city funds, Metro capital grant programs, state and federal grants, philanthropy, and developer mitigations and fees. In some instances, the private sector can be involved in funding for projects or plans.

STAKEHOLDER ROLES

Many important stakeholder groups play a vital role in the inspiration, planning, funding and implementation of active transportation projects.

The graphic provides an overview of the functions and roles that each stakeholder may play as it relates to active transportation. These functions and roles may differ among various local municipalities, non-profits, and community groups.



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Metro's Role

Metro is responsible for programming a significant portion of the County's transportation funds and for the planning and funding of the regional transit system and highway corridors. Over the last decade, the agency's role in supporting active transportation has continued to evolve in response to the Metro Board's vision and policy direction, regional and local needs and priorities, and to further support federal and state policy initiatives that address climate change and promote sustainable transportation. Metro's involvement in supporting active transportation projects and programs include:

> Funding projects that improve conditions for people who walk and bicycle through Metro's capital grant programs

> Leading the planning/ implementation of active transportation corridors and first last mile improvements to transit in partnership with local municipalities

> Leading the regional effort to develop a user-friendly bike share system to foster first last mile connections

> Operating and expanding bicycle parking at many stations throughout the system to improve first last mile connections

> Launching education and encouragement campaigns, events, and classes to raise awareness, improve safety, and encourage a shift from driving to more walking, bicycling, and the use of public transit

> Developing a Countywide Safe Routes to School Initiative to help communities start Safe Routes to School Programs or sustain and enhance existing efforts

> Providing technical assistance, policy guidance, training, toolkits, and data to local government agencies and other stakeholders to assist with project planning and implementation.

> Metro's countywide programs are discussed in more detail on page 72.


Temple City Rosemead Blvd. Improvement Project


Eastside Access Project



Metro El Monte Bike Hub



CicLAvia South LA


Metro's Safe Routes to School Pilot Program Walk to School Day

Other Stakeholder Roles, Responsibilities, & Opportunities

California Department of Transportation (Caltrans)

As the state transportation agency that controls the freeways in Los Angeles County, Caltrans is responsible for designing, building, and maintaining highways, freeways, and on and off ramps which can cause potential conflicts between vehicles entering or exiting the freeways and people walking or biking on the local adjacent roads. Caltrans also maintains some local roads throughout cities in the region, which follow the agency's design guidelines and standards rather than those of the local jurisdiction. Caltrans provides several funding streams for local agencies to implement pedestrian and bicycle improvements. Caltrans also sets state policy which can provide guidance for local jurisdictions coming into alignment with the goals of the state.

Non-profits

Non-profit organizations serve a variety of functions that link communities to the overall active transportation planning process. They provide programs and services that complement the infrastructure improvements across the county, such as CicLAvia. Non-profits solicit community input and report that input to the implementing agencies, and also communicate information about city and county efforts from agencies to the public. Some non-profits conduct third-party research and studies to advance the field of active transportation planning in Los Angeles County and advocate for change based on this research and the needs of the public.



Caltrans has a responsibility to maintain connection points between highways & local roads


Community workshop discussing the ATSP


Community workshop discussing the ATSP


Bicycle training class

Southern California Association of Governments (SCAG)

As the Metropolitan Planning Organization covering the six-county Southern California region, SCAG develops initiatives, conducts research and funds planning efforts to help Southern California meet state-legislated sustainability goals. The agency provides funding for bicycle and pedestrian improvements through the Active Transportation Program grant. SCAG provides policy guidance and technical assistance to local governments and conducts education and encouragement programs to encourage more sustainable transportation. SCAG also produces forecasts to estimate the pace of population growth in the region, as well as other demographic and socioeconomic changes that might have effects on transportation choices and travel behavior.

Communities

Community groups, residents, and individual advocates play an important role in the development and implementation of active transportation projects. They can provide insight into the needs and desires of residents, for whom the projects are intended to serve. They can also provide highly localized information about safety concerns and travel behavior, support the processes of defining goals, and inform the scoping, implementation, and maintenance of projects. They can also serve as a repository of knowledge about the history of plans and projects in a community for future planning efforts.

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Local Municipalities

Local municipalities in Los Angeles County are largely responsible for owning and operating the public right-of-way used by people walking, biking, driving, and riding transit. Local monies can fund right-of-way maintenance and improvement, as well as implementation of new active transportation facilities and access improvements to connect local residents with regional destinations. Local municipalities can set design guidelines and standards for the use of their right-of-way. They enforce traffic through their law enforcement department. They also represent the views and preferences of their residents to regional and countywide planning agencies like SCAG and Metro.



Local advocates create a "parklet" on Parking Day



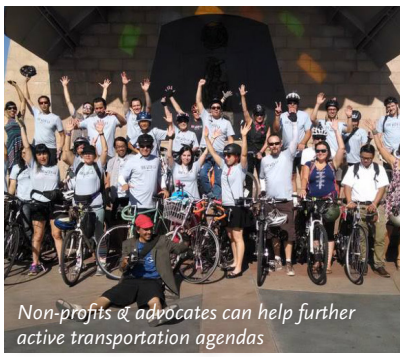
An example of bicycle infrastructure that enables more commuting choices

Elected Officials

Elected officials can be critical to the success of an active transportation project by serving as a local champion of a project idea, whether the idea was generated by constituents, by an agency, or by a third party such as a non-profit or community group. They can encourage agency staff to pursue the project, garner support from the public to implement the project, and advocate for funding to construct and maintain it. Elected officials can work to adopt supportive policies that provide institutional support for making streets safer and more accessible for all users.



Metro's Safe Routes to School Pilot Program Walk to School Day



Non-profits & advocates can help further active transportation agendas

Councils of Government (COGs)

Members of sub-regional Councils of Governments may consist of cities, Los Angeles County supervisorial districts, and other organizations. Each COG serves as a regional voice for its member agencies and provides an organizing body to engage and represent local agencies within a sub-region of the county to Metro for planning and funding purposes. The sub-regions were established to reflect the diversity of needs and preferences across the county, allowing each to set their own mobility and access agenda in a manner which represents the cities and residents within the sub-region through ongoing engagement with city representatives and the public. Sub-regional COGs communicate this input with Metro, influencing the development of active transportation programs and strategies.

Public Health Professionals

The topics of health and safety have become more pervasive in transportation planning, particularly with respect to walking, biking, and rolling. Public health professionals, some of whom also have planning backgrounds or experience, are uniquely suited to speak to health conditions and associated challenges that many communities face, particularly low-income communities and minority communities. Issues like air pollution, obesity, and opportunities for physical activity can be addressed through the strategies in this plan and by also incorporating the public health lens into planning and evaluation.

RESPONDING TO BARRIERS & OPPORTUNITIES

The Active Transportation Strategic Plan addresses many of the barriers and opportunities outlined in Chapter 2. It is designed to:



Provide clarity on the process of implementation

In this chapter, possible routes for implementation are outlined and clarified in a way that many different types of organizations can follow. Through the routes to implementation, which identify potential partner organizations for every step and related examples, this Plan aims to clarify the process and identify opportunities for different stakeholders to be involved in making our streets safer and more accessible for all users.



Provide guidance on obtaining & executing funding

Funding is a key element of any active transportation project. This Plan is intended to inform Metro's capital grant programs as well as better position partners for local, state, and federal grant funding opportunities that arise in the future. It identifies specific funding partners, strategies, and ways to think about new opportunities for funding.



Propose active transportation routes that connect multiple jurisdictions, communities, & regional destinations

Coordination with neighboring cities is critical to realizing the benefits of active transportation investments. Active transportation facilities within local jurisdictions can provide residents with more travel options by connecting local destinations; however, when these facilities connect multiple cities, communities, and regional destinations, it can bring tremendous regional benefits and contribute to a robust regional active transportation network. This Plan provides guidance and identifies gaps and corridors to provide a comprehensive, integrated, countywide active transportation network that can serve people ages 8 to 80.



Pull together progressive design resources

Designing an active transportation project that is both context-sensitive and cost effective while utilizing the newest planning practices can be difficult and daunting. This Plan looks at the latest in bicycle and pedestrian facility types and their application, paving the way for jurisdictions or agencies to follow suit.



Show by example how to scope projects to improve station area access

Examples in this Plan showcase the wide range of possible scopes for future projects, focusing in particular on station area access. The examples take into consideration different types of local context and challenges that are seen across the county. Use these flexible examples to build a scope that could be applied to any potential project site.



Share cost estimates and related tools

The cost estimates in this Plan provide a framework for creating a budget and determining funding needs for active transportation projects in the region.

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LA River Bike Path, Vernon

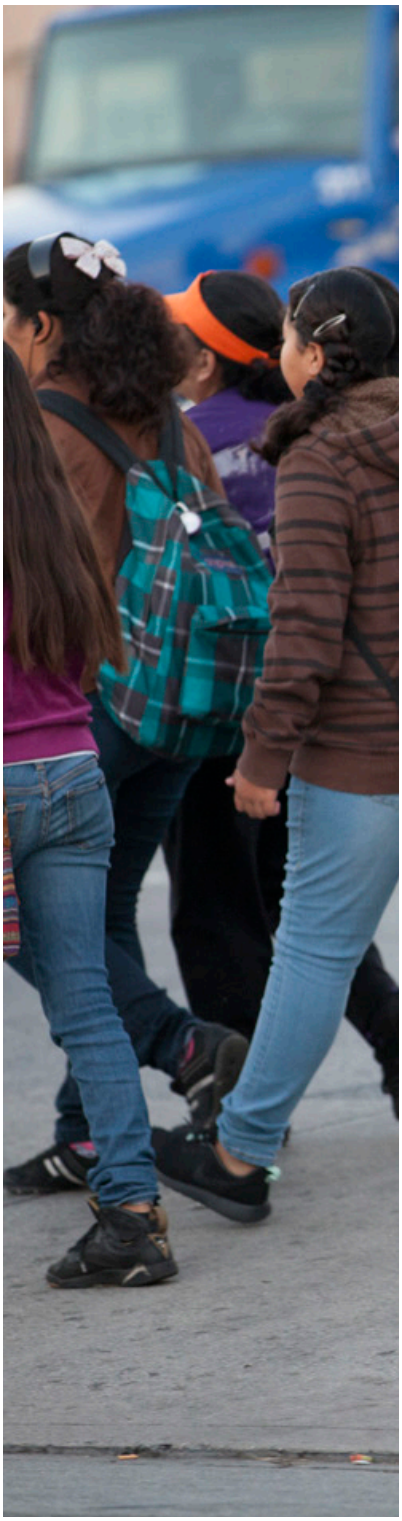

Harbor Drive Cycle Track, Redondo Beach


Michigan Avenue Neighborhood Greenway Staging, Santa Monica

ROUTES TO IMPLEMENTATION

This section provides several examples of how different agencies, partnerships, and approaches can come together to move toward active transportation project implementation. These examples include options such as local or regional agencies leading the effort, implementation efforts that are funded through grants or local funds, and areas where synergies and opportunities can be maximized based on a sampling of recent or on-going projects in LA County. These examples aim to provide a better understanding of key steps to implementation and how different stakeholders can participate in the process.

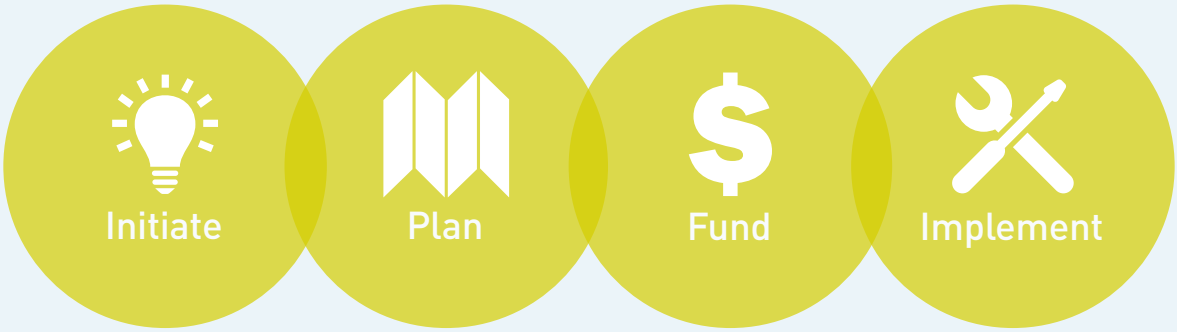
These are intended as representative examples only, and the participants, process, and implementation approach may vary in length, intensity, and stakeholder involvement depending on the given project.



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Example 1: City government institutionalizes processes which lead to the implementation of active transportation projects.





City reviews existing processes to identify places where active transportation could be imbedded and projects could be implemented with little or no additional cost.

City relies on policy guidance (such as Complete Streets policies) to direct the inclusion of pedestrian and bicycle facilities in existing processes. Where applicable, City's policies may need to be adopted by City Council.

Grant funding is not necessary to implement; active transportation projects are included in the normal course of maintenance, development, and construction projects.

Implementation occurs over time during the normal course of maintenance, development, and construction.



City of Long Beach considers bicycle facilities such as this cycle track through existing processes.

Long Beach's Complete Streets Policy

The City of Long Beach has taken great strides to integrate complete streets into citywide planning and operations. When considering maintenance, corridor planning, or new development, the City contextualizes a street in terms its function, the character and design of the surrounding neighborhood, and the needs of all mobility users. The design of streets is a multidisciplinary effort that draws from the expertise and resources of diverse City jurisdictions. This arrangement facilitates a more balanced mobility system, one that supports the integration of mobility, land use, and urban design.

Maintaining the program: As the consideration of bicycle and pedestrian safety and access became a normal part of all maintenance and construction, additional maintenance specific to those facilities became unnecessary. Maintenance of projects is institutionalized similar to all other capital projects.

Example 2: City government manages the projects from start to finish



City and local bicycle or pedestrian coalition successfully prepare grant for funds to develop bicycle plan.

City prepares active transportation master plan concurrent with subregional Active Transportation Plan at Council of Government level. City's plan is adopted by City Council.

Single grant source (e.g., Metro Call for Projects or State Active Transportation Plan) is successfully obtained to fund implementation of bicycle and pedestrian facilities, bicycle parking, and wayfinding.

Implementation of all components occurs upon receipt of grant funds from single source.



Cyclists of all ages attend Tour de Downey as part of the Bicycle Master Plan effort

Downey Bicycle Master Plan

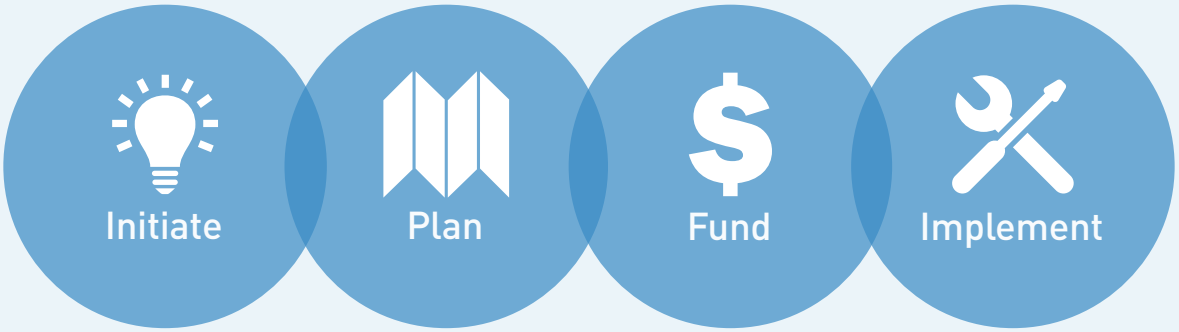
The development of the Bicycle Master Plan came as part of an effort by the City of Downey to address local and regional desires to enhance the viability of bicycling as a mode of transportation and reduce transportation system impacts on local communities. The City of Downey General Plan, adopted in 2005, identifies active modes of transportation such as bicycling as a way to mitigate congestion and advance livable communities. The process to develop the Bicycle Master Plan began in May 2014. Grant funding secured through this process will include all of the Bicycle Master Plan's Phase I projects, including 16 miles of bike lanes, approximately 100 bike racks, and wayfinding. All of these components will enhance access to commercial areas and the Lakewood Boulevard Green Line Station.

Maintaining the program: In July 2015, City Council adopted the Plan, which allowed the City to expand its funding efforts. It has since been recommended for a Metro Grant award of $2.3 million for implementation.

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Example 3: City government initiates and plans, then implements utilizing existing programs or as funding is available





City successfully prepares grant for funds to develop bicycle and pedestrian plan.

City prepares active transportation master plan absent subregional Active Transportation Plan. City's plan is adopted by City Council.

City transportation dollars and multiple grant sources (e.g., Metro Call for Projects and State Active Transportation Plan) are successfully obtained to fund implementation of bicycle and pedestrian facilities.

Implementation of facilities occurs as resources allow (such as roadway restriping) and as grants are received.



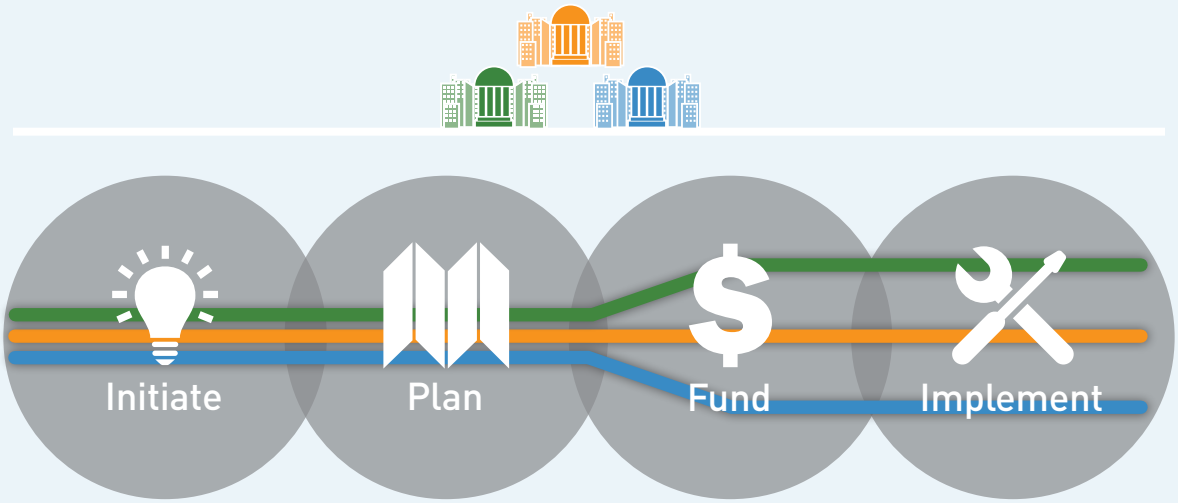
Pomona's Active Transportation Plan supports pedestrian and safe routes to school initiatives.

Pomona Active Transportation Plan

The City of Pomona embarked on developing its first Active Transportation Plan (ATP) in 2012, which includes a complete Bicycle Master Plan combined with targeted pedestrian and safe routes to school planning efforts. It was approved along with a General Plan amendment, Corridors Specific Plan, Green Plan and environmental impact study by City Council in March 2014.

Maintaining the program: Moving forward, the City of Pomona is considering "big-picture" ways in which the plan can now be implemented, as well as securing additional funding.

Example 4: Multiple cities initiate and coordinate, with each city obtaining its own funding and implementing separately



Multiple cities and/or agencies partner to plan and implement regional facility that connects multiple cities.

Project may be planned based on projects in local or regional plans. Projects may close gaps between existing facilities, or reflect jointly-planned new projects depending on each city's needs and capabilities.

Funding a project that is included in a local or regional plan will make it more competitive for grant funding. Jointly-planned new projects may require use of agency funds.

If cities jointly plan, fund, and implement the project with grant funding sources it may be done simultaneously or separately. Using agency funds is more likely to result in installation city by city.


Rosemead Blvd Cycle Track

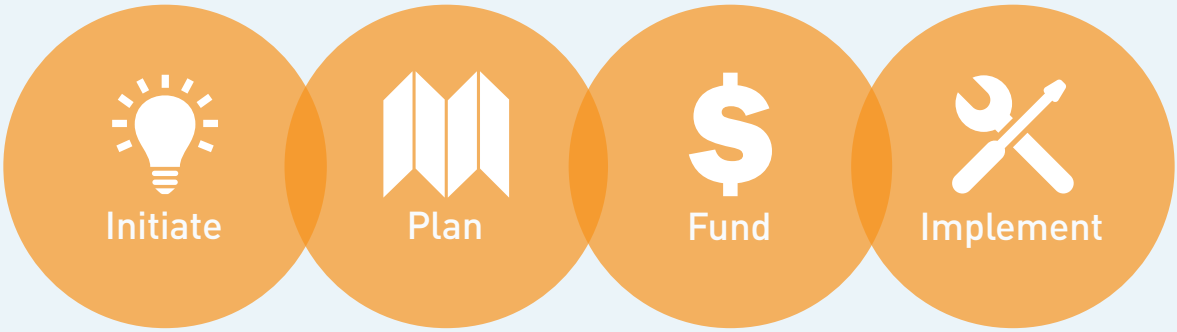
Lakewood Blvd/Rosemead Blvd Bike Facilities

Numerous jurisdictions are connected on Lakewood Blvd/Rosemead Blvd, from the San Gabriel Valley to Long Beach. The separated bikeway on Rosemead Blvd in Temple City began construction in 2013, improving conditions for bicyclists and pedestrians through streetscaping and separation from moving vehicle traffic. The project had a budget of $20.7 million, funded through local, state, and federal resources, including Metro's 2011 Call for Projects. Adjacent cities and others along Lakewood/Rosemead are exploring opportunities for regional coordination for a low stress facility spanning a significant portion of the region.

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Example 5: Metro initiates and leads project in coordination with local jurisdictions





Elected officials and the community partner with Metro to initiate the feasibility of an active transportation corridor along an under utilized Metro-owned right-of-way.

Metro develops a feasibility study with conceptual designs and generates support. The study identifies the value of multi-modal mobility elements throughout the corridor and benefits to the community, safety, connectivity to transit/ light rail corridors and employment.

The feasibility study provides information needed for various grant opportunities and a framework to further refine the project scope and cost estimates. Metro leverages in-kind and local match dollars to successfully obtain federal and state grant funding to design and construct the project.

Metro continues to work with federal, state, and local partners, including elected officials, local jurisdictions and community stakeholders, to further plan, design, and construct the project.

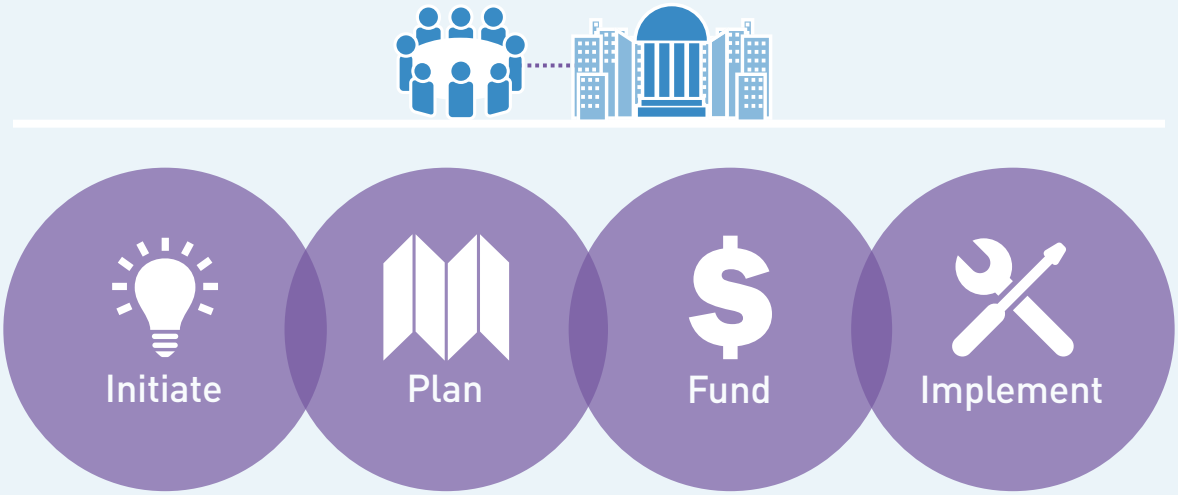


Photo-rendering shown at community meeting for the Rail-to-River Project

Metro Rail to Rail/River Active Transportation Corridor Project

The Rail to Rail/River Active Transportation Corridor Project will serve communities to the south and west of downtown LA by connecting two Metro Rail lines (Crenshaw/LAX and Blue Line) and the Harbor Busway to the LA River bike path which will eventually run 51 miles from the West San Fernando Valley to Long Beach. Metro is taking the lead on this complex active transportation project requiring coordination with the BNSF railroad, the County of Los Angeles, and the cities of Bell, Huntington Park, Los Angeles, Maywood and Vernon.

Example 6: Community members, non-profit organization, and city partner for initiation through implementation



Stakeholders such as community members or non-profits initiate requests or planning for features such as bicycle repair hubs or fix it stations.

The city works with stakeholders to provide support in planning specifics such as location, goals, and intended use.

The city and stakeholders partner to identify and pursue funding sources to implement and maintain the desired amenities.

The city and stakeholders may partner on implementation and operation, or identify an entity to implement and run the program/ project.



Santa Monica Bike Center

Santa Monica Bike Center

The Bike Center is a City-owned facility that is privately operated, and exists as a part of Santa Monica's comprehensive Bike Action Plan adopted in 2011. The Bike Center provides bike rentals, secure bike parking, showers, locker rooms, education courses, and specialty rides such as those for senior citizens.

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INNOVATIONS

The preceding section provides several examples, based on planned or completed projects, of how the planning process and resources available can be used among local stakeholders, elected officials, city staff, funding agencies, and regional partners to plan and implement active transportation projects. However, project planning, implementation, and associated processes can vary widely from community to community and project to project; therefore, the steps or strategies in the previous examples may be combined, expanded, or left out altogether depending on the local context and needs. While these are models used to successfully plan and implement projects, it is important to recognize that there is no "one size fits all" approach. The following innovations are described to provide more information regarding how approaches may be further modified to achieve project goals.

Innovation 1: Capacity Building with Metro

This route to implementation is a variation of examples 3 and 4 from the previous section. Under those examples, regional projects are initiated, planned, funded, and implemented entirely by the cities or Metro. One innovation that may emerge as a result of the ATSP recommended networks is for a project to be initiated by Metro and for Metro to play a greater role through the planning and funding stages for projects that span multiple cities or communities. Most of the implementation would continue to be under the purview of the local jurisdictions. Corridors such as Vermont Avenue, Imperial Highway, Washington Boulevard, and Crenshaw Boulevard are examples of corridors that either are related to a variety of on-going studies (transit, freeway, and active transportation studies) and/or provide significant regional connections between major employment or residential concentrations and transit facilities.

> Initiate: *A corridor with a proposed local or regional bicycle or pedestrian facility may emerge as key corridor for implementation because of the potential benefit to the users of the regional active transportation network or synergies with other projects underway.*

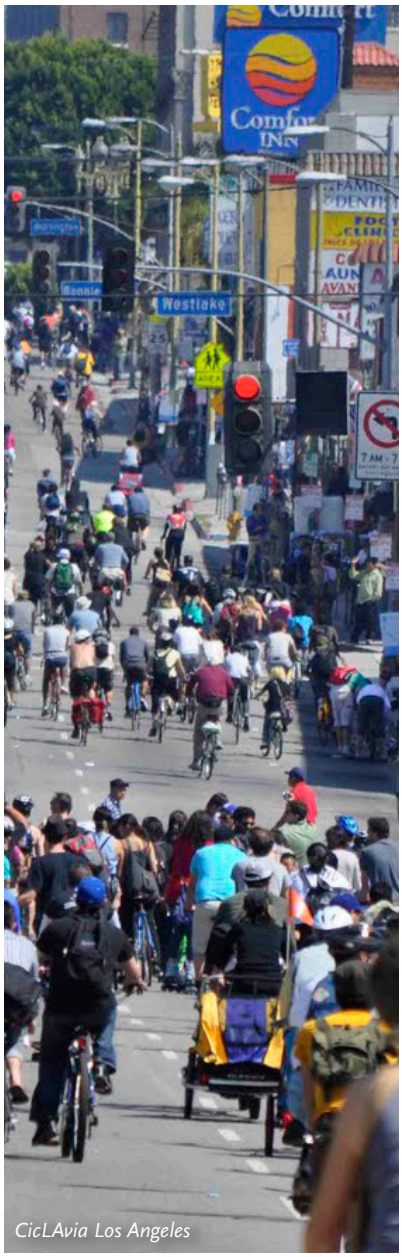
> Plan: *Playing a greater role, Metro could take the lead in organizing key government agencies and other implementers for communities along the corridor and provide technical assistance to those jurisdictions for planning the facility and pursuing funding for implementation.*

> Fund: *Metro would have involvement throughout the process, for instance providing assistance in preparing grant applications so that the various cities can secure funding through competitive sources and assemble multiple funding sources, if necessary.*

> Implement: *Two key outcomes of this innovation are implementation of projects for walking, biking, and rolling and building the capacity of local municipalities to replicate the process with or without Metro's assistance for the build out of local and regional active transportation networks.*

Innovation 2: Metro Exemplifies a Program Incubated by Stakeholders

This route to implementation is a variation of example 5. Under this innovation, local stakeholders would play a greater role in planning and implementing the project, and a successful undertaking would likely lead to the project's maintenance and on-going funding being transferred to local agencies or Metro, as opposed to staying at the community level. One example of a project that has generally followed this approach is Open Streets, which are temporary one-day events that close the streets to automotive traffic and open them to people on foot or bicycle. This project began at the local stakeholder level and has become a countywide program with a dedicated funding source at the regional level. Many cities have also taken it upon themselves to hold and fund smaller, local events.



CicLAvia Los Angeles

- Initiate: *A community stakeholder, such as a non-profit organization, resident, or elected official, initiates program or a project based on a local desire or unmet need. The initiation process could include identifying a project, affected stakeholders, and a strategy for assembling partners, informing the community, and obtaining the needed resources.*
- Plan: *While planning a project or event, the initiating entity would need to conduct outreach and develop project details required to pursue funding and move toward implementation. For something like an open streets event, this could include determining a route, developing traffic operation and control plans, outreaching to residents and businesses affected by the event, identifying funding sources, advertising the event, working with governmental agencies to have them as partners, and securing any needed permits. City support in planning and pursuing funding would improve the likelihood of finding a viable funding source and may assist stakeholders with the capacity to administer grant funding.*
- Fund: *Depending on the project/event type, this phase may be the most challenging and may depend on effective planning that identifies a broad range of supporters and benefits to the local community. If initiated by a local non-profit, for example, it is likely that the group would require additional funding support. Currently, cities interested in hosting an Open Streets event can submit an application for funding to Metro when the grant cycle is open. Metro and local cities are currently the two main sources used for funding open streets events. However, when the first Open Streets, or CicLAvia, event was held in Los Angeles, this funding source did not exist and the planners of that event pursued funding from a variety of sources.*
- Implement: *Implementation of these projects are key to demonstrating their benefit and long-term viability. Under this option, implementation would be a partnership between the initiating stakeholder(s) and the City. If the project is successful in the long-run, the duties initially taken on by local stakeholders may be assumed by governmental agencies in an effort to increase the size and frequency of events at the local or regional level.*

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Innovation 3: Working with Community-Based Groups

In addition to planning and funding infrastructure, support programs and events are critical elements of active transportation planning that should not be forgotten, since they are critical to building political will and public support to help implement walking and bicycling facilities. This route to implementation can be seen as a complement to all five of the routes discussed previously. Under this innovation, local stakeholders would take the lead, with coordination and support from governmental agencies, in developing programs alongside the planning and implementation of active transportation infrastructure. A number of non-profits have educational curricula, staff, and a variety of funding sources that they pursue to conduct programs related to the other E's (education, encouragement, enforcement, and evaluation) such as outreach, walking/biking skills classes, community based walking audits, and pedestrian/bike count data collection. This innovation identifies ways that stakeholders and agencies can partner to avoid duplicating efforts and enjoy the synergies between the engineering aspect of implementing facilities and the other E's, to promote safe and regular use of active transportation infrastructure through additional engagement of stakeholders. This example will focus on using the annual count program that the Los Angeles County Bicycle Coalition (LACBC) organizes as a model.



Volunteer at PopUp MANGo Event

> Initiate: *An external stakeholder, such as a local non-profit or community-based organization, initiates the planning of a program or effort such as count data collection. Initiation of this activity should include the local agency as a partner and can occur simultaneously with the development of a plan or the implementation of infrastructure for walking and biking.*

> Plan: *Planning a data collection program would be based on serving the effort being undertaken by the local agency. For example, if a cycle track is being implemented by a local city, a local stakeholder might conduct outreach to businesses and residents along the corridor to explain how the facility is being implemented and some of the associated tradeoffs and benefits. This could be followed by educational materials and classes targeting all roadway users to explain how the facility operates and the rights and responsibilities of all roadway users. Finally, this group may also plan a ride, collect pedestrian and bicycle data, and organize other events in the community to raise awareness of the project, evaluate how it is being used, and pursue additional implementation of infrastructure as desired by the local community.*

> Fund and Implement: *Funding and implementation would be led by the local stakeholder group with support from the City and other regional partners. The LACBC count program is largely a volunteer effort; however, as data collection needs grow for new projects and funding sources, support from sponsors and agencies are needed to organize the event, provide training and materials, and produce a document or product that shares the data collected and relevant findings.*

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REGIONAL CORRIDOR EXAMPLES

These four example corridors highlight the ways in which cross-jurisdictional facilities could be coordinated and implemented.

Some of these corridors already have elements underway. These corridors also connect to key transit facilities across the county.

Imperial Highway

South Bay and Gateway Cities Sub-regions

Initiate

- Proposed as a dedicated on-street facility in the ATSP
- Identified in the South Bay Subregional Mobility & Gateway Cities Subregional Mobility Matrix/ Project Lists
- Based on local community goals, plans and preferences, agencies may need to coordinate on the consideration of alternative facility types or corridors for implementation.

Plan

- Two segments in South LA/Watts included in the High Injury Network
- Major facilities represent a significant challenge to regional connectivity via active transportation
- Connects with I-105, I-405, I-110, I-710, I-5, I-605
- Connects with Metro Rapid Lines 740, 710, 757, 754, 745, 760, 762, Metro Green Line, Silver Line, Blue Line
- A low stress bicycle facility on an arterial such as Imperial Hwy would include protected or buffered on-street bike lanes
- A low stress bicycle facility through the South Bay sub-region could include slow lanes that accommodate bicycles and Neighborhood Electric Vehicles
- Include connectivity and wayfinding along corridor to/from local and regional facilities and activity sites
- Shade and ADA issues should be addressed to improve the streetscape
- Provide ancillary facilities to support active transportation along the corridor, including bike parking, sidewalk improvements, and street crossing enhancements

Fund

- To be most competitive for funding, regional cooperation is needed amongst cities and COGs, Metro ATSP, local advocacy groups and state and regional funding agencies

Implement

- California Active Transportation Program (ATP) Cycle 2 grants were awarded in October 2015. Future projects should be planned to be consistent with previous ATP grant cycle application requirements

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Vermont Avenue

South Bay and Central Los Angeles Sub-regions

Initiate

> Proposed as a dedicated on-street facility in the ATSP

> Identified in the South Bay Subregional Mobility & Central Subregional Mobility Matrix/Project Lists

> Based on local community goals, plans and preferences, agencies may need to coordinate on the consideration of alternative facilities or implementation options

Plan

> A large segment of Vermont Ave., from Manchester Ave. to Franklin Ave., is included in the High Injury Network

> Traverses South Bay and Central Los Angeles sub-regions

> Connects with I-405, SR-91, I-105, I-10, US 101

> Connects with Metro Rapid Lines 754, 705, 740, 728, 730, 733, 720, 704, 780, Metro Green Line, Expo Line, and Red/Purple Lines

> A low stress bicycle facility on an arterial such as Vermont Ave. would include protected or buffered on-street bike lanes

> Include connectivity and wayfinding along corridor to/from local and regional facilities and activity sites

> Shade and ADA issues should be addressed to improve the streetscape

> Provide ancillary facilities to support active transportation along the corridor, including bike parking, sidewalk improvements, and street crossing enhancements

Fund

> To be most competitive for funding, regional cooperation is needed amongst cities and COGs, Metro ATSP, local advocacy groups and state and regional funding agencies

Implement

> California Active Transportation Program (ATP) Cycle 2 grants were awarded in October 2015. Future projects should be planned to be consistent with previous ATP grant cycle application requirements

San Fernando Road / Colorado Blvd. / Huntington Dr.

San Fernando and San Gabriel Valley Sub-regions

Initiate

> Proposed as a dedicated off-street facility in the ATSP

> Identified in the San Fernando Valley Subregional Matrix/Project List

> Based on local community goals, plans and preferences, agencies may need to coordinate on the consideration of alternative facilities or implementation options

Plan

> San Fernando Road: Several segments in the northeastern San Fernando Valley included in the High Injury Network

> Colorado Blvd./Foothill Blvd.: High Injury data only available within City of Los Angeles; portions of other major corridors across LA County may also have high injury rates

> Connects with I-5, I-210, SR-118, SR-134, SR-2, I-605

> Connects with Metro Rapid 794, 761, 734, Metrolink, and the Metro Gold Line

> A low stress off-street bicycle facility on an arterial such as San Fernando Road could include a Class I bike path or a new Class IV cycletrack

> A low stress bicycle facility on Colorado Blvd./ Foothill Blvd. would include protected or buffered on-street bike lanes

> Include connectivity and wayfinding along corridor to/from local and regional facilities and activity sites

> Shade and ADA issues should be addressed to improve the streetscape

> Provide ancillary facilities to support active transportation along the corridor, including bike parking, sidewalk improvements, and street crossing enhancements

Fund

> To be most competitive for funding, regional cooperation is needed amongst cities and COGs, Metro ATSP, local advocacy groups and state and regional funding agencies

Implement

> California Active Transportation Program (ATP) Cycle 2 grants were awarded in October 2015. Future projects should be planned to be consistent with previous ATP grant cycle application requirements

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Sub-Regional Project with Regional Significance

Various Sub-regions

Initiate

> Proposed as a designated active transportation improvement in the ATSP or local planning documents

> Identify projects from Sub-regional Mobility Matrices/Project Lists

> Based on local community goals, plans and preferences, agencies may need to coordinate on the consideration of alternative facilities or implementation options

Fund

> To be most competitive for funding, regional cooperation is needed amongst cities and COGs, Metro ATSP, local advocacy groups and state and regional funding agencies

Implement

> As funding becomes available, coordinate between cities, sub-regions, and COGs to implement project cohesively

Plan

> Connects with several corridors planned as dedicated on-street active transportation facilities

> Connects through major highways and regional transit facilities

> Overcomes regional barriers such as water features or topography

> Addresses first last mile challenges when accessing transit facilities

> A low stress bicycle facility could include various on- or off-street options, including a Class I bike path, a Class IV cycletrack, or a Class II protected/buffered bike lane

> Include connectivity and wayfinding along corridor to/from local and regional facilities and activity sites, including transit stations/centers, educational facilities, recreational facilities, institutional/government facilities and high employment and commercial centers

> Provide ancillary facilities to support active transportation along the corridor, including bike parking, sidewalk improvements, and street crossing enhancements

COST ESTIMATES

An important aspect of active transportation planning and infrastructure development is understanding the resources required to develop a robust active transportation network that serves the County's varied user types and trips. Metro has been working to develop an estimate of the cost to build-out the active transportation network and incorporate a funding strategy to help partners in the region obtain dollars for planning and implementation. With an emphasis on developing a safe, low-stress network that suits users of all ages and abilities for both local and regional travel, an estimate is provided below for building out a high-quality network throughout the county (for additional detail on how these estimates were developed please see Appendix G). The costs are presented in Table 3.1 as a low-medium-high range, based on increasing magnitude of project and, therefore, cost. The ATSP will focus primarily on the regional active transportation network and first last mile access to major transit stops and stations in the County; therefore, the cost to implement improvements identified in the ATSP would be a subset of the overall costs mentioned in Table 3.1. Cost Savings may be obtained from changes in policies that support greater and more integrated multi-modal transportation and using a Complete Streets approach.



Bike racks on the front of a Metro bus help with first last mile access

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Table 3.1: High-Level Estimate of Annual Active Transportation Needs in Los Angeles County

Description	Cost [1]		
	Low	*Medium*	*High*
Total Active Transportation Network - Annual Capital Costs [2]	**$698,245,426**	**$1,013,418,783**	**$1,613,352,965**
First Last Mile Access to Major Transit Stops/ Stations [3]	$347,306,213	$468,699,344	$604,622,152
Regional Active Transportation Network [4]	$4,714,147	$75,811,137	$396,667,117
Local Active Transportation Networks [5]	$346,225,067	$468,908,301	$612,063,696
Metro Bike Services - Annual Capital Costs [6]	**$1,068,100**	**$2,205,900**	**$3,496,500**
Metro Bike Services - Annual Operations and Maintenance [6]	**$13,635,000**	**$26,921,000**	**$40,016,000**
Education & Encouragement Programs - Annual Costs [7]	**$24,357,776**	**$30,010,552**	**$35,734,663**
Total Annual Cost Range	**$737,306,302**	**$1,072,556,235**	**$1,692,600,128**

Notes:

1. Costs are in 2015 dollars and not escalated. Cost estimates are subject to change based on further refinements and economic conditions.
2. Assumes total build out by 2035. Includes planning, design, engineering, environmental clearance, construction, and contingency costs. Cost range considers intensity of infrastructure improvement elements. Includes annual capital costs for first last mile access improvements to major transit stops/stations, regional active transportation network, and local active transportation network.
3. Includes first last mile active transportation improvements to 661 total station areas, which consist of existing and under construction Metro Rail, Metro Rapid, Metrolink, and high ridership local bus stops served by Metro and municipal transit operators. Each station area location may consist of multiple bus stops and rail stations that are close to each other - this enabled stops that are on opposite sides of the streets, rail stations that have bus stops nearby, or stations that have more than one portal to be treated as one area rather than multiple areas with duplicative analysis.
4. Regional active transportation network consists of bikeways and mixed use paths that connect cities and communities, major destinations, and transit hubs. These include local projects with regional benefits.
5. Local active transportation networks provide connections to local destinations and feed into the regional network.
6. Metro bicycle services include bike share and secure bike parking, such as bike hubs, lockers, and racks. Cost range considers scale of services.
7. Cost range considers scale and intensity of activities for Metro-sponsored Adult Bicycle Safety Skills Classes, Metro sponsored community rides, Metro Open Streets grant program, and Safe Routes to School non-infrastructure programs at public schools, which may be implemented by local municipalities or other external stakeholders.

FUNDING STRATEGIES

With an understanding of the financial resources needed to develop world-class infrastructure for Los Angeles County, a funding strategy that accounts for this need helps the region compete for resources at all levels, including local, regional, state, and federal, as well as public-private partnerships or other private sector entities. There are many ways this issue can be examined, beginning with two key questions:

- How much would the county need to spend annually to build out this infrastructure in 20 years or 40 years?
- At the county's current annual spending levels, how many years would it take to build out this infrastructure?

There are several changes the Metro Board may wish to consider to align existing funding sources to better support active transportation projects in Los Angeles County. Below are recommendations to policy changes that may increase Metro's ability to finance and deliver active transportation projects to meet the equity, mobility, and sustainability goals of the agency.

- Update Proposition A, C, and Measure R Local Return Guidelines to align with the Metro Board-adopted 2009 Long Range Transportation Plan, Metro First Last Mile Strategic Plan, Metro Complete Streets Policy, and the Active Transportation Strategic Plan, consistent with any constraints in the ordinance language;
- Update Proposition C 10% and Proposition C 25% Guidelines to align with the Metro Board-adopted 2009 Long Range Transportation Plan and future Board-adopted updates, Metro First Last Mile Strategic Plan, Metro Complete Streets Policy, and the Active Transportation Strategic Plan;
- Increase proportion of Call for Projects funding reserved for the Bicycle, Pedestrian, and Transportation Demand Management Modes according to the needs identified in the ATSP in proportion to needs for other modes;
- Prioritize projects submitted for Call for Projects funding which implement projects and programs identified in the Metro Active Transportation Strategic Plan;

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- Continue to use grant-writing technical assistance for Active Transportation Program (ATP), Affordable Housing and Sustainable Communities (AHSC) Program, Highway Safety Improvement Program (HSIP) and Transportation Investments Generating Economic Recovery (TIGER) to advance projects and programs identified in the ATSP and any future updates; and
- Consider providing grant-writing technical assistance for other existing funding sources, including "non-traditional funds" or new funds that may arise in the future (e.g., health-related grants, "parks and recreation"-related grants that may fund active transportation projects that support Metro's policy goals).

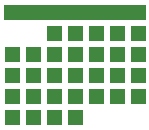


Table 3.2: Active Transportation Network Build Out within 20 years/40 years

Active Transportation Network build out estimate [1]	$20,300,000,000 [2]	
# of years for build out	20-year	40-year
Required yearly expenditures for AT network	$1,013,000,000	$506,700,000

Notes:

1. Includes first last mile access to major transit stops/stations, proposed Regional Active Transportation Network, and other local active transportation network.
2. Reflects the value of the medium cost estimate in the range provided in Table 3.1.

FUNDING SOURCES

Table 3.4 contains the list of eligible fund sources for active transportation improvements in the county and controlled by various levels or government. It should be noted that while the total amount of funding available per year is shown, many of these fund sources are also currently used for other transportation needs in the County beyond active transportation. Due to finite resources that must be distributed across many transportation priorities, these needs exceed the existing funding sources available.

Table 3.4: Eligible Formula Local Funding Sources

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/ Constraints
Transportation Development Act (TDA) – Article 3 $7.5 million	2% of TDA Article 3 funds are allocated to local jurisdictions based 85% on population and 15% to City of LA and LA County to maintenance of regionally significant Class I bicycle facilities.	Bicycle and pedestrian facilities are eligible.	TDA Article 3 funds are directly allocated to local jurisdictions.
Proposition C 10% $75.2 million	10% Commuter Rail/Transit Centers/ Park-n-Ride – To increase mobility and reduce congestion by providing funds for Commuter Rail and the construction of Transit Centers, Park-and-Ride Lots, and Freeway Bus Stops. Allocated directly by the Metro Board to Metrolink and through the Metro Call for Projects process to other eligible agencies for specific eligible projects.	In terms of active transportation, access improvement projects are eligible as well as bicycle lockers and other improvements to Metrolink rail stations.	Bond debt service and commuter rail operations have first priority for these funds. Board action in June 2015 further restricted these funds to only be available to projects which directly benefit Metrolink operations. These funds may not be used to improve access to Metro Rail or Bus stations.
Proposition C 20% $150.4 million	20% Local Return – Distributed to cities on a per capita basis for public transit-related purposes.	Proposition C 20% Local Return can be used for Transportation Demand Management, commuter bikeways and bike lanes, and street improvements supporting public transit service.	Declines in gas tax subventions from the state have led to cities using a larger portion of Local Return for street maintenance.

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Table 3.4: Eligible Formula Local Funding Sources (Continued)

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/ Constraints
Proposition C 25% $188.0 million	25% Transit-related Improvements to Freeways and State Highways and Public Mass Transit Improvements to Railroad Rights-of-Way – To provide essential countywide transit-related improvements to freeways and State highways. To facilitate transit flow, the operation of major streets and freeways will be improved by providing preference and priority for transit.	In terms of eligible active transportation projects, transportation demand management, Class I and Class II bicycle facilities, roadway improvements which support transit use, like first last mile improvements are eligible.	Bond debt service has first priority for funds. The majority of these funds are assumed to be programmed to rail and HOV projects. The balance is typically allocated through the Metro Call for Projects.
Measure R 15% $112.8 million	15% Local Return - Distributed to the incorporated cities within Los Angeles County and the County of Los Angeles for the unincorporated area of the County on a per capita basis.	Major street resurfacing, rehabilitation, reconstruction, bikeways, pedestrian improvements, streetscapes, and other active transportation improvements.	Declines in gas tax subventions from the state have led to cities using a larger portion of Local Return for street maintenance.
Repayment of Capital Project Loans Fund 3562 $ variable	Metro established the Repayment of Capital Project Loans (fund 3562) to account for capital reimbursements from the State for advances that Metro made in lieu of capital project funding that the State could not provide on the originally programmed schedule.	The Long Range Transportation Plan (LRTP) assumes that these funds must be used for capital purposes only and are allocated at the discretion of the Metro Board.	This source is typically used to cover cost increases on rail projects which are under construction. This fund source can also be programmed in the Metro Call for Projects when other eligible funds are not available.
Metro ExpressLanes Net Toll Revenue Grant Program $ 19.6 million (Cycle 1)	The objective of the Program is to increase mobility and person throughput through a series of integrated strategies (transit operations, transportation demand management, transportation systems management, active transportation, and capital investments) in the I-10 and I-110 corridors.	First last mile connections to transit facilities, focusing on multimodal elements recommended as part of the First Last Mile Strategic Plan including investments that might support 3rd party mobility solutions (car-share, bike-share), complete streets projects which emphasize multi-modalism, bicycle infrastructure including bicycle lanes and secured bicycle parking facilities, and pedestrian enhancements including on/off-ramp safety improvements.	This source is flexible, but limited by Board policy to areas within three miles of the ExpressLanes facilities. Funding for this program is subject to availability of net toll revenue.

Table 3.5: Eligible Formula State Funding Source [1]

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/Constraints
Regional Improvement Program $ variable	Regional Improvement Program – 75% of State Transportation Improvement Program Funds are distributed to the counties and RTPA's.	Capital projects including bicycle, pedestrian projects, safety projects, TDM, and intermodal facilities.	Funding from this source has been limited and volatile due to inflation and legislative and market changes in the price of gasoline and the taxes on gasoline.

Table 3.6: Eligible Competitive State Funding Sources

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/Constraints
Active Transportation Program (ATP)[2] $120 million available statewide $33 million available to LA County	The Active Transportation Program is a consolidation of five previous programs which funded active transportation. This program is exclusively devoted to funding active transportation projects, particularly those that improve health and safety, benefit disadvantaged communities, and promote increased use of active modes.	Bicycle and pedestrian improvement project, Safe Routes to School, bicycle and pedestrian planning, non-infrastructure projects, safety and encouragement campaigns. Highest priority projects demonstrate ability to increase walking and biking, improve health and safety, reduce GHG, and ensure benefit to disadvantaged communities.	Projects are selected based on a statewide as well as regional competition. Funds are now programmed several years out and are not available for immediate active transportation needs. Metro has provided ongoing technical grant-writing assistance to local municipalities to compete for this funding source.
Affordable Housing and Sustainable Communities (AHSC)[2] $ is 20% of overall Greenhouse Gas Reduction Fund	Supports reduction of GHG emissions by improving mobility options and increasing infill developments. Funds are administered by the Strategic Growth Council.	Active transportation and complete streets that are linked to affordable and infill developments.	Active transportation improvements must be linked to an affordable housing development.
Transit and Intercity Rail Capital Program (TIRCP) $ is 10% of overall Greenhouse Gas Reduction Fund	Administered by Caltrans in collaboration with California State Transportation Agency (CalSTA). The TIRCP provides grants for capital improvements and operational investments that modernize California's transit system.	Active transportation projects are eligible as project elements.	Funds are typically reserved for bus or rail projects. However, bicycle and pedestrian improvements are eligible project expenses as long as they are part of a transit expansion or modernization project.

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Table 3.7: Eligible Formula Federal Funding Sources [3]

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/Constraints
Congestion Mitigation and Air Quality Improvement Program (CMAQ) $138 million	An FHWA program. CMAQ funds are used to fund projects and programs which have a demonstrable impact on reducing criteria pollutants and relieving congestion. Funds are allocated based on weighted population formula, which takes into account air pollution severity. CMAQ funds are typically awarded through the Metro Call for Projects.	Bicycle, pedestrian, and TDM projects are eligible so long as they can demonstrate air quality benefits.	Funds from this source are typically allocated to rail expansion, HOV projects, and rail operation start-up. A limited amount of CMAQ is also programmed through the Metro Call for Projects to the Bicycle, Pedestrian, and Transit Capital modes. Projects must clearly demonstrate air quality benefits. Landscaping and street furniture are not eligible.
Regional Surface Transportation Program (RSTP) $81.6 million	An FHWA program. A flexible funding source which is apportioned to states on a per capita basis. Metro programs LA County's share to LRTP projects or through the Metro Call for Projects.	Bicycle, pedestrian, and TDM projects	Funds from this source are currently used primarily to operate Access Services as well as some highway and transit projects.
Surface Transportation Program – Local (STP-L) $31.7 million	Part of RSTP. Metro allocates $31.7 million per year of RSTP	Bicycle, pedestrian, and TDM projects	Funds from this source are apportioned to each municipality by population. Municipalities are responsible for selecting projects under this program. Funds are typically used for road rehabilitation and maintenance.

Notes:

[1] Eligibility and available funding amounts of state funds may have changed due to passage of new the new federal transportation bill, the FAST Act.
[2] ATP and AHSC funds are not directly controlled by Metro. However, Metro has provided grant assistance for recipients and has received ATP and AHSC funding for Metro-sponsored projects.
[3] Federal amounts reflect MAP-21 funding levels. Amounts will be updated once the FAST Act and state enabling legislation is analyzed

Table 3.8: Eligible Competitive Federal Funding Sources

Funding Source and Annual Amount (approx.)	Description	Eligible Uses	Opportunities/ Constraints
Highway Safety Improvement Program (HSIP) $2.4 billion available nationwide	An FHWAY MAP-21 program. The program purpose is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.	Any strategy, activity, or project on a public road with the data-driven State Strategic Highway Safety Plan (SHSP) and corrects or addresses a highway safety problem. Funds are administered by the state.	Projects must be identified in the SHSP.
Transportation Investment Generating Economic Recovery (TIGER) $500 million available nationwide	A competitive grant program for surface transportation capital project	All bicycle and pedestrian projects.	This is an extremely competitive grant program. Projects will need to demonstrate economic value as well as multi-modal transportation improvements.

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PERFORMANCE METRICS



Various transportation modes in Downtown Los Angeles

Progress toward the goals and objectives of this Plan can be measured by performance metrics that capture how much implementation activity is occurring and how this implementation activity is affecting the quality of life across the county. Both types of metrics are important to track so that Metro has an understanding of the broader trends that may influence or be influenced by Metro's active transportation investments.

The tables on the following pages include the set of performance metrics to measure the performance of this Plan. These metrics are based on the goals and objectives described in Chapter 1, informed by stakeholder input; aligned with national best practices from two key national sources of guidance, the National Complete Streets Coalition and the National Association of City Transportation Officials; and by a review of "cutting edge" peer agencies. A number of these metrics are optimal for the county level, so Metro and partner agencies can understand the effects of active transportation investments across the county, as shown in Table 3.9. Tracking at the countywide level is critical as some metrics may see an exponential effect – where the observed increases or decreases are greater than the sum of the activity occurring right around the project location. The benchmarks are set as an opportunity for Metro to be a leader in the field of active transportation planning. They are specifically tied to the context of Los Angeles County in terms of current baseline. The horizon year of 2025 was selected for most of the potential benchmarks because the ten-year horizon is generally the time frame in which active transportation plans are refreshed and updated, and would be a good point to revisit these targets. This time frame would allow Metro and partner agencies to track the implementation of active transportation projects and evaluate the performance of those projects against the baseline and benchmarks. Other metrics are more appropriate to be collected and tracked at the project level, to understand the localized impact of specific improvements for people walking and bicycling. Each performance metric includes a baseline and a benchmark, reflecting where we are today (or the most recent data available) and where we want to be by 2025 and 2035, using measurable targets. The full process of developing these metrics is described in Appendix F.

Finally, there are a number of other performance measure initiatives at Metro taking place concurrently to this Plan. These include the performance measures under review for the upcoming Long Range Transportation Plan update, those set forth by the Metro Countywide Sustainability Planning Policy and Implementation Plan, and those to be included in an upcoming Metro Quality of Life project. Where possible, Metro will streamline data collection and avoid duplication of efforts, as many of the types of data recommended for these various efforts are very similar.

Peer agencies reviewed included San Francisco Bay Area Metropolitan Transportation Commission, San Francisco Metropolitan Transportation Authority, Oregon Metro, Puget Sound Regional Council, New York City, City of Seattle, City of San Luis Obispo, City of Los Angeles, and City of Santa Monica.

PERFORMANCE METRICS AT THE COUNTYWIDE LEVEL

Table 3.9: Performance Metrics Collected at the Countywide Level

Performance Metric	Initial Baseline (2015)	Potential Benchmark	Available Data Sources
Number and percent bicycle-to-transit[1]	4% (Rail) 3% (Bus)	100% increase by 2025	Metro On-Board Surveys
Number and percent walk-to-transit	68% Walk (Rail) 4% Skated (Rail) 83% Walk (Bus) 2% Skated (Bus)	10 percentage point increase (walk to rail) by 2025 5 percentage point increase by 2025 (walk to bus)	Metro On-Board Surveys
Percent of all trips completed by bicycle in Los Angeles County	1.4% Bike	100% increase by 2025	2009 National Household Travel Survey
Percent of all trips completed by walking in Los Angeles County	17.6% Walk	50% increase by 2025	2009 National Household Travel Survey
Means of transportation to work	3.8% Combined Bike + Walk (0.9% Bicycle, 2.9% Walk)	100% increase by 2025 in combined Bike + Walk	2013 American Communities Survey 5-Year Estimate
Miles of installed bicycle facilities, by class	2014: Class IV = 6 miles (2015) Class III = 614 miles Class II = 1,046 miles Class I = 341 miles	100% increase per year for class IV 10% increase per year for each class I, II and III	Self-reported by jurisdictions

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Table 3.9 (continued)

Performance Metric	Initial Baseline (2015)	Potential Benchmark	Available Data Sources
Metro capital funding allocated to bicycle/pedestrian improvements	To Be Determined	To Be Determined	Self-tracked/self-reported by Metro
Percent of bicycle/ pedestrian improvement projects funded by Metro capital funding that benefits a disadvantaged community[2]	n/a	50% per funding cycle	Self-tracked/self-reported by Metro
Number of station areas receiving Metro capital funding or external funding allocated to bicycle/pedestrian access improvement treatments	To Be Determined	100% of 661 station areas served by 2030	Self-tracked/self-reported by Metro
Number of station areas with completed bicycle/ pedestrian access improvement treatments funded by Metro capital funding or external funding	To Be Determined	100% of 661 station areas served by 2035	Self-tracked/self-reported by Metro
External (non-Metro) discretionary grant funding won within LA County for active transportation projects	To Be Determined	Proportional to LA County population or greater	Self-reported by jurisdictions and implementing agencies

Notes:

1. *Because the percent of transit riders who walk or bike to transit is already very high, it is critical to also collect the number of riders who walk or bike to a station, so that net ridership increases are captured in addition to any increase in walk-or-bike-to-transit ridership.*

2. *For the purposes of this ATSP, Disadvantaged Community is characterized as one of the following: The median household income is less than 80% of the statewide median based on the most current census tract level data from the American Community Survey, an area identified as among the most disadvantaged 25% in the state of California according to the CalEPA and based on the latest version of the California Communities Environmental Health Screening Tool (CalEnviroScreen) scores, or at least 75% of public school students in the project area are eligible to receive free or reduced-price meals under the National School Lunch Program.*

Table 3.9 (continued)

Performance Metric	Initial Baseline (2015)	Potential Benchmark	Available Data Sources
Collision statistics (number by mode, percent by mode for severe injury and fatal crashes)	2012: Total Collisions=51,207 Total Injuries=50,622 Total Severe Injuries=2,300 Total Fatalities=585 Ped Collisions=5,024 Ped Injuries=4,821 Ped Fatalities=203 Bike Collisions=4,955 Bike Injuries=4,926 Bike Fatalities=29	Support benchmark of local municipalities with Vision Zero Policies Decrease overall collisions by 10% per year countywide	State-Wide Integrated Traffic Reporting System (SWITRS)
Greenhouse gas reductions	To Be Determined	Evaluate against forecasts and inputs	SCAG, Self-reported by implementing agencies

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PERFORMANCE METRICS AT THE PROJECT LEVEL

Table 3.10: Performance Metrics Collected at the Project Level

Performance Metric	Initial Baseline (2015)	Potential Benchmark	Available Data Sources
Number and percent of people who walk	Baseline set by implementing agency before project implementation	100% increase by 2025	Self-reported by implementing agencies via pedestrian counts, Baseline available in the ATSP existing conditions analysis
Number and percent of people who bike	Baseline set by implementing agency before project implementation	100% increase by 2025	Self-reported by implementing agencies via bicycle counts, Baseline available in the ATSP existing conditions analysis
Number of households within ¼ mile of a low-stress bicycle facility	Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	US Census American Communities Survey, Self-reported by implementing agencies, Baseline available in the ATSP existing conditions analysis
Number of jobs within ¼ mile of a low-stress bicycle facility	Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	US Census American Communities Survey, Self-reported by implementing agencies, Baseline available in the ATSP existing conditions analysis
Number of destinations (schools, medical, parks, recreational, etc.) within ¼ mile of a low-stress bicycle facility	Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	Self-reported by implementing agencies; Baseline available in the ATSP existing conditions analysis

METRO PROGRAMS

Supportive non-infrastructure programs and policies can help build capacity and momentum to implement active transportation infrastructure projects. This section provides an overview of programs under the purview of Metro that support active transportation in the county. By developing infrastructure, policies, and programs, the region will be able to execute a holistic approach to project delivery to improve safety and access for all roadway users.

Table 3.11: Metro Programs

Category	Programs & Description
Grant Programs	Call for Projects - Competitive grant program that provides local, state, and federal funds for surface transportation improvements in seven modal categories, including bicycle and pedestrian capital improvements. Other modal categories eligible for funding include regional surface transportation improvements, goods movement improvements, signal synchronization & bus speed improvements, transportation demand management, and transit capital.
	ExpressLanes Net Toll Revenue Re-Investment Grant Program - Net toll revenues generated by the Metro ExpressLanes are required by state law to be reinvested for transportation improvements in the corridor where generated. The Grant Program is intended to increase mobility through transit operations, transportation demand management, transportation systems management, active transportation, and capital investments in the 1-10 and 1-110 corridors.
	Metro Open Streets Grant Program - Competitive grant program that funds regional car-free events to provide opportunities to 1) ride transit, walk and ride a bike, possibly for the first time, 2) encourage future mode shift to more sustainable transportation modes, and 3) foster the development of multi-modal policies and infrastructure at the city/community level.
	Wayfinding Signage Grant Pilot Program – Provides funds to eligible agencies wishing to install static wayfinding signage within one mile to and from Metro fixed guideway stations that will be open by June 30, 2017.
	Transit Oriented Development (TOD) Planning Grant Program - Grant Program designed to spur the adoption of local land use regulations that are supportive of Transit Oriented Development in Los Angeles County.
Planning Studies	Los Angeles River Bikeway Gap Closure Feasibility Study - Feasibility study included conceptual designs, associated cost estimates and engineering feasibility considerations for the 8-mile gap in the path between Atwater Village and Maywood. The Study included a comprehensive accounting of existing and known future attractions as well as general transportation needs of the neighborhoods surrounding the project area.
	I-710 Bikeway Study - Studying the development of the following Class-I bike paths and access points: a) Los Angeles Flood Control District right-of-way on the western levee of the Los Angeles River Channel from the Pacific Coast Highway (Long Beach) to Imperial Highway (South Gate) to connect with the existing Los Angeles River Bike Path, b) Southern California Edison (SCE) right-of-way, roughly parallel to Greenleaf Blvd., between the Los Angeles Blue Line and Sportsman Drive; and c) SCE and Los Angeles Department of Water and Power right-of-way from Willow/TI Freeway (Long Beach) to connect with the Rio Hondo Bike trail at Garfield Avenue (South Gate).

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Table 3.11 (continued)

Category	Programs & Description
	Bike/Bus Interface Study - The study will establish recommended infrastructure guidelines that enhance safe and efficient mobility for roadway users. Study tasks include performing in-depth technical analyses to understand effects of bicycle infrastructure on transit operations and overall roadway safety, completing a review of national and international best practices and research on bike/bus interactions, developing training guidance and safety tips for transit operators and bicyclists, and identifying appropriate design guidelines.
	Blue Line First Last Mile Planning - Metro was awarded an Active Transportation Program (ATP) grant for first last mile planning around all 22 stations of the Metro Blue Line. This project will use the planning guidelines in the First Last Mile Strategic Plan to conduct walk audits and details plans for first last mile investments in and around 22 Metro Blue Line stations. The project will also utilize innovative community engagement to inform the first last mile maps and recommended improvements.
	Sustainability Demonstration Project: Metro is working in partnership with the San Gabriel Valley Council of Governments to develop a Bike Friendly Business Improvement Plan for the cities of South Pasadena and Glendora.
	Sustainability Demonstration Project: Complete Streets Master Plan - This project, in coordination with the Gateway Cities Council of Governments, will create a plan for implementation of a key complete street corridor identified in the COG's strategic transportation plan. The corridor will traverse multiple jurisdictions along Florence Avenue and will test and develop implementation methods for a multi-city project. The project is part of a larger effort to pilot strategies featured in Metro's Countywide Sustainability Planning Policy.
	Metro Transfer Design Criteria - Metro is working to develop criteria for transfer points. Over half of transit passengers make at least one transfer as part of their trip. The new Design Criteria will streamline the transfer experience with standards for the type and locations of transit amenities and infrastructure at major transfer points. Metro is gathering input from local jurisdictions, municipal transit operators, transit riders, and other stakeholder groups to develop the criteria. In addition to the Design Criteria for Metro, the project will produce an easy-to-use handbook for cities with local strategies to improve the transfer environment.
Capital Projects	Rail to Rail/River Active Transportation Corridor Project – This is a 6.4-mile long corridor project in South Los Angeles that will convert a rail right-of-way to an active transportation corridor, facilitating opportunities for improved access to key destinations and linking major transit facilities, including the future Crenshaw/LAX Transit Project, the Silver Bus Rapid Transit Line, and the Metro Blue Line.
	Regional Connector 1st & Central Station first last mile improvements
	Gold Line Eastside Access Projects - First last mile improvements to the following Metro Gold Line stations: Pico/Aliso, Mariachi Plaza, Soto, Indiana, Maravilla, East LA Civic Center, and Atlantic.
	Connect US Action Plan - Improve pedestrian and bicycle connections to and from Los Angeles Union Station, the 1st/ Central Regional Connector Station, and the surrounding historic and culturally significant communities.
Bicycle Services	Bicycle Parking - Metro provides bicycle parking and continues to expand bicycle services at many stations throughout the system to improve first last mile connections, including providing bike racks, bike lockers and secure bike hubs.

Table 3.11 (continued)

Category	Programs & Description
	Metro Bike Share – Metro is leading a regional effort to develop a Countywide Metro Bike Share program to facilitate first last mile connections and short point-to-point trips. The system will begin in summer 2016 with a pilot of 1000 bicycles and 80 stations in downtown Los Angeles with a phase II in the works to expand to Pasadena. Additionally, there are plans to expand the system to 4000 bicycles in other bike share ready communities, including, but not limited to, MacArthur Park, Koreatown, Hollywood, Culver City, East LA (unincorporated LA County), Boyle Heights, Burbank, Glendale, North Hollywood, Huntington Park, Downey, Marina Del Rey, Venice, and San Gabriel Valley cities.
Joint Development Program	The Metro Joint Development (JD) Program is a real estate management program that collaborates with qualified developers to build transit-oriented developments (TODs) on Metro-owned properties. These properties are often parcels of land that contain Metro Rail station portals or platforms or that were acquired for parking or construction staging for transit projects. Metro's JD sites are a gateway to the Metro transit system and hold unique potential for shaping the built environment surrounding transit stations, which will have a significant impact on rider experience, attraction of new riders, and the urban form of the County of Los Angeles. Each site includes a creation of Development Guidelines, in collaboration with the community and local regulatory agencies, to identify desired land uses, density and amenities for a Metro-owned site; provides neighborhood context; and assesses opportunities for integration with active transportation and other community development goals.
Education & Encouragement Programs and Activities	Active Transportation Campaign – Annual campaign to promote awareness of and participation in walking and bicycling countywide. A single marketing effort unites events for Bike Month and Walktober, and cross-promotes complementary efforts from many organizations and municipalities across the county.
	Bike Month LA - Month-long marketing and event effort to highlight bicycling as a mode of transportation. Creates multiple opportunities and incentives for people to try riding bicycles for utilitarian trips, perhaps for the first time. Bike Month culminates in Bike to Work Day, with pit stops across the county, and Bike Night, a Metro-hosted gathering at Union Station.
	Community Bicycle Rides - Metro's guided bicycle ride events provide safe, supportive environments such that people of all skill and comfort levels may engage in riding a bike in an urban setting. The rides also provide a controlled environment in which people can practice safe riding skills and provide a valuable overall encouragement opportunity.
	Bicycle Safety Classes - Metro provides bicycle safety skills classes free to the public. This resource is available to any Los Angeles County resident and classes are held in locations across the county. Classes may range from entry-level to expert instructor certification and are moving towards regionally-tailored educational materials adapted from national standards.
	Complete Streets Education and Training – Provides training to applicable Metro staff and local government agency planners, engineers, decision-makers, traffic safety professionals, public health professionals, and community organizations about developing a Complete Streets policy, as well as implementing Complete Streets and incorporating high quality design to help comply with the California Complete Streets Act of 2008 and Metro's 2014 Complete Streets Policy.
	First Last Mile Training Pilot Program - Metro will offer a series of trainings to local staff, elected officials, and other stakeholders. The trainings will inform staff on how to design, seek funding, and implement a first last mile project. Policy level trainings will cover communication and community issues that often arise as part of first last mile and active transportation efforts. The trainings will be geared toward near term implementation and will result in preliminary concept plans that can be directed toward funding sources in the near term.

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Table 3.11 (continued)

Category	Programs & Description
Technical Assistance, Policy and Planning Guidance, and Data	Grant Writing Assistance – Metro provides grant writing assistance to advance and implement Metro's active transportation plans and meet critical active transportation needs in Los Angeles County.
	Bicycle and Pedestrian Counter Program - In partnership with the Southern California Association of Governments, Metro is developing a countywide counter deployment plan to meet the calibration needs of bicycle travel demand models and infrastructure project performance monitoring. A combination of permanent and temporary automatic counters will be deployed in strategic locations and their data fed into the regional Active Transportation Database.
	Active Transportation Data Collection Plan – Metro is working in partnership with the Southern California Association of Governments to upgrade the existing Bicycle Data Clearinghouse. The new Active Transportation Database will set standards for data collected regionally and will be compatible with national databases. It will have the capability to accept manually collected as well as automatic data feeds. The Data Collection Plan will lay out initial and ongoing data collection efforts to meet regional needs.
	Open Streets Evaluation – Per Metro Board direction in 2014 to evaluate the costs/benefits of the annual $2 million grant program, Metro is conducting an evaluation of the 12 cycle-one Metro Open Street events. Results will be shared after the last event is implemented in June 2016.
	Urban Greening Toolkit and Implementation Plan – On-line website that provides tools on how to create transit-adjacent projects that facilitate access to Metro bus and rail lines throughout the Los Angeles region and enhance transit riders' experience getting to and from stations. Provides information on best-practices, resources, and guide to implementing greening and placemaking projects.
	Toolkit for Transit Supportive Planning- Funded by the Strategic Growth Council, Metro is developing the Toolkit for Transit Supportive Planning as a resource for Los Angeles County jurisdictions to develop and adopt transit supportive regulations and achieve the broader greenhouse gas (GHG) emission reduction and transportation, water, and energy efficiency goals of Assembly Bill 32 (AB32) and Senate Bill 375 (SB375).
	Countywide Safe Routes to School Initiative - Metro continues to collaborate with stakeholders to develop a Countywide Safe Routes to School Initiative to provide technical support to help communities interested in starting Safe Routes to School programs or sustain and enhance existing efforts. This involves assessing needs and identifying opportunities, collecting data, convening an advisory committee, and hosting summits to engage local jurisdictions and other stakeholders to guide Metro's initiative.
Other	Bicycle Roundtable - The Bicycle Roundtable is a quarterly public outreach meeting held by Metro that provides a forum to discuss and get input on current Metro bicycle projects and programs.

CITY, COUNTY AND COMMUNITY PROGRAMS

This section outlines key innovative programs, selected based on prior effectiveness in advancing planning, implementation, and capacity building at the local and regional level. Many programs are appropriate for countywide implementation, requiring more resources and regional coordination to realize the full benefits of the program. Some programs are appropriate on a smaller scale, at the city level or community level. The table below indicates the scale at which they are most appropriate.

Table 3.12: City & Community Programs

Programs	Implementers
Develop a Pedestrian and Bicycle Master Plan	*City planning, public works, or transportation department*
Train staff on Complete Streets guidelines, bicycle facilities design standards, and pedestrian-oriented safety interventions	*City, Caltrans, Metro, SCAG*
Train staff on how to respond to bicycle and pedestrian collisions to reduce collision severity	*City emergency responders*
Organize Open Streets events which temporarily close streets to vehicles and open them to people on foot, bike, skateboards, scooters, etc.	*Community groups or city agencies*



Developing the Downey Bicycle Master Plan



Metro's Complete Streets Workshop



Bike Safety Training Course



Ciclavia in Pasadena

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Table 3.12 (continued)

	Programs	Implementers
 *Bicycle Officers can help train communities*	Organize trainings on bicycle, pedestrian, and roadway safety	*City police department and County sheriff's department*
 *Walk to School Day*	Organize Walking School Buses or Bicycle Trains to encourage kids to walk and bike to school	*School communities, city*
 *Pedestrian Facilities from Eastside Access Project*	Develop a GIS-based asset inventory of sidewalks, curb-cuts, mid-block crossings, pedestrian and bicycle signals, bike lanes, bike racks, and other pedestrian and bicycle infrastructure	*City public works, planning, or transportation department*
 *Multi-modal Parking*	Conduct an annual multi-modal collision data analysis	*City public works, planning, or transportation department*
 *Pedestrians and cyclists meet at the Orange Line*	Conduct an annual collection of pedestrian and bicycle volumes at key locations including transit stops and stations	*City public works, planning, or transportation department*

NEXT STEPS FOR IMPLEMENTATION OF THE ACTIVE TRANSPORTATION STRATEGIC PLAN

Table 3.13: Steps for Implementation

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
1. Technical Assistance, Policy and Planning Guidance, and Data			
1.1 Provide grant-writing technical assistance for Active Transportation Program (ATP), Affordable Housing and Sustainable Communities (AHSC) Program, Highway Safety Improvement Program (HSIP) and Transportation Investments Generating Economic Recovery (TIGER) to advance projects and programs identified in the ATSP and any future updates.	**Planning**	Local Jurisdications	ongoing
1.2 Provide grant-writing technical assistance for other funding sources, including "non-traditional funds" or new funds that may arise in the future (e.g., health-related grants, "parks and recreation"-related grants that may fund active transportation projects that support Metro's policy goals).	**Planning**	Local Jurisdications	0-1 year
1.3 Maintain and update Metro active transportation and other applicable websites, newsletters, social media profiles, and online resources to provide relevant information to stakeholders regarding resources, funding, key information, and best-practices.	**Planning, Communications**		ongoing
1.4 Explore upcoming grant opportunities (e.g., Caltrans Planning Grant, Active Transportation Program, Cap and Trade, TIGER) and identify potential opportunities for supporting local jurisdictions achieve implementation.	**Planning**	Local Jurisdictions	ongoing
1.5 Organize training workshops, symposiums, and forums to disperse information on best-practices related to active transportation, first last mile, and complete streets.	**Planning**, Highways, Construction, Operations	Southern California Association of Governments (SCAG), Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, Other Interested Stakeholders	ongoing

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Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
1.6 Participate in project technical advisory committees and working groups convened by local jurisdictions.	Applicable Departments	Local Jurisdictions	ongoing
1.7 Connect agencies to other local organizations and expert sources, where applicable, to support implementation of active transportation projects and programs.	Planning	Local Jurisdictions	ongoing
1.8 Organize summit, at least annually, to connect organizations and businesses that offer resources and services related to active transportation with those who are looking to implement such projects and programs in Los Angeles County.	Planning, DEOD, other applicable departments	Local Jurisdictions, Businesses, Nonprofits, Other Interested Stakeholders	0-1 year
1.9 Assist local agencies to seek opportunities and partnerships to implement demonstration projects to showcase best practices and case studies and to highlight innovative active transportation demonstration projects.	**Planning**, other applicable departments	Local Jurisdictions	ongoing
1.10 Publicize outcomes of active transportation infrastructure, educational, and demonstration projects.	**Planning**, Communications, Community and Government Relations, and other applicable departments	Local Jurisdictions	0-2 years
1.11 Conduct before and after performance evaluations on projects led by Metro or projects funded through Metro's grant programs to evaluate metrics against baseline and benchmarks identified in ATSP report. Collection and reporting of data may be by Metro or partner agencies but must be uploaded to the Active Transportation Database.	**Planning**, other applicable departments	Local agencies, interested stakeholders	0-2 years
1.12 Implement automatic bicycle and pedestrian counter program.	**Planning**, Operations	SCAG, Local agencies, interested stakeholders	0-1 year

Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
1.13 Continue development of Metro Countywide Safe Routes to School (SRTS) Initiative through collaboration with Metro departments, elected officials and staff, SRTS advisory group, and key stakeholders to inform policy and program development.	**Planning**, other applicable departments	Local jurisdictions, other stakeholders	ongoing
1.14 Further refine Active Transportation Strategic Plan online webtool and update relevant data when applicable to better position partners for local, state, and federal grant funding opportunities that arise in the future.	**Planning**, ITS		0-1 year
2. Education & Encouragement Programs and Activities			
2.1 Implement temporary (i.e., pop-up, tactical urbanism) active transportation and first last mile projects to build community support and foster multi-modal policies and long-term infrastrucutre improvements.	**Planning**, Communications, Operations	SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, Other Interested Stakeholders	0-2 years
2.2 Continue to promote safe travel to schools in Los Angeles County through the development of Metro Safe Routes to School (SRTS) Resource Manual (toolkit); Walk-Safe, Bike-Safe (train the trainer) Safety Education Campaign; continued development and maintenance of the Metro SRTS website; and other related activities.	Planning, other applicable departments	Local Jurisdictions, Other Stakeholders	ongoing
2.3 Continue collaboration with key stakeholders and other Metro departments in the development of campaigns, printed materials, video and other visuals supporting safe walking, bicycling, and utilization of public transit for travel to and from schools within Los Angeles County.	Planning, other applicable departments	Local jurisdictions, other participants	ongoing
2.4 Continue to enhance education and training for bicyclists, pedestrians, bus operators, and other roadway users to improve awareness and safer interactions between these users of the roadway.	**Operations, Planning, Community Relations**	Metro Technical Advisory Committee (TAC) & Subcommittees, Transit Operators	ongoing

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Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
2.5 Continue annual active transportation campaigns, such as advertising/messaging, bike and walk to work/ school, radio advertisements, social media, and other related activities.	**Planning, Communications**, other applicable departments		ongoing
2.6 Work with health care providers, community groups, businesses, and other organizations to promote bicycle and pedestrian education programs and highlight benefits. Continue to seek partnerships and innovation opportunities.	Planning, Communications, other applicable departments	Health Care Providers, Community Groups, Businesses, other interested stakeholders	ongoing
2.7 Continue bicycle traffic safey classes, community bicycle rides, and explore other education and safety programs to promote bicycling and mode shift. Evaluate the effectiveness of these projects and programs and report outcomes. Refine as necessary to maximize effectiveness.	**Planning, Communications**, Community Relations, other applicable departments	Law Enforcement, Local Jurisdictions, School Districts, Nonprofits, Advocates, Other Interested Stakeholders	ongoing
2.8 Promote walking and bicycling among Metro employees through wellness programs, incentive programs, safety programs, rideshare, community rides, marketing materials, and campaigns.	Planning, Corporate Wellness, Communication, other applicable departments		ongoing
2.9 Explore the creation of Metro employee bicycle pool commuting and bicycle fleet programs.	Planning, General Services, Communication, other applicable departments		0-2 years
2.10 Support local agency efforts on bicycle and pedestrian education and safety.	**Planning**	Local Jurisdictions, Nonprofits, Advocates	ongoing

Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
2.11 Seek partnerships with local educational institutions to create active transportation education and research center in Los Angeles region to build capacity and knowledge about active transportation planning, implementation, and research and build long-term institutional knowledge among practitioners, decisionmakers, local jurisdictions, and other key stakeholders.	**Planning**	Educational Institutions, Federal Highway Administration, Federal Transit Administration, Caltrans	0-2 years
3. Funding			
3.1 Prioritize recommendations in Active Transportation Strategic Plan in Metro Capital Grant Programs.	**Planning, Congestion Reduction**	Metro TAC & Subcommittees, Councils of Governments (COGs), SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year
3.2 Update Proposition A, C, and Measure R Local Return Guidelines to align with the Metro Board-adopted 2009 Long Range Transportation Plan, Metro First Last Mile Strategic Plan, Metro Complete Streets Policy, and the Active Transportation Strategic Plan, consistent with any constraints in the ordinance language.	Planning, OMB	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year
3.3 Update Proposition C 10% and Proposition C 25% Guidelines to align with the Metro Board-adopted 2009 Long Range Transportation Plan and future Board-adopted updates, Metro First Last Mile Strategic Plan, Metro Complete Streets Policy, and the Active Transportation Strategic Plan.	Planning, OMB	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year

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Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
3.4 Increase proportion of Call for Projects funding reserved for the Bicycle, Pedestrian, and Transportation Demand Management Modes according to the needs identified in the ATSP in proportion to needs for other modes.	Planning, OMB	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year
3.5 Incorporate Active Transportation Strategic Plan into 2009 Long Range Transportation Plan update.	**Planning**	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year
3.6 Update funding criteria in Metro capital grant programs (i.e., Call for Projects, ExpressLanes Net Toll Revenue Re-Investment Grant Program, and other Metro capital grant programs) to encourage projects that implement recommendations in the Active Transportation Strategic Plan and projects that achieve goals of Metro Board-adopted First Last Mile Strategic Plan and Complete Streets Policy.	**Planning, Congestion Reduction**	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	0-1 year
3.7 Promote active transportation strategies and funding in applicable state and federal legislations.	Government Relations, Planning		ongoing
3.8 Seek new sources of funding opportunities and innovative finance strategies.	Planning, Office of Management & Budget		ongoing
3.9 When funding is available, program local funds for active transportation projects that have grant awards of $2 million or less. Prioritize federal funding when available and applicable to grant awards of $2 million or more to reduce the burden of grant administration and processing on smaller projects.	**Planning**		ongoing

Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
4. Planning and Project Delivery			
4.1 Issue "Call for Partners" to identify potential partners to help bring key active transportation corridor projects identified in the ATSP closer to the "shovel ready" stage and take advantage of potential funding opportunities that may arise in the future to acheive project implementation, including, but not limited to, the San Gabriel Valley Greenway Network and those currently in progress as shown in Chapter 3, under Metro Programs.	**Planning**, Highways, Construction, Operations	Local Jurisdictions, interested stakeholders	0-1 year
4.2 Update rail design criteria to further incorporate active transportation elements and create active transportation design criteria section.	**Planning, Construction**, Operations		0-1 year
4.3 Expand bicycle parking at Metro stations and stops, including creating bicycle hubs, increasing bicycle parking, implementing and expanding bike share, and providing other bicycle facilities.	**Planning**, Construction, Operations, other applicable departments	Local Jurisdictions, interested stakeholders	ongoing
4.4 During transit project corridor planning phase, define active transportation connectivity elements as an intrinsic part of the project's scope during project planning and in environmental documents and project definition for construction. Key sections within environmental documents where active transportation connectivity elements can be better specified include: Purpose and Need Statement, Project Definition, Basis of Design, and Mitigation Measures. Ensure project team members have staff skilled and experienced to address active transportation and first last mile planning and design by providing training to Metro staff members involved in project and/or as part of criteria during consultant team selection. Conduct active transportation access studies as part of corridor planning to ensure first last mile and bicycle and pedestrian access improvements are addressed early in the project planning. These studies may be planned as part of larger transit corridor project or in parallel.	**Planning**, Construction, Operations, other applicable departments	Local Jurisdictions, interested stakeholders	0-1 year

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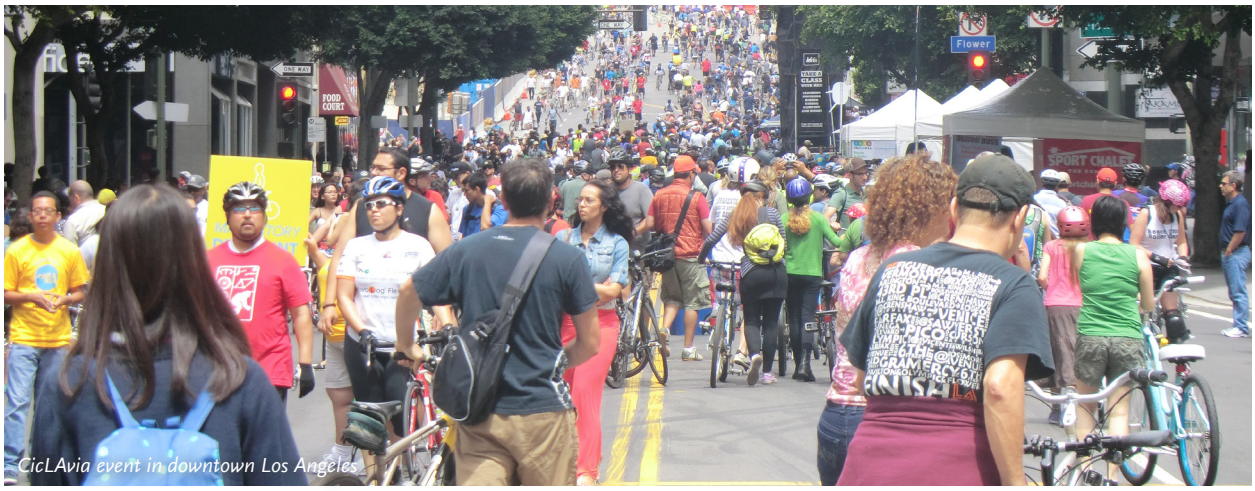
Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
4.5 During project design phase (following environmental clearance) and during construction for new projects, ensure that active transportation improvements and first and last mile solutions are integrated into project scope, design, and implementation. Provide relevant directive drawing(s) and appropriate budget set aside in Life of Project for construction of these facilities. Ensure project team members have staff skilled and experienced to adress first last mile and bicycle and pedestrian access design and implementation by providing training to Metro staff members involved in project and/or as part of criteria during consultant team selection.	**Planning, Construction**, Operations, other applicable departments	Local Jurisdictions, interested stakeholders	0-1 year
4.6 During construction for new projects, identify opportunities for maintaining access to bicycle and pedestrian facilities or provide appropriate detours.	**Planning, Construction**	Local Jurisdictions	ongoing
4.7 Better design street treatments around freeway on and off ramps in highway corridor projects to facilitate safer and convenient access for pedestrians and bicyclists who must cross these corridors. Ensure project team members have staff skilled and experienced to address multimodal active transportation and complete streets planning and design by providing training to Metro staff members involved in project and/or as part of criteria during consultant team selection.	**Highways**, Planning	Caltrans, Local Jurisdictions	ongoing
5. Joint Development			
5.1 Include appropriate text in boilerplate or a modified-to-suit language in every joint development project solicitation/Requests for Proposal/Design Guidelines to ensure appropriate inclusion of active transportation facilities and access for people who walk and bicycle.	**Planning**	Local Jurisdictions, interested stakeholders	ongoing
5.2 Work with local jurisdictions to incentivize developer mitigations to address first and last mile solutions and active transportation facilities and access.	**Planning**	Local Jurisdictions, interested stakeholders	ongoing
6. Transit Operations			
6.1 Explore opportunities to add additional bicycle accommodations on buses and trains.	**Planning, Operations**		ongoing

Table 3.13 (continued)

Implementation Action	Metro Participants (lead department designated in bold and underlined)	Other External Participants	Initiation Timeframe
7. Bicycle Services			
7.1 Expand bicycle parking at Metro stations and stops, including creating bicycle hubs, increasing bicycle parking, implementing bike share, and providing other bicycle facilities.	**Planning**, Operations, Construction, Maintenance, Communications, other applicable department		ongoing
8. Policy Update			
8.1 Review and consider updates to the Active Transportation Strategic Plan at least every five years.	**Planning**, other applicable departments	Metro TAC & Subcommittees, COGs, SCAG, Caltrans, Local Jurisdictions, Public Health, Nonprofits, Advocates, other interested stakeholders	
8.2 Review and recommend possible changes to Metro, state, and federal policies to achieve the goals of the ATSP.	Planning, other applicable departments		ongoing
8.3 Update the 2000 Metro Right of Way Preservation Guidelines to be consistent with recent Metro Board-adopted policies.	Planning, Operations, other applicable departments		0-2 years

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CicLAvia event in downtown Los Angeles

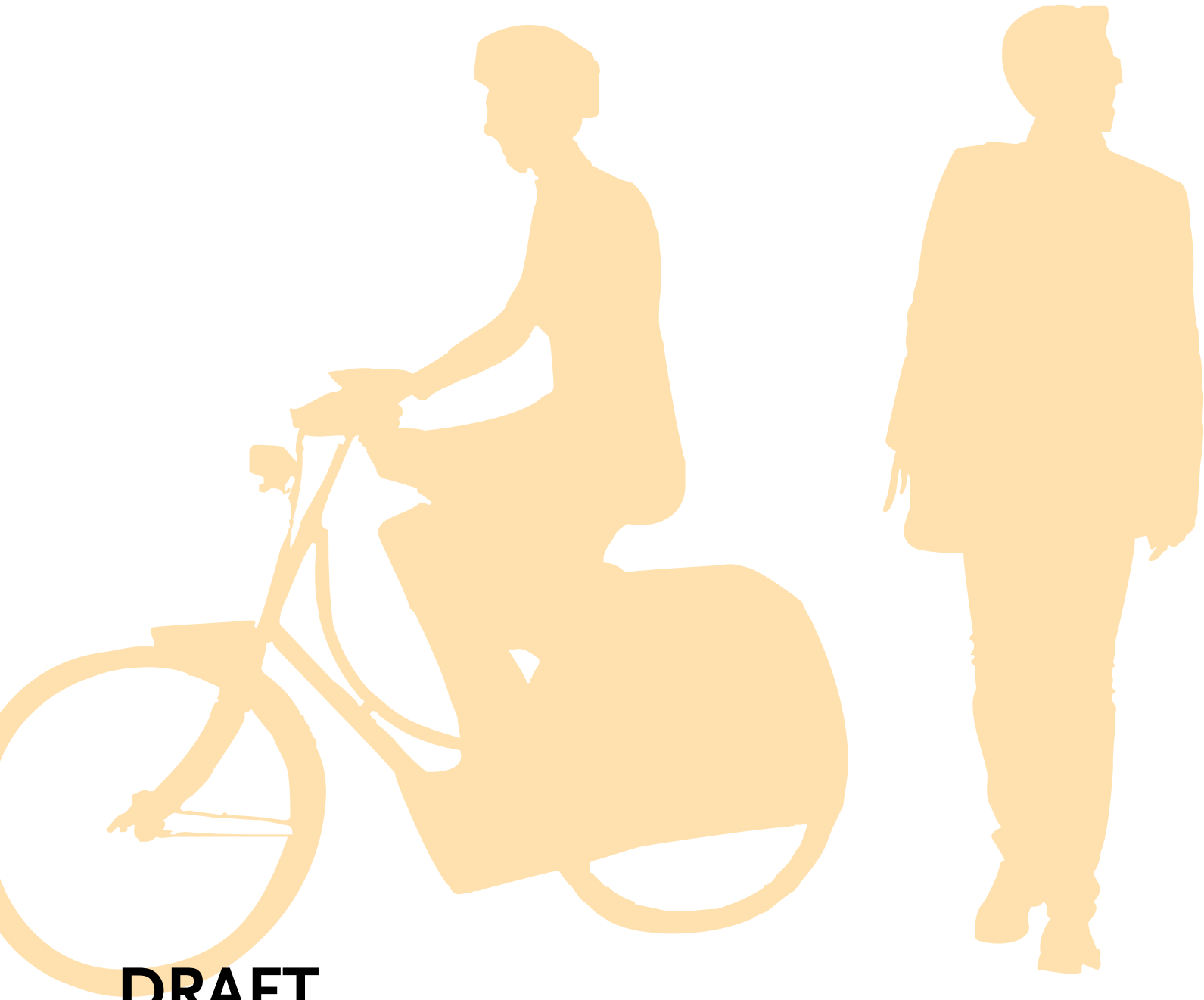


Metro Rapid bus serving Santa Monica



Pedestrians prepare to cross the street near a Metro bus station

4 COUNTYWIDE ACTIVE TRANSPORTATION NETWORK



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OVERVIEW

This chapter presents the recommended Countywide Active Transportation Network, comprised of two key components: 1) first last mile active transportation improvements to 661 major transit station areas and 2) the Regional Active Transportation Network.

The ATSP identified 661 major transit station locations throughout the county for first last mile improvements, which are intended to enhance regional access by connecting people to the extensive and growing transit network and to maximize the benefits from transit investments. In many places across the county, it connects with key corridors in the Regional Active Transportation Network that function both as origins and destinations as well as transit corridors.

The proposed Regional Active Transportation Network is intended to serve people biking and walking much like our freeway network serves drivers or our rail network serves transit riders. It is intended to provide the most comfortable, safe, high-quality bicycling and walking experience, with minimal disruption from other users and with extensive reach across the county. It is designed to connect key regional origins and destinations across the county, filling in the gaps in the current network, taking advantage of available waterways, utility corridors, and on-street right-of-way that can be developed into high-quality, low-stress walking and biking facilities.

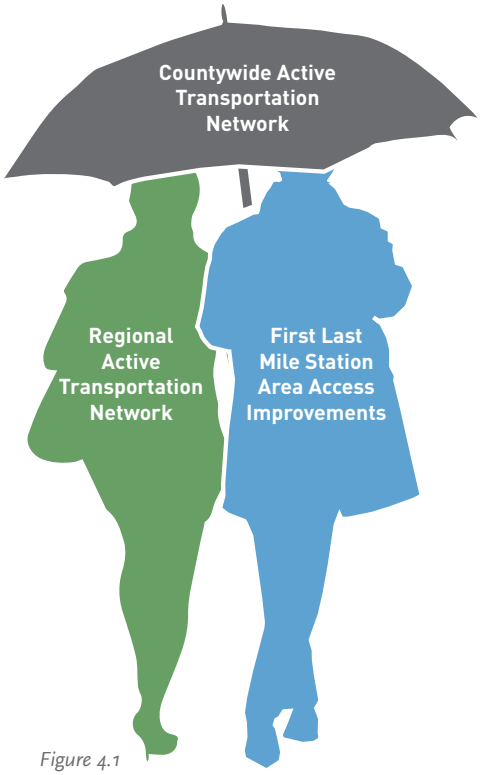


Figure 4.1

Sample Facilities in the Countywide Active Transportation Network



Sidewalk
(Dedicated On-Street)



Pedestrian-Only Promenade
(Dedicated On-Street)



Paseo
(Shared On-Street or Off-Street)



Class I Shared-Use Path
(Off-Street)



Class II Bicycle Lane
(Dedicated On-Street)



Class II Buffered Bicycle Lane
(Dedicated On-Street)



Class III Bicycle Route
(Shared On-Street)



Class IV Protected Bicycle Lane
(Dedicated On-Street)

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STAKEHOLDER OUTREACH

The process for identifying the Countywide Active Transportation Network began with an extensive existing conditions analysis. During the development of the ATSP, the project team engaged and solicited feedback from various Metro departments, as well as agency partners, including the Metro Technical Advisory Committee and its Subcommittees, sub-regional Councils of Governments, the California Department of Transportation (Caltrans), Southern California Association of Governments (SCAG), local governments, and other stakeholders. Metro also formed a project Technical Advisory Committee, which consisted of internal Metro departments and external stakeholders, to guide the development of the ATSP. During August 2015, Metro held seven stakeholder workshops across the county to solicit input. These workshops were attended by over 250 attendees and included representatives of local, regional, and state government agencies; elected offices; sub-regional councils of governments; nonprofit organizations; community groups; advocates; private firms; transit operators; transit riders; public health professionals; and other stakeholders. Metro launched an online survey to gather additional input from stakeholders during Summer 2015. During December 2015, the agency held a second round of six stakeholder workshops across the county to provide an update on the ATSP and solicit additional input. Over 120 participants attended in total to provide feedback. Refer to Appendix C for more details.

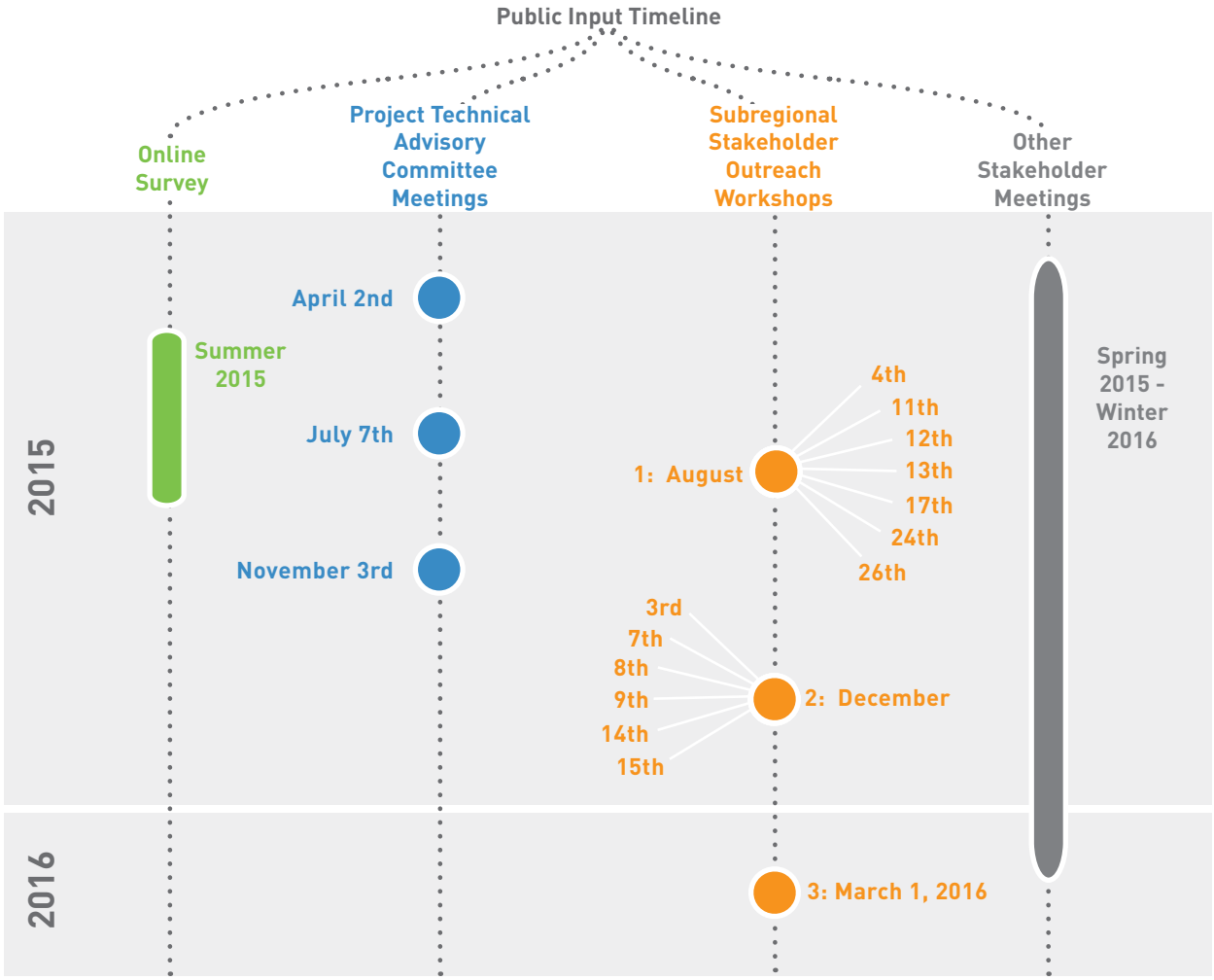


Figure 4.2

STAKEHOLDER INPUT

Throughout the project, we heard key feedback from stakeholders at every level, summarized here.



Figure 4.3

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FIRST LAST MILE ACCESS TO MAJOR TRANSIT STATIONS & STOPS

The Active Transportation Strategic Plan (ATSP) uses strategies presented in the Metro First Last Mile Strategic Plan and Planning Guidelines to identify opportunities for improving first last mile access to 661 major station locations, which is intended to improve the journey to and from a transit station or stop for people who walk and bicycle to transit.

Unlike the Regional Active Transportation Network, which recommends countywide corridors for active transportation facilities, the first last mile access strategies refer to walking and bicycling improvements around the 661 station areas (defined in the Existing Conditions section, Chapter 2), which are local in nature but connect to the wider transportation network via transit, thus generating regional benefits.

This section presents a step-by-step guide to assist local jurisdictions and stakeholders in identifying opportunities for first last mile access improvements around a transit area, based on the process established in the First Last Mile Strategic Plan.

The ATSP Volume II: Case Studies companion document uses this process to recommend first last mile improvements around 20 different study areas throughout Los Angeles County. These case studies reflect the diversity of transit areas, geographies, demographics, land uses, building and population densities, and subregions of Los Angeles County. Refer to the ATSP Volume II: Case Studies document to determine which conditions are most similar to your project study area and use these case studies as a helpful guide.

The ATSP has not identified specific first last mile access routes to each station area location, since this should be done at the local level and with applicable stakeholder input. The ATSp is developed to ensure that there is flexibility in local planning, design, and implementation that suits the context of the community. Key first last mile recommendations are summarized in this section and presented in more detail in the ATSP Volume II: Case Studies companion document.

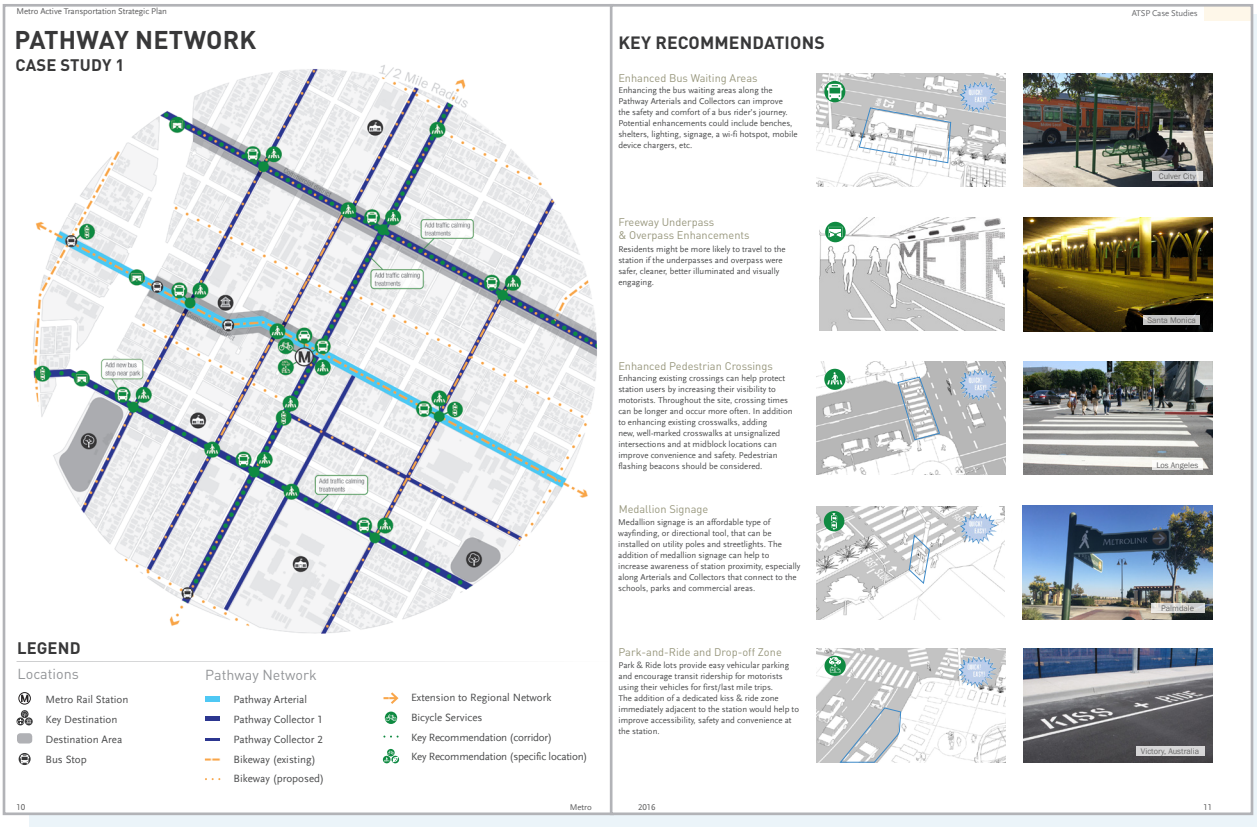
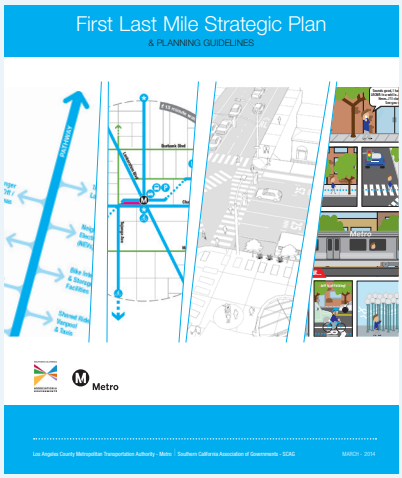


Figure 4.4: Pages from the ATSP Volume II: Case Studies

First Last Mile Strategic Plan & Planning Guidelines



The First Last Mile Strategic Plan & Planning Guidelines (2014) provides municipal organizations, community groups, and private institutions with a planning tool that strategically focuses infrastructure investments around a transit station or stop, with the ultimate goal of improving transit ridership. The Plan serves as guidance to create and implement a Pathway Network, which is a strategy that addresses first last mile challenges. Infrastructure investments are concentrated along the Arterials, Collectors, and Cut-Throughs of a particular Pathway Network. Arterials are the main streets that extend from transit locations and support maximized throughput and efficiency for active transportation users. Collectors include routes that both feed into Arterials and support general station area permeability. Cut-Throughs are supporting paths, often used as shortcuts that feed into Arterials and Collectors. These classifications do not supersede roadway designations assigned by the local jurisdiction.

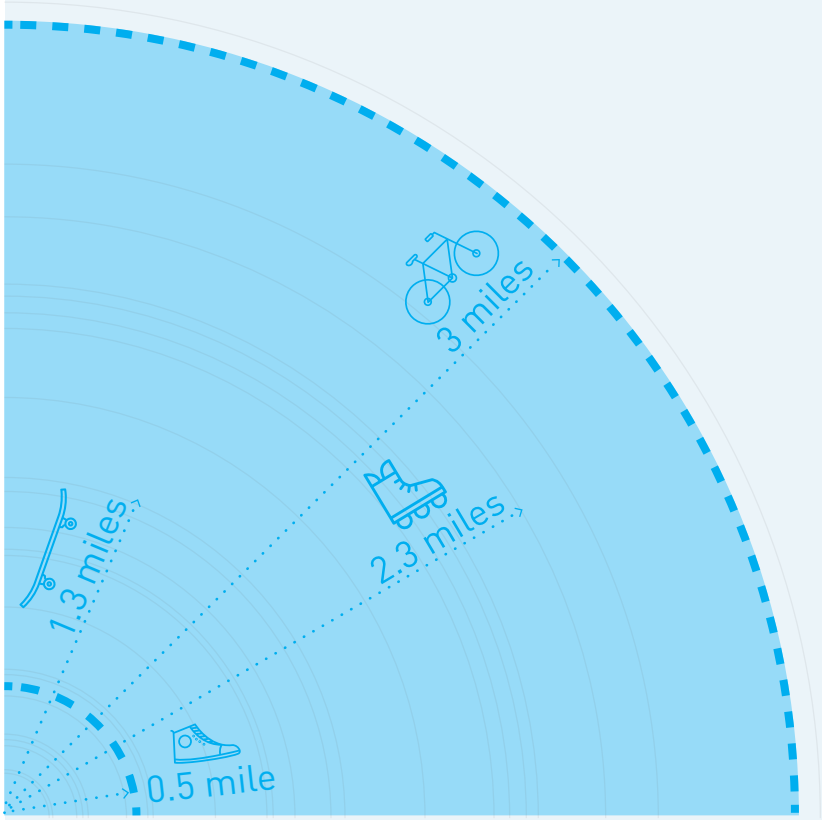


Figure 4.5: First last mile access shed

Access Shed

The First Last Mile Strategic Plan requires identification of an access shed, which is the average distance a person is willing to travel to a transit station or stop. The size and shape of an access shed depends on the type of active transportation that the project seeks to accommodate as well as typical access barriers such as topography, block size, and freeways.

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How to Use the First Last Mile Strategic Plan

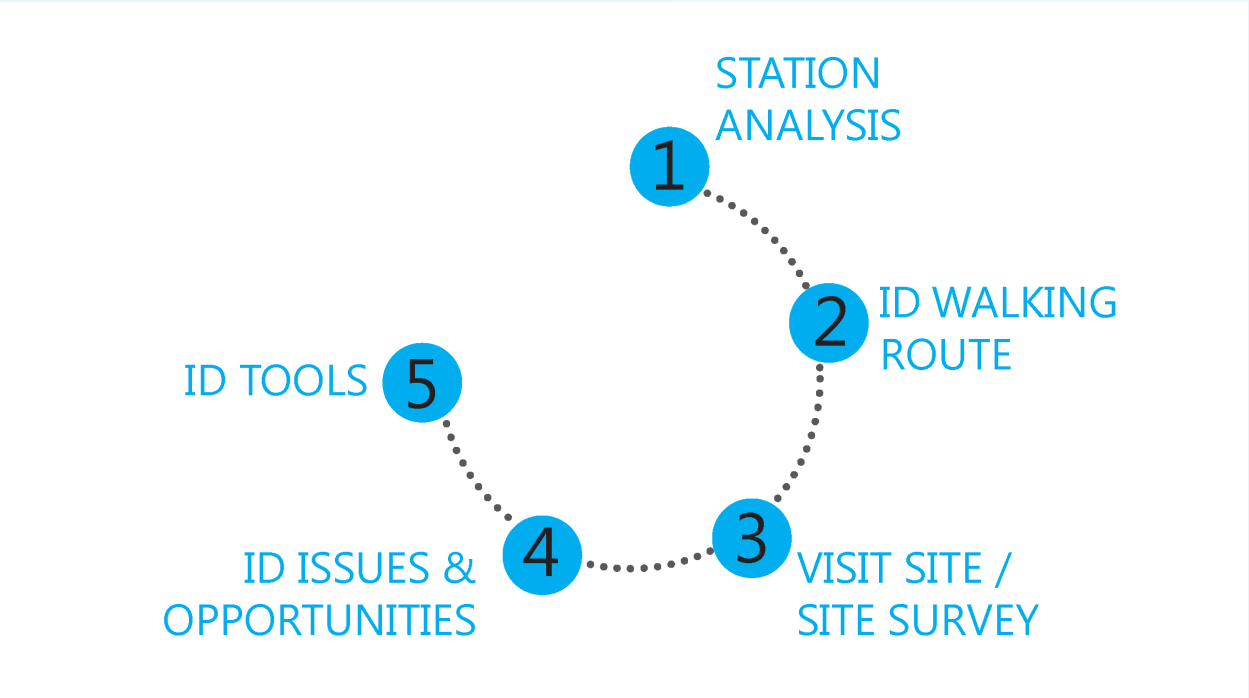
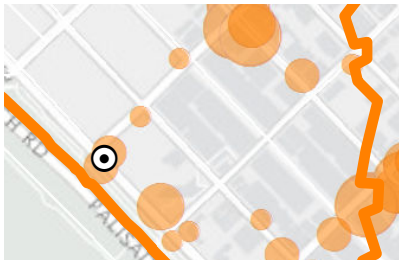


Figure 4.6: Simplified First Last Mile Process



Metro riders entering the North Hollywood Station



1. Conduct Preliminary Station Analysis

First last mile planning requires a comprehensive understanding of the study area, which is the space within the access shed of a transit stop or station. The access shed is defined by several measures, including distance, topography, block size, and freeways; these conditions serve as barriers or opportunities to first last mile connectivity.

1. Browse the existing conditions analysis online portal available at: http://gis.fehrandpeers.com/metroatsp.

2. Identify a Metro transit station or stop for the first last mile analysis

3. Study the existing conditions analysis summary



2. Determine Walking Route

Site visits offer first-hand knowledge of existing conditions within a study area. One way to conduct an effective site visit is by creating a walking route from a transit stop or station that passes by important destinations such as schools, commercial districts, and residential areas. Also consider routes that have high levels of activity, existing and planned bicycle routes, and areas where collisions have been reported.

1. Determine a walking route in the study area, based on elements from the existing conditions analysis summary

2. Make sure to visit local destinations such as points of interest, bicycle facilities, and areas where collisions have occurred

Recommendation: Talk to people who are familiar with the area to get a better sense of where and how people are travelling; consider organizing a walking audit



3. Visit Study Area & Complete Checklist

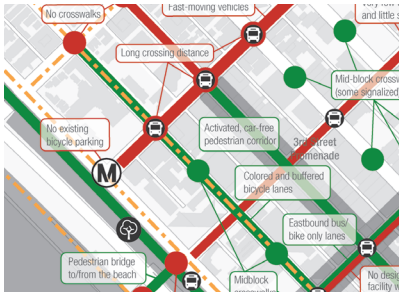
Now that the walking route has been planned, visit the study area to document the existing conditions. The First Last Mile Strategic Plan includes a station area checklist that qualitatively focuses on the safety, accessibility, and aesthetics of a station area. Fill out the checklist after your site visit has been completed; it helps if multiple people complete the checklist to get more balanced results.

1. Visit the study area and conduct site visit; repeat visits at different times of the day

2. Fill out a station area checklist found in the Metro First Last Mile Strategic Plan

3. Take photographs and notes of both barriers and local assets to first last mile connectivity

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4. Identify Issues & Opportunities

Every study area is unique, but there are typical first last mile issues including gaps in the bicycle network, street conditions barriers (e.g. lack of sidewalks), land use barriers (e.g. long blocks), connectivity gaps(e.g. freeways), and lack of amenities (e.g. bus stop benches). Typical access strengths include transit stations, key destinations (e.g. schools), destination corridors (e.g. retail areas), existing bikeways, corridor assets (e.g. shade), and specific assets (e.g. enhanced crosswalks).

1. Identify the key issues and assets relating to first last mile connectivity based on the existing conditions analysis, site visits, and station area checklist results

2. Refer to the First Last Mile Strategic Plan to identify typical issues and assets in Los Angeles County

3. Make the message clear and concise to stakeholders and funders by prioritizing key issues and assets



5. Choose First Last Mile Improvement Tools

The First Last Mile Strategic Plan has a list of improvement tools that help to address barriers to connectivity. Start by creating a Pathway Network and focusing improvements along those routes. Tools may include sidewalk addition or widening, landscaping and shade, enhanced pedestrian crossings, bikeway improvements, enhanced bus waiting areas, underpass and overpass enhancements, medallion signage, and kiss-and-ride locations.

1. Create a Pathway Network (refer to First Last Mile Strategic Plan)

2. Choose improvements from the First Last Mile Strategic Plan that relate to priority issues

3. Recommendations: Choose improvements that are more affordable and quick to install; implement temporary pilot projects or long-term infrastructure projects

Key First Last Mile Recommendations

ATSP Volume II Symbol	Term	Further Description
	Bike Share Station	Provides numerous strategic locations where users can rent bicycles for short-term use; bike share stations located at transit stations and stops make bicycling a convenient option for first last mile trips; other stations are typically placed at strategic locations close to destinations; corporate sponsorships and other public-private coordination can help make bike share a relatively inexpensive intervention for municipalities
	Sidewalk Widening or Addition	Improves safety, comfort and convenience for people of all ages and abilities; wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees
	Enhanced Pedestrian Crossings	Protects transit users by increasing their visibility to motorists; crossing times can be longer and occur more often; in addition to enhancing existing crosswalks, adding new, well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety; pedestrian flashing beacons may be considered
	Enhanced Bicycle Facility	Improves safety and increase comfort for people bicycling; these include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization
	Curb Extensions at Intersections	Improves safety by shortening crossing distances, increasing visibility of people walking, and slowing vehicles that are turning; it can also provide room for amenities such as seating areas, bioswales, stormwater management, and other planted areas
	Traffic Calming	Decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street; traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets
	Enhanced Bus Waiting Areas	Improves the safety and comfort of a bus rider's journey; potential enhancements could include benches, shelters, lighting, signage, wi-fi hotspot, mobile device chargers, etc.
	Freeway Underpass and Overpass Enhancements	Traveling to the transit station stop by foot or bike would be more convenient and comfortable if the underpasses were safer, cleaner, better illuminated, and visually engaging.

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ATSP Volume II Symbol	Term	Further Description
	New Connection Across Barrier	Designing a new connection across the railroad crossings can improve connectivity to the station; this can manifest as an at-grade signalized crosswalk for people walking and bicycling; a well-designed connection should consider the safety of all people
	Medallion Signage	Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights; the addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas
	Street Furniture	Provides amenities to make active transportation users comfortable while traveling and provide resting places; waste receptacles, pedestrian-scale lighting, water fountains, and bicycle parking are other elements that enhance the sidewalk environment
	Landscaping and Shade	Improves aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway; trees and shade structures provide refuge from the sun for people walking, resting, or waiting
	Lighting	Increases safety and aid in night navigation for people walking or bicycling along Pathway routes; install lighting rhythmically and consistently in coordination with tree canopies as not to block the light; consider installing lights that are efficient and/or motion activated/self powered in areas where constant light is not needed
	Car Share	Provides numerous strategic locations where users can rent vehicles for a short term use; vehicle pick-up/ drop-off spaces should be located conveniently nearby the transit station or stop at a highly-visible and location
	Bicycle Services	Includes secure bicycle parking, bicycle hubs, bicycle repair stations, and/or bike share
	Park-and-Ride	Park and Ride lots provide easy vehicular parking and encourage transit ridership for motorists using their vehicles for first last mile trips; the addition of a dedicated drop-off zone immediately adjacent to the station would help to improve accessibility, safety and convenience at the station
	Key Recommendation Along Corridor	Key recommendations that extend throughout the entire length of the corridor

THE REGIONAL ACTIVE TRANSPORTATION NETWORK

The Regional Active Transportation Network (Regional Network) is a countywide system of routes intended to serve active travelers - people walking, riding bicycles and using other non-motorized modes. The purpose of the Regional Network is to deliver an interconnected network of convenient active transportation routes that enable Los Angeles County residents to safely access the places they want to go by the mode of their choosing.

Cities around Los Angeles County are making tremendous progress in constructing active transportation facilities (such as sidewalks and protected bicycle lanes). However, the County has lacked a regional vision for inter-jurisdictional travel, resulting in piecemeal local systems, large network gaps and a wide range of facility comfort. The Regional Network is a low-stress network. This means that facility users will not be expected to share lane space with high-speed or high-volume motor vehicle traffic. The Regional Network is comprised of facility types with high safety performance and the ability to attract and retain users. Metro is committed to realizing this vision, and will support local jurisdictions in implementing the

Regional Active Transportation Network Guiding Principles

Connect cities and communities	The Regional Active Transportation Network emphasizes connectivity between communities, as opposed to connectivity within local jurisdictions. However, regional routes will still play a role in local travel.
Serve desire lines	The Regional Active Transportation Network enables bicycle travel on the routes that people want to use. People generally want routes that are direct and safe.
Serve Main Street	The Regional Active Transportation Network embraces routes that link directly to the cores of cities, serving historic Main Streets and Central Business Districts.
Harness continuous rights-of-way	The Regional Active Transportation Network relies upon continuous rights-of-way (both natural and human-made) to provide unhindered movement for long stretches.
Link to transit	The Regional Active Transportation Network seeks opportunities to connect with major transit hubs, particularly if these hubs are located in population centers.
Address existing safety problems	The Regional Active Transportation Network improves travel conditions along routes with a history of bicycle crashes.
Design for all ages and abilities	The facilities comprising the Regional Active Transportation Network meet a minimum standard of service, suitable for use by children and seniors.

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Regional Active Transportation Network progressively over time through funding and technical support.

The Regional Active Transportation Network is intended to serve both people walking and people riding bicycles. However, the network planning process primarily takes cues from best practices in regional bikeway network development, for the following reasons:

> Pedestrian trips are inherently less regional in scale than bicycle trips due to differences in travel speed;

> The Active Transportation Strategic Plan includes detailed transit station area plans that emphasize pedestrian connectivity;

> The Regional Active Transportation Network will directly serve pedestrian travel on all of its recommended Class I (shared-use path) facilities;

> The Regional Active Transportation Network will indirectly improve pedestrian conditions around many of its other facilities (for instance, protected bicycle lanes reduce sidewalk riding, calm traffic and shorten crossing distances, all of which improve pedestrian safety and comfort); and

> The inclusion of sidewalks can be assumed on all on-street facilities with low-stress bikeways, such as protected bicycle lanes (Class IV) or bicycle boulevards (Class III).

Design Flexibility

Metro encourages local jurisdictions to pursue facilities that best fit their communities. The Regional Active Transportation Network has been designed with local implementation in mind, and flexibility in design is a key aspect of this approach.

The generalized facility type identified for each Regional Network project is subject to review, modification and implementation by the relevant local jurisdiction(s). Engineering judgment, feasibility studies or community feedback may identify an alternative facility type for a Regional Network project. Provided that the modified facility meets the eligibility criteria contained in Table 4.1, the facility may be considered part of the Regional Network for the purposes of Metro grant opportunities and regional designation.

The alignments identified are also subject to review and modification by the relevant local jurisdiction(s). The Regional Network is intended to provide local jurisdictions with a high degree of latitude to construct facilities using preferred alignments. If a locally-identified alignment diverges from the identified Regional Active Transportation Network project, it can maintain Regional Active Transportation Network status by serving the same desire line as the original Regional Active Transportation Network facility (i.e. serving the same general corridor or destinations). For instance, a jurisdiction may elect to construct a facility along a parallel urban street or off-street corridor serving the same destinations as the original Regional Network alignment. As described above, these alternative facilities may harness the full range of available facility types and design enhancements, provided that the facility meets the eligibility criteria contained in Table 4.1.

Regional Active Transportation Network Eligible Facility Types

Table 4.1

Regional Active Transportation Network Design Guidance/Standards	Off-Street	Dedicated On-Street	Shared On-Street
Highway Design Manual (HDM) Class[1]	Class I	Class II & Class IV	Class III
HDM Class Eligible Under the Following Conditions[2]	Always	A conventional Class II bicycle lane is only eligible on a low-stress roadway.[3] Class II bikeways with buffers and Class IV protected bicycle lanes (with various barrier types) are always eligible.	A Class III facility is only eligible on a low-stress roadway.[4]
Available Design Enhancements	Bicycle Freeway [5] Floating Bicycle Path [6] Sub-Grade Bicycle Intersection	Various separation methods Two-way or contraflow operation Protected intersection	Various traffic calming methods to maintain low traffic speeds and volumes Bicycle boulevards, bike-friendly streets, neighborhood greenways Advisory Bicycle Lanes

1. California Department of Transportation, 2015. Highway Design Manual.
2. Eligible facility types are those that are consistent with Regional Active Transportation Network design standards. Existing or planned facilities meeting these standards are not necessarily included in the Regional Active Transportation Network.
3. For Class II bicycle lanes, a low-stress roadway is defined as having a bicycle lane adjacent to the curb, rather than parked vehicles, and no more than two general purpose travel lanes.
4. For Class III bicycle boulevards, a low-stress roadway is defined as having average daily vehicle volumes of no more than 2,000 and 85th percentile speeds at or below 20 mph.
5. A Bicycle Freeway is a long-distance bikeway that is separated from auto traffic and other street activity, allowing for high cycling speeds. The goal is to give cyclists the same long-distance access that drivers have on a auto-only freeway.
6. A Floating Bicycle Path is an on-street bike lane that shifts depending on when and where parallel parking is allowed at certain times of the day. During the peak travel hours (such as rush hour), an extra travel lane exists, no street parking is allowed, and the bike lane is adjacent to the curb. During off-peak hours (such as midday), autos may not use the additional travel lane, street parking is allowed, and the bike lane moves to the left of the street parking.

Proposed Regional Active Transportation Network

The Proposed Regional Network is presented as a map series (Maps 1 through 11) and a project list (Table 4.2). The Proposed Regional Active Transportation Network comprises nearly 2,000 miles of low-stress active transportation facilities throughout Los Angeles County and consists of three generalized facility types, as defined in Table 4.1: Dedicated On-Street, Off-Street, and Shared On-Street. Overall, the Regional Network includes 1,390 miles of Dedicated On-Street facilities (70 percent), 510 miles of Off-Street Facilities (26 percent) and 55 miles of Shared On-Street Facilities (3 percent). The Proposed Regional Network also includes about 15 miles of alternative alignments for facilities that are currently under study by Metro. These alignments are included in the overall mileage for the Proposed Regional Network.

Maps 1-11 can be accessed online at https://www.metro.net/projects/active-transportation-strategic-plan/. To explore additional existing and planned bikeway facilities in detail, visit http://gis.fehrandpeers.com/metroatsp.

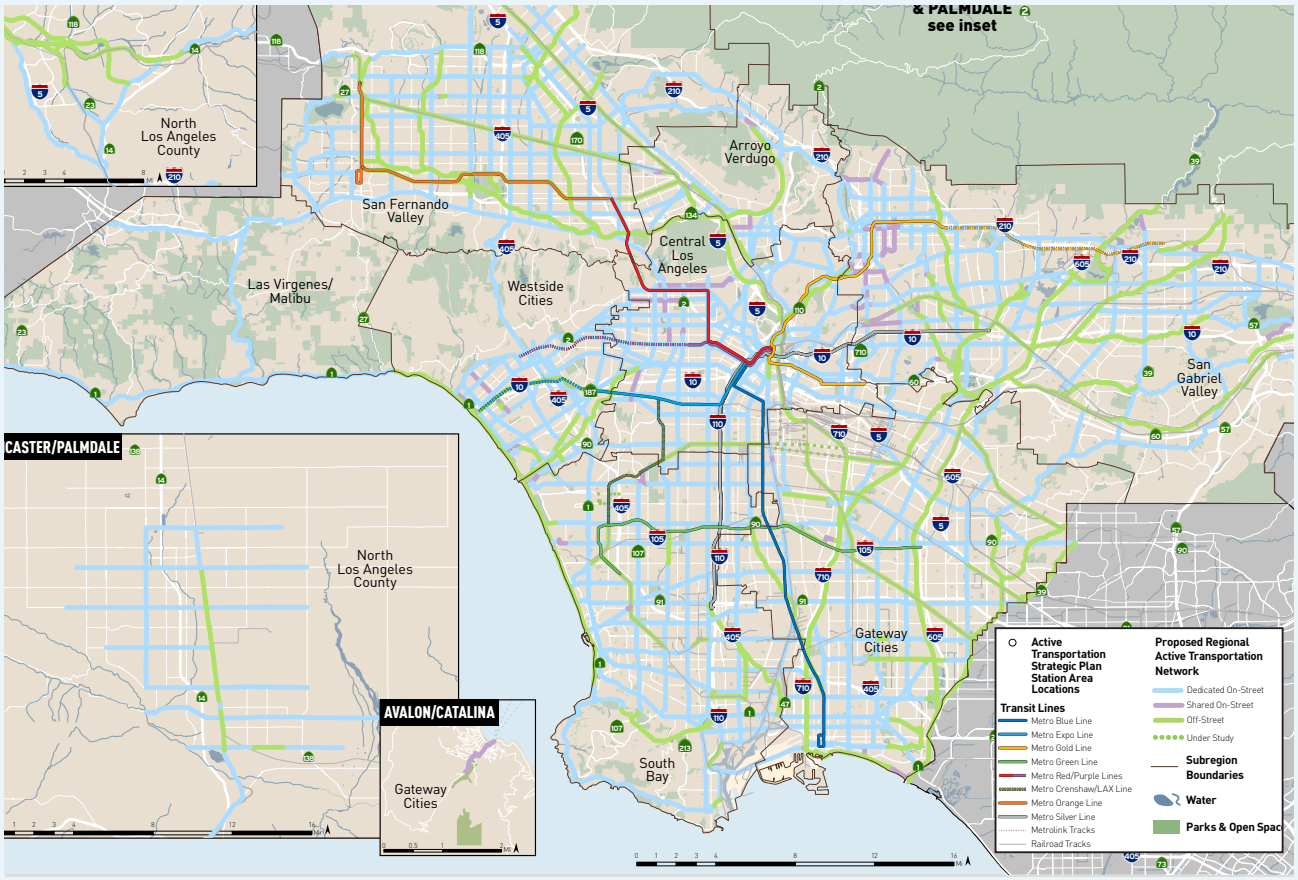
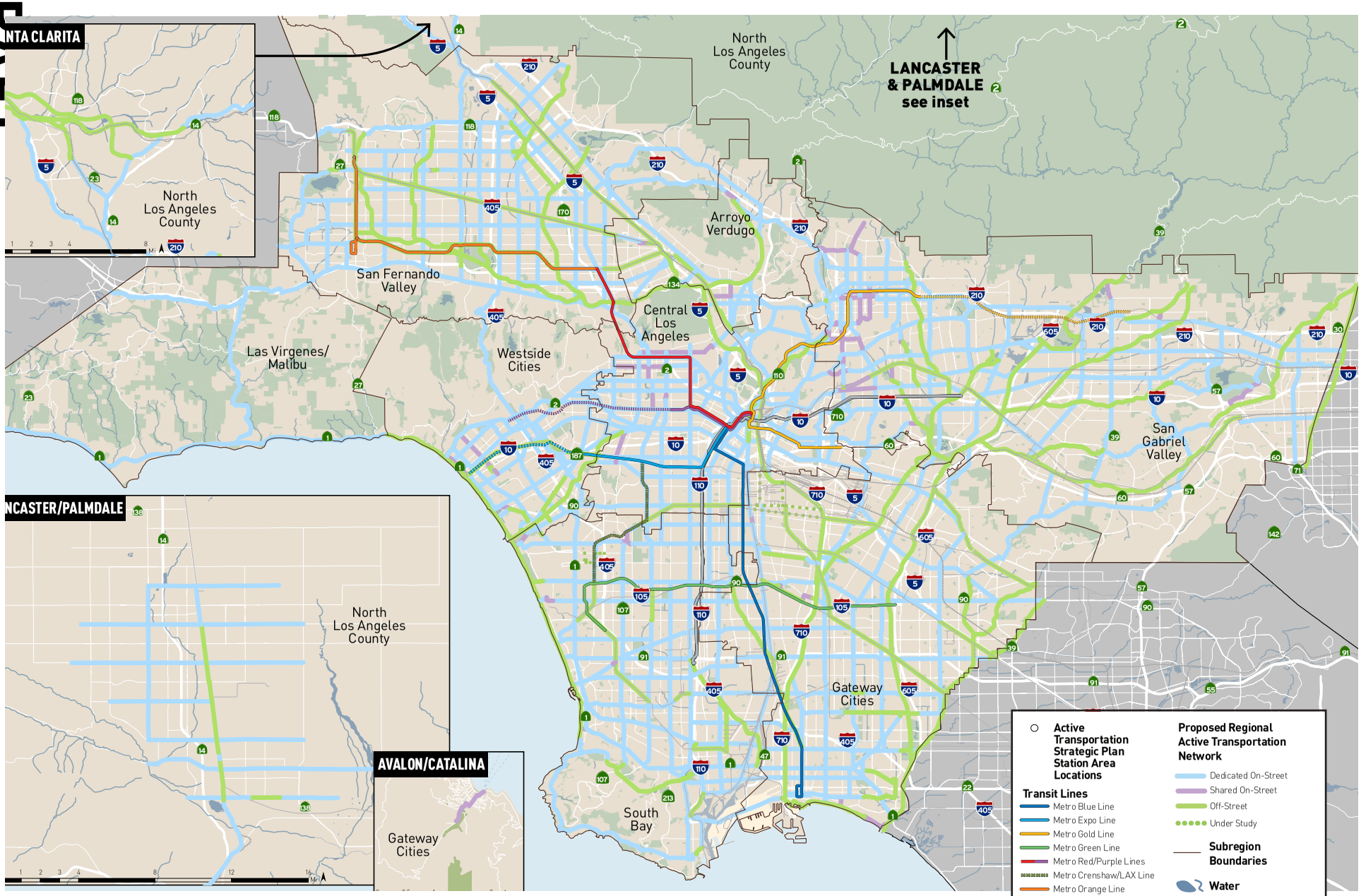


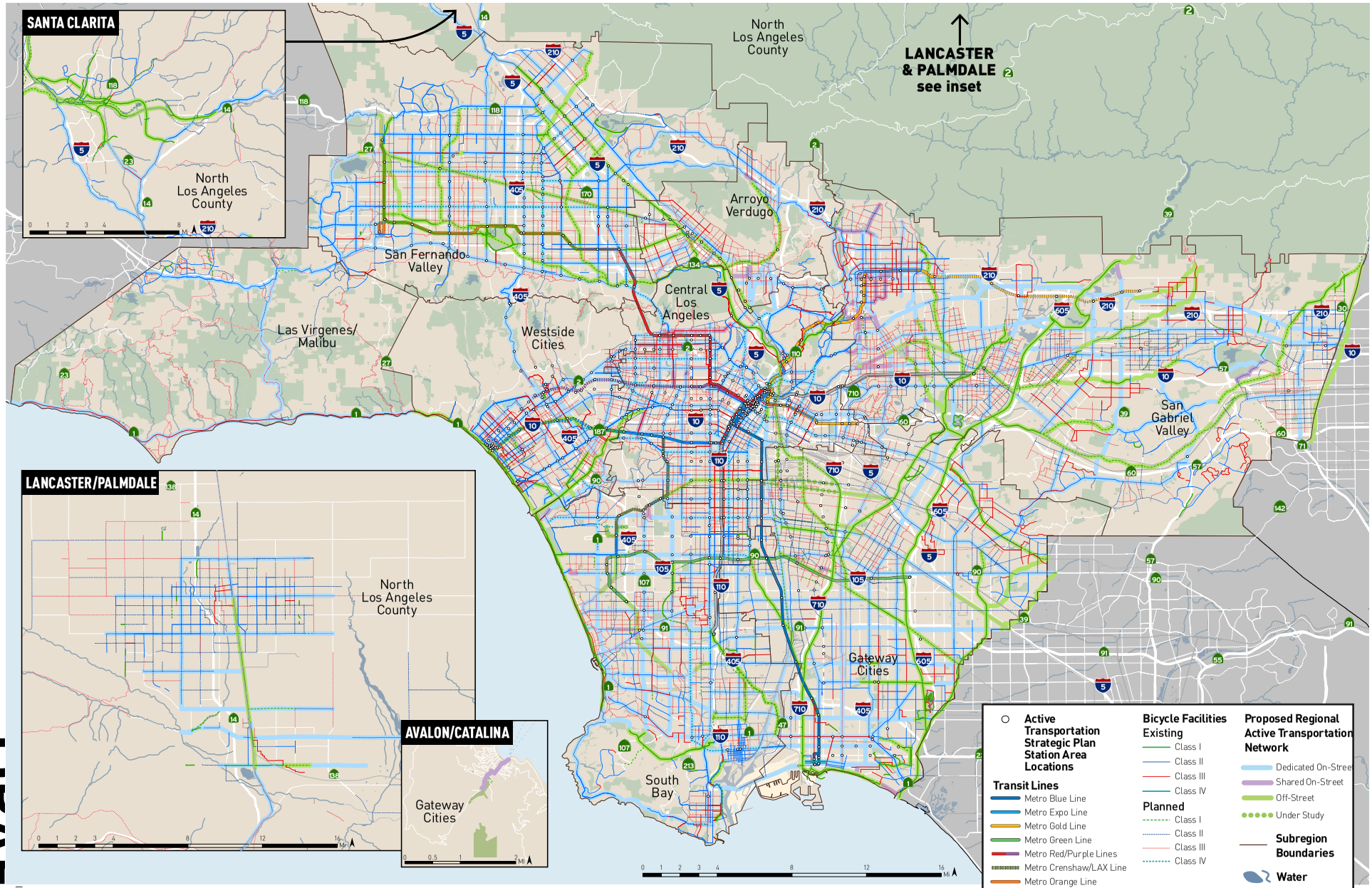
Figure 4.6: Proposed Regional Active Transportation Network (Maps 1-11 show enlargements of this image.)

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Map 1: Regional Active Transportation Network Overview



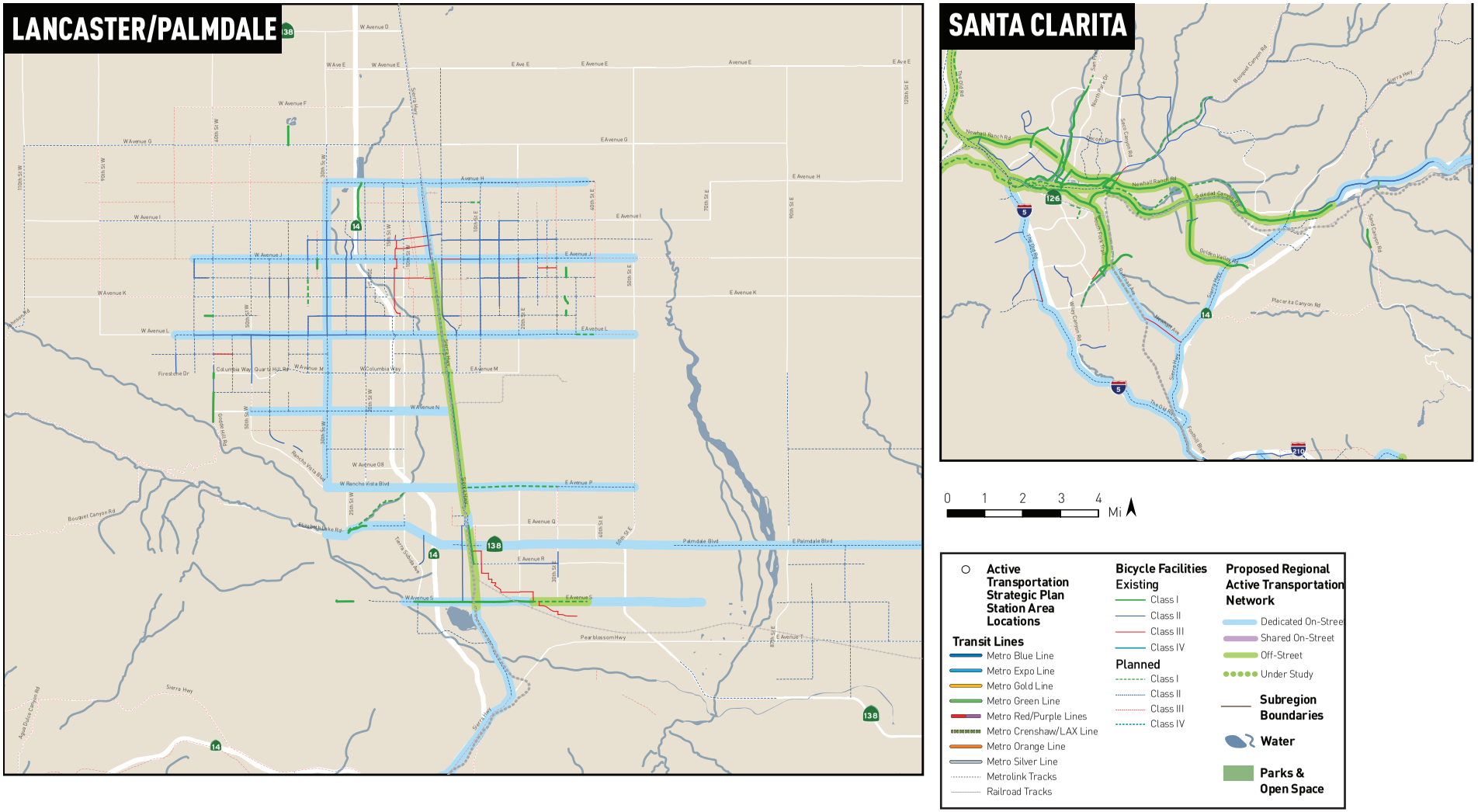
Map 2: Regional Active Transportation Network with Existing and Planned Bicycle Facilities



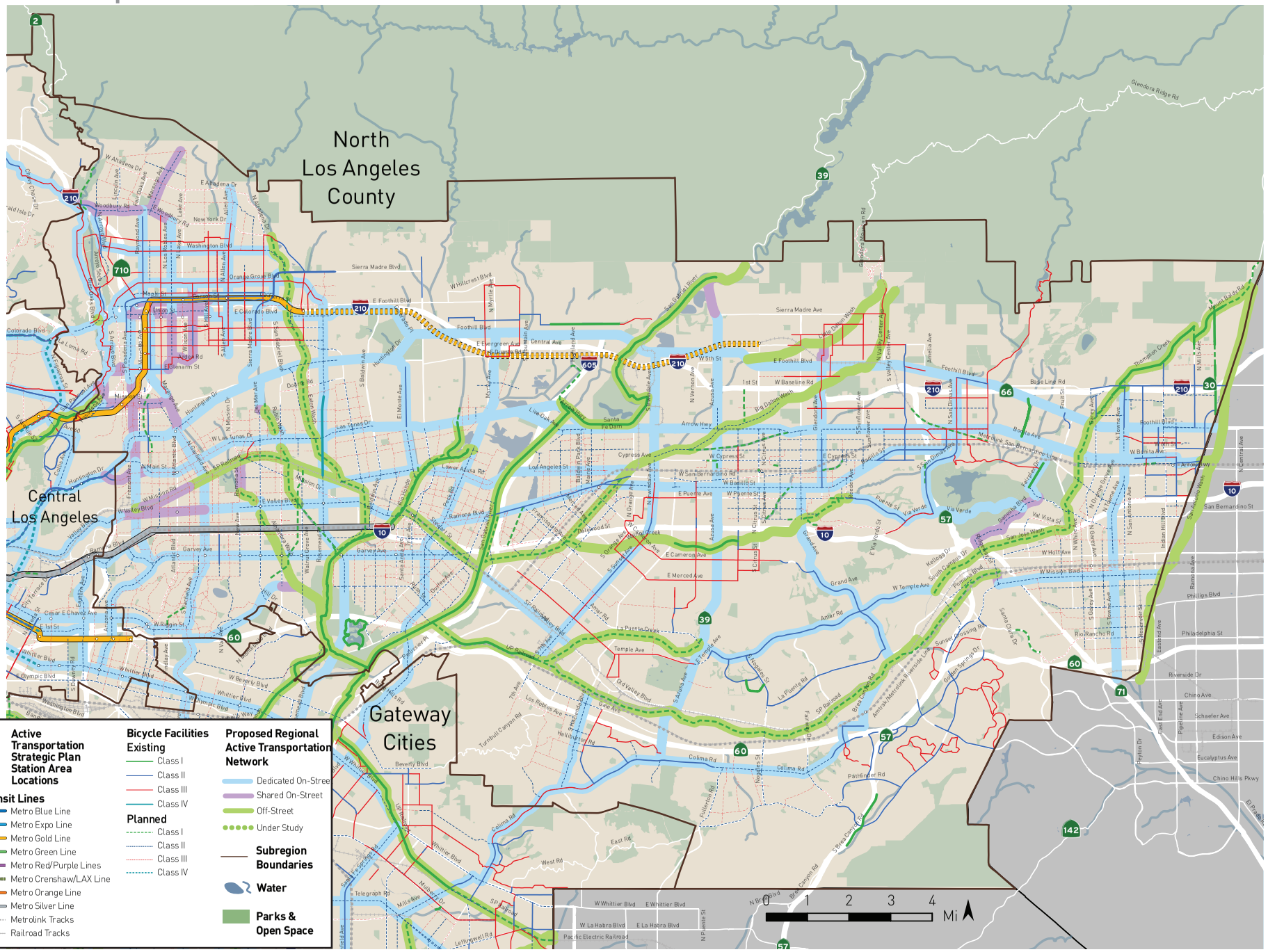
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Map 3: North Los Angeles County Proposed Regional Active Transportation Network



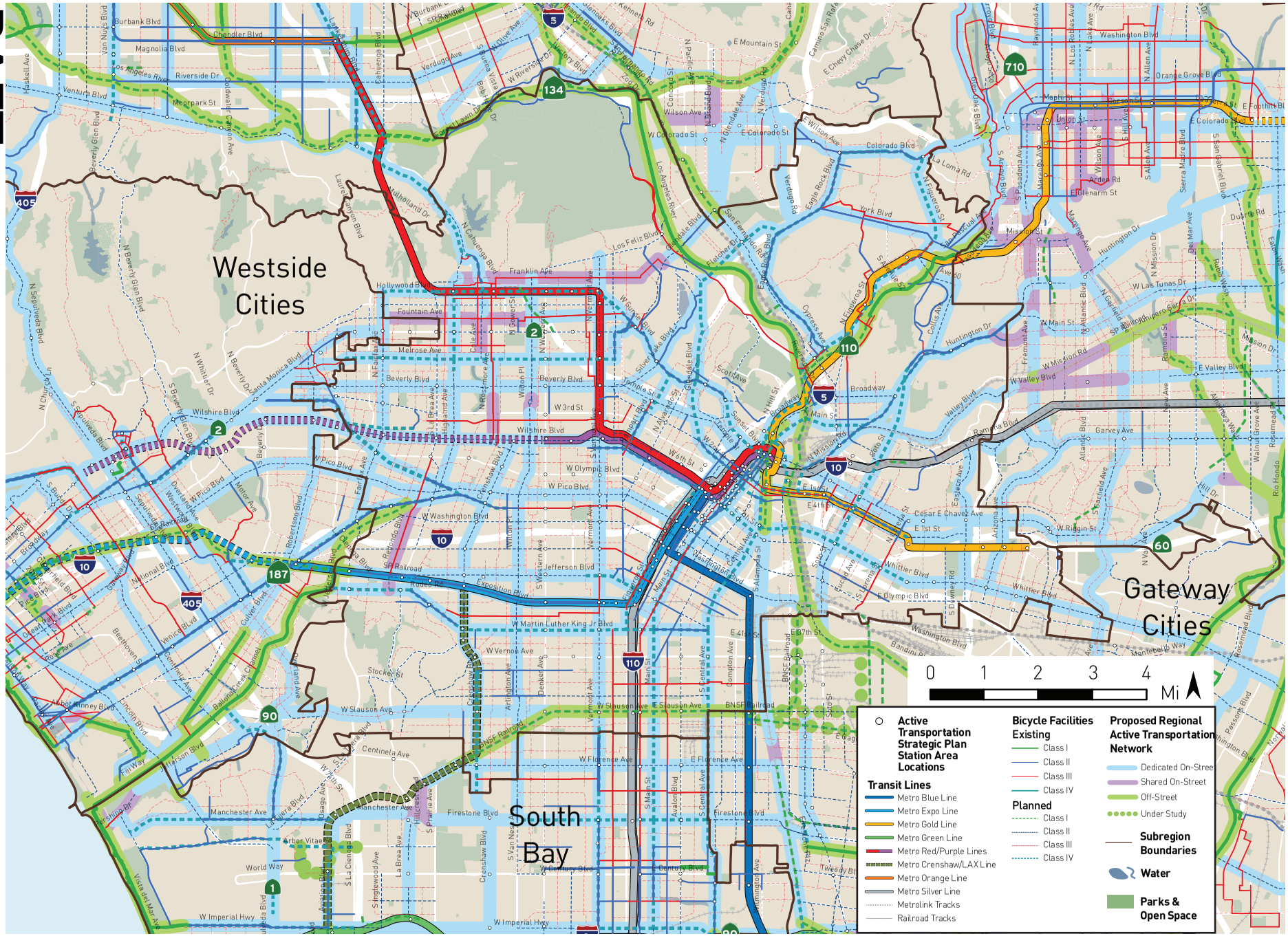
Map 4: San Gabriel Valley Proposed Regional Active Transportation Network



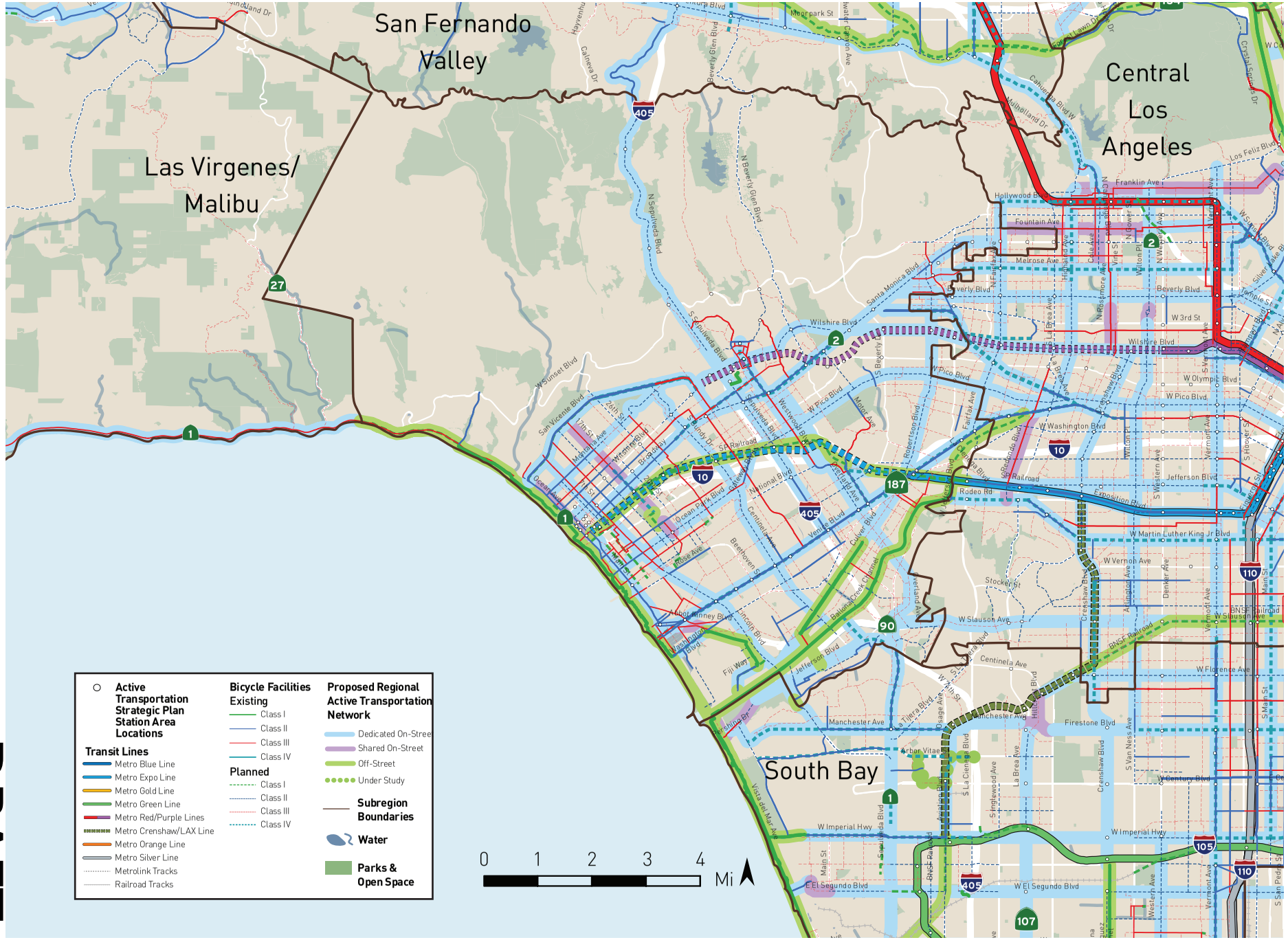
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Map 5: Central Los Angeles Proposed Regional Active Transportation Network



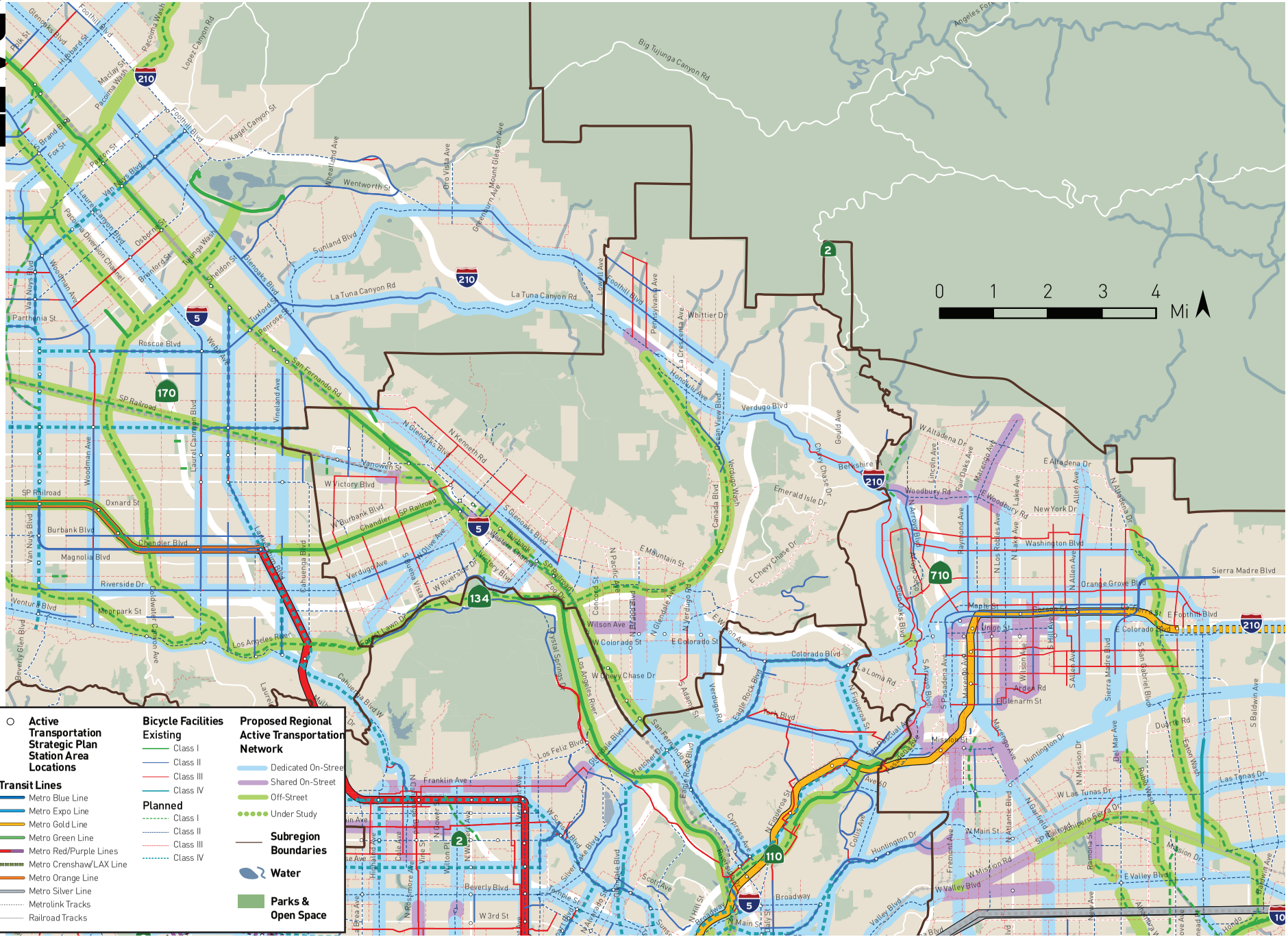
Map 6: Westside Cities Proposed Regional Active Transportation Network



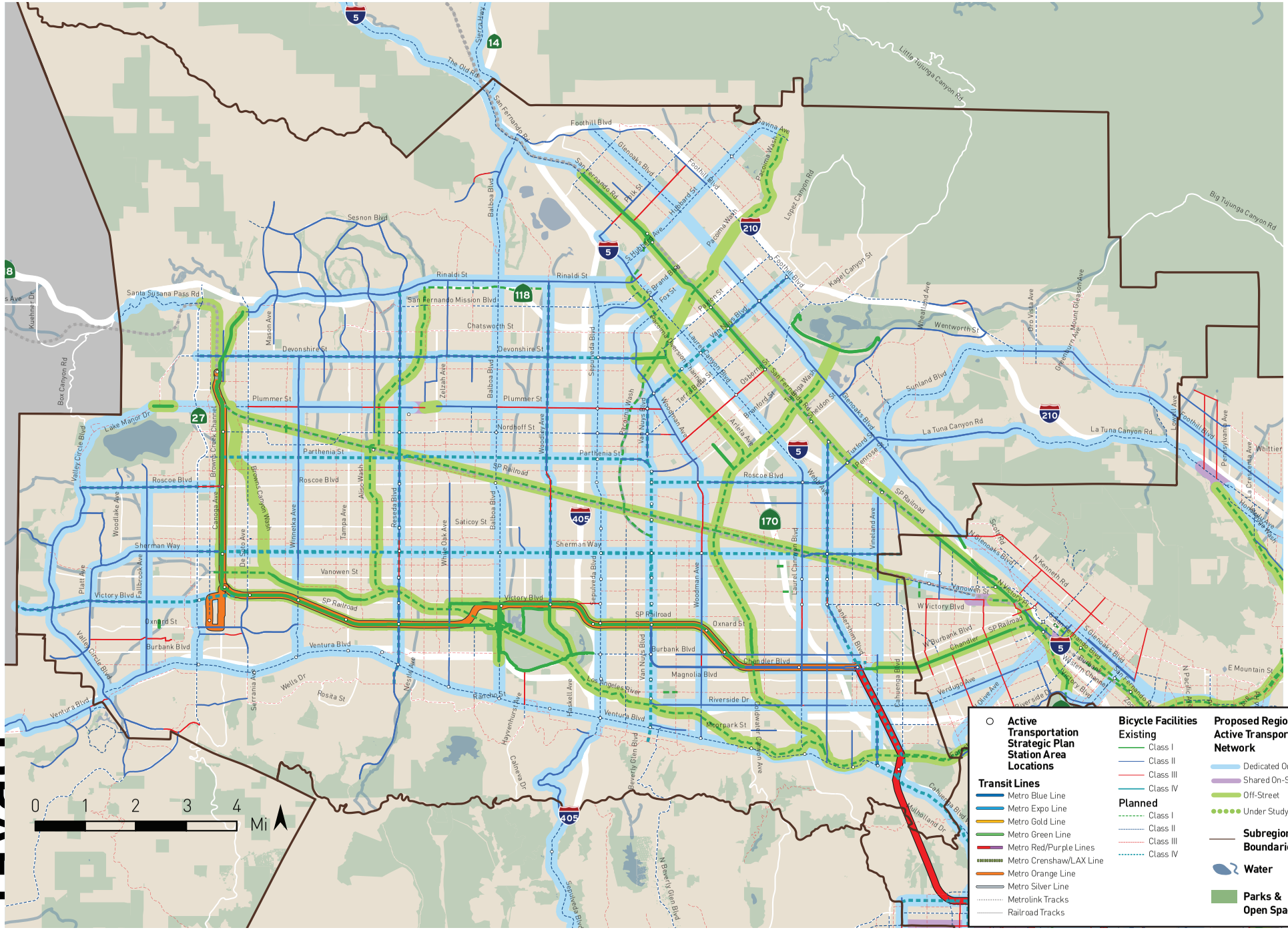
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Map 7: Arroyo Verdugo Proposed Regional Active Transportation Network



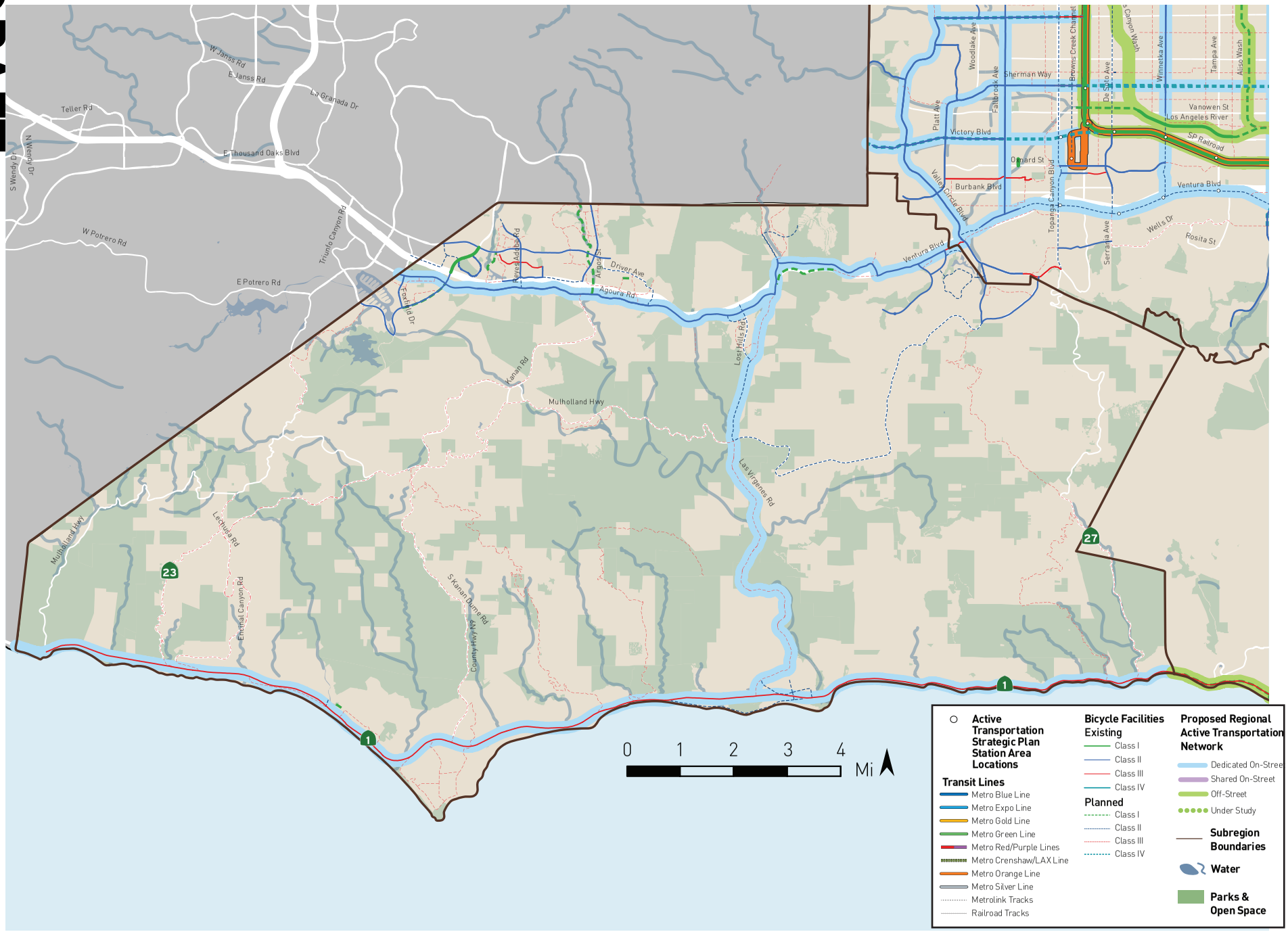
Map 8: San Fernando Valley Proposed Regional Active Transportation Network



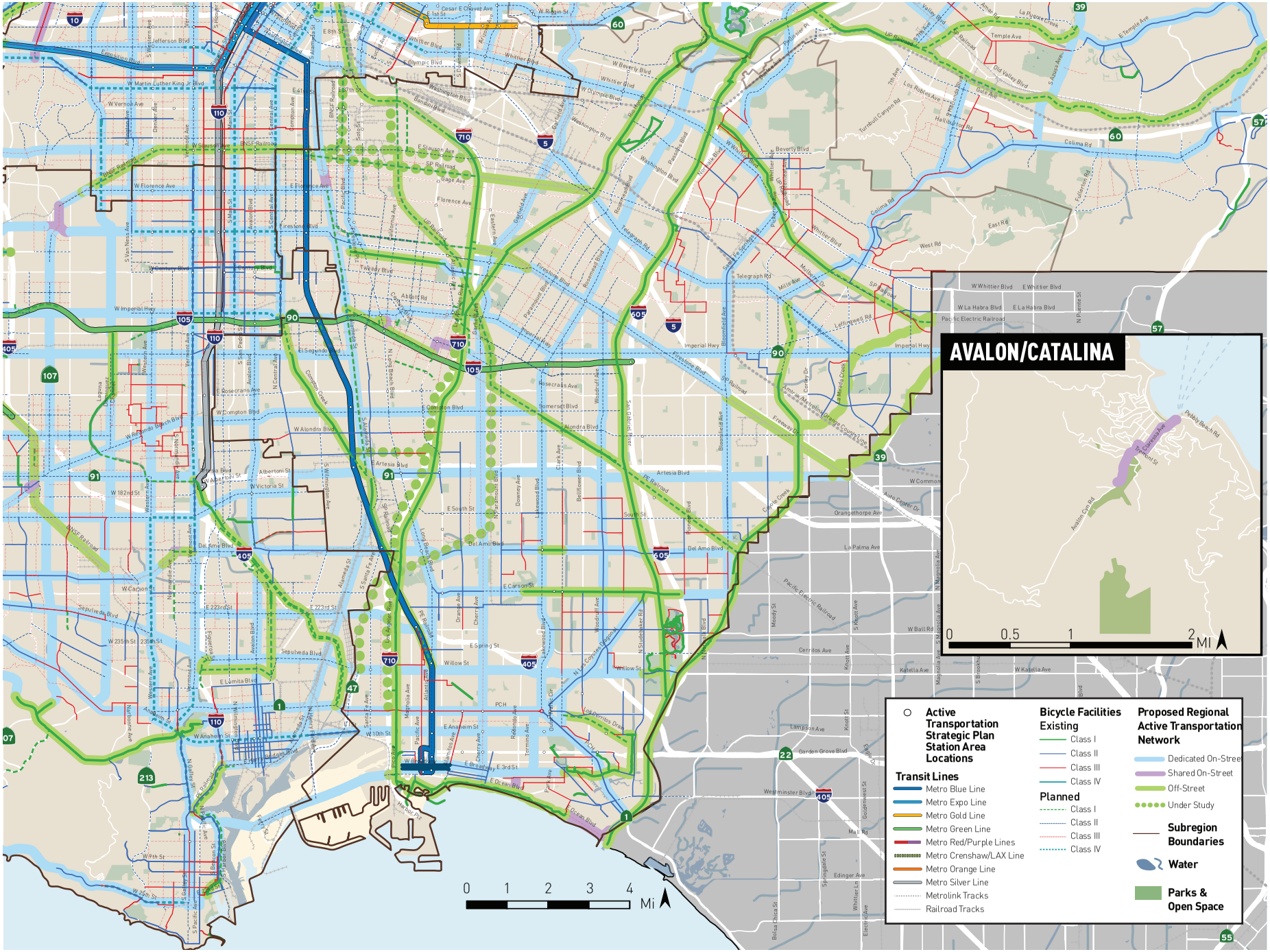
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Map 9: Las Virgenes-Malibu Proposed Regional Active Transportation Network



Map 10: Gateway Cities Proposed Regional Active Transportation Network



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Map 11: South Bay Proposed Regional Active Transportation Network



Table 4.2

Table 4.2 presents a summarized project list for the facilities included in the proposed Regional Active Transportation Network. This network includes nearly 2,000 miles of low-stress active transportation facilities throughout Los Angeles County and consists of three generalized facility types, as defined in Table 4.1: Dedicated On-Street, Off-Street, and Shared On-Street.

Table 4.2 shows the total mileage by type for each subregion in the county, as well as a low, medium, and high cost estimate for the Regional Network based on the mileage. More detail about the specific facilities included in the Regional Network can be found in Appendix H - Regional Active Transportation Network Methodology and Analysis.

Subregion	Milage				Total Cost Estimate		
	Dedi-cated	Off-Street	Shared	Metro Study	Low	Medium	High
Arroyo Verdugo	36	20	4	-	$3,813,436	$61,275,537	$320,652,189
Central Los Angeles	232	24	9	1	$9,937,396	$160,066,589	$837,315,707
Gateway Cities	196	129	5	12	$14,108,395	$226,834,079	$1,186,906,134
Las Virgenes/ Malibu	44	-	-	-	$1,354,114	$21,840,541	$114,226,029
North Los Angeles County	134	47	-	-	$8,547,752	$137,461,688	$719,241,743
San Fernando Valley	230	99	0	-	$18,718,312	$300,843,632	$1,574,245,230
San Gabriel Valley	245	118	27	-	$22,839,528	$367,099,021	$1,920,929,795
South Bay	168	39	3	-	$8,931,079	$143,718,448	$751,906,645
Westside Cities	90	35	8	-	$5,531,081	$88,991,715	$465,598,235
Ports & Airports	15	0	-	2	$501,843	$8,091,489	$42,320,642
Total	**1,390**	**510**	**55**	**15**	**$94,282,934**	**$1,516,222,738**	**$7,933,342,350**

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Users of all ages enjoy bike-related activities in the LA area



Pedestrian and cyclists wait to board a Metro bus

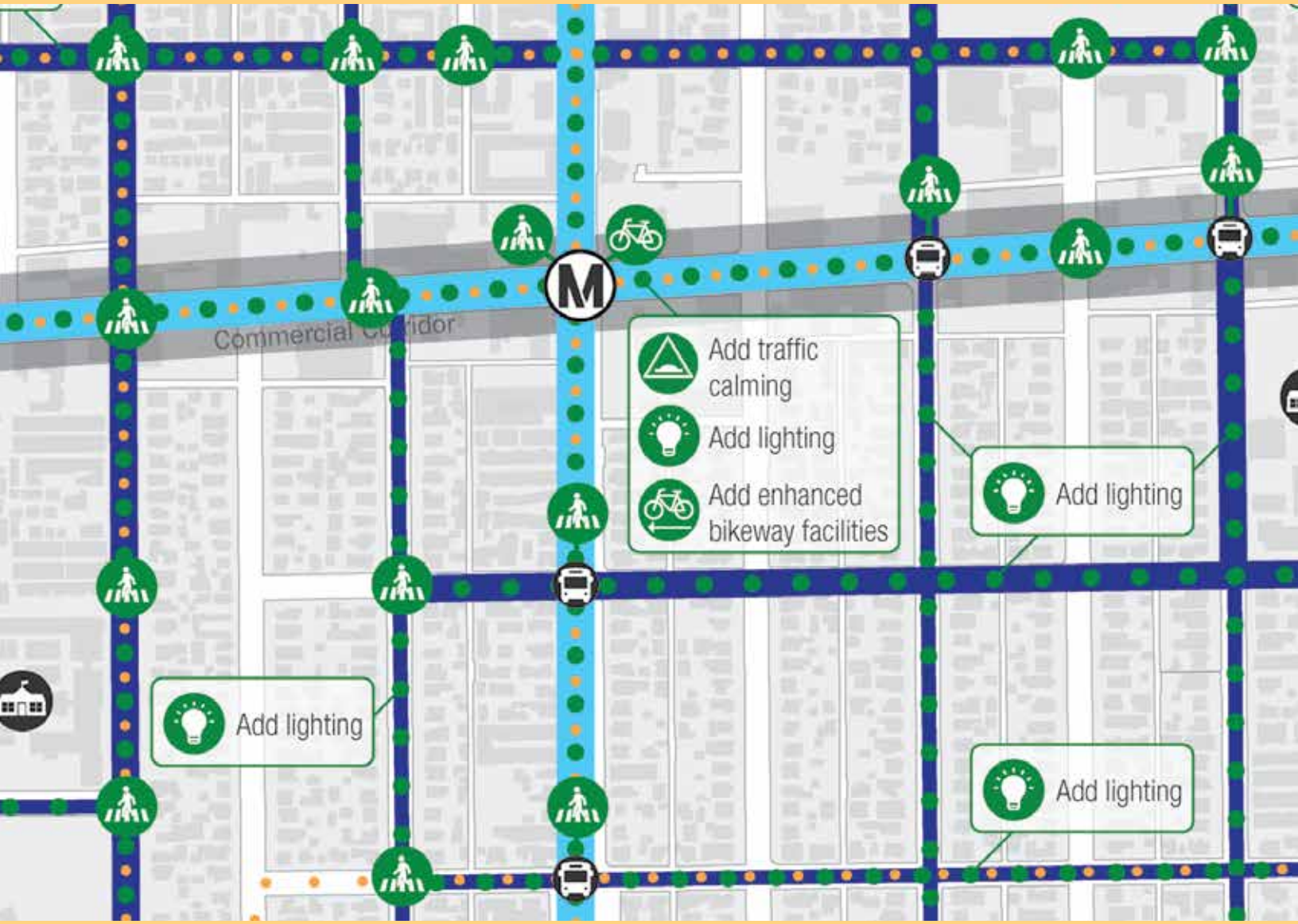


Green bike lanes provide visible cycling access in Santa Monica

ATSP CASE STUDIES

Volume II

February 2016



Metro

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INTRODUCTION

This volume presents examples on how to conduct first last mile analysis around transit stations and stops. The case studies provide a valuable reference for those interested in pursuing first last mile accessibility improvements in their own community. These case studies reflect the diversity of transit areas, geographies, demographics, land uses, building and population densities, and subregions of Los Angeles County.

The case studies are presented in two parts: 1) An existing conditions analysis shows assets and barriers to first last mile accessibility, and 2) Key recommendations to improve accessibility, based on the existing conditions analysis. The methodology used to conduct this study is based on Metro's First Last Mile Strategic Plan and the Active Transportation Strategic Plan Volume I. The examples take into consideration local conditions while addressing challenges that are seen in across the County. Use these examples to build a scope that could be applied to a transit station or stop in your community.

Although these case studies pertain to specific locations, place labels have been omitted in order to highlight the fact that the challenges shown in each study area are universal and countywide.

FIVE STEPS TO CASE STUDY ANALYSIS



1. Preliminary Station Analysis

- Studied existing conditions analysis summaries provided at the online portal available at: www.http://gis.fehrandpeers.com/metroatsp



2. Planning the site visit route

- Determined walking route based on elements from the existing conditions analysis summary (see above)
- Included destinations and points of interest such as parks, institutions, and regional attractions



3. Site Visit and Checklist

- Conducted site visit and took photographs and notes of barriers and assets to first last mile accessibility
- Filled out station area checklist



4. Identification of issues and opportunities

- Referred to the First Last Mile Strategic Plan to identify typical barriers and assets in LA County
- Identified key barriers and assets based on the preliminary station analysis, site visits, and checklist survey results



5. Key recommendations

- Created a Pathway Network, referring to the First Last Mile Strategic Plan
- Chose improvements from the First Last Mile Strategic Plan that relate to identified issues

ACCESSIBILITY SCORES

As part of step 3, an "accessibility score" was determined to provide a snapshot of each study area's support of first last mile accessibility. Scores were calculated during each study area visit via a checklist survey of key urban design elements encompassing safety, accessibility, and aesthetics.

The sample checklist survey can be used by any community to help determine its own challenges and opportunities for first last mile access. The survey can be found in the First Last Mile Strategic Plan.

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QUICK REFERENCE GUIDE

The guide below helps communities identify useful case studies that may apply to their own analysis of first last mile accessibility. General categories include the type of station/stop, land use characteristics, and the number of existing bicycle facilities.

WHAT IS THE TRANSIT STATION/STOP TYPE?

	Multi-modal or Multi-agency Hub or Stop	Metrolink	Bus Rapid Transit	Metro Rail			Rapid or Regional Bus Stop	Local Bus Stop
				Above-grade	*Subterranean*	*At-grade*		
CASE STUDY	3, 4, 10, 14, 18	3, 18	16	9, 17	1, 12, 13	2, 8, 15, 20	5, 7, 11	5, 6, 7, 11, 19

WHAT ARE SOME OF THE MAIN IDENTIFYING FEATURES?

	Human-scale Retail and/or Commercial	Industrial uses	Long blocks and limited or unenhanced crossings	Transit corridor barrier			Major regional destinations		
				Freeway	*Rail*	*BRT*	*Institutional or Civic*	*Retail*	*Tourist*
CASE STUDY	3, 4, 5, 6, 7, 9, 13	8, 15, 16, 18, 20	4, 5, 6, 7, 8, 9, 11	1, 2, 6, 9, 10, 12, 16, 17, 19	7, 15, 18	16	3, 7, 14, 16	3, 4, 5, 7, 10, 12, 13	3, 5, 7, 12, 13

HOW WALKABLE IS THE STUDY AREA*?

Highly Un-Walkable — **Highly Walkable**

CASE STUDY	18, 14, 9, 20, 17, 19, 2, 8, 16, 11, 6, 10, 5, 1, 4, 3, 7, 8, 13, 12

*Based on station area Walk Score which can be found in the existing conditions analysis in the online portal.

HOW BIKABLE IS THE STUDY AREA*?

Highly un-bikable — **Highly Bikable**

CASE STUDY	2, 3, 6, 19, 7, 11, 18, 10, 4, 17, 14, 16, 15, 13, 12, 9, 20, 14, 8, 12, 5, 1, 8

*Based on number of existing bicycle facilities as well as station area Bike Score, which can be found in the existing conditions analysis in the online portal.

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VISUAL GLOSSARY

The Active Transportation Strategic Plan (ATSP) Case Studies document uses a unique visual language that is consistent in each of the 20 case studies. Although the visuals are meant to be easily understood, referring to this visual glossary can be helpful when analyzing the case studies. These can also be copied and used to conduct your first last mile analysis.

EXISTING CONDITIONS VISUALS

	Symbol	Term	Further Description
LOCATIONS		Metro Transit Station or Stop	N/A
		Non-Metro Transit Station or Stop	N/A
		Public Open Space	N/A
		School	N/A
		Public Institution	N/A
		Other Destination	N/A
		Destination Area	N/A
		Existing Bus Stop	N/A
		Existing Bikeway	N/A
ACCESS BARRIERS		Gaps in the Bicycle Network	Street segment where an existing bikeway could extend to and strengthen connections to the larger bicycle network
		Street Conditions Barrier	Element along a street segment that is a barrier to and from the station such as speeding traffic
		Specific Barrier	Element at a specific location that is a barrier to and from the station such as a discontinuous sidewalk
		Area Barrier	Element within a parcel or area that is a barrier to and from the station
		Connectivity Gap	Barrier that is completely inaccessible due to a physical element in the public realm such as a freeway
ACCESS STRENGTHS		Corridor Asset	Element along a street segment that enhances accessibility to and from the station such as lighting or landscaping
		Specific Asset	Element at a specific location that enhances accessibility to and from the station such as an enhanced crossing
		Area Asset	Element within a parcel or area that enhances accessibility to and from the station such as a park-and-ride lot

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PATHWAY NETWORK VISUALS

	Symbol	Term	Further Description
LOCATIONS		Existing Bikeway	N/A
		Extension to Regional Active Transportation Network	Extension from an existing bikeway that connects to the Regional Active Transportation Network identified in the Active Transportation Strategic Plan
PATHWAY NETWORK		Pathway Arterial	Route that extends from the transit station or stop and supports maximized throughput and efficiency for active transportation users
		Pathway Collector 1	Routes that feed into Arterials and support crossing movements and general station area permeability; Collector 1s have a greater capacity to accommodate people walking and bicycling compared to Collector 2s
		Pathway Collector 2	
		Cut-Through	Supporting paths, often used as shortcuts that feed into Arterials and Collectors
		Proposed Bikeway	Bikeways are proposed in municipal and regional plans
		Extension to Regional Active Transportation Network	Extension to a proposed bikeway that connects with the ATSP Regional Network

PATHWAY NETWORK VISUALS (CONTINUED)

	Symbol	Term	Further Description
KEY RECOMMENDATIONS		Bike Share Station	Provides numerous strategic locations where users can rent bicycles for short-term use; bike share stations located at transit stations and stops make bicycling a convenient option for first last mile trips; other stations are typically placed at strategic locations close to destinations; corporate sponsorships and other public-private coordination can help make bike share a relatively inexpensive intervention for municipalities
		Sidewalk Widening or Addition	Improves safety, comfort and convenience for people of all ages and abilities; wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees
		Enhanced Pedestrian Crossings	Protects transit users by increasing their visibility to motorists; crossing times can be longer and occur more often; in addition to enhancing existing crosswalks, adding new, well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety; pedestrian flashing beacons may be considered
		Enhanced Bicycle Facility	Improves safety and increase comfort for people bicycling; these include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization
		Curb Extensions at Intersections	Improves safety by shortening crossing distances, increasing visibility of people walking, and slowing vehicles that are turning; it can also provide room for amenities such as seating areas, bioswales, stormwater management, and other planted areas
		Traffic Calming	Decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street; traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets
		Enhanced Bus Waiting Areas	Improves the safety and comfort of a bus rider's journey; potential enhancements could include benches, shelters, lighting, signage, wi-fi hotspot, mobile device chargers, etc.
		Freeway Underpass and Overpass Enhancements	Traveling to the transit station stop by foot or bike would be more convenient and comfortable if the underpasses were safer, cleaner, better illuminated, and visually engaging.

PATHWAY NETWORK VISUALS (CONTINUED)

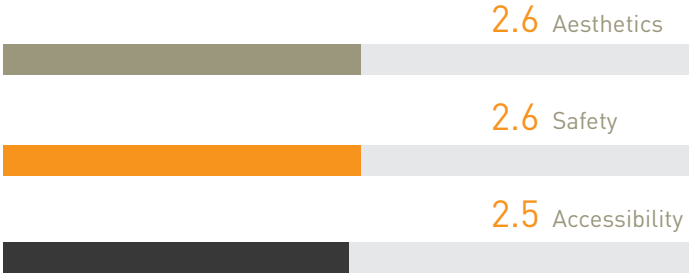
	Symbol	Term	Further Description
KEY RECOMMENDATIONS		New Connection Across Barrier	Designing a new connection across the railroad crossings can improve connectivity to the station; this can manifest as an at-grade signalized crosswalk for people walking and bicycling; a well-designed connection should consider the safety of all people
		Medallion Signage	Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights; the addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas
		Street Furniture	Provides amenities to make active transportation users comfortable while traveling and provide resting places; waste receptacles, pedestrian-scale lighting, water fountains, and bicycle parking are other elements that enhance the sidewalk environment
		Landscaping and Shade	Improves aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway; trees and shade structures provide refuge from the sun for people walking, resting, or waiting
		Lighting	Increases safety and aid in night navigation for people walking or bicycling along Pathway routes; install lighting rhythmically and consistently in coordination with tree canopies as not to block the light; consider installing lights that are efficient and/or motion activated/self powered in areas where constant light is not needed
		Car Share	Provides numerous strategic locations where users can rent vehicles for a short term use; vehicle pick-up/drop-off spaces should be located conveniently nearby the transit station or stop at a highly-visible and location
		Bicycle Services	Includes secure bicycle parking, bicycle hubs, bicycle repair stations, and/or bike share
		Park-and-Ride	Park and Ride lots provide easy vehicular parking and encourage transit ridership for motorists using their vehicles for first last mile trips; the addition of a dedicated drop-off zone immediately adjacent to the station would help to improve accessibility, safety and convenience at the station
		Key Recommendation Along Corridor	Key recommendations that extend throughout the entire length of the corridor

DRAFT

CASE STUDY 1

METRO RAIL STATION (SUBTERRANEAN)

- Major streets have primarily commercial land uses, while the bulk of the study area is residential
- Some commercial corridors are highly walkable, while others are oriented to the automobile
- Some enhanced bicycle facilities



2.6

Aesthetics

The study area has a strong sense of place, but lacks pleasant landscaping and strategically-placed pedestrian amenities in many places. Some sidewalk areas contain unpleasant blank walls and trash.

Safety

The high level of pedestrian activity and the orientation of most buildings toward the public realm give a perceived sense of safety. However, the study area lacks sufficient maintenance, characterized by some broken and uneven sidewalks. Commercial streets lack a strong safety buffer for pedestrians, and traffic speeds are high. Safety for people bicycling on the primary east-west corridor is enhanced by a colored bicycle lane with conflict zone pavement markings.

Accessibility

Pedestrian and bicycle amenities at the station facilitate mode transfer, but the station lacks high-quality signage and a streamlined approach to parking and drop-off. Many sidewalks (both commercial and residential streets) are narrow. Curb ramps are provided at almost all intersection crossings.

DRAFT

EXISTING CONDITIONS

CASE STUDY 1



LEGEND

Locations

- Metro Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Street Conditions Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

DRAFT

CRITICAL ACCESS BARRIERS

Bus waiting area



Most of the bus waiting areas within the site lack protection from natural elements such as the sun and rain.

Freeway underpass



The freeway is a major barrier that disconnects the station from the residents to the west. Two underpasses in the study area can feel unsafe at night, and an overpass can be unpleasant to walk across.

School crossings



Some crosswalks near schools have low visibility, long crossing distances, short crossing times, and long waiting times.

Wayfinding and informational signage



Transit-supportive signage is limited to the immediate station area. Outside the station plaza, however, there is no directional signage informing pedestrians, bicyclists and transit users of station proximity or location.

No park-and-ride lot or dedicated passenger drop-off zone



There is no existing parking or drop-off facility for those arriving to or departing from the station via automobile.

OTHER EXISTING CONDITIONS

Enhanced bicycle lane



Bicycle lanes provide a safe route for bicyclists traveling along the primary east-west corridor. Approaching and after intersections, the lanes are painted with green paint and conflict zone markings to help make the “mixing zone” safer for bicyclists and motorists.

Street furniture



In general, the station area lacks well-maintained street furniture such as seating, waste receptacles, and landscape planters.

Curb Bulbouts and Extensions



Temporary curb extensions on one commercial street improve safety and enhances the overall pedestrian experience.

Narrow Sidewalks



Most sidewalks in the station area are in good condition with sufficient width. However, in a few residential locations, narrow widths create a potential access barrier.

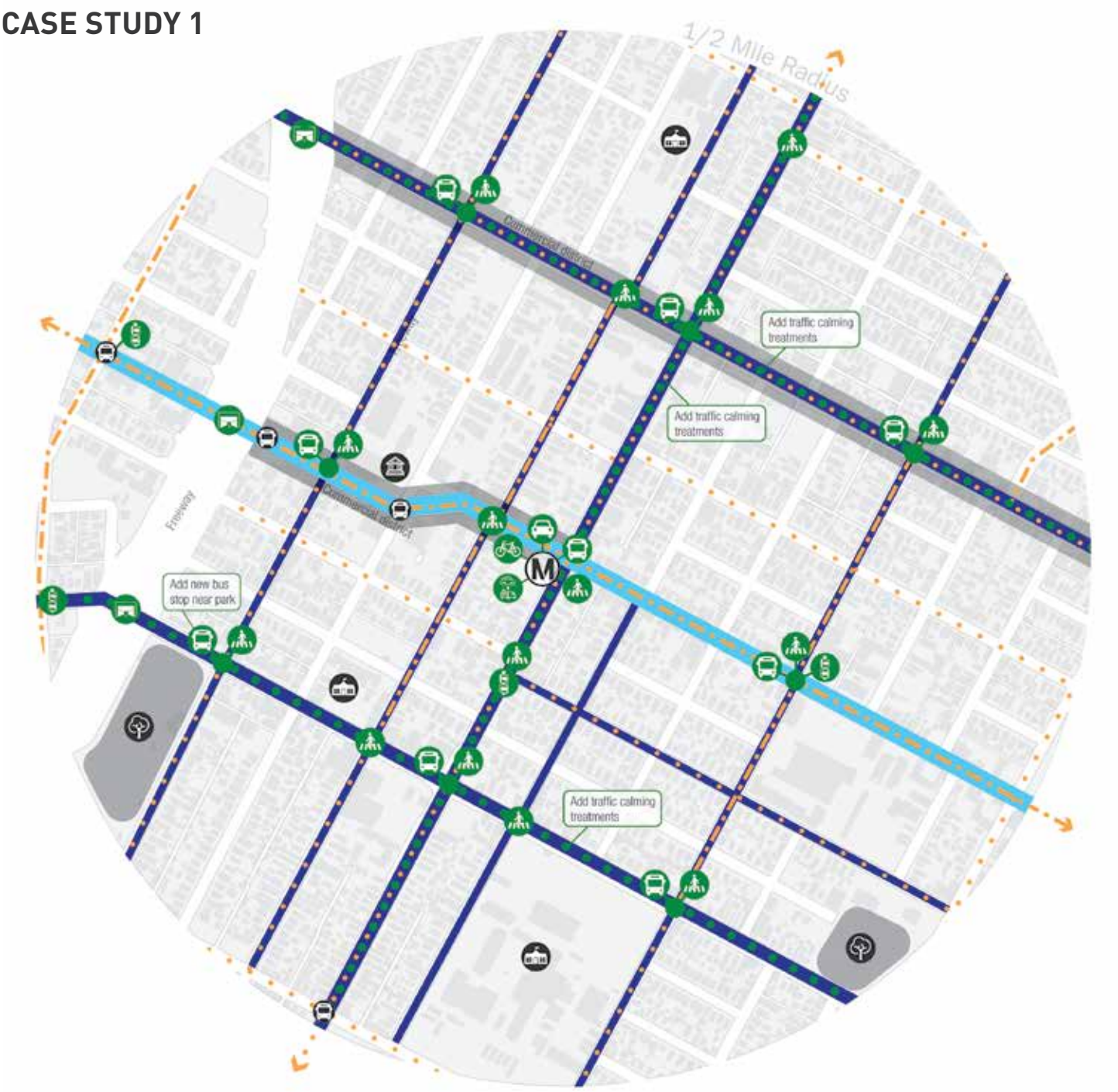
Bicycle Parking



Bicycle racks and lockers are located on the station plaza in view of the station portal. Safe, secure and convenient bicycle parking encourages transit riders to choose bicycling as a means to get to/from transit stations.

PATHWAY NETWORK

CASE STUDY 1



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





Freeway Underpass & Overpass Enhancements

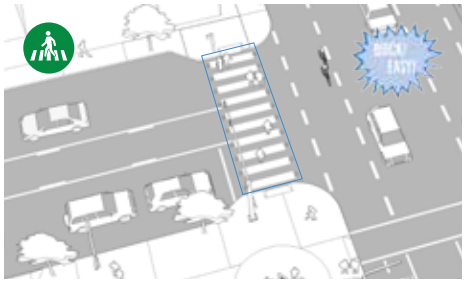
Residents might be more likely to travel to the station if the underpasses and overpass were safer, cleaner, better illuminated and visually engaging.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Medallion Signage

Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights. The addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas.





Park-and-Ride and Drop-off Zone

Park & Ride lots provide easy vehicular parking and encourage transit ridership for motorists using their vehicles for first last mile trips. The addition of a dedicated kiss & ride zone immediately adjacent to the station would help to improve accessibility, safety and convenience at the station.



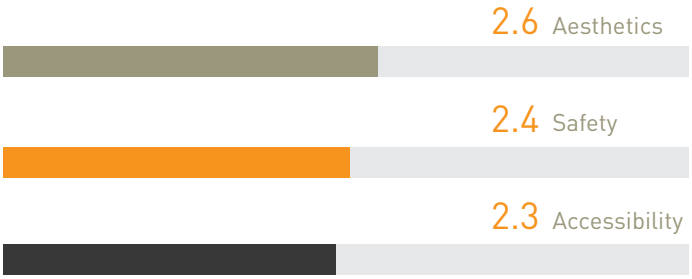


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CASE STUDY 2

METRO RAIL STATION (AT GRADE)

- Neighborhood-serving commercial corridor surrounded by mostly single-family residential uses
- Freeway bisects the southern portion of the study area, which limits connectivity
- Transit stop has bus shelters for several local and regional bus lines
- Limited park and recreation space



2.4

Aesthetics

The commercial corridor has pleasant landscaping, strategically-placed seating and waste receptacles, and is well maintained. However, there is a general lack of amenities elsewhere in the study area. Most of the residential areas are also well landscaped and well maintained. However, the study area lacks unique characteristics and landmarks that distinguishes a sense of place.

Safety

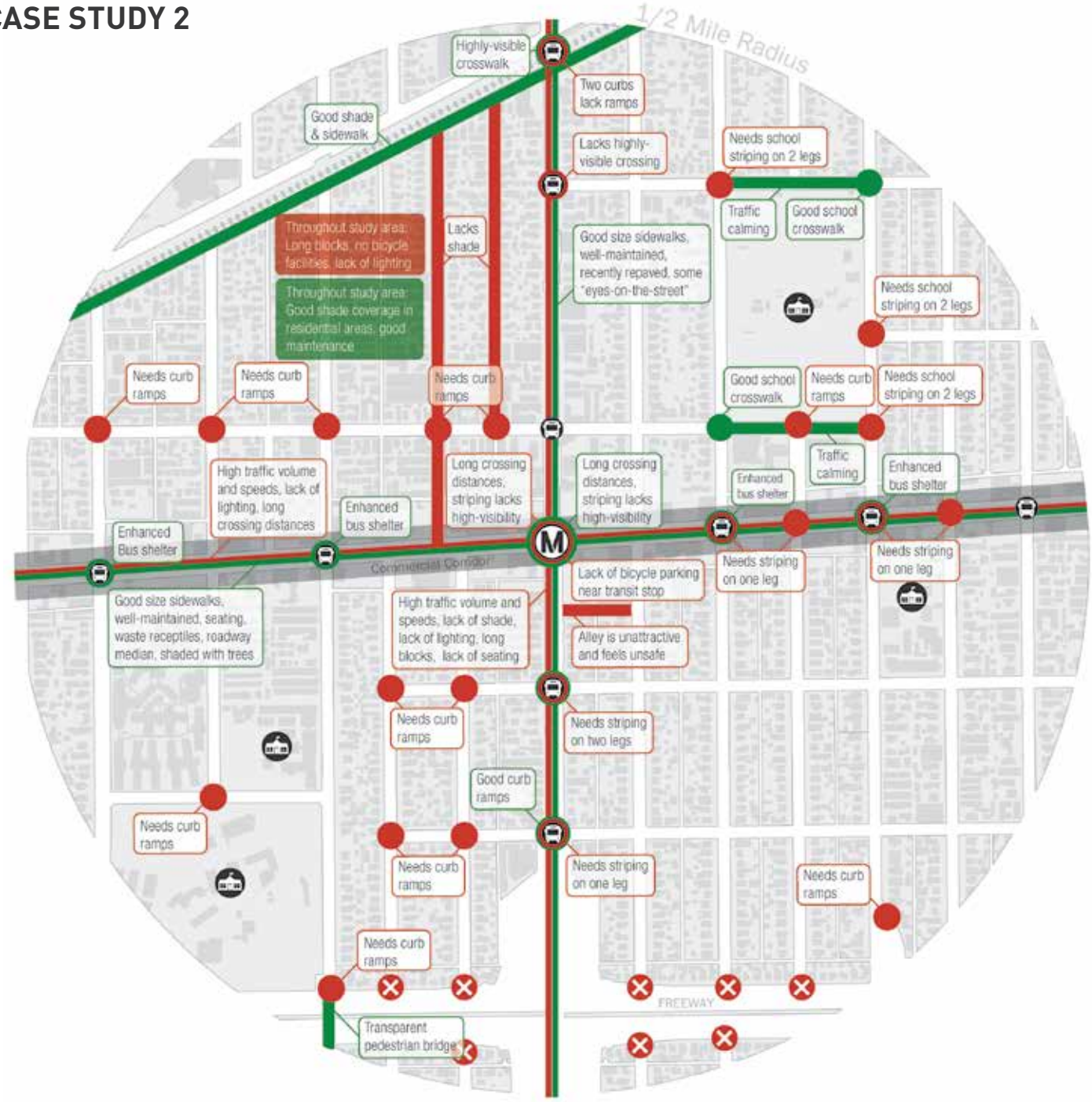
The study area is well maintained and clean. However, the lack of bicycle facilities, traffic signage, "eyes-on-the-street", and adequately-scaled lighting lowers the overall sense of safety. Thousands of collisions have been reported in recent years, many of them involving people walking or bicycling.

Accessibility

There are high-quality sidewalks throughout the study area. However, several intersections lack curb ramps and highly visible crosswalk striping. There are no bicycle facilities, resulting in many people preferring to ride their bicycle on the sidewalk where collisions involving people walking can occur. Most people commute to work either by driving alone or carpooling, although there is a high percentage of bus riders in the study area as well.

EXISTING CONDITIONS

CASE STUDY 2



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

DRAFT

CRITICAL ACCESS BARRIERS

Lack of curb ramps and long blocks



Several intersections lack curb ramps, especially in residential areas. This limits accessibility for mobility-impaired individuals and people transporting goods on wheels. Also, many of the street blocks are very long with no crosswalks.

Fast-moving traffic on major arterials



There is fast-moving traffic on the major north-south and east-west corridors, with some segments of the street with posted speeds of over 35 mph. As a result, many motorists speed and do not abide by traffic rules and manners.

No bicycle facilities



There are currently no bicycle facilities to buffer people bicycling from fast-moving traffic. This encourages many people to bicycle on the sidewalk, which can result in collisions with people walking.

Lack of adequately-scaled lighting



Although there is an abundance of street lighting that illuminates the roadway, there is a lack of adequately-scaled lighting to help guide people walking, especially at night.

Lack of landscaping and shade



Although most of the study area is well shaded with tress, there are some areas that lack protection from the sun. During a hot day, this can lower a person's sense of comfort.

OTHER EXISTING CONDITIONS

Traffic calming nearby schools



There are some locations where markings are the roadway signify drivers to slow down and watch for people crossing the street.

Alley network



The study area has a large alley network that is primarily used by vehicles to enter residences. Some people do use these alleys as a shortcut, but several alleys are not well lit and lack "eyes-on-the-street".

Well-maintained trees in most residential areas



Most of the residential streets have well-maintained landscaping that is aesthetically pleasing and provides shade.

Railway to the north and freeway to the south



The railway to the north and the freeway to the south limit accessibility just outside of the study area where centers of industry are located. There are a few connections, but most accommodate motorists rather than people walking or bicycling.

Bus waiting areas with bus shelters



Many of the bus waiting areas, especially along the main commercial corridor have bus shelters that provide shade. These bus shelters also have benches and sometimes waste receptacles.

PATHWAY NETWORK

CASE STUDY 2



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (proposed)

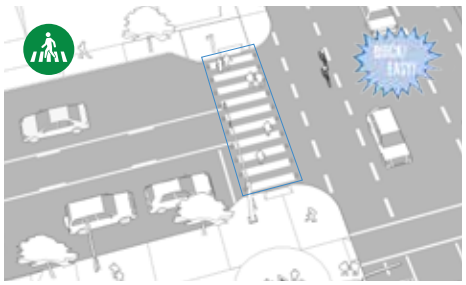
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.




Los Angeles

Traffic Calming

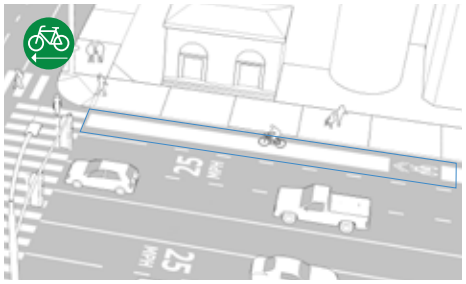
Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.




Pomona

Enhanced Bicycle Facilities

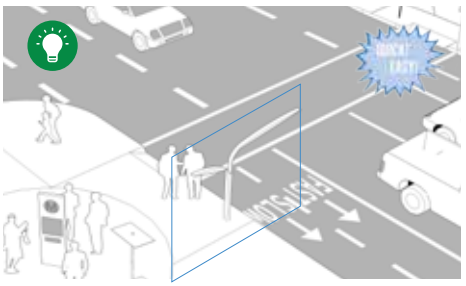
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.




Long Beach

Lighting

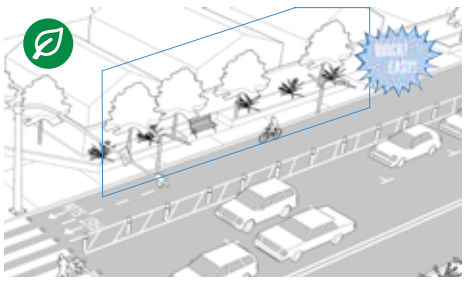
Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.




Pasadena

Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.



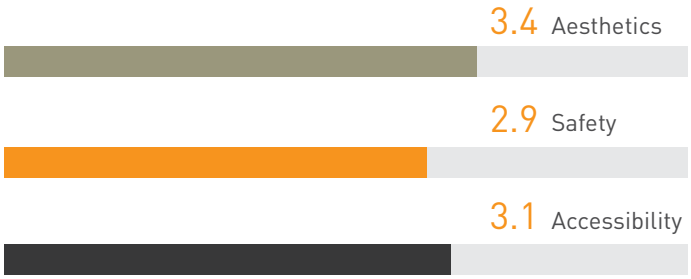

Inglewood

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CASE STUDY 3

METROLINK STATION AND MULTI-MODAL TRANSIT HUB

- Multi-modal transportation center featuring highly-amenitized rail and bus hubs
- "Small town" downtown location
- Commercial, residential, municipal, and limited industrial land uses
- Commercial historic district south of the station
- Residential historic neighborhoods north of the station



3.1

Aesthetics

The station plaza is landscaped and well maintained. The commercial district to the south of the station has attractive historic architecture and pleasant streetscapes that contribute to a strong sense of place. However, other commercial corridors lack sufficient landscaping, shade, and pedestrian amenities. Residential areas are generally very pleasant, with attractive landscaping and well-maintained residences.

Safety

Most of the station area has high levels of activity affording a perceived sense of safety, but alcoves and the pedestrian overpass feel somewhat unsafe because of the lack of human activity and poor lighting. In the commercial and municipal district to the south, activity from people on the street and the orientation of most buildings toward the public realm give a perceived sense of safety. Sidewalks are well maintained throughout the study area, and pedestrians are generally buffered from roadway traffic. The safety score is negatively affected by high traffic speeds on some streets, as well as the lack of any bikeway facilities.

Accessibility

At the station, mode transfer is facilitated by an adequate park-and-ride lot as well as amenities for people walking and bicycling. However, poorly-marked pathways make navigating to and from the station more difficult and less intuitive. The accessibility score is negatively affected by the lack of bicycle facilities, insufficient wayfinding signage, and some problematic pedestrian crossings.

EXISTING CONDITIONS

CASE STUDY 3



LEGEND

Locations

- Station
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Other Asset
- Area Asset

DRAFT

CRITICAL ACCESS BARRIERS

Lack of bicycle facilities



There are no bicycle facilities in the study area. As a result, people bicycling choose to ride on the sidewalk rather than the roadway.

Fast-moving traffic



Traffic on the commercial streets moves at high speeds, often above the speed limit, which detracts from the comfort and safety of people walking and bicycling. In addition, a couple of residential streets have fast-moving cut-through traffic.

Unpleasant pedestrian underpass



The underpass under the rail line is long, dark, and lacks decorative treatments. A positive feature is its separation from the roadway by a grade difference and metal fence.

Unenhanced crosswalks or lack of crosswalks



Some long roadway segments along busy commercial streets are without crosswalks. Existing crosswalks are generally unenhanced and inadequately marked, without such features as continental striping or advance stop lines. In addition, several crossings in the study area are without curb cuts.

Lack of landscaping and shade



The residential neighborhood in the study area's southeast quadrant lacks tree cover, and parkway strips are sometimes not well maintained. The two east-west commercial streets lack shade and landscaping.

OTHER EXISTING CONDITIONS

Active and pleasant commercial district



The downtown area to the south of the station is a vibrant, historic commercial district that is a regional attraction. Outdoor dining and transparent store windows contribute to an inviting people-friendly environment.

High-quality street furniture



In the downtown commercial district, an east-west promenade has an attractive streetscape with amenities such as seating, shade, bicycle racks, and traffic-calming measures. Along the promenade, street furniture is consistent in its design and orientation toward the sidewalk.

Pedestrian bridge



The architecturally-attractive pedestrian bridge provides a direct connection from the transit station to the downtown commercial district. It is somewhat unpleasant due to poor upkeep. In addition, a user's sense of safety is compromised by the low level of activity during much of the day.

Well-shaded, pedestrian-scale residential streets



In the northern half of the study area, streets are generally well shaded, often with mature tree cover. Appropriately-scaled lighting further contributes to a people-friendly environment.

Curb bulbouts



Curb bulbouts located at some downtown intersections shorten pedestrian crossing distances and provide space for amenities such as bicycle racks, seating, and pedestrian lighting. Bulbouts also have a traffic-calming effect because motorists must make tighter, slower turns.

PATHWAY NETWORK

CASE STUDY 3



LEGEND

Locations

- Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

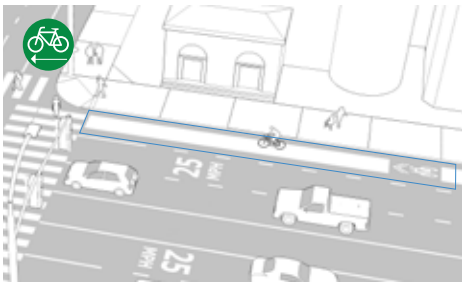
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Enhanced Bicycle Facilities

A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Traffic Calming

Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.





Underpass/Overpass Enhancements

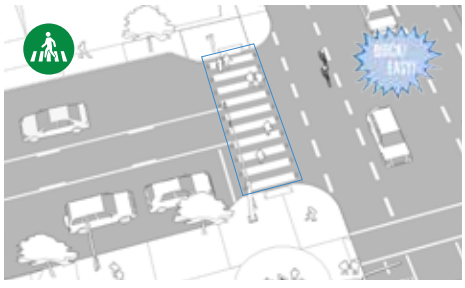
Transit riders might be more likely to travel to the station if the pedestrian overpass across the rail line and the underpass adjacent to the station were safer, cleaner, better illuminated, and visually engaging.





Enhanced Pedestrian Crossings

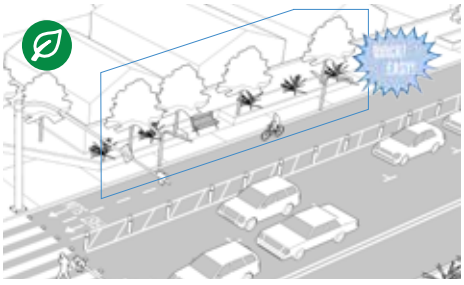
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





DRAFT

CASE STUDY 4

MULTI-AGENCY BUS STOP

- Central downtown location of a Los Angeles suburban community
- Active commercial corridors, with some people walkable districts and other areas that are more oriented to the automobile
- Large regional shopping mall south of the bus stop
- Primarily single-family residential neighborhoods outside commercial area



3.9

Aesthetics

The study area is generally well landscaped and well maintained. Residential areas commonly have mature trees providing substantial tree cover. People-friendly commercial streets provide well-maintained and inviting pedestrian amenities such as seating. However, two commercial corridors located toward the edges of the study area lack landscaping, shade, and pedestrian amenities.

Safety

In the commercial district along the study area's primary commercial corridors, activity from people on the street and the orientation of most buildings toward the public realm give a perceived sense of safety. Sidewalks are well maintained throughout the study area, and pedestrians are generally buffered from roadway traffic. The safety score is negatively affected by high traffic speeds on some streets, as well as the lack of any bicycle facilities.

Accessibility

Sidewalk quality is generally very good, and most pedestrian crosswalks on the primary commercial corridors are clearly marked. Curb ramps are consistently of good quality and ADA accessible. However, the lack of wayfinding signage makes locating destinations more difficult. The accessibility score is negatively affected by the lack of bicycle facilities, insufficient wayfinding signage, unenhanced pedestrian crossings located on two commercial streets, and the lack of crosswalks at some intersections.

EXISTING CONDITIONS

CASE STUDY 4



LEGEND

Locations

- Bus Stop
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Other Asset

DRAFT

CRITICAL ACCESS BARRIERS

Lack of bicycle facilities



There are few bicycle facilities in the study area. As a result, people bicycling often choose to ride on the sidewalk rather than the roadway.

Lack of further bicycle amenities



Although bicycle parking is abundant in the study area, the area can greatly benefit from a bike share system that allows people to conveniently bicycle to and from the bus stop.

Fast-moving traffic



With relatively wide streets and wide travel lanes, some commercial streets have high traffic speeds, often above the speed limit, which detracts from the comfort and safety of people walking and bicycling. Some smaller streets have significant cut-through traffic with high speeds.

Poorly marked (or lack of) crosswalks



While most crosswalks in the walkable commercial district are clearly marked, some crosswalks in the study area (especially on other commercial corridors) are generally unenhanced and sometimes inadequately marked, without such features as continental striping and advance stop lines.

Lack of shade on some commercial corridors



While much of the study area is well shaded with mature trees, sections of commercial streets lack tree cover. In addition, some residential streets are lined with palm trees, which do not provide shade.

OTHER EXISTING CONDITIONS

Active and pleasant commercial district



The commercial district near the bus stop has high levels of activity, attractive street furniture, distinctive pavement markings, shade-providing trees, large sidewalk widths, and other amenities such as bicycle racks and adequately-scaled lighting.

Well-marked midblock crossings



Midblock crossings throughout the walkable commercial district are well marked with either pedestrian flashing beacons or full signalization.

High-quality amenities at some bus waiting areas



Bus waiting areas in the walkable commercial district contain amenities such as shelters, seating, trees, and bike racks. Street furniture is distinctively designed and well maintained.

Public Art



Painted utility boxes provide whimsical and colorful assets to the streetscape. They are an integral component of the study area's attractive commercial streetscape.

Well-shaded residential areas



Residential neighborhoods are pleasantly landscaped and well shaded. Some municipal uses provide added green space.

PATHWAY NETWORK

CASE STUDY 4



LEGEND

Locations

- Bus Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

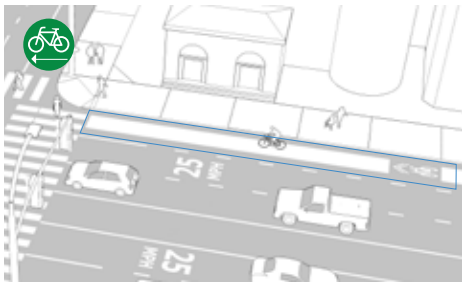
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Enhanced Bicycle Facilities

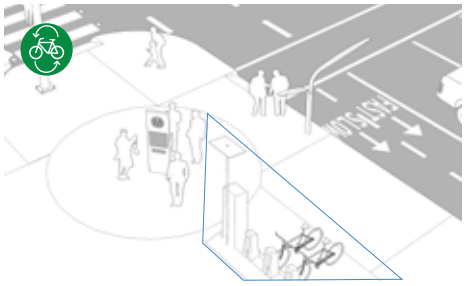
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Bike Share Stations

Bike share provides numerous strategic locations where users can rent bicycles for short-term use. Bike share stations located at transit stations and stops make bicycling a convenient option for first last mile trips. Other stations are typically placed at strategic locations close to destinations. Corporate sponsorships and other public-private coordination can help make bike share a relatively inexpensive intervention.





Traffic Calming

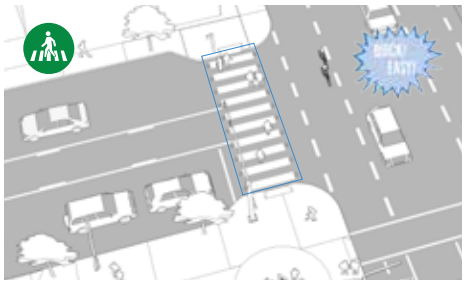
Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.





Enhanced Pedestrian Crossings

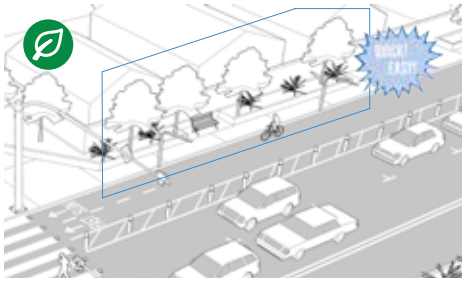
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





DRAFT

CASE STUDY 5

METRO RAPID AND LOCAL BUS STOP

- Active, walkable commercial district (to the east and south of the bus stop) that is a regional attraction
- Residential neighborhoods in the northern half of the study area
- Popular linear park overlooking the ocean
- Publicly accessible beach with multi-use paths



4.1

Aesthetics

The study area has a strong sense of place befitting its coastal location. Commercial and residential districts are generally pleasant and well shaded, and landscaping is well maintained.

Safety

The very high level of activity from people on the street and in public spaces elicits a strong sense of safety. Residential streets and some commercial streets provide a landscape buffer between the sidewalk and the roadway. Many bicycle facilities incorporate safety buffers to guide bicyclists away from the "door zone" beside parked vehicles. However, there has been a disproportionate number of severe automobile collisions involving people walking and bicycling.

Accessibility

The transit stop has no designated passenger drop-off location, bicycle parking, shelter, or seating, even though it is a major stop. Bicycle lanes and routes are abundant throughout the study area, and some routes have enhanced bicycle lanes. Sidewalks in the study area are generally in very good condition, and most crosswalks are enhanced. The midblock crossings around the commercial core improve accessibility. Compared to the rest of the county, the study area has a relatively high number of people commuting to work by walking, bicycling, or taking transit.

EXISTING CONDITIONS

CASE STUDY 5



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Other Asset

DRAFT

CRITICAL ACCESS BARRIERS

Difficult access to the oceanfront



The beach can be accessed via one of three pedestrian bridges in the study area. However, each requires navigating steep terrain and steps. The upcoming completion of a large roadway project will provide a more accessible route to and from the beach for bicyclists and individuals with mobility impairments.

Lack of amenities at some bus stops



While the quality of bus stop amenities is generally good, there are some locations without shelters or shade-providing elements. The bus stop at the center of this study does not have any sheltering elements, seating, or bicycle parking.

Long crossing distances on a commercial street



A primary street in the study area is about 80 feet wide, resulting in long crossing distances for people walking. There are no median refuge islands.

Lack of shade on some streets



While much of the study area is well shaded with mature trees, sections of commercial streets lack tree cover. In addition, some residential streets are lined with palm trees, which do not provide shade.

Wayfinding signage



There is some wayfinding and directional signage in the commercial core around the shopping promenade. However, they focus on cultural and retail destinations rather than offering directions to transit stops and bicycle facilities.

OTHER EXISTING CONDITIONS

Enhanced Bus Shelters



Where bus shelters exist, they generally provide adequate shade and seating. Some have pleasant landscaping elements and seating options that are far different from the typical bus bench.

No crosswalks on some residential streets





Midblock crossings – some signalized – are located on many streets in the commercial district (top image). However, some busy residential intersections are without any crosswalk markings (lower image).

Alley cut-through paths



Alleys that run parallel to some commercial streets provide additional routes of travel for people walking and bicycling, in addition to their utilitarian use for commercial loading. They are relatively popular routes today, sometimes as quiet alternatives to the hustle and bustle of the surrounding streets.

Buffered/Colored Bicycle Lanes





Enhanced bicycle facilities provide safer and more comfortable routes for people bicycling. Additional striped markings (top) guide people to bicycle outside of the dangerous "door zone" and provide a spatial buffer from traffic. A colored lane (bottom) provides enhanced visual cues.

Enhanced crosswalks



Almost all intersections in the commercial area have enhanced crosswalks with continental striping and advanced stop lines.

PATHWAY NETWORK

CASE STUDY 5



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Corridor
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

New Connection Across Barrier

Designing new connections to the beach can improve connectivity to and from the station. A well-designed connection, such as a fully- accessible pedestrian bridge, should consider the safety of all people.





Enhanced Bus Waiting Areas

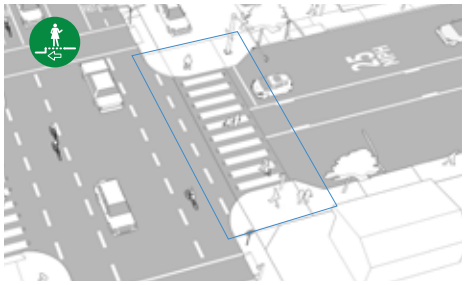
Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





Curb Extensions at Intersections

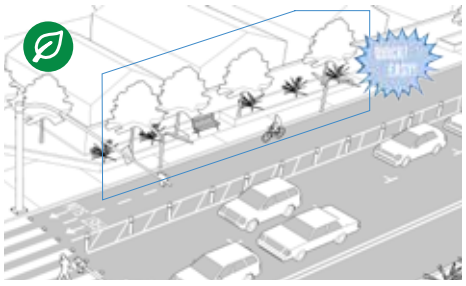
Extending the curb at intersections improves safety by shortening crossing distances, increasing visibility of people walking, and slowing vehicles that are turning. It can also provide room for amenities such as seating areas, bioswales, stormwater management, and other planted areas.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Medallion Signage

Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights. The addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas.



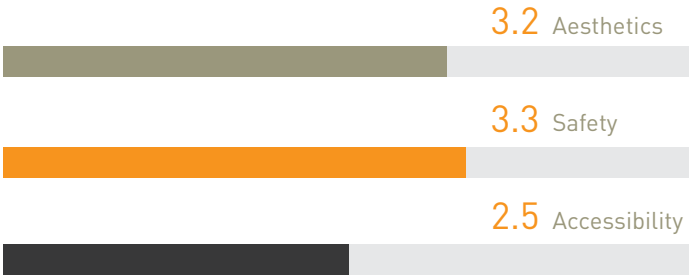


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CASE STUDY 6

METRO LOCAL BUS STOP

- Well-maintained commercial corridor that serves as the community's central artery for circulation, commerce, employment, and social activity
- Highly diverse land uses
- Freeway divides the study area with connections only on two streets
- Lack of bicycle facilities



3.0

Aesthetics

The study area is generally well landscaped with only a few residential streets without trees and planting. The station lacks strategically-placed amenities, such as pedestrian-scaled lighting, which help to enhance overall aesthetics.

Safety

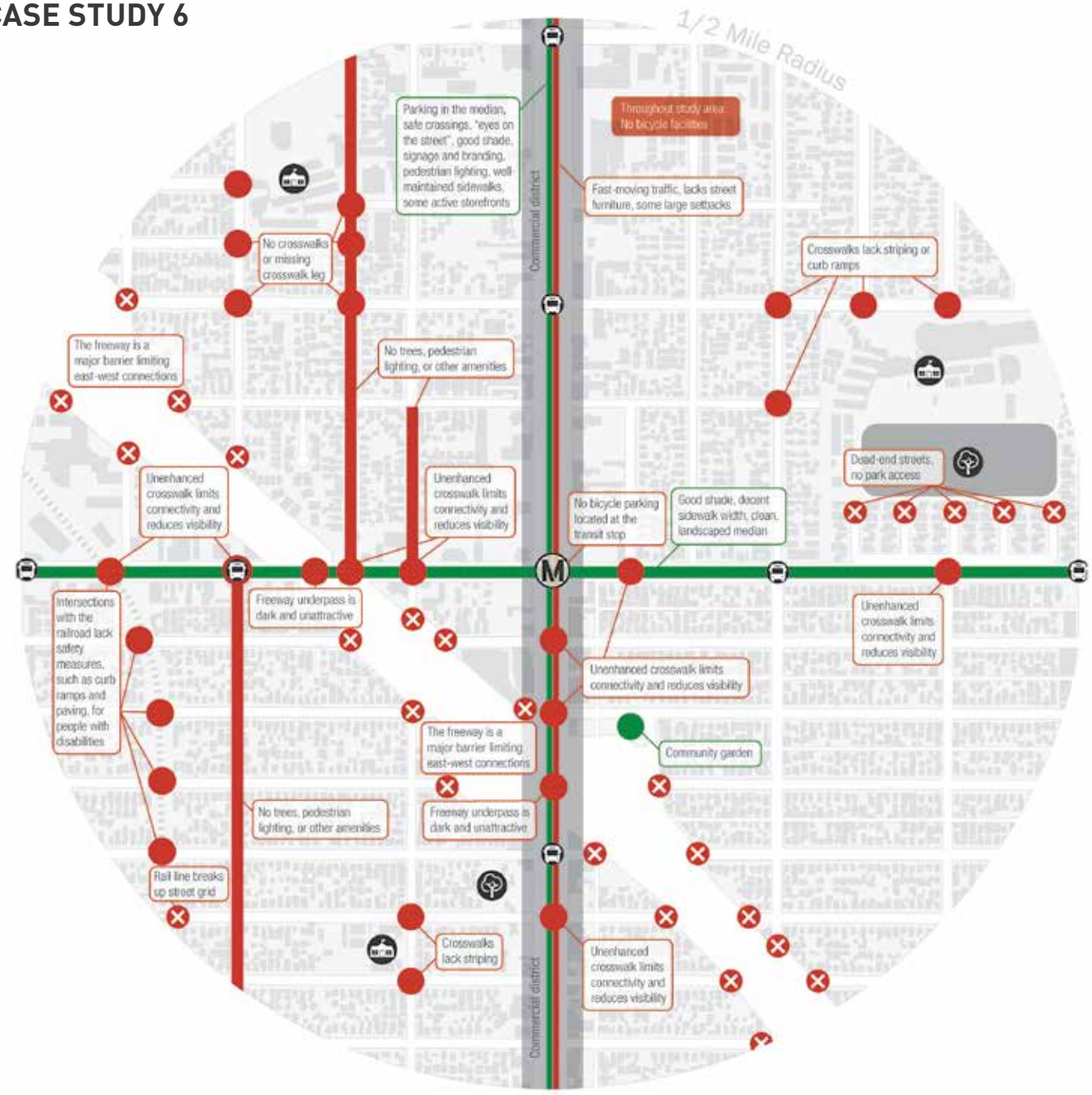
The study area is generally safe due to adequate maintenance of the public realm and sufficient "eyes on the street". However, the lack of bicycle facilities can make bicycling to and from the station unsafe for all users of the street, especially with fast-moving cars. There are several collisions that have recently happened in the area with a disproportionately high number occurring to people who are walking.

Accessibility

Most of the study area, especially near the transit stop, has high-quality sidewalks and curb ramps with either scoring or truncated domes. This makes walking to and from the station relatively easy and comfortable. However, the lack of bicycle facilities and drop-off areas discourages people bicycling or driving to travel to and from the transit stop. As a result, approximately 92% of people in the site area get to work by automobile.

EXISTING CONDITIONS

CASE STUDY 6



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Street Conditions Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

DRAFT

CRITICAL ACCESS BARRIERS

No bicycle facilities



There are currently no bicycle facilities in the study area. People who are bicycling often ride on the sidewalk or alongside fast-moving cars, which can be unsafe for all users of the road.

Freeway underpasses



The freeway is a major barrier that disconnects the station from the residents to the south and the west. Underpasses can feel unsafe during the night.

Crossings at the rail line



While most of the crosswalks in the study area are designed better than most in the County, important crossings along the rail line, the primary east-west street, and routes to school lack high visibility, accessibility, or safety amenities.

Dead ends caused by the freeway



Traveling from the southwest region of the study area to the transit stop is constrained as the freeway cuts through the street grid, resulting in dead ends that limit connectivity.

Lack of lighting



Although the north-south street has pedestrian-scaled lighting, several residential streets and underpasses do not. This lack of lighting can make traveling to the station feel unsafe.

OTHER EXISTING CONDITIONS

Well-maintained sidewalks



The sidewalk conditions on the primary east-west street are well-maintained, landscaped, shaded, illuminated, branded, and well-monitored. This offers a pleasant experience for people traveling along the corridor.

Alley network



There are several alleys in the residential parts of the study area that are not well-lit or maintained, creating an unpleasant environment for people to walk or bicycle, especially at night.

Parking at commercial corridors



There is an abundance of parking along the commercial corridors that make driving to the commercial area convenient. In addition to short-term curbside parking, there is parking in the roadway median.

Safe crosswalks and new paving



Throughout the study area, crosswalks are generally well designed and highly visible. Curbs have ramps with either scoring or truncated domes, accommodating for the safety of all users. Several streets have also been recently repaved.

Local community garden



A community garden provides the opportunity for residents without gardening space to maintain an individual plot in a community space.

PATHWAY NETWORK

CASE STUDY 6



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

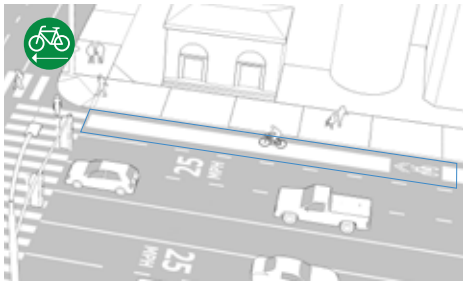
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DRAFT

KEY RECOMMENDATIONS

Enhanced Bicycle Facilities

A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Freeway Underpass & Overpass Enhancements

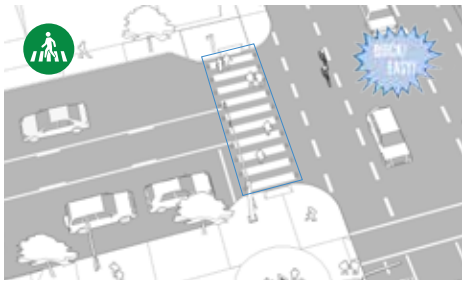
Residents might be more likely to travel to the station if the underpasses were safer, cleaner, better illuminated and visually engaging.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





New Connection Across Barrier

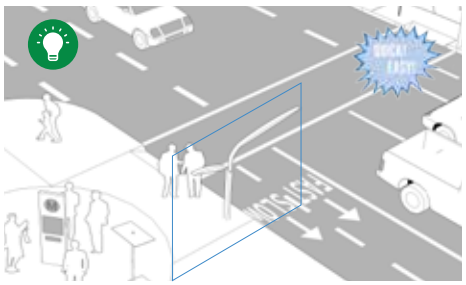
Designing a new connection across the railroad crossings can improve connectivity to the station. This can manifest as an at-grade signalized crosswalk for people walking and bicycling. A well-designed connection should consider the safety of all people.





Lighting

Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.



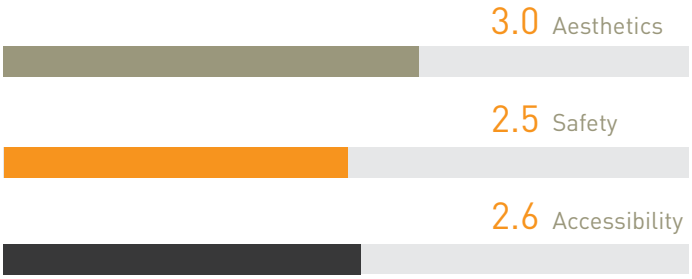


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CASE STUDY 7

METRO RAPID AND LOCAL BUS STOP

- Located at the heart of a walkable downtown commercial district
- Elsewhere in the study area, development on commercial corridors is oriented more to the automobile than to other modes
- Residential neighborhoods located behind commercial corridors
- Rail line running diagonally across the study area limits connectivity
- Lack of bicycle facilities



2.7

Aesthetics

The study area has a relatively strong sense of place, primarily along the primary north-south corridor. However, commercial streets generally lack adequate tree cover, landscaping, waste receptacles and seating. Residential areas are pleasant, with mature shade-providing trees in many locations.

Safety

Around the bus stop, the high level of activity from people on the street and the orientation of most buildings toward the public realm give a perceived sense of safety. While pedestrians on the primary north-south street are buffered from traffic by diagonal vehicular parking, other commercial streets have little or no buffer from the roadway. The smaller residential streets generally provide a landscape buffer between the sidewalk and the roadway. Also, there have been severe collisions reported recently in the study area.

Accessibility

There are no bicycle facilities in the study area. The primary north-south street has enhanced midblock crossings with curb extensions and signalization, while many other crossings are unenhanced with long crossing distances. Sidewalks are generally in good condition, although some are narrow and contain physical obstructions. In the study area, nearly 20% of people commute to work by bus, while approximately 30% either walk, bicycle, or ride transit.

EXISTING CONDITIONS

CASE STUDY 7



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Street Conditions Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Specific Asset

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CRITICAL ACCESS BARRIERS

Narrow sidewalks



Some streets have narrow sidewalks with no buffer from the roadway. In many locations, the pedestrian pathway is further obstructed by bus benches, signage poles, and/or public utilities, making some areas inaccessible for mobility-impaired individuals.

Long pedestrian crossing distances



Crossing distances on the primary north-south street are as long as 90 feet. At some intersections, corner bulbouts slightly reduce crossing distances, yet crossing distances at these locations are still long. A successful approach is seen at midblock locations where wide curb extensions reduce crossing distances to approximately 60 feet.

Lack of bicycle facilities



There are currently no bicycle facilities in the study area. People who are bicycling often ride on the sidewalk or alongside fast-moving cars, which can be unsafe for all users of the road.

Lack of amenities at some bus stops



Many bus stops lack adequate shelters or shade-providing elements, and some are without any seating. Bus stops generally do not have nearby bicycle parking. Insufficient sidewalk widths add challenges when making enhancements to existing bus stops.

Lack of landscaping and shade



Commercial streets lack adequate landscaping and shade. While the primary commercial street has adequate space for the addition of landscaping and trees, other commercial streets do not have adequate existing sidewalk widths to accommodate new landscaping and trees.

OTHER EXISTING CONDITIONS

Railroad right-of-way



The railroad crossings are signalized or have stop signs. Some residential streets lack a dedicated crossing although there is no fencing to prohibit people from crossing over the tracks. Metro is currently exploring options for east-west mobility for people who walk and bicycle within this corrido to connect rail stations to the Los Angeles River.

Parklets - Pacific Boulevard



Parklets at three locations expand the pedestrian realm and provide valuable outdoor space for dining and seating. (The site was visited early in the morning, hence the empty parklet)

Midblock bus shelters and enhanced crossings



Midblock curb extensions contain bus shelters, bus benches, shade-providing trees, and additional seating. A four-block segment of the primary north-south street contains signalized midblock crossings, although most do not have enhanced crosswalk markings such as continental striping.

Cultural signage



As a cultural hub for the community, the downtown hosts numerous festivals and events. Utility pole banners along the primary commercial street publicize these events and add to the neighborhood's sense of place.

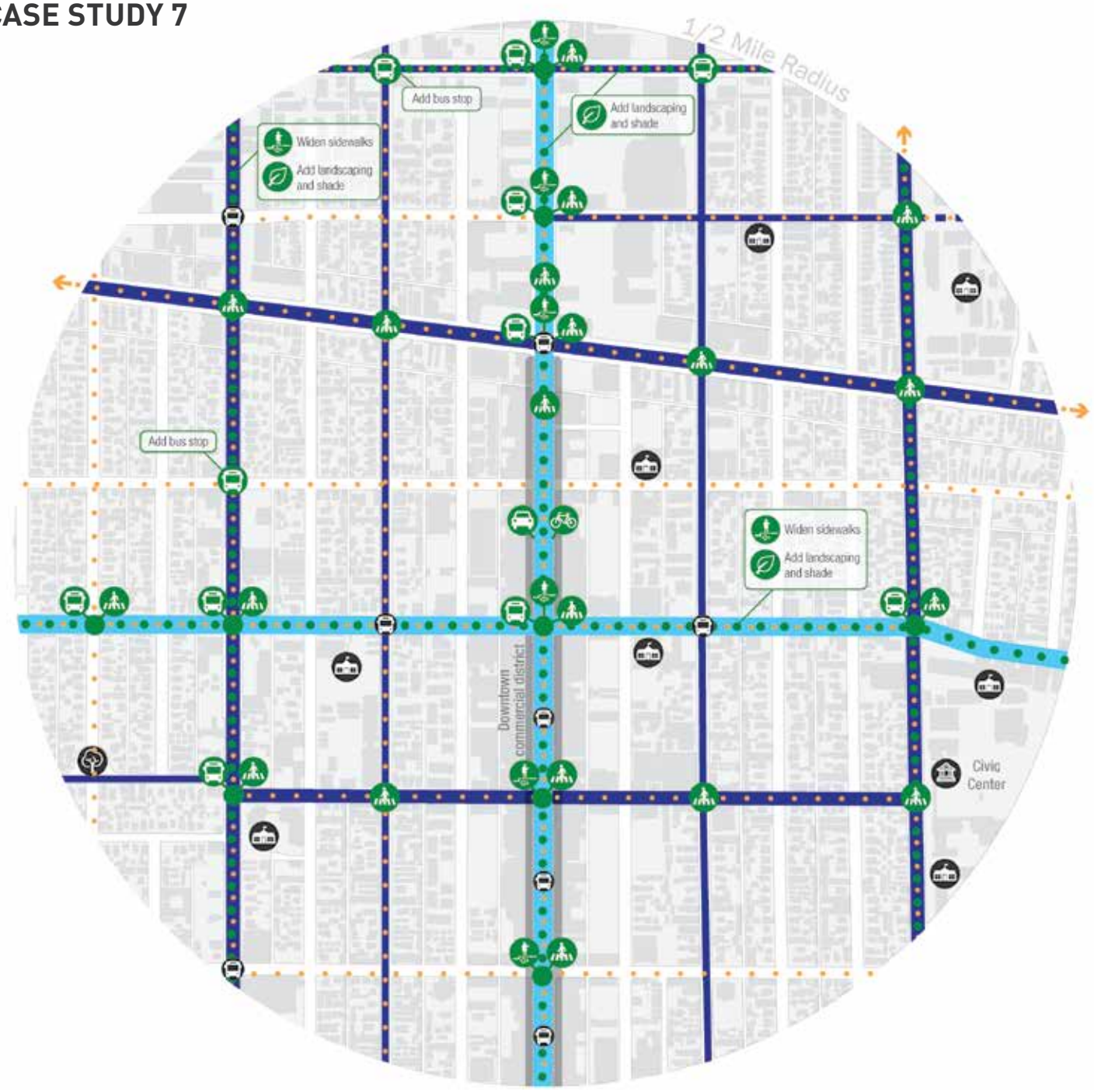
Shaded residential streets



The street environment in residential areas is generally pleasant, with mature shade-providing street trees and well-maintained landscaping. In some locations, however, the parkway width is too narrow to plant trees.

PATHWAY NETWORK

CASE STUDY 7



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

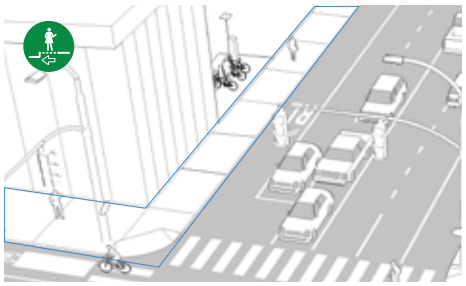
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- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Car Share
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Sidewalk Addition or Widening

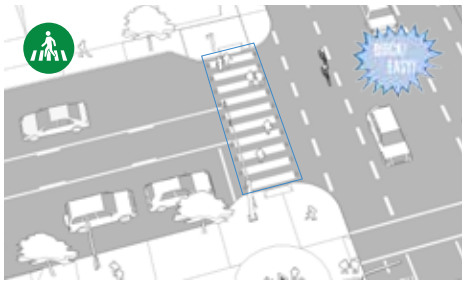
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Enhanced Pedestrian Crossings

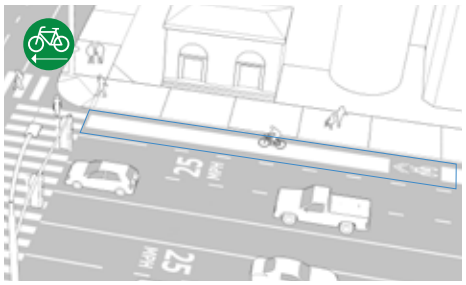
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Enhanced Bicycle Facilities

A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Enhanced Bus Waiting Areas

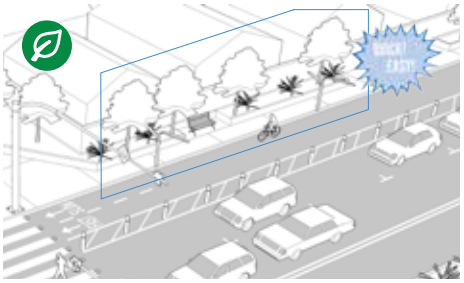
Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.



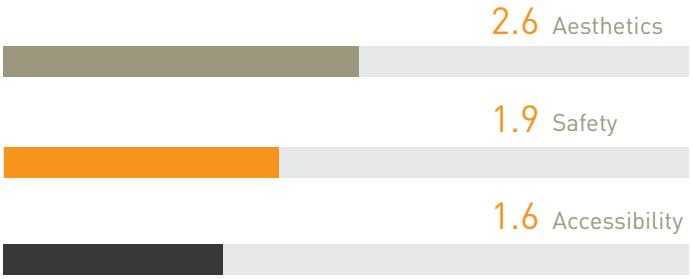


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CASE STUDY 8

METRO RAIL STATION (AT GRADE)

- Study area has a single-family residential character with a heavy industrial corridor
- Freeway divides the study area and is connected by four unattractive underpasses
- Station configuration and design creates barriers to entry and access



2.0

Aesthetics

The study area transitions between single-family homes and a heavy industrial corridor. Key arterial connections lack landscaping and amenities for people walking or riding a bicycle.

Safety

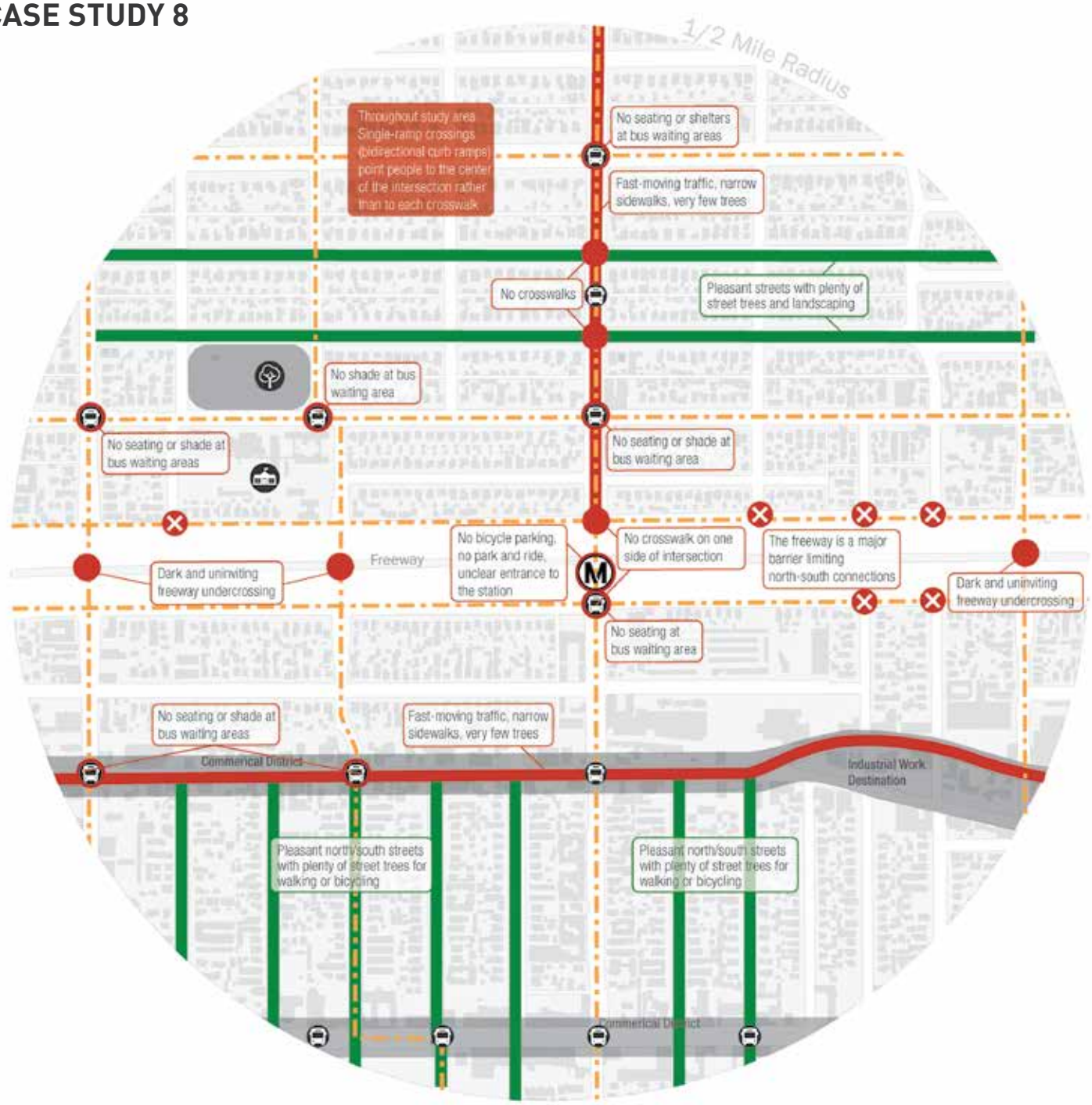
On the larger vehicular-oriented corridors, small sidewalks and setbacks create an unsafe atmosphere due to fast-moving traffic and lack of a safety buffer for people walking or bicycling. There have been several severe collisions reported recently in the study area, many of which involve people walking and bicycling.

Accessibility

The station area is located near a freeway on- and off-ramp, creating a difficult access barrier for transit users. Additionally, the station lacks high-quality signage and a streamlined approach to parking and drop-off. Compared to the rest of the county, this study area has a fair amount of people (approximately 15-20%) commuting to work by walking, bicycling, or taking public transportation.

EXISTING CONDITIONS

CASE STUDY 8



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset

DRAFT

CRITICAL ACCESS BARRIERS

Freeway undercrossings



The freeway serves as a barrier that separates the north and south residential neighborhoods. Freeway undercrossings on several streets are not lit, and do not provide ample separation from fast-moving cars.

Industrial blocks with limited landscaping



The street arterials are made up of a mix of residential and commercial/industrial uses. High speeds, along with limited landscaping and shade, create an unpleasant pathway to and from the station.

Long crossings



Crossings just outside of the station are long and do not provide a median refuge island for people walking.

Lack of signage and amenities at transit station



The Metro portals not signed or visible from perpendicular streets. The entry portal itself is not porous, and the bus station in front does not include seating or amenities for mode transfers.

Unenhanced bus waiting areas - next to station portal



Many bus waiting areas, including right next to the station are unenhanced and can benefit from the addition of seating and real-time arrival information.

OTHER EXISTING CONDITIONS

Landscaped neighborhood streets



Many streets that run north and south in the community are well landscaped, provide adequate shade for people walking, and have sufficient lighting and parkways, separating people from vehicles.

Sidewalk maintenance



In general, some areas may benefit from enhanced maintenance. This image shows a mature tree that is jutting out into the sidewalk, making it more difficult for people with mobility impairments to maneuver.

Existing bicycle couplet



Bicycle lanes are provided on two adjacent east/west streets (each one-way), serving as a couplet system for riders.

Narrow sidewalks and freeway barrier



Narrow sidewalks occur along the streets that front the freeway. Additionally, there are only roadway lights, with no pedestrian-oriented lighting along these routes.

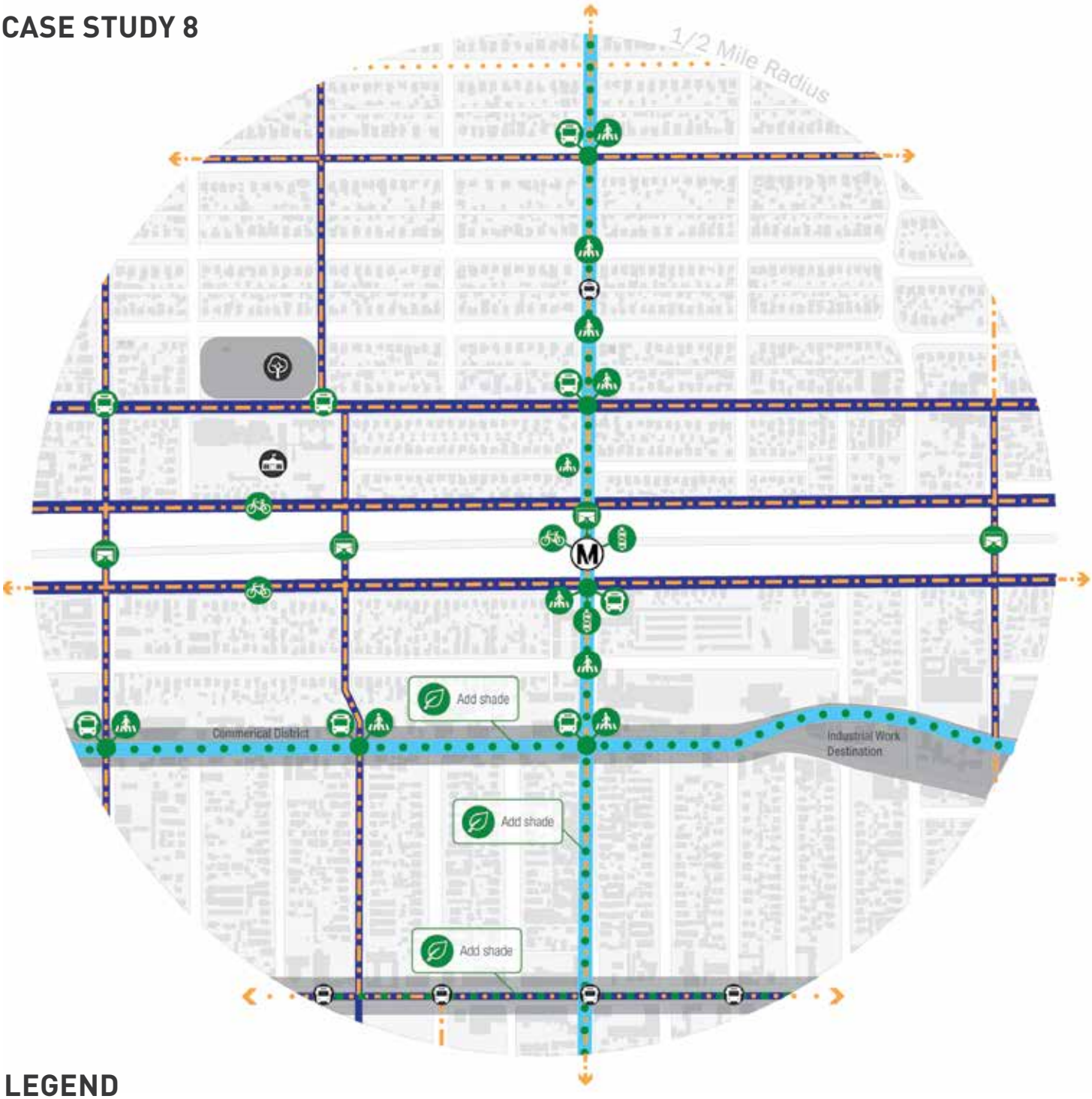
Station area underpass lighting



Directly adjacent to the station portal are a number of pedestrian-scale lighting fixtures, which help provide a sense of safety and comfort for transit users.

PATHWAY NETWORK

CASE STUDY 8



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Freeway Underpass & Overpass Enhancements

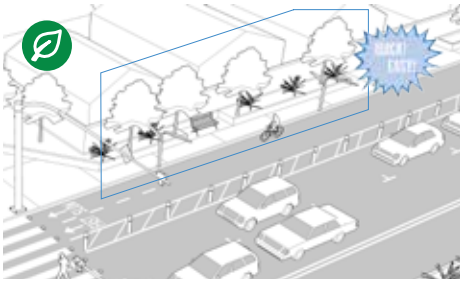
Residents might be more likely to travel to the station if the underpasses were safer, cleaner, better illuminated and visually engaging.





Landscaping and Shade

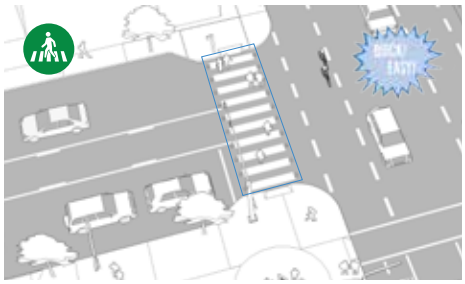
Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Medallion Signage

Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights. The addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas.





Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.



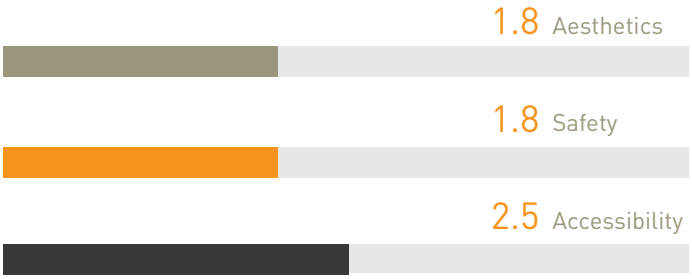


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CASE STUDY 9

METRO RAIL STATION (ABOVE GRADE)

- Neighborhood-serving commercial corridor surrounded by residential and public institutional land uses
- Freeway divides the study area, limiting connections to three streets
- Several bus lines meet at the station with a nearby park-and-ride lot
- Lack of landscaping and maintenance
- Several gaps in the bicycle network



2.1

Aesthetics

Residential areas lack well-maintained parkways. There is a lack of trees that provide shade for people traveling on the sidewalk. Trash dumping is also common on the sidewalks as well as in undeveloped parcels.

Safety

In the study area, there are not enough lights to safely illuminate the sidewalk and roadway for people walking to and from the station. There is a lack of safety buffers against fast-moving traffic. The study area has a very high number of collisions involving people commuting to work by automobile, walking, bicycling, or taking transit.

Accessibility

At the station, mode transfer is facilitated by an adequate park-and-ride lot. Several bus lines stop in front of the station entrance. However there is a general lack of well-maintained infrastructure for people walking or bicycling to the station. There are major gaps in the bicycle network, and sidewalks are either cracked or do not provide enough of a buffer from the roadway. Most people commute to work by driving alone, carpooling, riding the bus, or riding the Metro rail line.

EXISTING CONDITIONS

CASE STUDY 9



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset
- Area Asset

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CRITICAL ACCESS BARRIERS

Lack of lighting throughout the entire study area



Although there are some street lights, there are no lights at a scale that is adequate for people traveling on the sidewalk. The lack of lighting decreases the sense of safety, especially at night.

Lack of shade and amenities for people walking



There is a general lack of shade-providing trees in the study area. The parkway strip between the sidewalk and the roadway is generally unmaintained. In terms of other amenities, there are some bus benches, but there are no other seating options.

Several unenhanced crosswalks, especially near schools



Throughout the study area, several crossings are not sufficiently painted. Many of the curbs have ramps, but they can be further enhanced. Crossings over the railroad are also difficult to use.

Unattractive and trashed underpasses and overpasses



Overpasses are unattractive to travel across and do not provide a good buffer from fast-moving automobiles. The underpass in the study area is dark and filled with trash.

Lack of station identity and difficulty navigating



The station acts as a landmark for people immediately within view of the station. However, navigating to the station can be difficult as there is no Metro signage except at the park-and-ride area.

OTHER EXISTING CONDITIONS

Broken or no sidewalks



Throughout the study area, there are several sidewalks that are broken. There are also a few sidewalks missing near the freeway and across the railroad.

Enhanced school crossings



This crosswalk is newly painted and highly enhanced. This serves as a great example for how other crosswalks in the study area, especially near schools, should be designed.

Major gaps in the bicycle network



There are several gaps in the bicycle network, particularly south of the station, that can discourage people to ride their bicycle to and from the station. Also, there is a lack of safe facilities to park your bicycle at the station.

Metro park-and-ride nearby the station



There are 155 park-and-ride spaces just north of the station terminus. This gives the opportunity for drivers to conveniently park their car safely and walk or roll to the station.

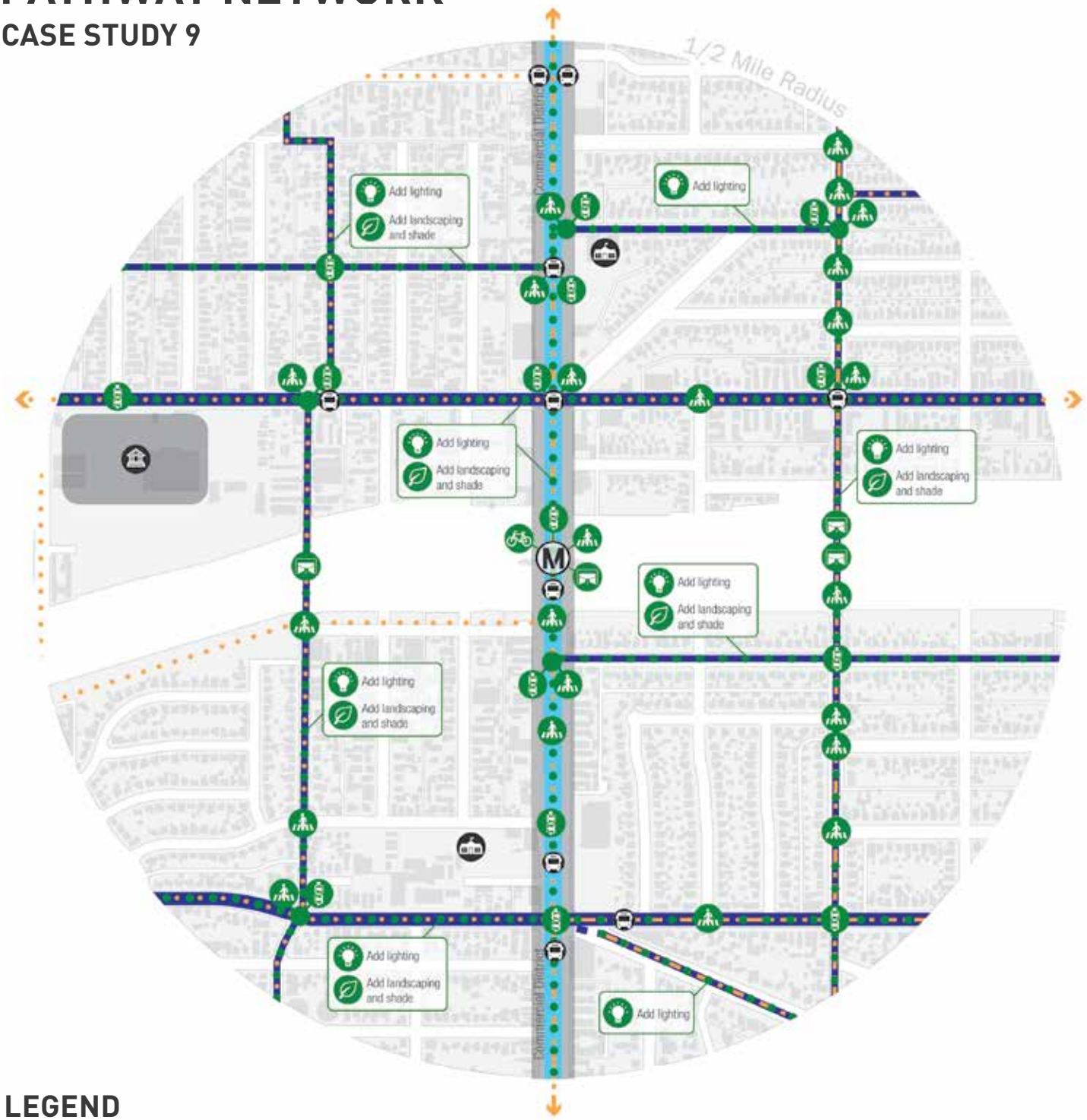
Underutilized median



The roadway median on the study area's main arterial is very wide and underutilized. Currently there are a few trees, but there are opportunities to transform this space into a green open space, which the study area lacks.

PATHWAY NETWORK

CASE STUDY 9



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Corridor

Pathway Network

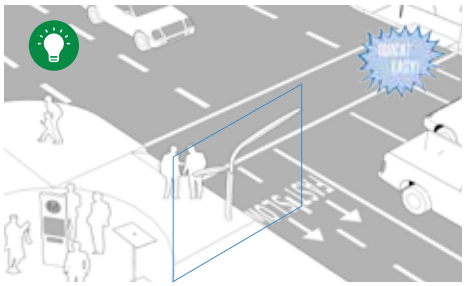
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Car Share
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Lighting

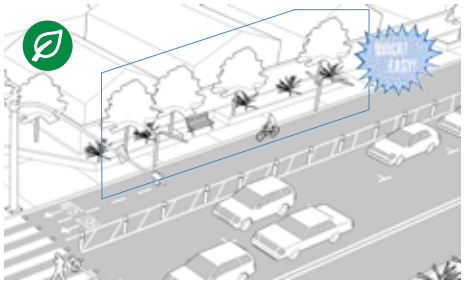
Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.





Landscaping and Shade

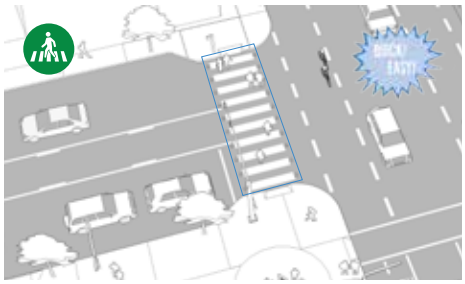
Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Freeway Underpass & Overpass Enhancements

Residents might be more likely to travel to the station if underpasses are safer, cleaner, better- illuminated and visually engaging.





Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.



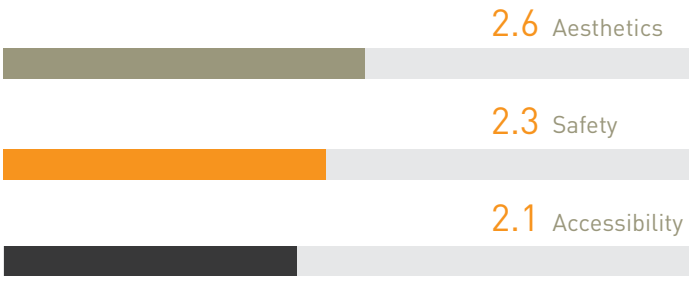


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CASE STUDY 10

MULTI-MODAL TRANSIT CENTER

- Major transit hub hosting several local and regional bus lines
- Highly-commercialized study area with a regional shopping destination
- Two freeways dividing the study area, limiting connectivity to the station
- Mostly well-maintained and attractively landscaped public realm
- Lack of bicycle facilities



2.3

Aesthetics

The study area has pleasant landscaping, including trees and plantings, that provide shade and aesthetic appeal. However, the study area lacks other strategically placed amenities for people walking or bicycling, such as benches, lighting, or waste receptacles.

Safety

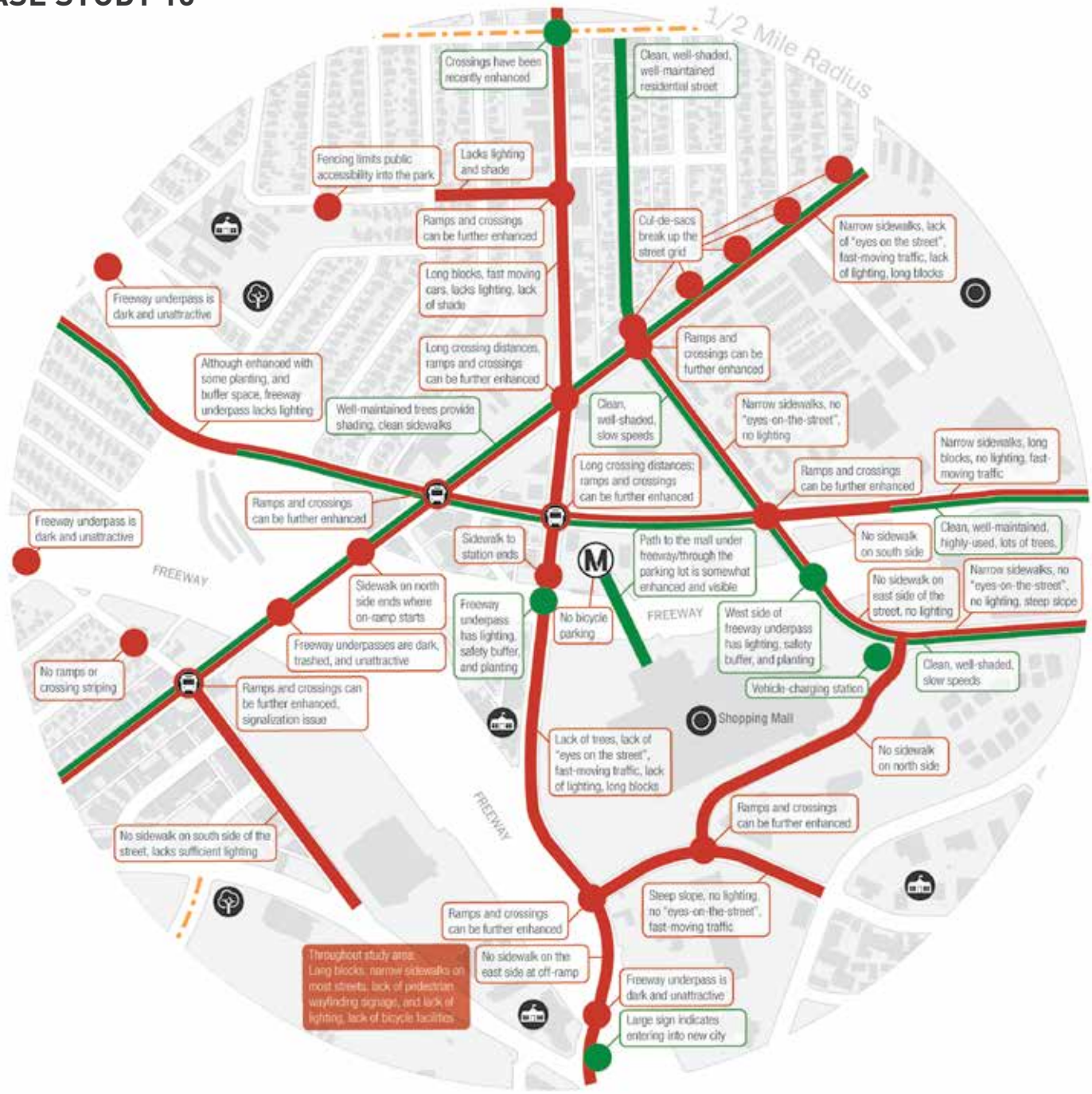
In the study area, the public realm is clean and well maintained. However, the lack of a safety buffer for people bicycling as well as the lack of lighting, especially under freeways, lowers the perceived sense of safety. Some areas lack sidewalks which also makes walking to and from the station feel dangerous. Several collisions have recently occurred in the study area, most of them involving automobiles.

Accessibility

There are high-quality sidewalks throughout the study area, but they do not provide enough width for people to comfortably pass one another or walk side-by-side. Some areas lack sidewalks altogether. There is also a general lack of bicycle facilities throughout the study area. There is no bicycle parking or park-and-ride areas that are streamlined. As a result, approximately 88% of people in the study area commute to work by driving alone.

EXISTING CONDITIONS

CASE STUDY 10



LEGEND

Locations

- Transit Center
- Key Destination
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Street Conditions Barrier
- Specific Barrier
- Corridor Asset
- Specific Asset

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CRITICAL ACCESS BARRIERS

Sidewalk widths are narrow throughout the study area



Although most of the sidewalks are well maintained and of high quality, there is often little room to maneuver given the placement utilities and trees.

Unenhanced crossings at important intersections



Many of the intersections lack highly visible striping to signify drivers of approaching stops. Some curbs do not have ramps, especially around the industrial areas. Also, because many street blocks are long, people often jaywalk at midblock locations.

Freeway underpasses



Although some of the freeway underpasses have enhancements, such as planting and sidewalk buffers, the lack of lighting and other amenities makes the underpass feel unsafe, especially during the night.

Unpleasant bus waiting areas throughout the site



There are several bus stops in the study area, but only a few of them have benches, waste receptacles, and shade to make it comfortable for people waiting.

Lack of station identity and difficulty navigating



The transit center is difficult to see from the street or sidewalk and there are only a few identifying markers or landmarks around the area. The curvilinear design of the streets also makes navigating to and from the station difficult unless you know where you are going.

OTHER EXISTING CONDITIONS

Broken or no sidewalks



Throughout the study area, some sidewalks are broken. There are also a few sidewalks missing near the freeway and the industrial areas.

Some underpass improvements



Some of the freeway underpasses, especially near the shopping mall, have improvements such as a sidewalk buffer and planting. The addition of adjacent parking also provides a sense of safety knowing that people are nearby.

Well-maintained public realm



Most of the streets are clean and well maintained. There are also many trees and planting that provide shade and improve the overall aesthetics of the study area.

Lack of "eyes-on-the-street"



Currently, there is a low level of pedestrian activity on the street, which is partially due to the orientation of the commercial, industrial, and residential buildings facing away or set back far from the street.

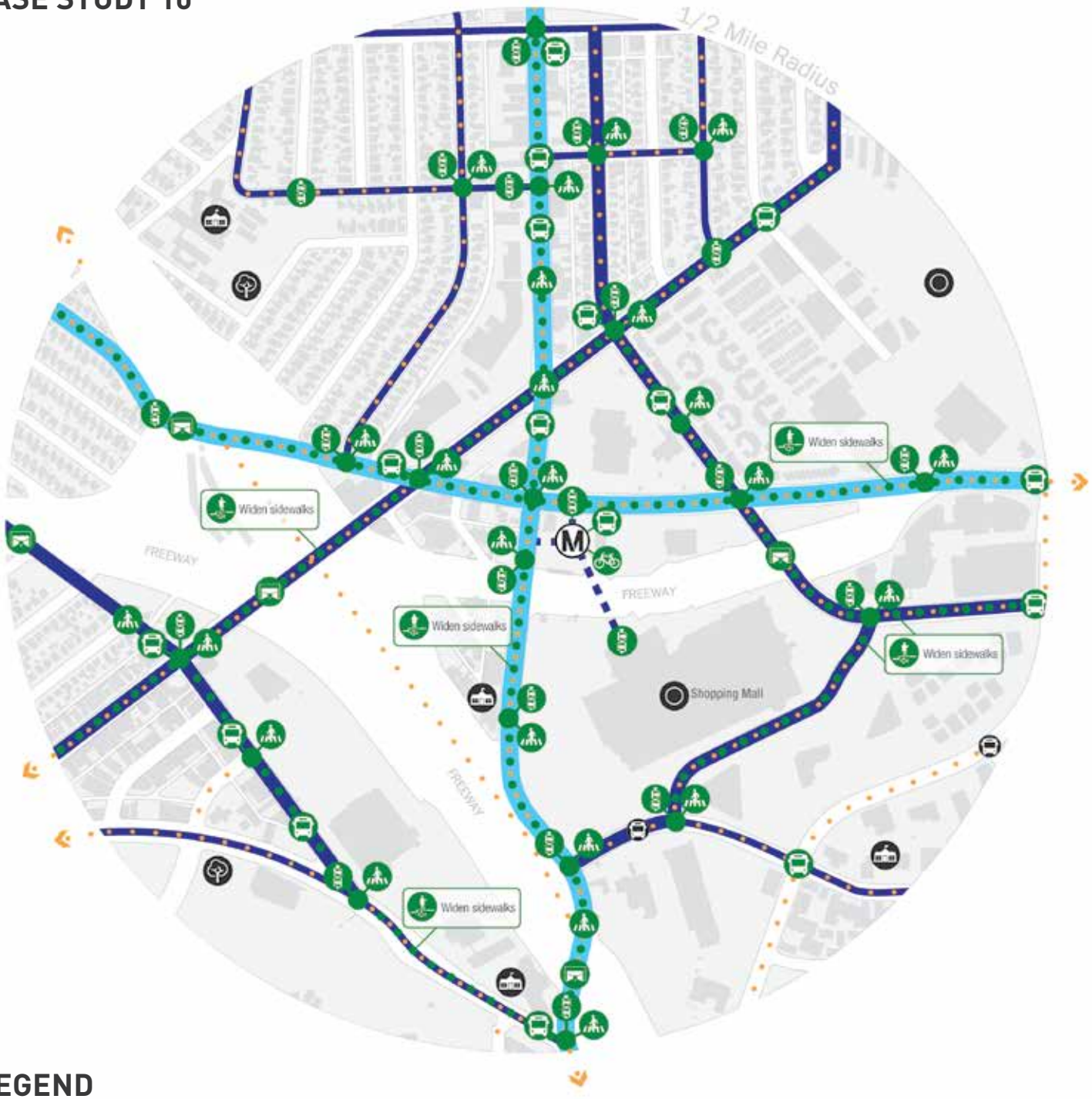
Vehicle-charging station



There is a vehicle charging station for automobiles at the shopping mall.

PATHWAY NETWORK

CASE STUDY 10



LEGEND

Locations

- Transit Center
- Key Destination
- Bus Stop

Pathway Network

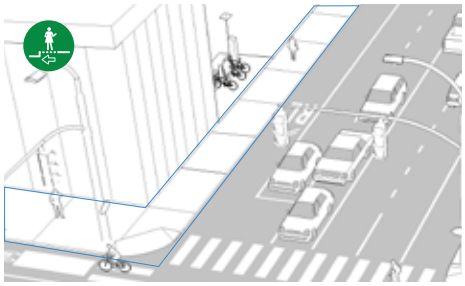
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Sidewalk Addition or Widening

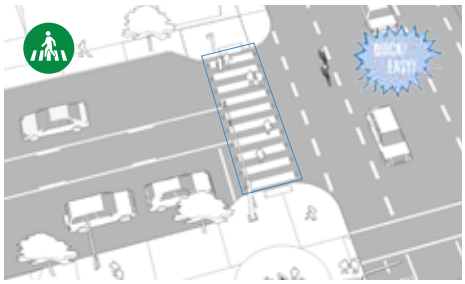
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Freeway Underpass & Overpass Enhancements

Residents might be more likely to travel to the station if the underpasses were safer, cleaner, better illuminated and visually engaging.





Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





Medallion Signage

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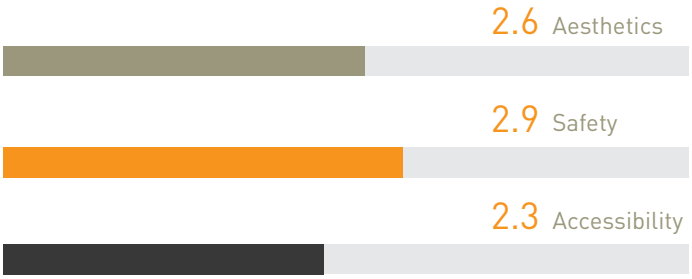


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CASE STUDY 11

METRO LOCAL BUS STOP

- Intersection with bus shelters for several local and regional bus lines
- Two commercial corridors surrounded by single-family residential land uses
- Transmission tower right-of-way with some portions being adapted for other uses
- Lack of bicycle facilities



2.6

Aesthetics

The study area is mostly clean and well-maintained, providing a pleasant experience for people traveling on the sidewalk. However, there is a general lack of shade-providing elements, such as trees and bus shelters.

Safety

The orientation of most buildings in both the commercial and residential areas are located close to the sidewalk and directly face the public realm. This creates a sense of safety by having "eyes-on-the-streets". The addition of traffic calming signage and striping have fostered a culture of people-friendly traffic speeds and manners. However, the study area lacks bicycle facilities and sufficient lighting, which can make getting to and from the transit stop feel unsafe. There is a high proportion of collisions involving all transit modes in the study area compared to the rest of the County.

Accessibility

There are high-quality sidewalks throughout most of the study area, especially on the primary commercial corridor, which has enhanced paving. However, some areas lack sidewalks altogether. The study area lacks bicycle facilities and a park-and-ride area. As a result, approximately 87% of people in the study area commute to work by carpooling or driving alone.

EXISTING CONDITIONS

CASE STUDY 11



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Area Barrier
- Corridor Asset
- Specific Asset

DRAFT

CRITICAL ACCESS BARRIERS

Crosswalks lack visible striping/enhanced ramps



There are several crosswalks throughout the study area that lack highly visible crossings to alert drivers of people crossing the street. Although most crosswalks have curb ramps, they can be improved upon with the addition of truncated domes and unidirectional curb ramps.

Narrow or missing sidewalks throughout the study area



There are some portions of sidewalk that are too narrow to adequately accommodate people walking. Some of the residential areas to the north lack sidewalks altogether, which means people have to travel alongside fast-moving traffic without a protective buffer.

Lack of shade



Several streets lack sufficient shading from the sun. Many of these streets are common routes to schools.

Lack of station identity and difficulty navigating



Currently, there is a large sign in the median of the primary east-west street welcoming people as they drive. Other than this landmark, there is no signage that signifies that the transit stop is nearby.

Insufficient lighting throughout the study area



Although there are some street lights, there is a general lack of lighting at the scale that is suitable for people walking, bicycling, or rolling. This discourages people to travel to and from the transit stop, especially at night.

OTHER EXISTING CONDITIONS

Green median



In the center median of the roadway, there is a well-maintained and attractively designed open space that is well utilized by the surrounding residential community.

Transmission tower right-of way



West of the transit stop, there is a transmission tower right-of-way that is underutilized. Some parcels use this area as a public park or a plant nursery.

Active/well-maintained public realm



Most buildings are built to the edge of the sidewalk and face the public realm; this orientation creates a sense of enclosure and activity by having “eyes-on-the-street”. In most areas, the sidewalks are well maintained and wide enough to accommodate several people at once.

Lack of facilities for bus riders and people bicycling



There are no bicycle facilities at the transit stop or in the study area. This discourages people from bicycling on the street and creates an unsafe environment if they choose to ride on the sidewalk. The lack of protection against the sun at nearby bus stops can make waiting for the bus uncomfortable.

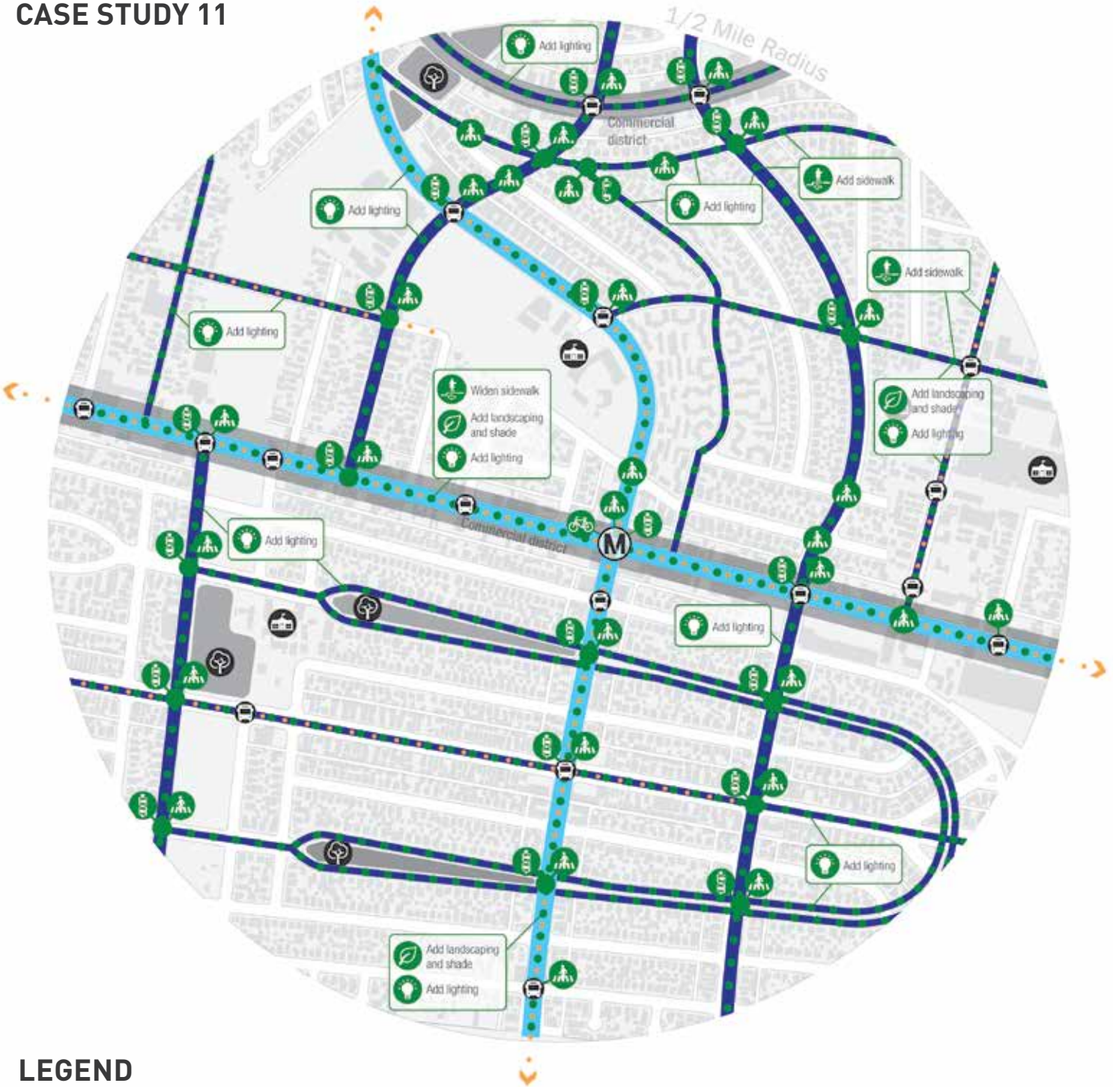
Landscaping and shade - commercial and residential areas



In some parts of the study area, trees provide shade for people traveling on the sidewalks, especially in the residential neighborhood.

PATHWAY NETWORK

CASE STUDY 11



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (proposed)

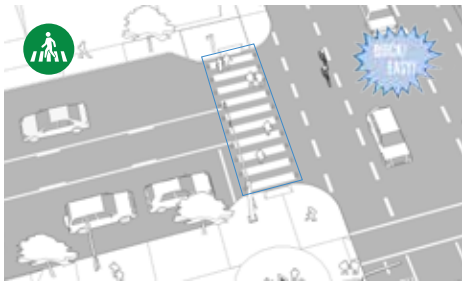
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Enhanced Pedestrian Crossings

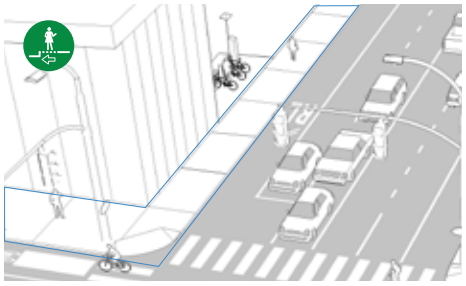
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Sidewalk Addition or Widening

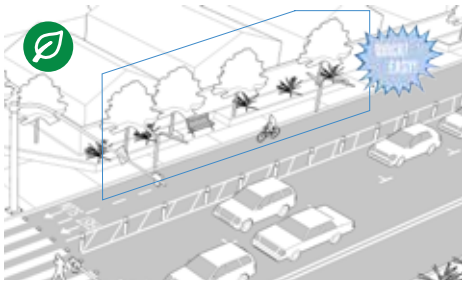
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Medallion Signage

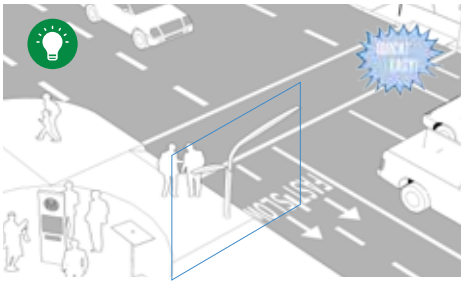
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Lighting

Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.



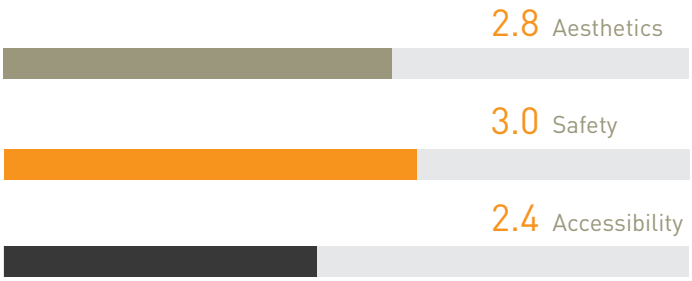


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CASE STUDY 12

METRO RAIL STATION (SUBTERRANEAN)

- High-density downtown character with multiple land uses including retail commercial, office commercial and residential
- A freeway bisects the study area, limiting connections to the station
- No vehicular or bicycle parking at the station
- Several unenhanced bus and bicycle facilities
- Several regional destinations



2.7

Aesthetics

The study area has a unique urban character that creates a strong sense of place. However, the general lack of pleasant landscaping, maintenance, and cleanliness lowers the overall aesthetics of the study area.

Safety

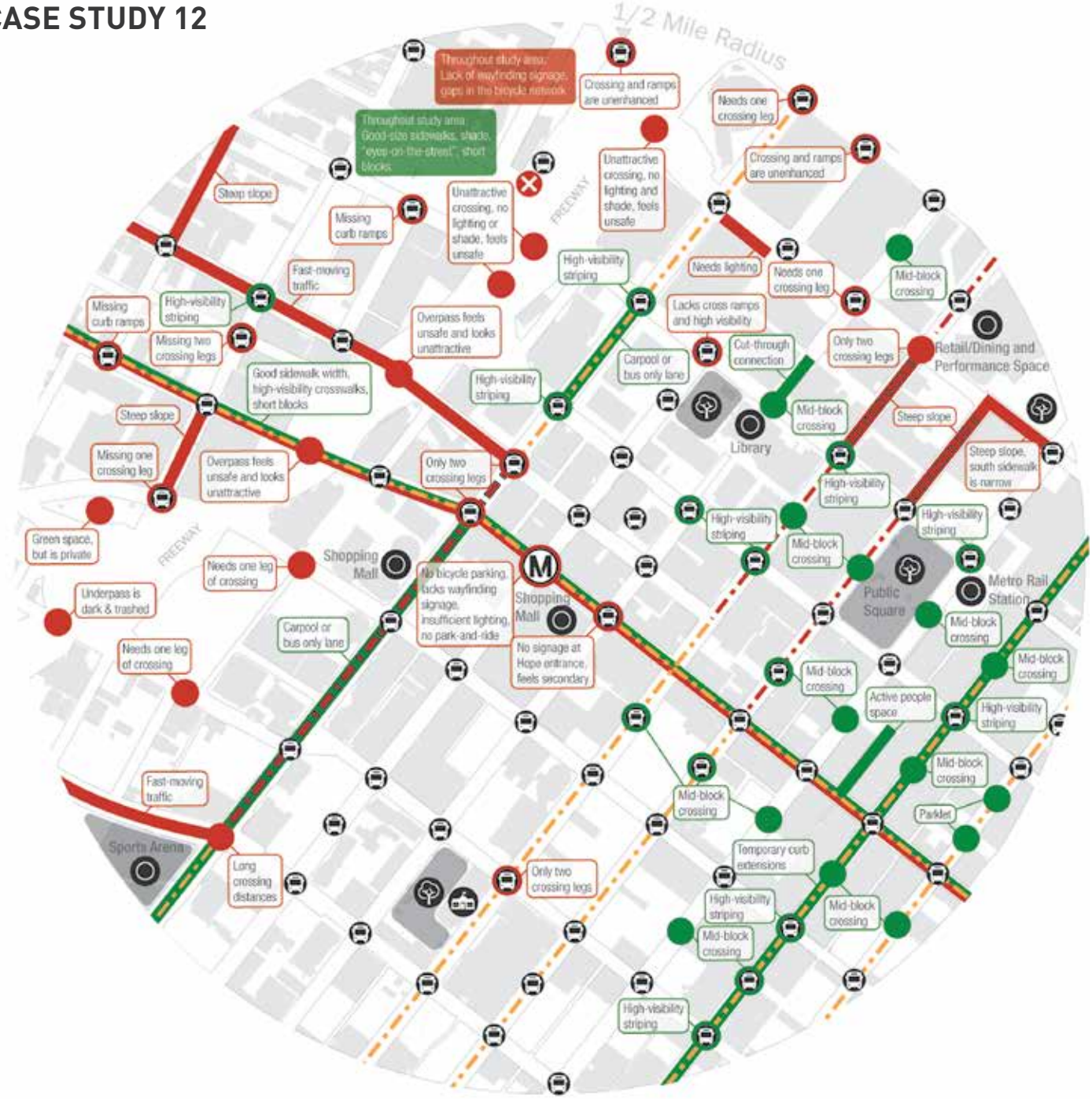
The study area generally has smooth and unbroken sidewalks and safe crosswalks. However, the gaps in the bicycle network, insufficient infrastructure to facilitate transit mode transfers, and lack of high-quality signage can make getting to and from the station difficult for many people. There is a relatively high number of people that walk, bicycle, or ride the bus to work as compared to the rest of the County, partially due to the diversity of transportation alternatives.

Accessibility

The high level of activity as well as appropriately scaled lighting fosters a sense of safety, especially at night. However, the lack of bicycle facilities, safety signage, and a well-maintained public realm can discourage people from using active transportation if they feel unsafe. There have been hundreds of reported collisions involving people walking, bicycling, or driving in the study area, with several of them resulting in death or severe injury.

EXISTING CONDITIONS

CASE STUDY 12



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

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CRITICAL ACCESS BARRIERS

Underpasses and overpasses over the freeway



The freeway divides the study area, but most of the streets connect via an overpass or an underpass. However, overpasses and underpasses are often dark, unattractive, or not well-shaded. This can lower the perception of safety and discourage people from traveling to and from the station.

Unenhanced bus waiting areas



Almost at every intersection, there are bus stops that host several local and regional bus lines. However, most of these bus stops are unenhanced, lacking seating, lighting, shade protection, and other amenities.

Unenhanced crosswalks



Several crosswalks lack high-visibility striping, curb ramps, and/or lighting. Given the high volume of people crossing at these intersections, there is a need for better crosswalks in the study area.

Inconsistent and lack of wayfinding



There are many signs that help direct people to destinations in the study area. However, there lacks consistent signage to guide people to the station, and the station entrance itself is hard to locate.

Lack of bicycle facilities at major destinations



There are major gaps in the bicycle network and a general lack of bicycle parking. This can discourage people to bicycle to and from the station if there are not enough places to safely secure their bicycle.

OTHER EXISTING CONDITIONS

Enhancements to the roadway and sidewalks



Several recent enhancements to the public realm include temporary curb extensions, public art, and roadway reconfigurations.

Utilities on the sidewalk



Some portions of the sidewalk are obstructed by utility poles or other public utilities. This makes maneuvering on the sidewalk difficult, especially for people with mobility impairments.

Some enhanced crosswalks



Throughout the study area, some crosswalks are enhanced with highly-visible striping, long crossing times, and curb ramps. Some of these crosswalks are designed with best practices.

Lack of signage at the station



The entrance to the station is not highly visible and lacks sufficient signage to orient people to its location. The elevator entrance to the station is set back from the street and is hard to find.

Lack of clean and well-maintained public realm



The high volume of activity and the lack of maintenance create an unpleasant experience walking or bicycling to and from the station.

DRAFT

PATHWAY NETWORK

CASE STUDY 12



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Freeway Underpass & Overpass Enhancements

Traveling to the station by foot or bicycle would be more convenient and comfortable if the underpasses were safer, cleaner, better illuminated, and visually engaging.





Enhanced Bus Waiting Areas

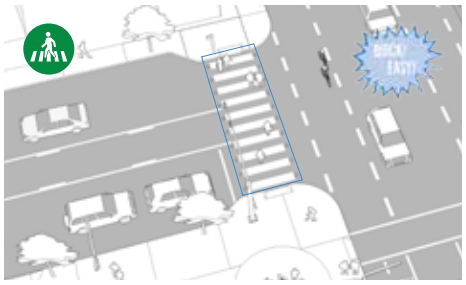
Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





Enhanced Pedestrian Crossings

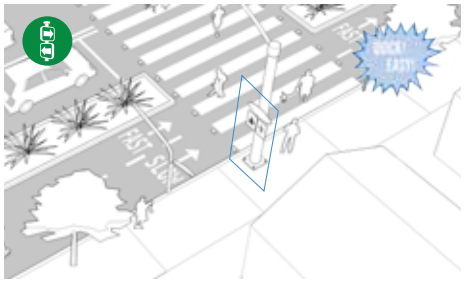
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Medallion Signage

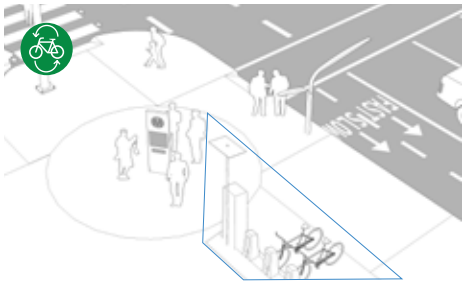
Medallion signage is an affordable type of wayfinding, or directional tool, that can be installed on utility poles and streetlights. The addition of medallion signage can help to increase awareness of station proximity, especially along Arterials and Collectors that connect to the schools, parks and commercial areas.





Bike Share Stations

Bike share provides numerous strategic locations where users can rent bicycles for short-term use. Bike share stations located at transit stations and stops make bicycling a convenient option for first last mile trips. Other stations are typically placed at strategic locations close to destinations. Corporate sponsorships and other public-private coordination can help make bike share a relatively inexpensive intervention.



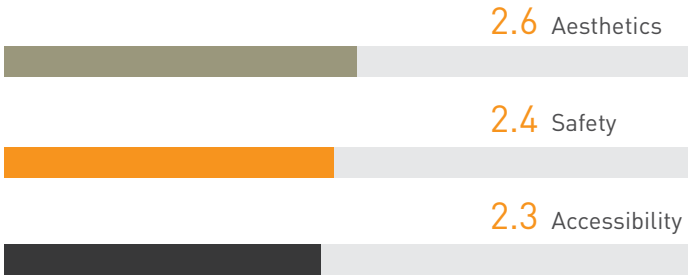


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CASE STUDY 13

METRO RAIL STATION (SUBTERRANEAN)

- Bustling business, cultural and tourist district (near the transit station) with active streetfronts and high levels of pedestrian activity
- Commercial corridors that emphasize vehicular travel over other modes
- Attractive residential neighborhoods adjacent to commercial corridors
- Limited park and recreation space



2.4

Aesthetics

The study area has a strong sense of place within the thriving cultural and tourist district near the transit station. Commercial streets generally lack adequate tree cover, landscaping, waste receptacles and seating. Residential areas are generally pleasant, well shaded, and well maintained.

Safety

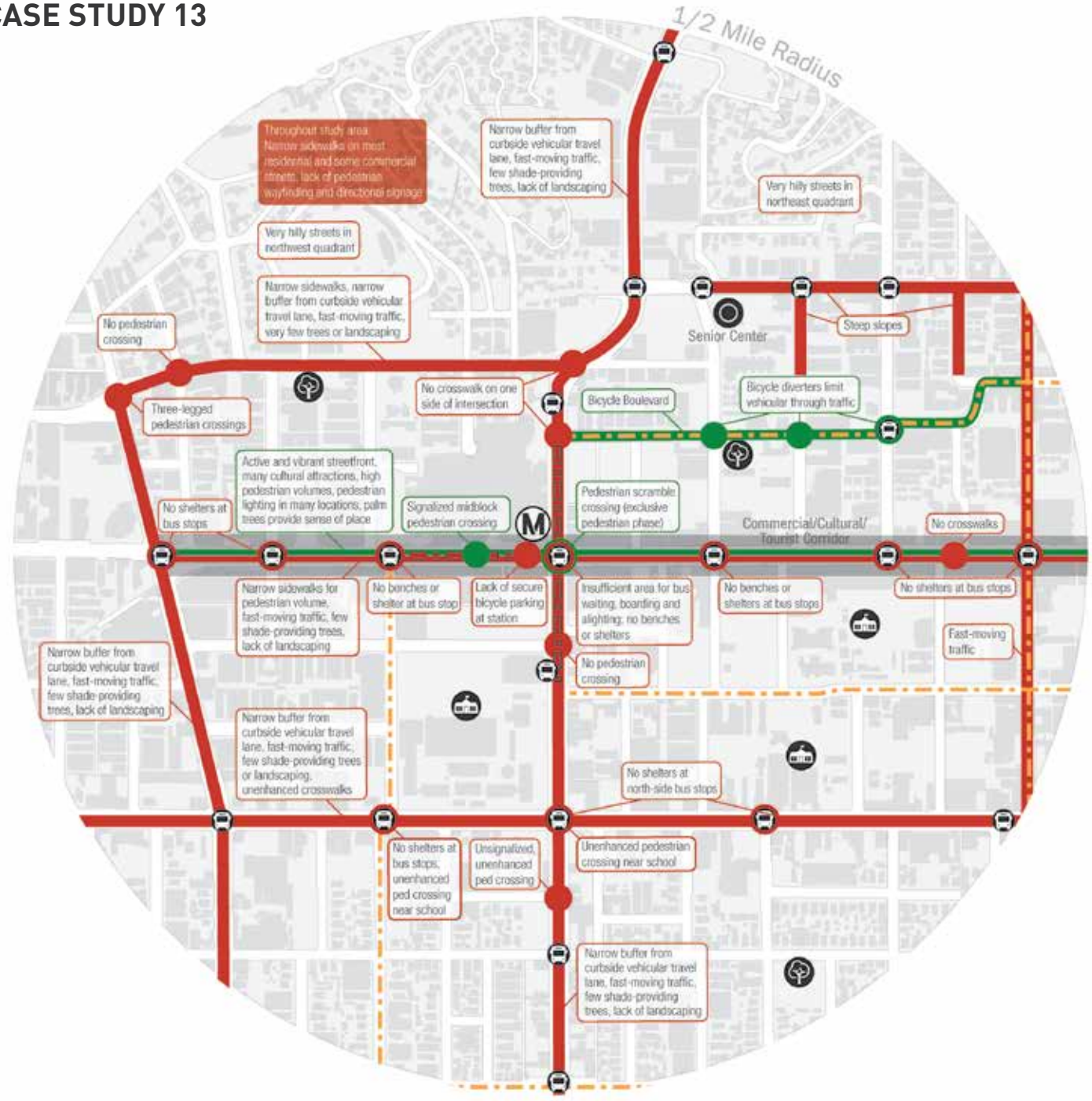
Around the transit station, the high level of activity from people on the street and the orientation of most buildings toward the public realm give a perceived sense of safety. A "Bicycle Boulevard" (located in a residential area east of the transit station) is a model of innovative bicycle facility design; however, all other bicycle routes in the study area contain only shared lane markings (sharrows). Most larger streets have little or no pedestrian buffer from vehicular traffic, while smaller residential streets generally provide a landscape buffer between the sidewalk and the roadway.

Accessibility

There are limited bicycle facilities in the study area, with a significant gap in the bicycle network right around the station. Sidewalks are generally in good condition, although many are narrow and contain physical obstructions.

EXISTING CONDITIONS

CASE STUDY 13



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Corridor Asset
- Other Asset

DRAFT

CRITICAL ACCESS BARRIERS

Narrow sidewalks and lack of buffer from roadway



Many streets - both residential and commercial - have narrow sidewalks with little or no buffer from the roadway. In some locations, the pedestrian pathway is further obstructed by utility poles and boxes, making some areas inaccessible for mobility-impaired individuals.

Pedestrian crossings



Many crossings across busy commercial streets do not have effective markings such as continental crosswalks and advance stop lines. In addition, curb ramps are generally bidirectional (leading people walking toward the center of the intersection) rather than unidirectional (leading to the direction of the crosswalk path).

Few enhanced bicycle facilities



Almost all bicycle routes consist of shared lane markings (sharrows) that provide no physical separation from vehicular traffic. The bicycle network has significant gaps.

Fast-moving traffic



Vehicle speeds (and rates of speeding) are high on many larger commercial streets and some residential streets. At peak hours, roadway congestion can lead to lower speeds, but peak-hour curbside travel lanes bring vehicular traffic closer to the sidewalk and make bicycling on the roadway hazardous.

Lack of amenities at bus stops



Many bus stops lack amenities such as shelters, bicycle parking, and shade-providing elements, and some are without seating (including the bus stop just outside the station area). Many bus waiting areas are in locations without sufficient sidewalk width to accommodate amenities.

OTHER EXISTING CONDITIONS

Sidewalk conditions



Sidewalk conditions are generally good in the study area, but some residential streets have uneven and/or broken sidewalks.

Pedestrian scramble



This enhanced crossing is located near the station portal in the heart of the cultural and tourist district. Dedicated traffic signals for people walking greatly reduce conflicts with turning vehicles, improving safety and comfort for people walking, while providing easier right turns for motorists.

Diverters along bicycle boulevard



The bicycle boulevard is the only enhanced bicycle route in the study area. Roadway diverters prevent vehicular through traffic but allow bicyclists to continue along the street. This greatly decreases vehicular traffic volumes and provides a safer route for people bicycling and walking.

High traffic levels and backups



Roadway congestion and traffic backups result in increased car exhaust and can encourage aggressive motorist behavior. In addition, heavy traffic makes bicycling more difficult and reduces safety for people walking.

Pedestrian-oriented signage



Tourist areas have some pedestrian-oriented signage that provides historical information on local attractions, but there is a general lack of signage directing road users to destinations (including the Metro station).

PATHWAY NETWORK

CASE STUDY 13



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Corridor
- Bus Stop

Pathway Network

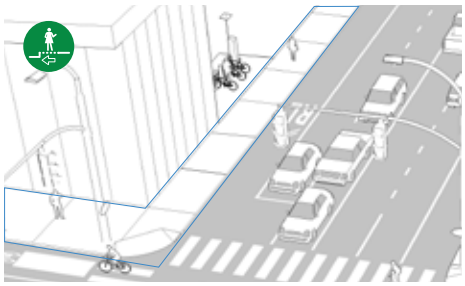
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Car Share
- Key Recommendation (corridor)
- Key Recommendation (specific location)

DRAFT

KEY RECOMMENDATIONS

Sidewalk Addition or Widening

Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Traffic Calming

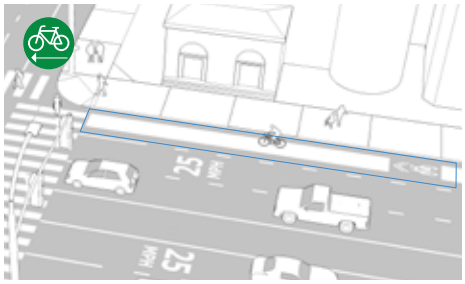
Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.





Enhanced Bicycle Facilities

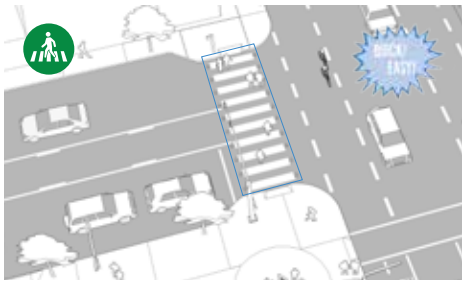
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.



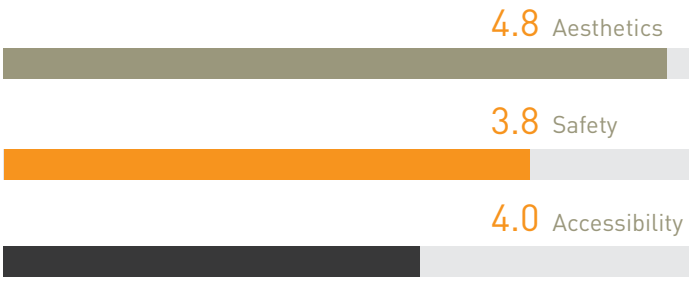


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CASE STUDY 14

MULTI-AGENCY BUS STOP

- Centrally located in a highly walkable and bicycle-friendly university campus
- Land uses are primarily institutional, including the university campus and a large medical complex
- Streets outside of the campus are primarily automobile-oriented
- Many vacant/underutilized land parcels and large parking lots limit connectivity
- Residential land uses located around the perimeter of the study area



4.2

Aesthetics

The university campus has a strong sense of place, pleasant and well-maintained landscaping, and strategically-placed pedestrian amenities in many locations. The overall ambiance within the study area is very good, though aesthetic qualities are lower toward the edges of the study area.

Safety

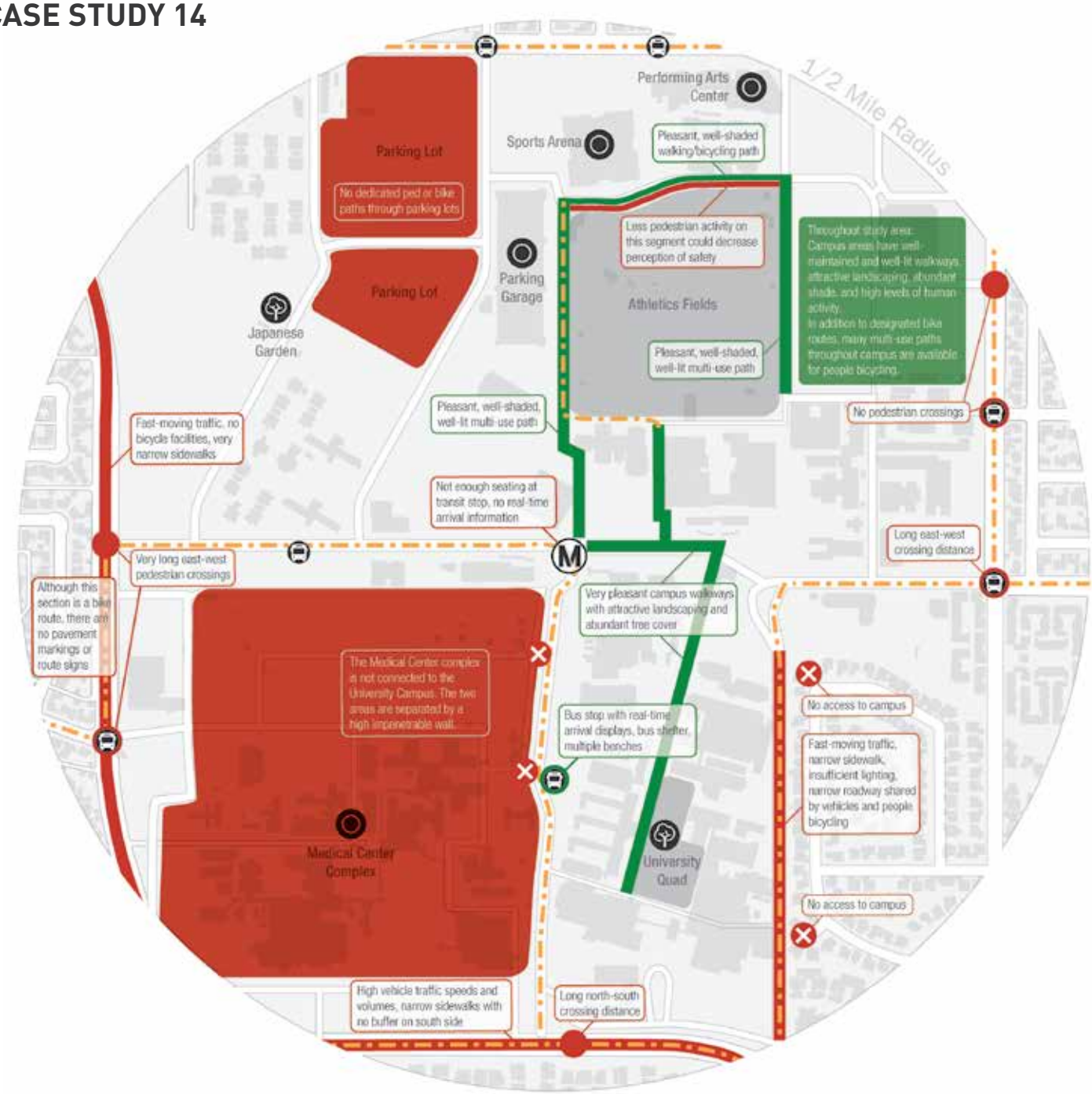
The high level of pedestrian activity within the central campus give a perceived sense of safety. Walking and bicycling paths on the campus are generally well-lit. The campus provides a safe environment for people bicycling and walking, while some streets outside of campus do not have enhanced bicycle facilities and provide pedestrians with little to no buffer from the roadway.

Accessibility

Pedestrian and bicycle amenities at the station facilitate mode transfer, but the station lacks high-quality signage and a streamlined approach to parking and drop-off. Sidewalks are generally in very good condition. Pedestrian crossings within the campus are well-marked, while some outside of campus lack sufficient markings. Separated bicycle paths within the campus provide safe and convenient access for people bicycling.

EXISTING CONDITIONS

CASE STUDY 14



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Area Barrier
- Corridor Asset
- Specific Asset
- Area Asset

DRAFT

CRITICAL ACCESS BARRIERS

Connectivity Barrier



The Medical Center is located adjacent to the University campus, but it is not accessible from the campus. A tall, continuous brick wall separates the two areas.

Wayfinding and informational Signage



Wayfinding signage is placed inconsistently along walking and bicycling routes throughout the campus, and is sometimes located away from primary routes of travel.

Unenhanced crossing and long crossing distance



The crossing in this image is located at the southern entrance to the campus. Crossing distance is long, the pedestrian crossing interval is short, and crosswalk striping is unenhanced. In addition, a single curb cut (slightly visible in the foreground) is oriented away from the crosswalk.

Unenhanced bicycle routes



Although it is a designated bicycle route, this roadway segment (near the west campus entrance) has no dedicated space for bicyclists. On streets south of campus, bicycle lanes are standard curbside bicycle lanes with inconsistent striping at intersections.

Fast-moving traffic



Traffic speeds on major streets are high. In addition, on a campus roadway(left), people bicycling share narrow lanes with vehicles that often travel over the speed limit. Comfort and safety for people walking is reduced by the lack of a buffer between the sidewalk and roadway.

OTHER EXISTING CONDITIONS

Attractive, well-maintained, shady campus



Much of the campus has mature trees that provide protection from the sun, especially at the central sections of campus.

Lack of shade in some areas



Although much of the campus is well shaded, some open plaza areas could benefit from the addition of shade.

Multi-use paths



Separated paths for people walking and bicycling provide safe and comfortable routes through campus.

Busy bus stop with real-time arrival information



A busy bus stop (south of the study area's central bus stop) contains real-time arrival displays, adding convenience for transit riders.

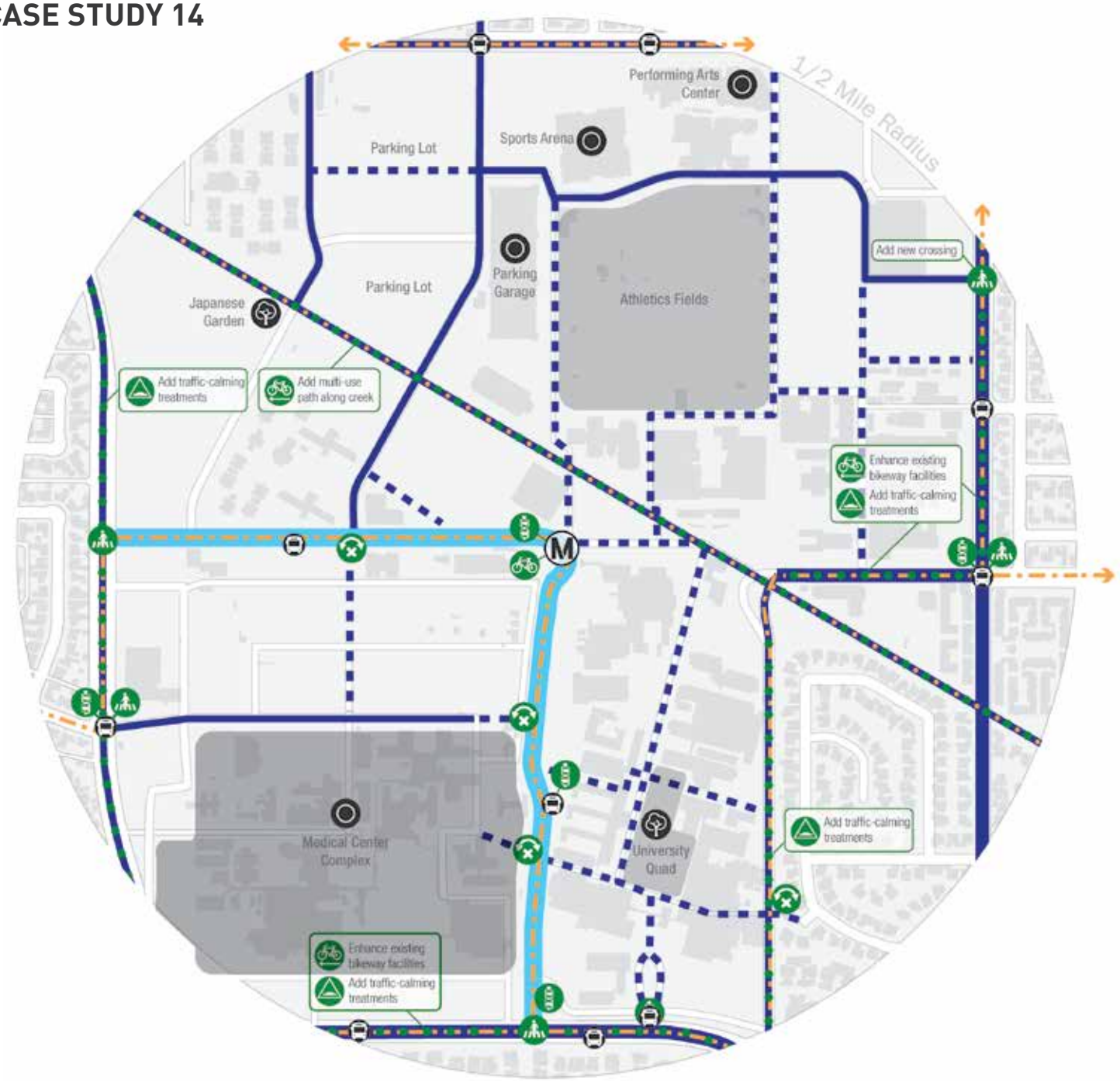
Lack of seating at main bus stop



The main bus stop at the center of the study area is located on a plaza with few seating opportunities. An expanded bus shelter and/or other seating would provide a desired amenity for transit riders.

PATHWAY NETWORK

CASE STUDY 14



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

New Connection Across Barrier

Designing a new connection between the university campus and the health center can greatly improve connectivity to the station.





Medallion Signage

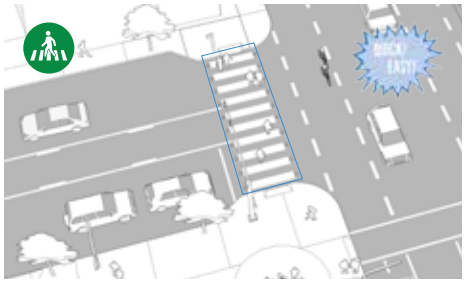
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Enhanced Pedestrian Crossings

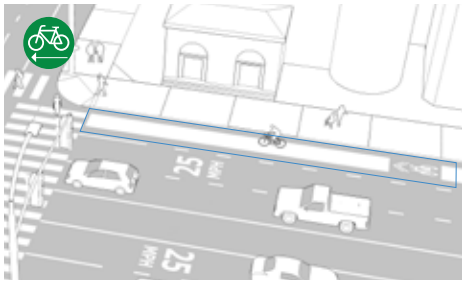
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Enhanced Bicycle Facilities

A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Traffic Calming

Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.



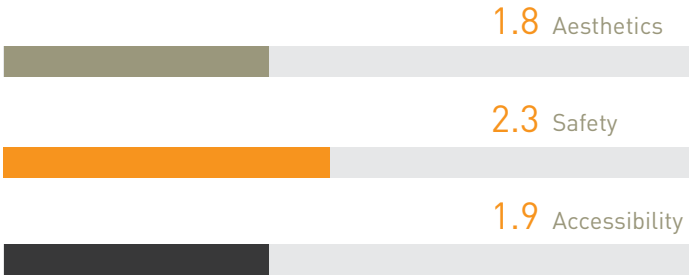


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CASE STUDY 15

METRO RAIL STATION (AT GRADE)

- Industrial uses along the rail corridor
- Single-family and some multifamiily residential land uses to the south of the station
- Commercial and single-family residential land uses to the north of the station
- Commercial corridors are oriented more to the automobile than to other modes
- The rail line limits north-south connectivity
- Very limited park and recreational space



2.0

Aesthetics

The study area does not have many unique characteristics or landmarks to give it a sense of place. Commercial streets generally lack adequate tree cover, landscaping, waste receptacles and seating. Residential areas are generally pleasant, often enhanced by trees and landscaping.

Safety

The station area itself is well-utilized during most times of the day and gives riders a better sense of safety. However, the area immediately adjacent to the transit station does not have a high level of activity, so perceived sense of safety may be limited. Traffic on the commercial corridors moves at high speeds, and pedestrians have little to no safety buffer from vehicular traffic. The primary north-south corridor has peak-hour curbside travel lanes that further lower the perceived sense of safety for people walking or bicycling. The lack of bicycle lanes forces bicyclists to ride on the sidewalks. Sidewalks are generally in good condition. The smaller residential streets generally provide a landscape buffer between the sidewalk and the roadway. There are a significant number of collisions at intersections, with a high percentage taking place at midblock locations where there are no marked crossings.

Accessibility

Bicycle facilities in the study area are limited to standard (unenhanced) bicycle lanes on the street adjacent to the rail corridor. Many intersections along the commercial corridors are without marked crossings. In the study area, the number of people commuting to work by mass transit is higher than average, while rates of walking and bicycling are low.

EXISTING CONDITIONS

CASE STUDY 15



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

DRAFT

CRITICAL ACCESS BARRIERS

Fast-moving traffic



Vehicle speeds are high on many of the larger commercial streets and on some residential streets. Peak-hour curbside travel lanes on some streets bring fast-moving vehicular traffic closer to the sidewalk, decreasing the pedestrian buffer as well as making bicycling on the roadway hazardous.

Pedestrian Crossings



Many existing crosswalks do not have adequately maintained striping, and are without enhancements such as continental striping or advance limit lines. Long stretches along some commercial boulevards are without pedestrian crossings. A few crossings in residential areas are without curb ramps.

Few enhanced bicycle facilities



There is only one bicycle lane in the study area. In many cases, people bicycling on the roadway are required to navigate between parked vehicles and narrow travel lanes. Many people choose to bicycle on the sidewalk.

Lack of shade



While some residential areas are abundantly shaded, the majority of the study area has insufficient tree cover to provide protection from the sun.

Lack of street furniture



There are few comfortable seating opportunities in the study area, and waste receptacles are placed sparingly. Seating opportunities are limited to bus benches at bus stops.

OTHER EXISTING CONDITIONS

Pleasant, well-shaded residential streets



In residential areas, the street environment is generally pleasant, with well-maintained landscaping and residences. While tree cover is generally limited, some streets are shaded by mature street trees.

Inefficient, confusing transition



Navigation from the transit platforms to adjacent streets is complicated by a jumble of physical structures, pavement patterns, and small areas to wait for walk signals.

Pedestrian-oriented lighting



A segment of a commercial corridor has pedestrian-oriented lights attached to roadway light poles, providing a more pleasant nighttime pedestrian environment.

Fencing and blank walls



On main streets, some vacant parcels and parking lots impair the aesthetic experience and comfort of people walking.

Narrow right-of-ways



Many collector streets do not have sufficient right-of-way width to accommodate bicycle lanes or curb extensions.

PATHWAY NETWORK

CASE STUDY 15



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Existing Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Traffic Calming

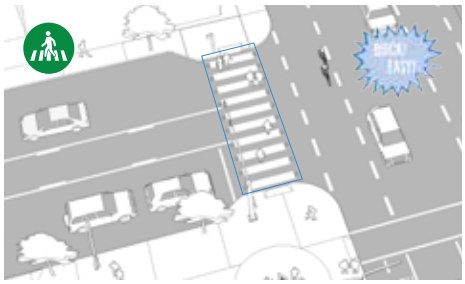
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Enhanced Pedestrian Crossings

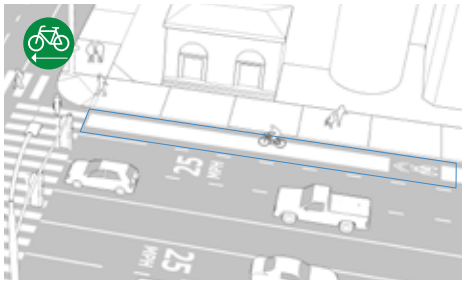
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Enhanced Bicycle Facilities

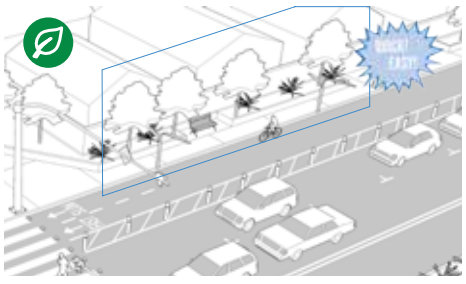
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Landscaping and Shade

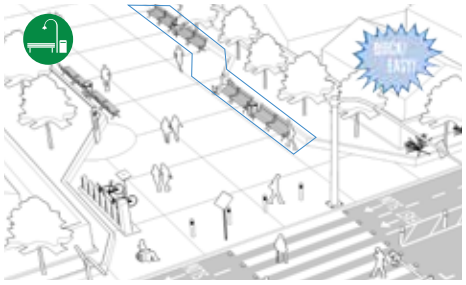
Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Street Furniture

Street furniture provides amenities to make active transportation users comfortable while traveling and provide resting places. Waste receptacles, pedestrian-scale lighting, water fountains, and bicycle parking are other elements that enhance the sidewalk environment.



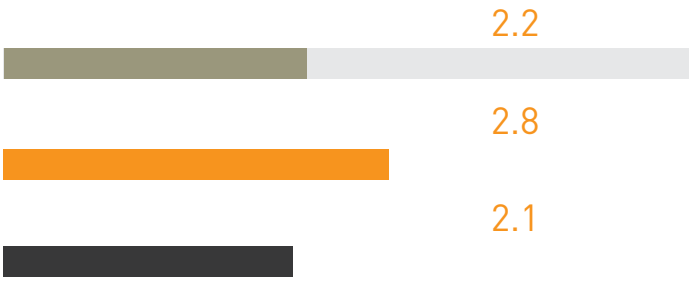


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CASE STUDY 16

METRO BUS RAPID TRANSIT (BRT) STATION

- Large civic center with numerous public services located to the north of the stop
- Dedicated right-of-way for the BRT line limits connectivity
- Industrial uses along the BRT right-of-way (formerly a freight rail line)
- Arterial streets are primarily lined with commercial uses, while block interiors are mostly single-family residential.
- The primary north-south commercial corridor is walkable, while other commercial corridors are automobile-oriented



2.4

Aesthetics

The study area lacks a strong sense of place. Residential districts are pleasantly shaded and landscaped, while commercial districts lack sufficient landscaping and well-maintained amenities for people walking.

Safety

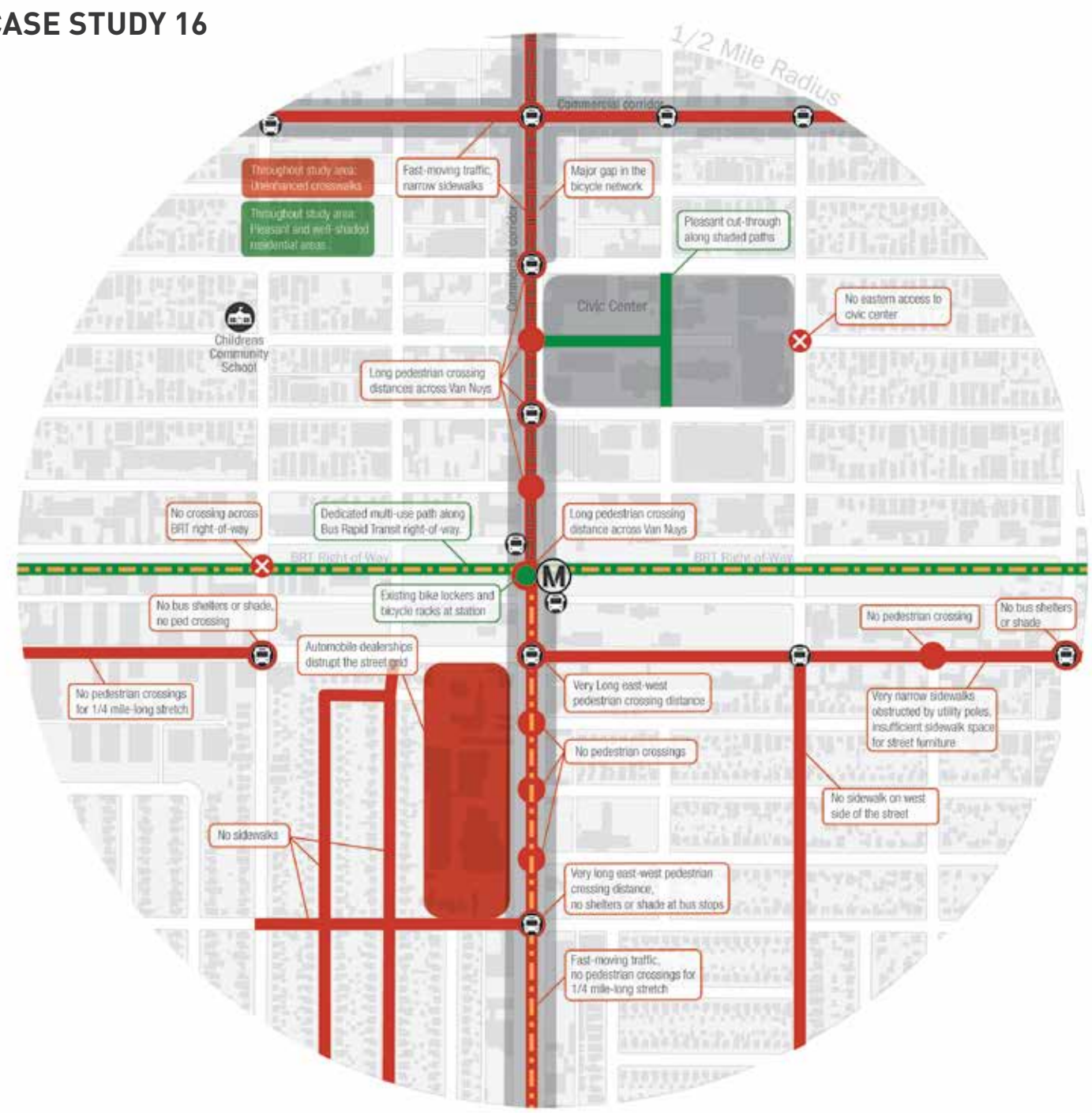
To the north of the station, the high level of activity from people on the street and the orientation of most buildings toward the public realm give a perceived sense of safety. Residential streets and some commercial streets provide a landscape buffer between the sidewalk and the roadway. The multi-use path along the BRT corridor provides a safe car-free route for people walking and bicycling. Recently, there have been several reports of severe collisions involving all modes of transportation.

Accessibility

At the station, mode transfer is facilitated by an adequate park and ride lot as well as amenities for people walking and bicycling. Sidewalks in the study area are generally in good condition. The area lacks high-quality wayfinding and directional signage to the station and to area destinations. Compared to the rest of the County, this study area has a relatively high number of people commuting to work by walking, bicycling, or taking public transportation.

EXISTING CONDITIONS

CASE STUDY 16



LEGEND

Locations

- Metro BRT Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset

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CRITICAL ACCESS BARRIERS

Lack of sidewalks / narrow sidewalks



Several residential streets do not have sidewalks. Some commercial corridors have narrow sidewalks with no landscape buffer from the roadway. Sidewalks are sometimes obstructed by infrastructural elements such as utility poles, utility boxes and fire hydrants.

Lack of shade and amenities for people walking



Sidewalk environments along the main commercial corridors generally lack landscaping and shade-providing trees. Sidewalk pavement conditions are generally good, although there is a lack of street furniture and lighting for people who walk.

Lack of pedestrian crossings at some intersections



Many unsignalized intersections lack crosswalks, resulting in long stretches (up to 1/4 mile) without any crosswalks.

Unenhanced bicycle lane



The existing bicycle lanes are not buffered from vehicular traffic. As shown above, they drop off at intersection approaches and lack pavement markings in conflict zones.

Unenhanced bus waiting areas



Many of the bus waiting areas within the station area lack amenities such as sufficient seating, shelters, and shade trees.

OTHER EXISTING CONDITIONS

Pleasant residential streets



In residential areas, the street environment is generally pleasant, with mature shade-providing street trees and well-maintained landscaping. Nighttime safety may be a concern in residential areas south of the station due to the lack of street lighting on many streets.

Long crossing distances



Crossing distances along the commercial corridors are generally long. The primary north-south corridor south of the station is especially wide, resulting in crossing distances as long as 120 feet.

Enhanced crosswalks



The main commercial corridor to the north of the station contains recently-enhanced crosswalks with continental striping and advance limit lines.

Multi-use path and bicycle facilities



This well-lit and shaded multi-use path provides a dedicated right-of-way for people walking and bicycling. The 18 mile-long path runs parallel to the BRT corridor, providing a convenient east-west regional connection. Bicycle racks and lockers at the station support multimodal transfers.

Attractive Civic Center Area



The Civic Center is an important regional destination. This area has well-maintained landscaping, pleasant walking paths, and comfortable seating areas.

PATHWAY NETWORK

CASE STUDY 16



LEGEND

Locations

- Metro BRT Station
- Key Destination
- Destination Area
- Existing Bus Stop

Pathway Network

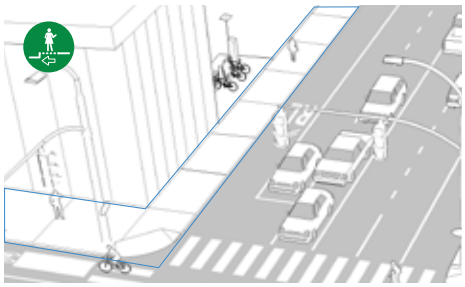
- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Sidewalk Addition or Widening

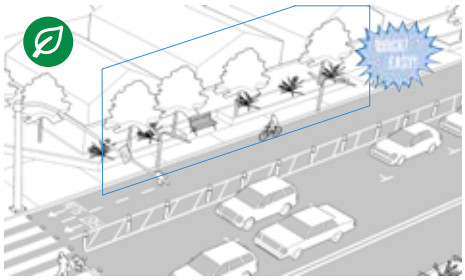
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Landscaping and Shade

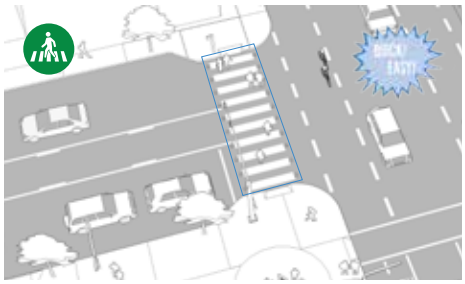
Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Enhanced Pedestrian Crossings

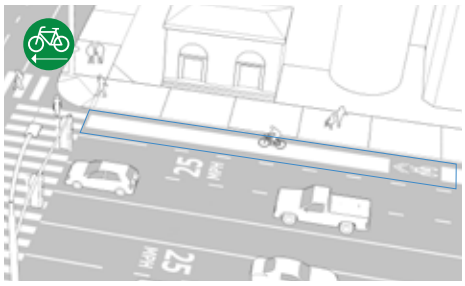
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Enhanced Bicycle Facilities

A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Enhanced Bus Waiting Areas

Enhancing the bus waiting areas along the Pathway Arterials and Collectors can improve the safety and comfort of a bus rider's journey. Potential enhancements could include benches, shelters, lighting, signage, a wi-fi hotspot, mobile device chargers, etc.





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CASE STUDY 17

METRO RAIL STATION (ABOVE GRADE)

- Active commercial corridors surrounded by mostly single-family residential uses
- Freeway bisects the study area, which limits connectivity
- Recently enhanced sidewalks and crosswalks
- Highly-amenitized transit station with nearby park-and-ride lot for convenient transfers
- Limited park and recreational space



ACCESSIBILITY SCORE 4.1

Aesthetics

Overall, the study area is well-maintained and clean. There is pleasant landscaping, including trees and plantings, that provide shade and aesthetic appeal. There are also several amenities, such as waste receptacles, bus shelters, and seating areas, which are strategically located.

Safety

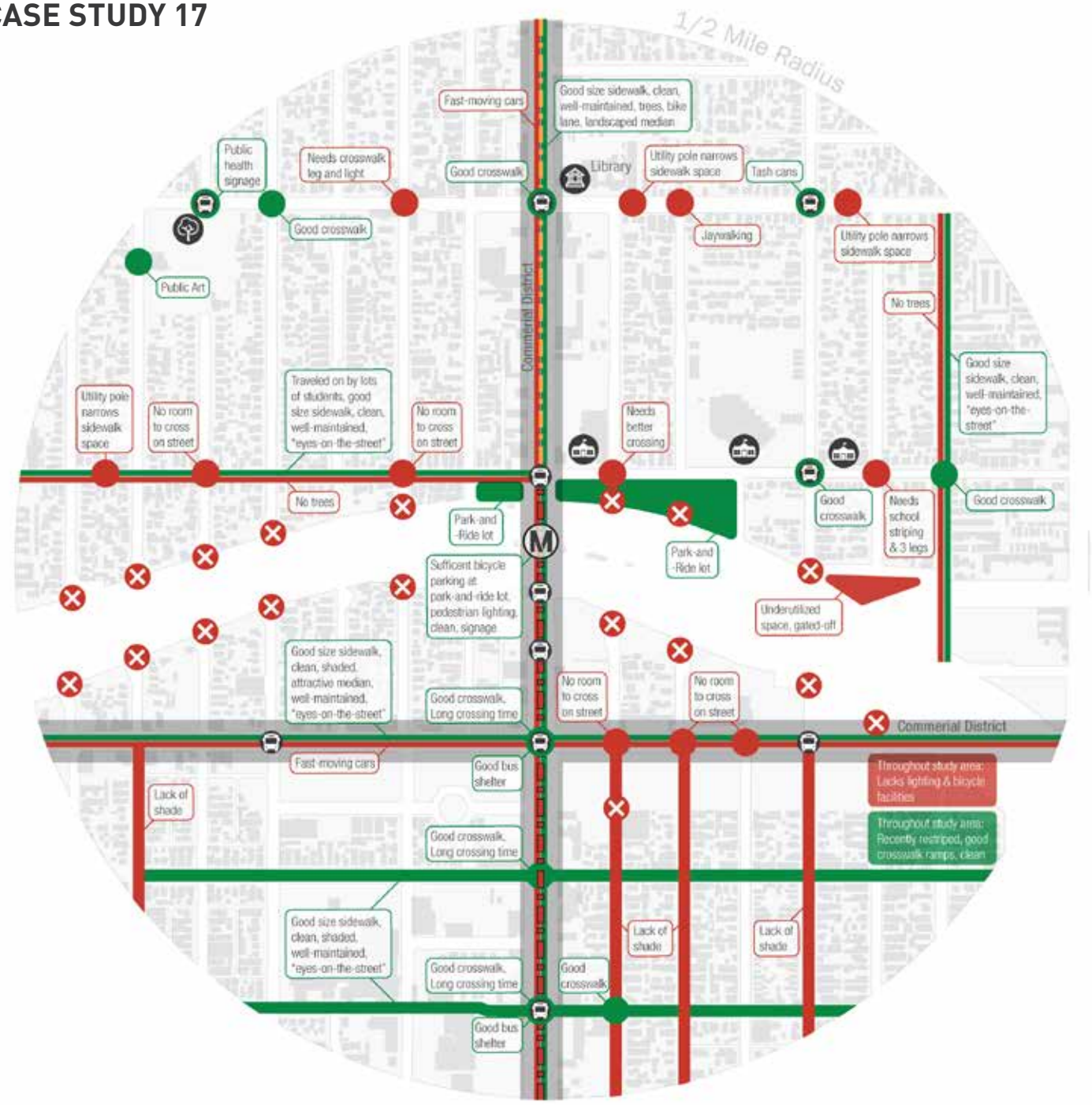
The public realm is clean and well-maintained. The orientation and design of the buildings add "eyes-on-the-street", which gives a perceived sense of safety. However, the lack of a safety buffer for people bicycling, and the lack of sufficient lighting lowers the perceived sense of safety, especially at night. There are several collisions that have recently happened in the area, with a large proportion of them involving people walking or bicycling.

Accessibility

There are high-quality sidewalks throughout the study area, but some utility poles create barriers for people traveling on the sidewalk. Crosswalks have been recently enhanced to be safer and more convenient for all users. Parking and drop off for vehicles is streamlined with the addition of a well-maintained park-and-ride lot. However, the freeway divides the study area and the only connection is along the major north-south arterial. There is also a general lack of bicycle facilities, although there is bicycle parking located at the park-and-ride locations. Although most people travel to work by driving or carpooling, many people utilize the Metro rail line, which offers another transportation alternative.

EXISTING CONDITIONS

CASE STUDY 17



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset
- Area Asset

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CRITICAL ACCESS BARRIERS

Unenhanced crossings at some intersections



At some intersections, there is a lack of sufficient crosswalk striping, creating unsafe crossing conditions. At certain locations, the stop limit line leaves no room for people to safely walk across when a vehicle is present.

Gaps in the bicycle network



The only bicycle lane in the study area does not fully connect to the station and other major destinations. The lane is separated from fast-moving traffic only by paint. The lack of bike facilities forces many people to ride on the sidewalk, creating unsafe environments for people walking.

Insufficient lighting throughout most of the study area



Most of the study area, except at the station, lacks sufficient lighting for people walking and bicycling. The lack of illumination can discourage many people from getting to and from the station, especially during the night.

Lack of shade in some residential areas



Although most of the study area has well-maintained trees and bus shelters that offer shade, some residential areas lack this protection from the sun.

Fast-moving traffic along major commercial streets



There is fast-moving traffic along the major commercial streets, which making bicycling on the road feel unsafe. People may also feel uncomfortable crossing the street with these conditions.

OTHER EXISTING CONDITIONS

Enhanced crossings at most intersections



Most of the intersections within the study area have crosswalks that have been recently enhanced to be safe and accessible for all users of the sidewalk. This is especially true for large arterial streets that have highly-enhanced crosswalk ramps, long crossing times, and highly-visible striping.

Utility poles on the sidewalk



At several locations throughout the study area, there are utility poles misplaced in the center of the sidewalk, leaving little space for people to travel, especially by wheelchair.

Park-and-ride lots near the station



There are park-and-ride lots just to the north of the station on both sides of the street that have hundreds of parking spaces. These lots are well-maintained and patrolled, which can encourage drivers to use transit.

Fence with no doors limits connectivity



There is a gate that restricts access for vehicles as well as people walking and bicycling. This makes it difficult for people traveling to and from the station to get to their destination.

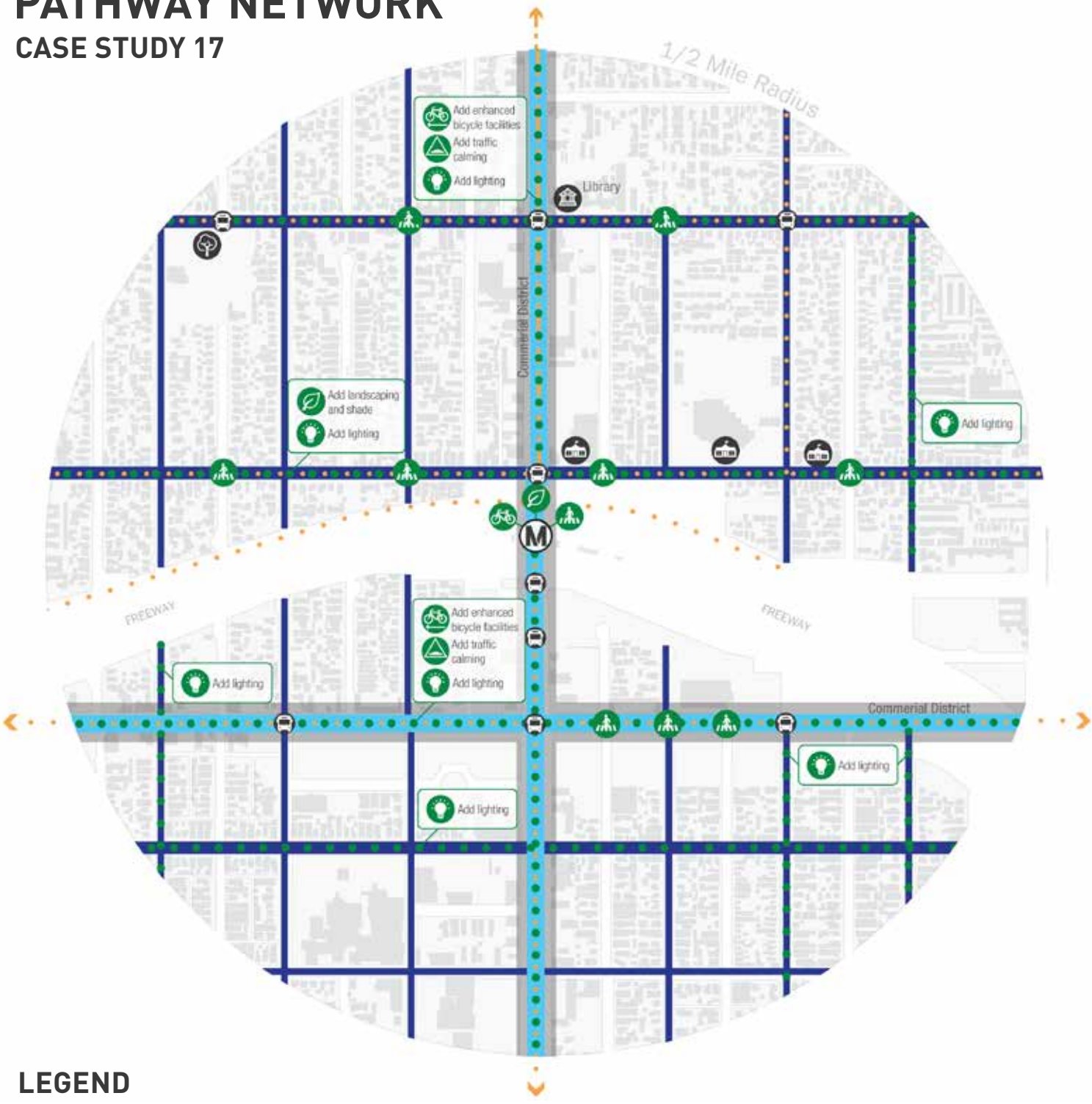
Public art facing the public realm



Located at the northwest corner of the study area, a community-designed mural fronts the sidewalk. The mural is well-maintained and is aesthetically pleasing for people traveling on the sidewalk.

PATHWAY NETWORK

CASE STUDY 17



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (existing)
- Bikeway (proposed)

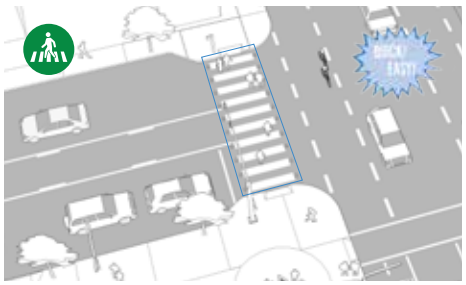
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Enhanced Pedestrian Crossings

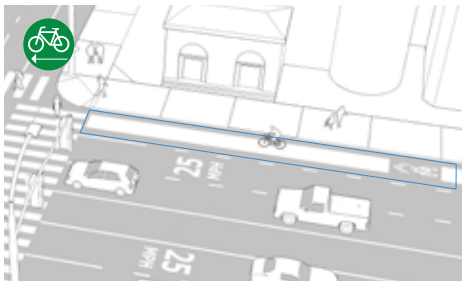
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Enhanced Bicycle Facilities

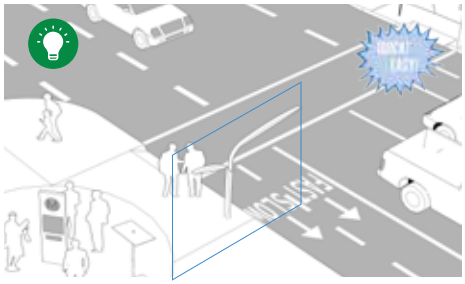
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Lighting

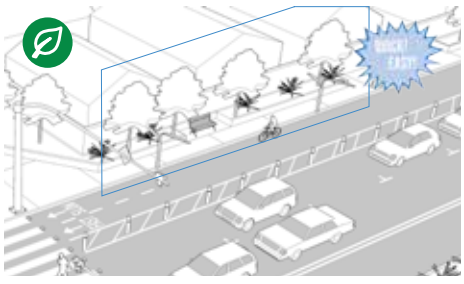
Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Traffic Calming

Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.



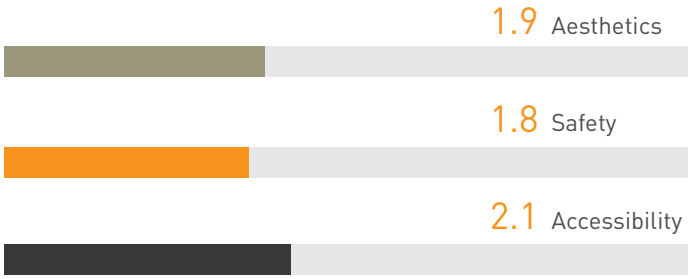


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CASE STUDY 18

METROLINK STATION AND MULTI-MODAL TRANSIT HUB

- Multi-modal transportation center featuring highly-amenitized rail and bus hubs
- Residential, industrial, and municipal land uses
- Large undeveloped parcels of land
- Limited connectivity due to rail line and long blocks



1.9

Aesthetics

Although the station is aesthetically pleasing, the surrounding study area lacks elements such as strategically placed amenities for people walking or bicycling, sufficient landscaping, and a strong sense of place.

Safety

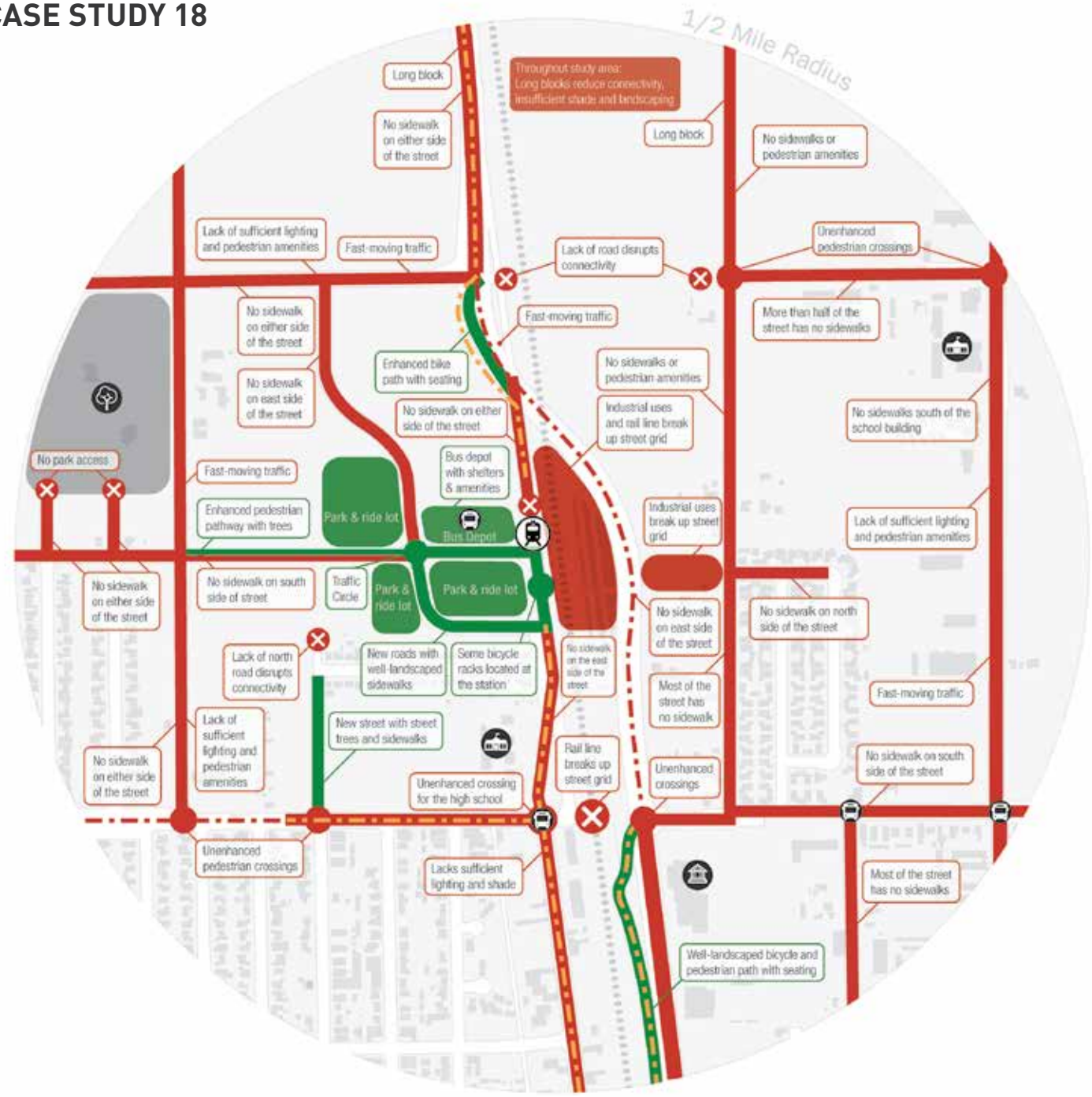
The lack of elements such as sidewalks, adequate lighting, and sufficient "eyes-on-the-street", coupled with fast-moving traffic, makes the study area feel unsafe for people walking or bicycling to the station.

Accessibility

At the station, parking and drop-off is streamlined and transfers between transit modes are almost seamless. Navigating throughout the study area is a different story. The lack of sidewalks, crosswalks, bicycle facilities, and other essential amenities severely constrains accessibility. Furthermore, people coming from east of the rail line can only access the station at one point on a major highway.

EXISTING CONDITIONS

CASE STUDY 18



LEGEND

Locations

- Metrolink Station & Transit Center
- Key Destination
- Destination Area
- Existing Bus Stop
- Existing Bikeway

Access Barriers and Strengths

- Gap in the Bicycle Network
- Corridor Barrier
- Specific Barrier
- Area Barrier
- Connectivity Gap
- Corridor Asset
- Other Asset
- Area Asset

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CRITICAL ACCESS BARRIERS

Little connectivity getting to and from the station



Currently, a person walking or bicycling from east of the station has only one access point to get to the station. Without establishing greater connectivity, any design recommendation east of the rail line will not help to encourage people to walk or bicycle to the station.

Lack of sidewalks throughout



Many of the parcels in the study area are undeveloped and lack sidewalks. As a result, there is no buffer from fast-moving vehicles. This is especially unsafe for mobility-impaired individuals.

Lack of protection against the weather



The study area experiences extreme weather conditions, including temperatures over 100°F during the summer. There is a general lack of trees and landscaping in the public realm, which makes walking to and from the station feel uncomfortable.

Long blocks throughout



People walking to and from the station must travel long distances, sometimes traveling past their destination, because there are no signalized places to cross the street. This discourages people from walking and encourages jaywalking.

Lack of lighting



Many of the streets lack adequate street lighting for people walking and bicycling. This reduces visibility making it feel unsafe for all users of the road.

OTHER EXISTING CONDITIONS

Abundant park-and-ride spaces



There are over 500 park-and-ride spaces at the station, including accessible and motorcycle spaces. There is security that monitors the lot during the day.

Gaps in the bicycle network



Although there are well-landscaped bicycle paths, there are some gaps in the bicycle network that limit accessibility. There also is greater need for more bicycle parking at the station.

Abundance of station amenities



Overall, the transportation center has several desirable amenities such as bus shelters, wayfinding signage, kiss-and-ride zone, drought-tolerant landscaping, seating, real-time arrival information, bicycle parking, etc.

Walking and bicycle paths



There are well-maintained walking and bicycle paths running parallel to the main highway. A nearby park has pleasant walking paths and is a popular regional destination.

Local community garden



A community garden provides an opportunity for residents without gardening space to maintain an individual plot in a community space.

PATHWAY NETWORK

CASE STUDY 18



LEGEND

Locations

- Metrolink Station & Transit Center
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

New Connection Across Barrier

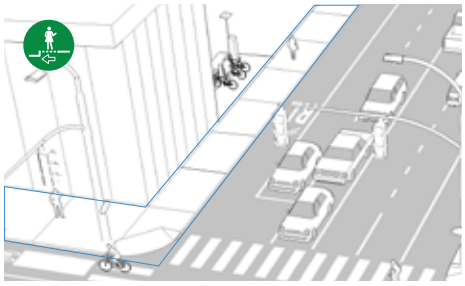
Designing a new connection across the main highway can improve connectivity to the station from the east. This can manifest as a bridge or an at-grade signalized crosswalk for people walking and bicycling. A well-designed connection should consider the safety of all people.





Sidewalk Addition or Widening

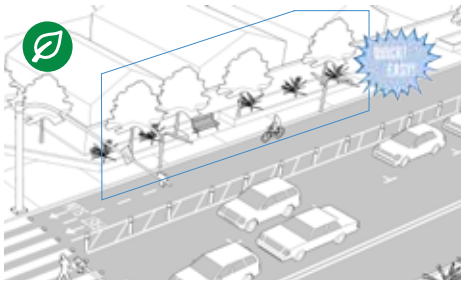
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Landscaping and Shade

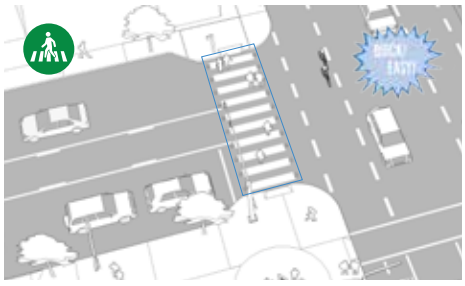
Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.





Enhanced Pedestrian Crossings

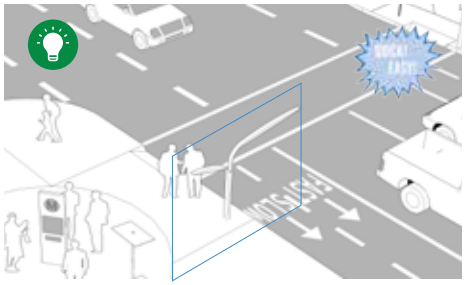
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Lighting

Adding lighting can increase safety and aid in night navigation for people walking or bicycling along Pathway routes. Install lighting rhythmically and consistently in coordination with tree canopies as not to block the light. Consider installing lights that are efficient and/or motion activated/ self powered in areas where constant light is not needed.



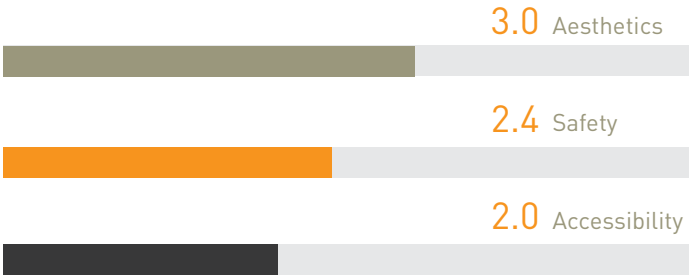


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CASE STUDY 19

METRO LOCAL BUS STOP

- Commercial corridors surrounded primarily by single-family residential neighborhoods
- A freeway bisects the study area, which limits connectivity
- Limited park and recreational space
- No bicycle facilities
- Many residential streets lack continuous paved sidewalks



2.4

Aesthetics

The study area does not have many unique characteristics or landmarks to give it a sense of place. Commercial streets generally lack adequate tree cover and landscaping. Residential areas are generally pleasant, often enhanced by trees and landscaping. Parkway strips are sometimes unplanted and poorly maintained, and blank walls and fencing mar the pedestrian environment.

Safety

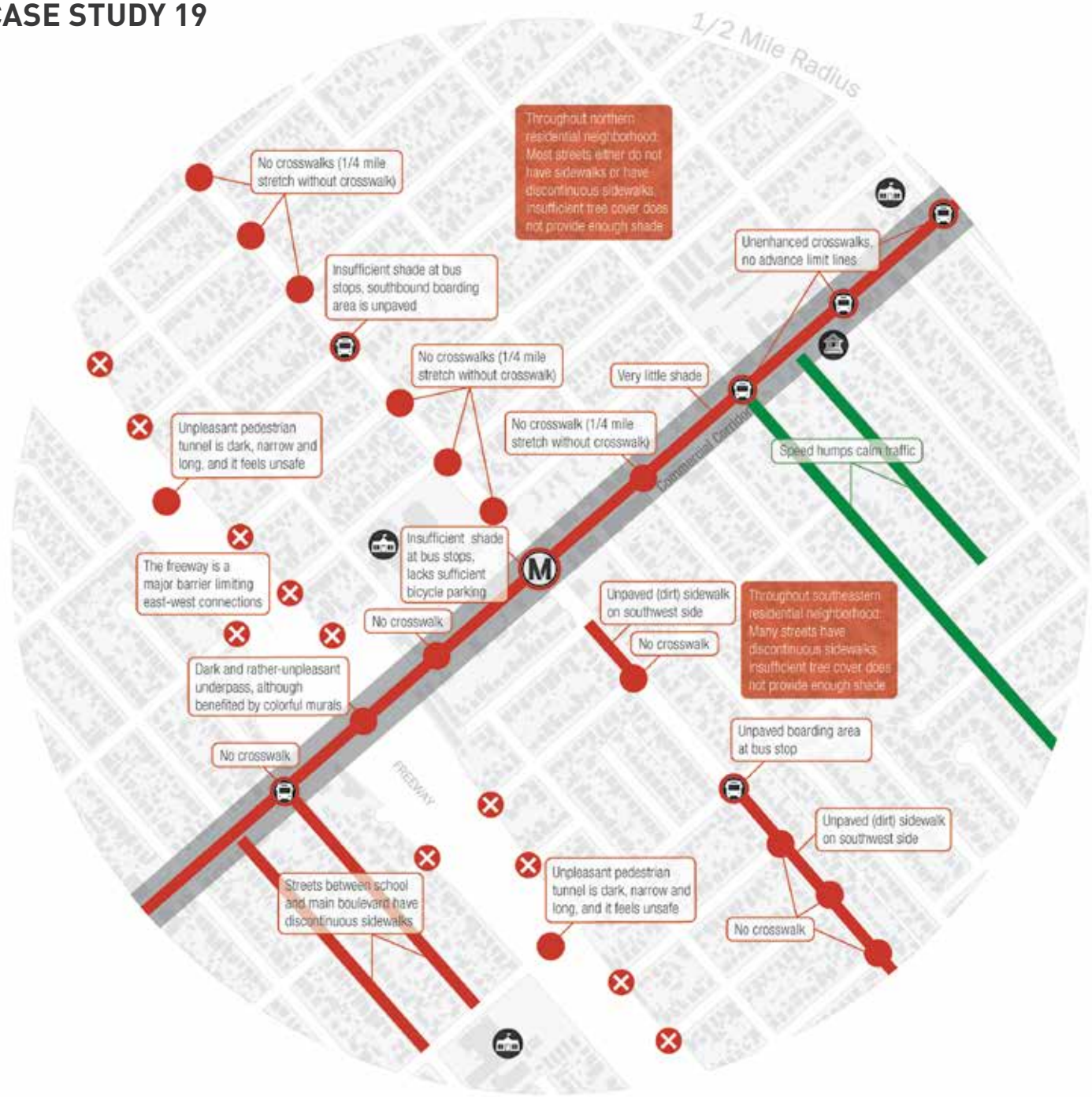
The public realm is relatively clean and well maintained. However, many street segments do not have sidewalks. The lack of bicycle facilities further lowers the safety score. A significant number of severe and fatal collisions in the study area involve pedestrians or bicyclists.

Accessibility

Sidewalks (where they exist) are generally in good condition. However, there are many locations without sidewalks or with discontinuous sidewalks. The freeway divides the study area, and east-west connectivity is limited to three locations for pedestrians to pass underneath. There is also a general lack of bicycle facilities. Although most people travel to work by driving or carpooling, about 4% utilize mass transit.

EXISTING CONDITIONS

CASE STUDY 19



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset

DRAFT

CRITICAL ACCESS BARRIERS

Unpleasant pedestrian undercrossings



Two pedestrian-only undercrossings provide valuable east-west connections for people walking and bicycling. Unfortunately, they are long, narrow, and dark, and they feel particularly unsafe at night. The freeway underpass on the main commercial corridor is also unpleasant (see description to the right).

Lack of (or discontinuous) sidewalks in residential areas



Many street segments in the residential neighborhoods lack paved sidewalks. The resulting pathway is usually dirt or trampled grass, creating a significant accessibility barrier for people with mobility impairments. Sometimes there is no sidewalk space at all, so people walk in the roadway.

Lack of bicycle facilities



There are few bicycle facilities in the study area. As a result, people bicycling often choose to ride on the sidewalk rather than the roadway.

Unenhanced crossings



Many crosswalks lack enhanced features such as continental striping and advance stop lines. Some crosswalks along the primary commercial corridor have decorative pavements that have faded and provide no enhanced visibility.

Lack of landscaping and shade



Many sections of the study area lack landscaping. Streets generally lack mature and consistent tree cover.

OTHER EXISTING CONDITIONS

Freeway underpass



The underpass along the primary commercial corridor is dark, lacks aesthetic improvements, and lacks a buffer between the sidewalk and the roadway.

Pedestrian amenities and street activity



The primary commercial corridor has some pedestrian-oriented amenities such as bus shelters and waste receptacles. Some informal vending and informational booths provide activity in the pedestrian realm.

Visual clutter from utility poles and power lines



In some locations, utility poles and power lines have a negative effect on the aesthetics of the streetscape.

Long street segments without crosswalks



Long street segments without crosswalks invite jay walking. In addition, several intersections across arterial streets are without crosswalks.

Traffic calming treatments



A few speed humps are located in the residential neighborhoods, but, overall, there are not a significant number of traffic calming treatments such as speed humps, curb extensions, speed feedback signs, etc.

PATHWAY NETWORK

CASE STUDY 19



LEGEND

Locations

- Transit Stop
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Bikeway (proposed)
- Extension to Regional Network
- Bicycle Services
- Key Recommendation (corridor)
- Key Recommendation (specific location)

KEY RECOMMENDATIONS

Freeway Underpass & Overpass Enhancements

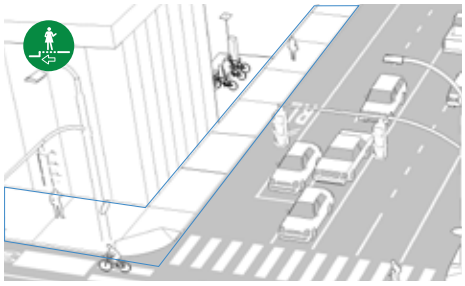
Residents might be more likely to travel to the station if the underpasses were safer, cleaner, better illuminated and visually engaging.





Sidewalk Addition or Widening

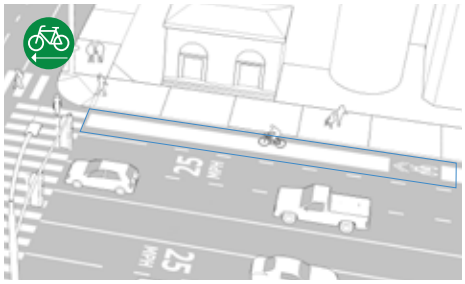
Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Enhanced Bicycle Facilities

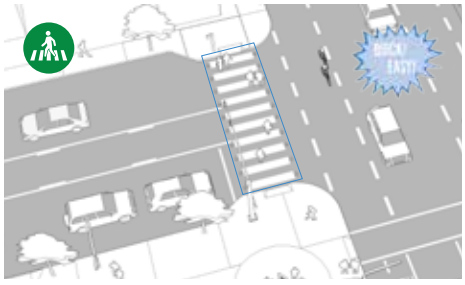
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Enhanced Pedestrian Crossings

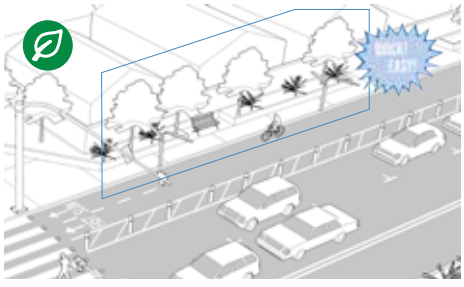
Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





Landscaping and Shade

Trees and landscaping improve aesthetics, provide pleasant and safe pathways, and offer an attractive buffer between the sidewalk and the roadway. Trees and shade structures provide refuge from the sun for people walking, resting, or waiting.



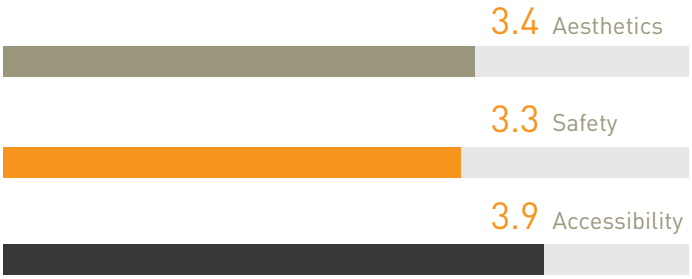


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CASE STUDY 20

METRO RAIL STATION (AT GRADE)

- Primarily residential land uses (single-family and low-density multifamily)
- Some neighborhood-serving retail along major streets, and some industrial uses adjacent to the rail line
- Freeway and rail line bisect the study area, which limits connectivity
- Highly-amenitized transit station with nearby park-and-ride parking structure for convenient transfers
- Limited bicycle facilities



3.5

Aesthetics

New streetscape projects around the transit station include landscaping and shade trees, as well as attractive and functional street furniture. However, some segments of the commercial streets do not have adequate landscaping or pedestrian amenities. Residential areas are attractive and well maintained, with plenty of trees and landscaping.

Safety

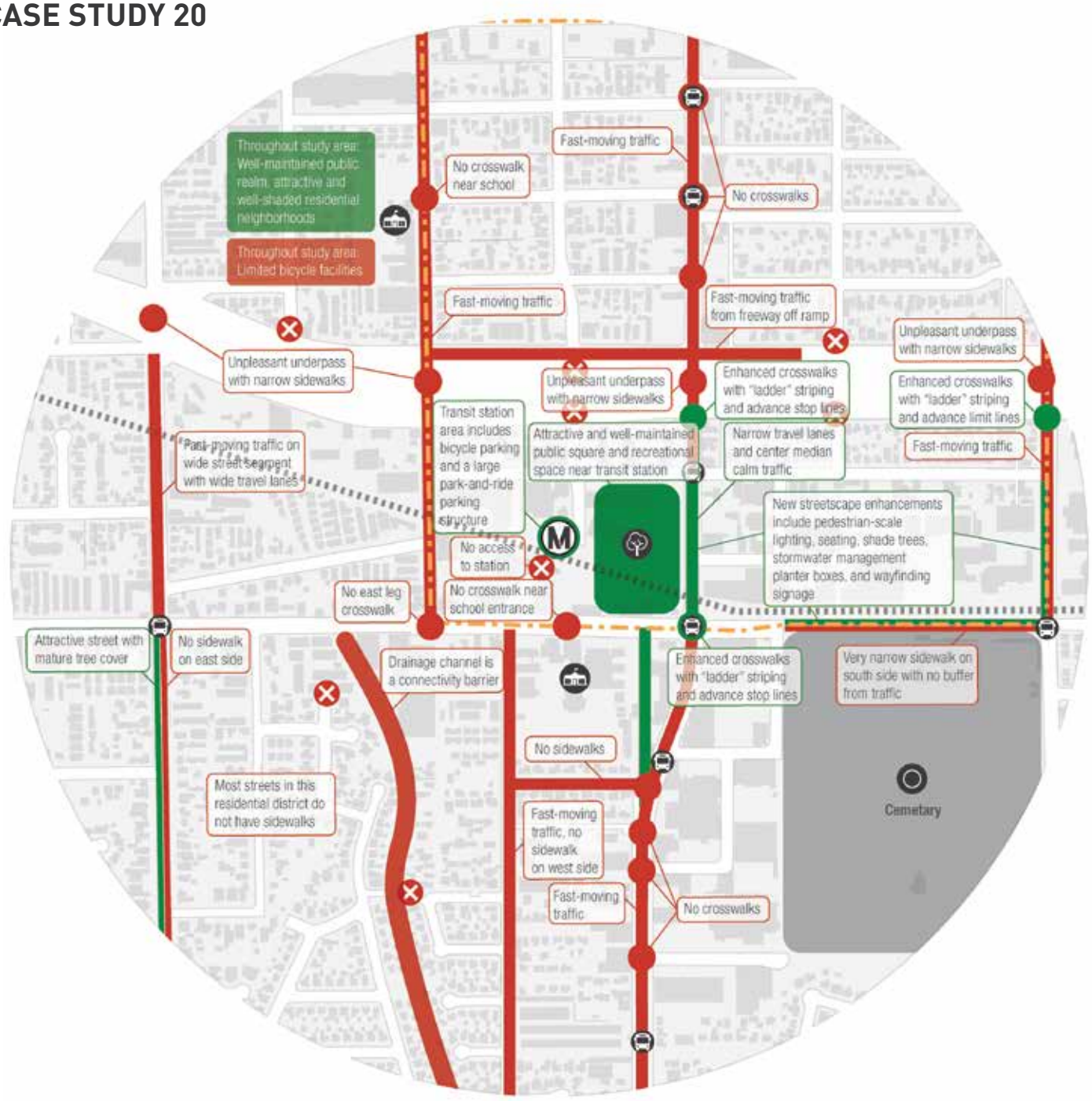
The public realm is generally clean and well maintained. Recent enhancements to pedestrian crossings around the station provide a safe environment for people walking. The relatively high level of human activity around the station contributes to a positive perception of safety. The limited number of bicycle facilities lowers the safety score. The number of reported collisions involving people walking or bicycling is low.

Accessibility

Transferring between bus and light rail is supported by an attractive bus waiting area (right near the station) with abundant seating and shelter. Vehicle parking and drop-off are also streamlined at the station. Sidewalks are in good condition and are equipped with curb ramps at intersections. However, some sidewalks are narrow, and many residential streets in the southern half of the study area do not have sidewalks. The freeway and rail line divide the study area, limiting north-south connectivity. There is also a general lack of bicycle facilities. Most people travel to work by driving alone, with about 8% using mass transit. (This data is reflective of transportation choices before the light rail station was operating.)

EXISTING CONDITIONS

CASE STUDY 20



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Existing Bus Stop

Access Barriers and Strengths

- Corridor Barrier
- Specific Barrier
- Connectivity Gap
- Corridor Asset
- Specific Asset
- Area Asset

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CRITICAL ACCESS BARRIERS

Unpleasant freeway underpasses



Freeway underpasses are dark, lack aesthetic improvements, and lack buffers between the sidewalk and the roadway.

Limited bicycle facilities



There are very few bicycle facilities in the study area. As a result, people bicycling often choose to ride on the sidewalk rather than the roadway.

Narrow sidewalks (and no sidewalks in some locations)



Sidewalks in the study area are generally narrow (on both commercial and residential streets). This image shows a very attractive streetscape environment, but the narrow right-of-way limits sidewalk width. Many street segments in the residential neighborhoods lack paved sidewalks.

Fast-moving traffic



Traffic speeds are high on some sections of commercial streets and there is fast-moving cut-through traffic on a couple residential streets.

Lack of crosswalks along some street segments



Some long street segments along commercial streets are without controlled intersections or pedestrian crosswalks.

OTHER EXISTING CONDITIONS

Wayfinding signage near station



Wayfinding signage is placed in strategic locations around the station area. However, no pedestrian-oriented signage is located elsewhere in the study area.

Pleasant, well-shaded residential neighborhoods



As part of the recent renovations to the transit station area, Metro has developed a small park that provides valuable open space and attractive places to sit.

Attractive pedestrian environment near the station



Near the station, attractively-planted bioswales and medians contribute to a pleasant street environment. In addition to landscaping, the area around the station includes pedestrian amenities such as seating, wayfinding signage, and pedestrian lighting.

Enhanced crossings



New crosswalks and curb ramps near the station improve accessibility and visibility.

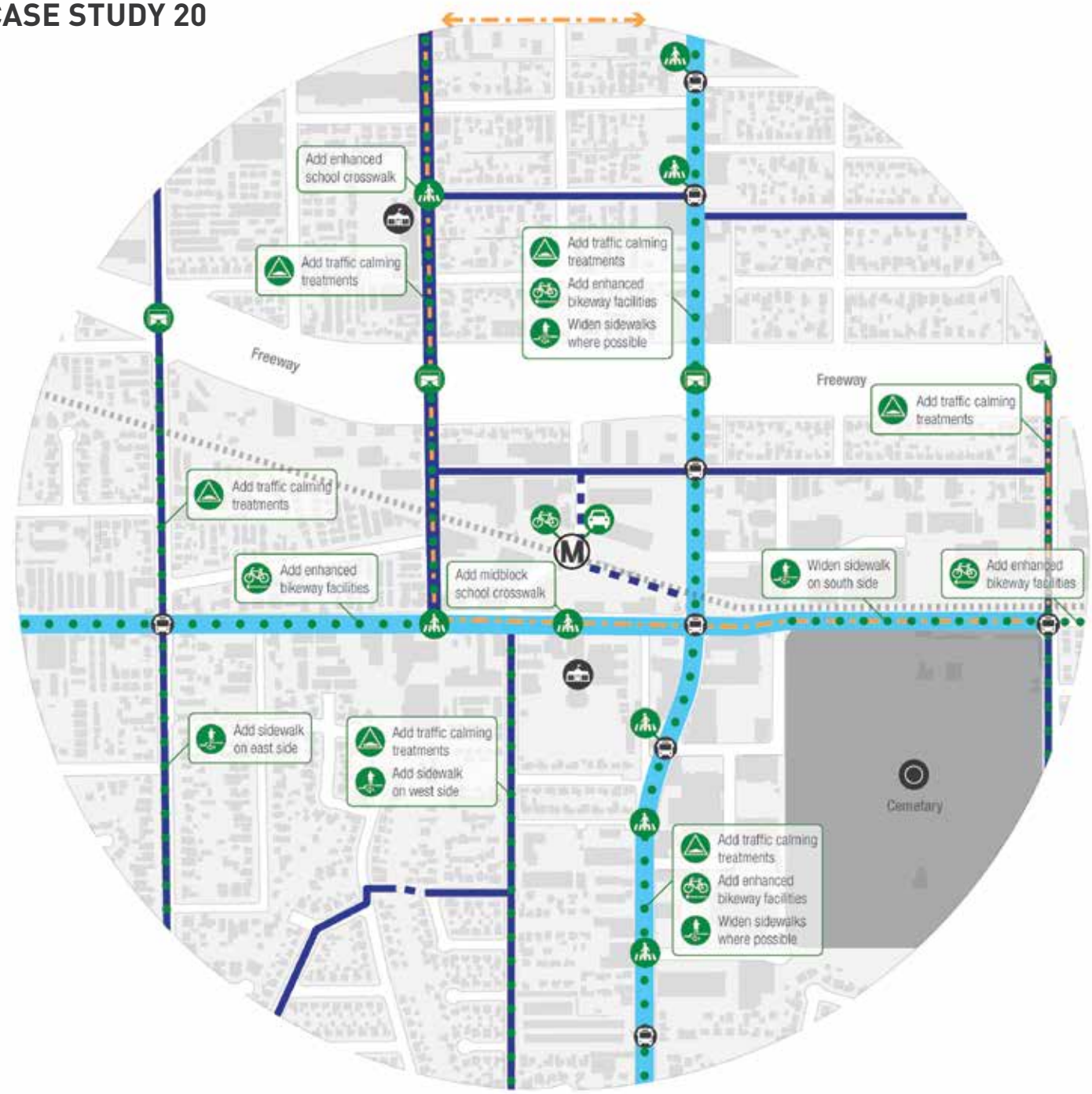
Some lack of landscaping and shade



Although the study area is generally well landscaped, some segments of the two primary commercial streets are lacking in landscaping and shade-providing trees.

PATHWAY NETWORK

CASE STUDY 20



LEGEND

Locations

- Metro Rail Station
- Key Destination
- Destination Area
- Bus Stop

Pathway Network

- Pathway Arterial
- Pathway Collector 1
- Pathway Collector 2
- Cut-Through
- Bikeway (existing)
- Extension to Regional Network
- Bicycle Services
- Car Share
- Key Recommendation (corridor)
- Key Recommendation (specific location)

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KEY RECOMMENDATIONS

Freeway Underpass & Overpass Enhancements

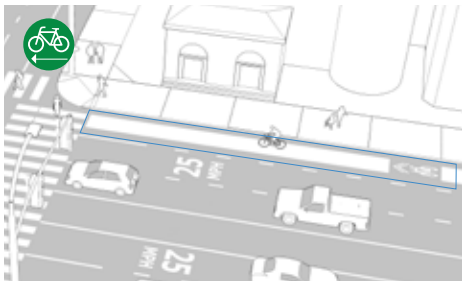
Residents might be more likely to travel to the station if the underpasses were safer, cleaner, better illuminated and visually engaging.





Enhanced Bicycle Facilities

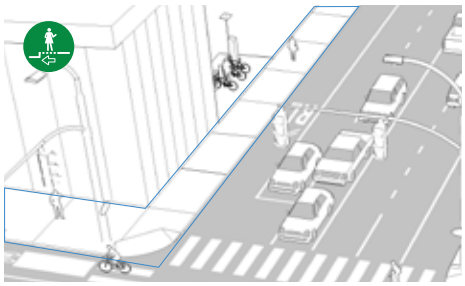
A variety of roadway and signalization improvements can improve safety and increase comfort for people bicycling. These include bicycle lanes physically separated from vehicular traffic, such as buffered lanes, cycle tracks, painted bicycle lanes, conflict zone markings at/approaching intersections, bicycle boxes, and bicycle-prioritized signalization.





Sidewalk Addition or Widening

Widening or adding sidewalks improves safety, comfort and convenience for people of all ages and abilities. Wider sidewalks create more room for streetscape elements that enhance comfort and convenience, such as street furniture, bus waiting areas, landscaping, and trees.





Traffic Calming

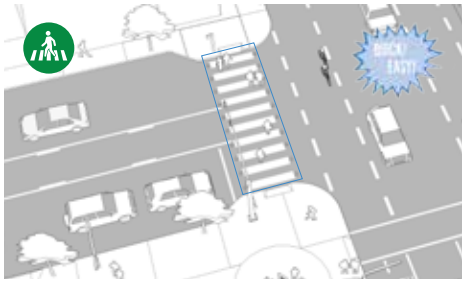
Traffic calming decreases speeds along streets with heavy, fast-moving traffic in order to increase safety and comfort for all users of the street. Traffic calming treatments include physical measures such as curb extensions to narrow the roadway, narrowed travel lanes to promote slower driving speeds, and diverters to limit vehicle cut-through traffic on neighborhood streets.





Enhanced Pedestrian Crossings

Enhancing existing crossings can help protect station users by increasing their visibility to motorists. Crossing times can be made longer and to occur more often. In addition to enhancing existing crosswalks, adding well-marked crosswalks at unsignalized intersections and at midblock locations can improve convenience and safety.





COST ESTIMATES

The following tables present the cost estimates for six of the 20 case studies. These estimates can help guide the costing of your own first-last mile project and inform its feasibility. The six case studies were chosen randomly, but represent a wide range of existing conditions.

CASE STUDY 3

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	1	$250,000
	1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	6	$90,000
	1.6	Pedestrian Scramble Phase	EA	$50,000	4	$200,000
	1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	2	$1,400
	1.10	Crosswalk (Striped Continental)	EA	$4,000	50	$200,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	6	$210,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	30	$7,500
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	164	$820,000
	1.14	Remove Existing Tree	EA	$900	2	$1,800
	1.15	Construct Sidewalk	SF	$10	15,200	$152,000
	1.16	Construct Curb and Gutter	LF	$24	500	$12,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
	1.18	Remove Sidewalk	SF	$3	2,000	$6,000
	1.19	Trees / Landscape	Block	$40,000	32	$1,280,000
	1.20	60 Day Maintenance	EA	$3,500	16	$56,000
	1.21	Street Lighting	EA	$3,000	108	$324,000
	1.22	Wayfinding Signs	EA	$900	40	$36,000
	1.23	Bus Shelter	EA	$12,000	12	$144,000
	1.24	Bench	EA	$1,600	40	$64,000
	1.25	Trash Receptacle	EA	$1,400	52	$72,800
		Pedestrian Subtotal				$4,130,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	22	$16,500
	2.3	Wayfinding Signs	EA	$900	48	$43,200
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	1.0	$890,000
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	1,860,000
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	8	$800,000
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1	$655,000
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	2.0	$34,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000

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CASE STUDY 3 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500	48	$120,000
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700	32	$22,400
	2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
		Bicycle Subtotal				$5,280,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	6,400	$96,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	20	$600,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
	3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
	3.5	Diverters	EA	$20,000	12	$240,000
	3.6	Chicanes	EA	$10,000	8	$80,000
	3.7	Bollards (Metal)	EA	$800	32	$25,600
	3.8	Stop Sign	EA	$300	6	$1,800
		Traffic Calming Subtotal				$1,310,000
		- Subtotal -				$10,720,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$1,070,000
		PROJECT SUBTOTAL (Items 1 to 4)				$11,790,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (20% Project Subtotal)				$2,350,000
	5.2	Utility Relocations (10% Project Subtotal)				$1,170,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$3,820,000
	5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$2,940,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$350,000
		Other Project Support Subtotal				$10,630,000
		PROJECT TOTAL (per square mile)				$22,400,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$10,000,000
BICYCLE GRAND TOTAL (per square mile)	$12,400,000

CASE STUDY 4

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	0	$0
	1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	2	$30,000
	1.6	Pedestrian Scramble Phase	EA	$50,000	9	$450,000
	1.7	Pedestrian (Countdown) Signal	EA	$900	256	$230,400
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	4	$2,800
	1.10	Crosswalk (Striped Continental)	EA	$4,000	88	$352,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	24	$6,000
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	188	$940,000
	1.14	Remove Existing Tree	EA	$900	2	$1,800
	1.15	Construct Sidewalk	SF	$10	5,200	$52,000
	1.16	Construct Curb and Gutter	LF	$24	500	$12,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
	1.18	Remove Sidewalk	SF	$3	1,000	$3,000
	1.19	Trees / Landscape	Block	$40,000	12	$480,000
	1.20	60 Day Maintenance	EA	$3,500	6	$21,000
	1.21	Street Lighting	EA	$3,000	27	$81,000
	1.22	Wayfinding Signs	EA	$900	32	$28,800
	1.23	Bus Shelter	EA	$12,000	15	$180,000
	1.24	Bench	EA	$1,600	40	$64,000
	1.25	Trash Receptacle	EA	$1,400	55	$77,000
		Pedestrian Subtotal				$3,240,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	24	$18,000
	2.3	Wayfinding Signs	EA	$900	48	$43,200
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	2	$1,780,000
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	$1,860,000
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	3	$300,000
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	4.0	$68,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000		$0

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CASE STUDY 4 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700	28	$19,600
	2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
	2.16	Bike Share Station	EA	$40,000	9	$360,000
		Bicycle Subtotal				$5,110,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	6,400	$96,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	16	$480,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	12	$300,000
	3.4	Speed Treatments (humps)	EA	$2,500	18	$45,000
	3.5	Diverters	EA	$20,000	16	$320,000
	3.6	Chicanes	EA	$10,000	32	$0
	3.7	Bollards (Metal)	EA	$800	6	$25,600
	3.8	Stop Sign	EA	$300	8	$1,800
		Traffic Calming Subtotal				$1,270,000
		- Subtotal -				$9,620,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$960,000
		PROJECT SUBTOTAL (Items 1 to 4)				$10,580,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (20% Project Subtotal)				$2,110,000
	5.2	Utility Relocations (10% Project Subtotal)				$1,050,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$3,430,000
	5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$2,640,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$310,000
		Other Project Support Subtotal				$9,540,000
		PROJECT TOTAL (per square mile)				$20,100,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$7,600,000
BICYCLE GRAND TOTAL (per square mile)	$12,500,000

CASE STUDY 6

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	1	$250,000
	1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	4	$60,000
	1.6	Pedestrian Scramble Phase	EA	$50,000	2	$100,000
	1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	6	$8,400
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700		$0
	1.10	Crosswalk (Striped Continental)	EA	$4,000	52	$208,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	22	$5,500
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	185	$926,400
	1.14	Remove Existing Tree	EA	$900	8	$7,200
	1.15	Construct Sidewalk	SF	$10	48,600	486,000
	1.16	Construct Curb and Gutter	LF	$24	1,000	$24,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	1,000	$16,000
	1.18	Remove Sidewalk	SF	$3	5,000	$15,000
	1.19	Trees / Landscape	Block	$40,000	6	$240,000
	1.20	60 Day Maintenance	EA	$3,500	3	$10,500
	1.21	Street Lighting	EA	$3,000	74	$222,000
	1.22	Wayfinding Signs	EA	$900	64	$57,600
	1.23	Bus Shelter	EA	$12,000	26	$312,000
	1.24	Bench	EA	$1,600	20	$32,000
	1.25	Trash Receptacle	EA	$1,400	46	$64,400
		Pedestrian Subtotal				$3,380,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	64	$32,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	16	$12,000
	2.3	Wayfinding Signs	EA	$900	48	$43,200
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	1	$890,000
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	$1,860,000
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	1	$100,000
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1	$655,000
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	2	$112,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	9.0	$153,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000		$0

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CASE STUDY 6 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700	36	$25,200
	2.15	Bicycle and Pedestrian Bridge	SF	$250	35,700	$8,925,000
		Bicycle Subtotal				$13,290,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	6,400	$96,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	8	$240,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	16	$400,000
	3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
	3.5	Diverters	EA	$20,000	2	$40,000
	3.6	Chicanes	EA	$10,000		$0
	3.7	Bollards (Metal)	EA	$800	32	$25,600
	3.8	Stop Sign	EA	$300	8	$2,400
		Traffic Calming Subtotal				$870,000
		- Subtotal -				$17,540,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$1,750,000
		PROJECT SUBTOTAL (Items 1 to 4)				$19,290,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (20% Project Subtotal)				$3,850,000
	5.2	Utility Relocations (10% Project Subtotal)				$1,920,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$6,260,000
	5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$4,820,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$570,000
		Other Project Support Subtotal				$17,420,000
		PROJECT TOTAL (per square mile)				$36,700,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$7,700,000
BICYCLE GRAND TOTAL (per square mile)	$29,000,000

CASE STUDY 8

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	1	$250,000
	1.4	Signal Modification (protected lefts)	EA	$40,000	4	$160,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	4	$160,000
	1.6	Pedestrian Scramble Phase	EA	$50,000	2	$100,000
	1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	2	$1,400
	1.10	Crosswalk (Striped Continental)	EA	$4,000	28	$112,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	22	$5,500
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	88	$440,000
	1.14	Remove Existing Tree	EA	$900	2	$1,800
	1.15	Construct Sidewalk	SF	$10	11,600	$116,000
	1.16	Construct Curb and Gutter	LF	$24	500	$12,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
	1.18	Remove Sidewalk	SF	$3	1,000	$3,000
	1.19	Trees / Landscape	Block	$40,000	17	$680,000
	1.20	60 Day Maintenance	EA	$3,500	9	$29,750
	1.21	Street Lighting	EA	$3,000	92	$276,000
	1.22	Wayfinding Signs	EA	$900	40	$36,000
	1.23	Bus Shelter	EA	$12,000	16	$192,000
	1.24	Bench	EA	$1,600	30	$48,000
	1.25	Trash Receptacle	EA	$1,400	46	$64,400
		Pedestrian Subtotal				$2,950,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	16	$12,000
	2.3	Wayfinding Signs	EA	$900	56	$50,400
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000		$0
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000		$0
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	12.0	$204,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000

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CASE STUDY 8 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700	8	$5,600
	2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
		Bicycle Subtotal				$1,190,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	6,400	$96,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	18	$540,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
	3.4	Speed Treatments (humps)	EA	$2,500	18	$45,000
	3.5	Diverters	EA	$20,000	4	$80,000
	3.6	Chicanes	EA	$10,000	2	$20,000
	3.7	Bollards (Metal)	EA	$800	32	$25,600
	3.8	Stop Sign	EA	$300	6	$1,800
		Traffic Calming Subtotal				$1,010,000
		- Subtotal -				$5,150,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$510,000
		PROJECT SUBTOTAL (Items 1 to 4)				$5,660,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (20% Project Subtotal)				$1,130,000
	5.2	Utility Relocations (10% Project Subtotal)				$560,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$1,830,000
	5.4	Planning/Design/Environmental/CM (20% Project Subtotal)				$1,410,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$160,000
		Other Project Support Subtotal				$5,090,000
		PROJECT TOTAL (per square mile)				$10,800,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$7,400,000
BICYCLE GRAND TOTAL (per square mile)	$3,400,000

CASE STUDY 16

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	1	$250,000
	1.4	Signal Modification (protected lefts)	EA	$40,000	4	$160,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000		$0
	1.6	Pedestrian Scramble Phase	EA	$50,000		$0
	1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	4	$5,600
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	44	$0
	1.10	Crosswalk (Striped Continental)	EA	$4,000	3	$176,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	12	$105,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	138	$3,000
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	8	$690,800
	1.14	Remove Existing Tree	EA	$900	100,200	$7,200
	1.15	Construct Sidewalk	SF	$10	7,000	$1,002,000
	1.16	Construct Curb and Gutter	LF	$24	7,000	$168,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	10,000	$112,000
	1.18	Remove Sidewalk	SF	$3	8	$30,000
	1.19	Trees / Landscape	Block	$40,000	4	$320,000
	1.20	60 Day Maintenance	EA	$3,500	86	$14,000
	1.21	Street Lighting	EA	$3,000	64	$258,000
	1.22	Wayfinding Signs	EA	$900	16	$57,600
	1.23	Bus Shelter	EA	$12,000	8	$192,000
	1.24	Bench	EA	$1,600	24	$12,800
	1.25	Trash Receptacle	EA	$1,400	46	$33,600
		Pedestrian Subtotal				$3,710,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	64	$32,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	4	$3,000
	2.3	Wayfinding Signs	EA	$900	32	$28,800
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	2	$1,780,000
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000		$0
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	2	$112,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	4	$68,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000

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CASE STUDY 16 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700	32	$22,400
	2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
		Bicycle Subtotal				$2,780,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	12,800	$192,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	4	$120,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
	3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
	3.5	Diverters	EA	$20,000	2	$40,000
	3.6	Chicanes	EA	$10,000		$0
	3.7	Bollards (Metal)	EA	$800	88	$70,400
	3.8	Stop Sign	EA	$300	6	$1,800
		Traffic Calming Subtotal				$690,000
		- Subtotal -				$7,180,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$710,000
		PROJECT SUBTOTAL (Items 1 to 4)				$7,890,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (20% Project Subtotal)				$1,570,000
	5.2	Utility Relocations (10% Project Subtotal)				$780,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$2,560,000
	5.4	Planning/Design/Environmental/CM (20% Project Subtotal)				$1,570,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$230,000
		Other Project Support Subtotal				$6,710,000
		PROJECT TOTAL (per square mile)				$14,600,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$8,200,000
BICYCLE GRAND TOTAL (per square mile)	$6,500,000

CASE STUDY 18

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
PEDESTRIAN	1.1	New Traffic Signal - Single Post	EA	$6,000		$0
	1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
	1.3	New Traffic Signal	EA	$250,000	8	$2,000,000
	1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
	1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	4	$60,000
	1.6	Pedestrian Scramble Phase	EA	$50,000	8	$0
	1.7	Pedestrian (Countdown) Signal	EA	$900	2	$7,200
	1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	56	$2,800
	1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	6	$0
	1.10	Crosswalk (Striped Continental)	EA	$4,000	26	$224,000
	1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	268	$210,000
	1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	449,960	$6,500
	1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	21,000	$1,340,000
	1.14	Remove Existing Tree	EA	$900	4,200	$0
	1.15	Construct Sidewalk	SF	$10	9,000	$4,499,600
	1.16	Construct Curb and Gutter	LF	$24	72	$504,000
	1.17	Remove Concrete Curb and Gutter	LF	$16	36	$67,200
	1.18	Remove Sidewalk	SF	$3	354	$27,000
	1.19	Trees / Landscape	Block	$40,000	72	$2,880,000
	1.20	60 Day Maintenance	EA	$3,500	56	$126,000
	1.21	Street Lighting	EA	$3,000	40	$1,062,000
	1.22	Wayfinding Signs	EA	$900	76	$64,800
	1.23	Bus Shelter	EA	$12,000	26	$672,000
	1.24	Bench	EA	$1,600	20	$64,000
	1.25	Trash Receptacle	EA	$1,400	46	$106,400
		Pedestrian Subtotal				$14,000,000
BICYCLE	2.1	Bicycle Parking (Inverted-U rack)	EA	$500	20	$10,000
	2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	10	$7,500
	2.3	Wayfinding Signs	EA	$900	56	$50,400
	2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000	1	$1,710,000
	2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	3.0	$2,670,000
	2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
	2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	2	$150,000
	2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1.5	$982,500
	2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	1.0	$56,000
	2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	3.0	$51,000
	2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	1	$25,000
	2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	8	$2,000,000

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CASE STUDY 18 (CONTINUED)

	Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
BICYCLE	2.13	Bicycle Loop Detection	EA	$2,500		$0
	2.14	Bicycle Push Button (attach to exist pole)	EA	$700		$0
	2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
		Bicycle Subtotal				$7,710,000
TRAFFIC CALMING	3.1	Median Refuge Islands	SF	$15	3,200	$48,000
	3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	20	$600,000
	3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
	3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
	3.5	Diverters	EA	$20,000	12	$240,000
	3.6	Chicanes	EA	$10,000	12	$120,000
	3.7	Bollards (Metal)	EA	$800	16	$12,800
	3.8	Stop Sign	EA	$300	8	$2,400
	3.9	Construct street segment	LF	$190	2,900	$551,000
		Traffic Calming Subtotal				$1,290,000
		- Subtotal -				$23,000,000
MOBILI-ZATION	4.1	Mobilization (10% Items 1 to 3)				$2,300,000
		PROJECT SUBTOTAL (Items 1 to 4)				$25,300,000
OTHER PROJECT SUPPORT	5.1	R/W Allowance (10% Project Subtotal)				$2,530,000
	5.2	Utility Relocations (10% Project Subtotal)				$2,530,000
	5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$7,590,000
	5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$6,320,000
	5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$750,000
		Other Project Support Subtotal				$19,720,000
		PROJECT TOTAL (per square mile)				$45,000,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

PEDESTRIAN GRAND TOTAL (per square mile)	$28,900,000
BICYCLE GRAND TOTAL (per square mile)	$16,100,000

Active Transportation Strategic Plan

Volume III: Appendices
February 2016



Metro

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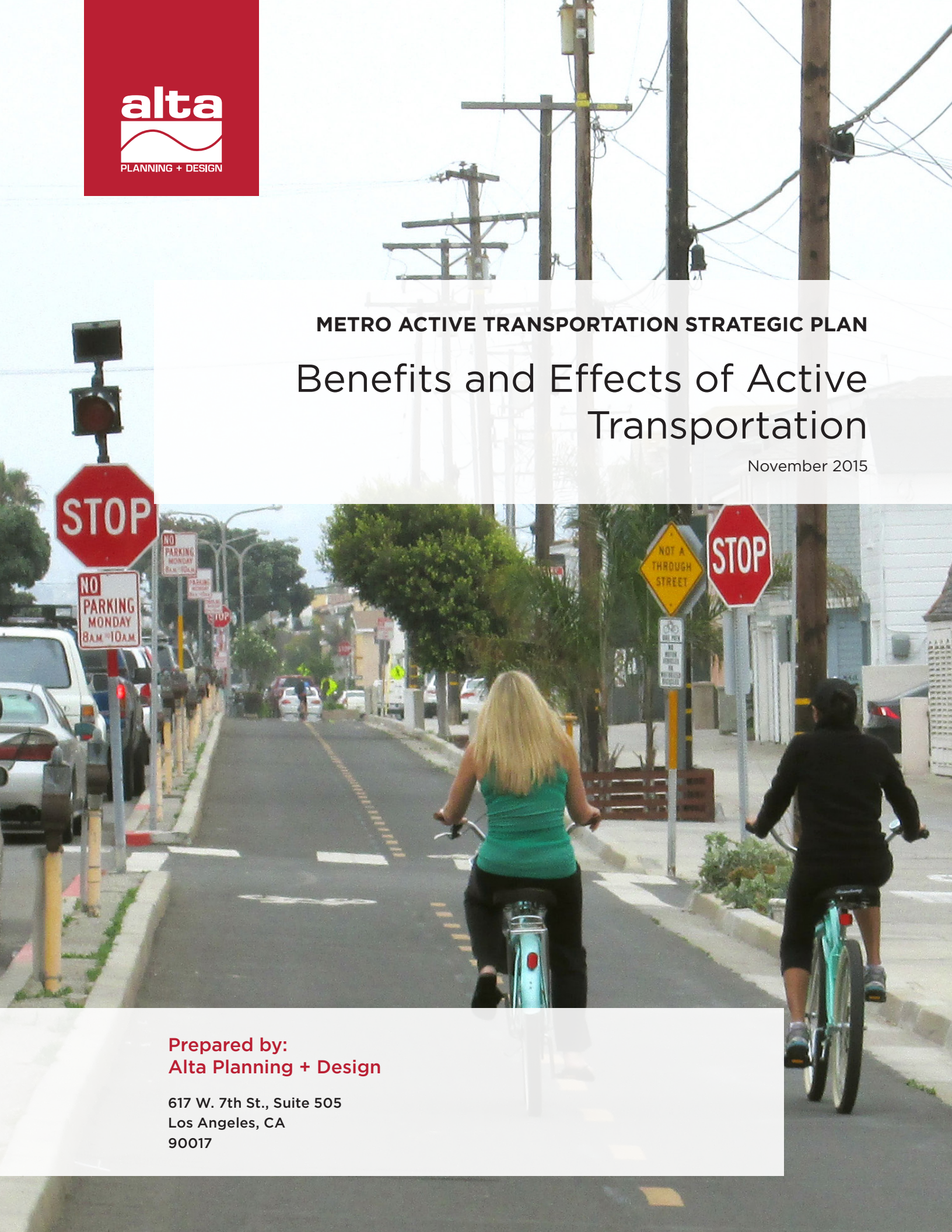
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APPENDIX

A BENEFITS AND EFFECTS OF ACTIVE TRANSPORTATION

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alta
PLANNING + DESIGN



METRO ACTIVE TRANSPORTATION STRATEGIC PLAN

Benefits and Effects of Active Transportation

November 2015

Prepared by:
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BENEFITS AND EFFECTS OF ACTIVE TRANSPORTATION

In 2012, at the grand opening of downtown Chicago's newest protected bicycle lane, Chicago Mayor Rahm Emanuel declared, "I expect not only to take all of [Seattle and Portland's] bikers, but I also want all the jobs that come with this, all the economic growth that comes with this, all the opportunities of the future that come with this" (Furcoloro, 2012). Mayor Emanuel's comments echo a sentiment that is increasingly apparent in America's large cities: that investment in active transportation provides a host of benefits beyond mobility. The benefits described in this report—related to mobility, economy, health, safety and environment—can be understood from a variety of angles. They affect individual residents, businesses, and the county as a whole. This summary of active transportation benefits outlines the potential return on investment for increasing active and multi-modal transportation options in Los Angeles County.

If you build it, they will come...

The provision of active transportation infrastructure is intimately linked to the use of that infrastructure. For example, at the beginning of the Transportation Equity Act for the 21st Century (TEA21) era in 1999, federal funding for active transportation increased to $360 million per year from $5 million per year. Beginning in 2006 (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) era), active transportation investment increased to almost $1 billion per year. In response to these investments, the number of people who ride bicycles to work in the United States has increased by 60 percent in the last ten years alone (USDOC, 2014a).

National trends in active transportation investment and uptake are mirrored in Los Angeles County, where bicycle commute trips have increased 81 percent since 2006 (USDOC, 2014a). In Long Beach, a 33 percent increase in people riding bicycles and a 15 percent increase in people walking occurred on Broadway and Third Streets one year after the implementation of protected bicycle lanes (KOA Corporation, 2013). In Eagle Rock, bicycle lanes were constructed on York Boulevard in 2010, contributing to a 140 percent increase in the number of people riding bicycles between 2009 and 2011 (City of Los Angeles, 2013a). In Santa Monica, the construction of 45 new lane-miles of bikeways between 2011 and 2013 accommodated a 71 percent increase in people riding bicycles to work (City of Santa Monica, 2014). Simply put, more people choose to walk and ride their bicycles when infrastructure investment enables them to do so safely and easily.



FROM 2006-2014
bicycle commute trips in Los Angeles County increased by



81%

(USDOC, 2014a)

Increased investment in active transportation infrastructure over the past ten years has led to an increase in bicycle commuting trips.

01 Mobility Benefits

Active transportation (i.e. transportation via walking, bicycling or rolling) provides benefits to all citizens. Many Americans have realized the benefits of walking and bicycling, and a majority (53 percent) now say that they would like to bicycle more than they currently do (People For Bikes, 2015). They are bringing to light a powerful latent demand for healthy and economical travel options.

Active transportation investment enables better connectivity between modes – particularly for transit. Many people who could potentially take transit choose not to when transit stops are not conveniently located at their starting points and final destinations.

These situations require "first and last mile" connections, and walking and bicycling are particularly well-suited to these relatively short, transit-linked trips. Enabling people to walk or ride a bicycle to or from transit expands the menu of transportation choices and may make transit a more attractive option than driving for certain trips. It creates a seamless travel experience that may not be practical using transit alone, particularly in areas of Los Angeles County with fewer or less frequent transit routes. In this way, active transportation improvements that link to transit expand the effective reach of the transit network and add value to Metro's ongoing capital investments around the county.



Riding a bicycle not only saves money - it saves time.

When the direct and indirect costs of transportation - such as the hours spent earning money to purchase and operate a motor vehicle - are accounted for, riding a bicycle is effectively "faster" than driving a car. In Los Angeles, people riding bicycles only need to travel at 8 miles per hour to achieve higher effective speeds than the average motor vehicle.

(Tranter, 2012)



Bicycles have higher effective speeds than cars in urban environments (Tranter, 2012) and can link areas where transit service is lacking.



The first-last mile barrier to transit use can be bridged by providing walking and bicycling facilities that link to transit stops and stations.

Improving active transportation connections to and from transit stops and stations enhances the transit system by making it more connected to residents, workplaces and other destinations. This increases mobility options, as locations that were previously only accessible by motor vehicle may be reached by transit, active transportation or a combination of both. This offers residents the flexibility to choose the transportation mode that best fits their trip purpose.

Evidence suggests that walking and bicycling investment - unlike highway investment - supports transit, rather than competing with it. Metro conducted a 2011 study to "identify the potential benefits of constructing the Metro Orange Line," a 14-mile-long Bus Rapid Transit route that extends from the terminus of the Metro Red Line in North Hollywood to Warner Center in Woodland Hills. The line was intended to serve as "an integrated transportation system where transit, bicycle, and pedestrian travel modes are included." (Metro, 2011). A bikeway was constructed along with the busway and, since then, the Metro Orange Line has experienced increased transit ridership. The bicycle facility has also seen increased use and has assisted in bringing new public transit riders to the Orange Line stations.

Among Metro Orange Line park-and-ride respondents:



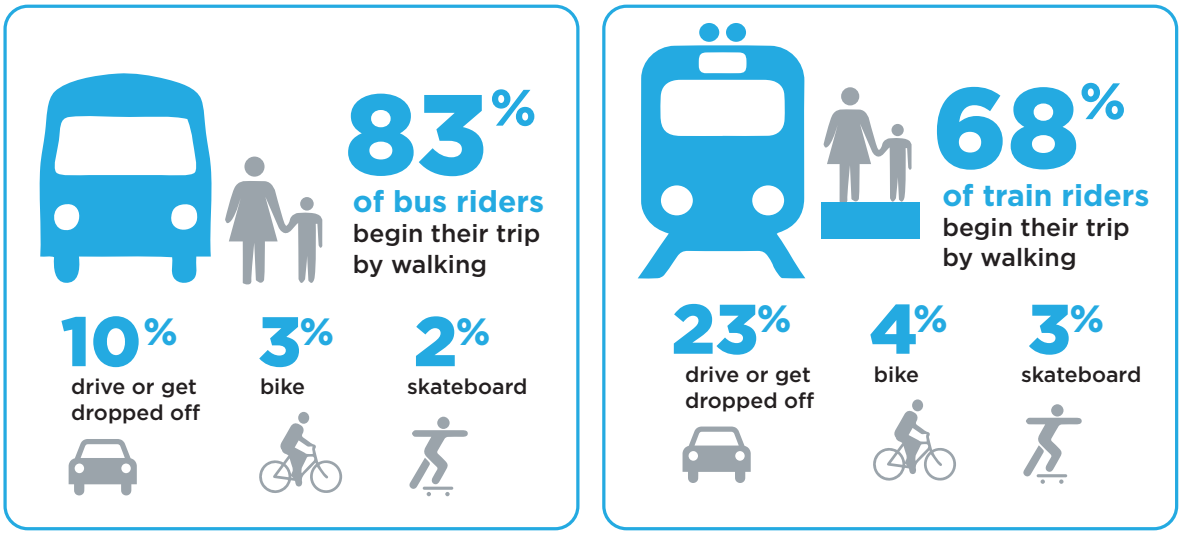
19% say the bike path has influenced their use of a bicycle for transportation

24% have considered walking or bicycling to the station

39% reported using the path at some point

(Metro, 2011)

The Spring 2015 Metro Customer Survey found that:



(Metro, 2015)

Metro's 2015 Customer Survey revealed that Orange Line bicycle facilities have influenced people who typically drive to Orange Line Stations, with 39 percent of park-and-ride users reporting using the path.

(Metro, 2015)

Parking Benefits

With the high rate of car ownership in Los Angeles County, there is a perceived scarcity of parking spaces. An increase in people walking and bicycling offsets motor vehicle trips, reducing demand for motor vehicle parking. This can potentially increase parking space availability and reduce cost for both users (lower prices) and developers (fewer parking spaces needed in new buildings).

Active transportation investment is being used to mitigate the parking impacts of population growth in cities across California. In 2010, Santa Monica approved a resolution intended to reduce the transportation impacts of new developments in the city. The resolution outlines a Transportation Impact Fee (TIF) that requires developers to offset traffic impacts by contributing to alternative transportation options, such as public transit, bicycling, ridesharing and walking (City of Santa Monica, 2010).

In the City of Los Angeles, a Bicycle Parking Ordinance has been in effect since 2013 which requires both short and long term bicycle parking for new buildings and additions of at least 50,000 square feet (City of Los Angeles, 2013b). Along with requiring bicycle parking, shower and locker facilities are also required for all non-residential bicycle parking spaces. A further incentive included in the ordinance is the ability for building owners to replace up to 20 percent of required motor vehicle parking with bicycle parking, at a rate of four bicycles spaces for each vehicle space. Sonny Astani, a developer in Los Angeles, was able to save more than $3 million dollars by cutting 110 of the legally required vehicular spaces and replacing these spaces with bicycle parking (Lee, 2013).

18% & 35%

OF BUS RIDERS **OF TRAIN RIDERS**

CHOOSE TRANSIT DESPITE OWNING A VEHICLE

(Metro, 2015)



On-street bicycle corrals can secure 12 or more bicycles within a typical curbside parking space.

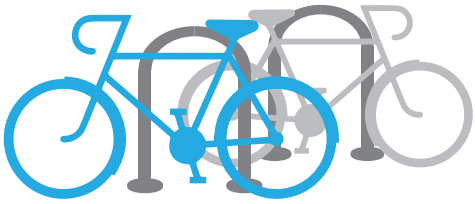
The overall cost of providing parking spaces in the United States (including the cost of maintenance) was $127 billion in 2002 ($168 billion in 2015 dollars). The typical cost of a structured parking space ranges from $15,000 to $30,000 (USDOE, 2013). Nonetheless, 99 percent of car trips in the US end up in a free parking spot (Shoup, 2011). Bicycle parking is more efficient than vehicle parking in terms of both space and cost. Up to ten bicycles can fit in a parking space originally designed for a motor vehicle, and the cost per vehicle is 200 to 300 times lower as shown by the graphic below.

Improving active transportation connections to and from parking lots expands the range of destinations served by existing parking spaces. “Park once” trips—park in one place and then make stops on foot rather than driving—are more practical when destinations are connected with safe walking and cycling facilities. This not only reduces vehicle trips but also the amount of parking spaces required.

Without safe, convenient and visible bicycle parking, many potential cyclists may not be able to ride.

Bicycle parking is a cost-effective investment due to its low cost relative to automobile parking. Assuming that new bicycle parking will be highly utilized, converting vehicle parking to bicycle parking is a cheap, easy and effective way to relieve parking capacity issues. High utilization of bicycle parking occurs when the full suite of bicycle infrastructure - such as bikeways, end-of-trip facilities and supporting programs and policies - are in place.

The average estimated cost of parking per space is:





$75-$110 PER BIKE*

*in short-term bike racks

(NCHRP, 2006; expressed in 2013 dollars)

vs.

$15K-30K PER CAR*

*in a parking garage structure

(USDOE, 2013)

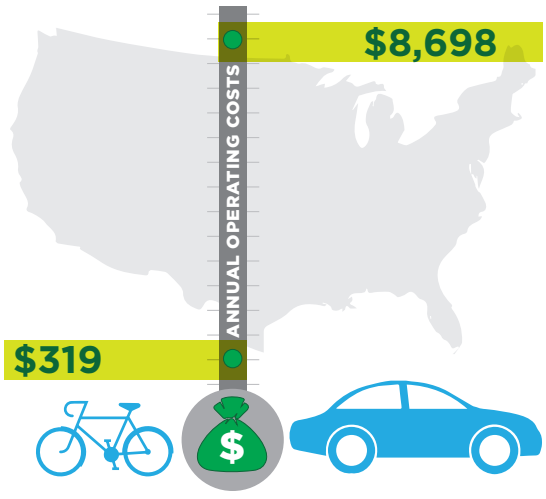
02 Economic Benefits

Affordability

Active transportation is the most affordable means of transportation available to Los Angeles County residents. Even with fluctuating fuel prices, households still devote high percentages of their total budget to transportation costs. Replacing vehicle trips with bicycling offers immediate financial benefit for households.

Moderate-income residents in the Los Angeles metropolitan area spend 27 percent of their income, on average, on transportation costs. In comparison to the other top 5 populated metro areas in the United States, Los Angeles falls in the middle, with New York and Chicago spending less and Dallas and Houston spending more (Center For Housing Policy & CNT, 2012).

Metro Vancouver, Canada has been uniquely successful at improving conditions for people walking, riding bicycles and taking transit. The region achieved a 16.5 percent decline in total vehicle miles traveled (VMT) between 2007 and 2014, and an even larger per-capita VMT reduction of 26 percent, accounting for rapid population growth (Litman, 2015). As a result, "Vancouver region households devote just 12.4 percent of their household budgets to transportation, the least of any North American city for which data are available, and 3.4 percentage points less than the average of other cities. This provides $2,623 average annual savings per household (Litman, 2015). Reductions in travel costs enable residents to save money and invest these additional funds in income-generating investments, rather than spending money on gasoline and maintenance.



(Mohn 2012, expressed in 2015 dollars; AAA Newsroom, 2015)

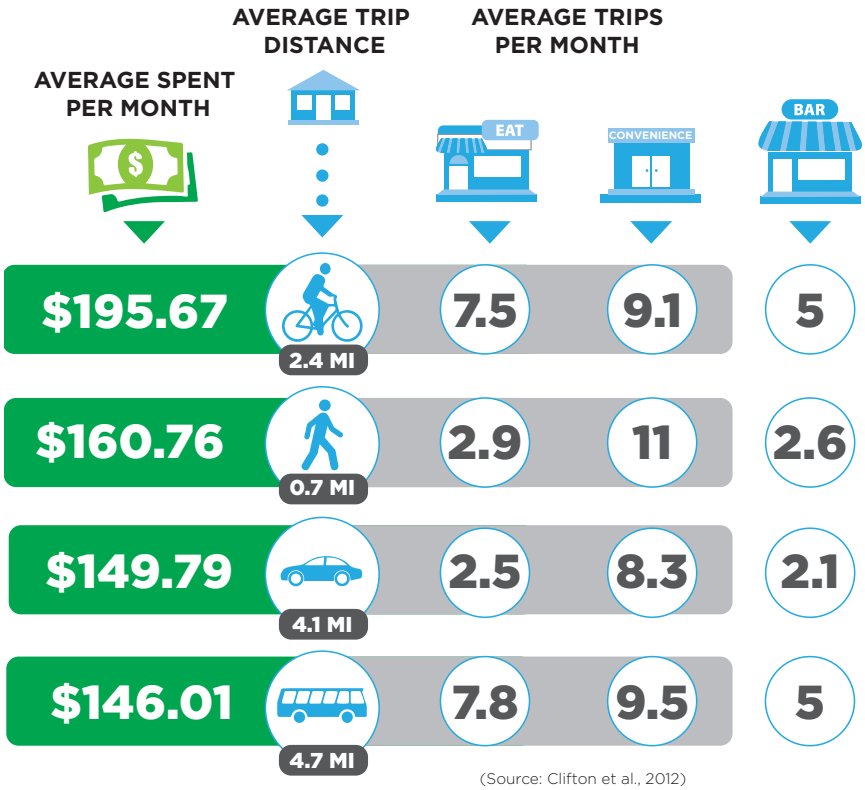
The annual operating costs for owning a vehicle as opposed to a bicycle are significantly higher.

Local Economic Impacts

At first glance, it may seem that people who walk and bicycle to reach local businesses spend less money compared to those driving a car. Yet people who arrive by walking and bicycling actually spend more.

A Portland State University research team conducted a study (Clifton et al., 2012) that surveyed 1,884 people as they left convenience stores, restaurants, and bars at 78 establishments in the Portland metropolitan area. The results showed that, per trip, people who drove outspent people walking, bicycling and taking transit. However, over time, people walking and riding bicycles spent more than people driving because they made more frequent trips. People taking transit also made more regular shopping trips than people driving and spent about the same amount per month (**see graphic on next page**). "It's not just a phenomenon born of the need to carry things," Clifton says, "A community that invests in walking and bicycling facilitates interaction between patrons and businesses, which, as a result, creates more regular customers."

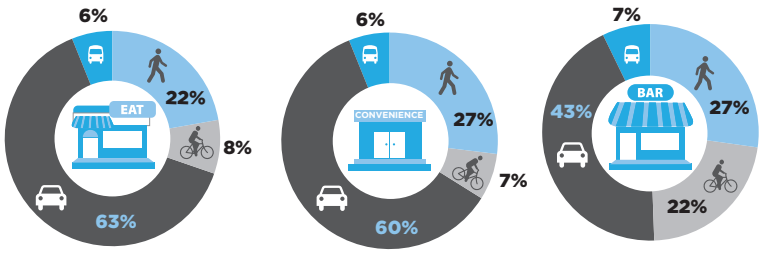
Nice Ride Minnesota is a bicycle sharing program that offers short-term bicycle rentals and subscriptions at 146 stations in Minneapolis and St. Paul. Researchers from the University of Minnesota conducted a survey near Nice Ride bicycle sharing stations in commercial areas and found that Nice Ride users spend $1.29 per week more than non-users. The researchers then extrapolated this amount to all bicycle share subscribers in the Twin Cities and estimated that the



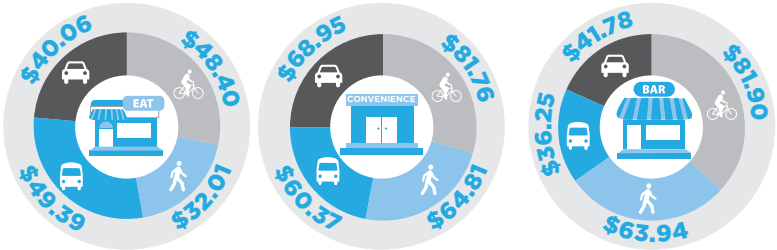
(Source: Clifton et al., 2012)

According to a Portland-based study, people who walk make more trips to convenience stores than all other modes of transportation, while people who ride transit and bicycles make the most trips to restaurants and bars.

AVERAGE PERCENT OF MODE SHARES BY ESTABLISHMENT TYPE



AVERAGE AMOUNT SPENT PER MONTH BY MODE AND ESTABLISHMENT TYPE

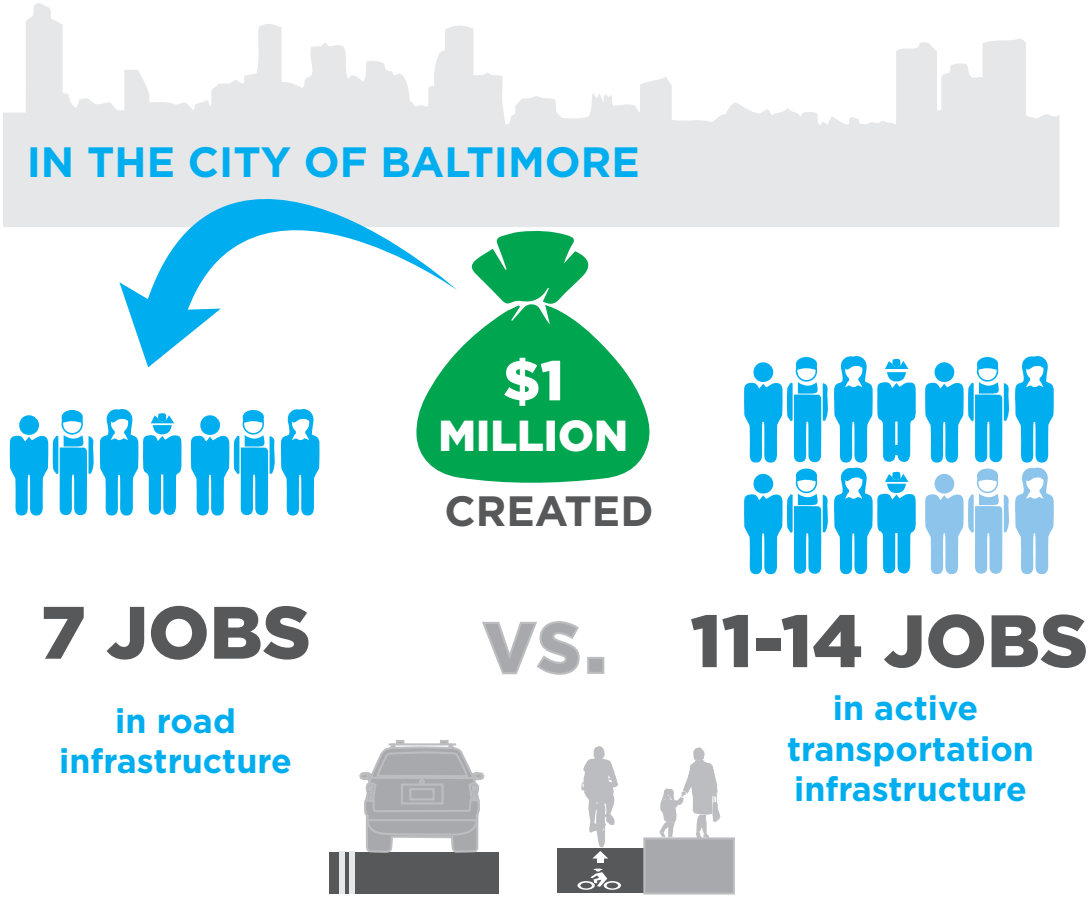


(Source: Clifton et al., 2012)

The survey found that people who ride transit spend more overall at restaurants than all other modes of transportation, while people who ride bicycles spend the most at convenience stores and bars.

system generates an additional $150,000 in retail spending during the bicycling season (Schoner, 2012).

Active transportation infrastructure thus has a direct economic impact on local economies through increased retail activity (sales and rentals) and tax revenues. It can also lead to direct job creation resulting from the design and construction of non-motorized infrastructure. In the City of Baltimore, every $1 million spent on bicycle and pedestrian infrastructure projects created 11 to 14 jobs, compared to only 7 jobs for each $1 million in roadway infrastructure (Garrett-Peltier, 2010). This estimate includes direct jobs (engineering and construction), indirect jobs (related to engineering and construction) and induced effects (impacts on other industries, such as retail).



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New York City is a leader in creating people-friendly improvements, such as protected bicycle lanes and pedestrian plazas, in dense urban environments. Their protected bicycle lanes are installed along some of the busiest streets in the country. NYCDOT's "Measuring the Street" report (2012) illustrates the impact of active transportation improvements on the local economy. Following the installation of protected bicycle lanes on 8th and 9th Avenues in Manhattan, retail sales increased by 49 percent at local businesses (compared to a 3 percent increase borough-wide).

Meanwhile, the installation of dedicated bus and bicycle lanes on 1st and 2nd Avenues contributed to a reduction in commercial vacancies of 47 percent (compared to a 2 percent increase borough-wide). Creating a large pedestrian plaza and installing protected bicycle lanes around Union Square North resulted in a similar 49 percent decrease in commercial vacancies (compared to a 5 percent increase borough-wide).

Washington, DC's Barracks Row, a three-quarter mile strip, was experiencing a steady decline of commercial activity due to uninviting sidewalks, lack of streetlights and speeding traffic. After a $9 million investment that included new patterned sidewalks, more efficient public parking, and new traffic signals, Barracks Row attracted 40 new businesses and 200 new jobs. Economic activity on Barracks Row (measured by sales,



Before and after images of the 1st Avenue lane re-configuration in New York City (NYCDOT, 2015).

Before



After



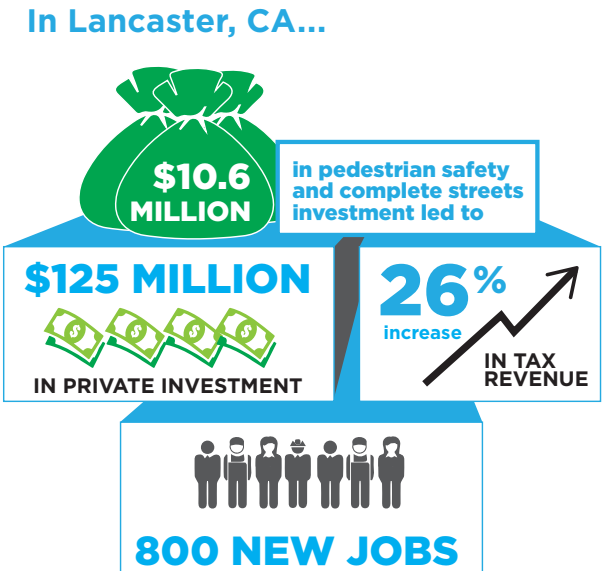
Before and after of Barracks Row street improvements in Washington DC (Town of Mansfield, 2014).

employees, and number of pedestrians) has more than tripled since implementation of the project (Town of Mansfield, 2014).

The San Francisco Department of Parking and Traffic implemented a roadway improvement project on Valencia Street that included bicycle lanes and traffic calming. A survey of 122 merchants and neighborhood associations on Valencia Street (including bicycle shops, book stores, grocery stores and other retail establishments) found that a majority (65 percent) of merchants believed the project brought benefits to the neighborhood. When asked if they would support additional traffic calming measures on Valencia Street, 65 percent responded "Yes."

In Mountain View, California, the addition of space for sidewalk cafes and a pedestrian-friendly street re-design were followed by $150 million in private investment, including residential, retail, and offices, resulting in a vibrant downtown destination (Smart Growth America, 2013).

As part of The BLVD, a downtown revitalization effort, Lancaster, CA re-designed its main street, Lancaster Boulevard. The re-design included a road diet, a pedestrian-only plaza, wider sidewalks and landscaping. After a $10.6 million public investment, the project helped attract nearly $125 million in private investment, resulting in a 26 percent increase in sales tax revenue and 800 new jobs (Smart Growth America, 2013). The project was awarded a 2012 National Award for Smart Growth Achievement in the category of "Overall Excellence" (USEPA, 2015).



(Source: Smart Growth America, 2013)

The City of Lancaster is an example of how the addition of pedestrian safety features to downtown can have positive economic impacts.

Before



During Construction



After



Before, in progress, and after images of downtown revitalization with added pedestrian safety features in Lancaster, CA (City of Lancaster, 2015).

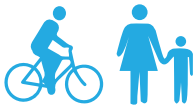
Regional Economic Impacts

The traffic analysis software company INRIX found that Americans wasted $124 billion sitting in traffic in 2013, costing families an average of $1,700 per year in wasted time (opportunity cost). Los Angeles County accounted for nearly 20 percent of the total opportunity cost of congestion nationwide, at $23.2 billion annually. This figure is forecasted to grow to $38.4 billion by 2030 (INRIX, 2014). Travelers in the greater Los Angeles area spend an average of 80 hours per year in traffic according to the most recent Urban Mobility Scorecard (Texas A&M Transportation Institute, 2015).

A study of regional transportation spending in Portland, OR found that varying levels of investment are required to attract a "new rider" to different transportation modes. The study looked at a twenty-year period between 1990 and 2009, and found that walking and bicycling investments were three times more cost-effective in terms of mode shift potential than motor vehicle investments (Anderson, 2011).

THE AVERAGE INVESTMENT REQUIRED TO SHIFT ONE TRAVELER TO A NEW MODE:

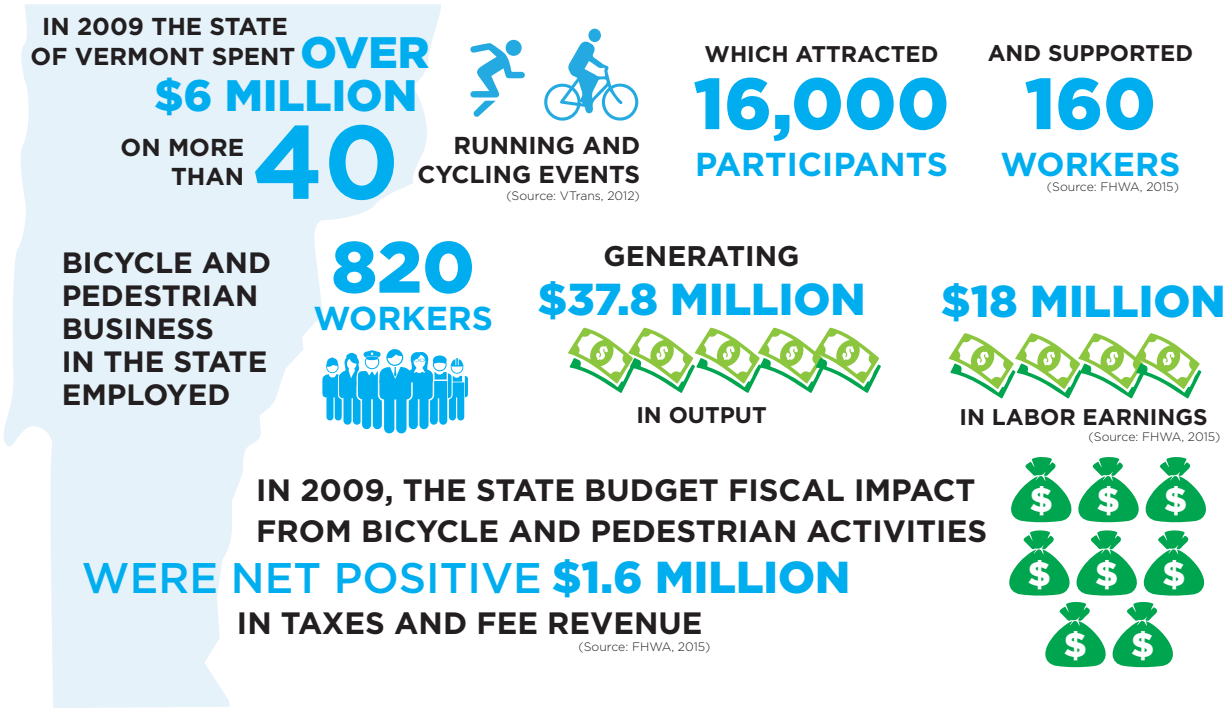
$5,538
for a new pedestrian or bicycle traveler



$18,072
for a new motor vehicle traveler

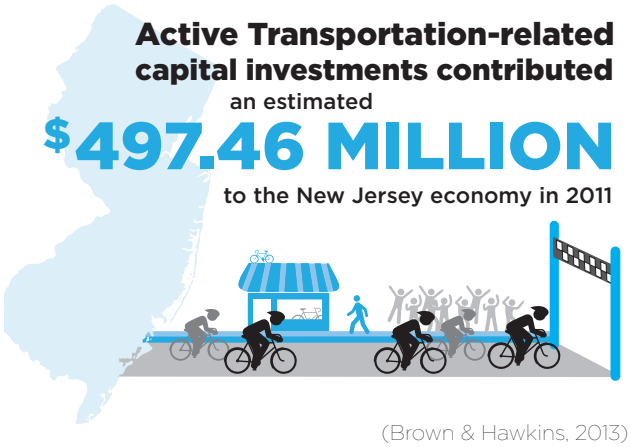


According to a 20-year assessment of investment and mode shift patterns in the Portland, OR region.
(Anderson, 2011)



The State of Vermont's 2009 State Budget Fiscal Impact Report is a great example of how supporting events that promote active transportation can result in economic gains through tax and fee revenue and labor earnings (VTrans, 2012).

In 2012, the Vermont Agency of Transportation conducted a study called Economic Impact of Bicycling in Vermont (VTrans, 2012). The analysis team looked at one year of "direct, indirect, and induced economic activity attributed to bicycling and walking." The net fiscal impact from active transportation investment was found to be $1.6 million.



(Brown & Hawkins, 2013)

The State of New Jersey - with a population and GDP similar to Los Angeles County, spread out over roughly twice the land area - has also enjoyed the economic benefits of investing in bicycling and walking-related infrastructure and improvements. A study conducted in 2012 by the Alan M. Voorhees Transportation Center analyzed active transportation–related capital investments, businesses and events (e.g. sidewalks, bicycle shops and bicycle races) to estimate economic activity generated and jobs supported. The findings were startling: "In total, active transportation–related infrastructure, businesses, and events were estimated to have contributed $497.46 million to the New Jersey economy in 2011," a return that was nearly eight times the estimated amount invested in active transportation infrastructure that year. The $497.46 million supported over 4,000 jobs in New Jersey and $153 million in wages. It generated approximately $49 million in total tax revenue and added approximately $278 million to state GDP (Brown and Hawkins, 2013).

Employee Recruitment and Retention

Major corporations, such as Amazon, Facebook, Google, and Walmart, have recognized the benefits of active transportation and are making investments in partnership with cities across the United States. The following examples illustrate how leading corporations are actively planning and funding innovative bicycle and pedestrian infrastructure and accommodations as a means to gain competitive advantage and improve quality of life for employees.

In Seattle, Amazon contributed $250,000 to investigate planning and design options for the construction of a two-block protected bicycle lane and bicycle corrals along its office towers on 7th Avenue. The retail giant also pledged to fund two blocks of protected bicycle lanes on the same street (Bhatt, 2013).

Facebook, a major employer in Menlo Park, CA, has a goal to have half of their workforce get to or from work using means other than their personal vehicles. Employees are encouraged to bicycle to work and are supported by multiple bicycle amenities on campus. Facebook integrates bicycling into corporate life by providing a fleet of company bicycles to get around campus, secure bicycle parking, interior and exterior bicycle racks, secure bicycle shelters and support for improving regional bikeway networks. Thanks to these improvements, Facebook is one of only five institutions in California to achieve a Platinum Level Bike Friendly Business designation from the League of American Bicyclists. With upwards of 5,000 employees, Facebook is the largest private employer in the United States to receive this distinction (LAB, 2015).

Google has committed to encourage walking and bicycling in an effort to reduce single-occupancy vehicle trips to and from their Santa Clara County campus. The company offers amenities to encourage employees to bicycle to work. The campus has a fleet of over 1,000 employee bicycles, bicycle storage on its shuttle bus fleet, bicycle parking inside buildings, and helmets at each building entrance and exit. Moreover, most buildings on campus are equipped with showers, lockers and changing rooms. Google's 2015 Vision Plan seeks to connect the campus to the rest of the region, creating a network of 277 connected miles of bikeways (Google, 2015).

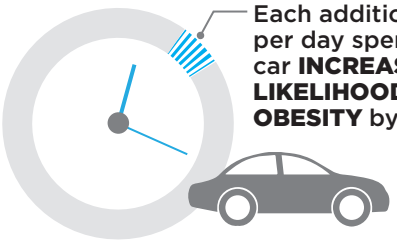
Google also provides a large-scale fleet of shuttle buses for its employees living more than ten miles away. These employee shuttles serve an average of 6,400 round-trips per day (Google Green, 2015). According to a survey of Silicon Valley shuttle riders, 48 percent would choose to drive alone if corporate shuttle services were discontinued (Dai and Weinzimmer, 2014).

In an effort to recruit talented young employees, the Walton Family Foundation has made substantial investments in its hometown of Bentonville, Arkansas and the surrounding Northwest Arkansas (NWA) area. Since 2000, it has invested more than $50 million into the NWA trail system, including $18 million for the iconic Razorback Regional Greenway - nearly half the total cost of the project. A 2015 count of NWA trail users found very high usage - around 11 people walking and bicycling per 100,000 population. This activity level is comparable to the busiest trails in Minneapolis, Portland, San Francisco and San Diego (Bowden, 2015).

03 Health Benefits

Regular aerobic activity (i.e. 30 minutes per day, 5 days per week) improves health by lowering the risk of heart attack and stroke (AHA, 2015). Active transportation increases opportunities to meet this minimum threshold of aerobic activity through regular daily travel.

Los Angeles health outcomes - such as premature death, poor or fair health, etc. - compare unfavorably against other California counties with large populations (over 1 million people) such as Orange and San Diego Counties (County Health Rankings, 2015). Many of the factors contributing to LA County's low health outcomes are related to physical environment, such as air quality, access to recreation and exercise opportunities, long commutes and a high percentage of residents that drive alone. All of these factors can be improved with active transportation investment.



Each additional hour per day spent in the car **INCREASES THE LIKELIHOOD OF OBESITY** by **6%**

(SCAG, 2012)

35% OF AMERICAN ADULTS **DO NOT ACHIEVE THE RECOMMENDED**

150 MINUTES OF WEEKLY PHYSICAL ACTIVITY PER WEEK

(CDC, 2015)



21% of Los Angeles County residents **ARE OBESE**

and **30%** of low income residents **ARE OBESE**

(County Health Rankings, 2015)

CARDIOVASCULAR DISEASE is ranked **#1** for the **CAUSE OF DEATH** in the U.S.

with **2,600 DEATHS EVERY DAY**

costing **$300 BILLION** in health expenditures

DIABETES RANKS 7th

Both can be improved through PHYSICAL ACTIVITY

(USDHHS, 2010 | CDC, 2015)

Close to **1 in 4** Children in Los Angeles County are **OBESE**

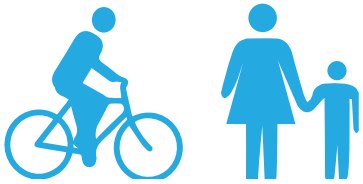


(County of LA Public Health, 2011)

The average benefit-cost ratio is

13:1

for active transportation investment



Several studies have estimated the benefits of walking and bicycling improvements to be significant - on average 13:1. This average is even higher in the UK, at 19:1 (Davis, 2010).

Active transportation infrastructure improvements have the ability to reduce health care costs by reducing the prevalence of obesity and associated health conditions. It has been found that, with significant investment in bicycle facilities in the range of $138 to $605 million, the benefit-cost ratios for health care and fuel savings alone are in the range of 1.2:1 to 3.8:1 (Gotschi, 2011).

Enabling people to ride bicycles to work can also improve the health of the workforce. Studies in the Netherlands and the United Kingdom have found that people who regularly bicycle to work take fewer sick days than average - 1.3 and 2.1 fewer sick days, respectively - per year (Hendriksen et al., 2010; Sustrans, 2013).

CYCLING TO WORK



RESULTS IN

1.3 FEWER SICK DAYS ANNUALLY

IN THE NETHERLANDS

AND 2.1 FEWER SICK DAYS ANNUALLY IN THE UK

Commuting to work via bicycle instead of by motor vehicle can result in fewer sick days

(Hendriksen et al., 2010 | Sustrans, 2013)

04 Environmental Benefits

Cars and trucks pollute the air during vehicle operation, manufacturing, and disposal and these major pollutants—such as particulate matter and greenhouse gases—have detrimental effects on the environment and our lungs (Shapiro, 2002). The transportation sector is a significant source of air and water pollution in Los Angeles County and accounts for 37 percent of greenhouse gas (GHG) emissions (CARB, 2014). The annual report released in 2014 by the American Lung Association placed the Los Angeles Basin and California's Central Valley as the areas with the nation's highest levels of ozone and fine particle pollution. Los Angeles topped the list of cities with the worst smog in the nation, violating federal health standards for ozone an average of 122 days per year.

Reducing vehicle miles traveled (VMT) in fossil fuel-burning vehicles is a pillar of efforts to reduce airborne pollutants and GHGs. Active transportation plays a role in reducing VMTs by offering a transportation alternative that enables people to leave their cars at home.

Active transportation is already being used in this capacity as a strategy to improve air quality in Los Angeles County. The Mobile Source Air Pollution Reduction Review Committee (MSRC)'s 2015 Clean Transportation Funding program offers to co-fund clean air projects to support cities' and counties' air quality improvement needs. The only transportation projects that qualify for funding are active transportation projects, since these modes can contribute significantly to offsetting motor vehicle trips and produce zero direct greenhouse gas emissions.

"In 2013, transportation contributed more than half of the carbon monoxide and nitrogen oxides and almost a quarter of the hydrocarbons emitted into our air"

(Union of Concerned Scientists, 2013).



Adding sidewalks to all roadways can result in a VMT reduction of 1.14 miles per person-day. Even small gains in an area's level of walk-and bicycle-friendliness can result in environmental benefits. For instance, a study evaluated the association between a single index of walkability (that incorporated land use mix, street connectivity, net residential density, and retail floor area ratios) and greenhouse gas emissions. It found that increasing a neighborhood's walkability by five percent can result in a 32 percent increase in active travel and a 6.5 percent reduction in VMT (Frank et al., 2006).

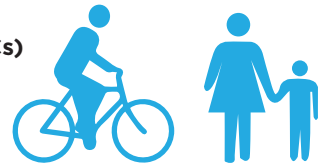


The addition of sidewalks and safer crossings can create a more pedestrian friendly environment, motivating more people to walk instead of using vehicles and reducing VMTs.

INCREASING A NEIGHBORHOOD'S WALKABILITY BY 5% CAN RESULT IN:

5.5% fewer grams
of volatile organic compounds (VOCs)

5.6% fewer grams
of Nitrogen oxide (NO_x)



32.1% **per capita increase in active travel by foot or bicycle results in**

- **0.23-point reduction** **in body mass index**
- **6.5%** **fewer VMT**

(Frank, et al., 2006)



Constructing multi-use paths provides non-motorized alternatives and improves access to recreational opportunities and nature.

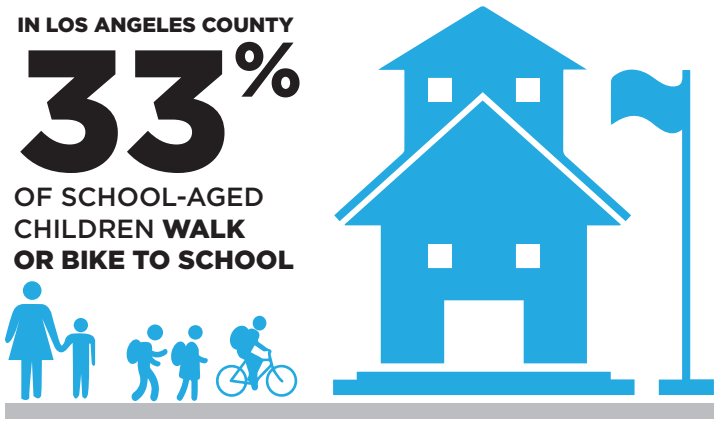
05 Safety Benefits

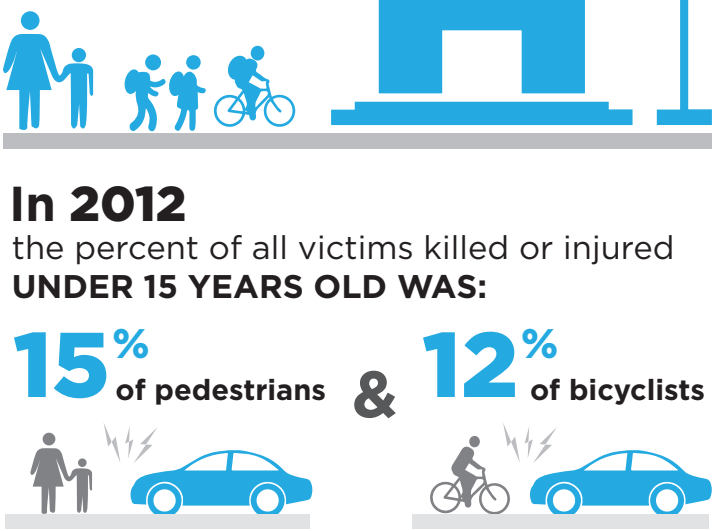
People walking and riding bicycles account for a disproportionate number of fatalities on the streets of Los Angeles County. These modes represent 19 percent of all trips but 40 percent of all traffic fatalities (McGuckin, 2012; TIMS, 2009-2013).

Safety in Numbers

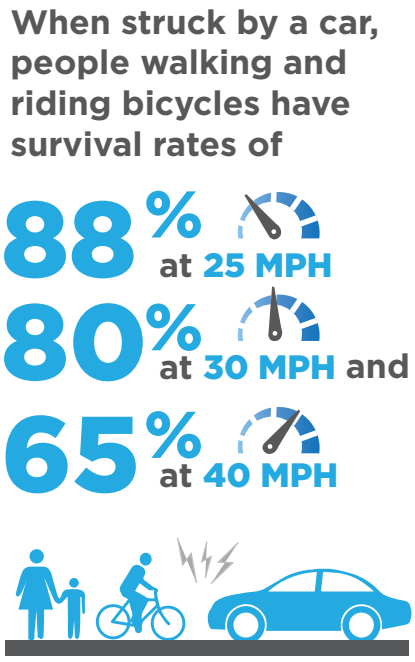
Improved safety for all road users may result when the number of people riding bicycles reaches a critical threshold. Between 1987 and 2000, the number of people who rode bicycles to work increased by 50 percent in the province of Quebec, Canada, yet bicycling fatalities decreased by 42 percent and serious injuries fell by 56 percent (Pucher and Buehler, 2005). In other words, the number of injuries and fatalities did not scale up as the number of bicycle trips increased. These long-term statistics support the "safety in numbers" principle, which holds that walking and bicycling becomes statistically less dangerous when more people walk and ride bicycles (Jacobsen, 2003). This principle is supported by a variety of research, including a study that found an inverse association between bicycle mode share and bicycle fatality risk across nine of North America's leading bicycling cities (Pucher et al., 2011a). These results show that bicycling infrastructure could lead to not only an increase in active transportation usage but also improved safety.

Safety is an area of particular concern for school trips. There has been a dramatic decrease in children walking and riding bicycles to school in the past 30 to 50 years. In 1969, 48 percent of children aged 5 to 14 years old walked or bicycled to school in LA County, compared to just 13 percent in 2009 (NCSRTS, 2015). However, changing a city's





(McGuckin, 2013 | California OTS, 2012)



(Tefft, 2011)

approach to street design and implementing Safe Routes to School Programs can result in behavior and attitude changes. Nationwide, the percentage of parents agreeing that their children's schools supported active transportation increased from 25 to 33 percent between 2007 and 2012 (NCSRTS, 2013). During this time period, the number of students walking and riding bicycles to and from school increased by 2.9 percentage points (to 17.9 percent of trips) and 3.5 percentage points (to 21.9 percent of trips), respectively.

The financial loss for each person killed in a traffic collision is $4,628,000 (NSC, 2015). Between 2009 and 2013, an average of 196 pedestrians and 28 bicyclists were killed in collisions with motor vehicles in Los Angeles County each year (TIMS, 2009-2013). Using these figures, the financial loss due to active transportation fatalities was more than $1 billion per year - a figure that does not include the emotional cost to the families and friends of these victims.

The estimated costs include "wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employers' uninsured costs." The calculations also include "a measure of the value of lost quality of life which was obtained through empirical studies of what people actually pay to reduce their safety and health risks" (NSC, 2015).

Between 2009 and 2013 an average of

4,480 BICYCLISTS AND **4,904** PEDESTRIANS

WERE INJURED IN COLLISIONS WITH MOTOR VEHICLES PER YEAR



AND IN THE COUNTY ACTIVE TRANSPORTATION ACCOUNTS FOR

19% OF ALL TRIPS BUT **40%** OF TRAFFIC FATALITIES

(FHWA, 2009 | TIMS, 2009-2013)

The estimated cost of each person killed in a traffic crash is

$4,628,000

196 pedestrians killed per year totaling over **$908 MILLION**

AND

28 bicyclists killed per year totaling over **$131 MILLION**

result in an estimated average cost of

$1,040,374,000

ANNUALLY IN FATALITIES

The estimated costs include "wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employers' uninsured costs." The calculations also include "a measure of the value of lost quality of life which was obtained through empirical studies of what people actually pay to reduce their safety and health risks" (NSC, 2015).

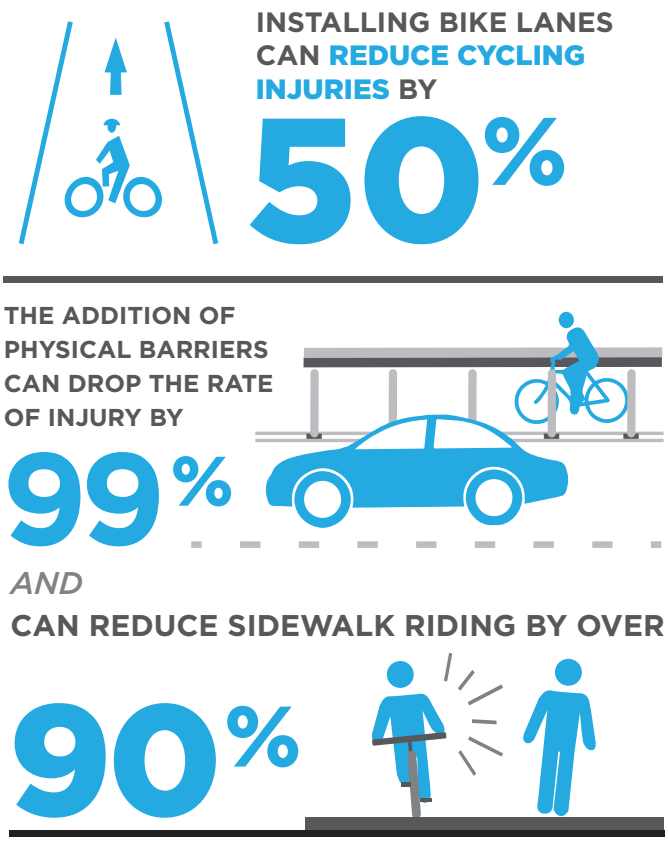
The Metro Active Transportation Strategic Plan addresses safety concerns through physical and programmatic improvements, mirroring the region's commitment to its citizens by valuing quality of life, comfort and safety for all street users.

Safety Benefits of Infrastructure Improvements

In New York City, a road diet was implemented on Prospect Park West. These designs included a reduction in general purpose travel lanes from three to two, the addition of a two-way protected bicycle lane, as well as updated signage and signals. Along with a near-tripling in the number of people riding bicycles (up 190 percent), the percentage of people riding bicycles on the sidewalk fell from 46 percent of bicycle riders to 3 percent - a decrease of over 90 percent (NYCDOT, 2012). This represented a significant safety improvement for people walking and riding bicycles. The latter are 1.8 times more likely to experience an injury while riding on the sidewalk than on the roadway (Wachtel and Lewiston, 1994).

Complete streets tend to reduce the number and severity of traffic collisions. Studies show that slower motor vehicle speeds exponentially increase collision survival rates for people walking and riding bicycles.

Results from the Highway Safety Information System (FHWA, 2010) indicate that road diets are effective at reducing collisions for all road users in a variety of urban contexts. On state highways in Iowa, collision rates have been found to decrease by 47 percent following road diet implementation. In suburban corridors of larger cities (sampled from cities including Oakland, San Francisco, Sacramento, Mountain View, San Leandro and Sunnydale, California) such improvements have reduced collisions by 19 percent.



A study conducted by the University of British Columbia that compared cycling injuries on 14 route types found that bicycle lanes reduce injuries substantially, while protected bicycle lanes can nearly eliminate injuries (Teschke et al., 2012). Moreover, constructing protected bike lanes has been shown to decrease sidewalk riding, creating a safer pedestrian environment (NYCDOT, 2011).

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APPENDIX

B LOCAL JURISDICTIONS: RELATED PLANS & POLICIES

DRAFT

Jurisdiction	Adoption Year	Plan	Comment
Agoura Hills	2010	City of Agoura Hills General Plan Update	Complete Streets policy within Mobility Element
Agoura Hills	2015	Las Virgenes-Malibu Council of	Plan covers all LVMCOG member cities
Alhambra	DRAFT	Alhambra Bicycle	
Arcadia	2010	Arcadia General Plan	Complete Streets policy within Circulation &
Artesia	2010	Artesia General Plan 2030	Complete Streets policy within Sustainability
Artesia	2011	Artesia Boulevard Corridor Specific Plan	
Artesia	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Avalon	2013	City of Avalon 2030 General Plan/ Local	Complete Streets policy within Circulation
Avalon	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Azusa	2011	Azusa Complete Streets	
Baldwin Park	2011	Baldwin Park Complete	
Baldwin Park	2014	San Gabriel Valley Regional Bicycle Master Plan	Plan covers 5 San Gabriel Valley Cities: Monterey Park, San
Bell	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Bell Gardens	DRAFT	Gateway Council of Governments Strategic	Plan covers all Gateway cities
Bellflower	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Bellflower	IN PROGRESS	Bellflower-Paramount	
Bradbury	DRAFT	City of Bradbury General Plan 2012-2030	Complete Streets policy within Circulation
Burbank	2009	City of Burbank Bicycle	
Burbank	2013	Burbank 2035 General Plan	Complete Streets policy within Mobility Element
Calabasas	2007	Calabasas Trails Master	
Calabasas	2013	Calabasas Bicycle	
Calabasas	2015	Las Virgenes-Malibu Council of	Plan covers all LVMCOG member cities
Calabasas	DRAFT	Calabasas Pedestrian	
Carson	2006	Carson Street Mixed-Use District Master Plan	Promotes active transportation through
Carson	2013	Carson Master Plan of	
Carson	2014	Carson Safe Routes to	
Cerritos	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Claremont	2007	Claremont Bicycle Plan	

Jurisdiction	Adoption Year	Plan	Comment
Commerce	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Compton	2015	City of Compton Bicycle	
Compton	DRAFT	Compton General Plan 2030	Complete Streets policy within Circulation
Compton	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Covina	2011	City of Covina Bicycle	
Cudahy	2015	Cudahy Safe Routes to	
Cudahy	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Culver City	2010	Culver City Bicycle and	
Culver City	2010	Culver City Safe Routes	
Downey	2010	City of Downey Downtown Specific Plan	Promotes active transportation through
Downey	2015	City of Downey Bicycle	
Downey	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
El Monte	2011	City of El Monte General Plan	Complete Streets policy within Circulation
El Monte	2014	San Gabriel Valley Regional Bicycle Master Plan	Plan covers 5 San Gabriel Valley Cities: Monterey Park, San
El Segundo	2000	El Segundo Downtown Specific Plan	Promotes active transportation through
El Segundo	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Gardena	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Glendale	2011	Glendale Downtown	
Glendale	2011	Glendale Safe & Healthy Streets Plan	Recommends the creation/adoption of a
Glendale	2012	City of Glendale Bicycle	
Hawaiian Gardens	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Hermosa Beach	2011	Beach Cities Livability Plan	Plan covers Hermosa Beach, Manhanttan Beach, and Redondo Beach; promotes active

Jurisdiction	Adoption Year	Plan	Comment
Hermosa Beach	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Hermosa Beach	2012	Living Streets Policy	Plan contains Complete Streets and active
Hidden Hills	2015	Las Virgenes-Malibu Council of	Plan covers all LVMCOG member cities
Huntington Park	2008	Downtown Huntington Park Specific Plan	Promotes active transportation through
Huntington Park	2012	City of Huntington Park	
Huntington Park	2012	Middleton Elementary School and Middle	
Huntington Park	2014	City of Huntington Park Bicycle Transportation	
Huntington Park	DRAFT	Gateway Cities Cities Council of	Plan covers all Gateway cities
Industry	2014	Industry General Plan	Complete Streets policy within Circulation
Inglewood	2009	Hollywood Park Specific Plan	Promotes active transportation through
Inglewood	IN PROGRESS	City of Inglewood	
La Canada Flintridge	2013	City of La Canada Flintridge General Plan	Complete Streets policy within Circulation
La Habra Heights	2014	City of La Habra General Plan 2035	Complete Streets policy within Circulation
La Habra Heights	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
La Mirada	2012	Imperial Highway Specific Plan	Promotes active transportation through
La Mirada	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Lakewood	DRAFT	Gateway Council of Governments Strategic	Plan covers all Gateway cities
Lancaster	2008	Downtown Lancaster Specific Plan	Promotes active transportation through
Lancaster	2012	City of Lancaster	
Lawndale	2009	Lawndale Safe Routes	
Lawndale	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Long Beach	2001	Long Beach Bicycle	
Long Beach	2011	Long Beach Safe Routes	

Jurisdiction	Adoption Year	Plan	Comment
Long Beach	2013	Long Beach General Plan 2035	Complete Streets policy within Mobility Element. Provides a foundation for updating the Bicycle Master Plan, but the Bicycle Master
Long Beach	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Long Beach	IN PROGRESS	Healthy Active Long	
Los Angeles City	2011	2010 Bicycle Plan	
Los Angeles City	2014	Street Design Manual	Part of the City of Los Angeles Mobility Element. Has Complete
Los Angeles City	2016	Mobility Plan 2035	Complete Streets policy
Los Angeles County	2012	Bicycle Master Plan	
Los Angeles County	2015	Los Angeles County General Plan	Complete Streets policy within Mobility Element
Lynwood	2013	Lynwood Bicycle and	
Lynwood	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Lynwood	IN PROGRESS	Lynwood Transit Area Strategic Plan	Promotes active transportation through
Malibu	2015	Las Virgenes-Malibu Council of	Plan covers all LVMCOG member cities
Manhattan Beach	2011	Beach Cities Livability Plan	Plan covers Hermosa Beach, Manhanttan Beach, and Redondo Beach. Promotes active
Manhattan Beach	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Manhattan Beach	DRAFT	Manhattan Beach	Complete Streets policy
Maywood	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Montebello	DRAFT	Gateway Council of Governments Strategic	Plan covers all Gateway cities
Monterey Park	2014	San Gabriel Valley Regional Bicycle Master Plan	Plan covers 5 San Gabriel Valley Cities: Monterey Park, San
Norwalk	DRAFT	Gateway Council of Governments Strategic	Plan covers all Gateway cities
Palmdale	IN PROGRESS	Active Transportation	
Paramount	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities

Jurisdiction	Adoption Year	Plan	Comment
Paramount	IN PROGRESS	Bellflower-Paramount	
Pasadena	2006	Pasadena Pedestrian	
Pasadena	2015	Bicycle Transportation	
Pasadena	2015	Pasadena General Plan Update	Complete Streets policy within Mobility Element
Pico Rivera	2014	City of Pico Rivera General Plan	Complete Streets policy within Circulation
Pico Rivera	2014	Pico Rivera Safe Routes	
Pico Rivera	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Pomona	2012	Active Transportation Plan: Bicycle Master	
Pomona	2012	City of Pomona Green Plan	Sustainability plan with Complete Streets
Pomona	2012	Pedestrian Design	
Pomona	2014	City of Pomona General Plan Update	Complete Streets policy within Mobility &
Ranchos Palos Verdes	1993	Conceptual Trails Plan	Contains the Conceptual Bikeways
Ranchos Palos Verdes	DRAFT	City of Ranchos Palos Verdes General Plan	Complete Streets policy within Circulation
Redondo Beach	2011	Beach Cities Livability Plan	Plan covers Hermosa Beach, Manhanttan Beach, and Redondo Beach. Promotes
Redondo Beach	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Rosemead	2012	City of Rosemead	
San Dimas	2011	City of San Dimas	
San Fernando	2013	San Fernando Safe	
San Gabriel	2004	San Gabriel Mission District Specific Plan	Promotes active transportation through
San Gabriel	2006	Valley Boulevard Neighborhoods	Promotes active transportation through
San Gabriel	2014	San Gabriel Valley Regional Bicycle Master Plan	Plan covers 5 San Gabriel Valley Cities: Monterey Park, San
Santa Clarita	2011	City of Santa Clarita General Plan	Complete Streets policy within Circulation
Santa Clarita	2014	City of Santa Clarita	
Santa Fe Springs	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
Santa Monica	2010	Santa Monica General Plan	Complete Streets policy within the Land Use

Jurisdiction	Adoption Year	Plan	Comment
Santa Monica	2011	Santa Monica Bike	
Santa Monica	2012	Santa Monica Safe	
Santa Monica	DRAFT	Santa Monica	
Sierra Madre	2015	2015 General Plan	Complete Streets policy within Circulation
Signal Hill	2009	City of Signal Hill General Plan	Complete Streets policy within Circulation
Signal Hill	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
South El Monte	2014	San Gabriel Valley Regional Bicycle Master Plan	Plan covers 5 San Gabriel Valley Cities: Monterey Park, San
South Gate	2009	South Gate General Plan 2035	Complete Streets policy within Mobility Element
South Gate	2012	South Gate Bicycle	
South Gate	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
South Pasadena	2011	City of South Pasadena	
Temple City	2011	City of Temple City	
Torrance	2011	South Bay Bicycle Master Plan	Plan covers 7 South Bay Cities: El Segundo, Gardena, Hermosa Beach, Lawndale,
Vernon	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities
West Covina	DRAFT	West Covina General Plan	Complete Streets policy within Circulation
West Hollywood	2003	Bicycle and Pedestrian	
West Hollywood	2011	West Hollywood General Plan 2035	Complete Streets policy within Mobility Element
Westlake Village	2015	Citywide Bike Plan City	
Whittier	2012	Strategic Community Action Plan	Plan focuses on improving health and wellness; includes plans
Whittier	2013	City of Whittier Bicycle	
Whittier	DRAFT	Gateway Cities Council of Governments	Plan covers all Gateway cities

APPENDIX

C

STAKEHOLDER OUTREACH

DRAFT

Stakeholder Outreach

During the development of the Active Transportation Strategic Plan (ATSP or Plan), the project team engaged and solicited feedback from various Metro departments, as well as agency partners, including the Metro Technical Advisory Committee and its Subcommittees; sub-regional Councils of Governments (COGs); state, regional, and local governments; nonprofit and community groups; and other stakeholders. Outreach to inform the ATSP consisted of the formation of a project Technical Advisory Committee, presentations to various stakeholder groups, two rounds of ATSP Stakeholder Workshops throughout the county, an online survey, and social media activities. Metro staff presented at numerous meetings to engage stakeholders and seek input, as shown in Table 1.

Table 1. Stakeholder Outreach Meetings

MEETING DATE & TIME	ORGANIZATION
Thu, 4/2/2015, 9-11am	Active Transportation Strategic Plan Project Technical Advisory Committee (Meeting #1 Kick-off)
Thu, 6/15/2015, 12pm	San Gabriel Valley Council of Governments - Public Works Technical Advisory Committee
Tue, 6/16/2015, 9:30am	Metro Bus Operations Subcommittee
Thu, 6/18/2015, 9:30am	Metro Streets and Freeways Subcommittee
Mon, 6/25/2015, 12pm	San Gabriel Valley Council of Governments - Planners Technical Advisory Committee
Wed, 7/1/2015, 4pm	Gateway Cities Council of Governments - Transportation Committee
Tue, 7/7/2015, 9am-11am	Active Transportation Strategic Plan Project Technical Advisory Committee (Meeting #2)
Wed, 7/8/2015, 8am	Gateway Cities Council of Governments - Planning Directors
Tue, 8/4/2015, 4pm-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (San Gabriel Valley & Surrounding Area)
Tue, 8/11/2015, 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (Westside & Surrounding Area)
Wed, 8/12/2015, 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (Central & Surrounding Area)
Thu, 8/13/2015, 4pm-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (North County & Surrounding Area)
Mon, 8/17/2015, 4pm-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (South Bay & Surrounding Area)
Wed, 8/19/2015, 12pm	South Bay Cities Council of Governments - Infrastructure Working Group
Mon, 8/24/2015, 4pm-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (Gateway Cities & Surrounding Area)
Wed, 8/26/2015, 4pm - 6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 1 (San Fernando Valley & Surrounding Area)
Thu, 9/10/2015, 4pm	San Gabriel Valley Council of Governments - Transportation Committee
Fri, 9/11/2015, 2pm	Natural Resources Defense Council
Wed, 9/16/2015, 2:30pm - 4:30pm	South Bay Cities Council of Governments - Livable Communities Working Group
Wed, 9/23/2015, 6pm-7:30pm	Metro Bicycle Roundtable
Wed, 10/7/2015, 9:30am	Metro Technical Advisory Committee
Wed, 10/7/2015, 6pm	Gateway Cities Council of Governments Board Meeting

MEETING DATE & TIME	ORGANIZATION
Wed, 10/14/2015, 10:30am	Metro Transportation Demand Management & Sustainability Subcommittee
Wed, 10/14/2015, 11am	Metro Ad Hoc Sustainability Committee
Thur, 10/15/2015, 9:30am	Metro Streets and Freeways Subcommittee
Tue, 10/20/2015, 9:30am	Metro Bus Operations Subcommittee
Thur, 10/29/2015, 2:30pm	Metro Local Transit Systems Subcommittee
Tue, 11/3/2015, 2pm-4pm	Active Transportation Strategic Plan Project Technical Advisory Committee (Meeting #3)
Wed, 11/18/2015, 4:30pm	City of Compton
Thu, 12/3/2015, 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (North Hollywood)
Mon, 12/7/2015, 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (Norwalk)
Tue, 12/8/2015. 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (Torrance)
Wed, 12/9/2015, 4-6pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (Baldwin Park)
Mon, 12/14/15, 9-11am	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (Los Angeles)
Tue, 12/15/2015, 5-7pm	Active Transportation Strategic Plan Stakeholder Workshops – Round 2 (Santa Clarita)
Tue, 1/5/2016, 10am	County of Los Angeles
Wed, 1/6/2016, 2:00pm	California High Speed Rail Project
Thu, 1/7/2016, 4pm	San Gabriel Valley Council of Governments
Wed, 1/20/2016, 2pm	Metro Planning & Programming Committee
Tue, 2/9/2016, 1pm	City of Los Angeles

Project Technical Advisory Committee

Metro formed a project Technical Advisory Committee, which consisted of internal Metro departments and external stakeholders. The purpose of the committee was to provide input and guidance on the development of the ATSP. Committee members were identified based on previous involvement in the development of Metro's First Last Mile Strategic Plan, their specific expertise, or because they represent an important perspective. Three committee meetings were held during the process of Plan development.

Active Transportation Strategic Plan Stakeholder Workshops

Metro hosted two rounds of stakeholder workshops to gather public input in order to develop a meaningful and effective plan. In the first round, seven stakeholder workshops were held throughout the County in August 2015. The goal of this round was to gather input on improving first and last mile access to transit, improvements to the regional network of walking and bicycling facilities, and opportunities for supporting local and regional partners to get these projects and programs implemented. Metro invited all sub-regional COGs to co-host these workshops and three accepted the offer, including Gateway Cities, San Gabriel Valley, and San Fernando Valley COGs. These workshops were attended by over 250 attendees in total and included representatives of local, regional, and state government agencies; elected offices; sub-regional councils of governments; nonprofit organizations; community groups; advocates; private firms; transit operators; transit riders; public health professionals; and other stakeholders.

In the second round, six stakeholder workshops were held throughout the County in December 2015. The goal of this round was to gather input on the proposed regional network of bicycle and multi-use path facilities, discuss strategies for first last mile improvements to key transit stops and stations, seek feedback on performance measures and discuss roadmap towards implementation of these projects and programs. Over 120 stakeholders attended in total. Figures 1-4 show invitation flyers and photos of the two rounds of stakeholder workshops.

Figure 1. Invitation flyers for Active Transportation Strategic Plan Stakeholder Workshops (Round 1), which included English and Spanish versions.



Active Transportation Strategic Plan
Open House Workshops

We want to hear from you! Metro is developing an Active Transportation Strategic Plan to identify needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County, and your input will help create a meaningful, effective plan.

The workshops will

- Gather input on improving first and last mile access to transit and improvements to the regional network of walking and bicycling facilities, including shared-use paths and on-street bikeways
- Explore opportunities for supporting local and regional partners to get these projects and programs implemented

San Gabriel Valley & Surrounding Area

Tuesday, August 4, 2015
4-6pm

Grace Black Auditorium
3130 Tyler Avenue
El Monte, CA 91731

Co-hosted with San Gabriel Valley Council of Governments

Westside & Surrounding Area

Tuesday, August 11, 2015
4-6pm

Veterans Memorial Building
Rotunda Room
4117 Overland Avenue
Culver City, CA 90230

Central & Surrounding Area

Wednesday, August 12, 2015
4-6pm

Union Station
Historic Ticketing Concourse
800 North Alameda Street
Los Angeles, CA 90012

North County & Surrounding Area

Thursday, August 13, 2015
4-6pm

Cultural Center Room
38350 Sierra Highway
Palmdale, CA 93550

South Bay & Surrounding Area

Monday, August 17, 2015
4-6pm

Lawndale Community Center
14700 Burin Avenue, 3rd fl
Lawndale, CA 90260

Gateway Cities & Surrounding Area

Monday, August 24, 2015
4-6pm

16401 Paramount Boulevard, 2nd fl
Paramount, CA 90723

Co-hosted with Gateway Cities Council of Governments

San Fernando Valley & Surrounding Area

Wednesday, August 26, 2015
4-6pm

150 N Third Street,
Room 104
Burbank, CA 91502

Co-hosted with San Fernando Valley Council of Governments

323.466.3876
Español
한국어
中文
Հայերէն
Tiếng Việt
日本語
русский
ภาษาไทย
ภาษาไทย

Metro

The workshops are designed for planners, engineers, traffic safety professionals, public health and injury prevention professionals, advocates, transit riders, transit operators, non-profit organizations, decision-makers, and other interested stakeholders. Each workshop will include information about the overall plan and information specific to the sub-region. We encourage you to attend the workshop specific to your sub-region; however, staff will be available to answer questions and gather input at all workshops.

ADA accommodations and translations are available by calling 213.922.2606 at least 72 hours before the meeting.

For more information, visit www.metro.net/walkbikeroll or contact Tham Nguyen at nguyentha@metro.net or 213.922.2606.



Plan Estratégico de Transporte Activo
Talleres Comunitarios

¡Queremos oír de ti! Metro está desarrollando un Plan Estratégico de Transporte Activo para identificar necesidades, recursos y estrategias para mejorar y aumentar caminar, andar en bicicleta y el uso del transporte en el condado de Los Ángeles, y su aportación ayudará a crear un plan útil y importante.

Los talleres van a lograr

- Obtener ideas para mejorar acceso de primera y última milla para el tránsito, mejoras a la red regional de instalaciones para andar en pie o en bicicleta, incluyendo caminos de uso compartido y carriles de bici en la vía pública
- Explorar las oportunidades para apoyar a las agencias locales y regionales para cumplir estos proyectos y programas

Valle San Gabriel y Alrededores

Martes| Agosto 4 | 4-6pm

Grace Black Auditorium
3130 Tyler Avenue
El Monte, CA 91731

Co-organizado con Consejo de Gobiernos del Valle San Gabriel

Westside y Alrededores

Martes| Agosto 11 | 4-6pm

Veterans Memorial Building
Rotunda Room
4117 Overland Avenue
Culver City, CA 90230

Centro y Alrededores

Miercoles| Agosto 12 | 4-6pm

Union Station
Historic Ticketing Concourse
800 North Alameda Street
Los Angeles, CA 90012

Norte del Condado y Alrededores

Jueves | Agosto 13 | 4-6pm

Cultural Center Room
38350 Sierra Highway
Palmdale, CA 93550

South Bay y Alrededores

Lunes| Agosto 17 | 4-6pm

Lawndale Community Center
14700 Burin Avenue
tercer piso
Lawndale, CA 90260

Cuidades Gateway y Alrededores

Lunes| Agosto 24 | 4-6pm

16401 Paramount Boulevard
segundo piso
Paramount, CA 90723

Co-organizado con Consejo de Gobiernos Gateway

Valle San Fernando y Alrededores

Miercoles| Agosto 26 | 4-6pm

150 N Third Street, Room 104
Burbank, CA 91502

Co-organizado con Consejo de Gobiernos del Valle San Fernando

323.466.3876
Español
한국어
中文
Հայերէն
Tiếng Việt
日本語
русский
ภาษาไทย
ภาษาษัย

Metro

Los talleres están diseñados para los planeadores, ingenieros, profesionales de la seguridad de tráfico, la salud pública y los profesionales de la prevención de lesiones, defensores, los usuarios del transporte, operadores de transporte, organizaciones sin fines de lucro, tomadores de decisiones y otros actores interesados. Cada taller incluirá información sobre el plan general y la información específica de la subregión. Le animamos a asistir al taller específico para su subregión; sin embargo, estarámos disponible para responder preguntas y reunir información en todos los talleres.

Alojamiento ADA y traducciones están disponibles llamando al 213.922.2606 por lo menos 72 horas antes de la reunión.

Para obtener más información, visite www.metro.net/walkbikeroll o póngase en contacto Tham Nguyen en nguyentha@metro.net o 213.922.2606.

Figure 2. Stakeholder participation at Active Transportation Strategic Plan Stakeholder Workshops (Round 1) during August 2015. From left to right, starting from upper left: San Gabriel Valley workshop - August 4, Westside workshop - August 11, Central workshop - August 12, South Bay workshop - August 17, Gateway Cities workshop – August 24, North County workshop - August 13, and San Fernando Valley - August 26.









Develop a funding strategy

Figure 3. Invitation flyers for Active Transportation Strategic Plan Stakeholder Workshops (Round 2), which included English and Spanish versions.



Join us for the Active Transportation Strategic Plan Stakeholder Workshops

The Los Angeles County Metropolitan Transportation Authority (Metro) is developing an Active Transportation Strategic Plan (Plan) to identify needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County. We held the first round of stakeholder workshops and launched an online survey in August 2015 to gather input. Please join us for a second round of workshops to learn about the status of the Plan, provide additional critical feedback, and ask questions.

THE WORKSHOPS WILL:

- Gather input on the proposed regional network of bicycle and multi-use path facilities
- Discuss strategies for first last mile improvements to key transit stops and stations
- Seek feedback on performance measures
- Discuss roadmap towards implementation of these projects and programs

THE WORKSHOPS ARE DESIGNED FOR:

Practitioners who implement walking/bicycling/transit improvements; applicable agency representatives; planners; engineers; traffic safety professionals; public health and injury prevention professionals; advocates; non-profit organizations; decision-makers; and other interested stakeholders.

PLEASE JOIN US AT ONE OF THE FOLLOWING SESSIONS:

Thursday, December 3, 2015 **4:00pm-6:00pm (4:15pm presentation)** North Hollywood Senior Citizen Center 11430 Chandler Boulevard North Hollywood, CA 91601	**Monday, December 7, 2015** **4:00pm-6:00pm (4:15pm presentation)** Norwalk Community Meeting Center Sproul Room 13200 Clarkdale Avenue Norwalk, CA 90650	**Tuesday, December 8, 2015** **4:00pm-6:00pm (4:15pm presentation)** Torrance Cultural Arts Center George Nakano Theatre 3330 Civic Center Drive Torrance, CA 90503
Wednesday, December 9, 2015 **4:00pm-6:00pm (4:15pm presentation)** Julia McNeill Senior Center Celebration Hall 4100 Baldwin Park Boulevard Baldwin Park, CA 91706	**Monday, December 14, 2015** **9:00am-11:00am (9:15am presentation)** Roy A. Anderson Recreation Center Comrie Hall 3980 Bill Robertson Lane Los Angeles, CA 90037	**Tuesday, December 15, 2015** **5:00pm-7:00pm (5:15pm presentation)** Santa Clarita Activities Center Sycamore Room 20880 Centre Pointe Parkway Santa Clarita, CA 91350

All sessions will cover the same topics. Please choose the session that is most convenient for you. There will be an open house during the first 15 minutes of the workshop. A presentation will start 15 minutes after the listed start time.

Metro

Please register early since space is limited! Register here:
https://www.metro.net/projects/active-transportation/strategic-plan/

ADA accommodations and translations are available by calling 213.922.2606 at least 72 hours before the meeting. For more information, visit www.metro.net/walkbikeroll or contact Tham Nguyen at nguyentha@metro.net or 213.922.2606.



Acompáñenos para los Talleres del Plan Estratégico de Transportación Activa

La Autoridad de Transportación del Condado de Los Ángeles (Metro) esta desarrollando un Plan Estratégico de Transportación Activa (el Plan) para identificar necesidades, recursos y estrategias para mejorar andar a pie y en bicicleta, y facilitar el uso de transito en el condado de Los Ángeles. Sostuvimos la primera ronda de talleres y la encuesta por internet en agosto de 2015 para colectar información. Por favor acompáñenos durante la segunda ronda de talleres para aprender mas sobre el estatus del Plan, proveernos mas información critica, y hacernos preguntas.

LOS TALLERES VAN A:

- Colectar información sobre la propuesta red regional de bicicleta y de las instalaciones de paseo de uso múltiple
- Discutir estrategias para mejoramientos de ultima/primera milla en paradas principales
- Obtener información sobre medidas de desempeño
- Discutir el mapa de implementación hacia estos proyectos y programas

LOS TALLERES ESTÁN DISEÑADOS PARA:

Profesionales que implementan mejoramientos de transportación activa; representativos de agencias aplicables; planificadores; ingenieros; profesionales de seguridad de trafico; profesionales de la salud publica y de la prevención de lesiones; abogados; organizaciones no lucrativas; oficiales; y otros partidos interesados

POR FAVOR ACOMPÁÑENOS DURANTE LAS SIGUIENTE SESIONES:

Jueves, Diciembre 3, 2015 **4:00pm-6:00pm (4:15pm presentación)** North Hollywood Senior Citizen Center 11430 Chandler Boulevard North Hollywood, CA 91601	**Lunes, Diciembre 7, 2015** **4:00pm-6:00pm (4:15pm presentación)** Norwalk Community Meeting Center Salón: Sproul 13200 Clarkdale Avenue Norwalk, CA 90650	**Martes, Diciembre 8, 2015** **4:00pm-6:00pm (4:15pm presentación)** Torrance Cultural Arts Center George Nakano Theatre 3330 Civic Center Drive Torrance, CA 90503
Miércoles, Diciembre 9, 2015 **4:00pm-6:00pm (4:15pm presentación)** Julia McNeill Senior Center Celebration Hall 4100 Baldwin Park Boulevard Baldwin Park, CA 91706	**Lunes, Diciembre 14, 2015** **9:00am-11:00am (9:15am presentación)** Roy A. Anderson Recreation Center Comrie Hall 3980 Bill Robertson Lane Los Angeles, CA 90037	**Martes, Diciembre 15, 2015** **5:00pm-7:00pm (5:15pm presentación)** Santa Clarita Activities Center Salón: Sycamore 20880 Centre Pointe Parkway Santa Clarita, CA 91350

Todas las sesiones cubrirán el mismo tema. Por favor atienda la sesión mas conveniente para usted. Habrá una exhibición durante los primeros 15 minutos del taller. La presentación empezara dentro 15 minutos del taller.

El espacio es limitado, por favor regístrese temprano! Regístrese Aquí
https://www.metro.net/projects/active-transportation/strategic-plan/

Metro

Acomodaciones ADA y traducciones son disponibles llamando al *213.922.2606 por lo menos 72 horas antes del taller. Para mas información, visite www.metro.net/walkbikeroll o contacte a Tham Nguyen por correo electrónico nguyentha@metro.net o al 213.922.2606.*

Figure 4. Stakeholder participation at Active Transportation Strategic Plan Stakeholder Workshops (Round 2) during December 2015. From left to right, starting from upper left: North Hollywood – December 3, Norwalk – December 7, Torrance – December 8, Los Angeles – December 14, Santa Clarita – December 15, Baldwin Park – December 9.













Stakeholder Survey

Metro launched an online survey to gather additional input from stakeholders during Summer 2015 in addition to providing printed copies of the survey during the August 2015 ATSP Stakeholder workshops. The survey was intended to gather input on people's top priorities for improving walking and bicycling to train station(s) and major bus stop(s) and along regional bikeways or shared-use paths and to identify challenges and opportunities. Over 200 responses were received from the general public. Figure 5 shows the survey form in both English and Spanish.

Figure 5. Stakeholder survey form, English and Spanish versions.

Take the Survey!

Active Transportation Strategic Plan

Metro is working on an Active Transportation Strategic Plan, which will identify strategies to improve and increase walking, bicycling, and transit use in Los Angeles County. We want to hear from you! We want your input about what your top priorities are for improving walking and bicycling to train station(s) and major bus stop(s) and along regional bikeways or shared-use paths. Please help us out by answering these 8 quick questions. Your answers will remain confidential and will not be used to target you for future solicitations. The information you provide will not be shared with any other organization for commercial purposes. You will be entered to win a prize upon completion. The survey will be open until **Wednesday, September 30, 2015.**

To answer this survey online, please visit www.metro.net/walkbikeroll. Select "Take our survey!"

1. List the transit stop(s), such as street intersections or station name, where you think improvements are most needed in Los Angeles County. See online survey for the map of 661 major transit stops.

2. Based on the answer to the question above, tell us what challenges exist to walking and bicycling access to those locations? Please check all that apply and list applicable transit stop location.

	Challenge	Transit Stop Location(s)
	Freeway Ramps	
	Poor sidewalk conditions or lack of sidewalk	
	Poor crosswalks or lack of crosswalks	
	No safe place to bicycle	
	Vehicle speed and traffic	
	Poor lighting	
	Poor signage	
	Lack of enforcement of traffic violations	
	No Shade	
	No bicycle parking (for example, no bicycle racks)	
	Personal safety concerns	
	Destinations are too far away	
	Bad driver behavior	
	Lack of worksite facilities (for example, showers or lockers)	
	Other challenges not listed above:	

See Reverse

3. Suggest additional routes or locations that you think need improvements for people on foot or bike.

   Consider suggesting locations or routes that fill a gap in the bikeway network, cross major barriers (such as freeways, rivers, or rail lines), connect to multiple cities and communities, and/or provide access to regional destinations (such as employment centers, shopping districts and government facilities).

Please describe the location:

Starting Point:

End Point:

4. Do you take transit? If yes, for what purpose? Please check all that apply.

	Work
	School
	Errands
	Shopping
	Play
	Other purposes not listed above:
	N/A – I do not take transit

5. Do you use any of the following to get to transit or for short trips? If yes, please select all that apply.

	Bike
	Walk
	Scooter
	Skateboard
	Rollerblade
	Other ways not listed above:
	N/A – I do not use any of these to get to transit or for short trips.

6. How often do you walk or bike to transit?

	I have taken it one time
	About once a month
	About once a week
	Multiple times a week
	N/A – I do not walk or bike to transit
	N/A – I never take transit

7. What types of improvements would encourage you to take transit and/or walk or bike more often?

8. Tell us where you live. (Optional) Zip Code:

Email address to enter to win. (Optional):

*** Please drop this survey in the box marked "Surveys and Comment Forms" at the workshop. Or submit this form via email to nguyentha@metro.net or mail to Tham Nguyen, One Gateway Plaza, Mail Stop 99-22-6, Los Angeles, CA 90012. Thank you!**

¡Tome la Encuesta!



Metro está desarrollando un Plan Estratégico de Transporte Activo para identificar estrategias para mejorar y aumentar caminar, andar en bicicleta y el uso de transporte público en el condado de Los Ángeles. ¡Queremos oír de ti! Queremos su opinión para saber cuáles son sus principales prioridades para mejorar y aumentar el acceso para peatones y ciclistas a estaciones de tren y paradas principales de autobús y a carriles de bicicleta regionales o caminos de uso-compartido. Por favor ayúdenos al contestar estas 8 preguntas. Sus respuestas permanecerán confidenciales y no serán usadas para solicitaciones en el futuro. La información que usted nos provee no será compartida con ninguna otra organización para fines comerciales. Al completar la encuesta, usted podría ganar un premio. La encuesta estará abierta hasta el **Miércoles, 30 de septiembre del 2015.**

Para tomar la encuesta por internet, visite www.metro.net/walkbikeroll. Seleccione "Take the Survey!" (Traducción: ¡Tome la Encuesta!)

1. Liste las parada(s) de tránsito, por nombre o por las intersecciones de calle, que usted piense que más necesitan mejoramiento en el Condado de Los Ángeles. Vea la encuesta vía internet para ver el mapa que contiene 661 paradas principales de tránsito.

2. ¿Basado en su respuesta a la pregunta anterior, cuales retos existen para peatones o ciclistas para llegar a esas paradas? Elija todas las opciones aplicables y liste la parada correspondiente.

	Reto	Parada(s) de Transito
	Rampas de autopista	
	Condiciones pobres de acera o falta de acera	
	Cruces en pobres condiciones o falta de cruces	
	No hay lugar seguro para andar en bicicleta	
	Velocidad de vehículos y tráfico	
	Mala iluminación	
	Señalización deficiente	
	Infracciones de trafico no son forzadas	
	No hay sombra	
	No hay aparcamiento para bicicletas (como rejillas para bicicletas)	
	Preocupaciones por la seguridad personal	
	Los destinos están demasiado lejos	
	Mal comportamiento de conductors	
	Falta de instalaciones como duchas o armarios en los sitios de aparcamiento para bicicletas.	
	Otros retos no mencionados	

Vea el Reverso

3. Sugiera rutas adicionales o ubicaciones que piensa que necesitan ser mejoradas para peatones y ciclistas.

   Considere ubicaciones o rutas que llenan huecos en la red de carriles de bicicleta, cruzan barreras (autopistas, ríos, vías de tren etc.) conectan a múltiples ciudades y comunidades, y/o proveen acceso a destinaciones regionales (centros de empleo, distritos de comercio, facilidades del gobierno etc.).

Por favor describa la ubicación

Punto de partida:

Punto final:

4. ¿Usted usa transportación pública? Si sí, para que fin? Marque lo que aplique.

	Trabajo
	Escuela
	Mandados
	Compras
	Ir a jugar
	Para otros fines no mencionados
	No es aplicable - Yo no uso transportación publica

5. ¿Usa alguna de las siguientes opciones para llegar a tránsito o para viajes cortos? Marque lo que aplique.

	Bicicleta
	Caminar
	Patinete
	Patineta
	Patines
	Otras maneras no mencionadas
	No es aplicable - Yo no uso ninguna opción mencionada

6. ¿Con que frecuencia camina o usa su bicicleta para conseguir acceso a transportación publica?

	Solo una vez lo he usado
	Una vez por mes
	Una vez por semana
	Multiples veces por semana
	No es aplicable – Yo no camino o uso mi bicicleta para conseguir acceso a paradas de tránsito
	No es aplicable – Yo no uso tránsito público

7. ¿Qué tipos de mejorías le animarían a utilizar el transito público, y/o viajar a pie o en bicicleta con más frecuencia?

8. ¿Cuál es su código postal? (Opcional)

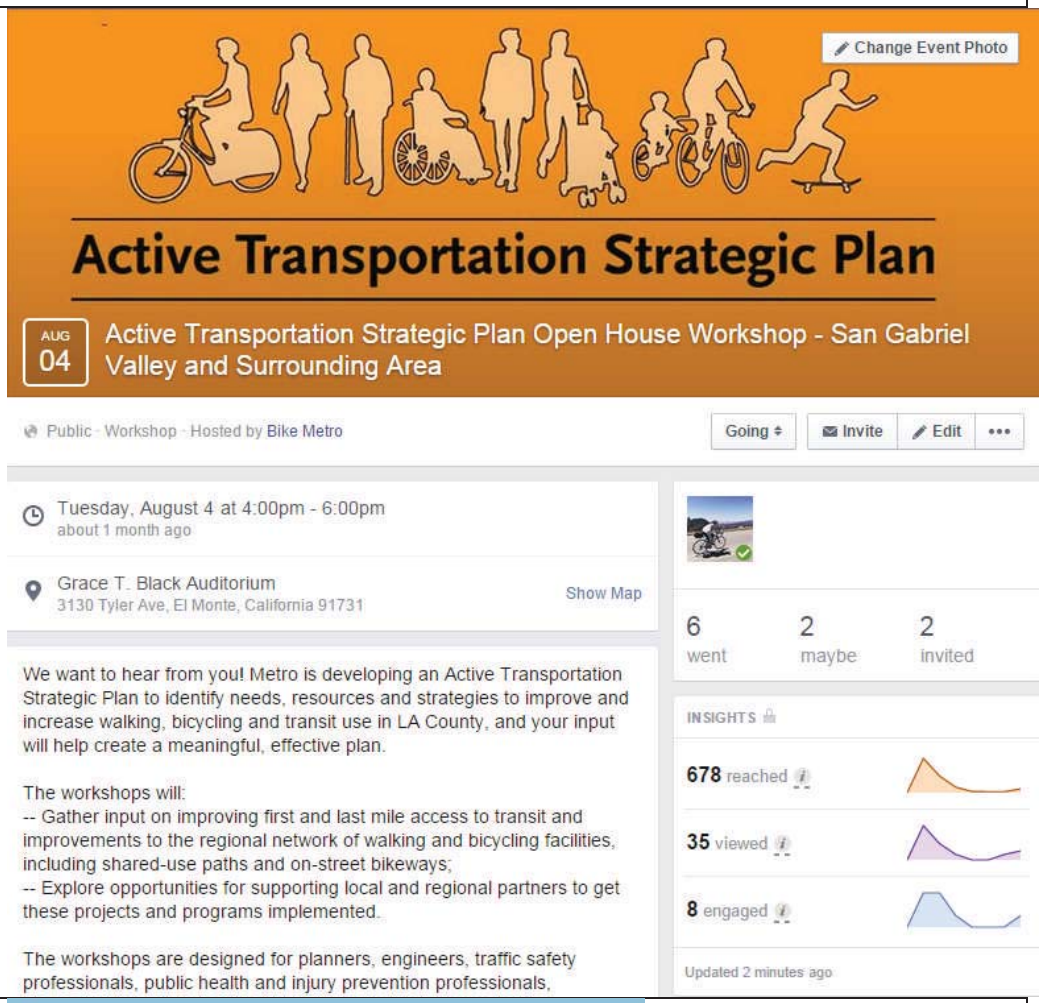
   ¿Dirección de correo electrónico para notificarle si ganó premio? (Opcional)

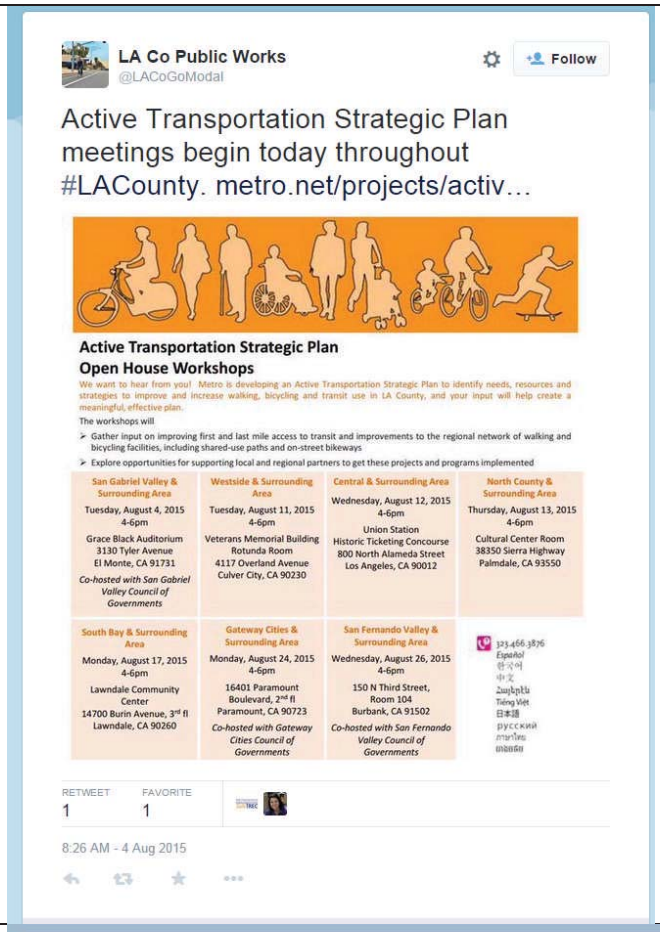
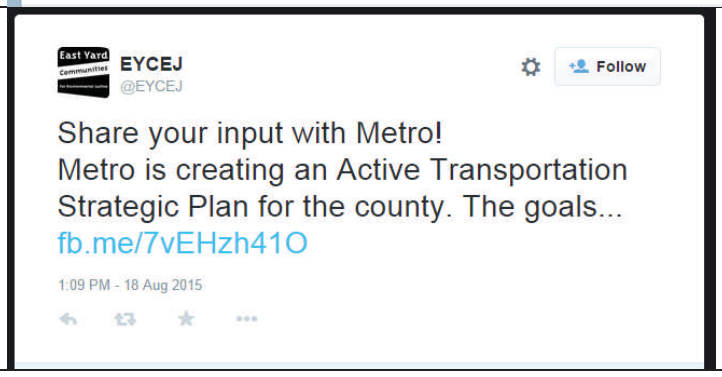
*** Por favor entregue esta forma en la caja marcada "Surveys and Comment Forms" durante el taller. También puede mandar la forma por internet a nguyentha@metro.net o mándela por correo a One Gateway Plaza, Mail Stop 99-22-6, Los Angeles, CA 90012. ¡Gracias!**

Social Media Activities

Metro was active on social media to promote the Active Transportation Strategic Plan, stakeholder workshops, and online survey, with additional partners and stakeholders helping to spread the word. Table 2 lists the social media posts.

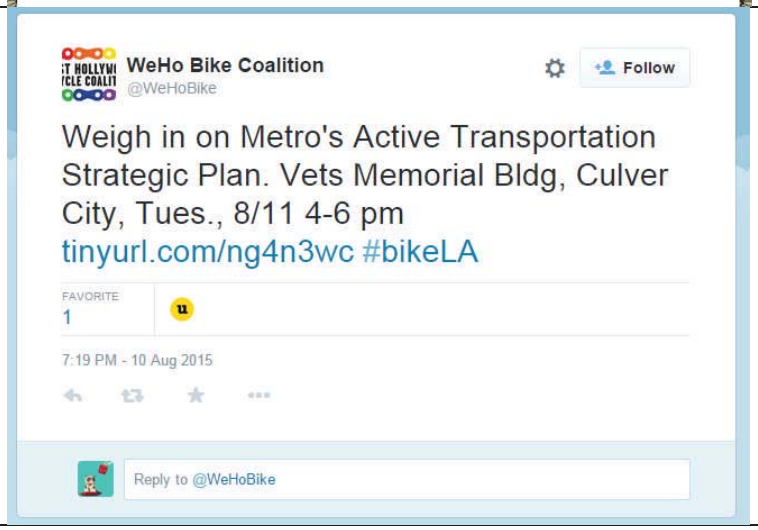
Table 2. Lists of social media posts about the Active Transportation Strategic Plan

Tweet/Post Link	Screenshot
https://www.facebook.com/events/1473977855931102/	
https://twitter.com/BikeMetro/status/628656833159368708	

https://twitter.com/LACoGoModal/status/628587829866541056	
https://twitter.com/crenshawrail/status/628600582668951552	
https://twitter.com/EYCEJ/status/633732514910068736	

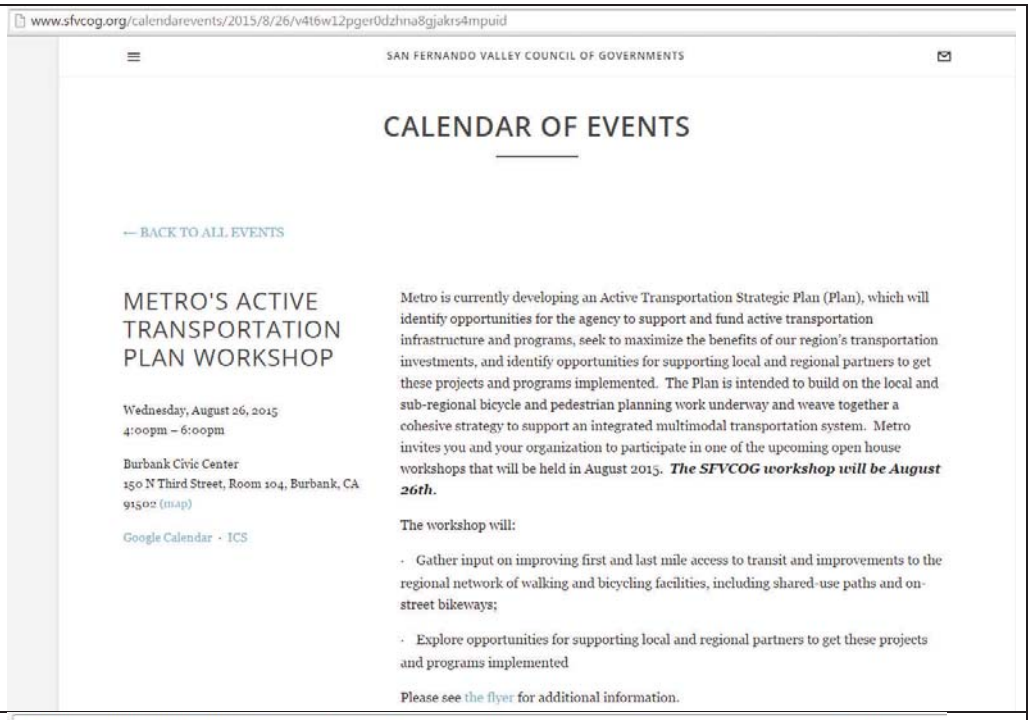
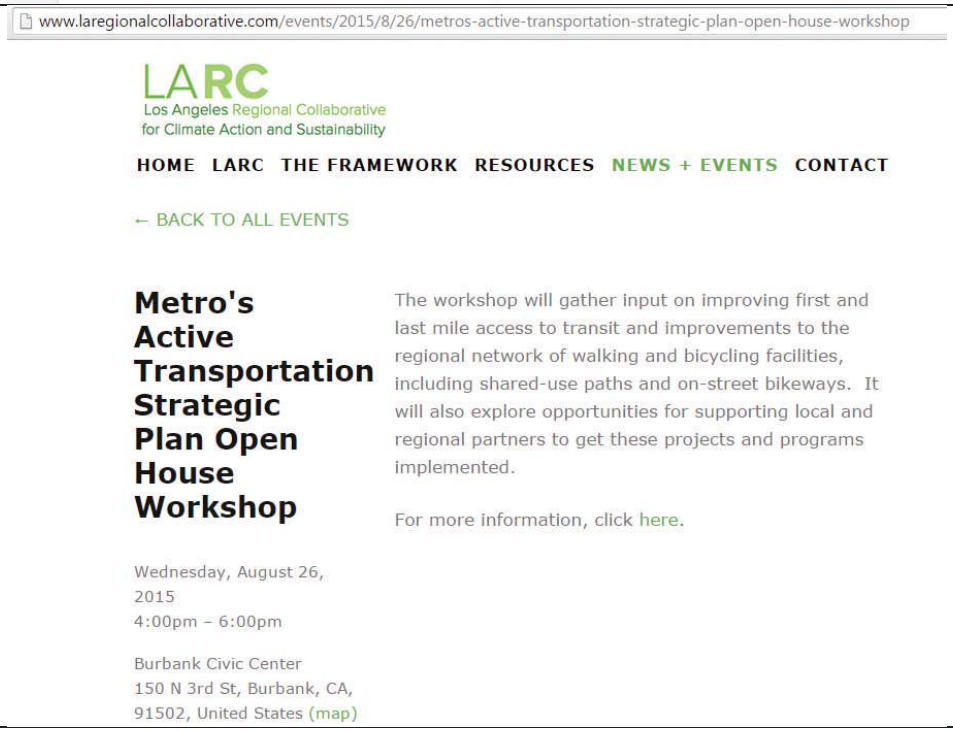
https://twitter.com/BikeMetro/status/631274933230809088



https://twitter.com/LADOTBikeProg/status/631150572553437184	
https://twitter.com/WeHoBike/status/630926486246035456	

https://twitter.com/SafeRoutesCA/status/623635159582027776	
http://www.myvalleyvillage.com/category/active-transportation-strategic-plan/	

http://empowerla.org/metro-to-host-active-transportation-workshops/	
https://twitter.com/amyshimshon/status/623645074811957248	

http://www.sfvcog.org/calendarevents/2015/8/26/v4t6w12pger0dzhna8gjakrs4mpuid	
http://www.laregionalcollaborative.com/events/2015/8/26/metros-active-transportation-strategic-plan-open-house-workshop	

http://www.losangeleswalks.org/metro-atsp/	www.losangeleswalks.org/metro-atsp/ Home About Us Campaigns Donate Español Resources Calendar ← Previous Next → **Metro Active Transportation Wants to Hear from You!** Posted on July 30, 2015  Para Espanol Click Aqui! Join an open house workshop with Metro to identify needs for the upcoming Active Transportation Strategic Plan. The goal of this project is to improve the bicycling, walking, and transit use in your area, so first we need to develop the plan. The workshops will: 1. *Gather input on improving the first and last mile access to transit and improvements to the regional network of walking and bicycling facilities, including shared-use paths and on-street bikeways.* 2. *Explore opportunities for supporting local and regional partners to get these programs implemented*
http://www.advancedtransportationcenter.org/event/metro-active-transportation-strategic-plan-open-house-workshops-4/	ADVANCED TRANSPORTATION CENTER of Southern California Fuels Vehicles Technologies Programs About Contact **Metro Active Transportation Strategic Plan Open House Workshops** August 17 @ 4:00 pm - 6:00 pm Metro is developing an Active Transportation Strategic Plan to identify needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County, and your input will help create a meaningful, effective plan. The workshops will: • Gather input on improving first and last mile access to transit and improvements to the regional network of walking and bicycling facilities, including shared-use paths and on-street bikeways • Explore opportunities for supporting local and regional partners to get these projects and programs implemented The workshops are designed for planners, engineers, traffic safety professionals, public health and injury prevention professionals, advocates, transit riders, transit operators, non-profit organizations, decision makers, and other interested stakeholders. Each workshop will include information about the overall plan and information specific to the sub-region. We encourage you to attend the workshop specific to your sub-region; however, staff will be available to answer questions and gather input at all workshops. + GOOGLE CALENDAR + ICAL EXPORT Details Date: August 17 Time: 4:00 pm - 6:00 pm Website: http://www.metro.net/projects/active-transportation/strategic-plan/ Organizer Metro Website: http://www.metro.net/ CA Energy Commission Awards Grant to CSE for First Standards-Based Smart EV Charging Platform Driving Mobility Advanced Transportation Event Features Key Leaders, June 18 MOEV Inc. develops distributed power smart-charging systems Mayor Garcetti Announces Dept of Transportation Technology Advisor

http://vnnc.org/2015/07/metro-to-host-active-transportation-workshops/

Van Nuys Neighborhood Council

The Van Nuys Neighborhood Council meets on the second Wednesday of the month at 7pm. The General Meeting is held at 6262 Van Nuys Blvd.

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Metro To Host Active Transportation Workshops

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Metro To Host Active Transportation Workshops

Metro is developing an Active Transportation Strategic Plan to identify needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County, and your input at a series of Open House Workshops will help create a meaningful, effective plan.

The workshops will gather input on improving first and last mile access to transit and improvements to the regional network of walking and bicycling facilities, including shared-use paths and on-street bikeways, and explore opportunities for supporting local and regional partners to get these projects and programs implemented.

The workshops are designed for planners, engineers, traffic safety professionals, public health and injury prevention professionals, advocates, transit riders, transit operators, non-profit organizations, decision-makers, and other interested stakeholders. Each workshop will include information about the overall plan and information specific to the sub-region. We encourage you to attend the workshop specific to your sub-region; however, staff will be available to answer questions and gather input at all workshops.

The Active Transportation Strategic Plan is a county wide effort to identify needs, resources, and strategies to improve and increase walking, bicycling and transit use in Los Angeles County. It is led by the Los Angeles County Metropolitan Transportation Authority (Metro). The Plan's policy and infrastructure recommendations will require collaboration between Metro, local and regional agencies, and other stakeholders to ensure implementation. The Plan will focus on improving first and last mile access to transit and propose a regional network of active transportation facilities, including shared-use paths and on-street bikeways, and develop a funding strategy to get them built.

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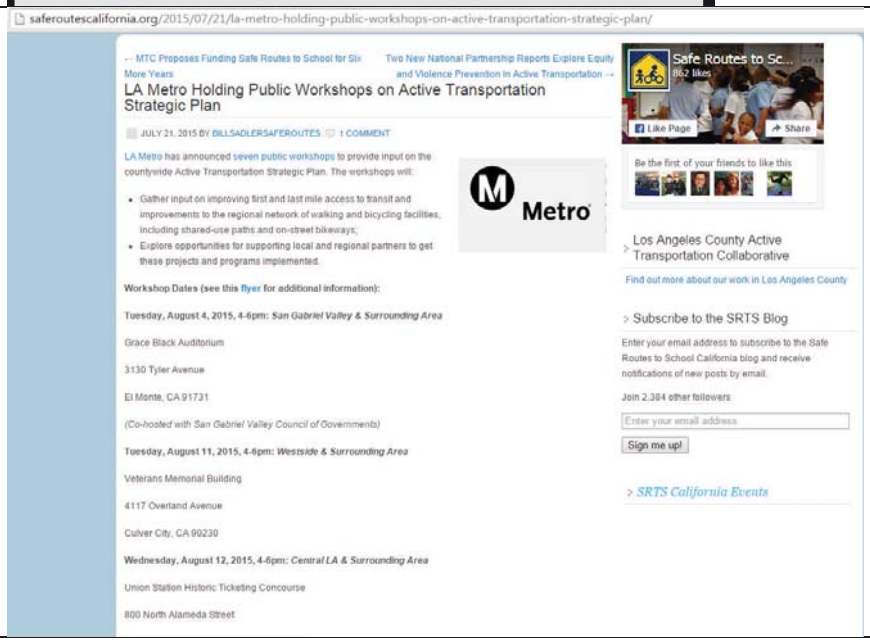
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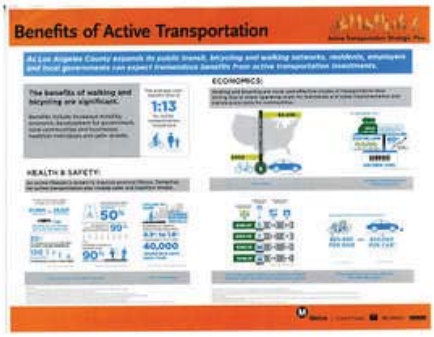
Metro's Active Transportation Plan needs your input!

Good advice lasts. I remember hearing a talk in November of 2008 entitled "*Leading Professional and Institutional Change through Subversion, Revolution and Meterology.*" The speaker was Debra R. Rolison of the U. S. Naval Research Laboratory. She told us about the **Rule of 18**, which states that when you take a new research direction, it will take 18 months to get yourself up to speed in the [new] area.

Last week I attended an Open House Workshop about active transportation in the San Fernando Valley. I didn't study transportation planning or urban design in school, so it has taken some time to learn the ins and outs of the transit system here in Southern California. I will try to explain some of the basics here so that **you** can take part in the conversation, too.

Metro is the major operator of bus and rail service in Los Angeles County, California. Metro hosted the first round of Open House Workshops as part of the development of the Active Transportation Strategic Plan. **Active transportation** refers to any form of human-powered transportation – walking, cycling, using a wheelchair, in-line skating or skateboarding. There are many ways to engage in active transportation, whether it is walking to the bus stop, or cycling to school/work.

Councils of governments (CoGs—also known as regional councils, regional commissions, regional planning commissions, and planning districts) are regional governing and/or coordinating bodies that exist throughout the United States. The Open House Workshop we attended was co-hosted by Metro and the San Fernando Valley Council of Governments (http://www.sfvcog.org/). The SFVCoG represents parts of Los Angeles County: Burbank, Glendale, San Fernando and Santa Clarita. The Southern California Association of Governments (SCAG) is the nation's largest metropolitan planning organization, representing six counties, 191 cities and more than 18 million residents.



When we arrived at the open house, there were posters on the perimeter of the room and Metro provided copies of the posters in 8.5" x 11" format. We scanned them and some are posted here. The pillars of Metro's Active Transportation Strategic Plan are:

- Acess to transit

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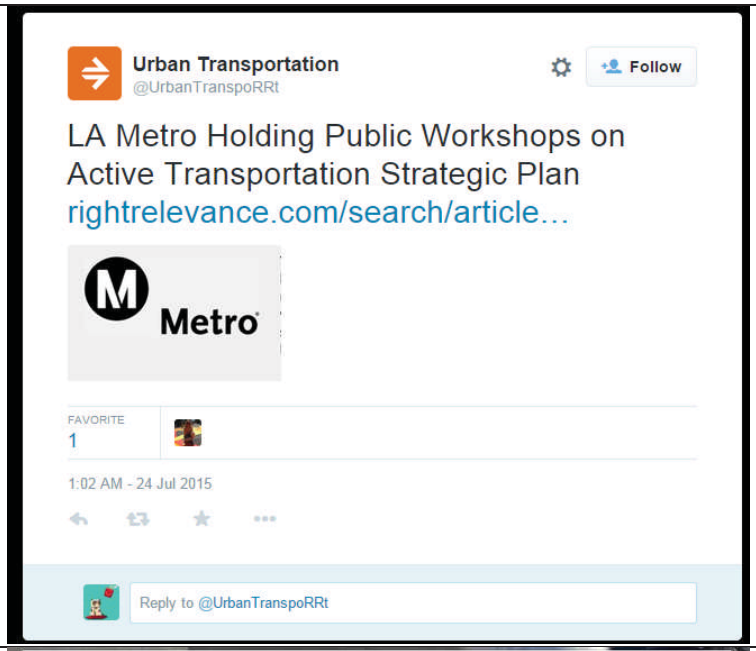
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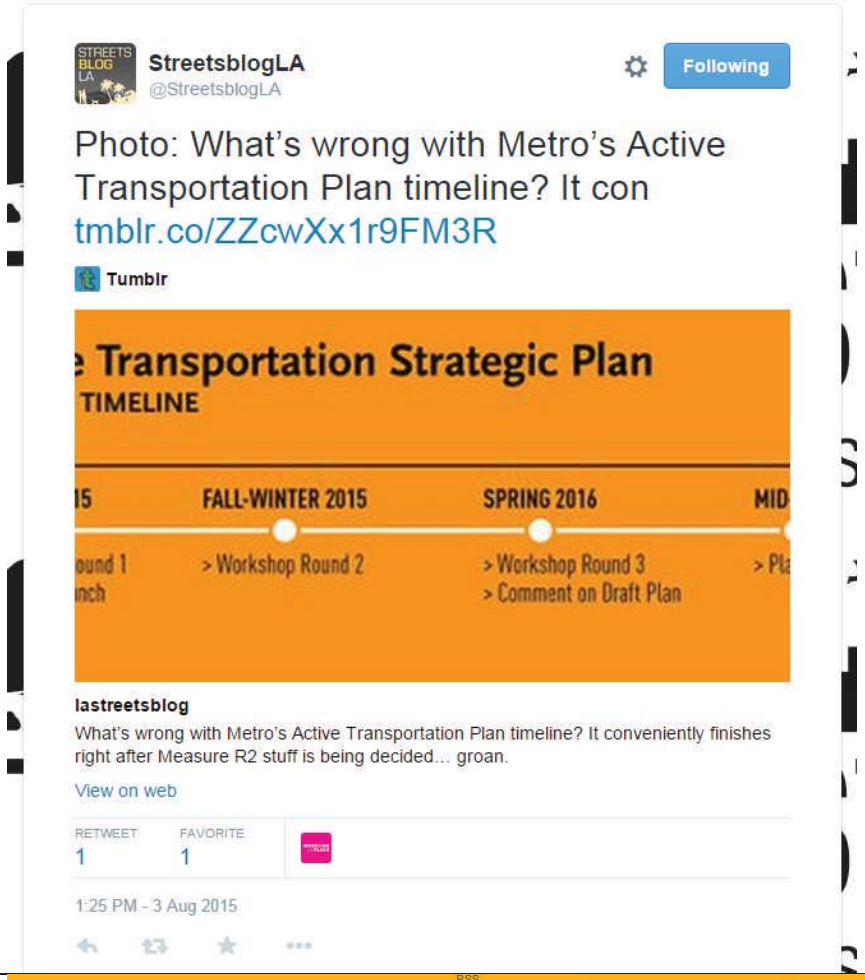
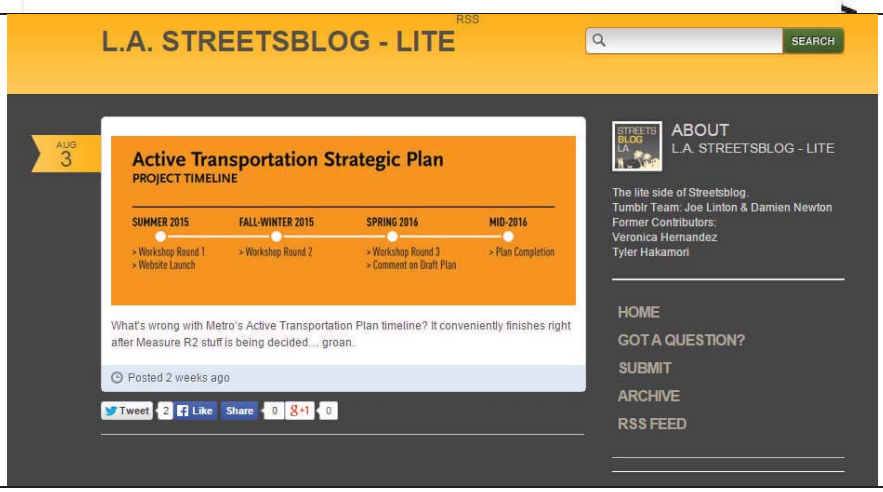
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Kayla A. Kaiser
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Born in Omaha, NE. Attended King Science Center and Omaha North High. Bachelor of Science in Chemistry from University of Nebraska at Kearney. Master of Science in Chemistry from Arizona State University. Adjunct Faculty in the Maricopa County Community College District. Doctor of Philosophy in Chemistry at University of California, Riverside. Currently Part-Time Faculty at California State University, Northridge.

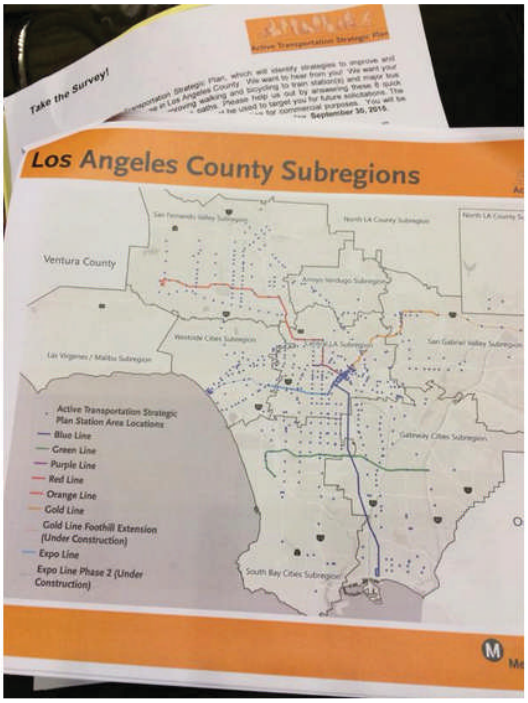
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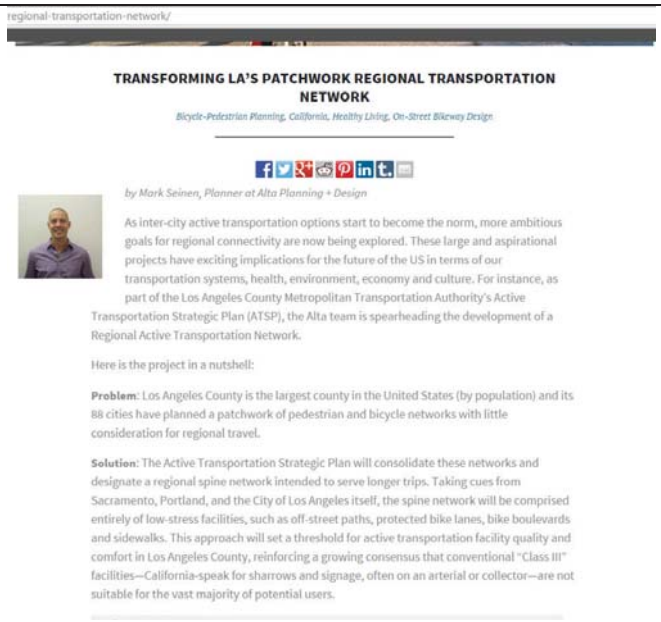
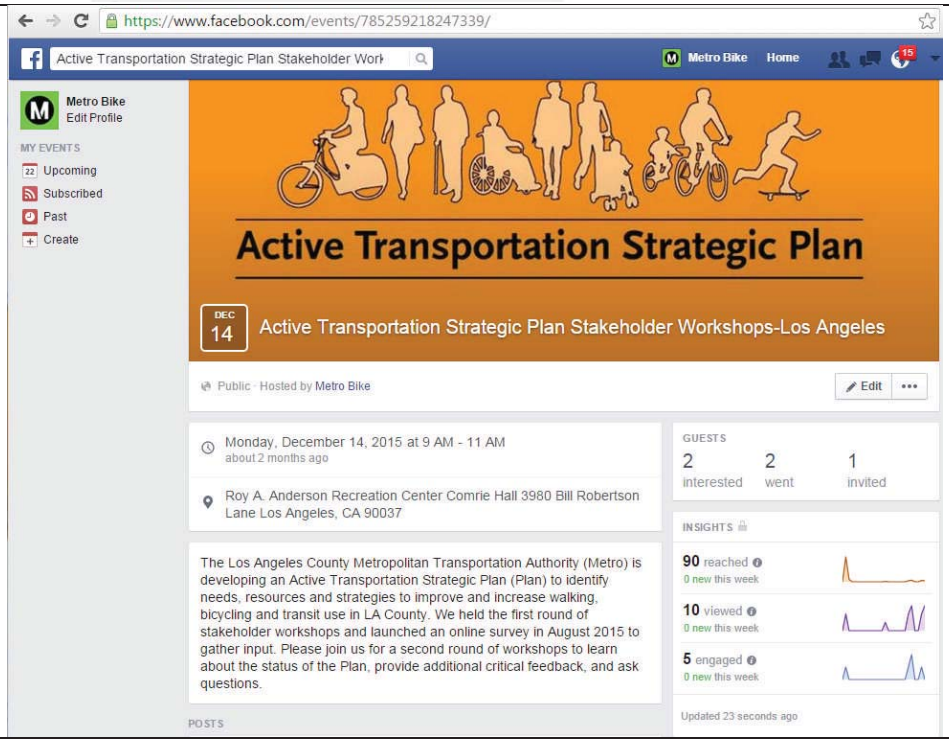
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https://twitter.com/woolie/status/639457286319161344	Ian @woolie Follow Awesome: LA Metro's Active Transportation Strategic Plan analysis of 661 station areas. True progressive transit. #transitGIS @FehrAndPeers RETWEETS 2 FAVORITES 2 8:17 AM - 3 Sep 2015 Reply to @woolie @FehrAndPeers Ian @woolie · Sep 3 Presentation was preview of station analysis methods: walksheds, density, landuse, ridership, etc. Hope it's made public!! @metrolosangeles 2
https://twitter.com/InvestinPlace/status/636685397339213824	Investing in Place @InvestinPlace Follow See the blue dots - those are proposed active transportation strategic plan area locations 

https://www.facebook.com/RepRoybalAllard/posts/1144003788947481	**Rep. Lucille Roybal-Allard** Like Page August 20 at 12:48pm On Monday, August 24, from 4-6 PM, Metro will be holding an open house workshop on the second floor of 16401 Paramount Blvd. in Paramount. The workshop is being held to gather input on Metro's development of an Active Transportation Strategic Plan, which aims to improve and increase walking, bicycling and transit use throughout LA County. If you would like to hear more about this plan, or would like to offer any thoughts on this subject, feel free to stop by. For more info about the plan, please refer to this fact sheet: roybal-allard.house.gov ROYBAL-ALLARD.HOUSE.GOV Like Comment Share 5 people like this.
https://www.facebook.com/valley.bikery/posts/1058669370809793?pnref=story	**Valley Bikery** shared Bike Metro's event. August 25 at 2:01pm Tomorrow night (8/26, 4-6 pm) in Burbank, Metro Los Angeles will be holding a meeting for their Active Transportation Strategic Plan. If you walk, ride a bike, or use public transit in the 818 and want to make sure your voice is heard and/or find out what's in store for the future of transportation in the San Fernando Valley, please attend!  26 AUG **Active Transportation Strategic Plan Ope...** Wed 4 PM · 150 N Third Street, Room 104, Burbank, ... Justin Garcia went Going Like Comment Share Kathryn Savage and Linda Coburn like this.

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Active Transportation Strategic Plan StakeholderWorkshops conta.cc/1NAIs7o



Join us for the Active Transportation Strategic Plan Stakeholder Workshops

The Los Angeles County Metropolitan Transportation Authority (Metro) is developing an Active Transportation Strategic Plan (Plan) to identify needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County. We held the first round of stakeholder workshops and launched an online survey in August 2015 to gather input. Please join us for a second round of workshops to learn about the status of the Plan, provide additional critical feedback, and ask questions.

THE WORKSHOPS WILL:

- Gather input on the proposed regional network of bicycle and multi-use path facilities
- Discuss strategies for first last mile improvements to key transit stops and stations
- Seek feedback on performance measures
- Discuss roadmap towards implementation of these projects and programs

THE WORKSHOPS ARE DESIGNED FOR:

Practitioners who implement walking/bicycling/transit improvements; applicable agency representatives; planners; engineers; traffic safety professionals; public health and injury prevention professionals; advocates; non-profit organizations; decision makers; and other interested stakeholders.

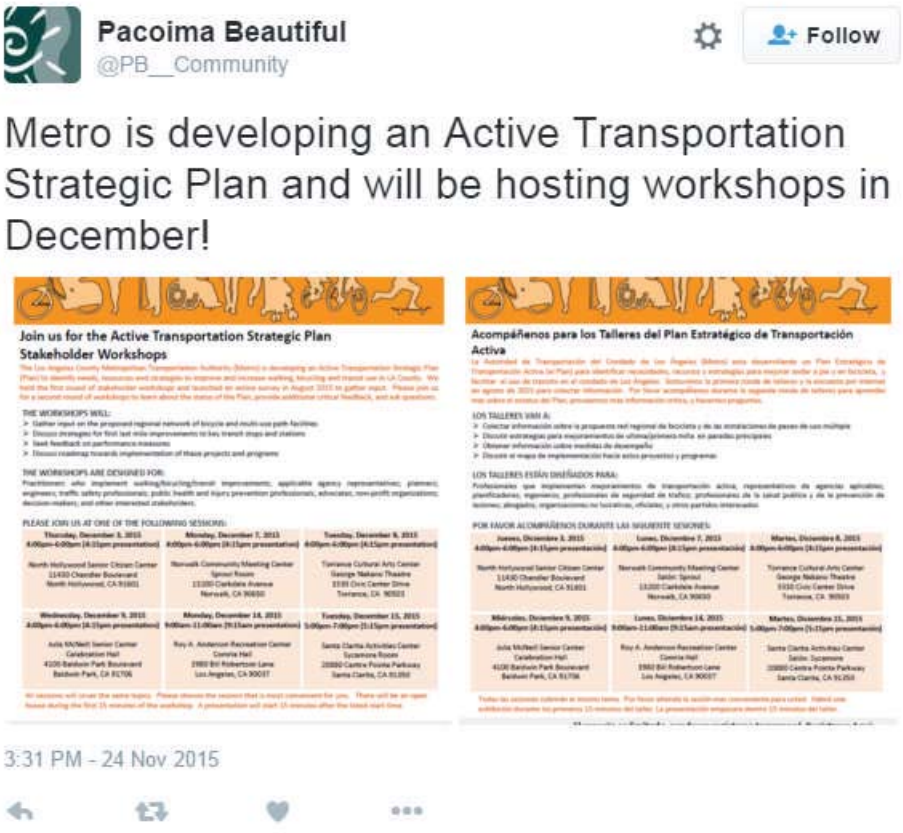
PLEASE JOIN US AT ONE OF THE FOLLOWING SESSIONS:

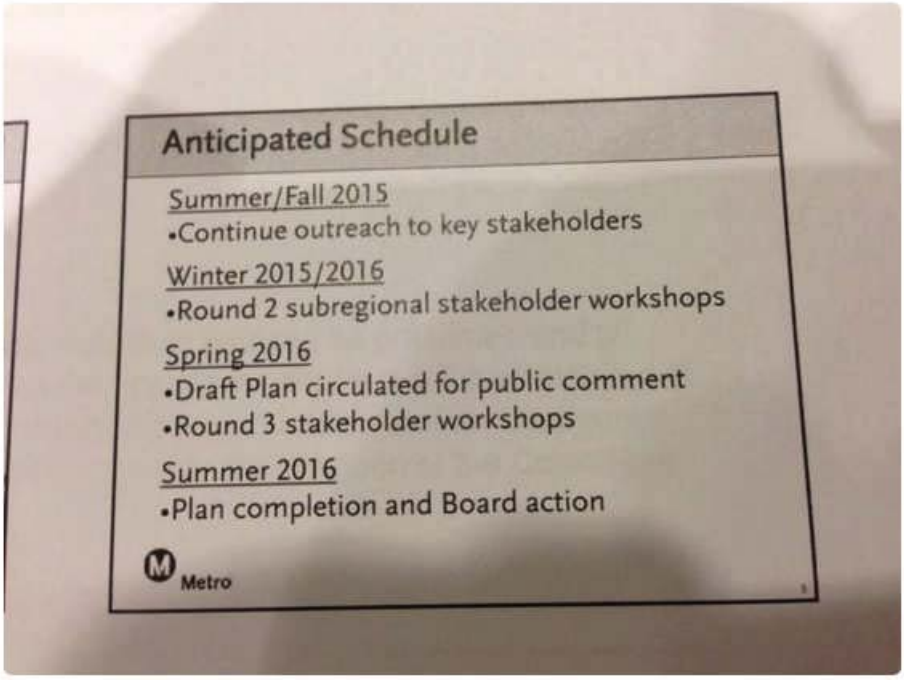
Thursday, December 3, 2015 **4:00pm-6:00pm (4:15pm presentation)** North Hollywood Senior Citizen Center 11430 Chandler Boulevard North Hollywood, CA 91601	**Monday, December 7, 2015** **4:00pm-6:00pm (4:15pm presentation)** Norwalk Community Meeting Center Sproul Room 13200 Clarkdale Avenue Norwalk, CA 90650	**Tuesday, December 8, 2015** **4:00pm-6:00pm (4:15pm presentation)** Torrance Cultural Arts Center George Nakano Theatre 3330 Civic Center Drive Torrance, CA 90503
Wednesday, December 9, 2015 **4:00pm-6:00pm (4:15pm presentation)** Julia McNeill Senior Center Celebration Hall 4100 Baldwin Park Boulevard Baldwin Park, CA 91706	**Monday, December 14, 2015** **9:00am-11:00am (9:15am presentation)** Roy A. Anderson Recreation Center Connie Hall 3980 Bill Robertson Lane Los Angeles, CA 90037	**Tuesday, December 15, 2015** **5:00pm-7:00pm (5:15pm presentation)** Santa Clarita Activities Center Sycamore Room 20880 Centre Pointe Parkway Santa Clarita, CA 91350

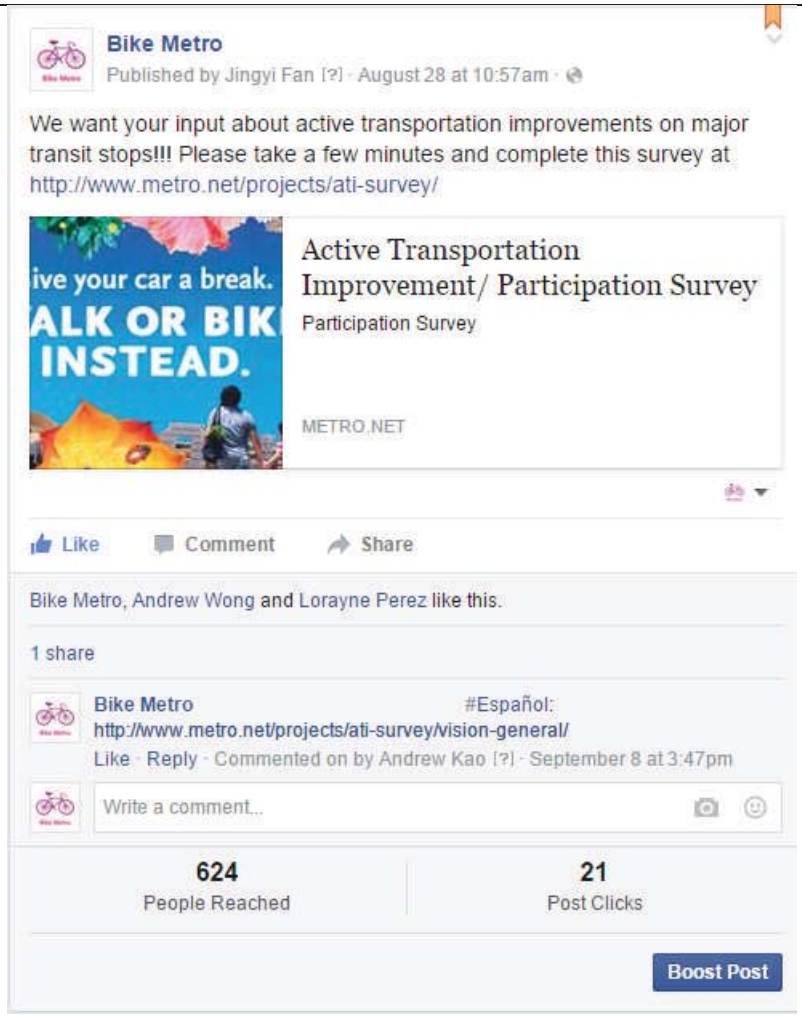
All sessions will cover the same topics. Please choose the session that is most convenient for you. There will be an open house during the first 15 minutes of the workshop. A presentation will start 15 minutes after the listed start time.

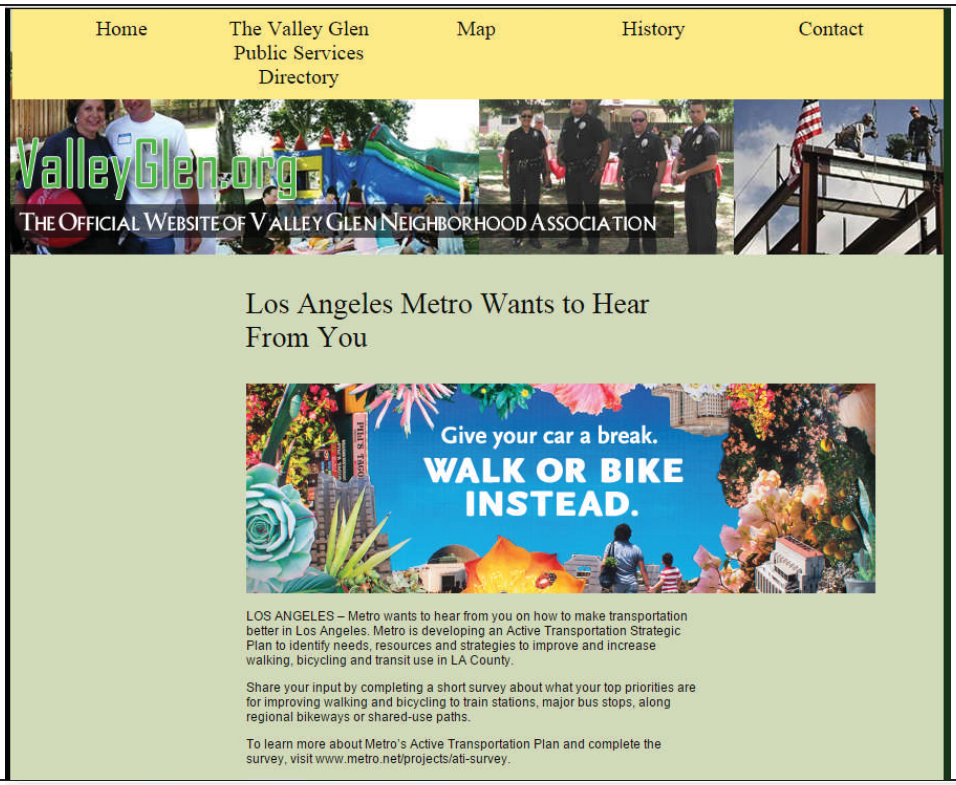
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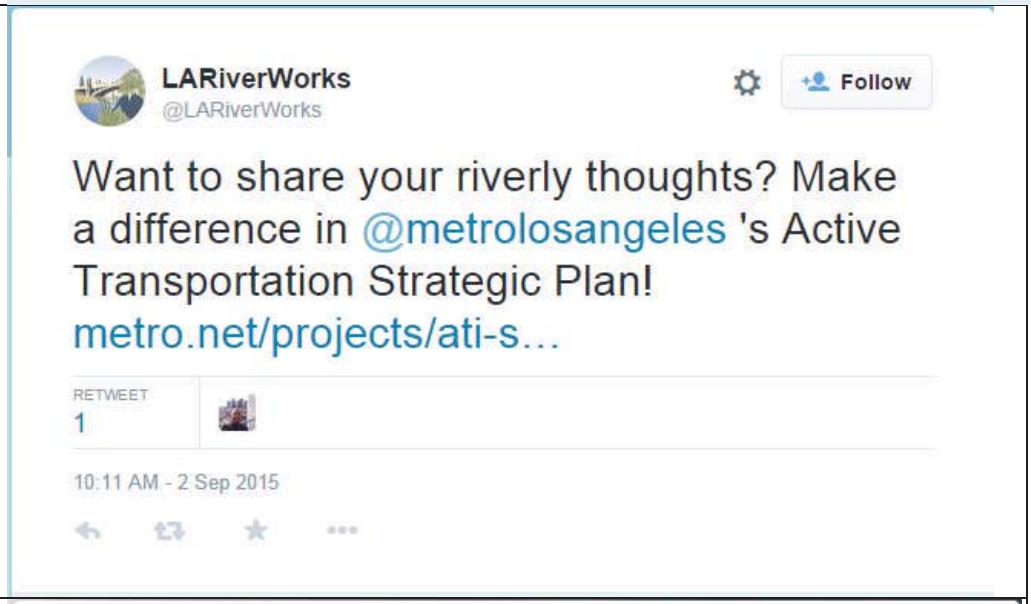
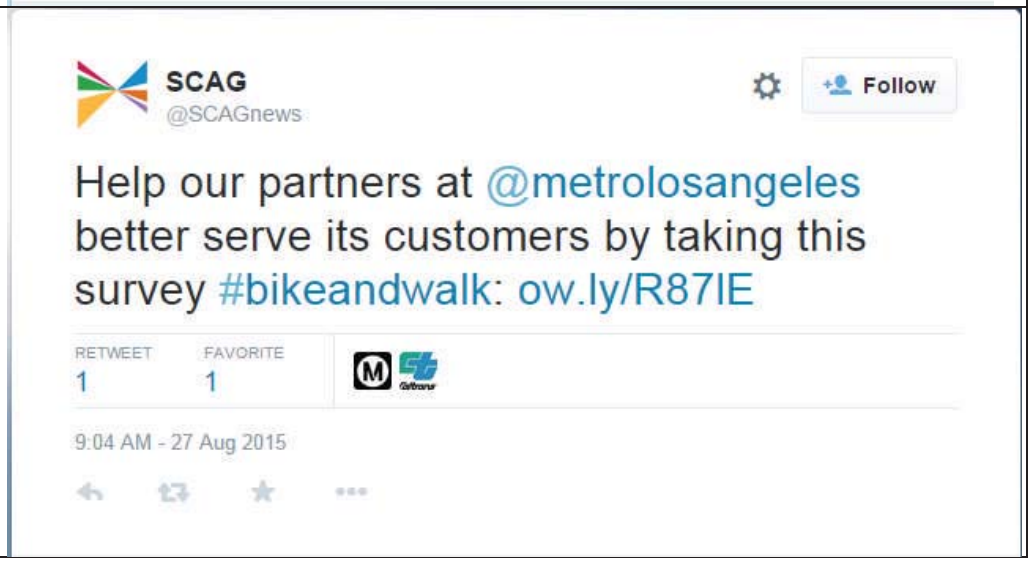
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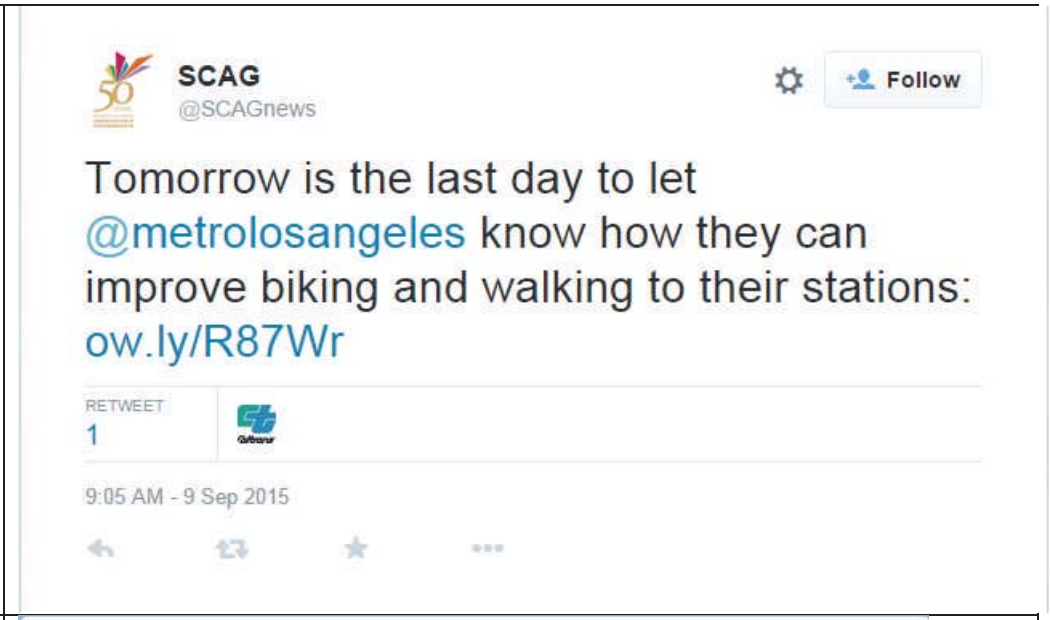
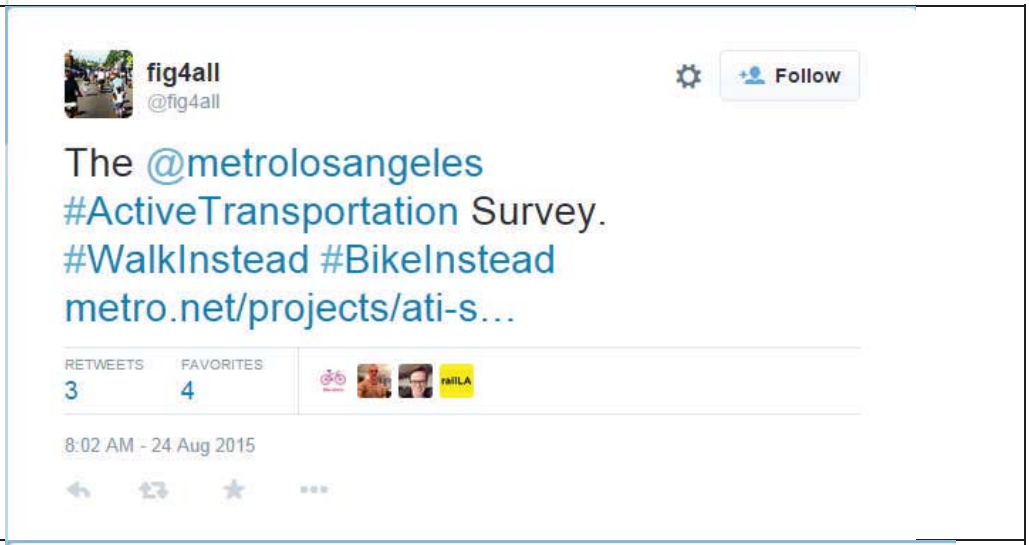
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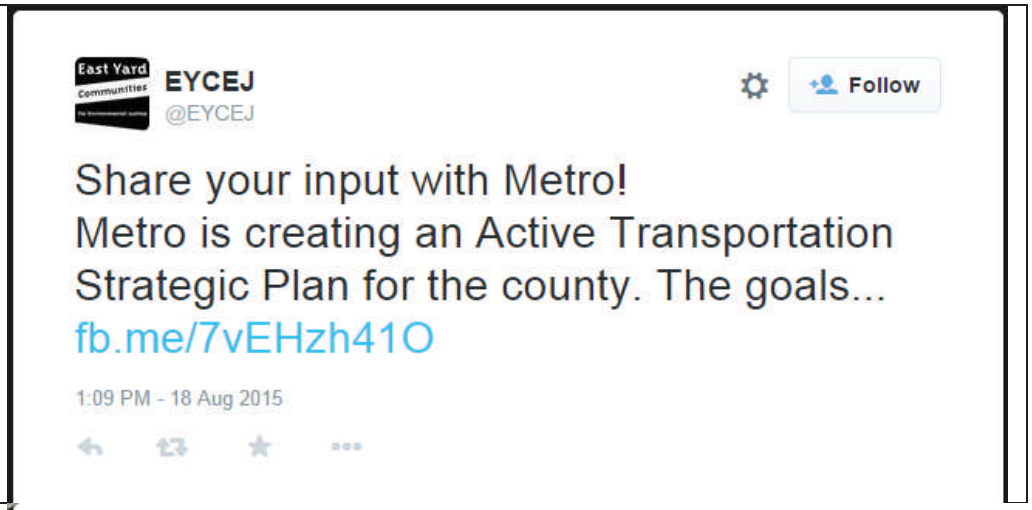
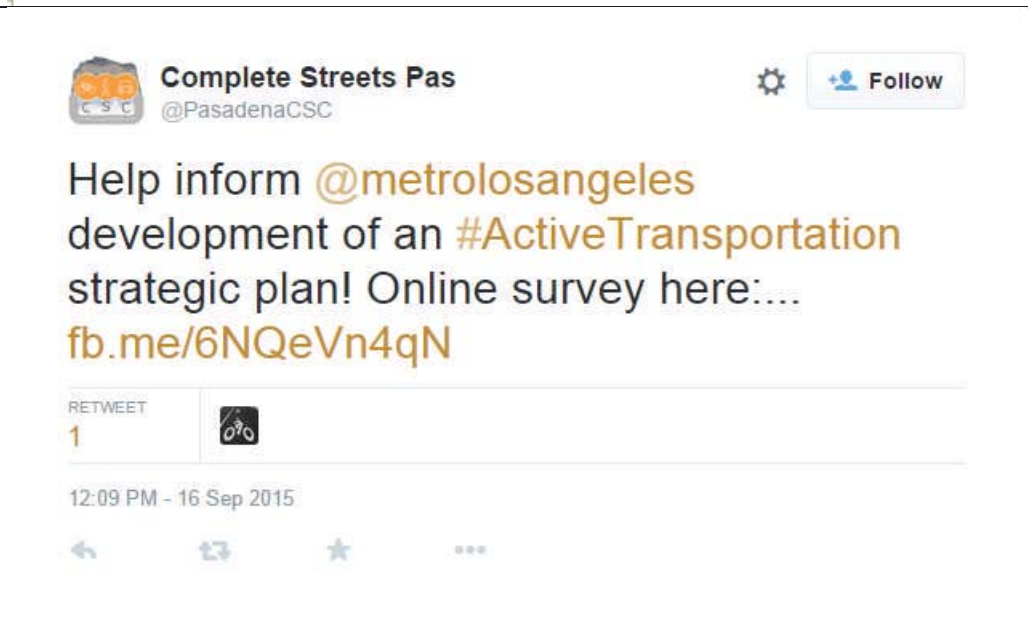
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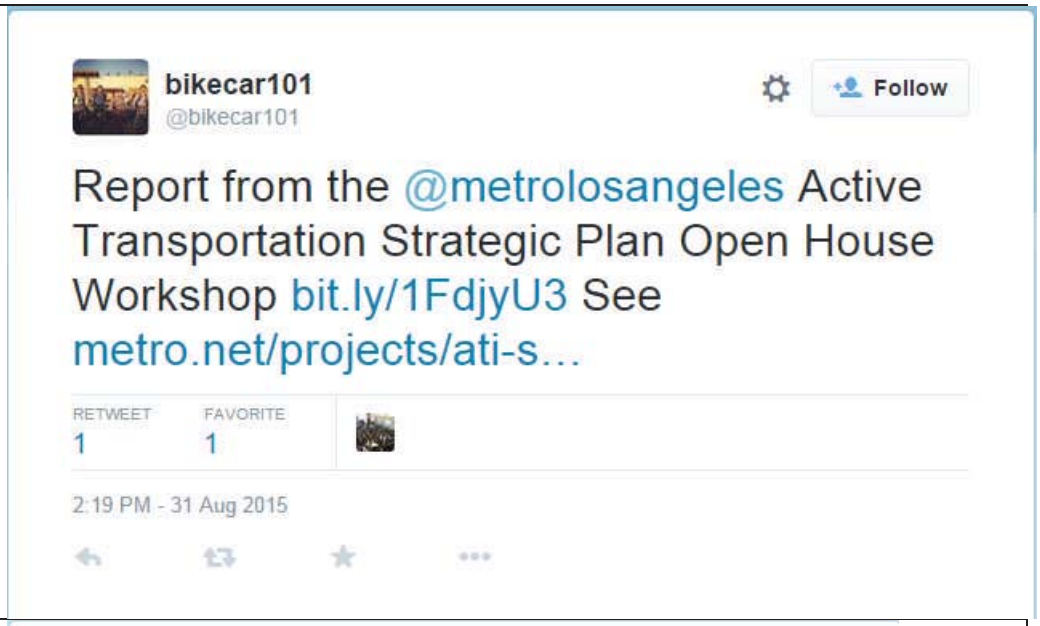
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https://www.facebook.com/EYCEJ/posts/1220969981261955	East Yard Communities for Environmental Justice August 18 · Like Page Share your input with Metro! Metro is creating an Active Transportation Strategic Plan for the county. The goals of the plan are to "identify needs, resources, and strategies to improve and increase walking, bicycling and transit use in Los Angeles County." They are looking to improve and expand upon the 650+ transit locations throughout the County. They are in the very first phase of this plan, and one of the outreach tools is a survey to gather input for improvements, found here: http://www.metro.net/projects/ati-survey/  Active Transportation Improvement/ Participation Survey Participation Survey METRO.NET Like Comment Share David de la Cruz likes this.
https://twitter.com/BikeMetro/status/647579019702050816?lang=en	Bike Metro LA County @BikeMetro Following Only one week left fill out #ActiveTransportortation survey!!! ow.ly/SB9Ct #WalkInstead #BikeInstead 

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APPENDIX

D SELECTION OF 661 STATION AREAS

DRAFT

FEHR PEERS

MEMORANDUM

Date: June 19, 2015
To: Tham Nguyen, Los Angeles County Metropolitan Transportation Authority
From: Matt Benjamin, Jacqui Swartz and Chelsea Richer, Fehr & Peers
Subject: ***Documentation - Development of Station Areas for Analysis***

Ref: LA15-2735

A total of 661 station areas will be analyzed in the Active Transportation Strategic Plan (ATSP). The development of this list of station areas occurred in three primary stages, in response to feedback from the project Technical Advisory Committee (TAC) and discussions by the project team. This memorandum documents the process of compiling the set of 661 station areas for analysis within the ATSP.

The first set of 565 station areas were developed by collapsing every stop or station on a Metro Rail, Metro Rapid, or Metrolink line into a "station area" that captured the stops and stations within 300 feet of an intersection. This enabled stops that were on opposite sides of the street, rail stations that had rapid bus stops nearby, or stations that had more than one portal, to be treated as one area rather than multiple areas with duplicative analysis. Therefore the first set of 565 station areas contains 1,427 stops and stations, but aggregates these spatially into a more meaningful and efficient unit of analysis.

The second set of 92 station areas were developed in response to TAC input, suggesting that the analysis also include high-ridership Metro Local and municipal transit operators in areas where there were no Rapid, Rail, or Metrolink stations to prompt their inclusion into the original set of 565 station areas. Following this suggestion, Metro reached out to municipal transit operators to collect stop-level boardings and alightings. Ultimately, seven municipal transit operators returned data in this format, which enabled comparison across Metro and other providers.

In order to capture all the transit activity occurring at an intersection, a 300 foot buffer around the intersection was created, all bus stops falling within that buffer were assigned to the intersection, and ridership was aggregated across municipal transit providers and Metro Local buses. The intersections that were within a half mile of one of the existing 565 station areas were eliminated to prevent duplicative analysis. The remaining intersections were sorted by ridership, and every intersection with more than 800 daily boardings and alightings were selected, adding 92 new "station areas" for analysis.[i]

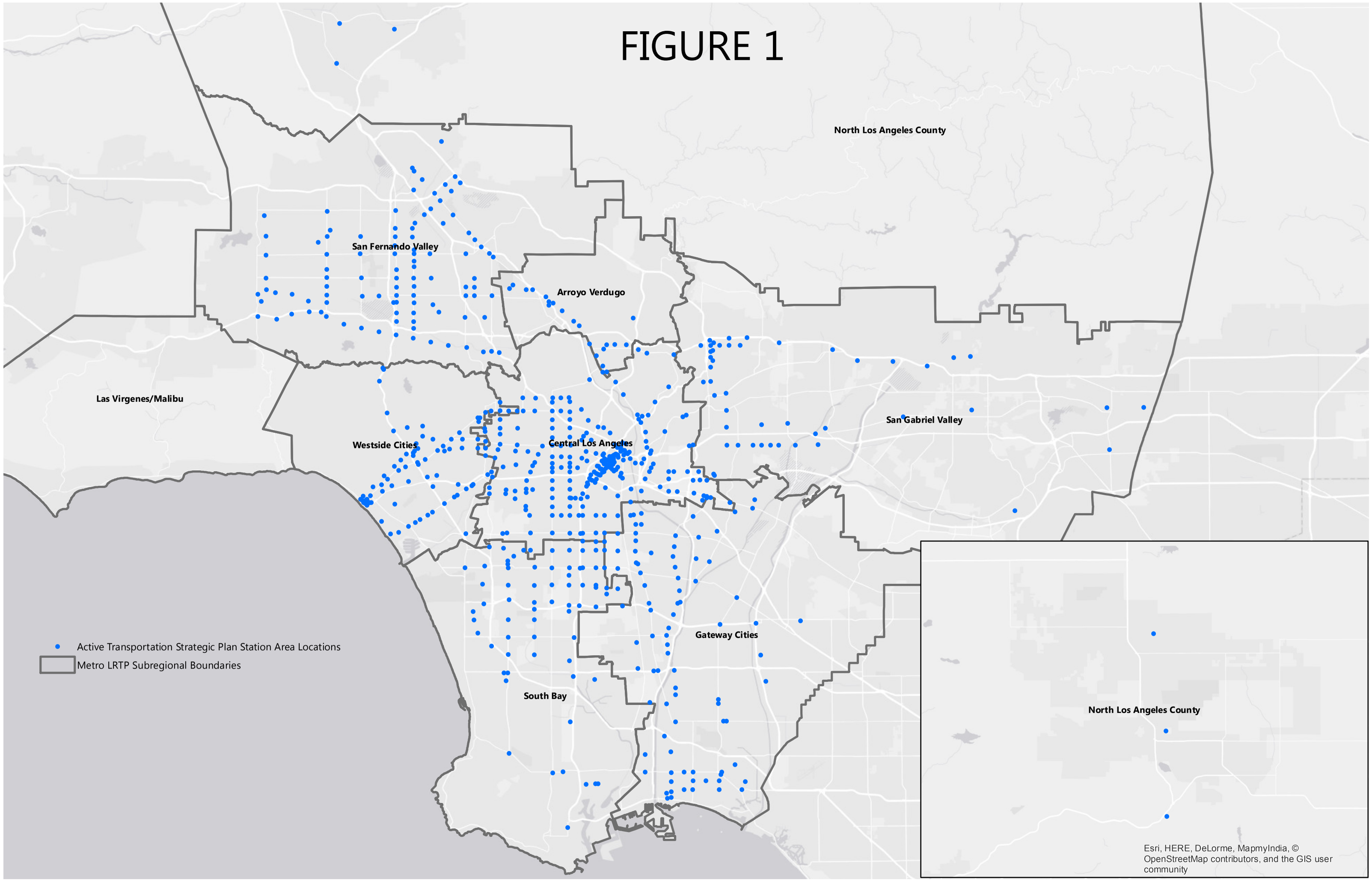
Four (4) future station areas on the Crenshaw light rail line (scheduled to open in 2019) were also added.[ii] The inclusion of these stations was in response to TAC input and subsequent discussion among the project team.

The attached map, Figure 1, illustrates the distribution of our final set of 661 station areas. These station areas are served by Metro Rapid, Metro Local, Metro Rail, Metrolink, Culver CityBus, Santa Monica Big Blue Bus, Gardena Municipal Bus, LADOT Transit, Montebello Bus, and Long Beach Transit lines.

[i] Selecting a threshold of 800 daily boardings and alightings incorporated a geographically diverse set of additional stations, while ensuring a manageable number of additional station areas to be analyzed. This threshold produced a manageable number of additional stations that was within the ridership range of existing station areas and was geographically diverse.

[ii] Six Crenshaw Line stations will be constructed, but two are already included in the data set because they are served by Metro Rapid Bus lines. Therefore only four (4) additional station areas were added to the data set.

FIGURE 1


North Los Angeles County
San Fernando Valley
Arroyo Verdugo
Las Virgenes/Malibu
San Gabriel Valley
Westside Cities
Central Los Angeles
Gateway Cities
South Bay
Active Transportation Strategic Plan Station Area Locations
Metro LRTP Subregional Boundaries
North Los Angeles County
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

APPENDIX

E STATION TYPOLOGY

DRAFT

FEHR PEERS

MEMORANDUM

Date: February 25, 2016

To: Tham Nguyen, Los Angeles County Metropolitan Transportation Authority

From: Miguel Núñez and Chelsea Richer, Fehr & Peers

Subject: ***Station Typology Development***

Ref: LA15-2735

INTRODUCTION

This memorandum summarizes the approach to developing a typology of station areas to select a diverse set of station areas to comprise the example case studies developed for the Active Transportation Strategic Plan (ATSP). By capturing and representing the wide range of diverse characteristics across the county, the resource will be most useful for numerous communities in Los Angeles County. The approach was informed by previous Metro studies and other studies in Southern California.

The approach considered a set of contexts that ranged from urban to suburban and exurban; very dense population to less dense population; many intersections per square mile to few intersections per square mile. The approach ultimately created 12 categories and categorized the set of 661 station areas included in the ATSP. Twenty example case study sites were selected to obtain coverage across these 12 categories.

SUMMARY OF PREVIOUS STUDIES

Two previous Metro studies include information pertinent to the development of a Station Typology. The Metro Countywide Sustainability Planning Policy (2012) and the Metro First Last Mile Strategic Plan (2014) each used a process for identifying and categorizing the underlying characteristics of a community in order to capture the differences in communities across the county.

The Metro Countywide Sustainability Planning Policy looks at residential density and employment density, creating a grid of nine "place types" based on an assessment of low-medium-high density and centrality. Nine place types were then developed into an "accessibility index" comprised of four clusters, ranging from very dense and very central to not dense and not central. These clusters – named A, B, C, and D – are incorporated as one parameter into the ATSP Station Typology. The Metro First Last Mile Strategic Plan utilizes the Accessibility Clusters and the station classification method to select case studies that encompass the diversity of place within the county.

In addition to these Metro studies, the Smart Growth Place Type, developed by the San Diego Association of Governments (SANDAG) for the Safe Routes to Transit initiative, informed the ATSP Station Typology. The SANDAG process set a minimum threshold for employment and residential density, and also

considered street network density and the type of transit service found in the place type. These additions capture the walkability of the space and the characteristics of the transit type in the area, which are particularly important for those who use active modes to access the area. This method results in seven more descriptive place types: Metropolitan Center, Urban Center, Town Center, Community Center, Rural Village, Special Use Center, and Mixed Use Transit Corridor.

ACTIVE TRANSPORTATION STRATEGIC PLAN APPROACH

The Station Typology for the Active Transportation Strategic Plan is informed by the previous studies described above. Three parameters were chosen based on previous efforts at categorizing "place type" within Southern California:[1]

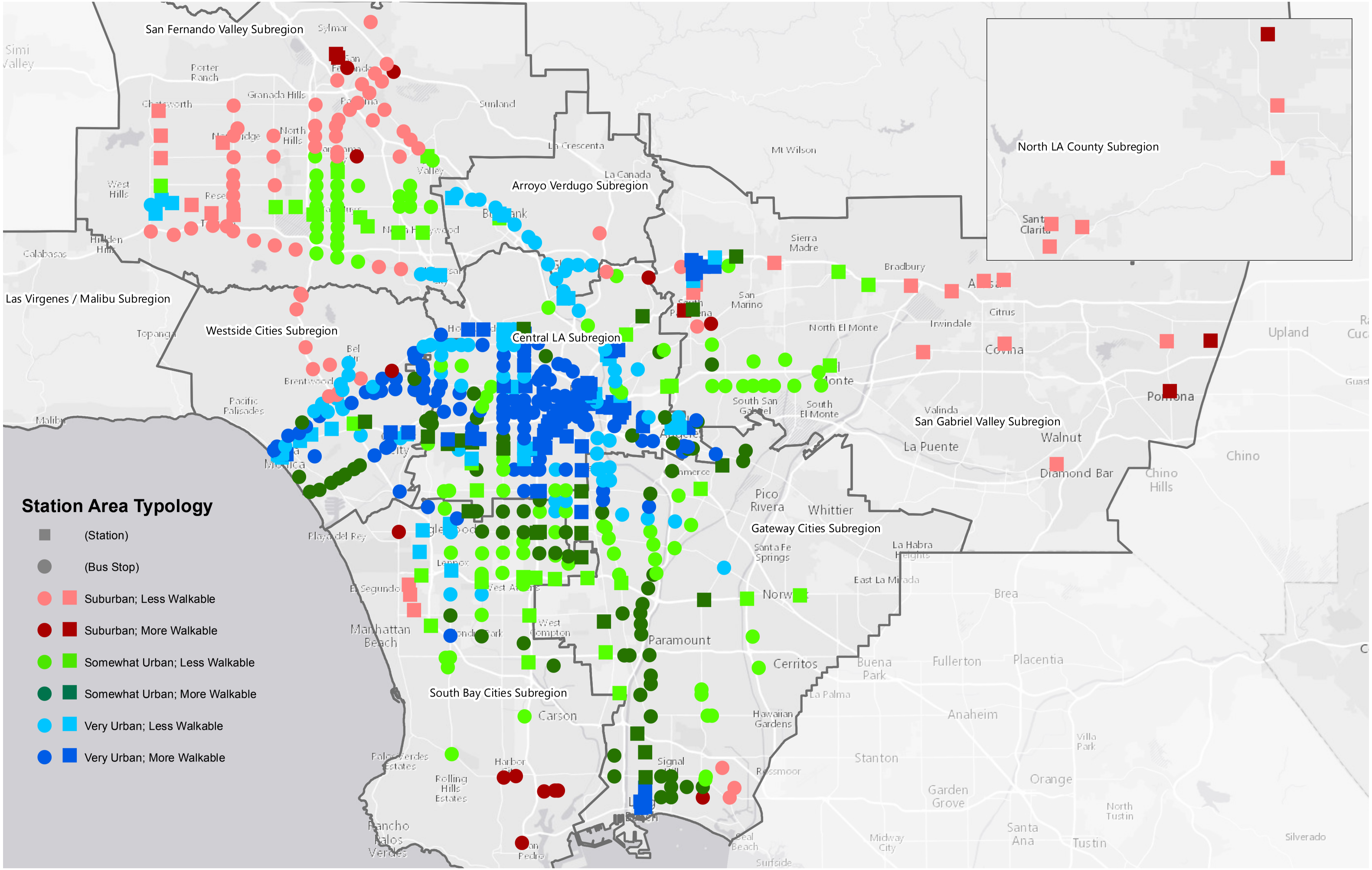
- Accessibility Cluster, based on the Countywide Sustainability Planning Policy, based on residential density and employment centrality
- Station or Bus Stop, based on the station or stop around which the existing conditions analysis was conducted
- Street Grid Density, based on the number of intersections per mile within a half mile of the station or stop around which the existing conditions analysis was conducted

These parameters result in a combined 12 Station Area types. Figure 1 (attached) shows the spatial distribution of these types across the county for the set of 661 Station Areas. Ultimately, the distribution of Station Areas selected as case studies reflect, among other criteria, distribution across the Station Area typology, with at least one case study per type. The distribution of the 661 Station Areas across the 12 types is shown in Table 1, below.

[1] Previous efforts include the Metro Sustainability Planning Policy, the Southern California Association of Governments (SCAG) Urban Footprint project and the Regional Transportation Plan / Sustainable Communities Strategy, the SANDAG Smart Growth project (part of the SANDAG Regional Comprehensive Plan), and the Congress for New Urbanism input to the LEED-Neighborhood Development process. The development of "place types" within each of these projects includes a combination of population and employment density, transit access and quality of transit, and "walkability" or intersection density.

Table 1: Station Areas Distributed Across Typology Categories

	Station		*Bus Stop*		
	Fewer Intersections per Mile	**More Intersections Per Mile**	**Fewer Intersections per Mile**	**More Intersections Per Mile**	**Total**
Low Employment Centrality/Residential Density	26 (3.9%)	6 (0.9%)	63 (9.5%)	14 (2.1%)	109 (16.5%)
Medium Employment Centrality/Residential Density	37 (5.6%)	22 (3.3%)	97 (14.6%)	69 (10.4%)	225 (34.0%)
High Employment Centrality/Residential Density	45 (6.9%)	107 (16.2%)	73 (11.1%)	102 (15.4%)	327 (49.5%)
Total	108 (16.3%)	135 (20.4%)	233 (35.3%)	185 (28.0%)	661 (100.0%)


San Fernando Valley Subregion
North LA County Subregion
Arroyo Verdugo Subregion
Las Virgenes / Malibu Subregion
Westside Cities Subregion
Central LA Subregion
San Gabriel Valley Subregion
Gateway Cities Subregion
South Bay Cities Subregion
Station Area Typology
(Station)
(Bus Stop)
Suburban; Less Walkable
Suburban; More Walkable
Somewhat Urban; Less Walkable
Somewhat Urban; More Walkable
Very Urban; Less Walkable
Very Urban; More Walkable

APPENDIX

F

PERFORMANCE METRICS

DRAFT

FEHR PEERS

MEMORANDUM

Date: January 25, 2016

To: Tham Nguyen, Los Angeles County Metropolitan Transportation Authority

From: Matt Benjamin and Chelsea Richer, Fehr & Peers

Subject: ***Goals, Objectives and Performance Metrics***

Ref: LA15-2735

INTRODUCTION

The process of developing performance metrics for the Active Transportation Strategic Plan (ATSP) began in April 2015 in advance of the first project Technical Advisory Committee (TAC) meeting. The project team used the first project TAC meeting as an opportunity to crowd-source ideas about measuring performance from informed and locally-engaged experts. This process commenced with the development of goals and objectives for the ATSP, to ensure that all performance metrics recommendations would be tied to the fundamental purpose of the project.

The summary of recommended metrics for the ATSP is as follows:

- Levels of bicycling and walking to transit
- Levels of overall bicycling and walking
- Levels of facilities installed at and around stations
- Levels of facilities installed across the county
- Funding levels for biking and walking
- Collision statistics
- Levels of bicycle access to origins and destinations
- Levels of greenhouse gas emissions
- Equity

Figure 1 summarizes the goals, objectives, and performance metrics. The remainder of this memorandum thoroughly describes the process of developing these recommended performance metrics, benchmarks, and data sources, including the following sections:

1. Active Transportation Strategic Plan Goals
2. Active Transportation Strategic Plan Objectives
3. Performance Metrics Best Practices
    a. Best Practices
    b. Project TAC Input
4. Recommended Active Transportation Strategic Plan Performance Metrics
5. Conclusion

These sections detail the responsibility of collecting and reporting data, whether the data should be collected at the project level or at the county level, benchmarks, and available data sources.

Finally, there are a number of performance measure initiatives at Metro taking place concurrently to this ATSP effort. These include the performance measures under review for the upcoming Long Range Transportation Plan update, those set forth in the Metro Countywide Sustainability Planning Policy and Implementation Plan and in the Urban Greening Plan, and those to be included in an upcoming Quality of Life project. Where possible, Metro should streamline data collection and avoid duplication of efforts, as many of the types of data recommended for these various efforts are very similar. For example, in the Proposed Performance Metrics Framework for the 2017 LRTP Update (Attachment A of the Metro Board Report from October 12, 2015), recommended performance measures include (among others) fatalities per miles traveled, injuries per miles traveled, linkages to major employment/activity centers, and job accessibility by population subgroup. These are similar to several of the recommended performance metrics in this memorandum, and the ATSP metrics should be aligned with those that are already underway at the point of ATSP adoption.

1. ACTIVE TRANSPORTATION STRATEGIC PLAN GOALS

The Active Transportation Strategic Plan (ATSP) goals were crafted to reflect the overarching vision of the active transportation planning process at Metro. The following goals are a synthesis of those outlined in previous Metro documents that informed the development of the ATSP. Goals were reviewed from the Bicycle Transportation Strategic Plan (2006), the Long Range Transportation Plan (2009), the Countywide Sustainability Planning Policy (2012), the First Last Mile Strategic Plan (2014), the Complete Streets Policy (2014), and the Mobility Matrices (2015).

The six goals of active transportation planning at Metro, based on the above referenced documents, are:

1. Improve access to transit.

2. Establish active transportation as integral elements of the countywide transportation system.

3. Enhance safety, remove barriers to access, or correct unsafe conditions in areas of heavy traffic, high transit use, and dense bicycle and pedestrian activity.

4. Promote clean transportation options to reduce criteria pollutants and greenhouse gas emissions, and improve air quality.

5. Improve public health through traffic safety, reduced exposure to pollutants, and design and infrastructure that encourage residents to use active transportation as a way to integrate physical activity into their daily lives.

6. Foster healthy, equitable, and economically vibrant communities where all residents have greater transportation choices and access to key destinations, such as jobs, medical facilities, schools, and recreation.

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Though these goals were developed to specifically relate to active transportation, many of the goals are multi-modal in nature and will result in benefits for all users of the transportation system throughout Los Angeles County.

2. ACTIVE TRANSPORTATION STRATEGIC PLAN OBJECTIVES

The Objectives were crafted to identify the specific ways in which the scope of the ATSP supports the overarching vision outlined by the goals above. Compared to the goals, which are aspirational in nature and may be affected by other Metro efforts or other trends outside Metro's control, the objectives are more specific to the ATSP and the actions that Metro can take related to the implementation of the plan. These objectives speak to all of the goals articulated in Metro's guiding policies and plans and discussed in the above section. The objectives also address the six overarching themes from the recent Mobility Matrices process: mobility, safety, sustainability, accessibility, economy, and state of good repair.

The five objectives of the ATSP are as follows:

1. Identify improvements that increase first and last mile access to transit for people who walk and bicycle.

2. Work with partners to create a regional active transportation network.

3. Develop supporting programs and policies related to education, enforcement, encouragement, and evaluation.

4. Provide guidance for setting regional active transportation policies and guidelines to guide future investments.

5. Develop a funding strategy and explore opportunities to expedite implementation.

3. PERFORMANCE METRICS BEST PRACTICES

As part of the screening process to develop the recommendations included in section four, the project team identified "best practice" performance metrics from two key national sources of guidance: the National Complete Streets Coalition (NCSC) and the National Association of City Transportation Officials (NACTO). These two key sources are both non-profit organizations which advance the practice of multi-modal transportation planning in urban areas. These organizations are discussed in more detail below.

The project team also reviewed benchmarks set by peer agencies in California and across the nation to understand how agencies track progress on each selected metric. Overall, there is no clear "best" set of metrics or benchmarks; the process and selection of metrics and benchmarks is context-sensitive to each location and tied to the overarching organizational goals of the agency. As such, Metro has an opportunity to lead the field in setting robust metrics, ambitious benchmarks, and clear data reporting processes beyond what exists for other major multi-modal transportation agencies across the country.

Best Practices

NCSC is a membership-based program of Smart Growth America, working to advance the ideas of "complete streets" since 2004. The steering committee of NCSC includes transportation and planning

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professional organizations, such as the American Public Transportation Association, the American Planning Association and the Institute of Transportation Engineers, civil engineering firms such as AECOM, and other non-profits which support the goals of NCSC, such as the AARP and the National Association of REALTORS.

According to the NCSC's *Measuring Performance*, the following best practices exist for multi-modal performance measurement, and reinforce the process of developing the recommended performance metrics for the ATSP:[1]

- Transportation departments should not be the only ones to track performance. They can collaborate with others to collect and analyze data, including the health department and public health organizations; law enforcement agencies and emergency responders; and advocacy groups, including those focused on equity.
- Use rates, rather than straight numbers, to show changes in safety and mode shift over time.
- Establish baseline data so as to better illustrate successes.
- Be clear about measuring outputs (such as blocks of sidewalks built or repaired) versus outcomes (such as increases in walking rates).
- Create metrics that are specific to community goals.

NACTO is a non-profit facilitating information sharing and the exchange of ideas among representatives from major cities, with the goal of raising the state of the practice for street design and transportation. NACTO member cities include Los Angeles along with 20 other major US Cities, as well as Santa Monica as an affiliate member. The Board is primarily made up of public officials in transportation agencies within the member cities. Two NACTO design guides have been published: the Urban Street Design Guide (2013) and the Urban Bikeway Design Guide (2012). The Federal Highway Administration issued a memorandum in August 2013 officially supporting the Urban Bikeway Design Guide.

NACTO offers guidance on the development of performance metrics that are broader than the traditional Level of Service metric used to measure the performance of projects for vehicles.[2] Recognizing that collecting and reporting data on each and every metric listed below would be a time-consuming undertaking, NACTO suggests the following performance metrics as a broad range of options that an agency could use to balance the way performance of streets is measured in order to capture the effects on all modes. Depending on the context, agencies may find it desirable to collect and report all metrics, one or more metrics per mode, or one or more metrics per organizational goal (i.e., safety, efficiency, cost-effectiveness).

PEDESTRIANS

- Safety: Rate of crashes, injuries, and fatalities (typically based on Police Records)
- Pedestrian LOS (Highway Capacity Manual)
- Public Life Surveys
- WalkScore (walkability ratings)
- Pedestrian Environmental Quality Index (PEQI)
- Minimal delay at crossings

[1] These best practices are taken directly from the Smart Growth America guidance, found here: http://www.smartgrowthamerica.org/complete-streets/implementation/measuring-performance.
[2] These are taken directly from NACTO guidance. More information can be found here: http://nacto.org/usdg/design-controls/performance-measures/.

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- Foot traffic volume

BICYCLISTS
- Safety: Crash records, injuries, and fatalities
- Bicycle LOS (Highway Capacity Manual)
- Travel Time and Delay
- Bicycle Environmental Quality Index
- Bicycle counts

VEHICLES
- LOS
- Travel Time
- Corridor Impact Analysis
- Safety: Crash records, injuries, and fatalities

TRANSIT
- On-time performance
- Average speed
- Farebox recovery ratio
- Ridership per revenue hour
- Operating cost per hour

FREIGHT
- Freight delivered by hour
- Time spent loading/unloading

EMERGENCY VEHICLES
- Response time

SUSTAINABILITY
- LEED Neighborhood Development
- STARS
- GreenRoads

MULTI-MODAL
- Multi-Modal LOS
- Retail revenues and business growth

Some of these metrics presented by NACTO are not relevant to the specific aims of the ATSP. Therefore, this list is provided as the best practice and cutting edge for measuring street performance and are not included wholesale into the list of recommended performance metrics.

The development of benchmarks was also informed by a review of peer agencies' metrics and benchmarks to understand how "cutting edge" regions are collecting and reporting data, and measuring progress. The following review highlights some examples of benchmarking by other cities and regions in the US, but is not an exhaustive list of every performance metric benchmarking effort. The project team aimed to provide a representative sample which shows trends and the diversity in methods used by agencies at different levels.

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A national review showed substantial variety between the Portland region, Seattle region, and New York City in how performance metrics are measured and tracked.

- Oregon Metro[3,4] in the Portland region sets explicit modeshare benchmarks overall, as well as varied by area of the region.
    - Triple walking and biking mode share from 2010 levels by 2040 (8.8% for walking in 2010 to a target of 27% in 2040; 3.1% for biking in 2010 to a target of 9% in 2040)
    - Mode share goals are also broken down by community type, including 60-70% non-drive alone modal target in the Central City, 45-55% non-drive alone modal target in Regional centers, town centers, and main streets, and 40-45% non-drive alone modal target in Industrial areas and neighborhoods.
    - Increase by 50% the miles of sidewalk, bikeways and trails compared to 2010 levels by 2040.
- Puget Sound Regional Council[5] and the City of Seattle[6] both set benchmarks based on modeshare, funding, and access.
    - The Puget Sound Regional Council Transportation 2040 Plan includes the target of increasing non-motorized mode share from 10.2% (2010) to 12.3% (2040).
    - The Puget Sound Regional Council Transportation 2040 Plan also includes the target of increasing walk trips by 62%, increasing bike trips by 58%, and increasing walk to transit trips by 160% (over 2006 levels).
    - The City of Seattle Bicycle Master Plan includes the target of funding bicycle projects and programming commensurate to the US Census "Commute by Bike" mode share percentage.
    - The City of Seattle Bicycle Master Plan aims to quadruple bicycle ridership between 2014 and 2030, based on annual counts.
    - The City of Seattle Bicycle Master Plan also states the target of having 100% of households within ¼ of a mile of an "all ages and abilities" bicycle facility by 2035.
- New York City[7,8] sets seasonal modeshare targets for cycling.
    - Double "In-Season Cycling Indicator" by 2020.

[3] http://www.oregonmetro.gov/sites/default/files/RTP-2014-final.PDF
[4] http://www.oregonmetro.gov/sites/default/files/2014_regional_active_transportation_plan_0.pdf
[5] http://www.psrc.org/assets/10541/T2040Update2014AppendixH.pdf?processed=true
[6] http://www.seattle.gov/transportation/docs/bmp/apr14/SBMP_21March_FINAL_full%20doc.pdf
[7] http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf
[8] http://www.nyc.gov/html/dot/downloads/pdf/2014-isci.pdf

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Within other California regions, the Bay Area Metropolitan Transportation Commission (MTC), the San Francisco Municipal Transportation Agency (SFMTA), and the City of San Luis Obispo have set benchmarks through various planning efforts that relate to modeshare and plan implementation.

- Bay Area MTC[9,10] sets benchmarks in their Plan Bay Area, including the following:
    - Increase the average daily time walking or biking per person for transportation by 70 percent (for an average of 15 minutes per person per day) by 2040
    - Increase non-auto mode share by 10 percentage points (to 26 percent of trips) by 2040
- SFMTA[11] sets benchmarks in their 2013 Bicycle Strategy for modeshare:
    - 8-10% bicycle mode share by 2018 (compared to 3.5% in 2010)
    - 19-21% walking mode share by 2018 (compared to 17.5% in 2010)
- San Luis Obispo[12] sets benchmarks in their General Plan Circulation Element for modeshare:
    - 50 percent motor vehicles by 2035
    - 12 percent transit by 2035
    - 20 percent bicycles by 2035
    - 18 percent walking, car pools, and other forms by 2035
- San Luis Obispo allocates general fund transportation spending at the same ratio as the modeshare target desired.

Locally, the City of Los Angeles[13] and the City of Santa Monica[14] have both set modeshare benchmarks as part of each city's Sustainable City Plan.

- The City of LA set a target of 35% combined walk, bike, and transit modeshare by 2025
- The City of Santa Monica includes three key benchmarks:
    - 25% combined walk, bike and transit trips by 2020
    - 15% combined walk and bike trips by 2020

[9] http://planbayarea.org/pdf/final_supplemental_reports/FINAL_PBA_Performance_Assessment_Report.pdf
[10] http://files.mtc.ca.gov/pdf/Plan_Bay_Area_FINAL/5-Performance.pdf
[11] https://www.sfmta.com/sites/default/files/BicycleStrategyFinal_0.pdf
[12] http://www.slo2035.com/images/pubdraft/luce_volume_II_appendix_b_draft_circulation_element_2014_06_web.pdf
[13] https://performance.lacity.org/en/stat/goals/yn4r-yz4i/3uu3-hzur/3qct-edmu
[14] http://www.smgov.net/uploadedFiles/Departments/OSE/Categories/Sustainability/Sustainable-City-Plan.pdf

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- 100% bicycle network build-out by 2020

Finally, major US cities are increasingly signing on to the Vision Zero safety targets of eliminating traffic fatalities and severe injuries, along different time horizons. These cities include, among others, the City of Los Angeles, New York City, Seattle, and San Diego, as well as Chicago which has stated similar safety goals (though not officially branded "Vision Zero").

Technical Advisory Committee Input

The project Technical Advisory Committee (TAC) was asked for input on performance metrics and benchmarks during the first TAC meeting on April 2, 2015. The project team received 14 responses from TAC members, including a variety of metrics and suggested ways to measure change over time. The project team reviewed and discussed all suggestions from the TAC; many of the ideas are reflected in the list of recommended metrics discussed above. Some reasons why suggested metrics were eliminated include:

- Metric not relevant to the goals or objectives of the ATSP
- Data are not readily available
- Metric is duplicative of other (included) metrics.

Appendix 1 (Excel document) lists the full set of performance metrics and benchmarks suggested by the TAC. Many of the metrics suggested by the TAC have been used in previous studies in the region to assess progress towards achieving the active transportation-related goals and objectives. In Appendix 1, the "Previous Use" column identifies other local, regional, and national documents and plans that have used the metric listed or a similar metric.

4. RECOMMENDED ACTIVE TRANSPORTATION STRATEGIC PLAN PERFORMANCE METRICS

Progress toward the goals and objectives discussed above can be measured by process-oriented performance metrics, which capture how much of a particular activity is being undertaken, and by outcome-oriented metrics, which capture the broader effects of these activities and typically cannot be attributed exclusively to the actions of Metro or the implementing agencies. Both types of metrics are important to track so that Metro has an understanding of the broader trends that may influence or be influenced by Metro's active transportation investments.

Figure 2 shows the relationship of the goals and objectives discussed above to the summarized categories of recommended performance metrics.

Table 1 includes the full set of performance metrics recommended for the ATSP, based upon the goals and objectives described above, and informed by the project TAC input and best practices described in the following sections (3b and 3c). Additionally, based on discussions among the project team, these recommended metrics were screened from an extensive array of options based on the following guiding principles:

- Applicability: Can the Metro ATSP projects and programs be realistically expected to "move the needle" using the proposed metric?
- Replicability: Will the metric be relevant to all project types in all contexts in Los Angeles County?
- Accuracy: Is the metric able to isolate project-specific outcomes from more general trends?

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- Availability of data: Does it currently exist? If not, how will it be collected?
- Efficiency: What combination of metrics provides the most impactful set of information, while keeping the number of performance measures to a minimum?
- Level of Effort: What is the level of effort required to collect data and complete analysis?
- Agency Capacity: Who will be expected to conduct each method of evaluation?
- Equity: Does the metric improve our understanding of whether the plan is being implemented in an equitable way across the county?

The first set of metrics would be collected and maintained by Metro, in partnership with local jurisdictions. These metrics are optimal for the county level, so Metro can understand the overall, county-wide effects of the active transportation investments. Tracking at the county-wide level is critical as some metrics may see an exponential effect – where the observed increases or decreases are greater than the sum of the activity occurring right around the project location.

The benchmarks are set as an opportunity for Metro to be a leader in the field of active transportation planning. They were developed after a review of benchmarks set by other regions and cities, as described above, and are specifically tied to the context of Los Angeles County in terms of our current baseline. The horizon year of 2025 was selected for most of the potential benchmarks because the ten-year horizon is generally the time frame in which active transportation plans are refreshed and updated, and would be a good point to revisit benchmarks.

Table 1: Recommended Performance Metrics					
Performance Metric	**Project Level**	**County-Wide Level**	**Initial Baseline (2015)**	**Potential Benchmark**	**Available Data Sources**
Collected by Metro					
Number and percent bicycle-to-transit[15]		X	4% (Rail) 3% (Bus)	100% increase by 2025	Metro On-Board Surveys
Number and percent walk-to-transit		X	68% Walk (Rail) 4% Skated (Rail) 83% Walk (Bus) 2% Skated (Bus)	10 percentage point increase (walk to rail) by 2025 5 percentage point increase by 2025 (walk to bus)	Metro On-Board Surveys
Percent trips completed by bicycle in Los Angeles County		X	1.4% Bike	100% increase by 2025	2009 National Household Travel Survey
Percent trips completed by walking in Los Angeles County		X	17.6% Walk	50% increase by 2025	2009 National Household Travel Survey
Means of transportation to work		X	3.8% Combined Bike + Walk (0.9% Bicycle, 2.9% Walk)	100% increase by 2025 in combined Bike + Walk	2013 American Communities Survey 5-Year Estimate

[15] Because the percent of transit riders who walk or bike to transit is already very high, it is critical to also collect the number of riders who walk or bike to a station, so that net ridership increases are captured in addition to any increase in walk-or-bike-to-transit ridership.

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Table 1: Recommended Performance Metrics					
Performance Metric	**Project Level**	**County-Wide Level**	**Initial Baseline (2015)**	**Potential Benchmark**	**Available Data Sources**
Miles of installed bicycle facilities, by class		X	2014: Class IV = 6 miles (2015) Class III = 614 miles Class II = 1,046 miles Class I = 341 miles	100% increase per year for class IV 10% increase per year for each class I, II and III	Self-reported by jurisdictions
Metro capital funding allocated to bicycle/pedestrian improvements		X	To Be Determined	To Be Determined	Self-tracked/self-reported by Metro
Percent of bicycle/pedestrian improvement projects funded by Metro capital funding that benefits a disadvantaged community[16]		X	n/a	50% per funding cycle	Self-tracked/self-reported by Metro
Number of station areas receiving Metro capital funding or external funding allocated to bicycle/pedestrian access improvement treatments		X	To Be Determined	100% of 661 station areas served by 2030	Self-tracked/self-reported by Metro
Number of station areas with completed bicycle/pedestrian access improvement treatments funded by Metro capital funding or external funding		X	To Be Determined	100% of 661 station areas served by 2035	Self-tracked/self-reported by Metro
External (non-Metro) discretionary grant funding won within LA County for active transportation projects		X	To Be Determined	Proportional to LA County population or greater	Self-reported by jurisdictions and implementing agencies
Collision statistics (number by mode, percent by mode for severe injury and fatal crashes)		X	2012: Total Collisions=51,207 Total Injuries=50,622 Total Severe Injuries=2,300 Total Fatalities=585 Ped Collisions=5,024 Ped Injuries=4,821 Ped Fatalities=203 Bike Collisions=4,955 Bike Injuries=4,926 Bike Fatalities=29	Support benchmark of local municipalities with Vision Zero Policies Decrease overall collisions by 10% per year countywide	State-Wide Integrated Traffic Reporting System (SWITRS)
Greenhouse gas reductions	X	X	To Be Determined	Evaluate against forecasts and inputs	SCAG, Self-reported by implementing agencies

[16] Disadvantaged Community is characterized as one of the following: The median household income is less than 80% of the statewide median based on the most current census tract level data from the American Community Survey, an area identified as among the most disadvantaged 25% in the state of California according to the CalEPA and based on the latest version of the California Communities Environmental Health Screening Tool (CalEnviroScreen) scores, or at least 75% of public school students in the project area are eligible to receive free or reduced-price meals under the National School Lunch Program.

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Table 1: Recommended Performance Metrics					
Performance Metric	**Project Level**	**County-Wide Level**	**Initial Baseline (2015)**	**Potential Benchmark**	**Available Data Sources**
Collected by Implementing Agencies					
Number and percent of people who walk	X		Baseline set by implementing agency before project implementation	100% increase by 2025	Self-reported by implementing agencies via pedestrian counts, Baseline available in the ATSP existing conditions analysis
Number and percent of people who bike	X		Baseline set by implementing agency before project implementation	100% increase by 2025	Self-reported by implementing agencies via bicycle counts, Baseline available in the ATSP existing conditions analysis
Number of households within ¼ mile of a low-stress bicycle facility	X		Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	US Census American Communities Survey, Self-reported by implementing agencies, Baseline available in the ATSP existing conditions analysis
Number of jobs within ¼ mile of a low-stress bicycle facility	X		Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	US Census American Communities Survey, Self-reported by implementing agencies, Baseline available in the ATSP existing conditions analysis
Number of destinations (schools, medical, parks, recreational, etc.) within ¼ mile of a low-stress bicycle facility	X		Baseline set by implementing agency before project implementation	Increase by 20% per year, countywide	Self-reported by implementing agencies; Baseline available in the ATSP existing conditions analysis

5. CONCLUSION

The recommendations presented above are the result of a process that included internal goal-setting and identification of project objectives, input from the project TAC, review of national best practices and regional examples of performance measuring, and screening through an additional set of guiding principles. The recommended metrics are anticipated to support and align with other Metro performance measurement efforts, and to demonstrate the impact of Metro's active transportation investments on all modes of travel across the county.

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APPENDIX

G COST ESTIMATES

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FEHR PEERS

MEMORANDUM

Date: February 25, 2016

To: Tham Nguyen, Los Angeles County Metropolitan Transportation Authority

From: Miguel Núñez and Chelsea Richer, Fehr & Peers

Subject: ***High-Level Cost Estimate Documentation***

Ref: LA15-2735

INTRODUCTION

This memorandum documents the approach to developing a high-level cost estimate for the Active Transportation Strategic Plan (ATSP). This cost estimate includes four components, providing a comprehensive estimate of the cost to building out a high quality active transportation environment throughout Los Angeles County. The cost parameters are based on other projects in Southern California, or national sources where local costs were not available. All costs are presented in a low-medium-high range, based on the ranges presented in the source documents or information provided by Metro. Where cost ranges were unavailable, the high cost was assumed to be 523% of the reported cost, and the low cost was assumed to be 6.2% of the reported cost. These factors are based on the range of actual construction costs for Class I bikeways projects provided by Metro in an email dated November 4, 2015. This range was then applied to any projects where a range was unavailable in the original source documentation, with the exception of the walkshed and bikeshed estimates. The high value and low value for the walkshed and bikeshed estimates are based on average deviations from the "Medium Estimate" in SANDAG's Safe Routes to Transit report.

A summary of the four categories' costs can be found in the accompanying attachments to this document. The four categories included in the high-level cost estimate are as follows:

1. **Walkshed**: This category includes all pedestrian treatments within the walksheds (½ mile radius, taking into account the network and the slope) of each station area included in the 661 ATSP station areas. Six sets of treatments were specified, based on the typology of station types developed in the previous stage of the project. The six sets include different existing conditions, and therefore different costs.
2. **Bikeshed**: This category includes all bicycle treatments within the bikesheds (3 mile radius, taking into account the network and the slope) of each station area included in the 661 ATSP station areas. Six sets of treatments were specified, based on the typology of station types developed in the previous stage of the project. The six sets include different existing conditions, and therefore different costs.

3. **Regional Active Transportation Network**: This category includes all facilities on the ATSP Regional Active Transportation Network, including Class I, II+, III+, and IV bikeways and mixed use paths for people on foot or people on bike. The mileage of this network was derived from the Draft Regional Active Transportation Network as of 2/4/16, and includes all unbuilt facilities on the Regional Active Transportation Network.
4. **Local Bicycle/Pedestrian Networks**: This category includes all potential additional bicycle facilities that would not be included in the bikeshed or Regional Active Transportation Network, but could be included in local plans, and all additional pedestrian treatments that would not be included in the walkshed but could be implemented by cities or included in local pedestrian plans. For the local bike network, the mileage of this network was derived by taking all the network miles within Los Angeles County minus the bikeshed area included in the category above. Using the Santa Monica bike network as a model it was assumed that a percent of these streets would include Class II and Class III facilities as part of the local networks, and applying a per-mile cost for Class II and Class III facilities. For the local pedestrian network, the total walkshed square mileage was subtracted from the square mileage of the urbanized area in Los Angeles County, and the per-square-mile costs associated with a basic treatment package of pedestrian improvements was applied.

The categories and cost parameters are described more fully, below. Any of the per-unit costs, assumptions, or cost parameters described below can be easily adjusted to reflect different assumptions or priorities for the ATSP, for Metro, or for LA County.

WALKSHED

This category includes all pedestrian treatments within the walksheds (½ mile radius, taking into account the network and the slope) of each station area included in the 661 ATSP station areas. Six sets of treatments were specified, based on the typology of station types developed in the previous stage of the project and an associated Case Study. Each type includes different existing conditions which results in different levels of treatments and cost.

Table 1 shows the walkshed and bikeshed projects assumed within each station typology, based on the cost estimates associated with the example Case Studies produced for the ATSP. These projects are used at differing levels of intensity (more or fewer, depending on the existing conditions) for each of the different types. The walkshed and bikeshed total costs include hard and soft costs, including a construction contingency, planning/design/environmental costs, and costs for construction engineering.

Table 1: Walkshed and Bikeshed Projects for Each Station Typology

Walkshed	Bikeshed
Signal modification	Bike Parking
Ped Scramble Phase	Bike Wayfinding Signs
Countdown Pedestrian Signalhead	One-way Cycle Track (striped buffer)
High-Visibility Crosswalks	One-way Cycle Track (raised median)
Directional Curb Ramps	Class II Bike Lanes
Sidewalk Reconstruction	Class III Sharrows
Curb/Gutter Reconstruction	Bike signals
Street Trees	Bicycle detection
Pedestrian Street Lighting	Bicycle and pedestrian bridge

Pedestrian Wayfinding Signs	
Curb Extensions	
Traffic signal	
Bus shelter, bench, trash receptacles	
Median refuge islands	
Neighborhood traffic circles	
Speed treatments	
Diverters	
Chicanes	
Bollards	
Stop signs	

The total walkshed square mileage of each station type was derived using a Geographic Information System (GIS) analysis, and an associated cost was applied. These planning level costs were derived from counting the number and types of treatments suggested in the Case Study for each type within the typology. The per-unit costs were based on estimates provided by Michael Baker International, provided with sources as an attachment to this document.

Overall, the treatment package applied to the more suburban stations cost more per square mile than the treatment package applied to the more urban stations, due to the lack of existing infrastructure. For the purposes of this high-level cost estimate, treatment packages were assumed to be the same for fixed-guideway stations and non-fixed-guideway stops within the same type of walkability and suburban/urban categorization. Table 2 shows the six categories and the number of station areas within each category. This categorization also applies to the bikeshed process described in the next section. For any overlapping square mileage – space that was in two separate station areas' walksheds – the cost per square mile was based on the "somewhat urban, more walkable" and "very urban, less walkable" station types because together, these encompass one third of all the station areas, and the associated Case Studies have the same cost estimates.

Table 2: Station Areas Distributed Across Typology Categories	
Very urban, more walkable	209
Very urban, less walkable	118
Somewhat urban, more walkable	91
Somewhat urban, less walkable	134
Suburban, more walkable	20
Suburban, less walkable	89
Total	661

The total square mileage of the walksheds by typology category, and the per unit cost parameters can be found in the Walkshed attachments to this document,

BIKESHED

This category includes all bicycle treatments within the bikesheds (3 mile radius, taking into account the network and the slope) of each station area included in the 661 ATSP station areas. Six sets of treatments were specified, based on the typology of station types developed in the previous stage of the project and

an associated Case Study. Each type includes different existing conditions which results in different levels of treatments and cost.

Using GIS, the total bikeshed square mileage of each station type was derived, and an associated cost was applied. These planning level costs were derived from counting the number and types of treatments suggested in the Case Study for each type within the typology. The per-unit costs were based on estimates provided by Michael Baker International, provided with sources as an attachment to this document.

Overall, the treatment package applied to the Somewhat Urban, More Walkable stations cost the least per square mile, and the treatment package applied to the Very Urban, More Walkable stations cost the most per square mile, generally due to the need for more intense infrastructure such as a pedestrian/bicycle bridge. For the purposes of this high-level cost estimate, treatment packages were assumed to be the same for fixed-guideway stations and non-fixed-guideway stops within the same type of walkability and suburban/urban categorization. For any overlapping square mileage – space that was in two separate station areas' bikesheds – the cost per square mile was based on the "very urban, less walkable" because the associated Case Study has the median cost of all six station area types.

The total square mileage of the bikesheds by typology category, and the per unit cost parameters can be found in the Bikeshed attachments to this document,

REGIONAL ACTIVE TRANSPORTATION NETWORK

This category includes all facilities on the ATSP Regional Active Transportation Network, including Class I, II+, III+, and IV bikeways and mixed use paths for people on foot or people on bike. The mileage of this network was derived from the Draft Regional Active Transportation Network as of 2/4/16, and includes all unbuilt facilities on the Regional Active Transportation Network. Table 3 provides a summary of the relevant bike facility class types.

Table 3: Bicycle Facility Class Types for Regional Network

Class I: Off-street bicycle-only or off-street mixed-use path for people walking or biking	

Class II+: Buffered bike lane. Traditional Class II bicycle lane with additional painted buffer to the left and/or the right of the bike lane between travel lanes and/or parking lanes provide additional protection and visibility for people on bicycles.	
Class III+: Bicycle Boulevard. Painted sharrows and bicycle route signage, combined with additional traffic calming elements, such as curb extensions, chicanes, traffic diverters, bicycle-friendly traffic signals, and other tools decrease the speed of travel and provide comfortable, safe accommodation for people on bicycles.	 

Class IV: Protected bike lane (cycletrack). Vertical elements added to an additional buffer, such as a curb, planters, or parked cars, provide additional protection for people on bicycles.	

As of 2/4/16, the Regional Active Transportation Network was categorized into "Off-Street" (Class I), "Dedicated On-Street" (enhanced on-street facilities including Class II+, Class IV), and "Shared On-Street" (Class III+). The per-mile cost applied to Off-Street facilities is based on a list of projects provided by Metro for Class I facilities. The per-mile cost applied to Dedicated and Shared On-Street facilities is based on the Gateway Cities COG Active Transportation Plan and recently-constructed Class II+, Class III+ and Class IV facilities, enhanced facilities, averaged together to create a per-mile cost for enhanced On-Street facilities. Where a construction year was available, costs were escalated 3% per year based on Metro guidance in order to capture the annual increase in costs associated with construction and implementation. There are also about 15 miles of facilities that are currently under study by Metro and are not added into the total cost of the Regional Active Transportation Network, though the mileage is itemized in the Unbuilt Regional Network tab.

These cost parameters and the total mileage of the Regional Active Transportation Network by class type are itemized in the Unbuilt Regional Active Transportation Network attachment to this document.

LOCAL BICYCLE/PEDESTRIAN NETWORKS

This category includes all potential additional bicycle facilities that would not be included in the bikeshed or Regional Network, but could be included in local plans. This includes Class II or Class III facilities (i.e., not part of the Regional Network) outside the bikeshed area. It also includes all potential additional pedestrian improvements that would not be included in the walkshed, but could be implemented by local cities or included in local pedestrian plans.

For the bicycle network, using GIS, the mileage of this network was derived by taking all the network miles within Los Angeles County minus the bikeshed area included in the category above, applying a "local network factor" which assumes a percent of these streets would include Class II and Class III facilities as part of the local networks, and applying a per-mile cost for Class II and Class III facilities.

The "local network factor" was based on the City of Santa Monica's bicycle network, one of the more comprehensive bicycle facility networks in the county. The total percentage of streets covered by Class II and Class III facilities in Santa Monica is 7% each. Therefore, 14% of the LA County street mileage outside

the bikesheds was assumed to be the basis for future local bike networks, with 7% taking the Class II per-mile cost, and 7% taking the Class III per-mile cost.

For the pedestrian network, using GIS, the total square mileage of urbanized Los Angeles County was derived. The non-overlapping square mileage of all the walksheds for the 661 transit station areas included in the ATSP was then subtracted from this total. Based on the Case Study cost estimates, the cost of the least-intensive pedestrian treatment package was then applied, reflecting the role of Metro in providing pedestrian infrastructure in the areas with lowest-intensity land use, the development context present in much of the area that falls outside the walksheds.

The per-mile cost parameters and the "local bicycle/pedestrian network factor" calculations are shown in the attachments to this document.

SUMMARY

A summary of all the information described above is shown in the attachment to this document, along with all supporting documentation including per-unit costs, walkshed and bikeshed mileage, Regional Network mileage, and local bicycle and pedestrian network mileage.

Cost Category	Total Costs		
	Low	Medium	High
Walkshed	$1,376,971,892	$1,858,261,700	$2,397,157,544
Bikeshed	$5,569,152,365	$7,515,725,189	$9,695,285,494
Regional Network	$94,282,934	$1,516,222,738	$7,933,342,350
Local Bike/Ped Networks	$6,924,501,334	$9,378,166,026	$12,241,273,915
TOTAL	$13,964,908,500	$20,268,375,700	$32,267,059,300

Description	Cost		
	Low	**Medium**	**High**
First Last Mile Access to Major Transit Stops/Stations	$347,306,213	$468,699,344	$604,622,152
Regional Active Transportation Network	$4,714,147	$75,811,137	$396,667,117
Local Active Transportation Networks	$346,225,067	$468,908,301	$612,063,696
Total Annual Capital Cost - Active Transportation Network	**$698,245,426**	**$1,013,418,783**	**$1,613,352,965**
Metro Bike Services - Annual Capital Costs	$1,068,100	$2,205,900	$3,496,500
Metro Bike Services - Annual Operations and Maintenance	$13,635,000	$26,921,000	$40,016,000
Education & Encouragement Programs - Annual Costs	$24,357,776	$30,010,552	$35,734,663
Total Annual Cost Range	**$737,306,302**	**$1,072,556,235**	**$1,692,600,128**

Total overall cost for buildout	*$13,964,908,525*	*$20,268,375,652*	*$32,267,059,303*
	20 year buildout	$1,013,418,782.62	
	40 year buildout	$506,709,391.31	

Walkshed				Total Cost			Cost per Station		
	Typology	**# of Stations**	**Total Area (sq mi)**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
1	Very urban, more walkable	209	24	$135,520,052	$182,888,059	$235,925,596	$648,421	$875,062	$1,128,831
2	Very urban, less walkable	118	21	$117,882,211	$159,085,305	$205,220,044	$999,002	$1,348,181	$1,739,153
3	Somewhat urban, more walkable	91	25	$136,483,142	$184,187,776	$237,602,231	$1,499,815	$2,024,041	$2,611,014
4	Somewhat urban, less walkable	134	35	$214,431,352	$289,381,042	$373,301,544	$1,600,234	$2,159,560	$2,785,832
5	Suburban, more walkable	20	6	$41,590,411	$56,127,410	$72,404,359	$2,079,521	$2,806,371	$3,620,218
6	Suburban, less walkable	89	23	$501,634,888	$676,970,160	$873,291,506	$5,636,347	$7,606,406	$9,812,264
Overlap			41	$229,429,835	$309,621,910	$399,412,264			
TOTAL		661	175	**$1,376,971,892**	**$1,858,261,662**	**$2,397,157,544**	**$2,083,165**	**$2,811,288**	**$3,626,562**

Bikeshed				Total Cost			Cost per Station		
	Typology	**# of Stations**	**Total Area (sq mi)**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
1	Very urban, more walkable	209	6	$129,920,474	$175,331,274	$226,177,343	$621,629	$838,906	$1,082,188
2	Very urban, less walkable	118	9	$80,963,040	$109,261,863	$140,947,803	$686,127	$925,948	$1,194,473
3	Somewhat urban, more walkable	91	20	$50,279,585	$67,853,691	$87,531,262	$552,523	$745,645	$961,882
4	Somewhat urban, less walkable	134	55	$266,067,674	$359,065,688	$463,194,737	$1,985,580	$2,679,595	$3,456,677
5	Suburban, more walkable	20	24	$217,848,180	$293,992,146	$379,249,868	$10,892,409	$14,699,607	$18,962,493
6	Suburban, less walkable	89	53	$637,879,219	$860,835,653	$1,110,477,993	$7,167,182	$9,672,311	$12,477,281
Overlap			452	$4,186,194,192	$5,649,384,875	$7,287,706,489			
TOTAL		661	619	**$5,569,152,365**	**$7,515,725,189**	**$9,695,285,494**	**$8,425,344**	**$11,370,235**	**$14,667,603**

Unbuilt Regional Active Transportation Network

Class Type	Unbuilt Mileage	Total Costs		
		Low	Medium	High
Off-Street (Class I)	297.20	$48,760,159.66	$781,984,441	$4,093,276,059
Dedicated On-Street (Class II+, Class IV)	1385.87	$42,821,325.16	$690,666,535	$3,612,185,977
Shared On-Street (Class III+)	55.33	$2,701,449.23	$43,571,762	$227,880,314
Metro Under Study	14.91	$0.00	$0.00	$0.00
TOTAL		$94,282,934	$1,516,222,738	$7,933,342,350

Local Bicycle and Pedestrian Networks

Class Type	Total Local Mileage	Unit	Santa Monica Factor	Total Costs		
				Low	Medium	High
Class II	12,117	lane miles	7%	$1,515,070	$24,436,605	$127,803,446
Class III	12,117	lane miles	7%	$742,104	$11,969,420	$62,600,069
Pedestrian treatments outside walkshed	1,262	square miles	n/a	$6,922,244,160	$9,341,760,000	$12,050,870,400
TOTAL				$6,924,501,334	$9,378,166,026	$12,241,273,915

Metro Active Transportation Strategic Plan

CASE STUDY: Type 1, Local and Rapid Bus Stop

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	1	$250,000
1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	4	$60,000
1.6	Pedestrian Scramble Phase	EA	$50,000	2	$100,000
1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	6	$8,400
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700		$0
1.10	Crosswalk (Striped Continental)	EA	$4,000	52	$208,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	22	$5,500
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	185	$926,400
1.14	Remove Existing Tree	EA	$900	8	$7,200
1.15	Construct Sidewalk	SF	$10	48,600	$486,000
1.16	Construct Curb and Gutter	LF	$24	1,000	$24,000
1.17	Remove Concrete Curb and Gutter	LF	$16	1,000	$16,000
1.18	Remove Sidewalk	SF	$3	5,000	$15,000
1.19	Trees / Landscape	Block	$40,000	6	$240,000
1.20	60 Day Maintenance	EA	$3,500	3	$10,500
1.21	Street Lighting	EA	$3,000	74	$222,000
1.22	Wayfinding Signs	EA	$900	64	$57,600
1.23	Bus Shelter	EA	$12,000	26	$312,000
1.24	Bench	EA	$1,600	20	$32,000
1.25	Trash Receptacle	EA	$1,400	46	$64,400
				Pedestrian Subtotal	**$3,380,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	64	$32,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	16	$12,000
2.3	Wayfinding Signs	EA	$900	48	$43,200
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	1	$890,000

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	$1,860,000
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	1	$100,000
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1	$655,000
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	2	$112,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	9.0	$153,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000		$0
2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
2.14	Bicycle Push Button (attach to exist pole)	EA	$700	36	$25,200
2.15	Bicycle and Pedestrian Bridge	SF	$250	35,700	$8,925,000
				Bicycle Subtotal	**$13,290,000**

3	TRAFFIC CALMING				
3.1	Median Refuge Islands	SF	$15	6,400	$96,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	8	$240,000
3.3	Neighborhood Traffic Circles	EA	$25,000	16	$400,000
3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
3.5	Diverters	EA	$20,000	2	$40,000
3.6	Chicanes	EA	$10,000		$0
3.7	Bollards (Metal)	EA	$800	32	$25,600
3.8	Stop Sign	EA	$300	8	$2,400
				Traffic Calming Subtotal	**$870,000**

	- Subtotal -	**$17,540,000**

4	MOBILIZATION				
4.1	Mobilization (10% Items 1 to 3)				$1,750,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$19,290,000**

5	OTHER PROJECT SUPPORT				
5.1	**R/W Allowance (20% Project Subtotal)**				**$3,850,000**
5.2	**Utility Relocations (10% Project Subtotal)**				**$1,920,000**
5.3	**Contingency (25% Project Subtotal + R/W + Utilities)**				**$6,260,000**
5.4	**Planning/Design/Environmental/CM (25% Project Subtotal)**				**$4,820,000**
5.5	**NPDES/Water Quality/BMPs (3% Project Subtotal)**				**$570,000**
				Other Project Support Subtotal	**$17,420,000**

6	PROJECT TOTAL (per square mile)	$36,700,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	PEDESTRIAN GRAND TOTAL (per square mile)	$7,700,000

8	BICYCLE GRAND TOTAL (per square mile)	$29,000,000

Metro Active Transportation Strategic Plan

CASE STUDY: Type 2, Multi-Agency Bus Stop

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	0	$0
1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	2	$30,000
1.6	Pedestrian Scramble Phase	EA	$50,000	9	$450,000
1.7	Pedestrian (Countdown) Signal	EA	$900	256	$230,400
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	4	$2,800
1.10	Crosswalk (Striped Continental)	EA	$4,000	88	$352,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	24	$6,000
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	188	$940,000
1.14	Remove Existing Tree	EA	$900	2	$1,800
1.15	Construct Sidewalk	SF	$10	5,200	$52,000
1.16	Construct Curb and Gutter	LF	$24	500	$12,000
1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
1.18	Remove Sidewalk	SF	$3	1,000	$3,000
1.19	Trees / Landscape	Block	$40,000	12	$480,000
1.20	60 Day Maintenance	EA	$3,500	6	$21,000
1.21	Street Lighting	EA	$3,000	27	$81,000
1.22	Wayfinding Signs	EA	$900	32	$28,800
1.23	Bus Shelter	EA	$12,000	15	$180,000
1.24	Bench	EA	$1,600	40	$64,000
1.25	Trash Receptacle	EA	$1,400	55	$77,000
				Pedestrian Subtotal	**$3,240,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	24	$18,000
2.3	Wayfinding Signs	EA	$900	48	$43,200
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	2	$1,780,000

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	$1,860,000
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	3	$300,000
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	4.0	$68,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000		$0
2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
2.14	Bicycle Push Button (attach to exist pole)	EA	$700	28	$19,600
2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
2.16	Bike Share Station	EA	$40,000	9	$360,000
				Bicycle Subtotal	**$5,110,000**

3	**TRAFFIC CALMING**				
3.1	Median Refuge Islands	SF	$15	6,400	$96,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	16	$480,000
3.3	Neighborhood Traffic Circles	EA	$25,000	12	$300,000
3.4	Speed Treatments (humps)	EA	$2,500	18	$45,000
3.5	Diverters	EA	$20,000	16	$320,000
3.6	Chicanes	EA	$10,000		$0
3.7	Bollards (Metal)	EA	$800	32	$25,600
3.8	Stop Sign	EA	$300	6	$1,800
				Traffic Calming Subtotal	**$1,270,000**

	- Subtotal -	**$9,620,000**

4	**MOBILIZATION**				
4.1	Mobilization (10% Items 1 to 3)				$960,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$10,580,000**

5	**OTHER PROJECT SUPPORT**				
5.1	R/W Allowance (20% Project Subtotal)				$2,110,000
5.2	Utility Relocations (10% Project Subtotal)				$1,050,000
5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$3,430,000
5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$2,640,000
5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$310,000
				Other Project Support Subtotal	**$9,540,000**

6	**PROJECT TOTAL (per square mile)**	**$20,100,000**

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	**PEDESTRIAN GRAND TOTAL (per square mile)**	**$7,600,000**

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
8	BICYCLE GRAND TOTAL (per square mile)				$12,500,000

Metro Active Transportation Strategic Plan

CASE STUDY: Type 3, Metro Rail (above ground)

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	1	$250,000
1.4	Signal Modification (protected lefts)	EA	$40,000	4	$160,000
1.5	RRFB Flashing Beacon (Solar)	EA	$40,000	4	$160,000
1.6	Pedestrian Scramble Phase	EA	$50,000	2	$100,000
1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	2	$1,400
1.10	Crosswalk (Striped Continental)	EA	$4,000	28	$112,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	4	$140,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	22	$5,500
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	88	$440,000
1.14	Remove Existing Tree	EA	$900	2	$1,800
1.15	Construct Sidewalk	SF	$10	11,600	$116,000
1.16	Construct Curb and Gutter	LF	$24	500	$12,000
1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
1.18	Remove Sidewalk	SF	$3	1,000	$3,000
1.19	Trees / Landscape	Block	$40,000	17	$680,000
1.20	60 Day Maintenance	EA	$3,500	9	$29,750
1.21	Street Lighting	EA	$3,000	92	$276,000
1.22	Wayfinding Signs	EA	$900	40	$36,000
1.23	Bus Shelter	EA	$12,000	16	$192,000
1.24	Bench	EA	$1,600	30	$48,000
1.25	Trash Receptacle	EA	$1,400	46	$64,400
				Pedestrian Subtotal	**$2,950,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	16	$12,000
2.3	Wayfinding Signs	EA	$900	56	$50,400
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000		$0

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000		$0
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	12.0	$204,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000
2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
2.14	Bicycle Push Button (attach to exist pole)	EA	$700	8	$5,600
2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
				Bicycle Subtotal	**$1,190,000**

3	**TRAFFIC CALMING**				
3.1	Median Refuge Islands	SF	$15	6,400	$96,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	18	$540,000
3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
3.4	Speed Treatments (humps)	EA	$2,500	18	$45,000
3.5	Diverters	EA	$20,000	4	$80,000
3.6	Chicanes	EA	$10,000	2	$20,000
3.7	Bollards (Metal)	EA	$800	32	$25,600
3.8	Stop Sign	EA	$300	6	$1,800
				Traffic Calming Subtotal	**$1,010,000**

	- Subtotal -	**$5,150,000**

4	**MOBILIZATION**				
4.1	Mobilization (10% Items 1 to 3)				$510,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$5,660,000**

5	**OTHER PROJECT SUPPORT**				
5.1	R/W Allowance (20% Project Subtotal)				$1,130,000
5.2	Utility Relocations (10% Project Subtotal)				$560,000
5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$1,830,000
5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$1,410,000
5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$160,000
				Other Project Support Subtotal	**$5,090,000**

6	**PROJECT TOTAL (per square mile)**	**$10,800,000**

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	**PEDESTRIAN GRAND TOTAL (per square mile)**	**$7,400,000**

8	**BICYCLE GRAND TOTAL (per square mile)**	**$3,400,000**

Metro Active Transportation Strategic Plan

CASE STUDY: Type 4, BRT and local bus

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	1	$250,000
1.4	Signal Modification (protected lefts)	EA	$40,000	4	$160,000
1.5	RRFB Flashing Beacon (Solar)	EA	$15,000		$0
1.6	Pedestrian Scramble Phase	EA	$50,000		$0
1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	4	$5,600
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700		$0
1.10	Crosswalk (Striped Continental)	EA	$4,000	44	$176,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	3	$105,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	12	$3,000
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	138	$690,800
1.14	Remove Existing Tree	EA	$900	8	$7,200
1.15	Construct Sidewalk	SF	$10	100,200	$1,002,000
1.16	Construct Curb and Gutter	LF	$24	7,000	$168,000
1.17	Remove Concrete Curb and Gutter	LF	$16	7,000	$112,000
1.18	Remove Sidewalk	SF	$3	10,000	$30,000
1.19	Trees / Landscape	Block	$40,000	8	$320,000
1.20	60 Day Maintenance	EA	$3,500	4	$14,000
1.21	Street Lighting	EA	$3,000	86	$258,000
1.22	Wayfinding Signs	EA	$900	64	$57,600
1.23	Bus Shelter	EA	$12,000	16	$192,000
1.24	Bench	EA	$1,600	8	$12,800
1.25	Trash Receptacle	EA	$1,400	24	$33,600
				Pedestrian Subtotal	**$3,710,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	64	$32,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	4	$3,000
2.3	Wayfinding Signs	EA	$900	32	$28,800
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	2	$1,780,000

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000		$0
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000		$0
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	2	$112,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	4	$68,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000
2.13	Bicycle Loop Detection	EA	$2,500	32	$80,000
2.14	Bicycle Push Button (attach to exist pole)	EA	$700	32	$22,400
2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
				Bicycle Subtotal	**$2,780,000**

3	TRAFFIC CALMING				
3.1	Median Refuge Islands	SF	$15	12,800	$192,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	4	$120,000
3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
3.5	Diverters	EA	$20,000	2	$40,000
3.6	Chicanes	EA	$10,000		$0
3.7	Bollards (Metal)	EA	$800	88	$70,400
3.8	Stop Sign	EA	$300	6	$1,800
				Traffic Calming Subtotal	**$690,000**

	- Subtotal -	**$7,180,000**

4	MOBILIZATION				
4.1	Mobilization (10% Items 1 to 3)				$710,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$7,890,000**

5	OTHER PROJECT SUPPORT				
5.1	R/W Allowance (20% Project Subtotal)				$1,570,000
5.2	Utility Relocations (10% Project Subtotal)				$780,000
5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$2,560,000
5.4	Planning/Design/Environmental/CM (20% Project Subtotal)				$1,570,000
5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$230,000
				Other Project Support Subtotal	**$6,710,000**

6	**PROJECT TOTAL (per square mile)**	**$14,600,000**

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	**PEDESTRIAN GRAND TOTAL (per square mile)**	**$8,200,000**

8	**BICYCLE GRAND TOTAL (per square mile)**	**$6,500,000**

Metro Active Transportation Strategic Plan

CASE STUDY: Type 5, Metrolink

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	1	$250,000
1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	6	$90,000
1.6	Pedestrian Scramble Phase	EA	$50,000	4	$200,000
1.7	Pedestrian (Countdown) Signal	EA	$900	128	$115,200
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700	2	$1,400
1.10	Crosswalk (Striped Continental)	EA	$4,000	50	$200,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	6	$210,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	30	$7,500
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	164	$820,000
1.14	Remove Existing Tree	EA	$900	2	$1,800
1.15	Construct Sidewalk	SF	$10	15,200	$152,000
1.16	Construct Curb and Gutter	LF	$24	500	$12,000
1.17	Remove Concrete Curb and Gutter	LF	$16	500	$8,000
1.18	Remove Sidewalk	SF	$3	2,000	$6,000
1.19	Trees / Landscape	Block	$40,000	32	$1,280,000
1.20	60 Day Maintenance	EA	$3,500	16	$56,000
1.21	Street Lighting	EA	$3,000	108	$324,000
1.22	Wayfinding Signs	EA	$900	40	$36,000
1.23	Bus Shelter	EA	$12,000	12	$144,000
1.24	Bench	EA	$1,600	40	$64,000
1.25	Trash Receptacle	EA	$1,400	52	$72,800
				Pedestrian Subtotal	**$4,130,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	32	$16,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	22	$16,500
2.3	Wayfinding Signs	EA	$900	48	$43,200
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000		$0
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	1.0	$890,000

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000	2	$1,860,000
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	8	$800,000
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1	$655,000
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	3.0	$168,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	2.0	$34,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	16	$400,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	1	$250,000
2.13	Bicycle Loop Detection	EA	$2,500	48	$120,000
2.14	Bicycle Push Button (attach to exist pole)	EA	$700	32	$22,400
2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
				Bicycle Subtotal	**$5,280,000**

3	TRAFFIC CALMING				
3.1	Median Refuge Islands	SF	$15	6,400	$96,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	20	$600,000
3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
3.5	Diverters	EA	$20,000	12	$240,000
3.6	Chicanes	EA	$10,000	8	$80,000
3.7	Bollards (Metal)	EA	$800	32	$25,600
3.8	Stop Sign	EA	$300	6	$1,800
				Traffic Calming Subtotal	**$1,310,000**

	- Subtotal -	**$10,720,000**

4	MOBILIZATION				
4.1	Mobilization (10% Items 1 to 3)				$1,070,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$11,790,000**

5	OTHER PROJECT SUPPORT				
5.1	R/W Allowance (20% Project Subtotal)				$2,350,000
5.2	Utility Relocations (10% Project Subtotal)				$1,170,000
5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$3,820,000
5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$2,940,000
5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$350,000
				Other Project Support Subtotal	**$10,630,000**

6	PROJECT TOTAL (per square mile)	$22,400,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	PEDESTRIAN GRAND TOTAL (per square mile)	$10,000,000

8	BICYCLE GRAND TOTAL (per square mile)	$12,400,000

Metro Active Transportation Strategic Plan

CASE STUDY: Type 6, Metrolink

UNIT COST SUMMARY

Michael Baker INTERNATIONAL

Last updated2/22/2016

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
1	**PEDESTRIAN**				
1.1	New Traffic Signal - Single Post	EA	$6,000		$0
1.2	New Traffic Signal - Post & Mast Arm	EA	$25,000		$0
1.3	New Traffic Signal	EA	$250,000	8	$2,000,000
1.4	Signal Modification (protected lefts)	EA	$40,000	2	$80,000
1.5	RRFB Flashing Beacon (Solar)	EA	$15,000	4	$60,000
1.6	Pedestrian Scramble Phase	EA	$50,000		$0
1.7	Pedestrian (Countdown) Signal	EA	$900	8	$7,200
1.8	Pedestrian Push Button with Sign (includes new post)	EA	$1,400	2	$2,800
1.9	Pedestrian Push Button with Sign (attach to exist pole)	EA	$700		$0
1.10	Crosswalk (Striped Continental)	EA	$4,000	56	$224,000
1.11	Crosswalk (In-Pavement Flashing Markers)	EA	$35,000	6	$210,000
1.12	Thermoplastic Pavement Marking (Symbols, Arrows, Letters, etc.)	EA	$250	26	$6,500
1.13	Curb Ramp (incl detectable warning surface)	EA	$5,000	268	$1,340,000
1.14	Remove Existing Tree	EA	$900		$0
1.15	Construct Sidewalk	SF	$10	449,960	$4,499,600
1.16	Construct Curb and Gutter	LF	$24	21,000	$504,000
1.17	Remove Concrete Curb and Gutter	LF	$16	4,200	$67,200
1.18	Remove Sidewalk	SF	$3	9,000	$27,000
1.19	Trees / Landscape	Block	$40,000	72	$2,880,000
1.20	60 Day Maintenance	EA	$3,500	36	$126,000
1.21	Street Lighting	EA	$3,000	354	$1,062,000
1.22	Wayfinding Signs	EA	$900	72	$64,800
1.23	Bus Shelter	EA	$12,000	56	$672,000
1.24	Bench	EA	$1,600	40	$64,000
1.25	Trash Receptacle	EA	$1,400	76	$106,400
				Pedestrian Subtotal	**$14,000,000**

2	**BICYCLE**				
2.1	Bicycle Parking (Inverted-U rack)	EA	$500	20	$10,000
2.2	Bicycle Parking (7-bicycle wave rack)	EA	$750	10	$7,500
2.3	Wayfinding Signs	EA	$900	56	$50,400
2.4	One-way Cycle Track w/5' raised median - includes Pavement reconstruction and C&G, signing, and striping	Mile	$1,710,000	1	$1,710,000
2.5	One-way Cycle Track w/3' striped buffer - includes Pavement reconstruction and C&G, signing, and striping	Mile	$890,000	3.0	$2,670,000

Item Number	Item Description	Unit	Unit Cost	Estimated Quantities	Item Cost
2.6	One-way Cycle Track w/5' raised median - includes signing and striping (no pavement reconstruction)	Mile	$930,000		$0
2.7	One-way Cycle Track w/3' striped buffer - includes signing and striping (no pavement reconstruction)	Mile	$100,000	2	$150,000
2.8	Class II Bike Lanes (Signing, Striping, & Pavement Reconstruction)	Mile	$655,000	1.5	$982,500
2.9	Class II Bike Lanes (Signing and Striping Only)	Mile	$56,000	1.0	$56,000
2.10	Class III Bike Route (Signing and Striping Only)	Mile	$17,000	3.0	$51,000
2.11	Bicycle Signal (added to exist signalized intersection)	EA	$25,000	1	$25,000
2.12	Bicycle Signal (added to exist unsignalized intersection)	EA	$250,000	8	$2,000,000
2.13	Bicycle Loop Detection	EA	$2,500		$0
2.14	Bicycle Push Button (attach to exist pole)	EA	$700		$0
2.15	Bicycle and Pedestrian Bridge	SF	$250		$0
				Bicycle Subtotal	**$7,710,000**

3	TRAFFIC CALMING				
3.1	Median Refuge Islands	SF	$15	3,200	$48,000
3.2	Curb Extensions (w/directional curb ramps)	EA	$30,000	20	$600,000
3.3	Neighborhood Traffic Circles	EA	$25,000	8	$200,000
3.4	Speed Treatments (humps)	EA	$2,500	27	$67,500
3.5	Diverters	EA	$20,000	12	$240,000
3.6	Chicanes	EA	$10,000	12	$120,000
3.7	Bollards (Metal)	EA	$800	16	$12,800
3.8	Stop Sign	EA	$300	8	$2,400
3.9	Construct street segment	LF	$190	2,900	$551,000
				Traffic Calming Subtotal	**$1,290,000**

	- Subtotal -	**$23,000,000**

4	MOBILIZATION				
4.1	Mobilization (10% Items 1 to 3)				$2,300,000
				PROJECT SUBTOTAL (Items 1 to 4)	**$25,300,000**

5	OTHER PROJECT SUPPORT				
5.1	R/W Allowance (10% Project Subtotal)				$2,530,000
5.2	Utility Relocations (10% Project Subtotal)				$2,530,000
5.3	Contingency (25% Project Subtotal + R/W + Utilities)				$7,590,000
5.4	Planning/Design/Environmental/CM (25% Project Subtotal)				$6,320,000
5.5	NPDES/Water Quality/BMPs (3% Project Subtotal)				$750,000
				Other Project Support Subtotal	**$19,720,000**

6	PROJECT TOTAL (per square mile)	$45,000,000

Assuming Traffic Calming (3) cost evenly split for Pedestrian (1) and Bicycle (2), and other Project Support (5) cost is split proportionally:

7	PEDESTRIAN GRAND TOTAL (per square mile)	$28,900,000

8	BICYCLE GRAND TOTAL (per square mile)	$16,100,000

Cost Methodology and Assumptions

One-Way Cycletrack (Reconstruct Pavement/New Striping & Signing)- Unit Cost per Mile

Assumptions:

8' Wide, One-Way (one lane) Cycletrack installed in existing roadway in outer lane --> no clearing and grubbing; reconstruct pavement & curb and gutter

One side	C&G (Reconstruct)	*assume C&G already existing in roadway (do not include in cost)*
Other Side - Option A	3' striped barrier	
Other Side - Option B	5' raised median	

Item	Unit	Qty	Unit Cost	Cost $	Notes
Remove pavement and excavate base	CY	1830	$ 100	$ 183,000	assume 14" (pvmt depth + base); 8' wide cycletrack
Pavement	CY	790	$ 250	$ 197,500	assume 6" PCC pvmt depth
Aggregate Base	CY	1050	$ 100	$ 105,000	assume 8" base
Curb and Gutter Reconstruction	LF	5280	$ 56	$ 295,680	Remove at $16 + Construct @ $40
Signs	EA	150	$ 300	$ 45,000	Washington DC, L Street cycletrack project - 237 signs over 1.4 miles (170 signs/mile) - oneway/lane cycletrack; Washington DC, M Street cycletrack project - 169 signs over 1.3 miles (130 signs/mile) - oneway/lane cycletrack;
Striping (centerline, for two-way)	LF	0	$ 1.75	$ -	One-way cycletrack (no centerline striping)
Pavement Markings (Paint)	EA	22	$ 250	$ 5,500	assume 1 symbol every 250'
Subtotal				$ 831,680	per route mile
Option A: 3' Striped Barrier					
Striping (solid white line)	LF	10560	$ 1.75	$ 18,480	2 continuous longitudinal lines (CAMUTCD Figure 9C-104(CA)); "*Chevron or diagonal markings may be omitted from bicycle lane buffer areas less than 4' wide* " - CAMUTCD Ch. 9C
Chevron Striping	SF	1584	$ 6.00	$ 9,504	3sf striping spaced at 10' intervals
Channelizer/Self Re-Erecting Post/Bollard	EA	106	$ 250.00	$ 26,500	For example: K71 Flexible Bollard/Post; Spaced at 50' intervals ; Washington D.C. cycletrack final plans: 20' intervals, 28" high channelizers
Subtotal Option A				$ 54,484	per cycletrack mile
Total Option A (Cycletrack with pavement reconstruction)				**$ 890,000**	per route mile
Option B: 5' Raised Median (Landscaping not included)					
Remove pavement and excavate base	CY	690	$ 100	$ 69,000	5' Median width + 2' c/g on car side * 6" base under c/g
Aggregate Base	CY	690	$ 100	$ 69,000	5' Median width + 2' c/g on car side * 6" base under c/g
Concrete Median	SF	21120	$ 15	$ 316,800	4' concrete median width + 6" top of curb (both sides) = 5' total median width
Curb and Gutter (New)	LF	10560	$ 40	$ 422,400	Curb (no gutter) along cycle track side; Curb with gutter on car side
Landscaping	LS			$ -	*Landscaping not included*
Subtotal Option B				$ 877,200	per mile
Total Option B (Cycletrack with pavement reconstruction)				**$ 1,710,000**	per mile

One-Way Cycletrack (New Striping & Signing; No Pavement Reconstruction)- Unit Cost per Mile

Assumptions:

8' Wide, One-Way (one lane) Cycletrack installed in existing roadway in outer lane --> use existing roadway pavement as-is

One side	C&G (Reconstruct)	*assume C&G already existing in roadway (do not include in cost)*
Other Side - Option A	3' striped barrier	
Other Side - Option B	5' raised median	

Item	Unit	Qty	Unit Cost	Cost $	Notes
Remove pavement and excavate base	CY	0	$ 100	$ -	assume reuse existing pavement as-is
Pavement	CY	0	$ 250	$ -	assume reuse existing pavement as-is
Aggregate Base	CY	0	$ 100	$ -	assume reuse existing pavement as-is
Curb and Gutter Reconstruction	LF	0	$ 56	$ -	assume no c/g reconstruction
Signs	EA	150	$ 300	$ 45,000	Washington DC, L Street cycletrack project - 237 signs over 1.4 miles (170 signs/mile) - oneway/lane cycletrack; Washington DC, M Street cycletrack project - 169 signs over 1.3 miles (130 signs/mile) - oneway/lane cycletrack;
Striping (centerline, for two-way)	LF	0	$ 1.75	$ -	One-way cycletrack (no centerline striping)
Pavement Markings (Paint)	EA	22	$ 250	$ 5,500	assume 1 symbol every 250'
Subtotal				$ 50,500	per route mile
Option A: 3' Striped Barrier					

Striping (solid white line)	LF	10560	$ 1.75	$ 18,480	2 continuous longitudinal lines (CAMUTCD Figure 9C-104(CA)); "*Chevron or diagonal markings may be omitted from bicycle lane buffer areas less than 4' wide* " - CAMUTCD Ch. 9C
Chevron Striping	SF	1584	$ 6.00	$ 9,504	3sf striping spaced at 10' intervals
Channelizer/Self Re-Erecting Post/Flexible Bollard	EA	106	$ 250.00	$ 26,500	For example: K71 Flexible Bollard/Post; Spaced at 50' intervals ; Washington D.C. cycletrack final plans: 20' intervals, 28" high channelizers
Subtotal Option A				$ 54,484	per cycletrack mile
Total Option A (Cycletrack reusing existing pavement as-is)				**$ 100,000**	per route mile
Option B: 5' Raised Median (Landscaping not included)					
Remove pavement and excavate base	CY	690	$ 100	$ 69,000	5' Median width + 2' c/g on car side * 6" base under c/g
Aggregate Base	CY	690	$ 100	$ 69,000	5' Median width + 2' c/g on car side * 6" base under c/g
Concrete Median	SF	21120	$ 15	$ 316,800	4' concrete median width + 6" top of curb (both sides) = 5' total median width
Curb and Gutter (New)	LF	10560	$ 40	$ 422,400	Curb (no gutter) along cycle track side; Curb with gutter on car side
Landscaping	LS			$ -	*Landscaping not included*
Subtotal Option B				$ 877,200	per mile
Total Option B (Cycletrack reusing existing pavement as-is)				**$ 930,000**	per mile

Class II Bike Lane (Signing and Striping Only) - Unit Cost per Mile

Assumptions:

Unit cost for one-way; No re-paving; Only striping and signing for bike route (*increase cost if need to re-stripe additional lanes*)
Unit cost will vary depending on existing or proposed path conditions (intersections, adjacent to parking and rt-turn lanes, etc.)

Item	Unit	Qty	Unit Cost	Cost $	Notes
Striping (solid white line)	LF	10560	$ 1.75	$ 18,480	2 lines on either side of bike lane
Re-striping (existing lanes)	LF	0	$ 2.50	$ -	Includes removal of exist striping
Pavement Markings (Paint)	EA	29	$ 250	$ 7,250	assume 1 symbol every 250' + 1 at each block (assume 8 blocks);
Signs	EA	100	$ 300	$ 30,000	Based on DC cycletrack projects, assume 100 signs per mile
Total Class II Bike Route - Unit Cost per Mile (signing and striping only)				$ 56,000	per mile, which is conservative compared to SANDAG study with costs of $13.5k/mi low, $19k med, $25k high LA County Bicycle Master Plan, $26k/direction (omitted PM), Table H-1.

Class II Bike Lane (Signing, Striping, and Pavement Reconstruction) - Unit Cost per Mile

Assumptions:

Unit cost for one-way/lane; pavement reconstruction, striping and signing for bike route (*increase cost if need to re-stripe additional lanes*)
Unit cost will vary depending on existing or proposed path conditions (intersections, adjacent to parking and rt-turn lanes, etc.)
5' bike lane

Item	Unit	Qty	Unit Cost	Cost $	Notes
Remove pavement and excavate base	CY	1150	$ 100	$ 115,000	assume excavate 14" (pvmt depth + base); 5' wide bike lane
Pavement	CY	490	$ 250.00	$ 122,500	assume 6" PCC pvmt depth,
Aggregate Base	CY	660	$ 100	$ 66,000	assume 8" base, Class 2 $80/CY, Class 3 $120/CY per Caltrans Cost Data
Curb and Gutter Reconstruction	LF	5280	$ 56	$ 295,680	Remove at $16 + Construct @ $40
Striping (solid white line)	LF	10560	$ 1.75	$ 18,480	2 lines on either side of bike lane
Re-striping (existing lanes)	LF	0	$ 1.50	$ -	
Pavement Markings (Paint)	EA	29	$ 250	$ 7,250	assume 1 symbol every 250' + 1 at each block (assume 8 blocks);
Signs	EA	100	$ 300	$ 30,000	Based on DC cycletrack projects, assume 100 signs per mile
Total Class II Bike Route - Unit Cost per Mile (with pavement reconstruction)				$ 655,000	LA County Bicycle Master Plan, $1.023M/direction, Table H-2

Class III Bike Route (Signing and Striping Only) - Unit Cost per Mile

Assumptions:

Unit cost for one-way; No re-paving; Only striping and signing for bike route (*increase cost if need to re-stripe existing lanes*)
Unit cost will vary depending on existing or proposed path conditions (intersections, adjacent to parking and rt-turn lanes, etc.)

Item	Unit	Qty	Unit Cost	Cost $	Notes

Pavement Markings (Paint)	EA	29	$ 250	$ 7,250	"*Should be placed immediately after an intersection and spaced at intervals not greater than 250' thereafter* " - CAMUTCD Section 9C.07; assume 1 symbol every 250' + 1 at each block (assume 8 blocks);
Re-striping (existing lanes)	LF	0	$ 1.50	$ -	
Signs	EA	32	$ 300	$ 9,600	Assume 8 blocks per mile, 4 signs per block
Total Class II Bike Route - Unit Cost per Mile (signing and striping only)				$ 17,000	SANDAG study costs of $6k/mi low, $9k med, $14k high. LA County Bicycle Master Plan, $14.6k/direction (Sign/PM), Table H-5.

See also "Pedestrian Backup" tab for Pedestrian and Bicycle Information Center data for bicycle costs

Note: References to "SANDAG study" are the SANDAG Safe Routes to Transit Plan.

Online Resources

http://www.pedbikeinfo.org/data/library/casestudies_details.cfm?id=4876		MBI Costs		SANDAG Costs		
Crosswalk (Striped Continental)	EA (intersection)	$4,000		$0	*$3,200*	typical cost (online research) is $7/sf. SANDAG I/S cost $2400-$4000/IS. If $7/sf, assume cross streets at 80' and 60' averages, 10' wide crosswalk, 1/3 painted area = $4,130 /intersection location, say $4000
Wayfinding Signs	EA	$400			900	Assume higher cost than nominal off the shelf signage for custom wayfinding signs. Use SANDAG costs of $900/sign
Bus Shelter	EA	$10,000		$0		typical cost (online research). Assume bus shelters needed every 1/4 mile for 2 N/S streets and 2 E/W streets. Case Study for Van Nuys Stn had 1 shelter in 1 sq mile.

www.walkinginfo.org/download/PedBikeCosts.pdf
Pedestrian and Bicycle Information Center, "Costs for Pedestrian and Bicyclist Infrastructure Improvements", July 2013.

Infrastructure Facility, Median cost, Average cost, Minimum cost, Maximum Cost, Unit of measure, Number of Sources (Observations)

Bicycle Lane, $89,470, $133,170, $5,360, $536,680, Mile, 6 (6)

Bicycle Rack, $540, $660, $64, $3,610, Each, 19 (21)

Concrete Sidewalk, $27, $32, $2.09, $410, Linear Foot, 46 (164)

Curb and Gutter, $20, $21, $1.05, $120, Linear Foot, 16 (108)

Curb Extension/ Choker/ Bulb-Out, $10,150, $13,000, $1,070, $41,170, Each, 19 (28)

Flashing Beacon, $5,170, $10,010, $360, $59,100, Each, 16 (25)

High Visibility Crosswalk, $3070, $2,540, $600, $5,710, Each, 4(4)

Multi-Use Trail - Paved, $261,000, $481,140, $64,710, $4,288,520, Mile, 11 (42)

Multi-Use Trail - Unpaved, $83,870, $121,390, $29,520,$412,720, Mile, 3 (7)

Pedestrian Crossing, $310, $360, $240, $1,240, Each, 4 (6)

Pedestrian Hybrid Beacon, $51,460, $57,680, $21,440, $128,660, Each, 9 (9)

Pedestrian Rail, $95, $100, $7.20, $690, Linear Foot, 29 (83)

Pedestrian Signal, $980, $1480, $130, $10,000, Each, 22 (33)

Raised Crosswalk, $7,110, $8,170, $1,290, $30,880, Each, 14 (14)

Rapid Rectangular Flashing Beacon, $14,160, $22,250, $4,520, $52,310, Each, 3 (4)

Shared Lane/Bicycle Marking, $160, $180, $22, $600, Each, 15 (39)

Signed Bicycle Route, $27,240, $25,070, $5,360, $64,330, Mile, 3 (6)

Speed Bump, $1,670, $1,550, $540, $2,300, Each, 4 (4)

Speed Hump, $2,130, $2,640, $690, $6,860, Each, 14 (14)

Speed Table, $2,090, $2,400, $2,000, $4,180, Each, 5 (5)

Speed Trailer, $9,480, $9,510, $7,000, $12,410, Each, 6 (6)

Stop/Yield Signs, $220, $300, $210, $560, Each, 4 (4)

Streetlight, $3,600, $4,880, $310, $13,900, Each, 12 (17)

Striped Crosswalk, $340, $770, $110, $2,090, Eac,h 8 (8)

Wheelchair Ramp, $740, $810, $89, $3,600, Each, 16 (31)

Item No.	Item	Unit	Avg Unit Price	Notes/Conversions to other units
Caltrans Cost Data (2013-2015, D7, 8, & 12)				
	Minor Concrete	CY	$ 2,200	
025028	Precast concrete trash receptacle	EA	$ 800	
025030	Prefabricated Metal Bench	EA	$ 1,500	
120165	Channelizer (Surface Mounted)	EA	$ 45	Caltrans Std plan A73C; not sturdy enough for cycletrack barrier
150768	Remove Asphalt Concrete Pavement	CY	$ 300	
150770	Remove Asphalt Concrete Pavement	SF	$ 3.25	
150847	Remove Concrete Pavement and Base	CY	$ 125	
150853	Remove Concrete Pavement	SY	$ 15	
150854	Remove Concrete Pavement	CY	$ 150	
153130	Remove Concrete Curb	LF	$ 13	
153215	Remove Concrete (Curb and Gutter)	LF	$ 16	
190101	Roadway Excavation	CY	$ 100	
566011	Roadside Sign - One Post	EA	$ 300	
566012	Roadside Sign - Two Post	EA	$ 750	
731502	Minor Concrete (Misc Construction)	CY	$ 1,040	
731504	Minor Concrete Curb and Gutter	CY	$ 640	Type A2-8 = 0.06379 CY/LF --> $41/LF
731521	Minor Concrete Sidewalk	CY	$ 610	4" depth --> $7.50/SF
731623	Minor Concrete Curb Ramp	CY	$ 1,130	
731656	Curb Ramp Detectable Warning Surf	SF	$ 53	A=3'x4' = 12sf --> $636/ea
731511	Mincor Concrete Island Paving	CY	$ 740	
Striping				
840655	Paint Traffic Stripe (1 coat)	LF	$ 0.50	
840656	Paint Traffic Stripe (2 coat)	LF	$ 0.60	
Pavement Marking				
840505	6" Thermoplastic traffic stripe	LF	$ 1.50	
840519	Thermoplastic Crosswalk and Pavement Marking	SF	$ 3.50	
850101	Pavement Marker (Non-Reflective)	EA	$ 2.80	
850111	Pavement Marker (Retroreflective)	EA	$ 5.20	
CAMUTCD				
Sharrows	Total Marking Height = 112"			
	Total Marking Width = 40"			
LA County Department of Public Works Online Cost Database				
300.02.003	Unclassified Excavation	CY	$ 100.00	

Striping & Pavement Marking

310.05.007	Detail 1 Thermoplastic	LF	$	1.75	Caltrans: Centerline
310.05.007	Detail 8 Thermoplastic	LF	$	1.75	Caltrans: Lane lines
310.05.129	Remove pavement markings	SF	$	5.00	
310.05.131	Remove striping and markings	SF	$	5.50	

Trees

308.04.013	Furnish and Plant 15 Gallon Tree	EA	$	330
308.04.015	Furnish and Plant 24" Box Tree, Case 1	EA	$	690
308.04.015	Furnish and Plant 24" Box Tree, Case 2	EA	$	605
308.04.015	Furnish and Plant 36" Box Tree, Case 1	EA	$	600
		average unit cost	**$**	**556**

Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center, October 2013

Infrastructure	Description, Number of Sources (Observations)	Unit	Cost		Cost type
Chicane	Chicanes, 8 (9)	Each	$	8,050.00	Median
		Each	$	9,960.00	Average
		Each	$	2,140.00	Minimum
		Each	$	25,730.00	Maximum
Curb Extension	Curb Extension/Choker/Bulb-out, 19(28)	Each	$	10,150.00	Median
		Each	$	13,000.00	Average
		Each	$	1,070.00	Minimum
		Each	$	41,170.00	Maximum
Diverter	Diverter, 5 (6)	Each	$	22,790.00	Median
		Each	$	26,040.00	Average
		Each	$	10,000.00	Minimum
		Each	$	51,460.00	Maximum
Island	Median Island, 17 (19)	Each	$	10,460.00	Median
		Each	$	13,520.00	Average
		Each	$	2,140.00	Minimum
		Each	$	41,170.00	Maximum
Island	Median Island, 6 (15)	SF	$	9.80	Median
		SF	$	10	Average
		SF	$	2.28	Minimum
		SF	$	26	Maximum

Roundabout/ Traffic Circle	Roundabout/ Traffic Circle, 11 (14)	Each	$	27,190.00	Median
		Each	$	85,370.00	Average
		Each	$	5,000.00	Minimum
		Each	$	523,080.00	Maximum
Speed Table	Speed Table, 5 (5)	Each	$	2,090.00	Median
		Each	$	2,400.00	Average
		Each	$	2,000.00	Minimum
		Each	$	4,180.00	Maximum
Bollard	Bollard, 28 (42)	Each	$	650.00	Median
		Each	$	730.00	Average
		Each	$	62.00	Minimum
		Each	$	4,130.00	Maximum
Lighting	In-Pavement Lighting, 4 (4)	Total	$	18,250.00	Median
		Total	$	17,620.00	Average
		Total	$	6,480.00	Minimum
		Total	$	40,000.00	Maximum
Lighting	Streetlight, 12 (17)	Each	$	3,660.00	Median
		Each	$	4,880.00	Average
		Each	$	310.00	Minimum
		Each	$	13,900.00	Maximum
Overpass/ Underpass	Pre-Fab Steel Bridge, 5 (5)	Each	$	191,400	Median
		Each	$	206,290	Average
		Each	$	41,850	Minimum
		Each	$	653,840	Maximum
Street Furniture	Street Trees, 7 (7)	Each	$	460	Median
		Each	$	430	Average
		Each	$	54	Minimum
		Each	$	940	Maximum
Street Furniture	Bench, 15 (17)	Each	$	1,660	Median
		Each	$	1,550	Average
		Each	$	220	Minimum
		Each	$	5,750	Maximum
Street Furniture	Bus Shelter, 4 (4)	Each	$	11,490	Median

		Each	$	11,560	Average
		Each	$	5,230	Minimum
		Each	$	41,850	Maximum
Street Furniture	Trash/ Recycling Receptacle, 12 (13)	Each	$	1,330	Median
		Each	$	1,420	Average
		Each	$	310	Minimum
		Each	$	3,220	Maximum
Crosswalk	High Visibility Crosswalk, 4 (4)	Each	$	3,070	Median
		Each	$	2,540	Average
		Each	$	600	Minimum
		Each	$	5,710	Maximum
Sidewalk	Concrete Paved Shoulder, 1 (11)	SF	$	6.10	Median
		SF	$	6.64	Average
		SF	$	2.79	Minimum
		SF	$	58	Maximum
Flashing Beacon	RRFB, 3 (4)	Each	$	14,160	Median
		Each	$	22,250	Average
		Each	$	4,520	Minimum
		Each	$	52,310	Maximum
Signal	Countdown Timer Module, 14 (18)	Each	$	600	Median
		Each	$	740	Average
		Each	$	190	Minimum
		Each	$	1,930	Maximum
Signs	Stop/Yield Signs, 4 (4)	Each	$	220	Median
		Each	$	300	Average
		Each	$	210	Minimum
		Each	$	560	Maximum
Pavement Marking Symbol	Pedestrian Crossing, 4 (6)	Each	$	310	Median
		Each	$	360	Average
		Each	$	240	Minimum
		Each	$	1,240	Maximum
Pavement Marking Symbol	Shared Lane / Bicycle Marking, 15 (39)	Each	$	160	Median
		Each	$	180	Average
		Each	$	22	Minimum
		Each	$	600	Maximum

Pedestrian/ Bike Detection	Bicycle Loop Detection (authors note)	Each	$	1,920	Average
		Each	$	1,070	Typical Range Low
		Each	$	2,680	Typical Range High
Pedestrian/ Bike Detection	Push Button, 22 (34)	Each	$	230	Median
		Each	$	350	Average
		Each	$	61	Minimum
		Each	$	2,510	Maximum

Authors note, "Some information about signals is not included in the table, namely bicycle signals, which have an average cost of $12,800."

More detailed infrastructure cost information can be found in the larger database, located at bit.ly/pedbikecosts.
The final database, including more detailed information about the data source, is located at the following URL:
http://katana.hsrc.unc.edu/cms/downloads/Costs-for-Pedestrian-Bicycle-Infrastructure-Improvements.xlsx.
In addition, more information, such as materials, classes, and types of treatments, is also included in the final database.

APPENDIX

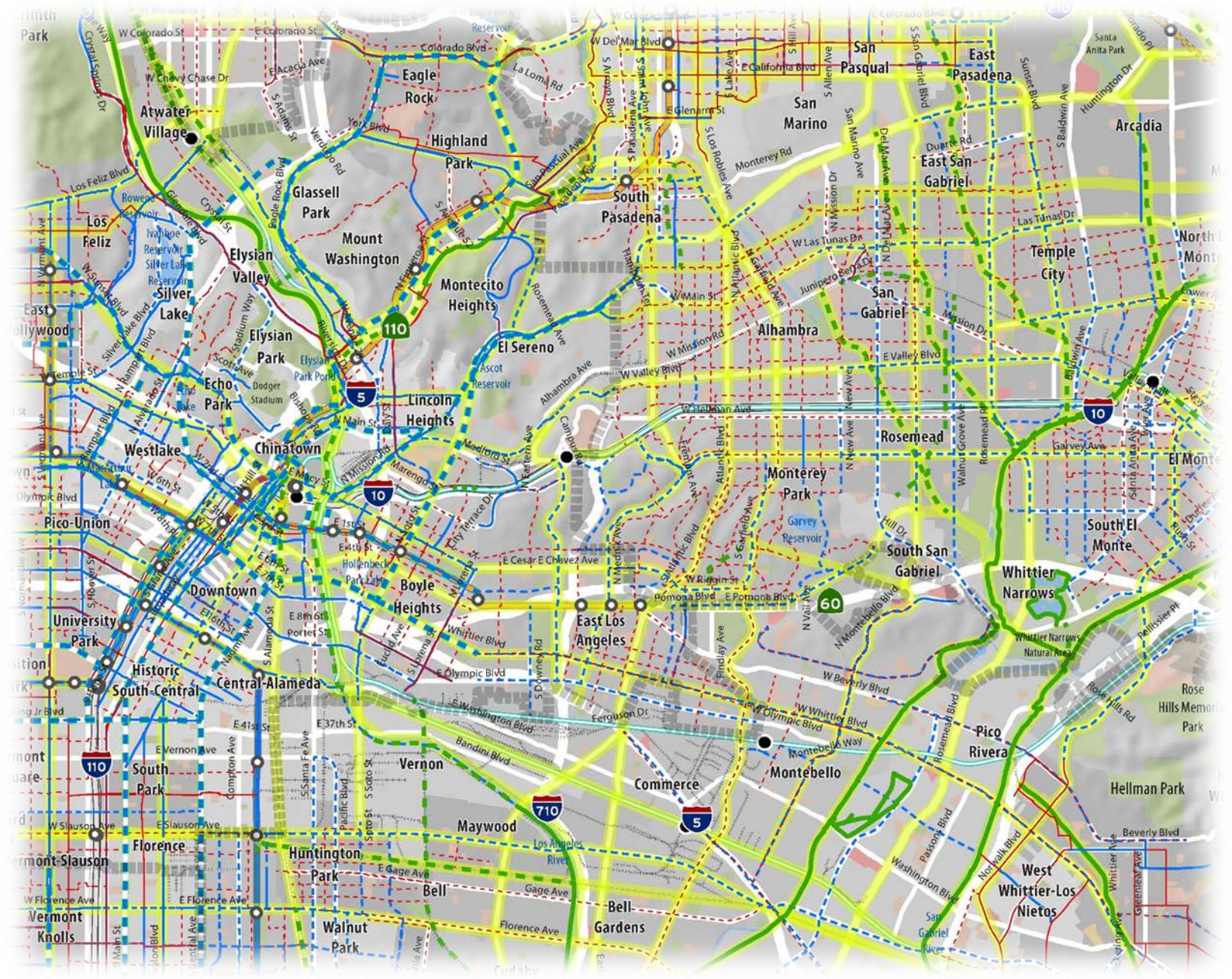
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REGIONAL ACTIVE TRANSPORTATION NETWORK METHODOLOGY & ANALYSIS

DRAFT

Metro Active Transportation Strategic Plan

Regional Active Transportation Network Methodology



alta PLANNING + DESIGN

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1 Introduction

Active transportation network development is the art and science of planning complete, interconnected transportation facilities that effectively serve non-motorized travel needs in a given geographic area.

The Los Angeles County Metropolitan Transportation Authority (Metro) began planning a Regional Active Transportation Network (then-called the Inter-Jurisdictional Bikeway Network) in the 2006 Bicycle Transportation Strategic Plan (BTSP). The BTSP provides a framework for active transportation network development that is based around a geographic analysis of gaps in the network. This approach forms the basis of continued Regional Active Transportation Network development in the Active Transportation Strategic Plan, and is expanded upon in this document to include discussion of facility types and geographically-dependent route planning.

Since 2006, transportation planning has evolved considerably in California. Statewide legislation now encourages the implementation of Complete Streets (AB 1358) and mandates reductions in Greenhouse Gas emissions (SB 375). Moreover, there is a growing consensus that successful active transportation facilities accommodate a wide range of users. This memorandum describes ways in which the 2006 BTSP approach is to be modified and enhanced.

The methodology presented here combines quantitative analysis with qualitative assessment. Techniques are included that extend the analysis conducted in the BTSP with tools inspired by best practices found in California, the United States, and internationally. It is important that active transportation network development be based around sound and, to the greatest extent possible, measureable principles. However, the process should also be flexible and responsive to local conditions, allowing room for professional judgment and the input of stakeholders.









2 Regional Active Transportation Network Guiding Principles

A first step in Regional Active Transportation Network development is the establishment of Guiding Principles. These are high-level, general objectives that inform the entire network development process and help to frame assumptions for the transportation professional.

Table 1: Regional Active Transportation Network Guiding Principles

Guiding Principle	Description
Connect cities and communities	The network emphasizes connectivity between communities, as opposed to connectivity within local jurisdictions. However, regional routes will still play a role in local travel.
Serve desire lines	The network enables bicycle travel on the routes that people want to use. People generally want routes that are *direct* and *safe*.
Serve Main Street	The network embraces routes that link directly to the cores of cities, serving historic Main Streets and Central Business Districts.
Harness continuous rights-of-way	The network relies upon continuous rights-of-way (both natural and human-made) to provide unhindered movement for long stretches.
Link to transit	The network seeks opportunities to connect with major[1] transit hubs, particularly if these hubs are located in population centers.
Address existing safety problems	The network improves travel conditions along routes with a history of bicycle crashes.
Design for all ages and abilities	The facilities comprising the Regional Active Transportation Network meet a minimum standard of service, suitable for use by children and seniors.

[1] Transit hubs that have regional benefits are defined elsewhere in the Active Transportation Strategic Plan.

3 Regional Active Transportation Network Development Process

A ten-step process for active transportation network development is shown in Table 2. This memorandum covers the process up to and including step eight (linear route identification). The steps listed beyond this point are the domain of detailed facility design and construction engineering, and should be carried out following the identification of linear gaps in steps 6 and 8.

Table 2: Regional Active Transportation Network Development Process

No.	Step
1.	Identify existing and planned regional routes
2.	Define applicable facilities
3.	Establish network density standards
4.	Establish gap typology
5.	Identify and map activity centers
6.	Identify and inventory linear gaps
7.	Identify area gaps
8.	Identify and inventory linear routes that resolve area gaps
9.	Select facility types using latest guidance
10.	Conduct detailed facility feasibility studies

3.1 Identify existing and planned regional routes

In order to perform gap analysis at the regional scale, the existing Regional Active Transportation Network must be identified. The Regional Active Transportation Network – including the current Inter-Jurisdictional Bikeway Network – is defined as "an interconnected system of active transportation routes, not necessarily reliant on transit, but connecting to major destinations, linking cities or as routes to transit destinations" (Metro 2006, pg. 100).

Planned and existing routes were identified through the consolidation of data from regional and municipal sources throughout Los Angeles County, including SCAG's Backbone Bikeway Network (2010), Metro's Bicycle Transportation Strategic Plan (2006), the City of Los Angeles Mobility Plan 2035 (2015), subregional-scale plans such as the San Gabriel Valley and Las Virgenes-Malibu Council of Governments Bicycle Master Plans, as well as bicycle transportation plans from individual cities and unincorporated areas throughout the county. Where facilities overlapped, those of lower user protection were overridden by those of higher user protection, e.g. Class III facilities were replaced by Class II, and Class II by Class I.

3.2 Define applicable facilities

The BTSP's vision of the Inter-Jurisdictional Bikeway Network included all three classes of bikeway infrastructure available at the time (Class I, II and III) and considered each of these classes as potential options to close gaps and complete the network. The Active Transportation Strategic Plan's Regional Active Transportation Network maintains each of these options, with certain modifications and additions.

Additions to the 2006 BTSP facility types

Since 2006, Class IV Protected Bicycle Lanes (also known as cycle tracks) have begun to appear across the United States and have received preliminary approval for use in California (AB 1193). Class IV facilities are traffic-protected bicycle lanes that use the existing road right-of-way. For these reasons, Class IV bikeways provide increased safety and directness, making them candidates for longer trips on busy streets. They are an appropriate addition to the Regional Active Transportation Network and should be, along with Class I Shared-Use Paths, a prioritized facility type for regional routes.

Modifications to the 2006 BTSP facility types

Alongside the need to develop new facilities is the need to attract new users. Facility types offering a greater degree of protection and/or separation from traffic (namely Class I paths and Class IV protected bicycle lanes) are preferred by people who bicycle and are most effective at drawing users (Winters and Teschke, 2010). The safety and comfort benefits of these facilities can largely be replicated in Class II and Class III facilities through engineering enhancements. Adding buffers to Class II bicycle lanes can improve user comfort while riding on-street, as can the addition of traffic calming measures to Class III bicycle routes, such as traffic diverters, roundabouts, and chicanes.

Based on these considerations, the Active Transportation Strategic Plan establishes a threshold of facility comfort for routes that comprise the Regional Active Transportation

Network. The current and future Regional Active Transportation Network is comprised of the following facility types – each of which may be used to close gaps in the network:

Table 3: Facility types comprising the Regional Active Transportation Network

Facility Type	Eligible Under the Following Conditions
Class I Shared-Use Path	Always
Class II Bicycle Lane	Facilities are buffered with additional lateral striping or are located on a low-stress roadway
Class III Bicycle Route	Facilities qualify only if they are located on a low-stress roadway or incorporate auxiliary traffic calming measures to create a low-stress environment
Class IV Protected Bicycle Lane	Always

The definitions provided in Table 3 and visualized in Figure 1 apply to both the existing, currently planned (if adopted),[2] and future proposed networks for the purposes of gap analysis and network development. For the existing and currently planned network, these facility type definitions provide a framework to identify the network elements to be analyzed. For the future proposed network, these definitions refine the design options that may be employed to close gaps in the network.

[2] The successful implementation of currently planned routes is assumed if these plans have been adopted by their respective jurisdictions. For the purposes of this analysis, these routes may be combined with the existing bikeway network. Currently planned routes that are in a draft or proposal stage are not included in the existing bikeway network, but are incorporated at later stages of the analysis.

Not all existing or planned facilities meeting the criteria described in Table 3 and visualized in Figure 1 are part of the Regional Active Transportation Network. An additional step is necessary at this stage to relegate segments from the Regional Active Transportation Network to local networks if they do not play a role in linking cities, major destinations or transit hubs. Once this refined version of the existing and previously-planned Regional Active Transportation Network dataset is prepared, gaps in that network can be identified and new linkages can be defined. This process is described in section 3.6.

The Regional Active Transportation Network is intended to serve both people walking and people riding bicycles. However, the network planning process primarily takes cues from best practices in regional bikeway network development, for the following reasons:

- Pedestrian trips are inherently less regional in scale than bicycle trips due to differences in travel speed;
- The Active Transportation Strategic Plan includes detailed transit station area plans that emphasize pedestrian connectivity;
- The Regional Active Transportation Network will directly serve pedestrian travel on all of its recommended Class I (shared-use path) facilities;
- The Regional Active Transportation Network will indirectly improve pedestrian conditions around many of its other facilities (for instance, protected bicycle lanes reduce sidewalk riding, calm traffic and shorten crossing distances, all of which improve pedestrian safety and comfort); and
- The inclusion of sidewalks can be assumed on all on-street facilities with low-stress bikeways, such as protected bicycle lanes (Class IV) or bicycle boulevards (Class III).

Figure 1: Facility Types Comprising the Regional Active Transportation Network

Class I Shared-Use path



Class II Bicycle Lane (Buffered)



Class II Bicycle Lane (On a Low-Stress Street)



Class III Bicycle Route (On a Traffic-Calmed Bicycle Boulevard)



Class IV Protected Bicycle Lane



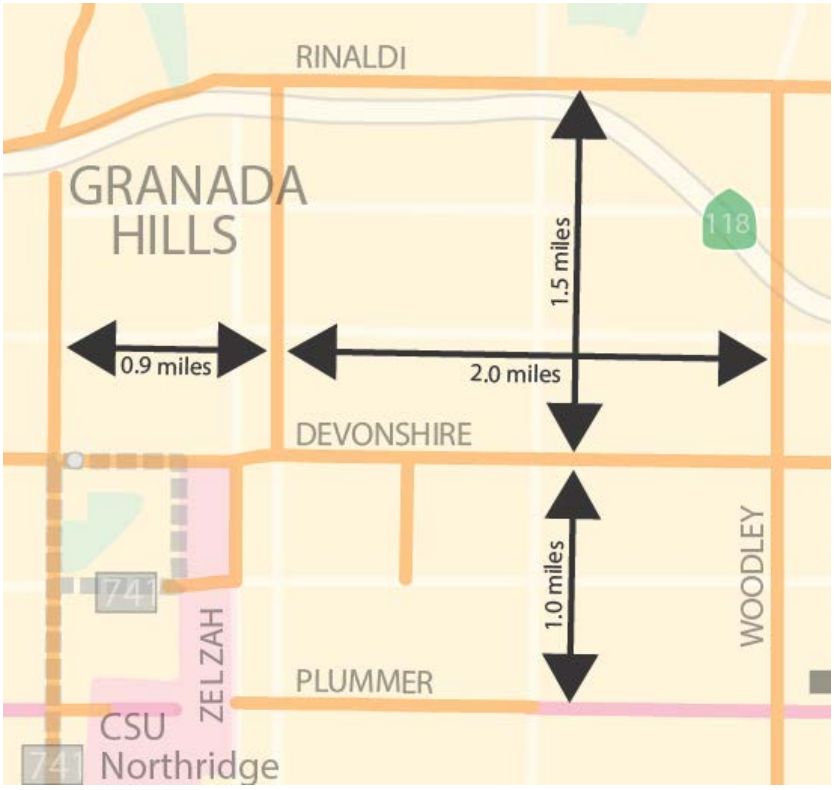
Sidewalk



3.3 Establish network density standards

Active transportation network density is a measure of internal cohesion (i.e. how well the active transportation network connects with itself). It is defined as the actual or target distance between parallel facilities in the network. An active transportation network with a low density of routes will have fewer intersections and limited routing alternatives compared with a high density network. Network density statistics may be calculated to describe an existing active transportation network or may serve as a target for future network development.

Figure 2: Network Density Visualized



In this Granada Hills neighborhood, bikeway spacing ranges from 0.9 to 2.0 miles for north-south routes and 1.0 to 1.5 miles for east-west routes.

Like roadways in general, scale is the most important determinant of active transportation network densities. Local active transportation networks, like local streets, should form a highly connected grid, with numerous junctions and alternative routes in a relatively small area. At the regional scale, active transportation networks should form a grid resembling a freeway network, with a much lower number of routes that connect with one another intermittently. Regional networks – whether intended for bicycles or motor vehicles – prioritize directness, quantity of traffic, speed and comfort over connectivity, resiliency and route choice. Both networks are vital to the functioning of a regional transportation system.

The interaction between local and regional networks are similar for both bicycle and motor vehicle travel. In both cases, local and regional networks must feed seamlessly into one another, with regional networks serving as spine connections between local networks. Local networks, in turn, provide first- and last-mile access to residential communities and destinations within local jurisdictions, such as employment centers, transit destinations, and schools.

Network density standards are applied in both the north-south and east-west directions, and are customized to fit the geometry of underlying street grids. Network density standards apply only to contiguous urban and suburban, or "built-up," areas. The target network density is contingent upon social and physical characteristics of these areas, such as the density of population, destinations and places of employment, topography, and existing street patterns. Outside of urban areas (in wilderness or rural settings), transportation professionals are expected to identify routes on a case-by-case basis, prioritizing connectivity, open space, habitat, and/or existing land uses as dictated by a specific area's needs.

Common practice targets customized network densities for different network scales within the built-up area. Sacramento's *Regional Bicycle, Pedestrian and Trails Master Plan* (2013) specifies a 1.5 to 2-mile spacing of bikeways in outlying areas of the city, and recommends bikeways on all streets serving as feeders into the central business district and major employment centers. *Portland's Regional Active Transportation Plan* (2014) evaluated a grid of regional bikeways with an approximate 2-mile spacing, emphasizing connectivity between employment centers and households. This plan found that areas with high numbers of destinations were associated with higher numbers of bicycle trips. As such, the 2-mile grid rule was adjusted for greater density in these areas, and for areas with greater planned numbers of households, jobs, and destinations.

Minnesota's *Twin Cities Regional Bicycle Study* (2014) and the *Minneapolis Bicycle Master Plan* (2011) include further guidance for network density. The Twin Cities study recommends a spacing of ½ mile in core cities out to one mile in surrounding suburbs, prioritizing routes that connect to the transit system and regional destinations. Minneapolis established a hierarchy of bikeways and network spacing, with arterial (1-2 miles), collector (1/2 mile), and neighborhood levels.

In the Netherlands, Delft targets a 0.31-mile network density for citywide routes, 0.19 miles for district-level routes within the city and 0.06 miles at the local level within districts. Similarly, the Dutch city of Valkenswaard targets a network density of 0.31 to 0.37 miles for the Primary bikeway network and a tighter standard of 0.12 to 0.19 miles for the Secondary network. All of these approaches operate on the logic that spine routes should be citywide, spaced relatively widely, and overlaid onto denser bikeway networks that serve local travel needs and connect to the spine network. The Regional Active Transportation Network will scale this network density methodology up to a countywide level.

In order to accommodate Los Angeles County's wide range of land uses and characteristics, a multi-tiered system of network density targets be employed, corresponding to degrees of built-up urban areas. These tiers are a combination of strategies used in the above-cited

examples, modified to fit a highly variable urban landscape. Each tier is defined through a geospatial analysis of activity centers, population density, employment density, land use, and topography. Recommended network density standards are provided in Table 4.

Only built-up areas are assigned a specific network density guideline. Rural/wilderness areas are treated on a case-by-case basis due to their low population densities, limited street grids, and greater incidence of steep topography, sensitive habitat, surface water, and other physical constraints.

Table 4: Recommended Regional Active Transportation Network Density Standards

Geography	Network Density
Tier 1 (Highest Density/Urban Core)	**0.25-1.0 Miles**
Tier 2 (Medium Density)	**1.0-3.0 Miles**
Tier 3 (Lowest Urban/Suburban Density)	**2.0-4.0 Miles**
Rural/Wilderness	**Case-by-case analysis**

3.4 Establish gap typology

The Regional Active Transportation Network employs gap analysis to identify necessary improvements to the existing and planned active transportation network. Two basic gap types present opportunities for network evaluation at the regional scale: linear gaps and area gaps. These two gap types are defined in Table 5, and their respective analyses are described in detail in section 3.6 and 3.7.

A number of other, more localized, gap types often included in network analyses are shown in Table 5. However, these are "spot" gaps that are specific to an intersection or block. These local gaps are of too fine a scale to include in a Regional Active Transportation Network gap analysis, and therefore fall under the purview of local jurisdictions. However, the key to a fully functional transportation network of any kind is the establishment of strong links between regional and local networks. The Regional Active Transportation Network will address these local gaps at strategic points where the regional and local networks converge.

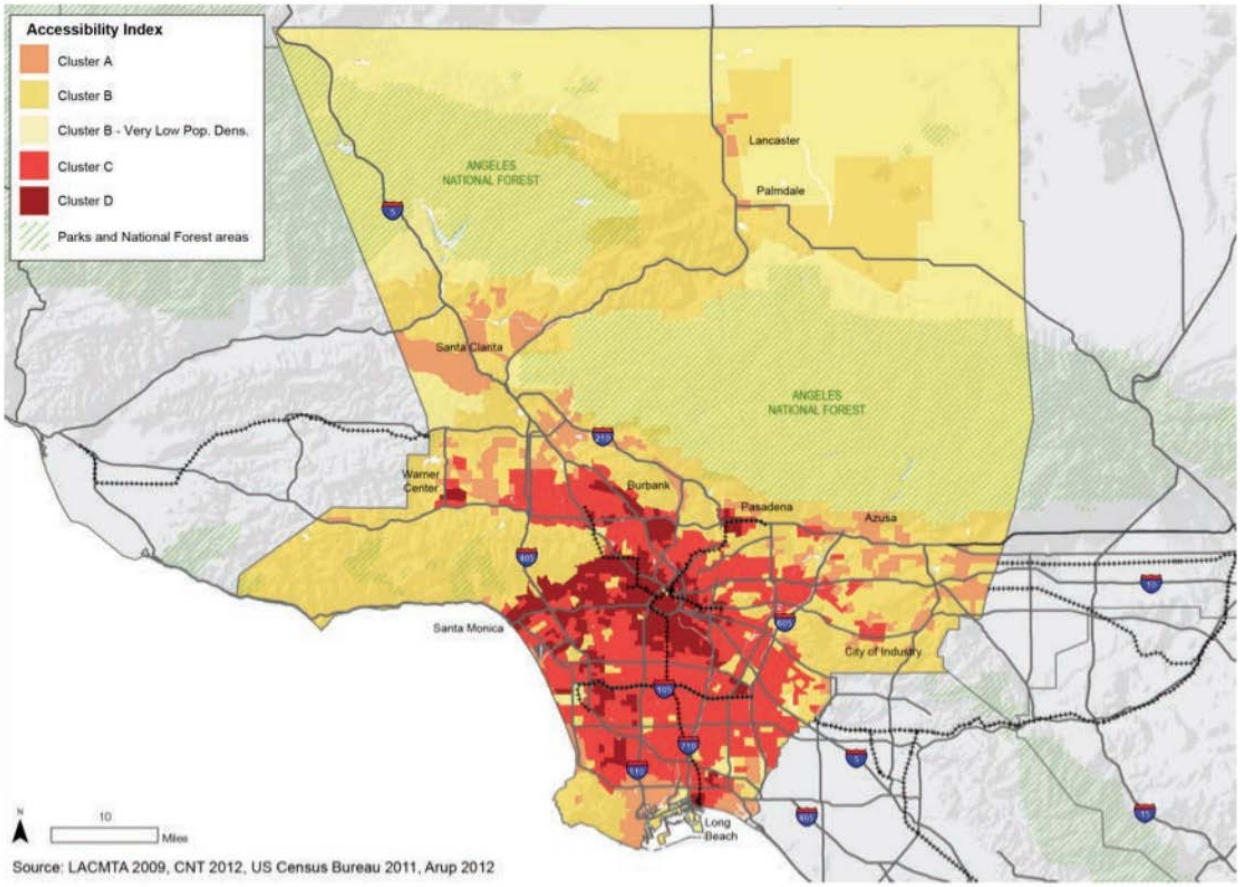
Table 5: Gap Typology

Regional Gap Types		Local Gap Types	
Name	*Description*	*Name*	*Description*
Linear Gap	A corridor serving a major desire line that is lacking a regional active transportation connection	**Crossing Gap**	A location where an active transportation facility meets a major (collector or arterial) crossing without adequate crossing treatments
Area Gap	An area serving major desire line(s) that is lacking regional active transportation connection(s)	**Drop Gap**	A location where an active transportation facility terminates unexpectedly, either mid-block or at an intersection
		Transition Gap	A location where an active transportation facility transitions from a facility of higher user comfort to one of lower comfort (e.g. from a Class I path to an on-street signed Class III route)

3.5 Identify and map activity centers

Mapping activity centers helps visualize the intensity of activity across Los Angeles County. Guidance is available in the accessibility cluster mapping in Metro's Countywide Sustainability Planning Policy (CSPP) and Implementation Plan, which is based around Residential Density and Employment Centrality metrics. Accessibility clusters represent areas of significant residential density, measured as households per census tract, and job centrality, which represents the number of jobs and distance from dense residential tracts (Metro CSPP, pg. 10). These clusters must be made accessible via the Regional Active Transportation Network, and are shown in Figure 3.

Figure 3: Accessibility Clusters across Los Angeles County (Metro CSPP)



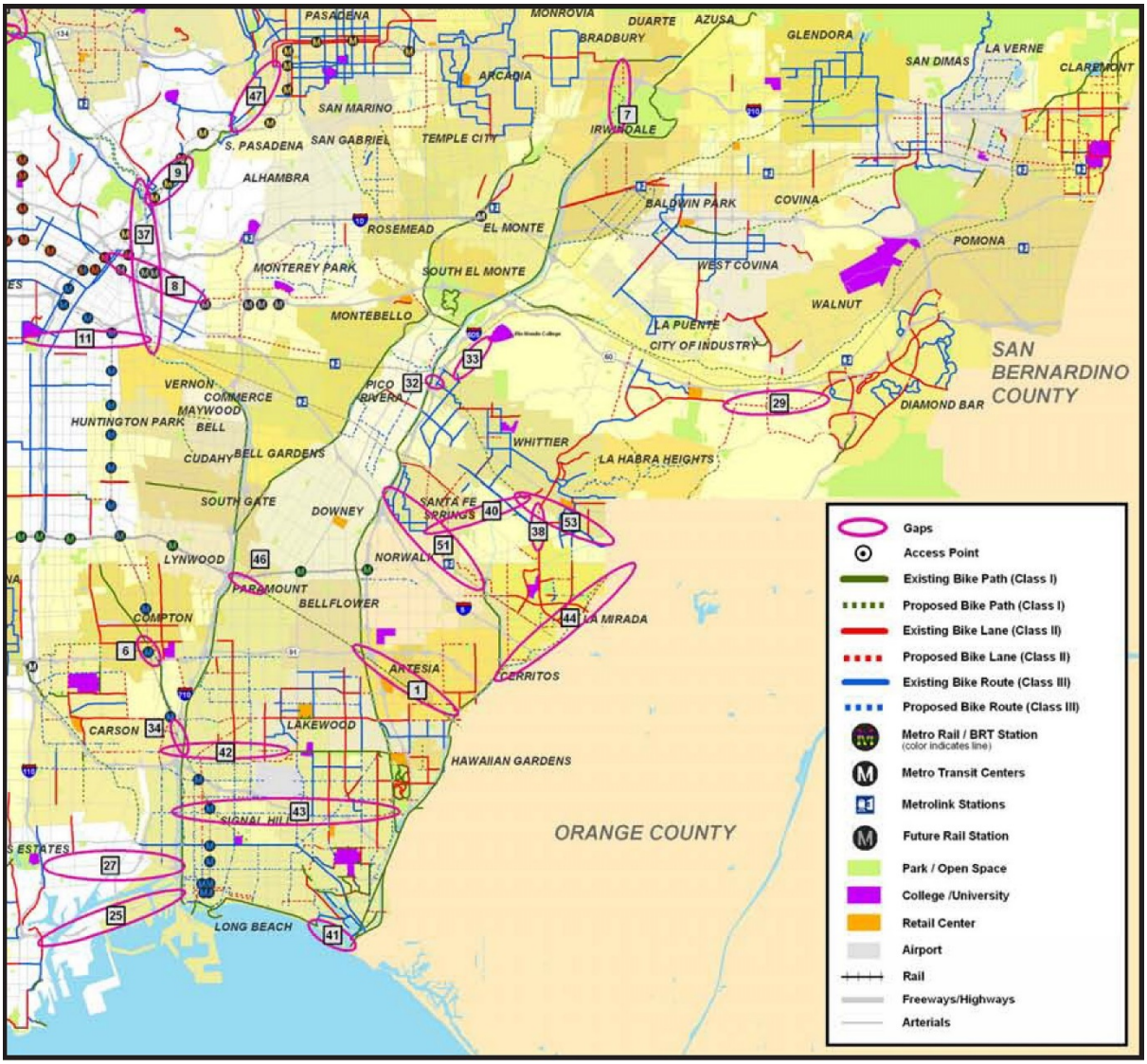
In addition to mapping residential and workplace density, other land uses should be considered, such as regional retail, schools, public facilities, and parks. These land uses, when layered with the results of accessibility cluster mapping, identify a complete spectrum of areas for regional network connectivity.

3.6 Identify and inventory linear gaps

The identification and inventory of linear gaps begins with an update and assessment of the gaps identified in the 2006 BTSP. The gap inventory is first revised to remove any gaps that have been resolved since 2006 as a result of new bikeway construction.

Following this update, the Regional Active Transportation Network is re-mapped according to the identification process described in Section 3.1. This adjustment results in a refined network and simplified map compared to those produced for the BTSP (Figure 4), by removing segments that fail to meet the comfort standards of a regional facility. This filtering of the network to only show high-comfort facilities reveals linear gaps that were otherwise not apparent. These gaps form the linear gap inventory.

Figure 4: Linear gap identification in the Metro Bicycle Transportation Strategic Plan (2006)



3.7 Identify area gaps

Following the linear gap analysis, a second round of gap identification occurs which focuses on area-wide gaps. This analysis relies upon the network density standards developed in section 3.3. With a network density standard of an active transportation route every 1-4 miles, a 0.5-mile buffer is drawn around all routes comprising the existing and planned Regional Active Transportation Network. A half-mile buffer drawn around a linear feature has a radius of 0.5 miles and a diameter of one mile. Gaps are revealed between parallel active transportation routes when facilities are more than one mile apart. Areas falling outside of a buffer are tentatively classified as gap areas. These gap areas are examined in further detail, first to confirm that they are home to significant activity and then to verify that they are located along a "desire line," a route identified by the transportation professional and through public feedback as having regional importance. If both of these conditions are met, the area is considered a gap requiring resolution. An example of area gap analysis in Los Angeles County, including only existing and planned bikeways, is shown in Figure 5, with white areas representing locations greater than ½ mile from a bicycle facility. See the accompanying Regional Active Transportation Network Analysis memorandum for detailed analysis of gaps.

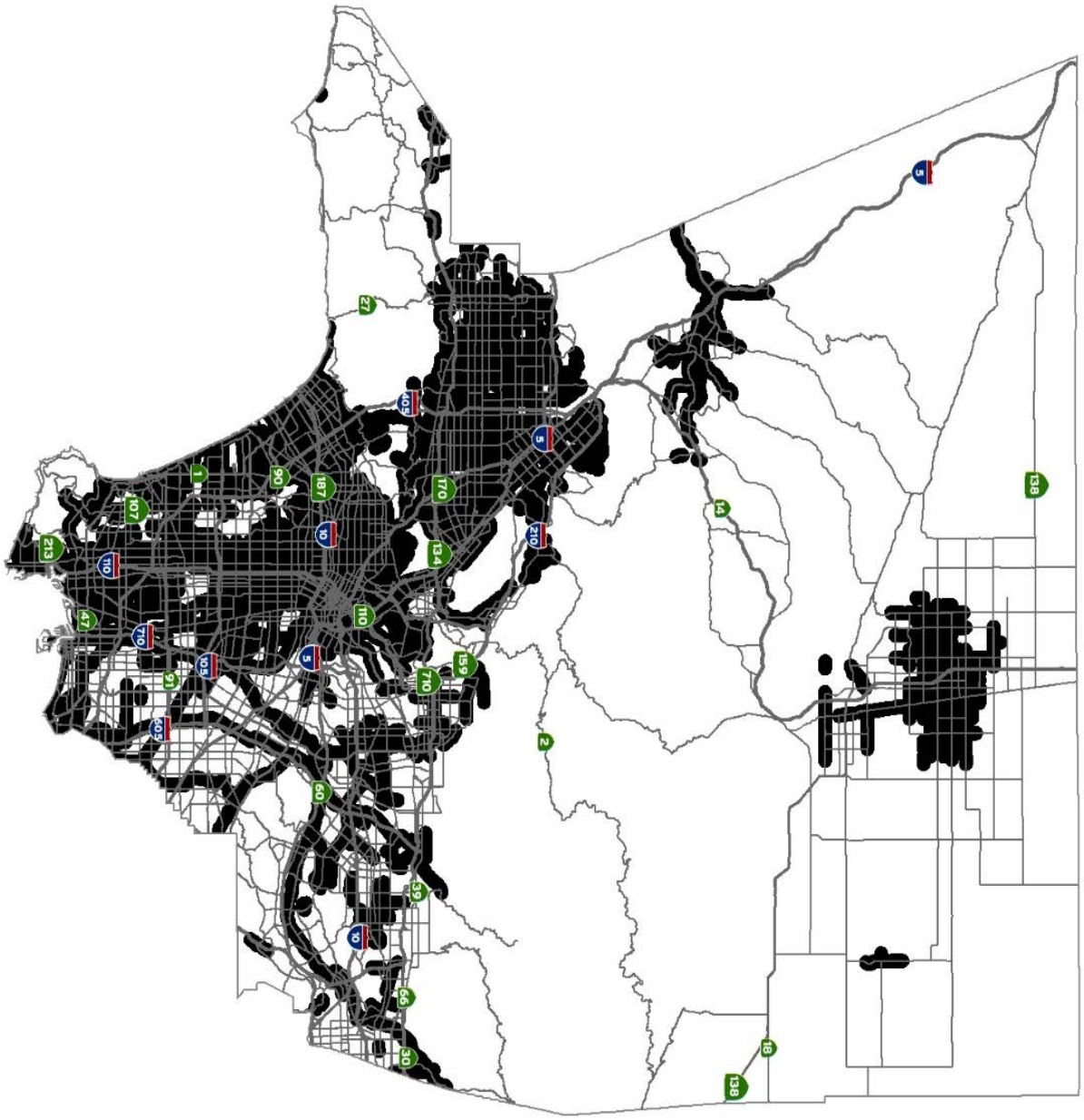
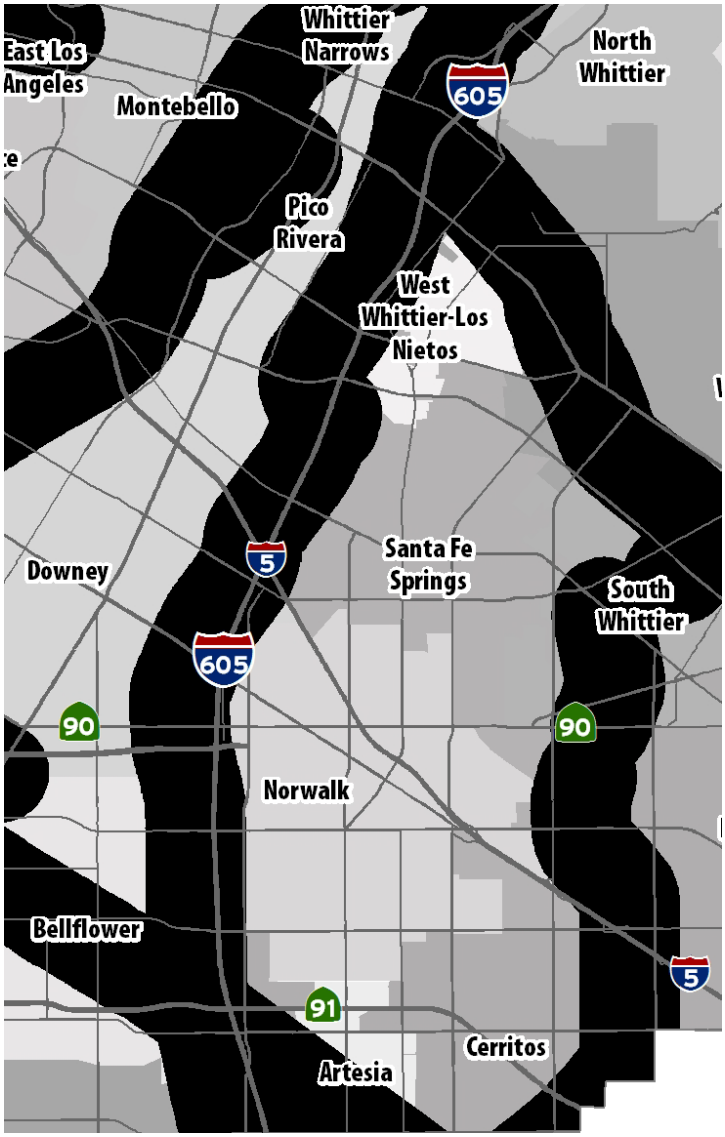


Figure 5: Area gap identification in Los Angeles County

Although it is possible to conduct area gap analysis using distinct east-west and north-south network grids, a simplified approach that consolidates directional considerations is recommended, as street grids may not follow strict north-south alignments. An examination of the shape and orientation of gap areas is typically sufficient to understand the nature of the gaps in question. For instance, in the example shown in Figure 6, areas in white and gray indicate the presence of long vertical (north-south) gaps between parallel north-south bikeways, hinting at the need for supplementary horizontal (east-west) bikeways to close these gaps.

Figure 6: Vertical (North-South) Gaps between Bikeways



3.8 Identify and inventory linear routes that resolve area gaps

The process of identifying area gaps as described in section 3.7 focuses the attention of the transportation professional on specific areas in Los Angeles County where active transportation networks are absent. Within each area, a limited number of linear corridors (consistent with the network density standards introduced in section 3.2) are then identified which connect across the gap area.

The purpose of this exercise is to derive a set of linear gaps from each area gap (some gaps may be closed with a single link, while others may require both a north-south and east-west route). In this way, gaps can be inventoried in a manner that is compatible with the linear gaps originally identified in section 3.5. Framing gaps as linear corridors (rather than areas) provides a means to seamlessly translate gaps into recommended routes.

Targeted Active transportation Improvements

The linear and area gap analyses described in this memorandum are designed to guide active transportation improvements at a high-level regional scale. However, they do not always capture the intricacies of network design and may overlook areas of greater need. For this reason, a thorough review is performed by a transportation professional with local knowledge, to ensure that the Regional Active Transportation Network is connected, direct and safe, independent of the linear and area gap analyses.

A supplemental analysis is performed that considers special exceptions to the linear and area gap analyses. This includes the entirety of the available existing and planned bikeway datasets, even if the planned routes are in Draft form only. It also includes consideration of major potential barriers to route creation, such as topography and surface water. This allows the transportation professional to study all existing and planned routes in detail and consider linkages that may not have been captured in the previous analyses.

It is important to note that an existing active transportation should never be shifted to an adjacent street in order to satisfy a general network density standard. In many situations, duplication or redundancy in the active transportation network, or increased route density, is beneficial. Some reasons for duplication or increased active transportation network density include:

- to provide increased route choice;
- to provide multiple facilities on the same corridor (e.g. Class I and Class II) ;
- to serve high-traffic desire lines and city centers; and
- one-way couplets on parallel one-way streets.

This stage of the process ends with the selection and inventory of preferred routes. Specific facility selection will occur at the local level, as part of detailed feasibility studies and project-level implementation planning, and will rise out of partnerships between Metro and local jurisdictions.

4 References

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Winters and Teschke, 2010. Route Preferences Among Adults in the Near Market for Bicycling: Findings of the Cycling in Cities Study. *American Journal of Health Promotion, 25.1.*

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Arroyo Verdugo	**35.88**		**15.39**	**3.68**	**54.95**	**4.74**	**59.69**	**$ 3,813,436**	**$ 61,275,537**	**$ 320,652,189**
Burbank	**10.75**		**3.00**	**0.80**	**14.55**	**4.74**	**19.29**	**$ 863,469**	**$ 13,881,784**	**$ 72,637,045**
CORRIDOR: BARHAM-OLIVE	**2.87**				**2.87**		**2.87**	**$ 88,797**	**$ 1,432,207**	**$ 7,490,444**
Sprr Burbank To La River										
W OLIVE AV	2.87				2.87		2.87	$ 88,797	$ 1,432,207	$ 7,490,444
CORRIDOR: CHANDLER			**0.76**	**0.25**	**1.01**	**1.99**	**3.00**	**$ 136,152**	**$ 2,184,638**	**$ 11,434,550**
La River To E Verdugo Ave										
CHANDLER CONNECTOR			0.62		0.62		0.62	$ 101,234	$ 1,623,528	$ 8,498,313
Off Street			0.14		0.14	1.99	2.13	$ 22,728	$ 364,492	$ 1,907,925
S FRONT ST				0.25	0.25		0.25	$ 12,190	$ 196,618	$ 1,028,312
CORRIDOR: GLENOAKS BLVD	**3.28**				**3.28**		**3.28**	**$ 101,307**	**$ 1,633,991**	**$ 8,545,773**
Foothill Fwy To Verdugo Wash										
N GLENOAKS BLVD	2.61				2.61		2.61	$ 80,520	$ 1,298,711	$ 6,792,256
S GLENOAKS BLVD	0.67				0.67		0.67	$ 20,787	$ 335,281	$ 1,753,517
CORRIDOR: LANCASTER-SANTA CLARITA-SFV	**0.01**				**0.01**	**2.02**	**2.02**	**$ 256**	**$ 4,129**	**$ 21,595**
Ave H To Sp Rr Burbank										
E BURBANK BLVD	0.01				0.01		0.01	$ 256	$ 4,129	$ 21,595
Off Street						2.02	2.02	$ -	$ -	$ -
CORRIDOR: RIVERSIDE-VERDUGO	**3.21**				**3.21**		**3.21**	**$ 99,107**	**$ 1,598,502**	**$ 8,360,168**
Van Nuys Blvd To Van Nuys Blvd										
E VERDUGO AV	0.41				0.41		0.41	$ 12,718	$ 205,128	$ 1,072,817
W VERDUGO AV	2.80				2.80		2.80	$ 86,389	$ 1,393,375	$ 7,287,351
CORRIDOR: SAN FERNANDO			**0.52**		**0.52**		**0.52**	**$ 85,575**	**$ 1,372,405**	**$ 7,183,818**
Verdugo Ave To Figueroa St										
Off Street			0.52		0.52		0.52	$ 85,575	$ 1,372,405	$ 7,183,818
CORRIDOR: SPRR-BURBANK WESTERN	**1.38**		**1.72**	**0.55**	**3.65**	**0.73**	**4.39**	**$ 352,274**	**$ 5,655,910**	**$ 29,600,697**
Lassen St To La River										
N BUENA VISTA ST				0.10	0.10		0.10	$ 4,734	$ 76,350	$ 399,310
Off Street			1.72		1.72	0.73	2.45	$ 282,834	$ 4,535,919	$ 23,743,146
PACIFIC AV				0.45	0.45		0.45	$ 21,930	$ 353,706	$ 1,849,880
VANOWEN ST	1.34				1.34		1.34	$ 41,452	$ 668,589	$ 3,496,718
W BURBANK BLVD	0.04				0.04		0.04	$ 1,324	$ 21,347	$ 111,644
Glendale	**20.07**		**12.39**	**2.78**	**35.24**		**35.24**	**$ 2,788,838**	**$ 44,794,902**	**$ 234,423,153**
CORRIDOR: ARROYO-VERDUGO	**3.06**			**0.70**	**3.75**		**3.75**	**$ 128,520**	**$ 2,072,899**	**$ 10,841,262**
Van Nuys Blvd To York Blvd										
HONOLULU AV	2.21			0.70	2.91		2.91	$ 102,538	$ 1,653,845	$ 8,649,612
PENNSYLVANIA AV	0.24				0.24		0.24	$ 7,530	$ 121,449	$ 635,178
VERDUGO BLVD	0.60				0.60		0.60	$ 18,451	$ 297,605	$ 1,556,473
CORRIDOR: BRAND-GLENDALE-HYPERION-HIGHLAND-REDONDO	**1.76**			**0.85**	**2.61**		**2.61**	**$ 95,904**	**$ 1,546,845**	**$ 8,090,001**
Verdugo Wash To Rodeo Rd										
GLENDALE BLVD	0.22				0.22		0.22	$ 6,719	$ 108,375	$ 566,800
N BRAND BLVD				0.85	0.85		0.85	$ 41,499	$ 669,338	$ 3,500,639
S BRAND BLVD	1.54				1.54		1.54	$ 47,686	$ 769,132	$ 4,022,562
CORRIDOR: BROADWAY-WILSON	**1.55**			**1.00**	**2.55**		**2.55**	**$ 96,671**	**$ 1,559,205**	**$ 8,154,643**
San Fernando Bike Path To La River										
E BROADWAY	0.01				0.01		0.01	$ 316	$ 5,091	$ 26,625
E WILSON AV	1.54				1.54		1.54	$ 47,689	$ 769,175	$ 4,022,783
W WILSON AV				1.00	1.00		1.00	$ 48,666	$ 784,940	$ 4,105,235
CORRIDOR: COLORADO-FOOTHILL	**2.37**				**2.37**		**2.37**	**$ 73,250**	**$ 1,181,452**	**$ 6,178,995**
La River To San Antonio Wash										
COLORADO ST	0.03				0.03		0.03	$ 971	$ 15,659	$ 81,898
E COLORADO ST	1.46				1.46		1.46	$ 45,138	$ 728,034	$ 3,807,620
SAN FERNANDO RD	0.04				0.04		0.04	$ 1,327	$ 21,407	$ 111,958
W COLORADO ST	0.84				0.84		0.84	$ 25,814	$ 416,352	$ 2,177,518
CORRIDOR: FOOTHILL-SUNLAND-VINELAND	**2.25**				**2.25**		**2.25**	**$ 69,551**	**$ 1,121,786**	**$ 5,866,941**
Ventura Blvd To Verdugo Wash										
FOOTHILL BLVD	1.24				1.24		1.24	$ 38,285	$ 617,500	$ 3,229,525
OCEAN VIEW BLVD	0.38				0.38		0.38	$ 11,591	$ 186,949	$ 977,741
VERDUGO RD	0.64				0.64		0.64	$ 19,675	$ 317,338	$ 1,659,675
CORRIDOR: GLENDALE AVE	**2.93**				**2.93**		**2.93**	**$ 90,431**	**$ 1,458,562**	**$ 7,628,279**
N Verdugo Rd To San Fernando Rd										
N GLENDALE AV	1.24				1.24		1.24	$ 38,445	$ 620,088	$ 3,243,061
S GLENDALE AV	1.68				1.68		1.68	$ 51,985	$ 838,474	$ 4,385,217
CORRIDOR: GLENOAKS BLVD	**2.88**			**0.05**	**2.93**		**2.93**	**$ 91,431**	**$ 1,474,700**	**$ 7,712,679**
Foothill Fwy To Verdugo Wash										
N PACIFIC AV				0.05	0.05		0.05	$ 2,344	$ 37,803	$ 197,708
W GLENOAKS BLVD	2.88				2.88		2.88	$ 89,088	$ 1,436,897	$ 7,514,970
CORRIDOR: RIVERSIDE-SONORA	**1.38**				**1.38**		**1.38**	**$ 42,652**	**$ 687,938**	**$ 3,597,914**
Burbank Western Channel To W Glenoaks Blvd										
RIVERSIDE DR	0.45				0.45		0.45	$ 14,037	$ 226,398	$ 1,184,063
SONORA AV	0.93				0.93		0.93	$ 28,615	$ 461,539	$ 2,413,851
CORRIDOR: SAN FERNANDO			**4.67**		**4.67**		**4.67**	**$ 765,606**	**$ 12,278,304**	**$ 64,270,444**
Verdugo Ave To Figueroa St										
Off Street			4.67		4.67		4.67	$ 765,606	$ 12,278,304	$ 64,270,444
CORRIDOR: SPRR-BURBANK WESTERN			**0.36**		**0.36**		**0.36**	**$ 58,597**	**$ 939,741**	**$ 4,919,048**
Lassen St To La River										
Off Street			0.36		0.36		0.36	$ 58,597	$ 939,741	$ 4,919,048
CORRIDOR: VERDUGO RD	**1.81**				**1.81**		**1.81**	**$ 56,075**	**$ 904,440**	**$ 4,730,219**
Glendale Ave To Eagle Rock Blvd										
N VERDUGO RD	1.08				1.08		1.08	$ 33,284	$ 536,846	$ 2,807,706
S VERDUGO RD	0.74				0.74		0.74	$ 22,791	$ 367,593	$ 1,922,513
CORRIDOR: VERDUGO WASH	**0.07**		**7.37**	**0.19**	**7.63**		**7.63**	**$ 1,220,150**	**$ 19,569,031**	**$ 102,432,729**
Honolulu Ave To La River										
CANADA BLVD	0.07				0.07		0.07	$ 2,266	$ 36,543	$ 191,122
NEW YORK AV				0.19	0.19		0.19	$ 9,156	$ 147,682	$ 772,376
Off Street			7.37		7.37		7.37	$ 1,208,728	$ 19,384,805	$ 101,469,231
La Canada Flintridge	**2.99**			**0.10**	**3.09**		**3.09**	**$ 97,151**	**$ 1,566,945**	**$ 8,195,125**
CORRIDOR: ARROYO-VERDUGO	**2.76**			**0.08**	**2.84**		**2.84**	**$ 89,113**	**$ 1,437,314**	**$ 7,517,153**
Van Nuys Blvd To York Blvd										
BERKSHIRE AV	1.36				1.36		1.36	$ 41,992	$ 677,289	$ 3,542,221
CHEVY CHASE DR	0.24				0.24		0.24	$ 7,516	$ 121,231	$ 634,039

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
DESCANSO DR	0.86				0.86		0.86	$ 26,561	$ 428,405	$ 2,240,560
HWY 159				0.08	0.08		0.08	$ 3,851	$ 62,118	$ 324,880
Off Street	0.10				0.10		0.10	$ 3,240	$ 52,257	$ 273,302
VERDUGO BLVD	0.19				0.19		0.19	$ 5,953	$ 96,014	$ 502,151
CORRIDOR: FOOTHILL-SUNLAND-VINELAND	**0.23**				**0.23**		**0.23**	**$ 7,023**	**$ 113,277**	**$ 592,439**
Ventura Blvd To Verdugo Wash										
FOOTHILL BLVD	0.23				0.23		0.23	$ 7,023	$ 113,277	$ 592,439
CORRIDOR: PASADENA-YORK				**0.02**	**0.02**		**0.02**	**$ 1,014**	**$ 16,354**	**$ 85,533**
Oak Grove To Eagle Rock Blvd										
OAK GROVE DR				0.02	0.02		0.02	$ 1,014	$ 16,354	$ 85,533
Los Angeles	**0.06**				**0.06**		**0.06**	**$ 1,859**	**$ 29,985**	**$ 156,821**
CORRIDOR: RIVERSIDE-SONORA	**0.06**				**0.06**		**0.06**	**$ 1,859**	**$ 29,985**	**$ 156,821**
Burbank Western Channel To W Glenoaks Blvd										
RIVERSIDE DR	0.06				0.06		0.06	$ 1,859	$ 29,985	$ 156,821
Unincorporated	**2.01**				**2.01**		**2.01**	**$ 62,119**	**$ 1,001,921**	**$ 5,240,046**
CORRIDOR: FOOTHILL-SUNLAND-VINELAND	**2.01**				**2.01**		**2.01**	**$ 62,119**	**$ 1,001,921**	**$ 5,240,046**
Ventura Blvd To Verdugo Wash										
FOOTHILL BLVD	1.24				1.24		1.24	$ 38,234	$ 616,673	$ 3,225,202
OCEAN VIEW BLVD	0.77				0.77		0.77	$ 23,885	$ 385,247	$ 2,014,844
Central Los Angeles	**231.66**	**0.51**	**14.23**	**9.11**	**255.51**	**9.82**	**265.33**	**$ 9,937,396**	**$ 160,066,589**	**$ 837,315,707**
Beverly Hills	**0.20**				**0.20**		**0.20**	**$ 6,201**	**$ 100,015**	**$ 523,076**
CORRIDOR: SAN VICENTE BLVD	**0.20**				**0.20**		**0.20**	**$ 6,201**	**$ 100,015**	**$ 523,076**
Santa Monica Blvd To Venice Blvd										
S ORLANDO AV	0.01				0.01		0.01	$ 262	$ 4,232	$ 22,131
S SAN VICENTE BLVD	0.19				0.19		0.19	$ 5,939	$ 95,783	$ 500,945
Huntington Park		**0.06**			**0.06**		**0.06**	**$ -**	**$ -**	**$ -**
CORRIDOR: RAIL TO RIVER		**0.06**			**0.06**		**0.06**	$ -	$ -	$ -
La River To Long Beach Ave										
Off Street		0.06			0.06		0.06	$ -	$ -	$ -
Los Angeles	**217.37**	**0.19**	**14.23**	**9.11**	**240.90**	**9.82**	**250.73**	**$ 9,495,780**	**$ 152,943,749**	**$ 800,063,254**
CORRIDOR: 1ST-2ND-GLENDALE	**7.41**				**7.41**		**7.41**	**$ 229,072**	**$ 3,694,705**	**$ 19,323,305**
Fletcher Dr To Eastern Ave										
E 1ST ST	3.20				3.20		3.20	$ 99,009	$ 1,596,926	$ 8,351,925
GLENDALE BLVD	2.97				2.97		2.97	$ 91,752	$ 1,479,877	$ 7,739,754
W 1ST ST	0.08				0.08		0.08	$ 2,477	$ 39,959	$ 208,985
W 2ND ST	1.16				1.16		1.16	$ 35,832	$ 577,943	$ 3,022,641
CORRIDOR: ALAMEDA	**1.74**		**2.24**		**3.98**		**3.98**	**$ 421,823**	**$ 6,769,850**	**$ 35,432,727**
Spring St To La River										
Off Street			2.24		2.24		2.24	$ 368,202	$ 5,904,985	$ 30,909,479
S ALAMEDA ST	1.74				1.74		1.74	$ 53,622	$ 864,866	$ 4,523,247
CORRIDOR: ARLINGTON-VAN NESS	**9.81**			**0.31**	**10.13**		**10.13**	**$ 318,436**	**$ 5,136,072**	**$ 26,861,656**
Franklin Ave To E Manchester Ave										
ARLINGTON AV	4.06				4.06		4.06	$ 125,527	$ 2,024,622	$ 10,588,771
N WILTON PL	2.23				2.23		2.23	$ 68,814	$ 1,109,901	$ 5,804,784
S VAN NESS AV	2.15				2.15		2.15	$ 66,458	$ 1,071,899	$ 5,606,034
S VAN NESS PL	0.23				0.23		0.23	$ 7,012	$ 113,094	$ 591,482
S WILTON PL	1.15			0.31	1.45		1.45	$ 50,428	$ 813,348	$ 4,253,811
W 3RD ST				0.00	0.00		0.00	$ 199	$ 3,207	$ 16,775
CORRIDOR: ARROYO SECO			**1.77**		**1.77**	**2.16**	**3.93**	**$ 290,261**	**$ 4,655,025**	**$ 24,366,602**
San Pascual Ave To Ave 19										
Off Street			1.77		1.77	2.16	3.93	$ 290,261	$ 4,655,025	$ 24,366,602
CORRIDOR: ARROYO-VERDUGO	**0.87**				**0.87**		**0.87**	**$ 26,862**	**$ 433,254**	**$ 2,265,917**
Van Nuys Blvd To York Blvd										
SAN PASCUAL AV	0.87				0.87		0.87	$ 26,862	$ 433,254	$ 2,265,917
CORRIDOR: AVALON BLVD	**0.55**				**0.55**		**0.55**	**$ 17,068**	**$ 275,282**	**$ 1,439,726**
E Imperial Hwy To Harry Bridges Blvd										
AVALON BLVD	0.55				0.55		0.55	$ 17,068	$ 275,282	$ 1,439,726
CORRIDOR: AVE 19-FIGUEROA	**6.61**				**6.61**		**6.61**	**$ 204,386**	**$ 3,296,551**	**$ 17,240,962**
Colorado Blvd To La River										
N AVE 19	0.57				0.57		0.57	$ 17,579	$ 283,526	$ 1,482,842
N FIGUEROA ST	5.23				5.23		5.23	$ 161,510	$ 2,604,995	$ 13,624,123
N SPRING ST	0.70				0.70		0.70	$ 21,481	$ 346,468	$ 1,812,027
S AVE 19	0.12				0.12		0.12	$ 3,817	$ 61,562	$ 321,969
CORRIDOR: BALLONA CREEK						**0.06**	**0.06**	**$ -**	**$ -**	**$ -**
Pacific Ave To Venice Blvd										
Off Street						0.06	0.06	$ -	$ -	$ -
CORRIDOR: BARHAM-OLIVE	**0.05**				**0.05**		**0.05**	**$ 1,593**	**$ 25,697**	**$ 134,394**
Sprr Burbank To La River										
BARHAM BLVD	0.05				0.05		0.05	$ 1,593	$ 25,697	$ 134,394
CORRIDOR: BEVERLY-TEMPLE	**8.73**				**8.73**		**8.73**	**$ 269,660**	**$ 4,349,359**	**$ 22,747,147**
Santa Monica Blvd To La River										
BEVERLY BLVD	5.23				5.23		5.23	$ 161,582	$ 2,606,154	$ 13,630,187
E TEMPLE ST	0.29				0.29		0.29	$ 9,000	$ 145,168	$ 759,226
SILVER LAKE BLVD	0.24				0.24		0.24	$ 7,338	$ 118,356	$ 619,004
W TEMPLE ST	2.97				2.97		2.97	$ 91,740	$ 1,479,681	$ 7,738,731
CORRIDOR: BRAND-GLENDALE-HYPERION-HIGHLAND-REDONDO	**5.37**			**5.69**	**11.06**		**11.06**	**$ 443,932**	**$ 7,160,189**	**$ 37,447,788**
Verdugo Wash To Rodeo Rd										
FRANKLIN AV				3.38	3.38		3.38	$ 165,127	$ 2,663,333	$ 13,929,232
GLENDALE BLVD	0.61				0.61		0.61	$ 18,817	$ 303,496	$ 1,587,286
HYPERION AV	0.57				0.57		0.57	$ 17,642	$ 284,541	$ 1,488,149
N HIGHLAND AV	2.20				2.20		2.20	$ 68,083	$ 1,098,113	$ 5,743,130
ROWENA AV				0.13	0.13		0.13	$ 6,173	$ 99,571	$ 520,754
S HIGHLAND AV	1.68				1.68		1.68	$ 51,883	$ 836,818	$ 4,376,556
S LA BREA AV	0.31				0.31		0.31	$ 9,546	$ 153,967	$ 805,245
S REDONDO BLVD				1.70	1.70		1.70	$ 83,155	$ 1,341,211	$ 7,014,533
SAINT GEORGE ST				0.48	0.48		0.48	$ 23,507	$ 379,140	$ 1,982,903
CORRIDOR: BROADWAY-FOUNTAIN-SANTA MONICA	**1.82**			**1.12**	**2.94**		**2.94**	**$ 110,723**	**$ 1,785,855**	**$ 9,340,021**
Ocean Ave To W Sunset Blvd										
FOUNTAIN AV	1.82			0.87	2.69		2.69	$ 98,841	$ 1,594,212	$ 8,337,731
LA MIRADA AV				0.13	0.13		0.13	$ 6,200	$ 99,998	$ 522,992
N BRONSON AV				0.04	0.04		0.04	$ 2,168	$ 34,973	$ 182,911

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N VAN NESS AV				0.07	0.07		0.07	$ 3,272	$ 52,777	$ 276,026
SEWARD ST				0.00	0.00		0.00	$ 241	$ 3,893	$ 20,362
CORRIDOR: BROADWAY-SPRING	**4.48**				**4.48**		**4.48**	**$ 138,321**	**$ 2,230,984**	**$ 11,668,047**
N Mission Rd To S Main St										
N BROADWAY	3.04				3.04		3.04	$ 93,837	$ 1,513,502	$ 7,915,613
N SPRING ST	0.46				0.46		0.46	$ 14,296	$ 230,588	$ 1,205,977
S SPRING ST	0.98				0.98		0.98	$ 30,187	$ 486,894	$ 2,546,456
CORRIDOR: BROADWAY-WILSON	**0.33**				**0.33**		**0.33**	**$ 10,342**	**$ 166,811**	**$ 872,422**
San Fernando Bike Path To La River										
W BROADWAY	0.33				0.33		0.33	$ 10,342	$ 166,811	$ 872,422
CORRIDOR: CENTRAL AVE-COMPTON CREEK	**8.59**				**8.59**		**8.59**	**$ 265,389**	**$ 4,280,467**	**$ 22,386,844**
E 1St St To E Artesia Blvd										
CLOVIS AV	0.01				0.01		0.01	$ 163	$ 2,623	$ 13,720
S CENTRAL AV	8.58				8.58		8.58	$ 265,226	$ 4,277,844	$ 22,373,124
CORRIDOR: CHAVEZ-SUNSET-RIGGIN	**11.52**				**11.52**		**11.52**	**$ 356,022**	**$ 5,742,297**	**$ 30,032,213**
N Fairfax Ave To Alhambra Wash										
E CESAR E CHAVEZ AV	2.90				2.90		2.90	$ 89,510	$ 1,443,711	$ 7,550,610
HOLLYWOOD BLVD	4.33				4.33		4.33	$ 133,909	$ 2,159,827	$ 11,295,893
W CESAR E CHAVEZ AV	0.59				0.59		0.59	$ 18,344	$ 295,872	$ 1,547,413
W SUNSET BLVD	3.70				3.70		3.70	$ 114,259	$ 1,842,887	$ 9,638,298
CORRIDOR: COLLIS-HILL	**2.20**				**2.20**		**2.20**	**$ 67,982**	**$ 1,096,485**	**$ 5,734,619**
N Figueroa St To Huntington Dr S										
COLLIS AV	1.34				1.34		1.34	$ 41,276	$ 665,742	$ 3,481,829
HILL DR	0.02				0.02		0.02	$ 647	$ 10,432	$ 54,560
S AVE 60	0.84				0.84		0.84	$ 26,059	$ 420,312	$ 2,198,229
CORRIDOR: COLORADO-FOOTHILL	**3.35**				**3.35**		**3.35**	**$ 103,573**	**$ 1,670,527**	**$ 8,736,855**
La River To San Antonio Wash										
COLORADO BLVD	2.92				2.92		2.92	$ 90,284	$ 1,456,195	$ 7,615,900
COLORADO ST	0.37				0.37		0.37	$ 11,581	$ 186,791	$ 976,915
I-5 N EXIT 142	0.06				0.06		0.06	$ 1,708	$ 27,541	$ 144,040
CORRIDOR: CORONADO-RAMPART	**1.67**				**1.67**		**1.67**	**$ 51,464**	**$ 830,067**	**$ 4,341,252**
W Sunset Blvd To W 7Th St										
COUNCIL ST	0.06				0.06		0.06	$ 1,853	$ 29,886	$ 156,302
N CORONADO ST	0.70				0.70		0.70	$ 21,671	$ 349,525	$ 1,828,018
N RAMPART BLVD	0.11				0.11		0.11	$ 3,552	$ 57,292	$ 299,638
S RAMPART BLVD	0.79				0.79		0.79	$ 24,389	$ 393,364	$ 2,057,295
CORRIDOR: CRENSHAW-ARDEN	**8.75**			**1.70**	**10.45**		**10.45**	**$ 353,267**	**$ 5,697,857**	**$ 29,799,793**
Highland Ave To Pch										
ARDEN PL				0.05	0.05		0.05	$ 2,302	$ 37,124	$ 194,161
COLE AV				0.88	0.88		0.88	$ 42,872	$ 691,479	$ 3,616,436
CRENSHAW BLVD	6.92				6.92		6.92	$ 213,865	$ 3,449,429	$ 18,040,512
N ARDEN BLVD	0.66				0.66		0.66	$ 20,504	$ 330,710	$ 1,729,611
N CAHUENGA BLVD	1.14				1.14		1.14	$ 35,120	$ 566,455	$ 2,962,557
N ROSSMORE AV	0.03				0.03		0.03	$ 786	$ 12,672	$ 66,276
S ARDEN BLVD				0.77	0.77		0.77	$ 37,519	$ 605,143	$ 3,164,896
W 3RD ST				0.01	0.01		0.01	$ 300	$ 4,846	$ 25,344
CORRIDOR: CULVER-ROBERTSON	**0.39**				**0.39**		**0.39**	**$ 11,911**	**$ 192,119**	**$ 1,004,784**
Santa Monica Blvd To Lincoln Blvd										
N ROBERTSON BLVD	0.08				0.08		0.08	$ 2,418	$ 39,008	$ 204,011
S ROBERTSON BLVD	0.31				0.31		0.31	$ 9,493	$ 153,111	$ 800,773
CORRIDOR: EAGLE ROCK BLVD	**2.95**				**2.95**		**2.95**	**$ 91,017**	**$ 1,468,010**	**$ 7,677,694**
Colorado Blvd To N San Fernando Rd										
EAGLE ROCK BLVD	2.95				2.95		2.95	$ 91,017	$ 1,468,010	$ 7,677,694
CORRIDOR: EXPOSITION BLVD	**4.62**				**4.62**		**4.62**	**$ 142,609**	**$ 2,300,149**	**$ 12,029,777**
W Jefferson Blvd To S Main St										
BROADWAY PL	0.09				0.09		0.09	$ 2,740	$ 44,197	$ 231,152
EXPOSITION BLVD	3.97				3.97		3.97	$ 122,789	$ 1,980,475	$ 10,357,884
S HARCOURT AV	0.07				0.07		0.07	$ 2,102	$ 33,897	$ 177,281
W 37TH ST	0.48				0.48		0.48	$ 14,978	$ 241,580	$ 1,263,461
CORRIDOR: FAIRFAX	**3.48**				**3.48**		**3.48**	**$ 107,525**	**$ 1,734,282**	**$ 9,070,294**
Hollywood Blvd To Ballona Creek										
N FAIRFAX AV	0.89				0.89		0.89	$ 27,437	$ 442,525	$ 2,314,407
S FAIRFAX AV	2.59				2.59		2.59	$ 80,089	$ 1,291,757	$ 6,755,887
CORRIDOR: FIRESTONE-MANCHESTER	**3.52**				**3.52**		**3.52**	**$ 108,880**	**$ 1,756,136**	**$ 9,184,590**
Culver Blvd To La River										
E MANCHESTER AV	3.52				3.52		3.52	$ 108,880	$ 1,756,136	$ 9,184,590
CORRIDOR: FLETCHER-SILVER LAKE	**4.24**				**4.24**		**4.24**	**$ 131,144**	**$ 2,115,227**	**$ 11,062,638**
Silver Lake Blvd To Eagle Rock Blvd										
FLETCHER DR	1.75				1.75		1.75	$ 53,936	$ 869,933	$ 4,549,747
SILVER LAKE BLVD	2.38				2.38		2.38	$ 73,552	$ 1,186,315	$ 6,204,426
W AVE 36	0.12				0.12		0.12	$ 3,657	$ 58,980	$ 308,465
CORRIDOR: FLORENCE AVE	**4.54**				**4.54**		**4.54**	**$ 140,159**	**$ 2,260,622**	**$ 11,823,053**
Bnsf Railroad To Alameda St										
E FLORENCE AV	1.02				1.02		1.02	$ 31,385	$ 506,212	$ 2,647,490
W FLORENCE AV	3.52				3.52		3.52	$ 108,773	$ 1,754,410	$ 9,175,562
CORRIDOR: FLOWER-WASHINGTON	**4.91**				**4.91**		**4.91**	**$ 151,810**	**$ 2,448,541**	**$ 12,805,869**
W 2Nd St To La River										
E WASHINGTON BLVD	2.59				2.59		2.59	$ 80,115	$ 1,292,173	$ 6,758,065
S FLOWER ST	1.92				1.92		1.92	$ 59,235	$ 955,405	$ 4,996,766
W WASHINGTON BLVD	0.40				0.40		0.40	$ 12,460	$ 200,963	$ 1,051,039
CORRIDOR: HILLCREST-HAWTHORNE			**1.89**		**1.89**		**1.89**	**$ 310,055**	**$ 4,972,460**	**$ 26,028,207**
Slauson Blvd To Palos Verdes Dr										
Off Street			1.89		1.89		1.89	$ 310,055	$ 4,972,460	$ 26,028,207
CORRIDOR: HUNTINGTON-MAIN	**15.52**				**15.52**		**15.52**	**$ 479,510**	**$ 7,734,039**	**$ 40,449,023**
E Huntington Dr To E Imperial Hwy										
HUNTINGTON DR	0.07				0.07		0.07	$ 2,190	$ 35,329	$ 184,771
HUNTINGTON DR N	0.95				0.95		0.95	$ 29,372	$ 473,739	$ 2,477,655
HUNTINGTON DR S	1.76				1.76		1.76	$ 54,335	$ 876,364	$ 4,583,382
MAYCREST AV	0.02				0.02		0.02	$ 524	$ 8,459	$ 44,239
N ALAMEDA ST	0.02				0.02		0.02	$ 683	$ 11,014	$ 57,604
N MAIN ST	2.63				2.63		2.63	$ 81,134	$ 1,308,611	$ 6,844,038

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N MISSION RD	1.13				1.13		1.13	$ 34,841	$ 561,944	$ 2,938,968
S MAIN ST	8.95				8.95		8.95	$ 276,432	$ 4,458,579	$ 23,318,366
CORRIDOR: IMPERIAL HWY	**3.57**				**3.57**		**3.57**	**$ 110,233**	**$ 1,777,956**	**$ 9,298,710**
Coast To Orange County Line										
E IMPERIAL HWY	2.55				2.55		2.55	$ 78,638	$ 1,268,349	$ 6,633,467
W IMPERIAL HWY	1.02				1.02		1.02	$ 31,596	$ 509,607	$ 2,665,243
CORRIDOR: LA RIVER			**4.98**		**4.98**	**7.32**	**12.30**	**$ 816,267**	**$ 13,090,771**	**$ 68,523,279**
Canoga Ave To Coyote Creek										
Off Street			4.98		4.98	7.32	12.30	$ 816,267	$ 13,090,771	$ 68,523,279
CORRIDOR: MAIN ST				**0.27**	**0.27**		**0.27**	**$ 13,030**	**$ 210,168**	**$ 1,099,180**
Huntington Dr N To Arrow Hwy										
POPLAR BLVD				0.27	0.27		0.27	$ 13,030	$ 210,168	$ 1,099,180
CORRIDOR: MELROSE AVE	**6.16**				**6.16**		**6.16**	**$ 190,197**	**$ 3,067,694**	**$ 16,044,040**
Santa Monica Blvd To W Sunset Blvd										
MELROSE AV	5.00				5.00		5.00	$ 154,493	$ 2,491,823	$ 13,032,232
MYRA AV	0.25				0.25		0.25	$ 7,636	$ 123,163	$ 644,140
N HOOVER ST	0.02				0.02		0.02	$ 471	$ 7,595	$ 39,721
N VIRGIL AV	0.50				0.50		0.50	$ 15,511	$ 250,175	$ 1,308,414
SANTA MONICA BLVD	0.39				0.39		0.39	$ 12,086	$ 194,939	$ 1,019,533
CORRIDOR: MISSION-VALLEY	**4.40**				**4.40**		**4.40**	**$ 135,820**	**$ 2,190,644**	**$ 11,457,070**
E Cesar E Chavez Ave To La Puente Creek										
N MISSION RD	1.27				1.27		1.27	$ 39,189	$ 632,075	$ 3,305,754
VALLEY BLVD	3.13				3.13		3.13	$ 96,631	$ 1,558,569	$ 8,151,316
CORRIDOR: PASADENA-YORK	**2.76**		**0.14**		**2.91**		**2.91**	**$ 109,075**	**$ 1,757,100**	**$ 9,191,338**
Oak Grove To Eagle Rock Blvd										
Off Street			0.14		0.14		0.14	$ 23,764	$ 381,117	$ 1,994,945
YORK BLVD	2.76				2.76		2.76	$ 85,311	$ 1,375,983	$ 7,196,394
CORRIDOR: PICO-GATEWAY-OCEAN PARK	**12.06**				**12.06**		**12.06**	**$ 372,762**	**$ 6,012,295**	**$ 31,444,305**
Barnard Way To Central Ave										
E PICO BLVD	0.96				0.96		0.96	$ 29,582	$ 477,131	$ 2,495,395
W PICO BLVD	11.11				11.11		11.11	$ 343,180	$ 5,535,164	$ 28,948,910
CORRIDOR: RAIL TO RIVER		**0.19**			**0.19**		**0.19**	**$ -**	**$ -**	**$ -**
La River To Long Beach Ave										
Off Street		0.19			0.19		0.19	$ -	$ -	$ -
CORRIDOR: S FIGUEROA ST	**3.01**				**3.01**		**3.01**	**$ 92,886**	**$ 1,498,169**	**$ 7,835,424**
W 7th St To W Martin Luther King Junior Blvd										
S FIGUEROA ST	3.01				3.01		3.01	$ 92,886	$ 1,498,169	$ 7,835,424
CORRIDOR: SAN FERNANDO	**3.07**			**0.03**	**3.10**		**3.10**	**$ 96,244**	**$ 1,552,317**	**$ 8,118,620**
Verdugo Ave To Figueroa St										
CYPRESS AV	1.69				1.69		1.69	$ 52,311	$ 843,722	$ 4,412,667
N SAN FERNANDO RD	1.38				1.38		1.38	$ 42,670	$ 688,231	$ 3,599,450
VERDUGO RD				0.03	0.03		0.03	$ 1,263	$ 20,364	$ 106,502
CORRIDOR: SAN VICENTE BLVD	**3.62**				**3.62**		**3.62**	**$ 111,949**	**$ 1,805,625**	**$ 9,443,418**
Santa Monica Blvd To Venice Blvd										
	0.06				0.06		0.06	$ 1,789	$ 28,856	$ 150,919
BURTON WY	0.78				0.78		0.78	$ 24,135	$ 389,274	$ 2,035,902
S ORLANDO AV	0.02				0.02		0.02	$ 510	$ 8,233	$ 43,058
S SAN VICENTE BLVD	0.35				0.35		0.35	$ 10,845	$ 174,919	$ 914,828
SAN VICENTE BLVD	2.42				2.42		2.42	$ 74,669	$ 1,204,342	$ 6,298,710
CORRIDOR: SLAUSON	**2.67**		**2.88**		**5.54**		**5.54**	**$ 554,241**	**$ 8,896,115**	**$ 46,560,520**
Sepulveda Blvd To La River										
SLAUSON BLVD			2.88		2.88		2.88	$ 471,795	$ 7,566,352	$ 39,605,864
W SLAUSON AV	2.67				2.67		2.67	$ 82,445	$ 1,329,762	$ 6,954,656
CORRIDOR: SOTO	**4.69**				**4.69**		**4.69**	**$ 144,819**	**$ 2,335,791**	**$ 12,216,187**
Mission Road To La River										
N SOTO ST	2.57				2.57		2.57	$ 79,374	$ 1,280,222	$ 6,695,562
S SOTO ST	2.12				2.12		2.12	$ 65,445	$ 1,055,569	$ 5,520,625
CORRIDOR: SPRR-BURBANK WESTERN			**0.33**		**0.33**		**0.33**	**$ 54,131**	**$ 868,114**	**$ 4,544,120**
Lassen St To La River										
Off Street			0.33		0.33		0.33	$ 54,131	$ 868,114	$ 4,544,120
CORRIDOR: VENTURA-CALABASAS	**0.35**				**0.35**		**0.35**	**$ 10,932**	**$ 176,323**	**$ 922,168**
Ventura County Line To N Cahuenga Blvd										
N HIGHLAND AV	0.19				0.19		0.19	$ 5,763	$ 92,958	$ 486,170
ODIN ST	0.17				0.17		0.17	$ 5,169	$ 83,365	$ 435,997
CORRIDOR: VERDUGO RD	**1.12**				**1.12**		**1.12**	**$ 34,716**	**$ 559,931**	**$ 2,928,441**
Glendale Ave To Eagle Rock Blvd										
S VERDUGO RD	0.12				0.12		0.12	$ 3,646	$ 58,810	$ 307,576
VERDUGO RD	1.01				1.01		1.01	$ 31,070	$ 501,122	$ 2,620,866
CORRIDOR: VERMONT	**18.25**				**18.25**		**18.25**	**$ 563,795**	**$ 9,093,467**	**$ 47,558,831**
Los Feliz Blvd To W Anaheim St										
N VERMONT AV	2.64				2.64		2.64	$ 81,579	$ 1,315,789	$ 6,881,574
S VERMONT AV	15.61				15.61		15.61	$ 482,216	$ 7,777,678	$ 40,677,257
CORRIDOR: WHITTIER BLVD	**3.00**				**3.00**		**3.00**	**$ 92,646**	**$ 1,494,295**	**$ 7,815,165**
Central Ave To Washington Blvd										
E 6TH ST	0.71				0.71		0.71	$ 21,803	$ 351,667	$ 1,839,219
WHITTIER BLVD	2.29				2.29		2.29	$ 70,843	$ 1,142,628	$ 5,975,946
CORRIDOR: WILSHIRE-SAN VICENTE	**8.01**				**8.01**		**8.01**	**$ 247,584**	**$ 3,993,298**	**$ 20,884,947**
Ocean Ave To Central Ave										
E 7TH ST	0.76				0.76		0.76	$ 23,602	$ 380,678	$ 1,990,947
W 7TH ST	2.61				2.61		2.61	$ 80,780	$ 1,302,904	$ 6,814,187
WILSHIRE BLVD	4.63				4.63		4.63	$ 143,202	$ 2,309,715	$ 12,079,812
CORRIDOR: WESTWOOD-SPRR-JEFFERSON	**5.35**				**5.35**	**0.28**	**5.63**	**$ 165,338**	**$ 2,666,741**	**$ 13,947,054**
Le Conte Ave To S Figueroa St										
Off Street						0.28	0.28	$ -	$ -	$ -
W JEFFERSON BLVD	5.35				5.35		5.35	$ 165,338	$ 2,666,741	$ 13,947,054
CORRIDOR: MLK-RODEO	**7.26**				**7.26**		**7.26**	**$ 224,317**	**$ 3,618,015**	**$ 18,922,220**
Ballona Creek To S Central Ave										
E MARTIN LUTHER KING JR BLVD	1.00				1.00		1.00	$ 31,049	$ 500,792	$ 2,619,140
RODEO RD	1.51				1.51		1.51	$ 46,734	$ 753,771	$ 3,942,220
W MARTIN LUTHER KING JR BLVD	4.74				4.74		4.74	$ 146,534	$ 2,363,453	$ 12,360,860
Montebello	**0.05**				**0.05**		**0.05**	**$ 1,595**	**$ 25,722**	**$ 134,526**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CORRIDOR: ALTADENA-LONG BEACH	0.05				0.05		0.05	$ 1,595	$ 25,722	$ 134,526
Loma Alta Dr To La River										
S GARFIELD AV	0.05				0.05		0.05	$ 1,595	$ 25,722	$ 134,526
Unincorporated	**14.04**	**0.25**			**14.29**		**14.29**	**$ 433,820**	**$ 6,997,104**	**$ 36,594,851**
CORRIDOR: 1ST-2ND-GLENDALE	1.09				1.09		1.09	$ 33,833	$ 545,701	$ 2,854,014
Fletcher Dr To Eastern Ave										
E 1ST ST	1.09				1.09		1.09	$ 33,833	$ 545,701	$ 2,854,014
CORRIDOR: ALTADENA-LONG BEACH	0.39				0.39		0.39	$ 12,056	$ 194,448	$ 1,016,965
Loma Alta Dr To La River										
S GARFIELD AV	0.39				0.39		0.39	$ 12,056	$ 194,448	$ 1,016,965
CORRIDOR: CHAVEZ-SUNSET-RIGGIN	2.05				2.05		2.05	$ 63,376	$ 1,022,190	$ 5,346,056
N Fairfax Ave To Alhambra Wash										
CESAR E CHAVEZ AV	2.05				2.05		2.05	$ 63,376	$ 1,022,190	$ 5,346,056
CORRIDOR: FREMONT-PASADENA	1.56				1.56		1.56	$ 48,168	$ 776,897	$ 4,063,169
E Union St To Whittier Blvd										
N MEDNIK AV	0.49				0.49		0.49	$ 15,284	$ 246,511	$ 1,289,255
S ARIZONA AV	0.64				0.64		0.64	$ 19,893	$ 320,858	$ 1,678,085
S MEDNIK AV	0.42				0.42		0.42	$ 12,991	$ 209,527	$ 1,095,829
CORRIDOR: GARVEY-RAMONA	2.82				2.82		2.82	$ 87,197	$ 1,406,402	$ 7,355,480
Whittier Blvd To Sp Rr										
N EASTERN AV	1.68				1.68		1.68	$ 51,760	$ 834,833	$ 4,366,174
RAMONA RD	0.24				0.24		0.24	$ 7,556	$ 121,876	$ 637,411
S EASTERN AV	0.90				0.90		0.90	$ 27,881	$ 449,693	$ 2,351,895
CORRIDOR: RAIL TO RIVER		0.25			0.25		0.25	$ -	$ -	$ -
La River To Long Beach Ave										
Off Street		0.25			0.25		0.25	$ -	$ -	$ -
CORRIDOR: SLAUSON	2.48				2.48		2.48	$ 76,482	$ 1,233,588	$ 6,451,663
Sepulveda Blvd To La River										
W SLAUSON AV	2.48				2.48		2.48	$ 76,482	$ 1,233,588	$ 6,451,663
CORRIDOR: WHITTIER BLVD	3.65				3.65		3.65	$ 112,708	$ 1,817,878	$ 9,507,504
Central Ave To Washington Blvd										
WHITTIER BLVD	3.65				3.65		3.65	$ 112,708	$ 1,817,878	$ 9,507,504
Gateway Cities	**194.67**	**12.44**	**47.92**	**4.75**	**259.78**	**82.11**	**341.89**	**$ 14,108,395**	**$ 226,834,079**	**$ 1,186,906,134**
Artesia	**1.19**		**0.64**		**1.82**		**1.82**	**$ 140,884**	**$ 2,262,768**	**$ 11,841,754**
CORRIDOR: ARTESIA-HERONDO	1.19				1.19		1.19	$ 36,618	$ 590,618	$ 3,088,931
Coast To Orange County Line										
ARTESIA BLVD	1.19				1.19		1.19	$ 36,618	$ 590,618	$ 3,088,931
CORRIDOR: SALT LAKE- UP-PE RR ROW			0.64		0.64		0.64	$ 104,266	$ 1,672,150	$ 8,752,822
La River To Coyote Creek										
Off Street			0.64		0.64		0.64	$ 104,266	$ 1,672,150	$ 8,752,822
Bell Gardens	**1.76**				**1.76**	**2.64**	**4.40**	**$ 54,347**	**$ 876,557**	**$ 4,584,394**
CORRIDOR: ALTADENA-LONG BEACH	1.76				1.76		1.76	$ 54,347	$ 876,557	$ 4,584,394
Loma Alta Dr To La River										
EASTERN AV	0.02				0.02		0.02	$ 559	$ 9,009	$ 47,119
GARFIELD AV	1.74				1.74		1.74	$ 53,788	$ 867,548	$ 4,537,275
CORRIDOR: RIO HONDO						2.64	2.64	$ -	$ -	$ -
Peck Rd To La River										
Off Street						2.64	2.64	$ -	$ -	$ -
Bellflower	**8.35**		**2.44**		**10.78**		**10.78**	**$ 657,560**	**$ 10,569,183**	**$ 55,305,491**
CORRIDOR: ARTESIA-HERONDO	2.59				2.59		2.59	$ 79,921	$ 1,289,053	$ 6,741,750
Coast To Orange County Line										
ARTESIA BLVD	2.59				2.59		2.59	$ 79,921	$ 1,289,053	$ 6,741,750
CORRIDOR: LAKEWOOD-ROSEMEAD	2.94				2.94		2.94	$ 90,889	$ 1,465,958	$ 7,666,962
E Orange Grove Blvd To Pch										
LAKEWOOD BLVD	2.94				2.94		2.94	$ 90,889	$ 1,465,958	$ 7,666,962
CORRIDOR: SALT LAKE- UP-PE RR ROW			2.44		2.44		2.44	$ 399,590	$ 6,408,368	$ 33,544,427
La River To Coyote Creek										
Off Street			2.44		2.44		2.44	$ 399,590	$ 6,408,368	$ 33,544,427
CORRIDOR: WOODRUFF AVE	2.82				2.82		2.82	$ 87,160	$ 1,405,804	$ 7,352,353
Firestone Blvd To E Willow St										
WOODRUFF AV	2.82				2.82		2.82	$ 87,160	$ 1,405,804	$ 7,352,353
Carson	**0.44**				**0.44**		**0.44**	**$ 13,583**	**$ 219,084**	**$ 1,145,809**
CORRIDOR: ARTESIA-HERONDO	0.44				0.44		0.44	$ 13,583	$ 219,084	$ 1,145,809
Coast To Orange County Line										
CENTRAL AVE	0.44				0.44		0.44	$ 13,583	$ 219,084	$ 1,145,809
Cerritos	**10.44**		**2.86**		**13.30**	**2.90**	**16.20**	**$ 791,891**	**$ 12,729,418**	**$ 66,608,518**
CORRIDOR: ARTESIA-HERONDO	3.31				3.31		3.31	$ 102,354	$ 1,650,869	$ 8,634,043
Coast To Orange County Line										
ARTESIA BLVD	3.31				3.31		3.31	$ 102,354	$ 1,650,869	$ 8,634,043
CORRIDOR: BLOOMFIELD AVE	2.83				2.83		2.83	$ 87,508	$ 1,411,422	$ 7,381,736
Whittier-Uprr To Carson St										
BLOOMFIELD AV	2.83				2.83		2.83	$ 87,508	$ 1,411,422	$ 7,381,736
CORRIDOR: Del Amo Blvd	4.30				4.30		4.30	$ 132,719	$ 2,140,625	$ 11,195,468
Coast To Coyote Creek										
DEL AMO BLVD	4.30				4.30		4.30	$ 132,719	$ 2,140,625	$ 11,195,468
CORRIDOR: SALT LAKE- UP-PE RR ROW			2.86		2.86		2.86	$ 469,310	$ 7,526,503	$ 39,397,271
La River To Coyote Creek										
Off Street			2.86		2.86		2.86	$ 469,310	$ 7,526,503	$ 39,397,271
CORRIDOR: SAN GABRIEL RIVER						2.90	2.90	$ -	$ -	$ -
Old San Gabriel Cyn To Coyote Creek										
Off Street						2.90	2.90	$ -	$ -	$ -
Commerce	**2.61**		**2.52**		**5.13**		**5.13**	**$ 494,729**	**$ 7,941,536**	**$ 41,563,933**
CORRIDOR: ALTADENA-LONG BEACH	2.61				2.61		2.61	$ 80,631	$ 1,300,503	$ 6,801,628
Loma Alta Dr To La River										
GARFIELD AV	2.61				2.61		2.61	$ 80,631	$ 1,300,503	$ 6,801,628
CORRIDOR: RANDOLPH AVE RAIL ROW			2.52		2.52		2.52	$ 414,098	$ 6,641,033	$ 34,762,305
E Slauson Ave To La River										
Off Street			2.52		2.52		2.52	$ 414,098	$ 6,641,033	$ 34,762,305
Compton	**10.19**		**0.86**		**11.04**	**3.01**	**14.06**	**$ 455,226**	**$ 7,329,487**	**$ 38,343,289**
CORRIDOR: ALAMEDA	3.40		0.12		3.52		3.52	$ 124,957	$ 2,013,603	$ 10,532,578
Spring St To La River										

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
ALAMEDA ST	3.40				3.40		3.40	$ 104,988	$ 1,693,362	$ 8,856,284
Off Street			0.12		0.12		0.12	$ 19,968	$ 320,241	$ 1,676,295
CORRIDOR: ARTESIA-HERONDO	**2.40**				**2.40**		**2.40**	**$ 74,063**	**$ 1,194,570**	**$ 6,247,601**
Coast To Orange County Line										
E ARTESIA BLVD	0.86				0.86		0.86	$ 26,485	$ 427,183	$ 2,234,168
W ARTESIA BLVD	1.54				1.54		1.54	$ 47,578	$ 767,387	$ 4,013,433
CORRIDOR: CENTRAL AVE-COMPTON CREEK			**0.73**		**0.73**	**2.85**	**3.58**	**$ 120,434**	**$ 1,931,447**	**$ 10,110,104**
E 1St St To E Artesia Blvd										
Off Street			0.73		0.73	2.85	3.58	$ 120,434	$ 1,931,447	$ 10,110,104
CORRIDOR: EL SEGUNDO BLVD	**0.88**				**0.88**		**0.88**	**$ 27,248**	**$ 439,482**	**$ 2,298,490**
Coast To Alameda St										
W EL SEGUNDO BLVD	0.88				0.88		0.88	$ 27,248	$ 439,482	$ 2,298,490
CORRIDOR: LA RIVER						**0.16**	**0.16**	**$ -**	**$ -**	**$ -**
Canoga Ave To Coyote Creek										
Off Street						0.16	0.16	$ -	$ -	$ -
CORRIDOR: REDONDO BEACH BLVD	**3.51**				**3.51**		**3.51**	**$ 108,524**	**$ 1,750,385**	**$ 9,154,515**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
E COMPTON BLVD	1.52				1.52		1.52	$ 46,934	$ 756,999	$ 3,959,105
W COMPTON BLVD	1.99				1.99		1.99	$ 61,590	$ 993,386	$ 5,195,410
Cudahy			**1.21**		**1.21**	**0.85**	**2.06**	**$ 198,527**	**$ 3,183,856**	**$ 16,665,808**
CORRIDOR: LA RIVER						**0.85**	**0.85**	**$ -**	**$ -**	**$ -**
Canoga Ave To Coyote Creek										
Off Street						0.85	0.85	$ -	$ -	$ -
CORRIDOR: SALT LAKE- UP-PE RR ROW			**1.21**		**1.21**		**1.21**	**$ 198,527**	**$ 3,183,856**	**$ 16,665,808**
La River To Coyote Creek										
Off Street			1.21		1.21		1.21	$ 198,527	$ 3,183,856	$ 16,665,808
Downey	**11.61**		**0.82**		**12.44**	**1.42**	**13.86**	**$ 494,103**	**$ 7,956,996**	**$ 41,624,792**
CORRIDOR: FIRESTONE-SPRR	**3.25**		**0.50**		**3.75**		**3.75**	**$ 181,784**	**$ 2,924,555**	**$ 15,301,249**
La River To Artesia Blvd										
FIRESTONE BLVD	3.25				3.25		3.25	$ 100,531	$ 1,621,470	$ 8,480,288
SPRR			0.50		0.50		0.50	$ 81,253	$ 1,303,085	$ 6,820,960
CORRIDOR: IMPERIAL HWY	**3.11**				**3.11**		**3.11**	**$ 96,233**	**$ 1,552,147**	**$ 8,117,731**
Coast To Orange County Line										
E IMPERIAL HWY	0.64				0.64		0.64	$ 19,753	$ 318,599	$ 1,666,272
IMPERIAL HWY	2.48				2.48		2.48	$ 76,480	$ 1,233,548	$ 6,451,458
CORRIDOR: LAKEWOOD-ROSEMEAD	**3.72**				**3.72**		**3.72**	**$ 114,871**	**$ 1,852,754**	**$ 9,689,903**
E Orange Grove Blvd To Pch										
LAKEWOOD BLVD	3.72				3.72		3.72	$ 114,871	$ 1,852,754	$ 9,689,903
CORRIDOR: SALT LAKE- UP-PE RR ROW			**0.33**		**0.33**		**0.33**	**$ 54,020**	**$ 866,340**	**$ 4,534,833**
La River To Coyote Creek										
Off Street			0.33		0.33		0.33	$ 54,020	$ 866,340	$ 4,534,833
CORRIDOR: SAN GABRIEL RIVER						**1.42**	**1.42**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						1.42	1.42	$ -	$ -	$ -
CORRIDOR: WOODRUFF AVE	**1.53**				**1.53**		**1.53**	**$ 47,194**	**$ 761,200**	**$ 3,981,076**
Firestone Blvd To E Willow St										
WOODRUFF AV	1.53				1.53		1.53	$ 47,194	$ 761,200	$ 3,981,076
Hawaiian Gardens	**1.17**				**1.17**		**1.17**	**$ 36,300**	**$ 585,482**	**$ 3,062,073**
CORRIDOR: BLOOMFIELD AVE	**0.11**				**0.11**		**0.11**	**$ 3,498**	**$ 56,425**	**$ 295,103**
Whittier-Uprr To Carson St										
BLOOMFIELD AV	0.11				0.11		0.11	$ 3,498	$ 56,425	$ 295,103
CORRIDOR: CARSON ST	**1.06**				**1.06**		**1.06**	**$ 32,802**	**$ 529,057**	**$ 2,766,970**
N Long Beach Blvd To Bloomfield Ave										
CARSON ST	1.06				1.06		1.06	$ 32,802	$ 529,057	$ 2,766,970
Huntington Park	**1.58**	**4.23**		**0.49**	**6.30**		**6.30**	**$ 72,454**	**$ 1,168,618**	**$ 6,111,874**
CORRIDOR: ALAMEDA	**0.54**			**0.49**	**1.03**		**1.03**	**$ 40,445**	**$ 652,337**	**$ 3,411,724**
Spring St To La River										
S ALAMEDA ST	0.54			0.49	1.03		1.03	$ 40,445	$ 652,337	$ 3,411,724
CORRIDOR: PACIFIC BLVD	**1.04**				**1.04**		**1.04**	**$ 32,009**	**$ 516,281**	**$ 2,700,149**
Slauson Ave To Southern Ave										
PACIFIC BLVD	1.04				1.04		1.04	$ 32,009	$ 516,281	$ 2,700,149
CORRIDOR: RAIL TO RIVER		**0.45**			**0.45**		**0.45**	**$ -**	**$ -**	**$ -**
La River To Long Beach Ave										
Off Street		0.45			0.45		0.45	$ -	$ -	$ -
CORRIDOR: RANDOLPH AVE RAIL ROW		**2.41**			**2.41**		**2.41**	**$ -**	**$ -**	**$ -**
E Slauson Ave To La River										
Off Street		2.41			2.41		2.41	$ -	$ -	$ -
CORRIDOR: SLAUSON		**1.37**			**1.37**		**1.37**	**$ -**	**$ -**	**$ -**
Sepulveda Blvd To La River										
Slauson AV		1.37			1.37		1.37	$ -	$ -	$ -
La Mirada	**4.86**		**6.73**		**11.59**		**11.59**	**$ 1,254,415**	**$ 20,131,279**	**$ 105,365,785**
CORRIDOR: ARTESIA-HERONDO	**0.96**				**0.96**		**0.96**	**$ 29,562**	**$ 476,809**	**$ 2,493,712**
Coast To Orange County Line										
ARTESIA BLVD	0.96				0.96		0.96	$ 29,562	$ 476,809	$ 2,493,712
CORRIDOR: COYOTE CREEK EAST			**2.20**		**2.20**		**2.20**	**$ 360,647**	**$ 5,783,829**	**$ 30,275,293**
Imperial Hwy To Artesia Blvd										
Off Street			2.20		2.20		2.20	$ 360,647	$ 5,783,829	$ 30,275,293
CORRIDOR: FIRESTONE-SPRR			**1.15**		**1.15**		**1.15**	**$ 188,539**	**$ 3,023,662**	**$ 15,827,273**
La River To Artesia Blvd										
Off Street			1.15		1.15		1.15	$ 188,539	$ 3,023,662	$ 15,827,273
CORRIDOR: IMPERIAL HWY	**3.91**				**3.91**		**3.91**	**$ 120,708**	**$ 1,946,901**	**$ 10,182,294**
Coast To Orange County Line										
IMPERIAL HWY	3.91				3.91		3.91	$ 120,708	$ 1,946,901	$ 10,182,294
CORRIDOR: LA MIRADA CREEK			**3.38**		**3.38**		**3.38**	**$ 554,959**	**$ 8,900,078**	**$ 46,587,213**
Orange County Line To Coyote Creek										
Off Street			3.38		3.38		3.38	$ 554,959	$ 8,900,078	$ 46,587,213
Lakewood	**12.91**				**12.91**	**1.57**	**14.48**	**$ 398,836**	**$ 6,432,846**	**$ 33,643,785**
CORRIDOR: ALTADENA-LONG BEACH	**4.85**				**4.85**		**4.85**	**$ 149,818**	**$ 2,416,427**	**$ 12,637,914**
Loma Alta Dr To La River										
CHERRY AV	4.85				4.85		4.85	$ 149,818	$ 2,416,427	$ 12,637,914
CORRIDOR: BLOOMFIELD AVE	**0.88**				**0.88**		**0.88**	**$ 27,119**	**$ 437,402**	**$ 2,287,610**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Whittier-Uprr To Carson St										
BLOOMFIELD AV	0.88				0.88		0.88	$ 27,119	$ 437,402	$ 2,287,610
CORRIDOR: CARSON ST	**0.97**				**0.97**		**0.97**	**$ 29,828**	**$ 481,100**	**$ 2,516,153**
N Long Beach Blvd To Bloomfield Ave										
E CARSON ST	0.97				0.97		0.97	$ 29,828	$ 481,100	$ 2,516,153
CORRIDOR: Del Amo Blvd	**1.25**				**1.25**	**0.51**	**1.75**	**$ 38,573**	**$ 622,144**	**$ 3,253,813**
Coast To Coyote Creek										
DEL AMO BLVD	1.25				1.25		1.25	$ 38,573	$ 622,144	$ 3,253,813
Off Street						0.51	0.51	$ -	$ -	$ -
CORRIDOR: LAKEWOOD-ROSEMEAD	**2.45**				**2.45**		**2.45**	**$ 75,598**	**$ 1,219,315**	**$ 6,377,016**
E Orange Grove Blvd To Pch										
N LAKEWOOD BLVD	2.45				2.45		2.45	$ 75,598	$ 1,219,315	$ 6,377,016
CORRIDOR: SAN GABRIEL RIVER						**1.07**	**1.07**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						1.07	1.07	$ -	$ -	$ -
CORRIDOR: WOODRUFF AVE	**2.52**				**2.52**		**2.52**	**$ 77,900**	**$ 1,256,459**	**$ 6,571,278**
Firestone Blvd To E Willow St										
WOODRUFF AV	2.52				2.52		2.52	$ 77,900	$ 1,256,459	$ 6,571,278
Long Beach	**49.27**		**4.60**	**2.03**	**55.90**	**24.55**	**80.45**	**$ 2,376,201**	**$ 38,256,657**	**$ 200,136,438**
CORRIDOR: 223RD-WARDLOW	**2.13**				**2.13**		**2.13**	**$ 65,788**	**$ 1,061,094**	**$ 5,549,523**
Vermont Ave To Long Beach Blvd										
E WARDLOW RD	0.19				0.19		0.19	$ 5,883	$ 94,887	$ 496,258
W WARDLOW RD	1.94				1.94		1.94	$ 59,905	$ 966,207	$ 5,053,265
CORRIDOR: 3RD-BROADWAY-LOS CERRITOS	**4.92**		**1.76**	**0.18**	**6.86**	**3.93**	**10.80**	**$ 449,947**	**$ 7,230,704**	**$ 37,837,321**
Golden Ave To Pch										
CLARK AV	0.86				0.86		0.86	$ 26,490	$ 427,256	$ 2,234,550
E 3RD ST	3.46				3.46		3.46	$ 107,027	$ 1,726,245	$ 9,028,261
E BROADWAY	0.60				0.60		0.60	$ 18,426	$ 297,198	$ 1,554,347
IROQUOIS AV				0.18	0.18		0.18	$ 8,841	$ 142,593	$ 745,759
Off Street			1.76		1.76	2.84	4.61	$ 289,163	$ 4,637,412	$ 24,274,404
W 3RD ST						0.54	0.54	$ -	$ -	$ -
W BROADWAY						0.55	0.55	$ -	$ -	$ -
CORRIDOR: ALAMEDA			**0.26**		**0.26**		**0.26**	**$ 42,515**	**$ 681,824**	**$ 3,568,991**
Spring St To La River										
Off Street			0.26		0.26		0.26	$ 42,515	$ 681,824	$ 3,568,991
CORRIDOR: ALTADENA-LONG BEACH	**2.16**				**2.16**		**2.16**	**$ 66,821**	**$ 1,077,764**	**$ 5,636,706**
Loma Alta Dr To La River										
	0.30				0.30		0.30	$ 9,339	$ 150,629	$ 787,791
CHERRY AV	1.86				1.86		1.86	$ 57,482	$ 927,135	$ 4,848,915
CORRIDOR: ANAHEIM ST	**5.03**				**5.03**		**5.03**	**$ 155,428**	**$ 2,506,898**	**$ 13,111,075**
S Western Ave To Pch										
E ANAHEIM ST	3.44				3.44		3.44	$ 106,305	$ 1,714,596	$ 8,967,335
W ANAHEIM ST	1.59				1.59		1.59	$ 49,123	$ 792,302	$ 4,143,741
CORRIDOR: ARTESIA-HERONDO	**3.21**				**3.21**		**3.21**	**$ 99,238**	**$ 1,600,607**	**$ 8,371,174**
Coast To Orange County Line										
E ARTESIA BLVD	2.96				2.96		2.96	$ 91,413	$ 1,474,404	$ 7,711,134
W ARTESIA BLVD	0.25				0.25		0.25	$ 7,825	$ 126,203	$ 660,040
CORRIDOR: CARSON ST	**1.65**				**1.65**	**3.79**	**5.44**	**$ 50,918**	**$ 821,256**	**$ 4,295,169**
N Long Beach Blvd To Bloomfield Ave										
E CARSON ST	1.65				1.65		1.65	$ 50,918	$ 821,256	$ 4,295,169
Off Street						3.79	3.79	$ -	$ -	$ -
CORRIDOR: CORONADO AVE			**0.04**	**0.47**	**0.51**		**0.51**	**$ 29,099**	**$ 468,769**	**$ 2,452,107**
E 3Rd St To La River										
			0.04		0.04		0.04	$ 6,187	$ 99,222	$ 519,377
CORONADO AV				0.47	0.47		0.47	$ 22,912	$ 369,547	$ 1,932,731
CORRIDOR: Del Amo Blvd	**2.42**				**2.42**		**2.42**	**$ 74,883**	**$ 1,207,790**	**$ 6,316,742**
Coast To Coyote Creek										
E DEL AMO BLVD	1.75				1.75		1.75	$ 54,004	$ 871,034	$ 4,555,505
W DEL AMO BLVD	0.68				0.68		0.68	$ 20,879	$ 336,756	$ 1,761,236
CORRIDOR: LA RIVER				**1.38**	**1.38**	**13.66**	**15.04**	**$ 67,581**	**$ 1,090,017**	**$ 5,700,791**
Canoga Ave To Coyote Creek										
E OCEAN BLVD				1.38	1.38		1.38	$ 67,581	$ 1,090,017	$ 5,700,791
Off Street						13.66	13.66	$ -	$ -	$ -
CORRIDOR: LAKEWOOD-ROSEMEAD	**0.15**				**0.15**		**0.15**	**$ 4,695**	**$ 75,725**	**$ 396,041**
E Orange Grove Blvd To Pch										
LOS ALAMITOS CIR	0.15				0.15		0.15	$ 4,695	$ 75,725	$ 396,041
CORRIDOR: LONG BEACH BLVD	**5.79**				**5.79**	**0.42**	**6.21**	**$ 178,789**	**$ 2,883,689**	**$ 15,081,695**
Coyote Creek To E Broadway										
LONG BEACH BLVD	0.50				0.50		0.50	$ 15,443	$ 249,078	$ 1,302,681
N LONG BEACH BLVD	5.29				5.29	0.42	5.71	$ 163,346	$ 2,634,611	$ 13,779,014
CORRIDOR: LOS COYOTES-TERMINO	**5.32**				**5.32**	**0.18**	**5.50**	**$ 164,259**	**$ 2,649,336**	**$ 13,856,029**
Carson St To E 3Rd St										
LOS COYOTES DIAGONAL	3.70				3.70		3.70	$ 114,195	$ 1,841,857	$ 9,632,913
N LAKEWOOD BLVD	0.11				0.11		0.11	$ 3,408	$ 54,967	$ 287,480
N TERMINO AV	1.51				1.51		1.51	$ 46,656	$ 752,512	$ 3,935,637
Off Street						0.18	0.18	$ -	$ -	$ -
CORRIDOR: PCH	**8.49**				**8.49**		**8.49**	**$ 262,321**	**$ 4,230,978**	**$ 22,128,017**
Esplanade To San Gabriel River										
E PACIFIC COAST HWY	6.03				6.03		6.03	$ 186,409	$ 3,006,604	$ 15,724,537
N PACIFIC COAST HWY	0.42				0.42		0.42	$ 12,912	$ 208,254	$ 1,089,169
W PACIFIC COAST HWY	2.04				2.04		2.04	$ 62,999	$ 1,016,121	$ 5,314,311
CORRIDOR: PEROW-LONG BEACH			**2.01**		**2.01**		**2.01**	**$ 329,226**	**$ 5,279,912**	**$ 27,637,552**
La River To Long Beach Blvd										
Off Street			2.01		2.01		2.01	$ 329,226	$ 5,279,912	$ 27,637,552
CORRIDOR: SAN GABRIEL RIVER						**2.56**	**2.56**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						2.56	2.56	$ -	$ -	$ -
CORRIDOR: SEPULVEDA-WILLOW	**5.97**		**0.53**		**6.50**		**6.50**	**$ 271,853**	**$ 4,376,713**	**$ 22,896,484**
Torrance Blvd To Coyote Creek										
E SEPULVEDA BLVD	0.06				0.06		0.06	$ 1,839	$ 29,655	$ 155,097
E WILLOW ST	4.19				4.19		4.19	$ 129,552	$ 2,089,551	$ 10,928,353

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
W WILLOW ST	1.71				1.71		1.71	$ 52,967	$ 854,314	$ 4,468,062
WILLOW ST			0.53		0.53		0.53	$ 87,495	$ 1,403,192	$ 7,344,971
CORRIDOR: WOODRUFF AVE	**2.03**				**2.03**		**2.03**	**$ 62,842**	**$ 1,013,579**	**$ 5,301,020**
Firestone Blvd To E Willow St										
WOODRUFF AV	2.03				2.03		2.03	$ 62,842	$ 1,013,579	$ 5,301,020
Los Angeles	**0.37**				**0.37**		**0.37**	**$ 11,570**	**$ 186,611**	**$ 975,974**
CORRIDOR: ALAMEDA	**0.37**				**0.37**		**0.37**	**$ 11,570**	**$ 186,611**	**$ 975,974**
Spring St To La River										
ALAMEDA ST	0.37				0.37		0.37	$ 11,570	$ 186,611	$ 975,974
Lynwood	**3.89**		**2.33**	**1.23**	**7.45**		**7.45**	**$ 562,810**	**$ 9,042,517**	**$ 47,319,795**
CORRIDOR: ALAMEDA	**1.38**				**1.38**		**1.38**	**$ 42,692**	**$ 688,576**	**$ 3,601,250**
Spring St To La River										
ALAMEDA ST	1.38				1.38		1.38	$ 42,692	$ 688,576	$ 3,601,250
CORRIDOR: CENTURY-MLK-PE ROW			**2.33**	**1.23**	**3.56**		**3.56**	**$ 442,587**	**$ 7,103,444**	**$ 37,178,444**
Alameda St To Salt Lake- Up-Pe Rr Row										
ATLANTIC AV				0.33	0.33		0.33	$ 16,164	$ 260,712	$ 1,363,526
CALIFORNIA AV				0.15	0.15		0.15	$ 7,277	$ 117,366	$ 613,825
FERNWOOD AV				0.11	0.11		0.11	$ 5,550	$ 89,510	$ 468,135
MARTIN LUTHER KING JR BLVD				0.50	0.50		0.50	$ 24,228	$ 390,781	$ 2,043,783
Off Street			2.33		2.33		2.33	$ 382,436	$ 6,133,261	$ 32,104,386
PLATT AV				0.03	0.03		0.03	$ 1,227	$ 19,788	$ 103,490
SANBORN AV				0.12	0.12		0.12	$ 5,706	$ 92,027	$ 481,299
CORRIDOR: IMPERIAL HWY	**2.51**				**2.51**		**2.51**	**$ 77,531**	**$ 1,250,497**	**$ 6,540,100**
Coast To Orange County Line										
E IMPERIAL HWY	2.51				2.51		2.51	$ 77,531	$ 1,250,497	$ 6,540,100
Maywood		**1.86**			**1.86**		**1.86**	**$ -**	**$ -**	**$ -**
CORRIDOR: SLAUSON		**1.86**			**1.86**		**1.86**	$ -	$ -	$ -
Sepulveda Blvd To La River										
Slauson AV		1.86			1.86		1.86	$ -	$ -	$ -
Montebello	**4.96**				**4.96**	**3.65**	**8.61**	**$ 153,259**	**$ 2,471,917**	**$ 12,928,125**
CORRIDOR: ALTADENA-LONG BEACH	**1.57**				**1.57**		**1.57**	**$ 48,520**	**$ 782,580**	**$ 4,092,895**
Loma Alta Dr To La River										
N GARFIELD AV	1.57				1.57		1.57	$ 48,520	$ 782,580	$ 4,092,895
CORRIDOR: RIO HONDO						**3.65**	**3.65**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						3.65	3.65	$ -	$ -	$ -
CORRIDOR: TELEGRAPH RD	**1.37**				**1.37**		**1.37**	**$ 42,430**	**$ 684,348**	**$ 3,579,139**
Garfield Ave To Imperial Hwy										
TELEGRAPH RD	1.37				1.37		1.37	$ 42,430	$ 684,348	$ 3,579,139
CORRIDOR: WHITTIER BLVD	**2.02**				**2.02**		**2.02**	**$ 62,309**	**$ 1,004,989**	**$ 5,256,091**
Central Ave To Washington Blvd										
E WHITTIER BLVD	0.29				0.29		0.29	$ 8,837	$ 142,526	$ 745,411
W WHITTIER BLVD	1.73				1.73		1.73	$ 53,473	$ 862,463	$ 4,510,679
Monterey Park	**0.48**				**0.48**		**0.48**	**$ 14,946**	**$ 241,069**	**$ 1,260,790**
CORRIDOR: CHAVEZ-SUNSET-RIGGIN	**0.48**				**0.48**		**0.48**	**$ 14,946**	**$ 241,069**	**$ 1,260,790**
N Fairfax Ave To Alhambra Wash										
E POMONA BLVD	0.48				0.48		0.48	$ 14,946	$ 241,069	$ 1,260,790
Norwalk	**8.08**				**8.08**	**3.25**	**11.33**	**$ 249,618**	**$ 4,026,102**	**$ 21,056,515**
CORRIDOR: BLOOMFIELD AVE	**2.08**				**2.08**		**2.08**	**$ 64,242**	**$ 1,036,155**	**$ 5,419,089**
Whittier-Uprr To Carson St										
BLOOMFIELD AV	2.08				2.08		2.08	$ 64,242	$ 1,036,155	$ 5,419,089
CORRIDOR: FIRESTONE-SPRR	**3.09**				**3.09**		**3.09**	**$ 95,415**	**$ 1,538,957**	**$ 8,048,744**
La River To Artesia Blvd										
FIRESTONE BLVD	3.09				3.09		3.09	$ 95,415	$ 1,538,957	$ 8,048,744
CORRIDOR: IMPERIAL HWY	**2.91**				**2.91**		**2.91**	**$ 89,961**	**$ 1,450,991**	**$ 7,588,682**
Coast To Orange County Line										
IMPERIAL HWY	2.91				2.91		2.91	$ 89,961	$ 1,450,991	$ 7,588,682
CORRIDOR: SAN GABRIEL RIVER						**3.25**	**3.25**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						3.25	3.25	$ -	$ -	$ -
Paramount	**4.47**		**1.69**		**6.15**	**2.22**	**8.38**	**$ 414,749**	**$ 6,664,131**	**$ 34,873,258**
CORRIDOR: ALTADENA-LONG BEACH	**2.08**				**2.08**		**2.08**	**$ 64,328**	**$ 1,037,556**	**$ 5,426,419**
Loma Alta Dr To La River										
GARFIELD AV	2.08				2.08		2.08	$ 64,328	$ 1,037,556	$ 5,426,419
CORRIDOR: LA RIVER						**2.22**	**2.22**	**$ -**	**$ -**	**$ -**
Canoga Ave To Coyote Creek										
Off Street						2.22	2.22	$ -	$ -	$ -
CORRIDOR: REDONDO BEACH BLVD	**2.38**				**2.38**		**2.38**	**$ 73,657**	**$ 1,188,011**	**$ 6,213,300**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
SOMERSET BLVD	2.38				2.38		2.38	$ 73,657	$ 1,188,011	$ 6,213,300
CORRIDOR: SALT LAKE- UP-PE RR ROW			**1.69**		**1.69**		**1.69**	**$ 276,764**	**$ 4,438,564**	**$ 23,233,540**
La River To Coyote Creek										
Off Street			1.69		1.69		1.69	$ 276,764	$ 4,438,564	$ 23,233,540
Pico Rivera	**8.55**		**0.17**		**8.72**	**7.37**	**16.09**	**$ 291,582**	**$ 4,700,422**	**$ 24,585,172**
CORRIDOR: LAKEWOOD-ROSEMEAD	**4.63**				**4.63**		**4.63**	**$ 143,059**	**$ 2,307,405**	**$ 12,067,730**
E Orange Grove Blvd To Pch										
ROSEMEAD BLVD	4.63				4.63		4.63	$ 143,059	$ 2,307,405	$ 12,067,730
CORRIDOR: RIO HONDO						**1.61**	**1.61**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						1.61	1.61	$ -	$ -	$ -
CORRIDOR: SAN GABRIEL RIVER						**5.77**	**5.77**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						5.77	5.77	$ -	$ -	$ -
CORRIDOR: TELEGRAPH RD	**2.26**				**2.26**		**2.26**	**$ 69,756**	**$ 1,125,098**	**$ 5,884,261**
Garfield Ave To Imperial Hwy										
TELEGRAPH RD	2.26				2.26		2.26	$ 69,756	$ 1,125,098	$ 5,884,261
CORRIDOR: WHITTIER BLVD	**1.66**				**1.66**		**1.66**	**$ 51,344**	**$ 828,126**	**$ 4,331,099**
Central Ave To Washington Blvd										
E WHITTIER BLVD	0.18				0.18		0.18	$ 5,560	$ 89,671	$ 468,980
WHITTIER BLVD	1.48				1.48		1.48	$ 45,784	$ 738,455	$ 3,862,119
CORRIDOR: WHITTIER-UPRR-SPRR			**0.17**		**0.17**		**0.17**	**$ 27,423**	**$ 439,792**	**$ 2,302,081**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
San Gabriel River To Orange County Line										
Off Street			0.17		0.17		0.17	$ 27,423	$ 439,792	$ 2,302,081
Santa Fe Springs	**6.04**		**3.20**		**9.24**	**1.51**	**10.75**	**$ 710,898**	**$ 11,418,046**	**$ 59,753,981**
CORRIDOR: BLOOMFIELD AVE	**3.13**				**3.13**		**3.13**	**$ 96,810**	**$ 1,561,449**	**$ 8,166,377**
Whittier-Uprr To Carson St										
SANTA FE SPRINGS RD	3.13				3.13		3.13	$ 96,810	$ 1,561,449	$ 8,166,377
CORRIDOR: COYOTE CREEK			**0.53**		**0.53**	**1.51**	**2.04**	**$ 86,198**	**$ 1,382,388**	**$ 7,236,073**
Telegraph Rd To Ocean Ave										
Off Street			0.53		0.53	1.51	2.04	$ 86,198	$ 1,382,388	$ 7,236,073
CORRIDOR: FIRESTONE-SPRR			**2.39**		**2.39**		**2.39**	**$ 392,853**	**$ 6,300,324**	**$ 32,978,873**
La River To Artesia Blvd										
Off Street			2.39		2.39		2.39	$ 392,853	$ 6,300,324	$ 32,978,873
CORRIDOR: LA MIRADA CREEK			**0.28**		**0.28**		**0.28**	**$ 45,133**	**$ 723,815**	**$ 3,788,791**
Orange County Line To Coyote Creek										
Off Street			0.28		0.28		0.28	$ 45,133	$ 723,815	$ 3,788,791
CORRIDOR: TELEGRAPH RD	**2.91**				**2.91**		**2.91**	**$ 89,904**	**$ 1,450,070**	**$ 7,583,867**
Garfield Ave To Imperial Hwy										
TELEGRAPH RD	2.91				2.91		2.91	$ 89,904	$ 1,450,070	$ 7,583,867
South Gate	**8.06**		**4.53**		**12.60**	**5.68**	**18.28**	**$ 992,798**	**$ 15,944,705**	**$ 83,444,147**
CORRIDOR: ALTADENA-LONG BEACH	**2.93**				**2.93**		**2.93**	**$ 90,479**	**$ 1,459,342**	**$ 7,632,359**
Loma Alta Dr To La River										
EASTERN AV	0.01				0.01		0.01	$ 305	$ 4,912	$ 25,691
GARFIELD AV	2.92				2.92		2.92	$ 90,175	$ 1,454,430	$ 7,606,667
CORRIDOR: CENTURY-MLK-PE ROW	**0.75**				**0.75**		**0.75**	**$ 23,027**	**$ 371,396**	**$ 1,942,403**
Alameda St To Salt Lake- Up-Pe Rr Row										
CENTURY BLVD	0.75				0.75		0.75	$ 23,027	$ 371,396	$ 1,942,403
CORRIDOR: FIRESTONE-MANCHESTER	**1.23**				**1.23**	**2.29**	**3.52**	**$ 38,108**	**$ 614,639**	**$ 3,214,561**
Culver Blvd To La River										
FIRESTONE BLVD	0.36				0.36		0.36	$ 11,130	$ 179,515	$ 938,866
Off Street						2.29	2.29	$ -	$ -	$ -
S SANTA FE AV	0.22				0.22		0.22	$ 6,746	$ 108,804	$ 569,043
SOUTHERN AVE	0.65				0.65		0.65	$ 20,232	$ 326,320	$ 1,706,653
CORRIDOR: FIRESTONE-SPRR	**0.89**		**1.00**		**1.89**		**1.89**	**$ 191,973**	**$ 3,081,252**	**$ 16,126,746**
La River To Artesia Blvd										
FIRESTONE BLVD	0.89				0.89		0.89	$ 27,451	$ 442,760	$ 2,315,636
SPRR			1.00		1.00		1.00	$ 164,522	$ 2,638,491	$ 13,811,110
CORRIDOR: IMPERIAL HWY	**1.24**				**1.24**		**1.24**	**$ 38,453**	**$ 620,208**	**$ 3,243,687**
Coast To Orange County Line										
E IMPERIAL HWY	1.24				1.24		1.24	$ 38,453	$ 620,208	$ 3,243,687
CORRIDOR: LA RIVER						**1.64**	**1.64**	**$ -**	**$ -**	**$ -**
Canoga Ave To Coyote Creek										
Off Street						1.64	1.64	$ -	$ -	$ -
CORRIDOR: PACIFIC BLVD	**1.02**				**1.02**		**1.02**	**$ 31,622**	**$ 510,035**	**$ 2,667,481**
Slauson Ave To Southern Ave										
LONG BEACH BLVD	1.02				1.02		1.02	$ 31,622	$ 510,035	$ 2,667,481
CORRIDOR: RIO HONDO						**1.76**	**1.76**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						1.76	1.76	$ -	$ -	$ -
CORRIDOR: SALT LAKE- UP-PE RR ROW			**3.53**		**3.53**		**3.53**	**$ 579,137**	**$ 9,287,834**	**$ 48,616,909**
La River To Coyote Creek										
Off Street			3.53		3.53		3.53	$ 579,137	$ 9,287,834	$ 48,616,909
Unincorporated	**23.04**	**1.33**	**6.37**		**30.73**	**14.58**	**45.31**	**$ 1,756,476**	**$ 28,234,493**	**$ 147,741,330**
CORRIDOR: ALAMEDA	**1.85**		**0.06**		**1.91**	**1.83**	**3.74**	**$ 67,763**	**$ 1,091,974**	**$ 5,711,784**
Spring St To La River										
ALAMEDA ST	1.85				1.85		1.85	$ 57,150	$ 921,772	$ 4,820,867
Off Street			0.06		0.06	1.83	1.89	$ 10,613	$ 170,202	$ 890,918
CORRIDOR: ALAMEDA-UPRR	**0.98**				**0.98**		**0.98**	**$ 30,172**	**$ 486,639**	**$ 2,545,122**
La River To Harry Bridges Blvd										
S ALAMEDA ST	0.87				0.87		0.87	$ 26,884	$ 433,605	$ 2,267,756
S SANTA FE AV	0.11				0.11		0.11	$ 3,288	$ 53,034	$ 277,367
CORRIDOR: AVALON BLVD	**2.55**				**2.55**		**2.55**	**$ 78,704**	**$ 1,269,415**	**$ 6,639,040**
E Imperial Hwy To Harry Bridges Blvd										
AVALON BLVD	2.55				2.55		2.55	$ 78,704	$ 1,269,415	$ 6,639,040
CORRIDOR: CENTRAL AVE-COMPTON CREEK			**0.88**		**0.88**		**0.88**	**$ 144,698**	**$ 2,320,574**	**$ 12,146,980**
E 1St St To E Artesia Blvd										
Off Street			0.88		0.88		0.88	$ 144,698	$ 2,320,574	$ 12,146,980
CORRIDOR: CENTURY-MLK-PE ROW			**0.13**		**0.13**		**0.13**	**$ 20,961**	**$ 336,163**	**$ 1,759,635**
Alameda St To Salt Lake- Up-Pe Rr Row										
Off Street			0.13		0.13		0.13	$ 20,961	$ 336,163	$ 1,759,635
CORRIDOR: COLIMA RD	**1.39**				**1.39**		**1.39**	**$ 43,077**	**$ 694,786**	**$ 3,633,731**
Telegraph Rd To Orange County Line										
MILLS AV	1.39				1.39		1.39	$ 43,077	$ 694,786	$ 3,633,731
CORRIDOR: COYOTE CREEK			**1.23**		**1.23**	**11.89**	**13.12**	**$ 201,410**	**$ 3,230,082**	**$ 16,907,774**
Telegraph Rd To Ocean Ave										
Off Street			1.23		1.23	11.89	13.12	$ 201,410	$ 3,230,082	$ 16,907,774
CORRIDOR: COYOTE CREEK EAST			**2.17**		**2.17**		**2.17**	**$ 355,894**	**$ 5,707,599**	**$ 29,876,272**
Imperial Hwy To Artesia Blvd										
Off Street			2.17		2.17		2.17	$ 355,894	$ 5,707,599	$ 29,876,272
CORRIDOR: EL SEGUNDO BLVD	**2.51**				**2.51**		**2.51**	**$ 77,436**	**$ 1,248,974**	**$ 6,532,136**
Coast To Alameda St										
E EL SEGUNDO BLVD	2.03				2.03		2.03	$ 62,706	$ 1,011,386	$ 5,289,549
W EL SEGUNDO BLVD	0.48				0.48		0.48	$ 14,730	$ 237,588	$ 1,242,588
CORRIDOR: FIRESTONE-MANCHESTER	**1.54**				**1.54**		**1.54**	**$ 47,735**	**$ 769,913**	**$ 4,026,648**
Culver Blvd To La River										
E FIRESTONE BLVD	1.54				1.54		1.54	$ 47,576	$ 767,361	$ 4,013,298
FIRESTONE BLVD	0.01				0.01		0.01	$ 158	$ 2,552	$ 13,349
CORRIDOR: FLORENCE AVE	**1.26**				**1.26**		**1.26**	**$ 38,983**	**$ 628,751**	**$ 3,288,369**
Bnsf Railroad To Alameda St										
E FLORENCE AV	1.26				1.26		1.26	$ 38,983	$ 628,751	$ 3,288,369
CORRIDOR: IMPERIAL HWY	**1.66**				**1.66**		**1.66**	**$ 51,237**	**$ 826,401**	**$ 4,322,076**
Coast To Orange County Line										

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
E IMPERIAL HWY	0.27				0.27		0.27	$ 8,334	$ 134,414	$ 702,987
IMPERIAL HWY	1.39				1.39		1.39	$ 42,903	$ 691,987	$ 3,619,090
CORRIDOR: LA MIRADA CREEK			**0.94**		**0.94**		**0.94**	**$ 154,087**	**$ 2,471,155**	**$ 12,935,194**
Orange County Line To Coyote Creek										
Off Street			0.94		0.94		0.94	$ 154,087	$ 2,471,155	$ 12,935,194
CORRIDOR: LA RIVER			**0.18**		**0.18**	**0.85**	**1.04**	**$ 30,119**	**$ 483,022**	**$ 2,528,367**
Canoga Ave To Coyote Creek										
Off Street			0.18		0.18	0.85	1.04	$ 30,119	$ 483,022	$ 2,528,367
CORRIDOR: PACIFIC BLVD	**0.57**				**0.57**		**0.57**	**$ 17,721**	**$ 285,821**	**$ 1,494,844**
Slauson Ave To Southern Ave										
PACIFIC BLVD	0.57				0.57		0.57	$ 17,721	$ 285,821	$ 1,494,844
CORRIDOR: PECK RD	**1.91**				**1.91**		**1.91**	**$ 58,886**	**$ 949,780**	**$ 4,967,348**
Huntington Dr To Whittier Blvd										
PECK RD	0.13				0.13		0.13	$ 3,991	$ 64,379	$ 336,700
WORKMAN MILL RD	1.78				1.78		1.78	$ 54,895	$ 885,401	$ 4,630,648
CORRIDOR: RANDOLPH AVE RAIL ROW		**0.34**			**0.34**		**0.34**	**$ -**	**$ -**	**$ -**
E Slauson Ave To La River										
Off Street		0.34			0.34		0.34	$ -	$ -	$ -
CORRIDOR: REDONDO BEACH BLVD	**2.01**				**2.01**		**2.01**	**$ 62,187**	**$ 1,003,015**	**$ 5,245,768**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
E COMPTON BLVD	0.59				0.59		0.59	$ 18,358	$ 296,100	$ 1,548,601
E REDONDO BEACH BLVD	1.03				1.03		1.03	$ 31,856	$ 513,800	$ 2,687,176
W REDONDO BEACH BLVD	0.39				0.39		0.39	$ 11,973	$ 193,115	$ 1,009,992
CORRIDOR: SLAUSON			**0.74**		**0.74**		**0.74**	**$ 122,085**	**$ 1,957,918**	**$ 10,248,668**
Sepulveda Blvd To La River										
SLAUSON AVE			0.74		0.74		0.74	$ 122,085	$ 1,957,918	$ 10,248,668
CORRIDOR: TELEGRAPH RD	**2.45**				**2.45**		**2.45**	**$ 75,603**	**$ 1,219,402**	**$ 6,377,473**
Garfield Ave To Imperial Hwy										
TELEGRAPH RD	2.45				2.45		2.45	$ 75,603	$ 1,219,402	$ 6,377,473
CORRIDOR: WHITTIER BLVD	**2.36**				**2.36**		**2.36**	**$ 72,919**	**$ 1,176,114**	**$ 6,151,074**
Central Ave To Washington Blvd										
WHITTIER BLVD	2.36				2.36		2.36	$ 72,919	$ 1,176,114	$ 6,151,074
CORRIDOR: WHITTIER-UPRR-SPRR			**0.03**		**0.03**		**0.03**	**$ 4,801**	**$ 76,995**	**$ 403,028**
San Gabriel River To Orange County Line										
Off Street			0.03		0.03		0.03	$ 4,801	$ 76,995	$ 403,028
CORRIDOR: WILLOWBROOK AV		**0.98**			**0.98**		**0.98**	**$ -**	**$ -**	**$ -**
E Imperial Hwy To E El Segundo Blvd										
S WILLOWBROOK AV		0.98			0.98		0.98	$ -	$ -	$ -
Vernon	**1.98**	**3.42**	**3.34**		**8.74**	**0.82**	**9.55**	**$ 609,167**	**$ 9,775,041**	**$ 51,162,774**
CORRIDOR: ALAMEDA	**1.63**				**1.63**		**1.63**	**$ 50,391**	**$ 812,752**	**$ 4,250,695**
Spring St To La River										
S ALAMEDA ST	1.56				1.56		1.56	$ 48,244	$ 778,127	$ 4,069,607
UP RR	0.07				0.07		0.07	$ 2,147	$ 34,625	$ 181,088
CORRIDOR: LA RIVER			**2.67**		**2.67**	**0.82**	**3.49**	**$ 438,379**	**$ 7,030,450**	**$ 36,800,700**
Canoga Ave To Coyote Creek										
Off Street			2.67		2.67	0.82	3.49	$ 438,379	$ 7,030,450	$ 36,800,700
CORRIDOR: RAIL TO RIVER		**1.77**			**1.77**		**1.77**	**$ -**	**$ -**	**$ -**
La River To Long Beach Ave										
Off Street		1.77			1.77		1.77	$ -	$ -	$ -
CORRIDOR: SALT LAKE- UP-PE RR ROW		**1.18**	**0.67**		**1.85**		**1.85**	**$ 109,630**	**$ 1,758,181**	**$ 9,203,151**
La River To Coyote Creek										
Off Street		1.18	0.67		1.85		1.85	$ 109,630	$ 1,758,181	$ 9,203,151
CORRIDOR: SLAUSON		**0.47**			**0.47**		**0.47**	**$ -**	**$ -**	**$ -**
Sepulveda Blvd To La River										
Slauson AV		0.47			0.47		0.47	$ -	$ -	$ -
CORRIDOR: SOTO	**0.35**				**0.35**		**0.35**	**$ 10,767**	**$ 173,657**	**$ 908,229**
Mission Road To La River										
S SOTO ST	0.35				0.35		0.35	$ 10,767	$ 173,657	$ 908,229
Whittier	**5.49**		**3.23**		**8.72**	**4.67**	**13.39**	**$ 699,388**	**$ 11,231,898**	**$ 58,780,822**
CORRIDOR: BLOOMFIELD AVE	**0.83**				**0.83**		**0.83**	**$ 25,525**	**$ 411,692**	**$ 2,153,150**
Whittier-Uprr To Carson St										
SANTA FE SPRINGS RD	0.83				0.83		0.83	$ 25,525	$ 411,692	$ 2,153,150
CORRIDOR: COLIMA RD	**3.35**				**3.35**		**3.35**	**$ 103,583**	**$ 1,670,697**	**$ 8,737,743**
Telegraph Rd To Orange County Line										
COLIMA RD	2.43				2.43		2.43	$ 75,142	$ 1,211,975	$ 6,338,629
MILLS AV	0.66				0.66		0.66	$ 20,329	$ 327,888	$ 1,714,856
WHITTIER BLVD	0.26				0.26		0.26	$ 8,112	$ 130,833	$ 684,259
CORRIDOR: LA MIRADA CREEK			**0.29**		**0.29**		**0.29**	**$ 48,364**	**$ 775,631**	**$ 4,060,020**
Orange County Line To Coyote Creek										
Off Street			0.29		0.29		0.29	$ 48,364	$ 775,631	$ 4,060,020
CORRIDOR: PECK RD	**1.14**				**1.14**		**1.14**	**$ 35,112**	**$ 566,329**	**$ 2,961,902**
Huntington Dr To Whittier Blvd										
NORWALK BLVD	0.84				0.84		0.84	$ 26,061	$ 420,341	$ 2,198,385
WORKMAN MILL RD	0.29				0.29		0.29	$ 9,051	$ 145,988	$ 763,517
CORRIDOR: WHITTIER BLVD	**0.18**				**0.18**		**0.18**	**$ 5,408**	**$ 87,229**	**$ 456,206**
Central Ave To Washington Blvd										
WHITTIER BLVD	0.18				0.18		0.18	$ 5,408	$ 87,229	$ 456,206
CORRIDOR: WHITTIER-UPRR-SPRR			**2.93**		**2.93**	**4.67**	**7.60**	**$ 481,396**	**$ 7,720,320**	**$ 40,411,802**
San Gabriel River To Orange County Line										
Off Street			2.93		2.93	4.67	7.60	$ 481,396	$ 7,720,320	$ 40,411,802
Avalon				**0.99**	**0.99**		**0.99**	**$ 48,533**	**$ 782,792**	**$ 4,093,999**
CORRIDOR: AVALON				**0.99**	**0.99**		**0.99**	**$ 48,533**	**$ 782,792**	**$ 4,093,999**
Ferry Landing To Rifle Range Rd										
Avalon Canyon				0.46	0.46		0.46	$ 22,355	$ 360,569	$ 1,885,774
Claressa Ave				0.27	0.27		0.27	$ 13,301	$ 214,527	$ 1,121,976
Pebbly Beach Rd				0.17	0.17		0.17	$ 8,537	$ 137,690	$ 720,121
Tremont St				0.09	0.09		0.09	$ 4,340	$ 70,005	$ 366,128
Bell		**1.60**	**0.39**		**2.00**	**1.42**	**3.42**	**$ 64,666**	**$ 1,037,078**	**$ 5,428,558**
CORRIDOR: LA RIVER						**1.42**	**1.42**	**$ -**	**$ -**	**$ -**
Canoga Ave To Coyote Creek										
Off Street						1.42	1.42	$ -	$ -	$ -

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CORRIDOR: RANDOLPH AVE RAIL ROW		1.60	0.15		1.75		1.75	$ 24,266	$ 389,165	$ 2,037,071
E Slauson Ave To La River										
Off Street		1.60	0.15		1.75		1.75	$ 24,266	$ 389,165	$ 2,037,071
CORRIDOR: SALT LAKE- UP-PE RR ROW			0.25		0.25		0.25	$ 40,400	$ 647,914	$ 3,391,487
La River To Coyote Creek										
Off Street			0.25		0.25		0.25	$ 40,400	$ 647,914	$ 3,391,487
Signal Hill	2.88				2.88		2.88	$ 88,876	$ 1,433,490	$ 7,497,152
CORRIDOR: ALTADENA-LONG BEACH	1.40				1.40		1.40	$ 43,229	$ 697,236	$ 3,646,543
Loma Alta Dr To La River										
CHERRY AV	1.40				1.40		1.40	$ 43,229	$ 697,236	$ 3,646,543
CORRIDOR: SEPULVEDA-WILLOW	1.48				1.48		1.48	$ 45,648	$ 736,254	$ 3,850,608
Torrance Blvd To Coyote Creek										
E WILLOW ST	1.48				1.48		1.48	$ 45,648	$ 736,254	$ 3,850,608
Las Virgenes/Malibu	43.82				43.82		43.82	$ 1,354,114	$ 21,840,541	$ 114,226,029
Agoura Hills	4.19				4.19		4.19	$ 129,482	$ 2,088,424	$ 10,922,457
CORRIDOR: VENTURA-CALABASAS	4.19				4.19		4.19	$ 129,482	$ 2,088,424	$ 10,922,457
Ventura County Line To N Cahuenga Blvd										
AGOURA RD	4.19				4.19		4.19	$ 129,482	$ 2,088,424	$ 10,922,457
Calabasas	5.38				5.38		5.38	$ 166,084	$ 2,678,771	$ 14,009,973
CORRIDOR: MALIBU CANYON	3.51				3.51		3.51	$ 108,474	$ 1,749,576	$ 9,150,282
Mureau Rd To Pch										
LAS VIRGENES RD	3.51				3.51		3.51	$ 108,474	$ 1,749,576	$ 9,150,282
CORRIDOR: VENTURA-CALABASAS	1.86				1.86		1.86	$ 57,610	$ 929,195	$ 4,859,691
Ventura County Line To N Cahuenga Blvd										
CALABASAS RD	1.63				1.63		1.63	$ 50,225	$ 810,075	$ 4,236,695
MUREAU RD	0.24				0.24		0.24	$ 7,385	$ 119,120	$ 622,997
Malibu	21.67				21.67		21.67	$ 669,462	$ 10,797,776	$ 56,472,371
CORRIDOR: MALIBU CANYON	1.12				1.12		1.12	$ 34,660	$ 559,031	$ 2,923,732
Mureau Rd To Pch										
S MALIBU CANYON RD	1.12				1.12		1.12	$ 34,660	$ 559,031	$ 2,923,732
CORRIDOR: COASTAL ROUTE-BEACH PATH	20.54				20.54		20.54	$ 634,802	$ 10,238,746	$ 53,548,639
Ventura County Line To La River										
PACIFIC COAST HWY	20.54				20.54		20.54	$ 634,802	$ 10,238,746	$ 53,548,639
Unincorporated	11.01				11.01		11.01	$ 340,263	$ 5,488,117	$ 28,702,853
CORRIDOR: MALIBU CANYON	5.19				5.19		5.19	$ 160,383	$ 2,586,815	$ 13,529,041
Mureau Rd To Pch										
LAS VIRGENES RD	1.44				1.44		1.44	$ 44,561	$ 718,730	$ 3,758,959
N MALIBU CANYON RD	1.25				1.25		1.25	$ 38,730	$ 624,673	$ 3,267,042
S MALIBU CANYON RD	2.49				2.49		2.49	$ 77,091	$ 1,243,411	$ 6,503,040
CORRIDOR: VENTURA-CALABASAS	3.50				3.50		3.50	$ 108,126	$ 1,743,960	$ 9,120,910
Ventura County Line To N Cahuenga Blvd										
AGOURA RD	1.65				1.65		1.65	$ 50,854	$ 820,229	$ 4,289,797
MUREAU RD	1.85				1.85		1.85	$ 57,271	$ 923,731	$ 4,831,113
CORRIDOR: COASTAL ROUTE-BEACH PATH	2.32				2.32		2.32	$ 71,755	$ 1,157,343	$ 6,052,902
Ventura County Line To La River										
PACIFIC COAST HWY	2.32				2.32		2.32	$ 71,755	$ 1,157,343	$ 6,052,902
Westlake Village	1.58				1.58		1.58	$ 48,822	$ 787,452	$ 4,118,374
CORRIDOR: VENTURA-CALABASAS	1.58				1.58		1.58	$ 48,822	$ 787,452	$ 4,118,374
Ventura County Line To N Cahuenga Blvd										
AGOURA RD	1.58				1.58		1.58	$ 48,822	$ 787,452	$ 4,118,374
North Los Angeles County	133.55		26.95		160.50	20.05	180.55	$ 8,547,752	$ 137,461,688	$ 719,241,743
Lancaster	26.79		3.08		29.87		29.87	$ 1,332,743	$ 21,449,567	$ 112,217,455
CORRIDOR: 30TH ST	6.04				6.04		6.04	$ 186,539	$ 3,008,690	$ 15,735,451
Ave H To Ave P										
30TH ST W	6.04				6.04		6.04	$ 186,539	$ 3,008,690	$ 15,735,451
CORRIDOR: AVE J	11.62				11.62		11.62	$ 359,079	$ 5,791,593	$ 30,290,032
65Th St W To 50Th St E										
AVE J	11.62				11.62		11.62	$ 359,079	$ 5,791,593	$ 30,290,032
CORRIDOR: AVE L	7.07				7.07		7.07	$ 218,352	$ 3,521,802	$ 18,419,026
70Th St W To 50Th St E										
25TH ST W	0.13				0.13		0.13	$ 3,933	$ 63,430	$ 331,741
AVE L	6.94				6.94		6.94	$ 214,419	$ 3,458,372	$ 18,087,286
CORRIDOR: LANCASTER-SANTA CLARITA-SFV	2.07		3.08		5.14		5.14	$ 568,774	$ 9,127,481	$ 47,772,946
Ave H To Sp Rr Burbank										
Off Street			3.08		3.08		3.08	$ 504,946	$ 8,097,999	$ 42,388,753
SIERRA HWY	2.07				2.07		2.07	$ 63,828	$ 1,029,482	$ 5,384,193
Palmdale	27.49		7.16		34.64		34.64	$ 2,023,582	$ 32,530,783	$ 170,220,222
CORRIDOR: AVE L	4.07				4.07		4.07	$ 125,799	$ 2,029,014	$ 10,611,742
70Th St W To 50Th St E										
AVE L	4.07				4.07		4.07	$ 125,799	$ 2,029,014	$ 10,611,742
CORRIDOR: AVE N	2.11				2.11		2.11	$ 65,051	$ 1,049,205	$ 5,487,340
50Th St To Sierra Bike Path										
AVE N	2.11				2.11		2.11	$ 65,051	$ 1,049,205	$ 5,487,340
CORRIDOR: AVE P	4.56				4.56		4.56	$ 140,898	$ 2,272,550	$ 11,885,434
30Th St W To 50Th St E										
RANCHO VISTA BLVD	4.56				4.56		4.56	$ 140,898	$ 2,272,550	$ 11,885,434
CORRIDOR: AVE S	6.12		1.43		7.55		7.55	$ 423,461	$ 6,808,521	$ 35,625,383
Tovey Ave To 70Th St E										
AVE S	6.12				6.12		6.12	$ 188,989	$ 3,048,213	$ 15,942,156
Off Street			1.43		1.43		1.43	$ 234,472	$ 3,760,308	$ 19,683,227
CORRIDOR: HIGH DESERT CORRIDOR	10.63				10.63		10.63	$ 328,565	$ 5,299,439	$ 27,716,068
Elizabeth Lake Rd To San Bernardino County										
ELIZABETH LAKE RD	1.35				1.35		1.35	$ 41,676	$ 672,197	$ 3,515,592
PALMDALE BLVD	9.28				9.28		9.28	$ 286,889	$ 4,627,242	$ 24,200,476
CORRIDOR: LANCASTER-SANTA CLARITA-SFV			5.73		5.73		5.73	$ 939,809	$ 15,072,054	$ 78,894,254
Ave H To Sp Rr Burbank										
Off Street			5.73		5.73		5.73	$ 939,809	$ 15,072,054	$ 78,894,254
Santa Clarita	12.24		3.43		15.67	20.05	35.72	$ 941,182	$ 15,128,752	$ 79,163,756
CORRIDOR: GOLDEN VALLEY			0.54		0.54	8.54	9.08	$ 88,489	$ 1,419,127	$ 7,428,382
The Old Road To Sierra Hwy										
Off Street			0.54		0.54	8.54	9.08	$ 88,489	$ 1,419,127	$ 7,428,382

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CORRIDOR: LANCASTER-SANTA CLARITA-SFV	9.41				9.41	1.25	10.65	$ 290,722	$ 4,689,061	$ 24,523,789
Ave H To Sp Rr Burbank										
SANTA CLARA RIVER TR						1.25	1.25	$ -	$ -	$ -
SIERRA HWY	6.22				6.22		6.22	$ 192,060	$ 3,097,737	$ 16,201,164
SOLEDAD CANYON RD	3.19				3.19		3.19	$ 98,662	$ 1,591,324	$ 8,322,625
CORRIDOR: NEWHALL AVE	2.83				2.83	1.91	4.75	$ 87,452	$ 1,410,512	$ 7,376,976
Santa Clara River To Sierra Hwy										
NEWHALL AV	1.19				1.19		1.19	$ 36,781	$ 593,234	$ 3,102,614
Off Street						1.91	1.91	$ -	$ -	$ -
UP RR	1.64				1.64		1.64	$ 50,671	$ 817,278	$ 4,274,362
CORRIDOR: SANTA CLARA RIVER						8.35	8.35	$ -	$ -	$ -
Ventura County Line To Sierra Hwy										
SANTA CLARA RIVER TR						8.35	8.35	$ -	$ -	$ -
CORRIDOR: SANTA CLARA RIVER EXT			2.89		2.89		2.89	$ 474,520	$ 7,610,052	$ 39,834,609
The Old Road To Bouquet Cyn Rd										
Off Street			2.89		2.89		2.89	$ 474,520	$ 7,610,052	$ 39,834,609
Unincorporated	67.04		13.28		80.32		80.32	$ 4,250,244	$ 68,352,586	$ 357,640,310
CORRIDOR: 30TH ST	2.02				2.02		2.02	$ 62,534	$ 1,008,612	$ 5,275,043
Ave H To Ave P										
30TH ST W	2.02				2.02		2.02	$ 62,534	$ 1,008,612	$ 5,275,043
CORRIDOR: AVE H	6.84				6.84		6.84	$ 211,211	$ 3,406,629	$ 17,816,672
30Th St W To 37Th St E										
AVE H	6.84				6.84		6.84	$ 211,211	$ 3,406,629	$ 17,816,672
CORRIDOR: AVE L	1.00				1.00		1.00	$ 30,908	$ 498,515	$ 2,607,236
70Th St W To 50Th St E										
AVE L	1.00				1.00		1.00	$ 30,908	$ 498,515	$ 2,607,236
CORRIDOR: AVE N	3.24				3.24		3.24	$ 100,095	$ 1,614,431	$ 8,443,473
50Th St To Sierra Bike Path										
AVE N	3.24				3.24		3.24	$ 100,095	$ 1,614,431	$ 8,443,473
CORRIDOR: AVE S	0.31				0.31		0.31	$ 9,580	$ 154,510	$ 808,088
Tovey Ave To 70Th St E										
AVE S	0.31				0.31		0.31	$ 9,580	$ 154,510	$ 808,088
CORRIDOR: GOLDEN VALLEY			0.17		0.17		0.17	$ 28,172	$ 451,802	$ 2,364,945
The Old Road To Sierra Hwy										
Off Street			0.17		0.17		0.17	$ 28,172	$ 451,802	$ 2,364,945
CORRIDOR: HIGH DESERT CORRIDOR	20.59				20.59		20.59	$ 636,184	$ 10,261,029	$ 53,665,180
Elizabeth Lake Rd To San Bernardino County										
240TH ST	1.53				1.53		1.53	$ 47,291	$ 762,763	$ 3,989,251
AVE P	2.00				2.00		2.00	$ 61,784	$ 996,515	$ 5,211,775
ELIZABETH LAKE RD	0.80				0.80		0.80	$ 24,741	$ 399,053	$ 2,087,048
PALMDALE BLVD	16.26				16.26		16.26	$ 502,367	$ 8,102,697	$ 42,377,106
CORRIDOR: LANCASTER-SANTA CLARITA-SFV	24.29		0.16		24.45		24.45	$ 776,253	$ 12,517,860	$ 65,470,247
Ave H To Sp Rr Burbank										
Off Street			0.16		0.16		0.16	$ 25,670	$ 411,681	$ 2,154,930
SIERRA HWY	0.82				0.82		0.82	$ 25,331	$ 408,568	$ 2,136,810
SOLEDAD CANYON RD	23.47				23.47		23.47	$ 725,252	$ 11,697,611	$ 61,178,506
CORRIDOR: SANTA CLARA RIVER			7.41		7.41		7.41	$ 1,215,898	$ 19,499,797	$ 102,071,150
Ventura County Line To Sierra Hwy										
Off Street			7.41		7.41		7.41	$ 1,215,898	$ 19,499,797	$ 102,071,150
CORRIDOR: THE OLD ROAD	8.75		5.54		14.29		14.29	$ 1,179,410	$ 18,939,401	$ 99,118,278
Lake Hughes Rd To Sierra Hwy										
Off Street			5.54		5.54		5.54	$ 909,135	$ 14,580,131	$ 76,319,293
THE OLD RD	8.75				8.75		8.75	$ 270,275	$ 4,359,271	$ 22,798,985
San Fernando Valley	229.53		70.79	0.25	300.57	28.04	328.61	$ 18,718,312	$ 300,843,632	$ 1,574,245,230
Los Angeles	226.86		69.68	0.25	296.79	26.87	323.66	$ 18,454,261	$ 296,601,389	$ 1,552,045,275
CORRIDOR: ALISO WASH			6.80		6.80		6.80	$ 1,115,938	$ 17,896,709	$ 93,679,831
Rinaldi St To La River										
Off Street			6.80		6.80		6.80	$ 1,115,938	$ 17,896,709	$ 93,679,831
CORRIDOR: ARROYO-VERDUGO	10.82				10.82		10.82	$ 334,435	$ 5,394,105	$ 28,211,168
Van Nuys Blvd To York Blvd										
HONOLULU AV	0.25				0.25		0.25	$ 7,745	$ 124,918	$ 653,319
LA TUNA CANYON RD	5.96				5.96		5.96	$ 184,159	$ 2,970,308	$ 15,534,711
ROSCOE BLVD	3.32				3.32		3.32	$ 102,473	$ 1,652,783	$ 8,644,057
TUXFORD ST	1.30				1.30		1.30	$ 40,058	$ 646,096	$ 3,379,081
CORRIDOR: BALBOA BLVD	10.10				10.10	1.18	11.29	$ 312,222	$ 5,035,841	$ 26,337,450
San Fernando Rd To Ventura Blvd										
BALBOA BLVD	10.10				10.10		10.10	$ 312,222	$ 5,035,841	$ 26,337,450
Off Street						1.18	1.18	$ -	$ -	$ -
CORRIDOR: BRAND	1.32				1.32		1.32	$ 40,690	$ 656,288	$ 3,432,388
Sepulveda Blvd To San Fernando Rd										
S BRAND BLVD	1.32				1.32		1.32	$ 40,690	$ 656,288	$ 3,432,388
CORRIDOR: BROWNS CANYON			3.51		3.51		3.51	$ 575,233	$ 9,225,214	$ 48,289,128
Sprr Burbank To La River										
Off Street			3.51		3.51		3.51	$ 575,233	$ 9,225,214	$ 48,289,128
CORRIDOR: BROWNS CREEK	1.29				1.29		1.29	$ 39,850	$ 642,744	$ 3,361,553
Victory Blvd To Ventura Blvd										
TOPANGA CANYON BLVD	1.29				1.29		1.29	$ 39,850	$ 642,744	$ 3,361,553
CORRIDOR: CHANDLER	2.67				2.67	7.51	10.17	$ 82,454	$ 1,329,902	$ 6,955,387
La River To E Verdugo Ave										
CHANDLER BLVD	2.67				2.67		2.67	$ 82,454	$ 1,329,902	$ 6,955,387
Off Street						7.51	7.51	$ -	$ -	$ -
CORRIDOR: DEVONSHIRE ST	8.69				8.69	0.60	9.29	$ 268,465	$ 4,330,084	$ 22,646,342
Topanga Canyon Blvd To Pacoima Wash										
DEVONSHIRE ST	8.69				8.69		8.69	$ 268,465	$ 4,330,084	$ 22,646,342
Off Street						0.60	0.60	$ -	$ -	$ -
CORRIDOR: EAST DIVERSION CHANNEL			2.37		2.37		2.37	$ 388,393	$ 6,228,806	$ 32,604,511
Gavina Ave To La River										
Off Street			2.37		2.37		2.37	$ 388,393	$ 6,228,806	$ 32,604,511
CORRIDOR: FALBROOK AVE	3.68				3.68		3.68	$ 113,636	$ 1,832,838	$ 9,585,743
Roscoe Blvd To Ventura Blvd										
FALLBROOK AV	3.68				3.68		3.68	$ 113,636	$ 1,832,838	$ 9,585,743

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CORRIDOR: FOOTHILL-SUNLAND-VINELAND	**13.90**				**13.90**		**13.90**	**$ 429,595**	**$ 6,928,953**	**$ 36,238,425**
Ventura Blvd To Verdugo Wash										
FOOTHILL BLVD	3.68				3.68		3.68	$ 113,752	$ 1,834,714	$ 9,595,557
PENROSE ST	0.10				0.10		0.10	$ 3,171	$ 51,150	$ 267,517
SUNLAND BLVD	4.81				4.81		4.81	$ 148,582	$ 2,396,479	$ 12,533,587
VINELAND AV	5.31				5.31		5.31	$ 164,090	$ 2,646,609	$ 13,841,765
CORRIDOR: GLENOAKS BLVD	**9.61**				**9.61**		**9.61**	**$ 296,843**	**$ 4,787,793**	**$ 25,040,159**
Foothill Fwy To Verdugo Wash										
GLENOAKS BLVD	9.61				9.61		9.61	$ 296,843	$ 4,787,793	$ 25,040,159
CORRIDOR: HUBBARD-RINALDI	**11.83**				**11.83**	**1.50**	**13.33**	**$ 365,451**	**$ 5,894,367**	**$ 30,827,538**
Independence Ave To Pacoima Wash										
GAVINA AV	0.48				0.48		0.48	$ 14,889	$ 240,146	$ 1,255,965
HUBBARD ST	3.36				3.36		3.36	$ 103,958	$ 1,676,743	$ 8,769,364
S HUBBARD AV	0.04				0.04		0.04	$ 1,247	$ 20,113	$ 105,193
Lassen St To Pacoima Wash										
Off Street						1.50	1.50	$ -	$ -	$ -
RINALDI ST	7.94				7.94		7.94	$ 245,357	$ 3,957,365	$ 20,697,017
CORRIDOR: LA RIVER			**17.30**		**17.30**	**1.85**	**19.15**	**$ 2,838,323**	**$ 45,519,219**	**$ 238,269,098**
Canoga Ave To Coyote Creek										
Off Street			17.30		17.30	1.85	19.15	$ 2,838,323	$ 45,519,219	$ 238,269,098
CORRIDOR: LANCASTER-SANTA CLARITA-SFV	**3.05**		**6.98**		**10.02**	**1.90**	**11.92**	**$ 1,238,796**	**$ 19,875,655**	**$ 104,031,778**
Ave H To Sp Rr Burbank										
Off Street			6.98		6.98	1.90	8.88	$ 1,144,659	$ 18,357,319	$ 96,090,884
SAN FERNANDO RD	2.69				2.69		2.69	$ 83,114	$ 1,340,547	$ 7,011,060
SIERRA HWY	0.36				0.36		0.36	$ 11,023	$ 177,788	$ 929,833
CORRIDOR: LANKERSHIM	**7.04**				**7.04**		**7.04**	**$ 217,675**	**$ 3,510,893**	**$ 18,361,970**
Sp Rr Burbank To W Cahuenga Blvd										
LANKERSHIM BLVD	7.04				7.04		7.04	$ 217,675	$ 3,510,893	$ 18,361,970
CORRIDOR: LAUREL CANYON BLVD	**11.78**				**11.78**		**11.78**	**$ 364,136**	**$ 5,873,156**	**$ 30,716,606**
Polk St To Ventura Blvd										
LAUREL CANYON BLVD	11.78				11.78		11.78	$ 364,136	$ 5,873,156	$ 30,716,606
CORRIDOR: ORANGE LINE	**0.25**				**0.25**	**10.09**	**10.33**	**$ 7,636**	**$ 123,166**	**$ 644,160**
Lassen St To Victory Blvd										
Off Street						4.16	4.16	$ -	$ -	$ -
Rinaldi St To Victory Blvd										
CANOGA AV	0.25				0.25		0.25	$ 7,636	$ 123,166	$ 644,160
Off Street						5.93	5.93	$ -	$ -	$ -
CORRIDOR: PACOIMA WASH/CHANNEL			**13.08**		**13.08**	**0.46**	**13.55**	**$ 2,146,255**	**$ 34,420,273**	**$ 180,171,971**
Gavina Ave To La River										
Off Street			13.08		13.08	0.46	13.55	$ 2,146,255	$ 34,420,273	$ 180,171,971
CORRIDOR: PARTHENIA ST	**8.49**				**8.49**		**8.49**	**$ 262,260**	**$ 4,230,001**	**$ 22,122,903**
Canoga Ave To Van Nuys Blvd										
PARTHENIA ST	8.49				8.49		8.49	$ 262,260	$ 4,230,001	$ 22,122,903
CORRIDOR: PLUMMER-VALLEY CIRCLE	**15.98**		**0.40**	**0.25**	**16.63**	**0.37**	**17.00**	**$ 571,811**	**$ 9,216,735**	**$ 48,208,238**
Ventura Blvd To Woodman Ave										
LAKE MANOR DR	0.17				0.17		0.17	$ 5,154	$ 83,123	$ 434,731
N UNIVERSITY DR				0.25	0.25		0.25	$ 12,202	$ 196,808	$ 1,029,307
Off Street			0.40		0.40	0.37	0.77	$ 65,724	$ 1,054,035	$ 5,517,317
PLUMMER ST	9.04				9.04		9.04	$ 279,371	$ 4,505,987	$ 23,566,313
VALLEY CIRCLE BLVD	6.78				6.78		6.78	$ 209,360	$ 3,376,782	$ 17,660,570
CORRIDOR: RESEDA BLVD	**7.39**				**7.39**		**7.39**	**$ 228,371**	**$ 3,683,397**	**$ 19,264,168**
Rinaldi St To Ventura Blvd										
RESEDA BLVD	7.39				7.39		7.39	$ 228,371	$ 3,683,397	$ 19,264,168
CORRIDOR: RIVERSIDE-VERDUGO	**5.57**				**5.57**		**5.57**	**$ 172,006**	**$ 2,774,294**	**$ 14,509,560**
Van Nuys Blvd To Van Nuys Blvd										
CAMARILLO ST	1.57				1.57		1.57	$ 48,448	$ 781,412	$ 4,086,784
RIVERSIDE DR	4.00				4.00		4.00	$ 123,559	$ 1,992,883	$ 10,422,776
CORRIDOR: ROSCOE BLVD	**2.83**				**2.83**		**2.83**	**$ 87,425**	**$ 1,410,081**	**$ 7,374,726**
Valley Circle Blvd To Canoga Ave										
ROSCOE BLVD	2.83				2.83		2.83	$ 87,425	$ 1,410,081	$ 7,374,726
CORRIDOR: SANTA SUSANA-SPRR	**2.07**		**1.81**		**3.88**		**3.88**	**$ 360,905**	**$ 5,793,807**	**$ 30,322,918**
Ventura County Line To Lassen St										
Off Street			1.81		1.81		1.81	$ 297,090	$ 4,764,538	$ 24,939,845
SANTA SUSANA PASS RD	2.07				2.07		2.07	$ 63,815	$ 1,029,268	$ 5,383,074
CORRIDOR: SEPULVEDA	**15.73**				**15.73**		**15.73**	**$ 486,181**	**$ 7,841,623**	**$ 41,011,688**
Rinaldi St To Venice Blvd										
N SEPULVEDA BLVD	15.73				15.73		15.73	$ 486,181	$ 7,841,623	$ 41,011,688
CORRIDOR: SHERMAN WAY	**16.33**				**16.33**		**16.33**	**$ 504,447**	**$ 8,136,237**	**$ 42,552,518**
Victory Blvd To Vineland Ave										
CALDUS AV	0.01				0.01		0.01	$ 186	$ 3,008	$ 15,731
ETIWANDA AV	0.00				0.00		0.00	$ 150	$ 2,419	$ 12,650
PLATT AV	0.83				0.83		0.83	$ 25,545	$ 412,017	$ 2,154,850
SHERMAN WY	15.48				15.48		15.48	$ 478,249	$ 7,713,698	$ 40,342,638
VANALDEN AV	0.01				0.01		0.01	$ 169	$ 2,726	$ 14,255
VARIEL AV	0.00				0.00		0.00	$ 147	$ 2,370	$ 12,394
CORRIDOR: SPRR-BURBANK WESTERN	**0.53**		**14.42**		**14.95**		**14.95**	**$ 2,382,797**	**$ 38,215,281**	**$ 200,035,658**
Lassen St To La River										
Off Street			14.42		14.42		14.42	$ 2,366,446	$ 37,951,564	$ 198,656,420
VANOWEN ST	0.53				0.53		0.53	$ 16,350	$ 263,717	$ 1,379,239
CORRIDOR: THE OLD ROAD	**0.14**				**0.14**		**0.14**	**$ 4,446**	**$ 71,713**	**$ 375,058**
Lake Hughes Rd To Sierra Hwy										
THE OLD RD	0.14				0.14		0.14	$ 4,446	$ 71,713	$ 375,058
CORRIDOR: TUJUNGA WASH			**3.01**		**3.01**		**3.01**	**$ 494,278**	**$ 7,926,911**	**$ 41,493,199**
Hansen Dam Bike Path To Pacoima Diversion Channel										
Off Street			3.01		3.01		3.01	$ 494,278	$ 7,926,911	$ 41,493,199
CORRIDOR: VAN NUYS BLVD	**10.22**				**10.22**		**10.22**	**$ 315,896**	**$ 5,095,094**	**$ 26,647,340**
Foothill Blvd To Ventura Blvd										
VAN NUYS BLVD	10.22				10.22		10.22	$ 315,896	$ 5,095,094	$ 26,647,340
CORRIDOR: VENTURA-CALABASAS	**19.24**				**19.24**		**19.24**	**$ 594,420**	**$ 9,587,427**	**$ 50,142,241**
Ventura County Line To N Cahuenga Blvd										
CAHUENGA BLVD W	2.38				2.38		2.38	$ 73,495	$ 1,185,405	$ 6,199,666

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CALABASAS RD	0.14				0.14		0.14	$ 4,458	$ 71,905	$ 376,063
MULHOLLAND DR	0.09				0.09		0.09	$ 2,821	$ 45,504	$ 237,986
VALLEY CIRCLE BLVD	0.11				0.11		0.11	$ 3,292	$ 53,095	$ 277,686
VENTURA BLVD	16.52				16.52		16.52	$ 510,354	$ 8,231,518	$ 43,050,839
CORRIDOR: VICTORY-SPRR	**4.11**				**4.11**		**4.11**	**$ 126,946**	**$ 2,047,509**	**$ 10,708,470**
Ventura County Line To Canoga Ave										
VICTORY BLVD	4.11				4.11		4.11	$ 126,946	$ 2,047,509	$ 10,708,470
CORRIDOR: WINNETKA AVE	**5.91**				**5.91**		**5.91**	**$ 182,619**	**$ 2,945,469**	**$ 15,404,803**
Devonshire St To Ventura Blvd										
WINNETKA AV	5.91				5.91		5.91	$ 182,619	$ 2,945,469	$ 15,404,803
CORRIDOR: WOODLEY	**6.40**				**6.40**	**1.41**	**7.80**	**$ 197,698**	**$ 3,188,671**	**$ 16,676,747**
Rinaldi St To La River										
Off Street						1.41	1.41	$ -	$ -	$ -
WOODLEY AV	6.40				6.40		6.40	$ 197,698	$ 3,188,671	$ 16,676,747
CORRIDOR: WOODMAN AVE	**9.89**				**9.89**		**9.89**	**$ 305,730**	**$ 4,931,134**	**$ 25,789,832**
San Fernando Rd To Ventura Blvd										
FOX ST	1.46				1.46		1.46	$ 45,066	$ 726,863	$ 3,801,493
WOODMAN AV	8.44				8.44		8.44	$ 260,665	$ 4,204,271	$ 21,988,340
San Fernando	**2.19**		**1.11**		**3.29**	**1.17**	**4.46**	**$ 249,108**	**$ 4,001,224**	**$ 20,939,427**
CORRIDOR: BRAND	**0.53**				**0.53**		**0.53**	**$ 16,370**	**$ 264,036**	**$ 1,380,906**
Sepulveda Blvd To San Fernando Rd										
S BRAND BLVD	0.53				0.53		0.53	$ 16,370	$ 264,036	$ 1,380,906
CORRIDOR: GLENOAKS BLVD	**1.27**				**1.27**		**1.27**	**$ 39,319**	**$ 634,176**	**$ 3,316,739**
Foothill Fwy To Verdugo Wash										
GLENOAKS BLVD	1.27				1.27		1.27	$ 39,319	$ 634,176	$ 3,316,739
CORRIDOR: HUBBARD-RINALDI	**0.38**				**0.38**		**0.38**	**$ 11,851**	**$ 191,149**	**$ 999,707**
Independence Ave To Pacoima Wash										
HUBBARD ST	0.01				0.01		0.01	$ 192	$ 3,096	$ 16,191
N HUBBARD AV	0.27				0.27		0.27	$ 8,418	$ 135,772	$ 710,088
S HUBBARD AV	0.10				0.10		0.10	$ 3,241	$ 52,281	$ 273,428
CORRIDOR: LANCASTER-SANTA CLARITA-SFV						**1.17**	**1.17**	**$ -**	**$ -**	**$ -**
Ave H To Sp Rr Burbank										
Off Street						1.17	1.17	$ -	$ -	$ -
CORRIDOR: PACOIMA WASH/CHANNEL			**1.11**		**1.11**		**1.11**	**$ 181,568**	**$ 2,911,864**	**$ 15,242,075**
Gavina Ave To La River										
Off Street			1.11		1.11		1.11	$ 181,568	$ 2,911,864	$ 15,242,075
Unincorporated	**0.48**				**0.48**		**0.48**	**$ 14,943**	**$ 241,019**	**$ 1,260,529**
CORRIDOR: PLUMMER-VALLEY CIRCLE	**0.48**				**0.48**		**0.48**	**$ 14,943**	**$ 241,019**	**$ 1,260,529**
Ventura Blvd To Woodman Ave										
LAKE MANOR DR	0.31				0.31		0.31	$ 9,443	$ 152,303	$ 796,546
SMITH RD	0.03				0.03		0.03	$ 992	$ 15,999	$ 83,677
VALLEY CIRCLE BLVD	0.15				0.15		0.15	$ 4,508	$ 72,716	$ 380,306
San Gabriel Valley	**243.73**		**85.14**	**27.45**	**356.32**	**34.50**	**390.82**	**$ 22,839,528**	**$ 367,099,021**	**$ 1,920,929,795**
Alhambra	**9.13**		**1.51**	**4.33**	**14.97**		**14.97**	**$ 740,821**	**$ 11,926,052**	**$ 62,390,988**
CORRIDOR: ALTADENA-LONG BEACH	**2.65**				**2.65**		**2.65**	**$ 81,895**	**$ 1,320,881**	**$ 6,908,210**
Loma Alta Dr To La River										
N GARFIELD AV	0.86				0.86		0.86	$ 26,460	$ 426,766	$ 2,231,987
S GARFIELD AV	1.79				1.79		1.79	$ 55,435	$ 894,115	$ 4,676,222
CORRIDOR: FREMONT-PASADENA	**2.70**			**0.22**	**2.92**		**2.92**	**$ 94,308**	**$ 1,521,098**	**$ 7,955,343**
E Union St To Whittier Blvd										
N FREMONT AV				0.22	0.22		0.22	$ 10,948	$ 176,581	$ 923,519
S FREMONT AV	2.70				2.70		2.70	$ 83,360	$ 1,344,517	$ 7,031,825
CORRIDOR: GARVEY-RAMONA	**0.66**				**0.66**		**0.66**	**$ 20,259**	**$ 326,753**	**$ 1,708,919**
Whittier Blvd To Sp Rr										
RAMONA RD	0.38				0.38		0.38	$ 11,790	$ 190,169	$ 994,584
S GARVEY AV	0.27				0.27		0.27	$ 8,468	$ 136,584	$ 714,335
CORRIDOR: MAIN ST	**2.12**			**0.86**	**2.97**		**2.97**	**$ 107,173**	**$ 1,728,594**	**$ 9,040,549**
Huntington Dr N To Arrow Hwy										
E MAIN ST	0.89				0.89		0.89	$ 27,603	$ 445,211	$ 2,328,453
POPLAR BLVD				0.86	0.86		0.86	$ 41,804	$ 674,261	$ 3,526,386
W MAIN ST	1.22				1.22		1.22	$ 37,766	$ 609,122	$ 3,185,710
CORRIDOR: MISSION-VALLEY	**1.01**			**2.03**	**3.04**		**3.04**	**$ 130,334**	**$ 2,102,160**	**$ 10,994,298**
E Cesar E Chavez Ave To La Puente Creek										
E VALLEY BLVD	0.85				0.85		0.85	$ 26,152	$ 421,799	$ 2,206,010
VALLEY BLVD	0.01				0.01		0.01	$ 197	$ 3,173	$ 16,595
W VALLEY BLVD	0.15			2.03	2.19		2.19	$ 103,986	$ 1,677,188	$ 8,771,693
CORRIDOR: SPRR-SAN GABRIEL			**1.51**	**1.22**	**2.73**		**2.73**	**$ 306,852**	**$ 4,926,565**	**$ 25,783,670**
Fremont Ave To Eaton Wash										
FRONT ST				1.22	1.22		1.22	$ 59,594	$ 961,194	$ 5,027,044
Off Street			1.51		1.51		1.51	$ 247,258	$ 3,965,371	$ 20,756,626
Arcadia	**9.66**		**0.12**		**9.78**	**1.56**	**11.34**	**$ 318,811**	**$ 5,140,241**	**$ 26,884,927**
CORRIDOR: COLORADO-FOOTHILL	**3.02**				**3.02**		**3.02**	**$ 93,165**	**$ 1,502,655**	**$ 7,858,887**
La River To San Antonio Wash										
E HUNTINGTON DR	0.63				0.63		0.63	$ 19,349	$ 312,085	$ 1,632,206
W COLORADO PL	0.53				0.53		0.53	$ 16,329	$ 263,368	$ 1,377,414
W COLORADO ST	1.56				1.56		1.56	$ 48,233	$ 777,944	$ 4,068,648
W HUNTINGTON DR	0.30				0.30		0.30	$ 9,254	$ 149,258	$ 780,620
CORRIDOR: DUARTE-EL MONTE	**2.18**				**2.18**		**2.18**	**$ 67,234**	**$ 1,084,415**	**$ 5,671,490**
W Huntington Dr To Rio Hondo										
CAMPUS DR	0.35				0.35		0.35	$ 10,810	$ 174,355	$ 911,879
EL MONTE AV	1.75				1.75		1.75	$ 54,089	$ 872,402	$ 4,562,661
W DUARTE RD	0.08				0.08		0.08	$ 2,335	$ 37,658	$ 196,950
CORRIDOR: HUNTINGTON-MAIN	**2.13**				**2.13**		**2.13**	**$ 65,963**	**$ 1,063,915**	**$ 5,564,277**
E Huntington Dr To E Imperial Hwy										
HUNTINGTON DR	0.16				0.16		0.16	$ 4,902	$ 79,061	$ 413,492
W HUNTINGTON DR	1.98				1.98		1.98	$ 61,061	$ 984,854	$ 5,150,785
CORRIDOR: MAIN ST	**2.10**				**2.10**		**2.10**	**$ 64,812**	**$ 1,045,358**	**$ 5,467,224**
Huntington Dr N To Arrow Hwy										
E LIVE OAK AV	0.82				0.82		0.82	$ 25,190	$ 406,291	$ 2,124,901
LAS TUNAS DR	1.23				1.23		1.23	$ 38,070	$ 614,030	$ 3,211,379
W LIVE OAK AV	0.05				0.05		0.05	$ 1,552	$ 25,037	$ 130,945

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CORRIDOR: PECK RD	0.23				0.23		0.23	$ 7,200	$ 116,125	$ 607,335
Huntington Dr To Whittier Blvd										
PECK RD	0.23				0.23		0.23	$ 7,200	$ 116,125	$ 607,335
CORRIDOR: RIO HONDO			0.12		0.12	1.56	1.69	$ 20,438	$ 327,772	$ 1,715,713
Peck Rd To La River										
Off Street			0.12		0.12	1.56	1.69	$ 20,438	$ 327,772	$ 1,715,713
Azusa	7.32		1.45	1.16	9.93	3.46	13.39	$ 520,211	$ 8,368,763	$ 43,785,635
CORRIDOR: ARROW-BONITA	1.13				1.13		1.13	$ 34,972	$ 564,071	$ 2,950,093
Live Oak Ave To San Antonio Wash										
W ARROW HWY	1.13				1.13		1.13	$ 34,972	$ 564,071	$ 2,950,093
CORRIDOR: AZUSA AVE	2.81			1.16	3.97		3.97	$ 143,661	$ 2,317,114	$ 12,118,506
San Gabriel River To Colima Rd										
N AZUSA AV	1.79				1.79		1.79	$ 55,195	$ 890,244	$ 4,655,978
N SAN GABRIEL AV				0.21	0.21		0.21	$ 10,139	$ 163,524	$ 855,231
S AZUSA AV	1.02				1.02		1.02	$ 31,669	$ 510,792	$ 2,671,441
SAN GABRIEL CANYON RD				0.96	0.96		0.96	$ 46,658	$ 752,554	$ 3,935,856
CORRIDOR: BIG DALTON WASH			0.97		0.97		0.97	$ 159,107	$ 2,551,650	$ 13,356,544
Big Dalton Debris Dam To Walnut Creek										
Off Street			0.97		0.97		0.97	$ 159,107	$ 2,551,650	$ 13,356,544
CORRIDOR: COLORADO-FOOTHILL	2.88				2.88		2.88	$ 88,883	$ 1,433,605	$ 7,497,753
La River To San Antonio Wash										
E ALOSTA AV	1.08				1.08		1.08	$ 33,295	$ 537,017	$ 2,808,601
E FOOTHILL BLVD	0.81				0.81		0.81	$ 24,952	$ 402,448	$ 2,104,801
W FOOTHILL BLVD	0.99				0.99		0.99	$ 30,637	$ 494,140	$ 2,584,350
CORRIDOR: LITTLE DALTON WASH			0.48		0.48		0.48	$ 77,988	$ 1,250,714	$ 6,546,829
Little Dalton Wash To E Alosta Ave										
Off Street			0.48		0.48		0.48	$ 77,988	$ 1,250,714	$ 6,546,829
CORRIDOR: SAN GABRIEL RIVER						3.46	3.46	$ -	$ -	$ -
Old San Gabriel Cyn To Coyote Creek										
Off Street						3.46	3.46	$ -	$ -	$ -
CORRIDOR: SUNSET AVE	0.50				0.50		0.50	$ 15,600	$ 251,608	$ 1,315,911
Foothill Blvd To Puente Creek										
IRWINDALE AV	0.50				0.50		0.50	$ 15,600	$ 251,608	$ 1,315,911
Baldwin Park	5.11		4.70		9.81	1.35	11.16	$ 928,618	$ 14,907,050	$ 78,019,163
CORRIDOR: BADILLO-RAMONA	3.33				3.33		3.33	$ 102,997	$ 1,661,247	$ 8,688,322
Mission-Valley Sprr To W Bonita Ave										
BADILLO ST	0.56				0.56		0.56	$ 17,243	$ 278,117	$ 1,454,550
RAMONA BLVD	2.78				2.78		2.78	$ 85,754	$ 1,383,130	$ 7,233,771
CORRIDOR: BIG DALTON WASH			2.09		2.09		2.09	$ 342,923	$ 5,499,578	$ 28,787,388
Big Dalton Debris Dam To Walnut Creek										
Off Street			2.09		2.09		2.09	$ 342,923	$ 5,499,578	$ 28,787,388
CORRIDOR: LOS ANGELES-LOWER AZUSA	1.77				1.77		1.77	$ 54,794	$ 883,767	$ 4,622,100
Rosemead Blvd To Big Dalton Wash										
LOS ANGELES ST	1.77				1.77		1.77	$ 54,794	$ 883,767	$ 4,622,100
CORRIDOR: SAN GABRIEL RIVER						1.35	1.35	$ -	$ -	$ -
Old San Gabriel Cyn To Coyote Creek										
Off Street						1.35	1.35	$ -	$ -	$ -
CORRIDOR: WALNUT CREEK			2.61		2.61		2.61	$ 427,904	$ 6,862,459	$ 35,921,352
San Gabriel River To Fairplex Dr										
Off Street			2.61		2.61		2.61	$ 427,904	$ 6,862,459	$ 35,921,352
Claremont	5.81		2.43		8.24	2.84	11.08	$ 577,914	$ 9,284,683	$ 48,587,465
CORRIDOR: ARROW-BONITA	1.73		0.33		2.06		2.06	$ 107,164	$ 1,723,546	$ 9,017,990
Live Oak Ave To San Antonio Wash										
E 1ST ST	0.59				0.59		0.59	$ 18,351	$ 295,978	$ 1,547,966
E BONITA AV	0.75				0.75		0.75	$ 23,207	$ 374,308	$ 1,957,632
N COLLEGE AV	0.14				0.14		0.14	$ 4,273	$ 68,927	$ 360,488
Off Street			0.33		0.33		0.33	$ 53,573	$ 859,172	$ 4,497,311
W BONITA AV	0.25				0.25		0.25	$ 7,760	$ 125,161	$ 654,593
CORRIDOR: COLORADO-FOOTHILL	2.38				2.38		2.38	$ 73,653	$ 1,187,947	$ 6,212,960
La River To San Antonio Wash										
E FOOTHILL BLVD	0.69				0.69		0.69	$ 21,306	$ 343,646	$ 1,797,270
W FOOTHILL BLVD	1.69				1.69		1.69	$ 52,347	$ 844,300	$ 4,415,691
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE	0.12		2.10		2.22	2.84	5.06	$ 348,406	$ 5,587,853	$ 29,249,203
Puente Creek To San Antonio Dam										
Off Street			2.10		2.10	2.84	4.94	$ 344,767	$ 5,529,150	$ 28,942,183
W BASELINE RD	0.12				0.12		0.12	$ 3,640	$ 58,704	$ 307,020
CORRIDOR: TOWNE AVE	1.58				1.58		1.58	$ 48,691	$ 785,337	$ 4,107,312
Base Line Rd To San Bernardino County Line										
N TOWNE AV	1.58				1.58		1.58	$ 48,691	$ 785,337	$ 4,107,312
Covina	8.56		1.84		10.39		10.39	$ 565,654	$ 9,095,845	$ 47,592,877
CORRIDOR: ARROW-BONITA	0.47				0.47		0.47	$ 14,661	$ 236,470	$ 1,236,738
Live Oak Ave To San Antonio Wash										
E ARROW HWY	0.47				0.47		0.47	$ 14,661	$ 236,470	$ 1,236,738
CORRIDOR: AZUSA AVE	1.41				1.41		1.41	$ 43,675	$ 704,439	$ 3,684,216
San Gabriel River To Colima Rd										
N AZUSA AV	1.40				1.40		1.40	$ 43,359	$ 699,336	$ 3,657,530
S AZUSA AV	0.01				0.01		0.01	$ 316	$ 5,103	$ 26,686
CORRIDOR: BADILLO-RAMONA	4.15				4.15		4.15	$ 128,083	$ 2,065,848	$ 10,804,384
Mission-Valley Sprr To W Bonita Ave										
E BADILLO ST	2.63				2.63		2.63	$ 81,191	$ 1,309,534	$ 6,848,863
W BADILLO ST	1.52				1.52		1.52	$ 46,891	$ 756,314	$ 3,955,521
CORRIDOR: BIG DALTON WASH			0.37		0.37		0.37	$ 60,013	$ 962,450	$ 5,037,916
Big Dalton Debris Dam To Walnut Creek										
Off Street			0.37		0.37		0.37	$ 60,013	$ 962,450	$ 5,037,916
CORRIDOR: GLENDORA-GRAND	1.94				1.94		1.94	$ 60,059	$ 968,687	$ 5,066,234
Little Dalton Wash To Sp Rr										
N GLENDORA AV	1.17				1.17		1.17	$ 36,072	$ 581,800	$ 3,042,812
S GRAND AV	0.78				0.78		0.78	$ 23,987	$ 386,887	$ 2,023,421
CORRIDOR: WALNUT CREEK	0.58		1.47		2.05		2.05	$ 259,164	$ 4,157,952	$ 21,763,390
San Gabriel River To Fairplex Dr										
E PUENTE ST	0.58				0.58		0.58	$ 17,960	$ 289,685	$ 1,515,052

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Off Street			1.47		1.47		1.47	$ 241,203	$ 3,868,267	$ 20,248,338
Diamond Bar	**1.63**				**1.63**		**1.63**	**$ 50,364**	**$ 812,317**	**$ 4,248,418**
CORRIDOR: COLIMA RD	**1.63**				**1.63**		**1.63**	**$ 50,364**	**$ 812,317**	**$ 4,248,418**
Telegraph Rd To Orange County Line										
BREA CANYON RD	0.30				0.30		0.30	$ 9,342	$ 150,685	$ 788,081
GOLDEN SPRINGS DR	0.40				0.40		0.40	$ 12,481	$ 201,311	$ 1,052,858
LEMON AV	0.41				0.41		0.41	$ 12,780	$ 206,134	$ 1,078,082
LYCOMING ST	0.51				0.51		0.51	$ 15,760	$ 254,187	$ 1,329,396
Duarte	**2.43**				**2.43**		**2.43**	**$ 75,143**	**$ 1,211,987**	**$ 6,338,693**
CORRIDOR: COLORADO-FOOTHILL	**2.43**				**2.43**		**2.43**	**$ 75,143**	**$ 1,211,987**	**$ 6,338,693**
La River To San Antonio Wash										
HUNTINGTON DR	2.43				2.43		2.43	$ 75,143	$ 1,211,987	$ 6,338,693
El Monte	**12.31**		**3.57**		**15.88**	**3.66**	**19.54**	**$ 965,468**	**$ 15,518,436**	**$ 81,203,377**
CORRIDOR: BADILLO-RAMONA	**1.66**				**1.66**		**1.66**	**$ 51,254**	**$ 826,682**	**$ 4,323,546**
Mission-Valley Sprr To W Bonita Ave										
RAMONA BLVD	1.66				1.66		1.66	$ 51,254	$ 826,682	$ 4,323,546
CORRIDOR: DUARTE-EL MONTE	**0.20**		**0.11**		**0.31**		**0.31**	**$ 23,979**	**$ 385,137**	**$ 2,015,533**
W Huntington Dr To Rio Hondo										
EL MONTE AV	0.20				0.20		0.20	$ 6,312	$ 101,805	$ 532,439
Off Street			0.11		0.11		0.11	$ 17,667	$ 283,332	$ 1,483,095
CORRIDOR: EATON WASH			**1.20**		**1.20**		**1.20**	**$ 197,064**	**$ 3,160,392**	**$ 16,542,987**
New York Dr To Rio Hondo										
Off Street			1.20		1.20		1.20	$ 197,064	$ 3,160,392	$ 16,542,987
CORRIDOR: GARVEY-RAMONA	**2.32**				**2.32**		**2.32**	**$ 71,811**	**$ 1,158,236**	**$ 6,057,572**
Whittier Blvd To Sp Rr										
E GARVEY AV	0.49				0.49		0.49	$ 15,141	$ 244,205	$ 1,277,193
GARVEY AV	1.83				1.83		1.83	$ 56,670	$ 914,030	$ 4,780,379
CORRIDOR: LOS ANGELES-LOWER AZUSA	**3.25**				**3.25**		**3.25**	**$ 100,343**	**$ 1,618,428**	**$ 8,464,377**
Rosemead Blvd To Big Dalton Wash										
LOWER AZUSA RD	3.25				3.25		3.25	$ 100,343	$ 1,618,428	$ 8,464,377
CORRIDOR: MISSION-VALLEY	**0.83**		**2.26**		**3.09**		**3.09**	**$ 395,929**	**$ 6,352,013**	**$ 33,247,581**
E Cesar E Chavez Ave To La Puente Creek										
Off Street			2.26		2.26		2.26	$ 370,226	$ 5,937,451	$ 31,079,424
VALLEY BLVD	0.83				0.83		0.83	$ 25,703	$ 414,562	$ 2,168,157
CORRIDOR: PECK RD	**4.05**				**4.05**		**4.05**	**$ 125,088**	**$ 2,017,549**	**$ 10,551,781**
Huntington Dr To Whittier Blvd										
PECK RD	4.05				4.05		4.05	$ 125,088	$ 2,017,549	$ 10,551,781
CORRIDOR: RIO HONDO						**3.66**	**3.66**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						3.66	3.66	$ -	$ -	$ -
Glendora	**5.72**		**7.98**	**0.43**	**14.12**		**14.12**	**$ 1,506,172**	**$ 24,173,142**	**$ 126,519,399**
CORRIDOR: BIG DALTON WASH			**4.38**		**4.38**		**4.38**	**$ 718,095**	**$ 11,516,348**	**$ 60,282,007**
Big Dalton Debris Dam To Walnut Creek										
Off Street			4.38		4.38		4.38	$ 718,095	$ 11,516,348	$ 60,282,007
CORRIDOR: COLORADO-FOOTHILL	**4.01**				**4.01**		**4.01**	**$ 123,984**	**$ 1,999,740**	**$ 10,458,639**
La River To San Antonio Wash										
E FOOTHILL BLVD	0.50				0.50		0.50	$ 15,486	$ 249,768	$ 1,306,288
E ROUTE 66	2.51				2.51		2.51	$ 77,497	$ 1,249,949	$ 6,537,233
W ROUTE 66	1.00				1.00		1.00	$ 31,001	$ 500,023	$ 2,615,119
CORRIDOR: GLENDORA-GRAND	**1.71**			**0.43**	**2.13**		**2.13**	**$ 73,564**	**$ 1,186,523**	**$ 6,205,514**
Little Dalton Wash To Sp Rr										
E ADA AV				0.05	0.05		0.05	$ 2,571	$ 41,461	$ 216,843
S GLENDORA AV	1.71				1.71		1.71	$ 52,779	$ 851,266	$ 4,452,123
S VIS BONITA AV				0.08	0.08		0.08	$ 4,022	$ 64,865	$ 339,246
S WABASH AV				0.29	0.29		0.29	$ 14,194	$ 228,930	$ 1,197,303
CORRIDOR: LITTLE DALTON WASH			**3.60**		**3.60**		**3.60**	**$ 590,529**	**$ 9,470,532**	**$ 49,573,239**
Little Dalton Wash To E Alosta Ave										
Off Street			3.60		3.60		3.60	$ 590,529	$ 9,470,532	$ 49,573,239
Industry	**4.90**		**12.44**		**17.35**	**2.18**	**19.52**	**$ 2,193,001**	**$ 35,183,842**	**$ 184,157,927**
CORRIDOR: AZUSA AVE	**2.54**				**2.54**		**2.54**	**$ 78,578**	**$ 1,267,393**	**$ 6,628,465**
San Gabriel River To Colima Rd										
AZUSA AV	0.44				0.44		0.44	$ 13,531	$ 218,246	$ 1,141,426
S AZUSA AV	2.11				2.11		2.11	$ 65,047	$ 1,049,147	$ 5,487,039
CORRIDOR: COLIMA RD	**0.97**				**0.97**		**0.97**	**$ 29,862**	**$ 481,650**	**$ 2,519,028**
Telegraph Rd To Orange County Line										
BREA CANYON RD	0.97				0.97		0.97	$ 29,862	$ 481,650	$ 2,519,028
CORRIDOR: GLENDORA-GRAND	**0.15**				**0.15**		**0.15**	**$ 4,524**	**$ 72,961**	**$ 381,585**
Little Dalton Wash To Sp Rr										
N GRAND AV	0.15				0.15		0.15	$ 4,524	$ 72,961	$ 381,585
CORRIDOR: MISSION-SPRR-UPRR			**9.75**		**9.75**	**0.72**	**10.47**	**$ 1,599,318**	**$ 25,648,853**	**$ 134,258,216**
San Gabriel River To San Antonio Wash										
Off Street			9.75		9.75	0.72	10.47	$ 1,599,318	$ 25,648,853	$ 134,258,216
CORRIDOR: MISSION-VALLEY	**0.13**		**0.37**		**0.51**		**0.51**	**$ 65,388**	**$ 1,049,025**	**$ 5,490,795**
E Cesar E Chavez Ave To La Puente Creek										
Off Street			0.37		0.37		0.37	$ 61,292	$ 982,960	$ 5,145,275
VALLEY BLVD	0.13				0.13		0.13	$ 4,096	$ 66,065	$ 345,520
CORRIDOR: PECK RD	**0.25**				**0.25**		**0.25**	**$ 7,752**	**$ 125,036**	**$ 653,940**
Huntington Dr To Whittier Blvd										
PECK RD	0.25				0.25		0.25	$ 7,752	$ 125,036	$ 653,940
CORRIDOR: SAN GABRIEL RIVER						**1.45**	**1.45**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						1.45	1.45	$ -	$ -	$ -
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE			**2.32**		**2.32**		**2.32**	**$ 380,919**	**$ 6,108,930**	**$ 31,977,028**
Puente Creek To San Antonio Dam										
Off Street			2.32		2.32		2.32	$ 380,919	$ 6,108,930	$ 31,977,028
CORRIDOR: SUNSET AVE	**0.86**				**0.86**		**0.86**	**$ 26,660**	**$ 429,994**	**$ 2,248,869**
Foothill Blvd To Puente Creek										
7TH AV	0.66				0.66		0.66	$ 20,266	$ 326,874	$ 1,709,549
N SUNSET AV	0.21				0.21		0.21	$ 6,393	$ 103,121	$ 539,320
Irwindale	**11.87**		**1.22**		**13.09**	**8.18**	**21.27**	**$ 566,981**	**$ 9,126,493**	**$ 47,745,924**
CORRIDOR: ARROW-BONITA	**3.87**				**3.87**		**3.87**	**$ 119,710**	**$ 1,930,812**	**$ 10,098,145**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Live Oak Ave To San Antonio Wash										
ARROW HWY	2.03				2.03		2.03	$ 62,770	$ 1,012,426	$ 5,294,987
LIVE OAK AV	1.84				1.84		1.84	$ 56,940	$ 918,386	$ 4,803,157
CORRIDOR: BIG DALTON WASH			**1.22**		**1.22**		**1.22**	**$ 200,313**	**$ 3,212,489**	**$ 16,815,685**
Big Dalton Debris Dam To Walnut Creek										
Off Street			1.22		1.22		1.22	$ 200,313	$ 3,212,489	$ 16,815,685
CORRIDOR: COLORADO-FOOTHILL	**0.95**				**0.95**		**0.95**	**$ 29,427**	**$ 474,635**	**$ 2,482,342**
La River To San Antonio Wash										
E FOOTHILL BLVD	0.14				0.14		0.14	$ 4,172	$ 67,295	$ 351,955
FOOTHILL BLVD	0.44				0.44		0.44	$ 13,636	$ 219,933	$ 1,150,248
HUNTINGTON DR	0.38				0.38		0.38	$ 11,619	$ 187,407	$ 980,139
CORRIDOR: LOS ANGELES-LOWER AZUSA	**1.59**				**1.59**		**1.59**	**$ 49,172**	**$ 793,102**	**$ 4,147,925**
Rosemead Blvd To Big Dalton Wash										
LOS ANGELES ST	0.65				0.65		0.65	$ 20,138	$ 324,804	$ 1,698,726
LOWER AZUSA RD	0.94				0.94		0.94	$ 29,034	$ 468,298	$ 2,449,199
CORRIDOR: MAIN ST	**2.74**				**2.74**		**2.74**	**$ 84,815**	**$ 1,367,976**	**$ 7,154,517**
Huntington Dr N To Arrow Hwy										
ARROW HWY	1.92				1.92		1.92	$ 59,380	$ 957,748	$ 5,009,020
LIVE OAK AV	0.82				0.82		0.82	$ 25,434	$ 410,229	$ 2,145,496
CORRIDOR: PECK RD	**0.61**				**0.61**		**0.61**	**$ 18,816**	**$ 303,489**	**$ 1,587,249**
Huntington Dr To Whittier Blvd										
MYRTLE AV	0.41				0.41		0.41	$ 12,812	$ 206,640	$ 1,080,728
PECK RD	0.19				0.19		0.19	$ 6,005	$ 96,849	$ 506,521
CORRIDOR: SAN GABRIEL RIVER						**8.18**	**8.18**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						8.18	8.18	$ -	$ -	$ -
CORRIDOR: SUNSET AVE	**2.09**				**2.09**		**2.09**	**$ 64,727**	**$ 1,043,989**	**$ 5,460,063**
Foothill Blvd To Puente Creek										
IRWINDALE AV	2.09				2.09		2.09	$ 64,727	$ 1,043,989	$ 5,460,063
La Canada Flintridge	**0.27**				**0.27**		**0.27**	**$ 8,255**	**$ 133,149**	**$ 696,370**
CORRIDOR: ARROYO-VERDUGO	**0.27**				**0.27**		**0.27**	**$ 8,255**	**$ 133,149**	**$ 696,370**
Van Nuys Blvd To York Blvd										
HIGHLAND DR	0.27				0.27		0.27	$ 8,255	$ 133,149	$ 696,370
La Verne	**4.84**				**4.84**		**4.84**	**$ 149,631**	**$ 2,413,403**	**$ 12,622,098**
CORRIDOR: ARROW-BONITA	**2.12**				**2.12**		**2.12**	**$ 65,606**	**$ 1,058,156**	**$ 5,534,153**
Live Oak Ave To San Antonio Wash										
BONITA AV	1.85				1.85		1.85	$ 57,098	$ 920,935	$ 4,816,489
E BONITA AV	0.28				0.28		0.28	$ 8,508	$ 137,221	$ 717,664
CORRIDOR: COLORADO-FOOTHILL	**2.39**				**2.39**		**2.39**	**$ 73,765**	**$ 1,189,761**	**$ 6,222,451**
La River To San Antonio Wash										
FOOTHILL BLVD	2.39				2.39		2.39	$ 73,765	$ 1,189,761	$ 6,222,451
CORRIDOR: FAIRPLEX-RIDGEWAY	**0.33**				**0.33**		**0.33**	**$ 10,260**	**$ 165,486**	**$ 865,494**
Bonita Ave To San Jose Wash										
E ST	0.33				0.33		0.33	$ 10,260	$ 165,486	$ 865,494
Monrovia	**3.48**				**3.48**		**3.48**	**$ 107,540**	**$ 1,734,513**	**$ 9,071,502**
CORRIDOR: COLORADO-FOOTHILL	**1.97**				**1.97**		**1.97**	**$ 60,925**	**$ 982,659**	**$ 5,139,305**
La River To San Antonio Wash										
E HUNTINGTON DR	0.85				0.85		0.85	$ 26,118	$ 421,256	$ 2,203,170
W HUNTINGTON DR	1.13				1.13		1.13	$ 34,807	$ 561,403	$ 2,936,135
CORRIDOR: PECK RD	**1.51**				**1.51**		**1.51**	**$ 46,615**	**$ 751,854**	**$ 3,932,197**
Huntington Dr To Whittier Blvd										
S MYRTLE AV	1.18				1.18		1.18	$ 36,523	$ 589,085	$ 3,080,915
S PECK RD	0.33				0.33		0.33	$ 10,092	$ 162,769	$ 851,282
Monterey Park	**10.47**				**10.47**		**10.47**	**$ 323,476**	**$ 5,217,349**	**$ 27,286,737**
CORRIDOR: ALTADENA-LONG BEACH	**2.62**				**2.62**		**2.62**	**$ 80,896**	**$ 1,304,768**	**$ 6,823,939**
Loma Alta Dr To La River										
N GARFIELD AV	0.51				0.51		0.51	$ 15,862	$ 255,835	$ 1,338,019
S GARFIELD AV	2.10				2.10		2.10	$ 65,034	$ 1,048,933	$ 5,485,920
CORRIDOR: CHAVEZ-SUNSET-RIGGIN	**3.08**				**3.08**		**3.08**	**$ 95,322**	**$ 1,537,448**	**$ 8,040,854**
N Fairfax Ave To Alhambra Wash										
AVD CESAR CHAVEZ	0.66				0.66		0.66	$ 20,483	$ 330,373	$ 1,727,849
POTRERO GRANDE DR	1.48				1.48		1.48	$ 45,881	$ 740,017	$ 3,870,291
W RIGGIN ST	0.94				0.94		0.94	$ 28,958	$ 467,058	$ 2,442,714
CORRIDOR: FREMONT-PASADENA	**1.49**				**1.49**		**1.49**	**$ 45,996**	**$ 741,878**	**$ 3,880,020**
E Union St To Whittier Blvd										
MONTEREY PASS RD	1.49				1.49		1.49	$ 45,996	$ 741,878	$ 3,880,020
CORRIDOR: GARVEY-RAMONA	**3.28**				**3.28**		**3.28**	**$ 101,262**	**$ 1,633,255**	**$ 8,541,925**
Whittier Blvd To Sp Rr										
E GARVEY AV	0.91				0.91		0.91	$ 28,076	$ 452,833	$ 2,368,319
RAMONA RD	0.57				0.57		0.57	$ 17,502	$ 282,284	$ 1,476,345
W GARVEY AV	1.80				1.80		1.80	$ 55,685	$ 898,138	$ 4,697,261
Pasadena	**38.73**		**2.69**	**8.40**	**49.83**		**49.83**	**$ 2,049,040**	**$ 33,008,503**	**$ 172,666,178**
CORRIDOR: ALLEN AVE	**2.31**				**2.31**		**2.31**	**$ 71,273**	**$ 1,149,560**	**$ 6,012,198**
E Altadena Dr To Orlando Rd										
N ALLEN AV	1.67				1.67		1.67	$ 51,746	$ 834,615	$ 4,365,036
S ALLEN AV	0.63				0.63		0.63	$ 19,527	$ 314,945	$ 1,647,162
CORRIDOR: ALTADENA-LONG BEACH	**4.00**			**0.37**	**4.37**		**4.37**	**$ 141,855**	**$ 2,287,980**	**$ 11,966,133**
Loma Alta Dr To La River										
N MARENGO AV				0.37	0.37		0.37	$ 18,288	$ 294,960	$ 1,542,643
N RAYMOND AV	2.00				2.00		2.00	$ 61,899	$ 998,374	$ 5,221,495
S MARENGO AV	2.00				2.00		2.00	$ 61,668	$ 994,645	$ 5,201,995
CORRIDOR: ARDEN-WILSON	**0.11**			**2.25**	**2.36**		**2.36**	**$ 113,124**	**$ 1,824,584**	**$ 9,542,574**
E Orange Grove Blvd To S El Molino Ave										
ARDEN RD				0.56	0.56		0.56	$ 27,438	$ 442,555	$ 2,314,562
N WILSON AV				0.70	0.70		0.70	$ 34,383	$ 554,557	$ 2,900,331
S LAKE AV				0.00	0.00		0.00	$ 190	$ 3,063	$ 16,019
S WILSON AV				0.98	0.98		0.98	$ 47,689	$ 769,179	$ 4,022,806
WILSON AV	0.11				0.11		0.11	$ 3,424	$ 55,231	$ 288,856
CORRIDOR: ARROYO-VERDUGO	**5.03**		**0.05**		**5.07**		**5.07**	**$ 162,830**	**$ 2,625,602**	**$ 13,732,435**
Van Nuys Blvd To York Blvd										
ARROYO BLVD	0.89				0.89		0.89	$ 27,576	$ 444,771	$ 2,326,152

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
LINDA VISTA AVE	0.12				0.12		0.12	$ 3,800	$ 61,283	$ 320,512
Off Street	2.82		0.05		2.87		2.87	$ 94,633	$ 1,525,662	$ 7,979,745
S ARROYO BLVD	0.52				0.52		0.52	$ 15,963	$ 257,471	$ 1,346,571
S GRAND AV	0.41				0.41		0.41	$ 12,719	$ 205,137	$ 1,072,868
SAN PASCUAL AV	0.06				0.06		0.06	$ 1,845	$ 29,765	$ 155,672
W CALIFORNIA BLVD	0.20				0.20		0.20	$ 6,294	$ 101,513	$ 530,916
CORRIDOR: COLORADO-FOOTHILL	**4.16**			**1.90**	**6.05**		**6.05**	**$ 220,987**	**$ 3,564,303**	**$ 18,641,304**
La River To San Antonio Wash										
E COLORADO BLVD	2.35				2.35		2.35	$ 72,479	$ 1,169,012	$ 6,113,932
E UNION ST				1.68	1.68		1.68	$ 82,244	$ 1,326,514	$ 6,937,670
N HILL AV	0.14				0.14		0.14	$ 4,369	$ 70,465	$ 368,533
W COLORADO BLVD	1.67				1.67		1.67	$ 51,621	$ 832,598	$ 4,354,488
W UNION ST				0.21	0.21		0.21	$ 10,274	$ 165,713	$ 866,679
CORRIDOR: EATON WASH			**2.65**		**2.65**		**2.65**	**$ 434,637**	**$ 6,970,427**	**$ 36,486,506**
New York Dr To Rio Hondo										
Off Street			2.65		2.65		2.65	$ 434,637	$ 6,970,427	$ 36,486,506
CORRIDOR: FREMONT-PASADENA	**1.51**			**0.03**	**1.54**		**1.54**	**$ 48,153**	**$ 776,668**	**$ 4,061,972**
E Union St To Whittier Blvd										
COLUMBIA ST				0.03	0.03		0.03	$ 1,609	$ 25,950	$ 135,716
S PASADENA AV	1.50				1.50		1.50	$ 46,269	$ 746,282	$ 3,903,053
W DEL MAR BLVD	0.01				0.01		0.01	$ 275	$ 4,436	$ 23,203
CORRIDOR: LAKEWOOD-ROSEMEAD	**0.85**				**0.85**		**0.85**	**$ 26,139**	**$ 421,595**	**$ 2,204,941**
E Orange Grove Blvd To Pch										
N ROSEMEAD BLVD	0.85				0.85		0.85	$ 26,139	$ 421,595	$ 2,204,941
CORRIDOR: MAPLE-CORSON	**6.21**			**1.83**	**8.04**		**8.04**	**$ 281,438**	**$ 4,539,321**	**$ 23,740,650**
W Colorado Blvd To Eaton Wash										
CORSON ST	0.65				0.65		0.65	$ 19,955	$ 321,855	$ 1,683,304
E CORSON ST	1.14			1.67	2.81		2.81	$ 116,819	$ 1,884,180	$ 9,854,261
E FOOTHILL BLVD	0.11				0.11		0.11	$ 3,451	$ 55,656	$ 291,080
E MAPLE ST	3.22				3.22		3.22	$ 99,520	$ 1,605,164	$ 8,395,008
E SIERRA MADRE BLVD	0.00				0.00		0.00	$ 142	$ 2,291	$ 11,981
LA TIERRA ST	0.13				0.13		0.13	$ 4,090	$ 65,968	$ 345,011
MAPLE ST	0.44				0.44		0.44	$ 13,519	$ 218,051	$ 1,140,408
N PASADENA AV				0.16	0.16		0.16	$ 7,901	$ 127,442	$ 666,521
SAINT JOHN AV	0.27				0.27		0.27	$ 8,379	$ 135,145	$ 706,811
SUNNYSLOPE AVE	0.06				0.06		0.06	$ 1,906	$ 30,747	$ 160,807
TIERRA RD	0.19				0.19		0.19	$ 5,755	$ 92,822	$ 485,460
CORRIDOR: ORANGE GROVE BLVD	**5.16**				**5.16**		**5.16**	**$ 159,590**	**$ 2,574,037**	**$ 13,462,214**
W Colorado Blvd To Rosemead Blvd										
E ORANGE GROVE BLVD	4.03				4.03		4.03	$ 124,379	$ 2,006,118	$ 10,491,996
N ORANGE GROVE BLVD	1.14				1.14		1.14	$ 35,211	$ 567,919	$ 2,970,218
CORRIDOR: PASADENA-YORK	**3.45**			**2.02**	**5.47**		**5.47**	**$ 205,202**	**$ 3,309,705**	**$ 17,309,758**
Oak Grove To Eagle Rock Blvd										
ALPINE ST				0.09	0.09		0.09	$ 4,240	$ 68,380	$ 357,627
ARLINGTON DR	0.21				0.21		0.21	$ 6,426	$ 103,638	$ 542,027
E GLENARM ST	0.69				0.69		0.69	$ 21,387	$ 344,944	$ 1,804,055
MADELINE DR				0.28	0.28		0.28	$ 13,701	$ 220,985	$ 1,155,752
N EL MOLINO AV	2.30				2.30		2.30	$ 71,035	$ 1,145,718	$ 5,992,103
OAK GROVE DR				0.30	0.30		0.30	$ 14,653	$ 236,336	$ 1,236,035
S EL MOLINO AV				1.13	1.13		1.13	$ 55,350	$ 892,748	$ 4,669,071
S MADISON AV				0.13	0.13		0.13	$ 6,127	$ 98,824	$ 516,847
S ORANGE GROVE BLVD				0.09	0.09		0.09	$ 4,618	$ 74,486	$ 389,559
W GLENARM ST	0.25				0.25		0.25	$ 7,666	$ 123,648	$ 646,682
CORRIDOR: SAN GABRIEL-SIERRA MADRE	**1.76**				**1.76**		**1.76**	**$ 54,380**	**$ 877,092**	**$ 4,587,189**
Eaton Wash To Valley Blvd										
E SIERRA MADRE BLVD	0.21				0.21		0.21	$ 6,424	$ 103,610	$ 541,879
N SIERRA MADRE BLVD	1.23				1.23		1.23	$ 37,953	$ 612,153	$ 3,201,558
S SIERRA MADRE BLVD	0.32				0.32		0.32	$ 10,002	$ 161,329	$ 843,752
CORRIDOR: WASHINGTON BLVD	**4.19**				**4.19**		**4.19**	**$ 129,433**	**$ 2,087,630**	**$ 10,918,304**
Woodbury Rd To Woodlyn Rd										
E WASHINGTON BLVD	2.51				2.51		2.51	$ 77,452	$ 1,249,228	$ 6,533,462
N ARROYO BLVD	0.76				0.76		0.76	$ 23,421	$ 377,761	$ 1,975,688
W WASHINGTON BLVD	0.92				0.92		0.92	$ 28,560	$ 460,642	$ 2,409,155
Pomona	**13.13**		**9.35**	**2.64**	**25.11**		**25.11**	**$ 2,068,117**	**$ 33,216,123**	**$ 173,830,336**
CORRIDOR: ARROW-BONITA	**1.38**				**1.38**		**1.38**	**$ 42,673**	**$ 688,272**	**$ 3,599,660**
Live Oak Ave To San Antonio Wash										
E BONITA AV	0.93				0.93		0.93	$ 28,739	$ 463,527	$ 2,424,249
W BONITA AV	0.45				0.45		0.45	$ 13,934	$ 224,744	$ 1,175,411
CORRIDOR: COLORADO-FOOTHILL	**0.83**				**0.83**		**0.83**	**$ 25,700**	**$ 414,520**	**$ 2,167,938**
La River To San Antonio Wash										
E FOOTHILL BLVD	0.68				0.68		0.68	$ 21,081	$ 340,015	$ 1,778,278
W FOOTHILL BLVD	0.15				0.15		0.15	$ 4,619	$ 74,505	$ 389,661
CORRIDOR: FAIRPLEX-RIDGEWAY	**1.11**			**2.34**	**3.45**		**3.45**	**$ 148,657**	**$ 2,397,686**	**$ 12,539,897**
Bonita Ave To San Jose Wash										
FAIRPLEX DR	0.82			1.32	2.13		2.13	$ 89,439	$ 1,442,560	$ 7,544,591
MURCHISON AV				0.71	0.71		0.71	$ 34,610	$ 558,233	$ 2,919,559
RIDGEWAY ST				0.32	0.32		0.32	$ 15,531	$ 250,500	$ 1,310,114
W FAIRPLEX DR	0.29				0.29		0.29	$ 9,076	$ 146,393	$ 765,634
CORRIDOR: MISSION-SPRR-UPRR	**3.95**		**2.65**	**0.30**	**6.90**		**6.90**	**$ 571,578**	**$ 9,179,114**	**$ 48,037,979**
San Gabriel River To San Antonio Wash										
E MISSION BLVD	1.50				1.50		1.50	$ 46,467	$ 749,462	$ 3,919,687
MISSION BLVD	0.17				0.17		0.17	$ 5,122	$ 82,618	$ 432,090
Off Street			2.65		2.65		2.65	$ 435,131	$ 6,978,355	$ 36,528,009
S HUMANE WY				0.30	0.30		0.30	$ 14,404	$ 232,316	$ 1,215,013
W MISSION BLVD	2.28				2.28		2.28	$ 70,455	$ 1,136,363	$ 5,943,181
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE	**0.32**		**6.70**		**7.02**		**7.02**	**$ 1,108,570**	**$ 17,779,454**	**$ 93,065,343**
Puente Creek To San Antonio Dam										
Off Street			6.70		6.70		6.70	$ 1,098,600	$ 17,618,651	$ 92,224,346
TEMPLE AV	0.32				0.32		0.32	$ 9,970	$ 160,803	$ 840,997
CORRIDOR: TOWNE AVE	**5.53**				**5.53**		**5.53**	**$ 170,939**	**$ 2,757,078**	**$ 14,419,518**
Base Line Rd To San Bernardino County Line										

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
N TOWNE AV	2.80				2.80		2.80	$ 86,390	$ 1,393,381	$ 7,287,385
S TOWNE AV	2.74				2.74		2.74	$ 84,549	$ 1,363,697	$ 7,132,133
Rosemead	**6.42**		**2.69**	**0.41**	**9.52**	**0.45**	**9.97**	**$ 660,257**	**$ 10,608,804**	**$ 55,515,736**
CORRIDOR: ALHAMBRA WASH			**1.84**		**1.84**		**1.84**	**$ 301,785**	**$ 4,839,836**	**$ 25,333,987**
Sprr San Gabriel To Rio Hondo										
Off Street			1.84		1.84		1.84	$ 301,785	$ 4,839,836	$ 25,333,987
CORRIDOR: CHAVEZ-SUNSET-RIGGIN				**0.41**	**0.41**		**0.41**	**$ 20,164**	**$ 325,222**	**$ 1,700,910**
N Fairfax Ave To Alhambra Wash										
RUSH ST				0.41	0.41		0.41	$ 20,164	$ 325,222	$ 1,700,910
CORRIDOR: GARVEY-RAMONA	**2.27**				**2.27**		**2.27**	**$ 70,015**	**$ 1,129,275**	**$ 5,906,111**
Whittier Blvd To Sp Rr										
E GARVEY AV	0.24				0.24		0.24	$ 7,539	$ 121,604	$ 635,988
GARVEY AV	2.02				2.02		2.02	$ 62,476	$ 1,007,672	$ 5,270,123
CORRIDOR: LAKEWOOD-ROSEMEAD	**1.91**				**1.91**		**1.91**	**$ 59,016**	**$ 951,875**	**$ 4,978,307**
E Orange Grove Blvd To Pch										
ROSEMEAD BLVD	1.91				1.91		1.91	$ 59,016	$ 951,875	$ 4,978,307
CORRIDOR: LOS ANGELES-LOWER AZUSA	**0.40**				**0.40**		**0.40**	**$ 12,375**	**$ 199,596**	**$ 1,043,887**
Rosemead Blvd To Big Dalton Wash										
LOWER AZUSA RD	0.40				0.40		0.40	$ 12,375	$ 199,596	$ 1,043,887
CORRIDOR: MISSION-VALLEY	**1.84**				**1.84**		**1.84**	**$ 56,884**	**$ 917,490**	**$ 4,798,471**
E Cesar E Chavez Ave To La Puente Creek										
VALLEY BLVD	1.84				1.84		1.84	$ 56,884	$ 917,490	$ 4,798,471
CORRIDOR: RIO HONDO						**0.45**	**0.45**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						0.45	0.45	$ -	$ -	$ -
CORRIDOR: SAN GABRIEL-SIERRA MADRE			**0.85**		**0.85**		**0.85**	**$ 140,017**	**$ 2,245,511**	**$ 11,754,065**
Eaton Wash To Valley Blvd										
Off Street			0.85		0.85		0.85	$ 140,017	$ 2,245,511	$ 11,754,065
San Dimas	**14.11**				**14.11**		**14.11**	**$ 435,950**	**$ 7,031,444**	**$ 36,774,453**
CORRIDOR: ARROW-BONITA	**2.67**				**2.67**		**2.67**	**$ 82,364**	**$ 1,328,455**	**$ 6,947,817**
Live Oak Ave To San Antonio Wash										
E BONITA AV	0.89				0.89		0.89	$ 27,558	$ 444,478	$ 2,324,618
W ARROW HWY	1.05				1.05		1.05	$ 32,423	$ 522,949	$ 2,735,024
W BONITA AV	0.72				0.72		0.72	$ 22,384	$ 361,028	$ 1,888,175
CORRIDOR: BADILLO-RAMONA	**2.43**				**2.43**		**2.43**	**$ 75,096**	**$ 1,211,233**	**$ 6,334,749**
Mission-Valley Sprr To W Bonita Ave										
E BADILLO ST	0.67				0.67		0.67	$ 20,785	$ 335,249	$ 1,753,352
S CATARACT AV	0.37				0.37		0.37	$ 11,579	$ 186,752	$ 976,711
W COVINA BLVD	1.38				1.38		1.38	$ 42,732	$ 689,233	$ 3,604,687
CORRIDOR: COLORADO-FOOTHILL	**1.10**				**1.10**		**1.10**	**$ 34,030**	**$ 548,872**	**$ 2,870,600**
La River To San Antonio Wash										
E FOOTHILL BLVD	0.83				0.83		0.83	$ 25,507	$ 411,405	$ 2,151,648
W FOOTHILL BLVD	0.28				0.28		0.28	$ 8,523	$ 137,467	$ 718,952
CORRIDOR: SAN DIMAS AVE	**3.74**				**3.74**		**3.74**	**$ 115,680**	**$ 1,865,805**	**$ 9,758,158**
E Foothill Blvd To Via Verde										
N SAN DIMAS AV	1.24				1.24		1.24	$ 38,348	$ 618,517	$ 3,234,842
S SAN DIMAS AV	2.50				2.50		2.50	$ 77,332	$ 1,247,288	$ 6,523,316
CORRIDOR: WALNUT CREEK	**4.17**				**4.17**		**4.17**	**$ 128,779**	**$ 2,077,080**	**$ 10,863,128**
San Gabriel River To Fairplex Dr										
PUENTE ST	1.00				1.00		1.00	$ 30,936	$ 498,969	$ 2,609,606
VIA VERDE	3.17				3.17		3.17	$ 97,843	$ 1,578,111	$ 8,253,522
San Gabriel	**4.13**		**2.55**	**1.09**	**7.77**		**7.77**	**$ 599,119**	**$ 9,624,846**	**$ 50,367,966**
CORRIDOR: ALHAMBRA WASH	**0.31**		**0.77**	**0.94**	**2.03**		**2.03**	**$ 181,783**	**$ 2,920,424**	**$ 15,282,859**
Sprr San Gabriel To Rio Hondo										
HOVEY AV				0.14	0.14		0.14	$ 6,884	$ 111,038	$ 580,727
Off Street			0.77		0.77		0.77	$ 126,070	$ 2,021,837	$ 10,583,252
S DEL MAR AV	0.31				0.31		0.31	$ 9,733	$ 156,979	$ 821,002
S RAMONA ST				0.80	0.80		0.80	$ 39,095	$ 630,569	$ 3,297,878
CORRIDOR: MAIN ST	**2.09**				**2.09**		**2.09**	**$ 64,461**	**$ 1,039,689**	**$ 5,437,574**
Huntington Dr N To Arrow Hwy										
E LAS TUNAS DR	1.29				1.29		1.29	$ 39,856	$ 642,833	$ 3,362,019
W LAS TUNAS DR	0.80				0.80		0.80	$ 24,605	$ 396,856	$ 2,075,556
CORRIDOR: MISSION-VALLEY	**1.17**				**1.17**		**1.17**	**$ 36,029**	**$ 581,113**	**$ 3,039,219**
E Cesar E Chavez Ave To La Puente Creek										
E VALLEY BLVD	0.66				0.66		0.66	$ 20,541	$ 331,303	$ 1,732,715
W VALLEY BLVD	0.50				0.50		0.50	$ 15,488	$ 249,810	$ 1,306,504
CORRIDOR: SAN GABRIEL-SIERRA MADRE	**0.56**		**0.56**	**0.14**	**1.27**		**1.27**	**$ 116,662**	**$ 1,873,188**	**$ 9,803,392**
Eaton Wash To Valley Blvd										
E HERMOSA DR	0.14				0.14		0.14	$ 4,322	$ 69,705	$ 364,557
E LONGDEN DR				0.13	0.13		0.13	$ 6,334	$ 102,160	$ 534,296
HERMOSA DR				0.01	0.01		0.01	$ 670	$ 10,812	$ 56,549
N SAN GABRIEL BLVD	0.20				0.20		0.20	$ 6,054	$ 97,648	$ 510,698
Off Street			0.56		0.56		0.56	$ 92,266	$ 1,479,699	$ 7,745,443
S SAN GABRIEL BLVD	0.23				0.23		0.23	$ 7,016	$ 113,164	$ 591,849
CORRIDOR: SPRR-SAN GABRIEL			**1.22**		**1.22**		**1.22**	**$ 200,185**	**$ 3,210,433**	**$ 16,804,923**
Fremont Ave To Eaton Wash										
Off Street			1.22		1.22		1.22	$ 200,185	$ 3,210,433	$ 16,804,923
San Marino	**5.08**			**1.05**	**6.13**		**6.13**	**$ 208,227**	**$ 3,358,500**	**$ 17,564,954**
CORRIDOR: ALLEN AVE	**0.27**				**0.27**		**0.27**	**$ 8,444**	**$ 136,188**	**$ 712,266**
E Altadena Dr To Orlando Rd										
S ALLEN AV	0.27				0.27		0.27	$ 8,444	$ 136,188	$ 712,266
CORRIDOR: ALTADENA-LONG BEACH				**0.90**	**0.90**		**0.90**	**$ 43,772**	**$ 705,992**	**$ 3,692,339**
Loma Alta Dr To La River										
LOS ROBLES AV				0.90	0.90		0.90	$ 43,772	$ 705,992	$ 3,692,339
CORRIDOR: HUNTINGTON-MAIN	**2.92**				**2.92**		**2.92**	**$ 90,194**	**$ 1,454,747**	**$ 7,608,328**
E Huntington Dr To E Imperial Hwy										
HUNTINGTON DR	2.92				2.92		2.92	$ 90,194	$ 1,454,747	$ 7,608,328
CORRIDOR: MISSION ST				**0.16**	**0.16**		**0.16**	**$ 7,624**	**$ 122,966**	**$ 643,110**
Arroyo Dr To Los Robles Ave										
MISSION ST				0.16	0.16		0.16	$ 7,624	$ 122,966	$ 643,110
CORRIDOR: SAN GABRIEL-SIERRA MADRE	**1.88**				**1.88**		**1.88**	**$ 58,194**	**$ 938,607**	**$ 4,908,913**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Eaton Wash To Valley Blvd										
DEL MAR AV	0.72				0.72		0.72	$ 22,317	$ 359,951	$ 1,882,544
S SIERRA MADRE BLVD	0.06				0.06		0.06	$ 1,957	$ 31,568	$ 165,102
SAN MARINO AV	0.02				0.02		0.02	$ 533	$ 8,602	$ 44,986
SIERRA MADRE BLVD	1.08				1.08		1.08	$ 33,386	$ 538,486	$ 2,816,280
South El Monte	**2.70**				**2.70**	**0.12**	**2.83**	**$ 83,480**	**$ 1,346,456**	**$ 7,041,963**
CORRIDOR: GARVEY-RAMONA	**0.69**				**0.69**		**0.69**	**$ 21,457**	**$ 346,080**	**$ 1,809,998**
Whittier Blvd To Sp Rr										
E GARVEY AV	0.69				0.69		0.69	$ 21,457	$ 346,080	$ 1,809,998
CORRIDOR: LAKEWOOD-ROSEMEAD	**0.99**				**0.99**		**0.99**	**$ 30,536**	**$ 492,521**	**$ 2,575,886**
E Orange Grove Blvd To Pch										
N ROSEMEAD BLVD	0.84				0.84		0.84	$ 25,955	$ 418,631	$ 2,189,441
ROSEMEAD BLVD	0.15				0.15		0.15	$ 4,581	$ 73,890	$ 386,446
CORRIDOR: PECK RD	**1.02**				**1.02**		**1.02**	**$ 31,487**	**$ 507,855**	**$ 2,656,079**
Huntington Dr To Whittier Blvd										
PECK RD	0.94				0.94		0.94	$ 29,185	$ 470,721	$ 2,461,869
RUSH ST	0.07				0.07		0.07	$ 2,302	$ 37,134	$ 194,211
CORRIDOR: RIO HONDO						**0.12**	**0.12**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						0.12	0.12	$ -	$ -	$ -
South Pasadena	**2.45**		**0.56**	**4.25**	**7.26**		**7.26**	**$ 374,623**	**$ 6,033,952**	**$ 31,564,111**
CORRIDOR: ALTADENA-LONG BEACH	**0.07**				**0.07**		**0.07**	**$ 2,032**	**$ 32,780**	**$ 171,437**
Loma Alta Dr To La River										
GARFIELD AV	0.07				0.07		0.07	$ 2,032	$ 32,780	$ 171,437
CORRIDOR: ARROYO SECO			**0.56**	**0.36**	**0.92**		**0.92**	**$ 108,986**	**$ 1,749,480**	**$ 9,156,324**
San Pascual Ave To Ave 19										
Off Street			0.56		0.56		0.56	$ 91,207	$ 1,462,726	$ 7,656,597
STONEY DR				0.36	0.36		0.36	$ 17,779	$ 286,755	$ 1,499,726
CORRIDOR: ARROYO-VERDUGO	**0.18**				**0.18**		**0.18**	**$ 5,689**	**$ 91,757**	**$ 479,889**
Van Nuys Blvd To York Blvd										
SAN PASCUAL AV	0.18				0.18		0.18	$ 5,689	$ 91,757	$ 479,889
CORRIDOR: COLLIS-HILL	**0.05**				**0.05**		**0.05**	**$ 1,477**	**$ 23,820**	**$ 124,577**
N Figueroa St To Huntington Dr S										
HILL DR	0.05				0.05		0.05	$ 1,477	$ 23,820	$ 124,577
CORRIDOR: FREMONT-PASADENA				**1.77**	**1.77**		**1.77**	**$ 86,234**	**$ 1,390,878**	**$ 7,274,294**
E Union St To Whittier Blvd										
FREMONT AV				1.77	1.77		1.77	$ 86,234	$ 1,390,878	$ 7,274,294
CORRIDOR: HUNTINGTON-MAIN	**1.48**				**1.48**		**1.48**	**$ 45,710**	**$ 737,263**	**$ 3,855,885**
E Huntington Dr To E Imperial Hwy										
HUNTINGTON DR	0.18				0.18		0.18	$ 5,581	$ 90,009	$ 470,746
HUNTINGTON DR N	1.30				1.30		1.30	$ 40,130	$ 647,254	$ 3,385,139
CORRIDOR: MISSION ST				**1.52**	**1.52**		**1.52**	**$ 74,433**	**$ 1,200,527**	**$ 6,278,755**
Arroyo Dr To Los Robles Ave										
MISSION ST				1.52	1.52		1.52	$ 74,433	$ 1,200,527	$ 6,278,755
CORRIDOR: PASADENA-YORK	**0.67**			**0.60**	**1.27**		**1.27**	**$ 50,062**	**$ 807,448**	**$ 4,222,952**
Oak Grove To Eagle Rock Blvd										
ARROYO DR				0.60	0.60		0.60	$ 29,247	$ 471,718	$ 2,467,087
PASADENA AV	0.67				0.67		0.67	$ 20,815	$ 335,729	$ 1,755,865
Temple City	**4.47**		**3.06**		**7.52**		**7.52**	**$ 639,582**	**$ 10,269,857**	**$ 53,747,328**
CORRIDOR: DUARTE-EL MONTE	**0.86**				**0.86**		**0.86**	**$ 26,505**	**$ 427,505**	**$ 2,235,851**
W Huntington Dr To Rio Hondo										
EL MONTE AV	0.86				0.86		0.86	$ 26,505	$ 427,505	$ 2,235,851
CORRIDOR: EATON WASH			**2.55**		**2.55**		**2.55**	**$ 419,082**	**$ 6,720,965**	**$ 35,180,708**
New York Dr To Rio Hondo										
Off Street			2.55		2.55		2.55	$ 419,082	$ 6,720,965	$ 35,180,708
CORRIDOR: LAKEWOOD-ROSEMEAD	**1.60**				**1.60**		**1.60**	**$ 49,391**	**$ 796,621**	**$ 4,166,329**
E Orange Grove Blvd To Pch										
ROSEMEAD BLVD	1.60				1.60		1.60	$ 49,391	$ 796,621	$ 4,166,329
CORRIDOR: LOS ANGELES-LOWER AZUSA	**0.58**				**0.58**		**0.58**	**$ 17,855**	**$ 287,980**	**$ 1,506,136**
Rosemead Blvd To Big Dalton Wash										
LOWER AZUSA RD	0.58				0.58		0.58	$ 17,855	$ 287,980	$ 1,506,136
CORRIDOR: MAIN ST	**1.43**				**1.43**		**1.43**	**$ 44,293**	**$ 714,405**	**$ 3,736,337**
Huntington Dr N To Arrow Hwy										
LAS TUNAS DR	1.43				1.43		1.43	$ 44,293	$ 714,405	$ 3,736,337
CORRIDOR: SPRR-SAN GABRIEL			**0.50**		**0.50**		**0.50**	**$ 82,456**	**$ 1,322,381**	**$ 6,921,967**
Fremont Ave To Eaton Wash										
Off Street			0.50		0.50		0.50	$ 82,456	$ 1,322,381	$ 6,921,967
Unincorporated	**32.28**		**19.58**	**3.68**	**55.54**	**9.10**	**64.64**	**$ 4,389,236**	**$ 70,499,672**	**$ 368,943,687**
CORRIDOR: ALHAMBRA WASH			**0.76**		**0.76**		**0.76**	**$ 124,901**	**$ 2,003,081**	**$ 10,485,074**
Sprr San Gabriel To Rio Hondo										
Off Street			0.76		0.76		0.76	$ 124,901	$ 2,003,081	$ 10,485,074
CORRIDOR: ALLEN AVE	**1.41**				**1.41**		**1.41**	**$ 43,706**	**$ 704,934**	**$ 3,686,803**
E Altadena Dr To Orlando Rd										
N ALLEN AV	1.41				1.41		1.41	$ 43,706	$ 704,934	$ 3,686,803
CORRIDOR: ALTADENA-LONG BEACH	**0.11**			**1.60**	**1.72**		**1.72**	**$ 81,753**	**$ 1,318,597**	**$ 6,896,260**
Loma Alta Dr To La River										
N MARENGO AV				1.60	1.60		1.60	$ 78,200	$ 1,261,289	$ 6,596,542
N RAYMOND AV	0.11				0.11		0.11	$ 3,553	$ 57,308	$ 299,718
CORRIDOR: ARROW-BONITA	**3.45**				**3.45**		**3.45**	**$ 106,470**	**$ 1,717,258**	**$ 8,981,261**
Live Oak Ave To San Antonio Wash										
E ARROW HWY	3.45				3.45		3.45	$ 106,470	$ 1,717,258	$ 8,981,261
CORRIDOR: AZUSA AVE	**0.49**				**0.49**		**0.49**	**$ 15,267**	**$ 246,240**	**$ 1,287,838**
San Gabriel River To Colima Rd										
AZUSA AV	0.49				0.49		0.49	$ 15,267	$ 246,240	$ 1,287,838
CORRIDOR: BADILLO-RAMONA	**0.92**				**0.92**		**0.92**	**$ 28,382**	**$ 457,779**	**$ 2,394,184**
Mission-Valley Sprr To W Bonita Ave										
E BADILLO ST	0.15				0.15		0.15	$ 4,485	$ 72,340	$ 378,340
W BADILLO ST	0.77				0.77		0.77	$ 23,897	$ 385,439	$ 2,015,844
CORRIDOR: BIG DALTON WASH			**1.54**		**1.54**		**1.54**	**$ 252,128**	**$ 4,043,466**	**$ 21,165,413**
Big Dalton Debris Dam To Walnut Creek										
Off Street			1.54		1.54		1.54	$ 252,128	$ 4,043,466	$ 21,165,413

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CORRIDOR: CHAVEZ-SUNSET-RIGGIN	**0.81**				**0.81**		**0.81**	**$ 25,045**	**$ 403,954**	**$ 2,112,680**
N Fairfax Ave To Alhambra Wash										
POTRERO GRANDE DR	0.81				0.81		0.81	$ 25,045	$ 403,954	$ 2,112,680
CORRIDOR: COLIMA RD	**7.74**				**7.74**		**7.74**	**$ 239,238**	**$ 3,858,676**	**$ 20,180,874**
Telegraph Rd To Orange County Line										
COLIMA RD	7.74				7.74		7.74	$ 239,238	$ 3,858,676	$ 20,180,874
CORRIDOR: COLORADO-FOOTHILL	**0.84**				**0.84**		**0.84**	**$ 25,892**	**$ 417,610**	**$ 2,184,100**
La River To San Antonio Wash										
E COLORADO BLVD	0.62				0.62		0.62	$ 19,284	$ 311,031	$ 1,626,693
E FOOTHILL BLVD	0.21				0.21		0.21	$ 6,608	$ 106,579	$ 557,407
CORRIDOR: EATON WASH			**1.87**		**1.87**		**1.87**	**$ 306,968**	**$ 4,922,960**	**$ 25,769,101**
New York Dr To Rio Hondo										
Off Street			1.87		1.87		1.87	$ 306,968	$ 4,922,960	$ 25,769,101
CORRIDOR: GLENDORA-GRAND	**1.54**				**1.54**		**1.54**	**$ 47,639**	**$ 768,372**	**$ 4,018,587**
Little Dalton Wash To Sp Rr										
N GLENDORA AV	0.24				0.24		0.24	$ 7,538	$ 121,588	$ 635,904
S GRAND AV	1.30				1.30		1.30	$ 40,101	$ 646,784	$ 3,382,682
CORRIDOR: HACIENDA BLVD	**2.46**				**2.46**		**2.46**	**$ 76,144**	**$ 1,228,134**	**$ 6,423,140**
Sp Rr To Colima Rd										
S HACIENDA BLVD	2.46				2.46		2.46	$ 76,144	$ 1,228,134	$ 6,423,140
CORRIDOR: HUNTINGTON-MAIN	**1.37**				**1.37**		**1.37**	**$ 42,250**	**$ 681,459**	**$ 3,564,032**
E Huntington Dr To E Imperial Hwy										
HUNTINGTON DR	1.37				1.37		1.37	$ 42,250	$ 681,459	$ 3,564,032
CORRIDOR: LAKEWOOD-ROSEMEAD	**3.45**				**3.45**	**1.46**	**4.91**	**$ 106,597**	**$ 1,719,301**	**$ 8,991,943**
E Orange Grove Blvd To Pch										
N ROSEMEAD BLVD	1.45				1.45		1.45	$ 44,710	$ 721,126	$ 3,771,487
ROSEMEAD BLVD	1.93				1.93		1.93	$ 59,623	$ 961,654	$ 5,029,449
S ROSEMEAD BLVD	0.07				0.07	1.46	1.53	$ 2,264	$ 36,521	$ 191,006
CORRIDOR: LOS ANGELES-LOWER AZUSA	**0.01**				**0.01**		**0.01**	**$ 267**	**$ 4,310**	**$ 22,542**
Rosemead Blvd To Big Dalton Wash										
LIVE OAK AV	0.01				0.01		0.01	$ 267	$ 4,310	$ 22,542
CORRIDOR: MAIN ST	**0.70**				**0.70**		**0.70**	**$ 21,534**	**$ 347,327**	**$ 1,816,522**
Huntington Dr N To Arrow Hwy										
E LIVE OAK AV	0.70				0.70		0.70	$ 21,534	$ 347,327	$ 1,816,522
CORRIDOR: MISSION-SPRR-UPRR			**1.47**		**1.47**	**1.37**	**2.85**	**$ 241,754**	**$ 3,877,098**	**$ 20,294,563**
San Gabriel River To San Antonio Wash										
Off Street			1.47		1.47	1.37	2.85	$ 241,754	$ 3,877,098	$ 20,294,563
CORRIDOR: MISSION-VALLEY	**2.76**				**2.76**		**2.76**	**$ 85,329**	**$ 1,376,282**	**$ 7,197,955**
E Cesar E Chavez Ave To La Puente Creek										
E VALLEY BLVD	1.08				1.08		1.08	$ 33,410	$ 538,879	$ 2,818,337
VALLEY BLVD	1.68				1.68		1.68	$ 51,919	$ 837,403	$ 4,379,618
CORRIDOR: PASADENA-YORK				**2.03**	**2.03**		**2.03**	**$ 99,054**	**$ 1,597,639**	**$ 8,355,653**
Oak Grove To Eagle Rock Blvd										
E WOODBURY RD				0.87	0.87		0.87	$ 42,590	$ 686,934	$ 3,592,666
OAK GROVE DR				0.13	0.13		0.13	$ 6,477	$ 104,461	$ 546,331
W WOODBURY RD				1.02	1.02		1.02	$ 49,987	$ 806,244	$ 4,216,656
CORRIDOR: PECK RD	**1.02**				**1.02**		**1.02**	**$ 31,472**	**$ 507,609**	**$ 2,654,796**
Huntington Dr To Whittier Blvd										
PECK RD	0.54				0.54		0.54	$ 16,634	$ 268,298	$ 1,403,199
S MYRTLE AV	0.48				0.48		0.48	$ 14,837	$ 239,311	$ 1,251,598
CORRIDOR: RIO HONDO						**3.08**	**3.08**	**$ -**	**$ -**	**$ -**
Peck Rd To La River										
Off Street						3.08	3.08	$ -	$ -	$ -
CORRIDOR: SAN ANTONIO WASH			**10.01**		**10.01**		**10.01**	**$ 1,641,567**	**$ 26,326,414**	**$ 137,804,890**
San Antonio Dam To Riverside Dr										
Off Street			10.01		10.01		10.01	$ 1,641,567	$ 26,326,414	$ 137,804,890
CORRIDOR: SAN GABRIEL RIVER						**2.52**	**2.52**	**$ -**	**$ -**	**$ -**
Old San Gabriel Cyn To Coyote Creek										
Off Street						2.52	2.52	$ -	$ -	$ -
CORRIDOR: SAN GABRIEL-SIERRA MADRE	**0.31**		**0.63**		**0.95**		**0.95**	**$ 113,580**	**$ 1,822,412**	**$ 9,538,669**
Eaton Wash To Valley Blvd										
Off Street			0.63		0.63		0.63	$ 103,936	$ 1,666,866	$ 8,725,165
S SIERRA MADRE BLVD	0.31				0.31		0.31	$ 9,644	$ 155,546	$ 813,503
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE	**0.77**		**2.43**		**3.20**	**0.66**	**3.86**	**$ 422,370**	**$ 6,775,888**	**$ 35,466,477**
Puente Creek To San Antonio Dam										
Off Street			2.43		2.43	0.66	3.09	$ 398,514	$ 6,391,109	$ 33,454,087
TEMPLE AV	0.77				0.77		0.77	$ 23,856	$ 384,778	$ 2,012,390
CORRIDOR: SPRR-SAN GABRIEL			**0.87**		**0.87**		**0.87**	**$ 142,432**	**$ 2,284,237**	**$ 11,956,776**
Fremont Ave To Eaton Wash										
Off Street			0.87		0.87		0.87	$ 142,432	$ 2,284,237	$ 11,956,776
CORRIDOR: SUNSET AVE	**1.12**				**1.12**		**1.12**	**$ 34,483**	**$ 556,185**	**$ 2,908,846**
Foothill Blvd To Puente Creek										
7TH AV	0.13				0.13		0.13	$ 4,006	$ 64,614	$ 337,934
IRWINDALE AV	0.64				0.64		0.64	$ 19,642	$ 316,812	$ 1,656,926
N SUNSET AV	0.35				0.35		0.35	$ 10,835	$ 174,758	$ 913,986
CORRIDOR: WASHINGTON BLVD	**0.99**			**0.05**	**1.04**		**1.04**	**$ 33,012**	**$ 532,449**	**$ 2,784,709**
Woodbury Rd To Woodlyn Rd										
E WASHINGTON BLVD	0.91				0.91		0.91	$ 28,223	$ 455,206	$ 2,380,727
N ARROYO BLVD	0.08				0.08		0.08	$ 2,435	$ 39,282	$ 205,443
N WINDSOR AV				0.05	0.05		0.05	$ 2,354	$ 37,962	$ 198,539
Walnut	**6.46**				**6.46**		**6.46**	**$ 199,608**	**$ 3,219,482**	**$ 16,837,888**
CORRIDOR: GLENDORA-GRAND	**2.56**				**2.56**		**2.56**	**$ 79,188**	**$ 1,277,226**	**$ 6,679,893**
Little Dalton Wash To Sp Rr										
N GRAND AV	2.56				2.56		2.56	$ 79,188	$ 1,277,226	$ 6,679,893
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE	**3.90**				**3.90**		**3.90**	**$ 120,420**	**$ 1,942,255**	**$ 10,157,995**
Puente Creek To San Antonio Dam										
AMAR RD	3.04				3.04		3.04	$ 93,975	$ 1,515,726	$ 7,927,245
TEMPLE AV	0.86				0.86		0.86	$ 26,445	$ 426,530	$ 2,230,750
West Covina	**9.50**		**4.31**		**13.81**	**1.61**	**15.42**	**$ 1,001,066**	**$ 16,081,366**	**$ 84,156,292**
CORRIDOR: AZUSA AVE	**3.88**				**3.88**		**3.88**	**$ 119,789**	**$ 1,932,081**	**$ 10,104,784**
San Gabriel River To Colima Rd										

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
AZUSA AV	0.41				0.41		0.41	$ 12,635	$ 203,785	$ 1,065,794
N AZUSA AV	0.89				0.89		0.89	$ 27,501	$ 443,557	$ 2,319,805
S AZUSA AV	2.58				2.58		2.58	$ 79,654	$ 1,284,739	$ 6,719,185
CORRIDOR: BADILLO-RAMONA	**0.87**				**0.87**		**0.87**	**$ 26,744**	**$ 431,355**	**$ 2,255,985**
Mission-Valley Sprr To W Bonita Ave										
BADILLO ST	0.19				0.19		0.19	$ 5,846	$ 94,288	$ 493,124
E BADILLO ST	0.51				0.51		0.51	$ 15,623	$ 251,981	$ 1,317,860
W BADILLO ST	0.17				0.17		0.17	$ 5,275	$ 85,086	$ 445,001
CORRIDOR: BIG DALTON WASH			**0.28**		**0.28**		**0.28**	**$ 45,998**	**$ 737,689**	**$ 3,861,412**
Big Dalton Debris Dam To Walnut Creek										
Off Street			0.28		0.28		0.28	$ 45,998	$ 737,689	$ 3,861,412
CORRIDOR: GLENDORA-GRAND	**0.48**				**0.48**		**0.48**	**$ 14,701**	**$ 237,118**	**$ 1,240,128**
Little Dalton Wash To Sp Rr										
N GRAND AV	0.22				0.22		0.22	$ 6,827	$ 110,120	$ 575,927
S GRAND AV	0.25				0.25		0.25	$ 7,874	$ 126,998	$ 664,201
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE	**1.20**				**1.20**		**1.20**	**$ 37,006**	**$ 596,875**	**$ 3,121,658**
Puente Creek To San Antonio Dam										
E AMAR RD	1.20				1.20		1.20	$ 37,006	$ 596,875	$ 3,121,658
CORRIDOR: SUNSET AVE	**3.09**				**3.09**		**3.09**	**$ 95,327**	**$ 1,537,532**	**$ 8,041,291**
Foothill Blvd To Puente Creek										
N SUNSET AV	1.00				1.00		1.00	$ 31,038	$ 500,606	$ 2,618,168
S SUNSET AV	2.08				2.08		2.08	$ 64,289	$ 1,036,926	$ 5,423,123
CORRIDOR: WALNUT CREEK			**4.03**		**4.03**	**1.61**	**5.64**	**$ 661,500**	**$ 10,608,716**	**$ 55,531,034**
San Gabriel River To Fairplex Dr										
Off Street			4.03		4.03	1.61	5.64	$ 661,500	$ 10,608,716	$ 55,531,034
La Puente	**0.77**		**3.10**		**3.88**		**3.88**	**$ 533,165**	**$ 8,552,749**	**$ 44,767,402**
CORRIDOR: SAN JOSE-THOMPSON-LA PUENTE			**3.10**		**3.10**		**3.10**	**$ 509,235**	**$ 8,166,793**	**$ 42,748,855**
Puente Creek To San Antonio Dam										
Off Street			3.10		3.10		3.10	$ 509,235	$ 8,166,793	$ 42,748,855
CORRIDOR: SUNSET AVE	**0.77**				**0.77**		**0.77**	**$ 23,929**	**$ 385,955**	**$ 2,018,547**
Foothill Blvd To Puente Creek										
N SUNSET AV	0.77				0.77		0.77	$ 23,929	$ 385,955	$ 2,018,547
South Bay	**168.11**		**22.02**	**2.53**	**192.66**	**16.58**	**209.25**	**$ 8,931,079**	**$ 143,718,448**	**$ 751,906,645**
Carson	**22.97**		**10.09**		**33.06**	**0.61**	**33.68**	**$ 2,365,466**	**$ 38,000,913**	**$ 198,863,531**
CORRIDOR: 223RD-WARDLOW	**3.38**				**3.38**		**3.38**	**$ 104,386**	**$ 1,683,639**	**$ 8,805,431**
Vermont Ave To Long Beach Blvd										
E 223RD ST	2.74				2.74		2.74	$ 84,675	$ 1,365,727	$ 7,142,750
W 223RD ST	0.64				0.64		0.64	$ 19,711	$ 317,912	$ 1,662,681
CORRIDOR: ALAMEDA			**0.19**		**0.19**		**0.19**	**$ 30,985**	**$ 496,917**	**$ 2,601,100**
Spring St To La River										
Off Street			0.19		0.19		0.19	$ 30,985	$ 496,917	$ 2,601,100
CORRIDOR: ALAMEDA-UPRR	**3.33**				**3.33**		**3.33**	**$ 102,764**	**$ 1,657,485**	**$ 8,668,646**
La River To Harry Bridges Blvd										
S ALAMEDA ST	2.23				2.23		2.23	$ 68,861	$ 1,110,669	$ 5,808,799
UP RR	1.10				1.10		1.10	$ 33,903	$ 546,816	$ 2,859,847
CORRIDOR: ARTESIA-HERONDO	**1.97**				**1.97**		**1.97**	**$ 60,871**	**$ 981,793**	**$ 5,134,779**
Coast To Orange County Line										
VICTORIA ST	1.97				1.97		1.97	$ 60,871	$ 981,793	$ 5,134,779
CORRIDOR: AVALON BLVD	**6.04**				**6.04**		**6.04**	**$ 186,507**	**$ 3,008,183**	**$ 15,732,797**
E Imperial Hwy To Harry Bridges Blvd										
AVALON BLVD	6.04				6.04		6.04	$ 186,507	$ 3,008,183	$ 15,732,797
CORRIDOR: BNSF-CARSON			**4.22**		**4.22**		**4.22**	**$ 691,866**	**$ 11,095,702**	**$ 58,080,147**
Avalon Blvd To W Sepulveda Blvd										
Off Street			4.22		4.22		4.22	$ 691,866	$ 11,095,702	$ 58,080,147
CORRIDOR: Del Amo Blvd	**4.58**				**4.58**		**4.58**	**$ 141,470**	**$ 2,281,773**	**$ 11,933,673**
Coast To Coyote Creek										
E DEL AMO BLVD	4.31				4.31		4.31	$ 133,090	$ 2,146,615	$ 11,226,798
W DEL AMO BLVD	0.27				0.27		0.27	$ 8,380	$ 135,158	$ 706,875
CORRIDOR: DOMINGUEZ CHANNEL			**5.69**		**5.69**	**0.61**	**6.30**	**$ 932,773**	**$ 14,959,227**	**$ 78,303,662**
S Vermont Ave To Pch										
Off Street			5.69		5.69	0.61	6.30	$ 932,773	$ 14,959,227	$ 78,303,662
CORRIDOR: SEPULVEDA-WILLOW	**3.68**				**3.68**		**3.68**	**$ 113,844**	**$ 1,836,194**	**$ 9,603,295**
Torrance Blvd To Coyote Creek										
E SEPULVEDA BLVD	2.99				2.99		2.99	$ 92,498	$ 1,491,908	$ 7,802,679
W SEPULVEDA BLVD	0.69				0.69		0.69	$ 21,346	$ 344,286	$ 1,800,616
El Segundo	**4.16**		**2.90**	**0.51**	**7.56**	**0.82**	**8.38**	**$ 628,842**	**$ 10,099,011**	**$ 52,851,946**
CORRIDOR: AVIATION-BNSF-LAX			**2.33**		**2.33**		**2.33**	**$ 382,581**	**$ 6,135,583**	**$ 32,116,541**
W Manchester Ave To Manhattan Beach Blvd										
Off Street			2.33		2.33		2.33	$ 382,581	$ 6,135,583	$ 32,116,541
CORRIDOR: BNSF-SOUTH BAY			**0.57**		**0.57**		**0.57**	**$ 93,071**	**$ 1,492,606**	**$ 7,813,003**
Bnsf Rr To Crenshaw Blvd										
Off Street			0.57		0.57		0.57	$ 93,071	$ 1,492,606	$ 7,813,003
CORRIDOR: EL SEGUNDO BLVD	**2.15**			**0.51**	**2.66**		**2.66**	**$ 91,342**	**$ 1,473,262**	**$ 7,705,161**
Coast To Alameda St										
BINDER PL				0.06	0.06		0.06	$ 3,161	$ 50,989	$ 266,673
E EL SEGUNDO BLVD	2.15				2.15		2.15	$ 66,551	$ 1,073,400	$ 5,613,884
LOMA VISTA ST				0.14	0.14		0.14	$ 6,967	$ 112,375	$ 587,724
W EL SEGUNDO BLVD				0.27	0.27		0.27	$ 13,156	$ 212,189	$ 1,109,748
WHITTING ST				0.03	0.03		0.03	$ 1,507	$ 24,308	$ 127,132
CORRIDOR: SEPULVEDA-PCH	**2.00**				**2.00**		**2.00**	**$ 61,849**	**$ 997,560**	**$ 5,217,240**
Santa Monica Blvd To Palos Verdes Blvd										
N SEPULVEDA BLVD	1.00				1.00		1.00	$ 30,973	$ 499,563	$ 2,612,713
S SEPULVEDA BLVD	1.00				1.00		1.00	$ 30,876	$ 497,998	$ 2,604,527
CORRIDOR: COASTAL ROUTE-BEACH PATH						**0.82**	**0.82**	**$ -**	**$ -**	**$ -**
Ventura County Line To La River										
Off Street						0.82	0.82	$ -	$ -	$ -
Gardena	**6.67**				**6.67**	**1.04**	**7.71**	**$ 206,060**	**$ 3,323,548**	**$ 17,382,154**
CORRIDOR: CRENSHAW-ARDEN						**1.04**	**1.04**	**$ -**	**$ -**	**$ -**
Highland Ave To Pch										
Off Street						1.04	1.04	$ -	$ -	$ -
CORRIDOR: REDONDO BEACH BLVD	**2.12**				**2.12**		**2.12**	**$ 65,546**	**$ 1,057,194**	**$ 5,529,124**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Flagler Ln To Salt Lake- Up-Pe Rr Row										
W REDONDO BEACH BLVD	2.12				2.12		2.12	$ 65,546	$ 1,057,194	$ 5,529,124
CORRIDOR: WESTERN AVE	**3.50**				**3.50**		**3.50**	**$ 108,097**	**$ 1,743,504**	**$ 9,118,528**
Imperial Hwy To W Anaheim St										
WESTERN AV	3.50				3.50		3.50	$ 108,097	$ 1,743,504	$ 9,118,528
CORRIDOR: ARTESIA-VERMONT	**1.05**				**1.05**		**1.05**	**$ 32,417**	**$ 522,849**	**$ 2,734,502**
Coast To S Vermont Ave										
W ARTESIA BLVD	1.05				1.05		1.05	$ 32,417	$ 522,849	$ 2,734,502
Hawthorne	**6.96**		**0.73**		**7.69**	**0.50**	**8.19**	**$ 334,928**	**$ 5,391,070**	**$ 28,203,896**
CORRIDOR: BNSF-SOUTH BAY			**0.73**		**0.73**		**0.73**	**$ 119,927**	**$ 1,923,305**	**$ 10,067,489**
Bnsf Rr To Crenshaw Blvd										
Off Street			0.73		0.73		0.73	$ 119,927	$ 1,923,305	$ 10,067,489
CORRIDOR: CRENSHAW-ARDEN	**0.21**				**0.21**	**0.50**	**0.71**	**$ 6,419**	**$ 103,528**	**$ 541,453**
Highland Ave To Pch										
120TH ST	0.02				0.02		0.02	$ 568	$ 9,161	$ 47,914
CRENSHAW BLVD	0.16				0.16		0.16	$ 5,011	$ 80,822	$ 422,698
Off Street						0.50	0.50	$ -	$ -	$ -
W 120TH ST	0.03				0.03		0.03	$ 840	$ 13,545	$ 70,841
CORRIDOR: EL SEGUNDO BLVD	**2.70**				**2.70**		**2.70**	**$ 83,295**	**$ 1,343,460**	**$ 7,026,298**
Coast To Alameda St										
W EL SEGUNDO BLVD	2.70				2.70		2.70	$ 83,295	$ 1,343,460	$ 7,026,298
CORRIDOR: HILLCREST-HAWTHORNE	**2.21**				**2.21**		**2.21**	**$ 68,265**	**$ 1,101,048**	**$ 5,758,481**
Slauson Blvd To Palos Verdes Dr										
HAWTHORNE BLVD	1.66				1.66		1.66	$ 51,165	$ 825,242	$ 4,316,017
S HAWTHORNE BLVD	0.55				0.55		0.55	$ 17,100	$ 275,806	$ 1,442,464
CORRIDOR: IMPERIAL HWY	**1.85**				**1.85**		**1.85**	**$ 57,023**	**$ 919,728**	**$ 4,810,175**
Coast To Orange County Line										
W IMPERIAL HWY	1.85				1.85		1.85	$ 57,023	$ 919,728	$ 4,810,175
Hermosa Beach	**1.89**				**1.89**	**1.81**	**3.71**	**$ 58,455**	**$ 942,819**	**$ 4,930,945**
CORRIDOR: SEPULVEDA-PCH	**1.26**				**1.26**		**1.26**	**$ 38,878**	**$ 627,058**	**$ 3,279,512**
Santa Monica Blvd To Palos Verdes Blvd										
PACIFIC COAST HWY	1.26				1.26		1.26	$ 38,878	$ 627,058	$ 3,279,512
CORRIDOR: ARTESIA-VERMONT	**0.63**				**0.63**		**0.63**	**$ 19,577**	**$ 315,762**	**$ 1,651,433**
Coast To S Vermont Ave										
27TH ST	0.18				0.18		0.18	$ 5,593	$ 90,214	$ 471,822
GOULD AV	0.45				0.45		0.45	$ 13,984	$ 225,547	$ 1,179,611
CORRIDOR: COASTAL ROUTE-BEACH PATH						**1.81**	**1.81**	**$ -**	**$ -**	**$ -**
Ventura County Line To La River										
Off Street						1.81	1.81	$ -	$ -	$ -
Inglewood	**9.56**		**0.25**	**1.19**	**11.00**		**11.00**	**$ 393,905**	**$ 6,349,610**	**$ 33,211,359**
CORRIDOR: AVIATION-BNSF-LAX	**0.51**				**0.51**		**0.51**	**$ 15,660**	**$ 252,579**	**$ 1,320,990**
W Manchester Ave To Manhattan Beach Blvd										
AVIATION BLVD	0.51				0.51		0.51	$ 15,660	$ 252,579	$ 1,320,990
CORRIDOR: CRENSHAW-ARDEN	**2.81**				**2.81**		**2.81**	**$ 86,945**	**$ 1,402,335**	**$ 7,334,214**
Highland Ave To Pch										
CRENSHAW BLVD	2.76				2.76		2.76	$ 85,372	$ 1,376,967	$ 7,201,540
CRENSHAW DR	0.05				0.05		0.05	$ 1,573	$ 25,368	$ 132,674
CORRIDOR: FIRESTONE-MANCHESTER	**2.85**			**0.69**	**3.54**		**3.54**	**$ 121,679**	**$ 1,962,559**	**$ 10,264,183**
Culver Blvd To La River										
E MANCHESTER BLVD				0.69	0.69		0.69	$ 33,626	$ 542,352	$ 2,836,501
W MANCHESTER BLVD	2.85				2.85		2.85	$ 88,053	$ 1,420,207	$ 7,427,682
CORRIDOR: FLORENCE AVE	**0.12**				**0.12**		**0.12**	**$ 3,661**	**$ 59,053**	**$ 308,847**
Bnsf Railroad To Alameda St										
E FLORENCE AV	0.12				0.12		0.12	$ 3,661	$ 59,053	$ 308,847
CORRIDOR: HILLCREST-HAWTHORNE	**2.21**		**0.25**	**0.50**	**2.96**		**2.96**	**$ 133,122**	**$ 2,143,422**	**$ 11,212,996**
Slauson Blvd To Palos Verdes Dr										
E FLORENCE AV	0.76				0.76		0.76	$ 23,549	$ 379,824	$ 1,986,481
E HILLCREST BLVD	0.26				0.26		0.26	$ 8,057	$ 129,950	$ 679,641
N HILLCREST BLVD				0.44	0.44		0.44	$ 21,387	$ 344,954	$ 1,804,108
Off Street			0.25		0.25		0.25	$ 40,392	$ 647,773	$ 3,390,752
S HAWTHORNE BLVD	0.25				0.25		0.25	$ 7,681	$ 123,889	$ 647,939
S HILLCREST BLVD				0.06	0.06		0.06	$ 3,112	$ 50,189	$ 262,488
S LA BREA AV	0.79				0.79		0.79	$ 24,547	$ 395,917	$ 2,070,648
S MARKET ST	0.14				0.14		0.14	$ 4,397	$ 70,925	$ 370,939
CORRIDOR: IMPERIAL HWY	**1.06**				**1.06**		**1.06**	**$ 32,839**	**$ 529,661**	**$ 2,770,129**
Coast To Orange County Line										
W IMPERIAL HWY	1.06				1.06		1.06	$ 32,839	$ 529,661	$ 2,770,129
Lawndale	**3.57**		**1.15**		**4.72**		**4.72**	**$ 298,970**	**$ 4,804,796**	**$ 25,142,623**
CORRIDOR: BNSF-SOUTH BAY			**1.15**		**1.15**		**1.15**	**$ 188,799**	**$ 3,027,833**	**$ 15,849,107**
Bnsf Rr To Crenshaw Blvd										
Off Street			1.15		1.15		1.15	$ 188,799	$ 3,027,833	$ 15,849,107
CORRIDOR: HILLCREST-HAWTHORNE	**1.87**				**1.87**		**1.87**	**$ 57,654**	**$ 929,899**	**$ 4,863,373**
Slauson Blvd To Palos Verdes Dr										
HAWTHORNE BLVD	1.87				1.87		1.87	$ 57,654	$ 929,899	$ 4,863,373
CORRIDOR: MANHATTAN BEACH BLVD	**0.99**				**0.99**		**0.99**	**$ 30,636**	**$ 494,121**	**$ 2,584,255**
Coast To Crenshaw Blvd										
MANHATTAN BEACH BLVD	0.99				0.99		0.99	$ 30,636	$ 494,121	$ 2,584,255
CORRIDOR: REDONDO BEACH BLVD	**0.71**				**0.71**		**0.71**	**$ 21,882**	**$ 352,942**	**$ 1,845,889**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
REDONDO BEACH BLVD	0.71				0.71		0.71	$ 21,882	$ 352,942	$ 1,845,889
Los Angeles	**36.31**		**3.04**	**0.06**	**39.42**	**1.97**	**41.39**	**$ 1,624,287**	**$ 26,152,390**	**$ 136,812,824**
CORRIDOR: 223RD-WARDLOW	**0.22**				**0.22**		**0.22**	**$ 6,851**	**$ 110,507**	**$ 577,951**
Vermont Ave To Long Beach Blvd										
E 223RD ST	0.22				0.22		0.22	$ 6,851	$ 110,507	$ 577,951
CORRIDOR: ALAMEDA-COAST	**0.84**		**1.40**		**2.25**		**2.25**	**$ 256,281**	**$ 4,112,458**	**$ 21,524,671**
Harry Bridges Blvd To N Harbor Blvd										
CHANNEL ST	0.10				0.10		0.10	$ 3,207	$ 51,726	$ 270,529
N FRONT ST	0.46				0.46		0.46	$ 14,243	$ 229,733	$ 1,201,502
N PACIFIC AV	0.28				0.28		0.28	$ 8,550	$ 137,895	$ 721,193
Off Street			1.40		1.40		1.40	$ 230,281	$ 3,693,103	$ 19,331,448
CORRIDOR: ALAMEDA-UPRR	**4.01**				**4.01**		**4.01**	**$ 123,910**	**$ 1,998,541**	**$ 10,452,371**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	Not Usable As Built MetroStudy Metro Regional ATN	Not Usable As Built Off-Street Metro Regional ATN	Not Usable As Built Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
La River To Harry Bridges Blvd										
ALAMEDA ST	2.30				2.30		2.30	$ 71,183	$ 1,148,108	$ 6,004,603
HARRY BRIDGES BLVD	1.33				1.33		1.33	$ 40,984	$ 661,040	$ 3,457,240
UP RR	0.38				0.38		0.38	$ 11,742	$ 189,394	$ 990,529
CORRIDOR: ANAHEIM ST	**5.23**				**5.23**		**5.23**	**$ 161,472**	**$ 2,604,390**	**$ 13,620,957**
S Western Ave To Pch										
E ANAHEIM ST	2.45				2.45		2.45	$ 75,699	$ 1,220,953	$ 6,385,582
W ANAHEIM ST	2.78				2.78		2.78	$ 85,773	$ 1,383,437	$ 7,235,375
CORRIDOR: ARTESIA-HERONDO	**1.67**				**1.67**		**1.67**	**$ 51,688**	**$ 833,684**	**$ 4,360,169**
Coast To Orange County Line										
VICTORIA ST	0.59				0.59		0.59	$ 18,094	$ 291,838	$ 1,526,314
W 190TH ST	1.09				1.09		1.09	$ 33,594	$ 541,846	$ 2,833,855
CORRIDOR: AVALON BLVD	**1.93**				**1.93**		**1.93**	**$ 59,513**	**$ 959,889**	**$ 5,020,220**
E Imperial Hwy To Harry Bridges Blvd										
AVALON BLVD	0.07				0.07		0.07	$ 2,237	$ 36,080	$ 188,696
N AVALON BLVD	1.85				1.85		1.85	$ 57,276	$ 923,810	$ 4,831,524
CORRIDOR: BNSF-CARSON			**0.52**		**0.52**		**0.52**	**$ 84,536**	**$ 1,355,727**	**$ 7,096,513**
Avalon Blvd To W Sepulveda Blvd										
Off Street			0.52		0.52		0.52	$ 84,536	$ 1,355,727	$ 7,096,513
CORRIDOR: Del Amo Blvd	**0.39**		**0.39**	**0.06**	**0.83**		**0.83**	**$ 78,086**	**$ 1,253,649**	**$ 6,561,121**
Coast To Coyote Creek										
DENKER AV				0.01	0.01		0.01	$ 361	$ 5,817	$ 30,422
S NORMANDIE AV				0.05	0.05		0.05	$ 2,457	$ 39,626	$ 207,244
TORRANCE BLVD	0.39				0.39		0.39	$ 11,993	$ 193,439	$ 1,011,688
UP RR			0.39		0.39		0.39	$ 63,275	$ 1,014,767	$ 5,311,768
CORRIDOR: DOMINGUEZ CHANNEL						**0.84**	**0.84**	**$ -**	**$ -**	**$ -**
S Vermont Ave To Pch										
Off Street						0.84	0.84	$ -	$ -	$ -
CORRIDOR: EL SEGUNDO BLVD	**0.54**				**0.54**		**0.54**	**$ 16,605**	**$ 267,829**	**$ 1,400,743**
Coast To Alameda St										
W EL SEGUNDO BLVD	0.54				0.54		0.54	$ 16,605	$ 267,829	$ 1,400,743
CORRIDOR: FIGUEROA ST	**1.41**				**1.41**		**1.41**	**$ 43,474**	**$ 701,197**	**$ 3,667,259**
W Pch To Harry Bridges Blvd										
FIGUEROA ST	1.41				1.41		1.41	$ 43,474	$ 701,197	$ 3,667,259
CORRIDOR: GAFFEY-FRONT	**4.34**				**4.34**		**4.34**	**$ 134,011**	**$ 2,161,462**	**$ 11,304,448**
W Anaheim St To W 26Th St										
N GAFFEY ST	2.79				2.79		2.79	$ 86,351	$ 1,392,751	$ 7,284,090
S GAFFEY ST	1.54				1.54		1.54	$ 47,660	$ 768,711	$ 4,020,358
CORRIDOR: IMPERIAL HWY	**0.52**				**0.52**		**0.52**	**$ 16,137**	**$ 260,276**	**$ 1,361,246**
Coast To Orange County Line										
W IMPERIAL HWY	0.52				0.52		0.52	$ 16,137	$ 260,276	$ 1,361,246
CORRIDOR: PALOS VERDES DRIVE	**0.50**		**0.74**		**1.24**	**0.66**	**1.90**	**$ 136,825**	**$ 2,195,733**	**$ 11,492,387**
Palos Verdes Blvd To S Figueroa St										
L ST	0.38				0.38		0.38	$ 11,603	$ 187,152	$ 978,807
Off Street			0.74		0.74	0.66	1.40	$ 121,338	$ 1,945,948	$ 10,186,011
W L ST	0.13				0.13		0.13	$ 3,883	$ 62,633	$ 327,570
CORRIDOR: PCH	**4.66**				**4.66**		**4.66**	**$ 143,853**	**$ 2,320,211**	**$ 12,134,704**
Esplanade To San Gabriel River										
E PACIFIC COAST HWY	2.08				2.08		2.08	$ 64,386	$ 1,038,485	$ 5,431,275
W PACIFIC COAST HWY	2.57				2.57		2.57	$ 79,467	$ 1,281,726	$ 6,703,428
CORRIDOR: REDONDO BEACH BLVD	**0.51**				**0.51**		**0.51**	**$ 15,633**	**$ 252,153**	**$ 1,318,759**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
W REDONDO BEACH BLVD	0.51				0.51		0.51	$ 15,633	$ 252,153	$ 1,318,759
CORRIDOR: SEPULVEDA-WILLOW	**0.76**				**0.76**		**0.76**	**$ 23,543**	**$ 379,721**	**$ 1,985,940**
Torrance Blvd To Coyote Creek										
E SEPULVEDA BLVD	0.11				0.11		0.11	$ 3,386	$ 54,613	$ 285,626
W SEPULVEDA BLVD	0.65				0.65		0.65	$ 20,157	$ 325,108	$ 1,700,314
CORRIDOR: VERMONT	**1.21**				**1.21**		**1.21**	**$ 37,481**	**$ 604,527**	**$ 3,161,676**
Los Feliz Blvd To W Anaheim St										
S NORMANDIE AV	0.21				0.21		0.21	$ 6,434	$ 103,767	$ 542,699
S VERMONT AV	1.00				1.00		1.00	$ 31,047	$ 500,760	$ 2,618,977
CORRIDOR: WESTERN AVE	**3.35**				**3.35**		**3.35**	**$ 103,438**	**$ 1,668,351**	**$ 8,725,476**
Imperial Hwy To W Anaheim St										
S WESTERN AV	3.35				3.35		3.35	$ 103,438	$ 1,668,351	$ 8,725,476
CORRIDOR: COASTAL ROUTE-BEACH PATH	**4.24**				**4.24**	**0.47**	**4.70**	**$ 130,949**	**$ 2,112,086**	**$ 11,046,212**
Ventura County Line To La River										
N HARBOR BLVD	0.45				0.45		0.45	$ 13,904	$ 224,255	$ 1,172,856
Off Street						0.47	0.47	$ -	$ -	$ -
S HARBOR BLVD	0.96				0.96		0.96	$ 29,741	$ 479,699	$ 2,508,827
S PACIFIC AV	0.25				0.25		0.25	$ 7,753	$ 125,041	$ 653,964
W 22ND ST	0.20				0.20		0.20	$ 6,162	$ 99,388	$ 519,799
W 25TH ST	2.09				2.09		2.09	$ 64,679	$ 1,043,206	$ 5,455,966
W 26TH ST	0.28				0.28		0.28	$ 8,711	$ 140,497	$ 734,801
Manhattan Beach	**6.45**				**6.45**	**2.11**	**8.57**	**$ 199,372**	**$ 3,215,671**	**$ 16,817,958**
CORRIDOR: AVIATION-BNSF-LAX	**1.59**				**1.59**		**1.59**	**$ 49,194**	**$ 793,457**	**$ 4,149,781**
W Manchester Ave To Manhattan Beach Blvd										
N ARDMORE AV	1.59				1.59		1.59	$ 49,194	$ 793,457	$ 4,149,781
CORRIDOR: MANHATTAN BEACH BLVD	**1.96**				**1.96**		**1.96**	**$ 60,592**	**$ 977,289**	**$ 5,111,220**
Coast To Crenshaw Blvd										
MANHATTAN BEACH BLVD	1.96				1.96		1.96	$ 60,592	$ 977,289	$ 5,111,220
CORRIDOR: SEPULVEDA-PCH	**2.01**				**2.01**		**2.01**	**$ 62,162**	**$ 1,002,618**	**$ 5,243,694**
Santa Monica Blvd To Palos Verdes Blvd										
N SEPULVEDA BLVD	1.55				1.55		1.55	$ 47,949	$ 773,368	$ 4,044,715
PACIFIC COAST HWY	0.31				0.31		0.31	$ 9,470	$ 152,746	$ 798,862
S SEPULVEDA BLVD	0.15				0.15		0.15	$ 4,743	$ 76,504	$ 400,117
CORRIDOR: ARTESIA-VERMONT	**0.89**				**0.89**		**0.89**	**$ 27,423**	**$ 442,307**	**$ 2,313,263**
Coast To S Vermont Ave										
ARTESIA BLVD	0.89				0.89		0.89	$ 27,423	$ 442,307	$ 2,313,263
CORRIDOR: COASTAL ROUTE-BEACH PATH						**2.11**	**2.11**	**$ -**	**$ -**	**$ -**
Ventura County Line To La River										
Off Street						2.11	2.11	$ -	$ -	$ -

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Palos Verdes Estates	**5.82**				**5.82**		**5.82**	**$ 179,956**	**$ 2,902,520**	**$ 15,180,180**
CORRIDOR: PALOS VERDES DRIVE	**1.71**				**1.71**		**1.71**	**$ 52,786**	**$ 851,390**	**$ 4,452,772**
Palos Verdes Blvd To S Figueroa St										
PALOS VERDES DR N	1.71				1.71		1.71	$ 52,786	$ 851,390	$ 4,452,772
CORRIDOR: COASTAL ROUTE-BEACH PATH	**4.12**				**4.12**		**4.12**	**$ 127,170**	**$ 2,051,130**	**$ 10,727,408**
Ventura County Line To La River										
PALOS VERDES DR W	4.09				4.09		4.09	$ 126,527	$ 2,040,755	$ 10,673,148
VIA CORONEL	0.02				0.02		0.02	$ 643	$ 10,375	$ 54,259
Rancho Palos Verdes	**6.81**				**6.81**		**6.81**	**$ 210,351**	**$ 3,392,753**	**$ 17,744,096**
CORRIDOR: COASTAL ROUTE-BEACH PATH	**6.81**				**6.81**		**6.81**	**$ 210,351**	**$ 3,392,753**	**$ 17,744,096**
Ventura County Line To La River										
PALOS VERDES DR S	5.22				5.22		5.22	$ 161,295	$ 2,601,526	$ 13,605,978
PALOS VERDES DR W	1.59				1.59		1.59	$ 49,056	$ 791,227	$ 4,138,117
Redondo Beach	**10.81**		**1.15**	**0.54**	**12.50**	**2.76**	**15.26**	**$ 549,202**	**$ 8,840,776**	**$ 46,250,814**
CORRIDOR: ARTESIA-HERONDO	**2.62**		**0.04**		**2.66**		**2.66**	**$ 87,876**	**$ 1,416,730**	**$ 7,409,986**
Coast To Orange County Line										
190TH ST	1.40				1.40		1.40	$ 43,131	$ 695,658	$ 3,638,290
ANITA ST	0.75				0.75		0.75	$ 23,158	$ 373,516	$ 1,953,491
FLAGLER LN	0.04				0.04		0.04	$ 1,311	$ 21,141	$ 110,565
HERONDO ST	0.43				0.43		0.43	$ 13,437	$ 216,729	$ 1,133,495
Off Street			0.04		0.04		0.04	$ 6,839	$ 109,685	$ 574,145
CORRIDOR: BNSF-SOUTH BAY			**1.11**		**1.11**		**1.11**	**$ 182,181**	**$ 2,921,698**	**$ 15,293,550**
Bnsf Rr To Crenshaw Blvd										
Off Street			1.11		1.11		1.11	$ 182,181	$ 2,921,698	$ 15,293,550
CORRIDOR: Del Amo Blvd	**0.87**				**0.87**		**0.87**	**$ 27,024**	**$ 435,864**	**$ 2,279,570**
Coast To Coyote Creek										
TORRANCE BLVD	0.87				0.87		0.87	$ 27,024	$ 435,864	$ 2,279,570
CORRIDOR: MANHATTAN BEACH BLVD	**1.00**				**1.00**		**1.00**	**$ 30,886**	**$ 498,155**	**$ 2,605,351**
Coast To Crenshaw Blvd										
MANHATTAN BEACH BLVD	1.00				1.00		1.00	$ 30,886	$ 498,155	$ 2,605,351
CORRIDOR: PCH				**0.33**	**0.33**		**0.33**	**$ 16,145**	**$ 260,408**	**$ 1,361,936**
Esplanade To San Gabriel River										
AVE I				0.33	0.33		0.33	$ 16,145	$ 260,408	$ 1,361,936
CORRIDOR: REDONDO BEACH BLVD	**1.23**			**0.21**	**1.43**		**1.43**	**$ 47,954**	**$ 773,455**	**$ 4,045,170**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
GRANT AVE				0.21	0.21		0.21	$ 10,031	$ 161,792	$ 846,173
RIPLEY AV	1.23				1.23		1.23	$ 37,923	$ 611,663	$ 3,198,997
CORRIDOR: SEPULVEDA-PCH	**2.57**				**2.57**		**2.57**	**$ 79,470**	**$ 1,281,772**	**$ 6,703,668**
Santa Monica Blvd To Palos Verdes Blvd										
N PACIFIC COAST HWY	0.94				0.94		0.94	$ 28,902	$ 466,165	$ 2,438,042
S PACIFIC COAST HWY	1.64				1.64		1.64	$ 50,568	$ 815,607	$ 4,265,626
CORRIDOR: SEPULVEDA-WILLOW	**0.93**				**0.93**		**0.93**	**$ 28,660**	**$ 462,255**	**$ 2,417,596**
Torrance Blvd To Coyote Creek										
CM REAL	0.93				0.93		0.93	$ 28,660	$ 462,255	$ 2,417,596
CORRIDOR: ARTESIA-VERMONT	**1.59**				**1.59**		**1.59**	**$ 49,007**	**$ 790,437**	**$ 4,133,988**
Coast To S Vermont Ave										
ARTESIA BLVD	1.59				1.59		1.59	$ 49,007	$ 790,437	$ 4,133,988
CORRIDOR: COASTAL ROUTE-BEACH PATH						**2.76**	**2.76**	**$ -**	**$ -**	**$ -**
Ventura County Line To La River										
Off Street						2.76	2.76	$ -	$ -	$ -
Rolling Hills Estates	**0.36**				**0.36**	**3.96**	**4.32**	**$ 11,116**	**$ 179,286**	**$ 937,666**
CORRIDOR: HILLCREST-HAWTHORNE	**0.36**				**0.36**	**0.45**	**0.81**	**$ 11,116**	**$ 179,286**	**$ 937,666**
Slauson Blvd To Palos Verdes Dr										
HAWTHORNE BLVD	0.36				0.36		0.36	$ 11,116	$ 179,286	$ 937,666
Off Street						0.45	0.45	$ -	$ -	$ -
CORRIDOR: PALOS VERDES DRIVE						**3.51**	**3.51**	**$ -**	**$ -**	**$ -**
Palos Verdes Blvd To S Figueroa St										
Off Street						3.51	3.51	$ -	$ -	$ -
Torrance	**31.31**		**2.48**		**33.79**	**0.31**	**34.10**	**$ 1,374,894**	**$ 22,138,342**	**$ 115,812,765**
CORRIDOR: ARTESIA-HERONDO	**2.56**				**2.56**		**2.56**	**$ 79,016**	**$ 1,274,448**	**$ 6,665,365**
Coast To Orange County Line										
190TH ST	2.56				2.56		2.56	$ 79,016	$ 1,274,448	$ 6,665,365
CORRIDOR: BNSF-SOUTH BAY			**2.48**		**2.48**		**2.48**	**$ 407,602**	**$ 6,536,858**	**$ 34,217,006**
Bnsf Rr To Crenshaw Blvd										
Off Street			2.48		2.48		2.48	$ 407,602	$ 6,536,858	$ 34,217,006
CORRIDOR: CRENSHAW-ARDEN	**6.42**				**6.42**		**6.42**	**$ 198,242**	**$ 3,197,453**	**$ 16,722,679**
Highland Ave To Pch										
CRENSHAW BLVD	6.42				6.42		6.42	$ 198,242	$ 3,197,453	$ 16,722,679
CORRIDOR: Del Amo Blvd	**3.85**				**3.85**		**3.85**	**$ 119,104**	**$ 1,921,028**	**$ 10,046,975**
Coast To Coyote Creek										
TORRANCE BLVD	3.85				3.85		3.85	$ 119,104	$ 1,921,028	$ 10,046,975
CORRIDOR: HILLCREST-HAWTHORNE	**5.64**				**5.64**		**5.64**	**$ 174,349**	**$ 2,812,080**	**$ 14,707,177**
Slauson Blvd To Palos Verdes Dr										
HAWTHORNE BLVD	5.64				5.64		5.64	$ 174,349	$ 2,812,080	$ 14,707,177
CORRIDOR: PCH	**3.97**				**3.97**		**3.97**	**$ 122,549**	**$ 1,976,592**	**$ 10,337,576**
Esplanade To San Gabriel River										
PACIFIC COAST HWY	3.37				3.37		3.37	$ 104,200	$ 1,680,652	$ 8,789,810
S PACIFIC COAST HWY	0.59				0.59		0.59	$ 18,348	$ 295,940	$ 1,547,765
CORRIDOR: SEPULVEDA-WILLOW	**3.75**				**3.75**		**3.75**	**$ 115,992**	**$ 1,870,840**	**$ 9,784,493**
Torrance Blvd To Coyote Creek										
SEPULVEDA BLVD	3.75				3.75		3.75	$ 115,992	$ 1,870,840	$ 9,784,493
CORRIDOR: WESTERN AVE	**2.08**				**2.08**		**2.08**	**$ 64,423**	**$ 1,039,088**	**$ 5,434,428**
Imperial Hwy To W Anaheim St										
WESTERN AV	2.08				2.08		2.08	$ 64,423	$ 1,039,088	$ 5,434,428
CORRIDOR: ARTESIA-VERMONT	**2.49**				**2.49**		**2.49**	**$ 76,989**	**$ 1,241,765**	**$ 6,494,431**
Coast To S Vermont Ave										
ARTESIA BLVD	1.74				1.74		1.74	$ 53,859	$ 868,686	$ 4,543,228
W ARTESIA BLVD	0.75				0.75		0.75	$ 23,131	$ 373,079	$ 1,951,202
CORRIDOR: COASTAL ROUTE-BEACH PATH	**0.54**				**0.54**	**0.31**	**0.85**	**$ 16,628**	**$ 268,190**	**$ 1,402,635**
Ventura County Line To La River										
	0.17				0.17		0.17	$ 5,384	$ 86,846	$ 454,207

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
CL DE SIRENAS	0.10				0.10		0.10	$ 3,165	$ 51,050	$ 266,990
CM D ENCANTO	0.23				0.23		0.23	$ 6,999	$ 112,892	$ 590,425
Off Street						0.31	0.31	$ -	$ -	$ -
PAS PLAYA	0.03				0.03		0.03	$ 1,079	$ 17,402	$ 91,013
Unincorporated	**13.39**		**0.22**	**0.24**	**13.85**		**13.85**	**$ 461,866**	**$ 7,446,092**	**$ 38,945,697**
CORRIDOR: 223RD-WARDLOW	**0.18**				**0.18**		**0.18**	**$ 5,591**	**$ 90,174**	**$ 471,611**
Vermont Ave To Long Beach Blvd										
W 223RD ST	0.18				0.18		0.18	$ 5,591	$ 90,174	$ 471,611
CORRIDOR: ALAMEDA			**0.02**		**0.02**		**0.02**	**$ 3,260**	**$ 52,278**	**$ 273,648**
Spring St To La River										
Off Street			0.02		0.02		0.02	$ 3,260	$ 52,278	$ 273,648
CORRIDOR: CRENSHAW-ARDEN	**1.32**				**1.32**		**1.32**	**$ 40,716**	**$ 656,705**	**$ 3,434,566**
Highland Ave To Pch										
CRENSHAW BLVD	1.32				1.32		1.32	$ 40,716	$ 656,705	$ 3,434,566
CORRIDOR: Del Amo Blvd	**0.38**		**0.20**	**0.24**	**0.82**		**0.82**	**$ 56,878**	**$ 914,312**	**$ 4,784,253**
Coast To Coyote Creek										
			0.20		0.20		0.20	$ 33,471	$ 536,780	$ 2,809,758
W DEL AMO BLVD	0.38			0.24	0.62		0.62	$ 23,407	$ 377,533	$ 1,974,495
CORRIDOR: EL SEGUNDO BLVD	**2.30**				**2.30**		**2.30**	**$ 70,957**	**$ 1,144,466**	**$ 5,985,555**
Coast To Alameda St										
W EL SEGUNDO BLVD	2.30				2.30		2.30	$ 70,957	$ 1,144,466	$ 5,985,555
CORRIDOR: HILLCREST-HAWTHORNE	**0.57**				**0.57**		**0.57**	**$ 17,729**	**$ 285,959**	**$ 1,495,567**
Slauson Blvd To Palos Verdes Dr										
S HAWTHORNE BLVD	0.57				0.57		0.57	$ 17,729	$ 285,959	$ 1,495,567
CORRIDOR: IMPERIAL HWY	**1.50**				**1.50**		**1.50**	**$ 46,320**	**$ 747,104**	**$ 3,907,355**
Coast To Orange County Line										
W IMPERIAL HWY	1.50				1.50		1.50	$ 46,320	$ 747,104	$ 3,907,355
CORRIDOR: MANHATTAN BEACH BLVD	**1.00**				**1.00**		**1.00**	**$ 30,928**	**$ 498,843**	**$ 2,608,949**
Coast To Crenshaw Blvd										
MANHATTAN BEACH BLVD	1.00				1.00		1.00	$ 30,928	$ 498,843	$ 2,608,949
CORRIDOR: REDONDO BEACH BLVD	**1.07**				**1.07**		**1.07**	**$ 32,939**	**$ 531,276**	**$ 2,778,575**
Flagler Ln To Salt Lake- Up-Pe Rr Row										
REDONDO BEACH BLVD	1.07				1.07		1.07	$ 32,939	$ 531,276	$ 2,778,575
CORRIDOR: SEPULVEDA-WILLOW	**0.71**				**0.71**		**0.71**	**$ 21,890**	**$ 353,059**	**$ 1,846,500**
Torrance Blvd To Coyote Creek										
W SEPULVEDA BLVD	0.71				0.71		0.71	$ 21,890	$ 353,059	$ 1,846,500
CORRIDOR: VERMONT	**3.36**				**3.36**		**3.36**	**$ 103,716**	**$ 1,672,845**	**$ 8,748,980**
Los Feliz Blvd To W Anaheim St										
S VERMONT AV	3.36				3.36		3.36	$ 103,716	$ 1,672,845	$ 8,748,980
CORRIDOR: WESTERN AVE	**1.00**				**1.00**		**1.00**	**$ 30,942**	**$ 499,070**	**$ 2,610,137**
Imperial Hwy To W Anaheim St										
S WESTERN AV	1.00				1.00		1.00	$ 30,942	$ 499,070	$ 2,610,137
Lomita	**1.08**				**1.08**	**0.67**	**1.75**	**$ 33,409**	**$ 538,851**	**$ 2,818,192**
CORRIDOR: PALOS VERDES DRIVE						0.67	0.67	$ -	$ -	$ -
Palos Verdes Blvd To S Figueroa St										
Off Street						0.67	0.67	$ -	$ -	$ -
CORRIDOR: PCH	**1.08**				**1.08**		**1.08**	**$ 33,409**	**$ 538,851**	**$ 2,818,192**
Esplanade To San Gabriel River										
PACIFIC COAST HWY	1.08				1.08		1.08	$ 33,409	$ 538,851	$ 2,818,192
Westside Cities	**89.64**		**14.58**	**7.57**	**111.78**	**20.77**	**132.55**	**$ 5,531,081**	**$ 88,991,715**	**$ 465,598,235**
Beverly Hills	**6.29**				**6.29**		**6.29**	**$ 194,238**	**$ 3,132,865**	**$ 16,384,886**
CORRIDOR: BEVERLY-TEMPLE	**0.34**				**0.34**		**0.34**	**$ 10,506**	**$ 169,459**	**$ 886,271**
Santa Monica Blvd To La River										
BEVERLY BLVD	0.34				0.34		0.34	$ 10,506	$ 169,459	$ 886,271
CORRIDOR: BROADWAY-FOUNTAIN-SANTA MONICA	**1.83**				**1.83**		**1.83**	**$ 56,416**	**$ 909,941**	**$ 4,758,992**
Ocean Ave To W Sunset Blvd										
SANTA MONICA BLVD	1.83				1.83		1.83	$ 56,416	$ 909,941	$ 4,758,992
CORRIDOR: CULVER-ROBERTSON	**0.94**				**0.94**		**0.94**	**$ 29,066**	**$ 468,813**	**$ 2,451,892**
Santa Monica Blvd To Lincoln Blvd										
N ROBERTSON BLVD	0.26				0.26		0.26	$ 8,051	$ 129,854	$ 679,139
S ROBERTSON BLVD	0.68				0.68		0.68	$ 21,015	$ 338,959	$ 1,772,753
CORRIDOR: SAN VICENTE BLVD	**0.62**				**0.62**		**0.62**	**$ 19,296**	**$ 311,218**	**$ 1,627,670**
Santa Monica Blvd To Venice Blvd										
	0.62				0.62		0.62	$ 19,296	$ 311,218	$ 1,627,670
CORRIDOR: WILSHIRE-SAN VICENTE	**2.56**				**2.56**		**2.56**	**$ 78,953**	**$ 1,273,434**	**$ 6,660,060**
Ocean Ave To Central Ave										
WILSHIRE BLVD	2.56				2.56		2.56	$ 78,953	$ 1,273,434	$ 6,660,060
Culver City	**4.30**		**1.02**		**5.32**	**3.10**	**8.42**	**$ 300,770**	**$ 4,835,732**	**$ 25,302,930**
CORRIDOR: BALLONA CREEK			**0.30**		**0.30**	**2.44**	**2.74**	**$ 48,907**	**$ 784,344**	**$ 4,105,625**
Pacific Ave To Venice Blvd										
Off Street			0.30		0.30	2.44	2.74	$ 48,907	$ 784,344	$ 4,105,625
CORRIDOR: BUNDY-CENTINELA-INGLEWOOD	**0.27**				**0.27**		**0.27**	**$ 8,220**	**$ 132,589**	**$ 693,438**
San Vicente Blvd To S Centinela Ave										
S CENTINELA AV	0.27				0.27		0.27	$ 8,220	$ 132,589	$ 693,438
CORRIDOR: CULVER-JEFFERSON	**0.24**				**0.24**		**0.24**	**$ 7,283**	**$ 117,467**	**$ 614,350**
S Sepulveda Blvd To Coast										
W CENTINELA AV	0.24				0.24		0.24	$ 7,283	$ 117,467	$ 614,350
CORRIDOR: CULVER-ROBERTSON	**1.40**				**1.40**	**0.66**	**2.06**	**$ 43,382**	**$ 699,710**	**$ 3,659,484**
Santa Monica Blvd To Lincoln Blvd										
CULVER BLVD	1.40				1.40		1.40	$ 43,382	$ 699,710	$ 3,659,484
Off Street						0.66	0.66	$ -	$ -	$ -
CORRIDOR: SEPULVEDA-PCH	**2.39**				**2.39**		**2.39**	**$ 73,828**	**$ 1,190,781**	**$ 6,227,786**
Santa Monica Blvd To Palos Verdes Blvd										
	0.11				0.11		0.11	$ 3,466	$ 55,908	$ 292,398
OVERLAND AV	1.93				1.93		1.93	$ 59,665	$ 962,346	$ 5,033,070
PLAYA ST	0.35				0.35		0.35	$ 10,697	$ 172,527	$ 902,319
CORRIDOR: WESTWOOD-SPRR-JEFFERSON			**0.73**		**0.73**		**0.73**	**$ 119,149**	**$ 1,910,841**	**$ 10,002,247**
Le Conte Ave To S Figueroa St										
Off Street			0.73		0.73		0.73	$ 119,149	$ 1,910,841	$ 10,002,247
Los Angeles	**59.14**		**8.45**	**1.92**	**69.50**	**12.59**	**82.09**	**$ 3,306,446**	**$ 53,202,763**	**$ 278,349,833**
CORRIDOR: BALLONA CREEK			**1.60**		**1.60**	**4.14**	**5.74**	**$ 262,683**	**$ 4,212,743**	**$ 22,051,488**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
Pacific Ave To Venice Blvd										
Off Street			1.60		1.60	4.14	5.74	$ 262,683	$ 4,212,743	$ 22,051,488
CORRIDOR: BROADWAY-FOUNTAIN-SANTA MONICA	**3.57**				**3.57**		**3.57**	**$ 110,172**	**$ 1,776,964**	**$ 9,293,521**
Ocean Ave To W Sunset Blvd										
OHIO AV	0.35				0.35		0.35	$ 10,823	$ 174,559	$ 912,942
SANTA MONICA BLVD	3.22				3.22		3.22	$ 99,349	$ 1,602,405	$ 8,380,579
CORRIDOR: BUNDY-CENTINELA-INGLEWOOD	**6.09**				**6.09**		**6.09**	**$ 188,032**	**$ 3,032,768**	**$ 15,861,378**
San Vicente Blvd To S Centinela Ave										
INGLEWOOD BLVD	0.64				0.64		0.64	$ 19,772	$ 318,908	$ 1,667,890
S BUNDY DR	3.20				3.20		3.20	$ 98,936	$ 1,595,746	$ 8,345,750
S CENTINELA AV	2.24				2.24		2.24	$ 69,323	$ 1,118,114	$ 5,847,738
CORRIDOR: CULVER-JEFFERSON	**2.68**		**0.27**	**1.32**	**4.26**		**4.26**	**$ 190,843**	**$ 3,074,110**	**$ 16,080,727**
S Sepulveda Blvd To Coast										
CULVER BLVD				0.91	0.91		0.91	$ 44,546	$ 718,478	$ 3,757,642
N JEFFERSON BLVD	0.13				0.13		0.13	$ 4,011	$ 64,686	$ 338,309
Off Street			0.27		0.27		0.27	$ 43,623	$ 699,591	$ 3,661,988
PACIFIC AV				0.41	0.41		0.41	$ 19,952	$ 321,814	$ 1,683,085
S CENTINELA AV	0.57				0.57		0.57	$ 17,494	$ 282,154	$ 1,475,666
W JEFFERSON BLVD	1.98				1.98		1.98	$ 61,218	$ 987,387	$ 5,164,036
CORRIDOR: CULVER-ROBERTSON	**2.84**		**0.69**		**3.52**	**1.38**	**4.91**	**$ 200,383**	**$ 3,221,650**	**$ 16,857,313**
Santa Monica Blvd To Lincoln Blvd										
CULVER BLVD	0.78				0.78		0.78	$ 24,181	$ 390,012	$ 2,039,765
McKonnel			0.69		0.69		0.69	$ 112,726	$ 1,807,825	$ 9,463,009
Off Street						1.38	1.38	$ -	$ -	$ -
ROBERTSON PL	0.06				0.06		0.06	$ 1,937	$ 31,238	$ 163,375
S ROBERTSON BLVD	1.99				1.99		1.99	$ 61,540	$ 992,575	$ 5,191,165
CORRIDOR: EL SEGUNDO BLVD	**0.39**				**0.39**		**0.39**	**$ 12,007**	**$ 193,654**	**$ 1,012,809**
Coast To Alameda St										
GRAND AV	0.39				0.39		0.39	$ 12,007	$ 193,654	$ 1,012,809
CORRIDOR: FAIRFAX	**0.47**				**0.47**		**0.47**	**$ 14,532**	**$ 234,388**	**$ 1,225,850**
Hollywood Blvd To Ballona Creek										
N FAIRFAX AV	0.47				0.47		0.47	$ 14,532	$ 234,388	$ 1,225,850
CORRIDOR: FIRESTONE-MANCHESTER	**4.28**				**4.28**		**4.28**	**$ 132,342**	**$ 2,134,548**	**$ 11,163,686**
Culver Blvd To La River										
PERSHING DR	0.49				0.49		0.49	$ 15,204	$ 245,219	$ 1,282,498
W MANCHESTER AV	3.79				3.79		3.79	$ 117,138	$ 1,889,329	$ 9,881,188
CORRIDOR: IMPERIAL HWY						**0.60**	**0.60**	**$ -**	**$ -**	**$ -**
Coast To Orange County Line										
Off Street						0.60	0.60	$ -	$ -	$ -
CORRIDOR: LINCOLN BLVD	**4.11**		**0.11**		**4.23**		**4.23**	**$ 145,498**	**$ 2,345,050**	**$ 12,265,929**
San Vicente Blvd To W Manchester Ave										
LINCOLN BLVD	4.11				4.11		4.11	$ 127,099	$ 2,049,988	$ 10,721,437
Off Street			0.11		0.11		0.11	$ 18,398	$ 295,062	$ 1,544,492
CORRIDOR: MONTANA AVE	**0.96**				**0.96**		**0.96**	**$ 29,513**	**$ 476,010**	**$ 2,489,530**
Ocean Ave To Sin Vicente Blvd										
MONTANA AV	0.96				0.96		0.96	$ 29,513	$ 476,010	$ 2,489,530
CORRIDOR: MOTOR-SPRR-COLORADO	**0.85**		**2.88**		**3.73**		**3.73**	**$ 498,852**	**$ 8,002,676**	**$ 41,887,900**
Ocean Ave To Venice Blvd										
MOTOR AV	0.85				0.85		0.85	$ 26,166	$ 422,030	$ 2,207,215
Off Street			2.88		2.88		2.88	$ 472,687	$ 7,580,646	$ 39,680,685
CORRIDOR: OCEAN-MAIN-VENICE	**1.20**			**0.60**	**1.80**		**1.80**	**$ 66,193**	**$ 1,067,633**	**$ 5,583,720**
San Vicente Blvd To Ballona Creek										
MAIN ST	0.88				0.88		0.88	$ 27,135	$ 437,668	$ 2,289,005
MILDRED AV				0.58	0.58		0.58	$ 28,117	$ 453,498	$ 2,371,796
OCEAN AV				0.02	0.02		0.02	$ 1,018	$ 16,414	$ 85,845
VENICE WY	0.32				0.32		0.32	$ 9,923	$ 160,052	$ 837,073
CORRIDOR: OHIO AVE	**1.00**				**1.00**		**1.00**	**$ 30,771**	**$ 496,313**	**$ 2,595,715**
Federal Ave To Westwood Blvd										
OHIO AV	1.00				1.00		1.00	$ 30,771	$ 496,313	$ 2,595,715
CORRIDOR: PICO-GATEWAY-OCEAN PARK	**0.90**				**0.90**		**0.90**	**$ 27,837**	**$ 448,984**	**$ 2,348,189**
Barnard Way To Central Ave										
GATEWAY BLVD	0.54				0.54		0.54	$ 16,775	$ 270,567	$ 1,415,068
OCEAN PARK BLVD	0.36				0.36		0.36	$ 11,062	$ 178,417	$ 933,121
CORRIDOR: SEPULVEDA	**4.41**				**4.41**		**4.41**	**$ 136,238**	**$ 2,197,391**	**$ 11,492,356**
Rinaldi St To Venice Blvd										
S SEPULVEDA BLVD	4.41				4.41		4.41	$ 136,238	$ 2,197,391	$ 11,492,356
CORRIDOR: SEPULVEDA-PCH	**6.87**				**6.87**		**6.87**	**$ 212,266**	**$ 3,423,642**	**$ 17,905,647**
Santa Monica Blvd To Palos Verdes Blvd										
OVERLAND AV	2.85				2.85		2.85	$ 88,100	$ 1,420,967	$ 7,431,655
S SEPULVEDA BLVD	4.02				4.02		4.02	$ 124,166	$ 2,002,675	$ 10,473,992
CORRIDOR: VENICE BLVD	**9.51**				**9.51**		**9.51**	**$ 293,729**	**$ 4,737,568**	**$ 24,777,482**
Ocean Front Walk To Crenshaw Blvd										
N VENICE BLVD	1.29				1.29		1.29	$ 39,825	$ 642,334	$ 3,359,404
VENICE BLVD	8.22				8.22		8.22	$ 253,905	$ 4,095,235	$ 21,418,078
CORRIDOR: WILSHIRE-SAN VICENTE	**4.36**				**4.36**		**4.36**	**$ 134,772**	**$ 2,173,746**	**$ 11,368,689**
Ocean Ave To Central Ave										
FEDERAL AV	0.52				0.52		0.52	$ 15,979	$ 257,732	$ 1,347,937
SAN VICENTE BLVD	1.77				1.77		1.77	$ 54,626	$ 881,069	$ 4,607,993
WILSHIRE BLVD	2.08				2.08		2.08	$ 64,167	$ 1,034,944	$ 5,412,759
CORRIDOR: COASTAL ROUTE-BEACH PATH	**0.84**		**2.09**		**2.94**	**6.47**	**9.40**	**$ 369,327**	**$ 5,925,414**	**$ 31,014,536**
Ventura County Line To La River										
Off Street			2.09		2.09	6.47	8.56	$ 343,290	$ 5,505,461	$ 28,818,183
WASHINGTON BLVD	0.84				0.84		0.84	$ 26,037	$ 419,953	$ 2,196,354
CORRIDOR: WESTWOOD-SPRR-JEFFERSON	**3.83**		**0.81**		**4.63**		**4.63**	**$ 250,457**	**$ 4,027,512**	**$ 21,073,366**
Le Conte Ave To S Figueroa St										
NATIONAL BLVD	0.45				0.45		0.45	$ 13,970	$ 225,327	$ 1,178,461
NATIONAL PL	0.53				0.53		0.53	$ 16,463	$ 265,540	$ 1,388,775
Off Street			0.81		0.81		0.81	$ 132,169	$ 2,119,643	$ 11,095,212
WESTWOOD BLVD	2.84				2.84		2.84	$ 87,854	$ 1,417,002	$ 7,410,918
Santa Monica	**13.74**		**4.98**	**4.02**	**22.74**	**3.03**	**25.77**	**$ 1,438,259**	**$ 23,122,805**	**$ 120,990,901**
CORRIDOR: 17TH ST SANTA MONICA			**0.46**	**2.59**	**3.05**		**3.05**	**$ 202,151**	**$ 3,253,569**	**$ 17,021,590**

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
San Vicente Blvd To Ocean Park Blvd										
			0.46	0.25	0.71		0.71	$ 87,958	$ 1,411,744	$ 7,388,845
17TH ST				2.34	2.34		2.34	$ 114,193	$ 1,841,825	$ 9,632,745
CORRIDOR: BROADWAY-FOUNTAIN-SANTA MONICA	**2.43**				**2.43**		**2.43**	**$ 74,970**	**$ 1,209,186**	**$ 6,324,043**
Ocean Ave To W Sunset Blvd										
ARIZONA AV	0.46				0.46		0.46	$ 14,157	$ 228,333	$ 1,194,182
BROADWAY	1.97				1.97		1.97	$ 60,813	$ 980,853	$ 5,129,861
CORRIDOR: LINCOLN BLVD	**3.00**				**3.00**		**3.00**	**$ 92,543**	**$ 1,492,636**	**$ 7,806,486**
San Vicente Blvd To W Manchester Ave										
7TH ST	1.62				1.62		1.62	$ 50,047	$ 807,210	$ 4,221,710
LINCOLN BLVD	1.38				1.38		1.38	$ 42,496	$ 685,426	$ 3,584,776
CORRIDOR: MONTANA AVE	**2.20**				**2.20**		**2.20**	**$ 67,950**	**$ 1,095,966**	**$ 5,731,904**
Ocean Ave To Sin Vicente Blvd										
MONTANA AV	2.20				2.20		2.20	$ 67,950	$ 1,095,966	$ 5,731,904
CORRIDOR: MOTOR-SPRR-COLORADO	**0.12**		**2.47**		**2.58**		**2.58**	**$ 408,265**	**$ 6,547,831**	**$ 34,274,177**
Ocean Ave To Venice Blvd										
COLORADO AV	0.11				0.11		0.11	$ 3,280	$ 52,906	$ 276,697
Off Street			2.47		2.47		2.47	$ 404,632	$ 6,489,225	$ 33,967,672
PALISADES BEACH RD	0.01				0.01		0.01	$ 353	$ 5,700	$ 29,809
CORRIDOR: OCEAN-MAIN-VENICE	**1.32**			**1.43**	**2.76**		**2.76**	**$ 110,853**	**$ 1,787,950**	**$ 9,350,981**
San Vicente Blvd To Ballona Creek										
MAIN ST	1.32				1.32		1.32	$ 40,938	$ 660,298	$ 3,453,358
OCEAN AV				1.43	1.43		1.43	$ 69,914	$ 1,127,653	$ 5,897,623
CORRIDOR: PICO-GATEWAY-OCEAN PARK	**2.62**				**2.62**		**2.62**	**$ 80,921**	**$ 1,305,171**	**$ 6,826,045**
Barnard Way To Central Ave										
OCEAN PARK BLVD	2.62				2.62		2.62	$ 80,921	$ 1,305,171	$ 6,826,045
CORRIDOR: WILSHIRE-SAN VICENTE	**2.05**		**2.05**		**4.11**		**4.11**	**$ 400,607**	**$ 6,430,496**	**$ 33,655,673**
Ocean Ave To Central Ave										
SAN VICENTE BIKE PATH			2.05		2.05		2.05	$ 337,116	$ 5,406,458	$ 28,299,953
SAN VICENTE BLVD	2.05				2.05		2.05	$ 63,490	$ 1,024,038	$ 5,355,720
CORRIDOR: COASTAL ROUTE-BEACH PATH						**3.03**	**3.03**	**$ -**	**$ -**	**$ -**
Ventura County Line To La River										
Off Street						3.03	3.03	$ -	$ -	$ -
Unincorporated	**1.70**		**0.13**		**1.83**	**2.05**	**3.87**	**$ 73,489**	**$ 1,183,388**	**$ 6,190,620**
CORRIDOR: OCEAN-MAIN-VENICE			**0.13**		**0.13**	**2.05**	**2.17**	**$ 20,940**	**$ 335,825**	**$ 1,757,867**
San Vicente Blvd To Ballona Creek										
FIJI WY						0.75	0.75	$ -	$ -	$ -
Off Street			0.13		0.13	1.30	1.43	$ 20,940	$ 335,825	$ 1,757,867
CORRIDOR: SEPULVEDA	**0.60**				**0.60**		**0.60**	**$ 18,562**	**$ 299,392**	**$ 1,565,821**
Rinaldi St To Venice Blvd										
S SEPULVEDA BLVD	0.60				0.60		0.60	$ 18,562	$ 299,392	$ 1,565,821
CORRIDOR: WILSHIRE-SAN VICENTE	**1.10**				**1.10**		**1.10**	**$ 33,987**	**$ 548,171**	**$ 2,866,933**
Ocean Ave To Central Ave										
SAN VICENTE BLVD	0.25				0.25		0.25	$ 7,805	$ 125,889	$ 658,401
WILSHIRE BLVD	0.85				0.85		0.85	$ 26,181	$ 422,281	$ 2,208,532
West Hollywood	**4.48**			**1.63**	**6.11**		**6.11**	**$ 217,878**	**$ 3,514,162**	**$ 18,379,066**
CORRIDOR: BEVERLY-TEMPLE	**0.63**				**0.63**		**0.63**	**$ 19,539**	**$ 315,149**	**$ 1,648,231**
Santa Monica Blvd To La River										
BEVERLY BLVD	0.63				0.63		0.63	$ 19,539	$ 315,149	$ 1,648,231
CORRIDOR: BROADWAY-FOUNTAIN-SANTA MONICA	**1.87**			**1.63**	**3.49**		**3.49**	**$ 137,046**	**$ 2,210,415**	**$ 11,560,472**
Ocean Ave To W Sunset Blvd										
FOUNTAIN AV				1.63	1.63		1.63	$ 79,415	$ 1,280,888	$ 6,699,046
N DOHENY DR	0.02				0.02		0.02	$ 643	$ 10,377	$ 54,273
SANTA MONICA BLVD	1.84				1.84		1.84	$ 56,987	$ 919,150	$ 4,807,153
CORRIDOR: CULVER-ROBERTSON	**0.53**				**0.53**		**0.53**	**$ 16,442**	**$ 265,190**	**$ 1,386,941**
Santa Monica Blvd To Lincoln Blvd										
N ROBERTSON BLVD	0.53				0.53		0.53	$ 16,442	$ 265,190	$ 1,386,941
CORRIDOR: FAIRFAX	**0.51**				**0.51**		**0.51**	**$ 15,613**	**$ 251,821**	**$ 1,317,021**
Hollywood Blvd To Ballona Creek										
N FAIRFAX AV	0.51				0.51		0.51	$ 15,613	$ 251,821	$ 1,317,021
CORRIDOR: MELROSE AVE	**0.95**				**0.95**		**0.95**	**$ 29,238**	**$ 471,587**	**$ 2,466,400**
Santa Monica Blvd To W Sunset Blvd										
MELROSE AV	0.95				0.95		0.95	$ 29,238	$ 471,587	$ 2,466,400
Palmdale Regional Airport	**3.55**				**3.55**		**3.55**	**$ 109,742**	**$ 1,770,033**	**$ 9,257,273**
Unincorporated	**3.55**				**3.55**		**3.55**	**$ 109,742**	**$ 1,770,033**	**$ 9,257,273**
CORRIDOR: AVE P	**3.55**				**3.55**		**3.55**	**$ 109,742**	**$ 1,770,033**	**$ 9,257,273**
30Th St W To 50Th St E										
AVE P	3.55				3.55		3.55	$ 109,742	$ 1,770,033	$ 9,257,273
LAX	**4.25**	**1.96**			**6.21**		**6.21**	**$ 131,344**	**$ 2,118,448**	**$ 11,079,484**
Los Angeles	**4.25**	**1.96**			**6.21**		**6.21**	**$ 131,344**	**$ 2,118,448**	**$ 11,079,484**
CORRIDOR: AVIATION-BNSF-LAX	**1.50**				**1.50**		**1.50**	**$ 46,477**	**$ 749,630**	**$ 3,920,563**
W Manchester Ave To Manhattan Beach Blvd										
AVIATION BLVD	1.50				1.50		1.50	$ 46,477	$ 749,630	$ 3,920,563
CORRIDOR: IMPERIAL HWY	**2.75**				**2.75**		**2.75**	**$ 84,867**	**$ 1,368,819**	**$ 7,158,921**
Coast To Orange County Line										
E IMPERIAL HWY	1.86				1.86		1.86	$ 57,563	$ 928,433	$ 4,855,704
W IMPERIAL HWY	0.88				0.88		0.88	$ 27,304	$ 440,386	$ 2,303,218
CORRIDOR: METRO STUDY - LAX		**1.96**			**1.96**		**1.96**	**$ -**	**$ -**	**$ -**
W Manchester Ave To Manhattan Beach Blvd										
		1.96			1.96		1.96	$ -	$ -	$ -
Port of Los Angeles	**1.97**				**1.97**		**1.97**	**$ 61,005**	**$ 983,959**	**$ 5,146,103**
Los Angeles	**1.97**				**1.97**		**1.97**	**$ 61,005**	**$ 983,959**	**$ 5,146,103**
CORRIDOR: COASTAL ROUTE-BEACH PATH	**1.97**				**1.97**		**1.97**	**$ 61,005**	**$ 983,959**	**$ 5,146,103**
Ventura County Line To La River										
FERRY ST	0.02				0.02		0.02	$ 554	$ 8,935	$ 46,730
N SEASIDE AV	0.90				0.90		0.90	$ 27,883	$ 449,721	$ 2,352,040
VINCENT THOMAS BRDG	1.05				1.05		1.05	$ 32,569	$ 525,303	$ 2,747,333
Long Beach Municipal Airport	**2.94**				**2.94**		**2.94**	**$ 90,847**	**$ 1,465,268**	**$ 7,663,350**
Long Beach	**2.94**				**2.94**		**2.94**	**$ 90,847**	**$ 1,465,268**	**$ 7,663,350**
CORRIDOR: LAKEWOOD-ROSEMEAD	**2.94**				**2.94**		**2.94**	$ 90,847	$ 1,465,268	$ 7,663,350
E Orange Grove Blvd To Pch										

Subregion:City:Corridor:Corridor Span:Segment	Not Usable As Built Dedicated Metro Regional ATN	MetroStudy Metro Regional ATN	Off-Street Metro Regional ATN	Shared Metro Regional ATN	Not Usable As Built Metro Regional ATN	Usable As Built Metro Regional ATN	Total Metro Regional ATN	Total Low Cost	Total Med Cost	Total High Cost
N LAKEWOOD BLVD	2.94				2.94		2.94	$ 90,847	$ 1,465,268	$ 7,663,350
Port of Long Beach	**2.55**		**0.18**		**2.73**		**2.73**	**$ 108,905**	**$ 1,753,781**	**$ 9,174,431**
Long Beach	**2.55**		**0.18**		**2.73**		**2.73**	**$ 108,905**	**$ 1,753,781**	**$ 9,174,431**
CORRIDOR: COASTAL ROUTE-BEACH PATH	**2.55**		**0.18**		**2.73**		**2.73**	$ 108,905	$ 1,753,781	$ 9,174,431
Ventura County Line To La River										
OCEAN BLVD	0.55				0.55		0.55	$ 17,122	$ 276,161	$ 1,444,324
Off Street			0.18		0.18		0.18	$ 30,061	$ 482,094	$ 2,523,510
W OCEAN BLVD	2.00				2.00		2.00	$ 61,723	$ 995,525	$ 5,206,597
Total	**1385.87**	**14.91**	**297.20**	**55.33**	**1753.31**	**216.61**	**1969.92**	**$ 94,282,934**	**$ 1,516,222,738**	**$ 7,933,342,350**

APPENDIX

J BICYCLE PARKING ANALYSIS

DRAFT

Metro Active Transportation Strategic Plan

Bicycle Parking & Multi-Modal Interface Recommendations



alta PLANNING + DESIGN

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1. The Role of Bicycle Parking and Multi-Modal Interface Improvements

While bicycling as a mode of transportation is consistently on the rise in the United States, this increase is primarily occurring in places that have invested time and resources into improving bicycle access (Pucher et al., 2011). Transit agencies around the country are recognizing the need to accommodate people who ride bicycles. Harnessing this growing demographic is a means to encourage new transit ridership by extending the range of the transit network. Bicycle parking at transit stations and bicycles on transit vehicles both play essential roles in improving bicycle access to transit.

Bicycle access mode share

The percentage of transit riders accessing the transit system via bicycle

Bicycle access to transit is particularly efficient for rail transit. Compared to bus services, rail services have limited geographic coverage and fewer stops, often requiring travelers to make connections by modes other than walking. Metro's Spring 2015 Customer Survey found that, compared with bus riders, more train riders connect to stations by modes other than walking, by a difference of 15 percentage points (83 percent walk access mode share for bus services versus 68 percent walk access mode share for train services). These figures include the 23 percent of train riders (but only 10 percent of bus riders) driving to stops or stations, along with higher numbers of people riding bicycles and skateboards to rail transit. Reducing the number of train riders who access the transit system by private motor vehicle benefits Metro (reducing parking demand at stations) and the transportation system as a whole (removing vehicles from the roadway network), in addition to the other economic, health, environmental and safety benefits associated with decreasing vehicle-miles traveled (VMT). Research reveals that provision of high-quality bicycle parking at transit stations is associated with increased bicycle trips to transit (TCRP, 2012).

Metro has already made significant strides in improving the multi-modal interface of its system. With an accommodating "Bikes on Metro" policy, one Bike Hub in operation (with two more coming soon) and bicycle parking in place at high-demand stations, Metro is taking the initiative to encourage bicycling as a component of transit. Its website features an entire section dedicated to bicycles, which includes information on the policy for taking bicycles on transit, the different types of bicycle parking, and a printable "Bike Pocket Guide" with bicycle safety tips and a map of bicycle parking locations. For all of these reasons, Metro is encouraging more people to access transit by bicycle and, as a result, there will be more demand for bicycle parking in the near future. With sufficient access to secure bicycle parking, more people will be able to access Metro and existing Metro users will be able to incorporate bicycling as part of their transit experience.

Bicycle parking improves the multi-modal interface and increases transit ridership by:

- Extending the effective range of the transit network to larger areas and greater numbers of potential riders
- Increasing flexibility and solving first- and last-mile connection issues
- Encouraging mode-shifts (TCRP, 2012).

Extending the range of the transit network

Studies show that most transit riders will walk one-half of a mile – about ten minutes – to a station. In this same amount of time, one can travel over two miles by bicycle (four times the distance). With a radius four times longer, the catchment area for bicycle-to-transit trips (the bikeshed) is about 16 times larger than that of walk-to-transit trips (TCRP, 2012).

Bicycles and transit are complementary modes. Transit is most effective for moderate- and long-distance trips along busy corridors, and is less effective at serving point-to-point trips within local neighborhoods or across sprawling suburban areas. Bicycling, meanwhile, is most effective for shorter trips but is often not practical for longer commutes involving significant time, preparation and potential traffic stress. Therefore, combining transit with bicycling enhances both modes, resulting in high levels of mobility: deep reach into communities combined with fast and frequent service along key corridors.

Increasing flexibility and solving first- and last-mile connection issues

Bicycle parking and bicycles-on-board enable more people to access transit more easily. With the assurance of bicycle parking at transit stops or the option to take their bicycle on-board, users have more travel options for the first and last miles of their trips. The Mineta Transportation Institute conducted a comprehensive study in 2014 that measured bicycle-friendly policies and their impacts on accessibility to transit. People who combined bicycles with transit (Cycle-Transit Users, or CTUs) were surveyed in Philadelphia and San Francisco. CTUs indicated that bicycles and transit serve as access modes for one another. Respondents said the most common reasons for being a CTU were: 1) it was faster than using either mode on its own, 2) their trips were too long to travel by bicycle alone, 3) using both modes together eliminated biking in the dark or in bad weather, and 4) a bicycle was needed to reach their final destination. In almost all cases, respondents noted bicycle parking as a key factor in their decision to bicycle to transit. If CTUs could not easily find secure bicycle parking (or take their bicycle on transit), 15 percent said that they would drive a car instead (MTI, 2014).

Encouraging mode shifts

New or improved bicycle access facilities can lead to a mode shift. People who drive may see the combination of bicycle and transit as a convenient alternative, while people who usually bicycle may take advantage of bicycle parking or the option to take a bicycle on-board as a way to fit transit into one portion of their trip. Overall, then, the multi-modal interface sees improvements and transit ridership increases.

When bicycle parking is provided at transit stations, people use it. In 2012, the Massachusetts Bay Transportation Authority inventoried bicycle parking spaces and the number of parked bicycles at each of the system's rapid transit stations, commuter rail stations, and some commuter boat terminals and bus stops. When compared to the 2009-2011 inventory, staff noted a 48 percent increase in parked bicycles and a 30 percent increase in parking spaces. This indicates that people who were not previously riding bicycles as part of their commute decided to do so in response to the installation of more bicycle parking. These findings led to a recommendation to install more short-term and long-term bicycle parking (CTPS, 2014).

In addition to the provision of bicycle parking, accommodating bicycles on transit is another way to integrate bicycle travel with transit. Every Metro bus is equipped with two or three bicycle racks on the front. Folding bicycles with wheels that are 20 inches or smaller can be taken on board at all times. Metro also allows for standard-sized bicycles on Metro Rail trains at all times, provided that there is space to fit a bicycle. Metro provides designated open areas for bicycles on train cars on the Red, Purple, Green, Gold, Blue and Expo Lines (Metro, 2016). This policy is more accommodating to people with bicycles than that of many transit agencies, where bicycles are only permitted during non-peak times. However, on-board accommodation cannot substitute for secure bicycle parking. The capacity for trains to accommodate an increasing number of bicycles over time is limited by physical space. Moreover, a lack of secure bicycle parking at rail stations tends to result in more bicycles on board trains: in the Bay Area, approximately 25 percent of people who brings their bicycles on board transit do so because of a lack of secure bicycle parking (BART, 2012). Improving bicycle parking at stations can improve service for transit customers and enhance on-board bicycle access for those who prefer to use it, simply by freeing up space on transit vehicles.

Bicycle share systems can support transit in the same way that bicycle parking can. A study from the National Center for Smart Growth Research and Education found a statistically significant association between Washington D.C.'s Capital Bikeshare ridership and Metrorail ridership. The study predicts that a 10 percent increase in bicycle sharing ridership will likely lead to a 2.8 percent increase in transit ridership (Ma et al., 2014). Metro has already taken steps in this direction. With a new bicycle share pilot program coming summer 2016, Metro has committed to making bicycle share a key part of the public transportation system. The pilot program will feature 80 stations and nearly 1,000 bicycles. With the new bicycle share system and increased bicycle parking, Metro is significantly improving its multi-modal interface and enabling people to more effectively use transit.

This memorandum outlines policy approaches and design techniques to improve the multi-modal interface in Los Angeles County and enable more people to access transit more easily.

2. Existing Bicycle Parking Requirements and Guidance

Existing Requirements

It is important to recognize the existing bicycle parking requirements within Los Angeles County before moving forward with bicycle parking infrastructure. It is still relatively uncommon for cities to have bicycle parking ordinances, but the following places are some of those in LA County that include requirements for bicycle parking supply in their Municipal Codes:

1. Los Angeles County
2. City of Los Angeles
3. City of Santa Monica
4. City of West Hollywood
5. City of Glendale
6. City of Burbank
7. City of Inglewood
8. City of Lancaster
9. City of Whittier
10. City of South Gate

Among these leaders, several jurisdictions have gone further, incorporating innovative ways to utilize bicycle parking as a transportation demand management (TDM) tool:

- Los Angeles County
    - Reduction in Required Vehicle Parking Spaces When Bicycle Parking Provided: "For every two bicycle parking spaces provided above the minimum number of such spaces required…the required number of vehicle parking spaces required may be reduced by one, with a maximum reduction in vehicle parking spaces of five percent of the total number of such spaces otherwise required."
- City of Santa Monica
    - Bicycle Parking Ordinance: One vehicle space can be replaced by four bicycles for up to 30 percent of the required number of spaces for commercial developments near transit lines and for up to 10 to 20 percent at other types of developments.
- City of South Gate
    - Density Bonus Incentive: 15 percent density bonus with the "provision of a transportation system management plan, which describes the full set of facilities and services to be provided by a development project, proposed to reduce the number of employee commute trips to the site; plus any other facilities, amenities, or services intended to encourage carpool, vanpool, transit, bicycle, or pedestrian commuting."
    - The Density Bonus Incentive also includes a one percent bonus for every five bicycle lockers installed (up to five percent), a five percent bonus for constructing an on-site internal walk/bikeway network, a two percent bonus for connecting to an existing or future regional bike trail, and a one percent bonus for every shower and locker facility (up to five percent).

- Combining these multi-modal interface incentives can result in a density bonus of more than 30 percent, with transit, carpool and alternative vehicle provisions accounting for an additional 20 percent.

State Bicycle Parking Guidance

The State of California separates bicycle parking into two classes. Class One bicycle parking is long-term, secure parking. This includes bicycle lockers, bicycle rooms or cages. Long-term bicycle parking usually serves employees, students, residents, commuters, and others who stay at a particular site for over two hours. People who park a bicycle somewhere for a longer period of time expect a secure, sheltered space (SFPD, 2013), and this is generally the case for transit trips (although short-term parking can still play a role in the bicycle-transit interface).

Class Two bicycle parking is meant for short-term use, designed to serve visitors who stay at a site for less than two hours (typically shoppers, customers, and guests). Bicycle racks are the most common form of Class Two parking and these should be convenient, easy to use, and visible (SFPD, 2013).

Site Design

To encourage maximum utilization rates and to ensure that bicycling complements transit, bicycle facilities must be carefully designed at each transit station. Short-term parking and long-term parking require different site plans and different design considerations. Regardless of the type of parking, users must be able to easily access the facilities. For example, sidewalk bicycle racks that are placed adjacent to curbside vehicle parking should be located between the parking spaces and in line with existing objects in the furnishing zone, such as trees and parking meters, to avoid conflicts with opening car doors or other sidewalk users. Conflicts with moving vehicles can generally be mitigated by providing dedicated access routes to the transit station for people walking and/or bicycling and avoiding reliance on parking lots as access routes. The station site's design should have intuitive circulation and wayfinding, so as to encourage the use of both short-and long-term bicycle parking facilities.

Spacing and layout of bicycle parking facilities should be consistent with Metro's AS-103 Standard Drawing and Rail Design Criteria (Metro, 2012). Relevant site design requirements are summarized below.

Short-Term (Free) Bicycle Parking

Short-term bicycle parking should be:

- In the form of an inverted-U rack with capacity for two bicycles
- Placed no more than 50 feet from the station entrance
- Located in a highly-trafficked area with natural, passive surveillance

Long-Term (Paid-Secure) Bicycle Parking

Long-term bicycle parking is designed primarily for safety of users and their bicycles. Whereas short-term parking takes the form of bicycle racks, long-term parking can consist of a wider variety of facilities. These can be located indoors or outdoors and can include bicycle lockers or high-capacity bicycle rooms (also known as Secure Parking Areas or SPAs). Long-term

bicycle parking may be located more than 50 feet from the station entrance, but no further than the nearest car parking space. Long-term bicycle parking should be:

- Adequately lit
- Visible through natural surveillance and cameras
- Weather-protected
- Access-controlled through:
    - Leased or on-demand lockers that use either keys or smartcards
    - Keycard/code access to a garage cage or bicycle room

Lockers for personal items and showers are occasionally provided at long-term bicycle parking locations. However, these features are typically best-suited to privately-managed facilities. Further consideration of business models and operating arrangements is required before installing such facilities at public transit stations.

3. Bicycle Parking Supply for Metro Rail Stations

For bicycle parking to be effective, there must be a sufficient supply of spaces to accommodate current and future demand. There are a variety of ways to approach such an analysis, but most estimates of bicycle parking demand at transit stations incorporate the following variables:

- Transit ridership
- Bicycle ridership (at the station and/or in the community)
- Existing bicycle parking supply

This memo presents four alternative approaches. Methodology 1 comes directly from Metro's Bicycle Parking Baseline Specifications (Metro 2012b); Methodology 2 is from the Transit Cooperative Research Program (TCRP, 2011); Methodology 3 is drawn from the Association of Pedestrian and Bicycle Professionals (APBP, 2015); and Methodology 4 is an adjusted version of Metro's methodology that incorporates aspects of the TCRP and APBP models. This memo recommends Methodology 4 as the preferred framework for calculating bicycle parking supply at Metro Rail stations going forward. [1]

Table 1 provides the parking supply results from the preferred methodology for all Metro Rail Stations. The calculations provided in Table 1 represent an estimate of parking need for each station, based on transit ridership and bicycle access mode share. Recommended supplies for each station should be vetted by Metro staff and adjusted to reflect unique characteristics at each station, such as community-wide bicycle mode share, land use context, population density, transit dependency and available right of way.

Table 2, located in the Appendix, summarizes the results generated by each of these alternative methodologies.

Methodology 1: Metro Bicycle Parking Baseline Specifications

The first methodology is found in Section 12 93 12 of Metro's Bicycle Parking Ordinance. This approach uses a single variable:

1. Number of daily peak-period boardings for each station[2]

Two constants are also used in the Metro methodology:

2. 1.25 percent – called "current demand," Metro's estimated system-wide bicycle access mode share, circa 2012.
3. 60:40 – Metro's recommended ratio of short-term to long-term bicycle parking spaces at Metro Rail.

The peak-period boardings at each station were multiplied by the average bicycle access mode share (1.25 percent) to find the total required bicycle parking supply, which was then divided into short-term and long-term at a ratio of 60:40. Existing bicycle parking at each station was

[1] These approaches all focus specifically on Metro-supplied bicycle parking at Metro Rail stations; while there may be supplementary municipal-supplied parking available in the station area, those parking spaces are not included in this assessment.
[2] For the purposes of this analysis, daily peak-period boardings are estimated as 50 percent of average daily boardings.

then subtracted to find the deficiency in bicycle parking. These deficits form the basis of recommendations for additional short-term and long-term bicycle parking spaces (Tables 1 and 2).

Metro specifies that each station must have a minimum of six free, short-term bicycle rack spaces and eight paid-secure bicycle parking spaces. Therefore, if the methodology yielded recommendations of less than six short-term or eight long-term bicycle parking spaces at any station, the number of recommended spaces was automatically raised to these minimums.

Methodology 1 has the advantage of being straightforward, as it only requires one data input (peak period boardings). However, as Table 2 indicates, Methodology 1 generates parking requirements that are substantially lower than the other models, by a factor of two to four times.

Metro's Bicycle Parking Baseline Specifications peg "current demand" at 1.25 percent of peak ridership and "future demand" at 2.5 percent of peak ridership. Both of these inputs are technically variables that can be adjusted over time – as Methodology 4 has done – but the Bicycle Parking Baseline Specifications present these inputs as constants in the bicycle parking formula. This creates ambiguity about whether these inputs should be updated to current values before running the model. Moreover, the 1.25 and 2.5 percent values themselves are not defined, and could therefore represent either bicycle access mode share (more likely) or community-wide bicycle commute mode share (less likely). As a result, the Bicycle Parking Baseline Specifications, as written, do not provide the practitioner with guidance that is readily adaptable to different transit modes (e.g. bus stops) or to changing conditions over time (e.g. increased bicycle usage).

Methodology 2: Transit Cooperative Research Program (TCRP)

The second approach is the TCRP methodology. This method uses the Station Access Planning Tool (TCRP, 2012) and is spreadsheet-based. The tool is extensive, covering other aspects of transit access (such as motor vehicle parking demand), but for this analysis only the following variables were considered:

1. Number of total daily boardings at each station
2. The bicycle commute mode share in each station area[3]

In addition, two constants were used for all stations:

3. Assumed bicycle access mode share (set to 4 percent in consultation with Metro)[4]
4. 60:40 – Metro's recommended ratio of short-term to long-term bicycle parking spaces at Metro Rail stations

With these inputs, the spreadsheet's built-in formulas then yielded a recommended minimum number of bicycle spaces for each station. Again using Metro's 60:40 ratio of short-term to long-term bicycle parking, the total number of recommended spaces were divided into short-term spaces and long-term spaces. The existing bicycle parking inventory was again used to calculate a net amount of additional recommended short-term and long-term spaces. Metro's

[3] The percent of workers who commute by bicycle, within a three-mile travel shed.
[4] Metro's average bicycle access mode share for train riders is four percent (Metro, 2015).

minimum requirements of six short-term spaces and eight long-term spaces were also applied at any station where recommended bicycle parking supply fell below these thresholds.

Methodology 2 generates parking requirements that are two to four times as large as Methodology 1 and broadly consistent with Methodology 3, in terms of total spaces required. This is primarily due to increasing the assumed bicycle access mode share to four percent from 1.25 percent.

The TCRP model is the most complex of the four methodologies assessed. It contains advanced features, such as "effectiveness ratios," but the usefulness of these features is constrained by the quality of the available input data. The effectiveness ratio compares a station's bicycle access mode share with the bicycle commute mode share in the surrounding community, reasoning that bicycle parking improvements will be most effective at stations where the bicycle access mode share is significantly outstripped by the bicycle commute mode share in the surrounding community (in other words, where a latent demand for bicycle-transit access exists). The rationale of the effectiveness ratio is sound, but without bicycle access mode share data for each station, the utility of these calculations is limited and can even be misleading. The average systemwide bicycle access mode share used for this exercise (four percent) is substantially higher than the average bicycle commute mode share in Los Angeles County, which is less than half this number. As a result, the TCRP model produced unfavorable effectiveness ratios for many Metro Rail stations, since the average bicycle access mode share used (four percent) overstates the actual bicycle access mode share at many stations (which is likely closer to the bicycle commute mode share in the surrounding community). In short, the TCRP model has potentially useful features, but these features are only powerful if the input data is extremely detailed.

The complexity of the TCRP model also makes it ill-suited to handle projections of future conditions. The TCRP model's focus on existing conditions – and particularly the comparison between bicycle access mode share and bicycle commute mode share – means that assessing future conditions would require at least three assumed inputs: future transit ridership, future bicycle access mode share, and future bicycle commute mode share. This add layers of complexity to the projection process and introduces the potential for error. Moreover, it hinges upon a comparison (between bicycle access mode share and bicycle commute mode share) that is not particularly relevant for future conditions, as it may be assumed that these two percentages will approach one another over time as conditions for bicycling improve (both at transit stations and in general).

Methodology 3: Association of Pedestrian and Bicycle Professionals (APBP) Guidelines

The third methodology comes from the Sample Parking Requirements for Transit developed by the Association of Pedestrian and Bicycle Professionals' (APBP) and found in their Bicycle Parking Guide. These guidelines call for short-term parking spaces to equal two percent and long-term parking spaces equal to seven percent of A.M. peak period daily ridership. These rates are based on best practices throughout North America and are intended to meet current demand but also scale up for future mode shares. In order to calculate A.M. peak period daily ridership, each station's total daily peak ridership was divided in half. This number was

multiplied by two percent to yield the recommended short-term parking spaces, and seven percent for long-term parking spaces.

Methodology 3 generates parking requirements that are two to four times as large as Methodology 1 and broadly consistent with Methodology 2, in terms of total spaces required. The key differences between the APBP model and the TCRP model are:

- the APBP model is more streamlined, with only a single input required
- the APBP model is heavily weighted toward long-term parking. For instance, at Grand Station (Blue Line), the TCRP and APBP models require 98 and 100 spaces, respectively, but APBP requires 77 of these spaces to be long-term, as opposed to 39 in the TCRP model.

Methodology 4: Metro Bicycle Parking Baseline Specifications (Modified)

Recommended Methodology

The fourth and final approach is a modified version of Metro's guidelines. Instead of using a bicycle access mode share of 1.25 percent, the analysis was run again using an updated "current demand" input of four percent. Four percent was selected because it represents Metro's best estimate of average bicycle access mode share for train trips as of 2015 (Metro, 2015).

This final approach yielded recommendations that are broadly consistent with – but about ten percent lower than – both the TCRP and APBP models. The recommendations are significantly greater than those generated using Methodology 1, as a result of a higher assumed bicycle access mode share.

The subsequent section makes further comparisons between the Methodologies and explains why Methodology 4 is the Recommended Methodology.

Bicycle Parking Recommendations

The purpose of a bicycle parking supply model is to accurately estimate the demand for bicycle parking spaces at a given location. As this analysis has demonstrated, at least three models are available that produce broadly similar results (Methodologies 2, 3 and 4). However, these models have vastly different input requirements and rely upon different assumptions. An effective bicycle parking supply model is one which:

- is intuitive
- uses readily accessible data
- is adjustable and scaleable

Based on these criteria, Methodology 4 (Metro Bicycle Parking Baseline Specifications – Modified) is the recommended bicycle parking supply model for future use by Metro. Both Methodology 4 and 3 (APBP) are intuitive and use readily available data. However, the Metro model has an edge when it comes to being adjustable and scaleable. The APBP model calculates parking demand as a direct function of ridership (two percent and seven percent of A.M. peak ridership for short-term and long-term parking, respectively) and does not consider bicycle usage as a variable. This means that the APBP methodology is unable to model a scenario in which bicycle use increases (e.g. a future condition) and cannot account for differences in bicycle parking demand between communities with similar transit ridership. In other words, where the TCRP model includes too many bicycle usage variables to be intuitive and readily accessible, the APBP model includes too few to be adjustable and scaleable; as a result, neither methodology is as powerful as the Metro model.

The Metro model essentially relies upon the two most critical variables in estimating bicycle parking demand at transit stations: level of transit use and level of bicycle use. It does so in a way that is intuitive (simply multiplying the bicycle access mode share against transit boardings), with minimal data requirements and the ability to adjust either key variable to model alternative scenarios (e.g. future conditions or other transit modes).

Detailed recommendations for the implementation of Methodology 4 are described below.

Bicycle Parking Supply Methodology Recommendations

In order to implement appropriate amounts of bicycle parking and continue to update bicycle parking stock over time, Metro should make the following adjustments to its Metro Rail Design Criteria (Metro, 2012a):

1. Adjust the Bicycle Parking Formula to clearly define **peak boardings** and **bicycle access mode share.**
2. Specify that peak boardings may be assumed to represent 50 percent of daily boardings.
3. Clarify that bicycle access mode share is a variable, not a constant, and that it may be updated over time or adjusted to model other conditions. For analyses of Metro Rail and Metro Bus services, calibrate bicycle access mode shares to the latest known (2015) system-wide averages: four percent and three percent, respectively.
4. Adjust the Bicycle Parking Formula over time as ridership and bicycle access mode shares change.

5. Conduct parking inventory assessments and bicycle user surveys at Metro Rail stations to determine parking utilization rates and bicycle access mode shares for each station. Parking inventories should be conducted during clear, mild weekdays that are not holidays. In Los Angeles County, spring and fall are best suited to data collection, as weather is typically mild and schools are in session.
6. Consider adjusting the default ratio of short-term to long-term bicycle parking to include a greater share of long-term parking. The current ratio is 60:40, but APBP (2015) recommends a 30:70 split.
7. Re-assess the methodology for estimating bicycle parking demand every three to five years.
8. Further observe bicycle access patterns and use this information to calibrate bicycle parking supplies at each station. For instance, in some communities, bicycle riders may prefer to bring their bicycles on board transit vehicles rather than park their bicycles in a secure area, either due to first-last mile connection needs or financial constraints. At these stations, a smaller (or lower-cost) supply of secure bicycle parking may be appropriate. At stations serving multiple Metro Rail lines, bicycle access mode share may include a significant proportion of people making transfers between transit lines while carrying their bicycles. This scenario justifies a lower supply of bicycle parking than would otherwise be recommended based on the Bicycle Parking Formula. Other adjustment factors to consider include community-wide bicycle mode share, land use context, population density, transit dependency and available right of way.
9. At short-term bicycle parking locations, use messaging (in the form of a decal or placard) to encourage proper bicycle locking procedures, such as using a U-lock, securing the frame and wheels, and removing any accessories.

Multi-Modal Interface Recommendations

Beyond the recommended updates to Metro's Bicycle Parking formula, the following actions should be implemented to improve the multi-modal interface:

10. Continue to implement the site design, CPTED and rack type standards contained in the Metro Rail Design Criteria (Metro, 2012a).
11. Continue to construct Bike Hubs at key transit stations, beginning with the stations ranked highest in Table 1.
12. Construct linear facilities, such as sidewalks and paths, to link transit stations with the surrounding active transportation network. People walking and riding bicycles should not be expected to travel through uncontrolled parking lot areas.
13. Work with municipal partners and private land owners to identify funding, develop access, operations and maintenance agreements to provide secure bicycle parking where right of way constraints exist.
14. Consider space-efficient, self-serve, modular secure bicycle parking.
15. Provide ADA ramps, and consider the provision of wheel runnels on stairs, to allow people with wheelchairs and bicycles to access train platforms. Further study of wheel runnel design issues is required.
16. Enhance bicycle areas on trains with bicycle hooks and clothing hangers.
17. Maintain the policy of permitting bicycles on board Metro Rail without peak-period restrictions.

18. Maintain the existing supply of bike racks and lockers.
19. Conduct a regular bicycle parking review every three to five years (as resources permit), to assess ridership and bicycle access mode share on a station-by-station basis.

This memo has discussed the many benefits of integrating bicycling with transit. A complete, multi-modal interface allows people to reach transit stations from further distances; increases travel flexibility and help resolve first-last mile issues; and plays a role in encouraging a mode shift (away from driving and towards transit and/or bicycling). Implementation of the above recommendations will enable Metro to achieve greater integration between transit and active modes and to strengthen this integration over time.

Table 1: Bicycle Parking Supply Requirements for Metro Rail Stations

		Existing Conditions						Recommended Metro Model				
Station	**Line**	**Bicycle Mode Share (%)[a]**	**Daily Boardings[b]**	**Peak Boardings[c]**	**AM Peak Boardings[d]**	**Existing Short-Term Spaces[e]**	**Existing Long-Term Spaces[e]**	**Total Spaces Req'd**	**Short-Term Spaces Req'd**	**Add. Short-Term Spaces**	**Long-Term Spaces Req'd**	**Add. Long-Term Spaces**
7th Street / Metro Center	Red/Purple/ Blue/Expo	0.90	48,829	24,414	12,207	0	0	977	586	586	391	391
Union Station	Gold/Red/ Purple	0.92	33,775	16,888	8,444	16	300	676	405	389	270	0
North Hollywood	Red/Orange	1.03	24,232	12,116	6,058	101	200	485	291	190	194	0
Willowbrook (Rosa Parks)	Blue/Green	0.69	13,942	6,971	3,485	14	6	279	167	153	112	106
Wilshire / Vermont	Red/Purple	0.55	12,472	6,236	3,118	8	16	249	150	142	100	84
Pershing Square	Red/Purple	1.09	10,803	5,401	2,701	4	0	216	130	126	86	86
Westlake / McArthur Park	Red/Purple	0.65	9,218	4,609	2,305	18	0	184	111	93	74	74
Harbor Gateway Transit Center	Silver	0.61	9,146	4,573	2,287	0	0	183	110	110	73	73
Hollywood / Highland	Red	1.23	8,877	4,438	2,219	0	0	178	107	107	71	71
Long Beach Blvd	Green	0.45	8,673	4,337	2,168	8	0	173	104	96	69	69
Universal City	Red	0.46	7,806	3,903	1,951	16	32	156	94	78	62	30
Hollywood / Vine	Red	1.31	6,507	3,253	1,627	12	72	130	78	66	52	0
Civic Center	Red/Purple	1.03	6,415	3,208	1,604	10	8	128	77	67	51	43
Pico	Blue	2.96	6,392	3,196	1,598	0	0	128	77	77	51	51
El Monte Busway	Silver	1.47	6,386	3,193	1,597	26	56	128	77	51	51	0
Vermont / Santa Monica	Red	0.96	6,286	3,143	1,571	26	4	126	75	49	50	46

Wilshire / Western	Purple	0.77	5,677	2,839	1,419	12	16	114	68	56	45	29
Hollywood / Western	Red	1.27	5,249	2,625	1,312	36	2	105	63	27	42	40
Vermont / Sunset	Red	0.82	4,805	2,402	1,201	10	4	96	58	48	38	34
Florence	Blue	0.74	4,745	2,373	1,186	12	0	95	57	45	38	38
Compton	Blue	0.56	4,653	2,326	1,163	4	0	93	56	52	37	37
Vermont / Beverly	Red	0.62	4,599	2,300	1,150	24	0	92	55	31	37	37
Grand	Blue	3.31	4,422	2,211	1,106	0	0	88	53	53	35	35
Culver City	Expo	1.35	4,179	2,090	1,045	20	72	84	50	30	33	0
Willow	Blue	1.40	4,119	2,059	1,030	16	8	82	49	33	33	25
Artesia	Blue	0.09	4,051	2,026	1,013	6	0	81	49	43	32	32
Hawthorne / Lennox	Green	0.88	3,767	1,883	942	4	0	75	45	41	30	30
103rd Street / Watts Towers	Blue	0.65	3,635	1,817	909	0	0	73	44	44	29	29
Van Nuys	Orange	0.62	3,488	1,744	872	12	8	70	42	30	28	20
DT Long Beach/ Transit Mall	Blue	2.03	3,408	1,704	852	0	62	68	41	41	27	0
Del Amo	Blue	0.14	3,353	1,676	838	10	12	67	40	30	27	15
Wilshire / Normandie	Purple	0.75	3,350	1,675	838	0	0	67	40	40	27	27
Harbor Freeway	Green	0.46	3,321	1,660	830	10	0	66	40	30	27	27
Anaheim	Blue	1.84	3,203	1,601	801	0	0	64	38	38	26	26
Firestone	Blue	0.59	3,156	1,578	789	8	0	63	38	30	25	25
Vermont / Athens	Green	0.38	3,120	1,560	780	0	0	62	37	37	25	25
Lakewood	Green	0.29	3,099	1,550	775	22	12	62	37	15	25	13
Avalon	Green	0.58	3,057	1,528	764	12	0	61	37	25	24	24
PCH	Blue	1.72	2,978	1,489	744	0	0	60	36	36	24	24
Vernon	Blue	1.27	2,939	1,470	735	0	0	59	35	35	24	24
Crenshaw	Green	0.86	2,811	1,405	703	12	4	56	34	22	22	18
Sierra Madre Villa	Gold	0.18	2,784	1,392	696	10	16	56	33	23	22	6
Slauson	Blue	0.90	2,681	1,341	670	4	0	54	32	28	21	21
Norwalk	Green	0.42	2,654	1,327	663	36	40	53	32	0	21	0

Little Tokyo / Arts District	Gold	0.93	2,626	1,313	656	12	2	53	32	20	21	19
Highland Park	Gold	0.76	2,594	1,297	649	10	16	52	31	21	21	5
Reseda	Orange	0.95	2,540	1,270	635	6	16	51	30	24	20	4
San Pedro	Blue	2.91	2,507	1,254	627	0	0	50	30	30	20	20
Expo / Vermont	Expo	2.80	2,408	1,204	602	10	0	48	29	19	19	19
Memorial Park	Gold	3.62	2,327	1,164	582	8	16	47	28	20	19	3
Expo / Western	Expo	1.59	2,313	1,156	578	10	0	46	28	18	19	19
Expo / Crenshaw	Expo	0.28	2,180	1,090	545	10	0	44	26	16	17	17
Atlantic	Gold	0.58	2,031	1,016	508	12	8	41	24	12	16	8
Warner Center Transit Hub	Orange	1.60	1,836	918	459	0	0	37	22	22	15	15
Washington	Blue	1.64	1,829	915	457	0	0	37	22	22	15	15
Sepulveda	Orange	0.77	1,795	898	449	12	12	36	22	10	14	2
Chatsworth	Orange	0.17	1,772	886	443	16	16	35	21	5	14	0
Lake	Gold	2.83	1,753	876	438	18	0	35	21	3	14	14
Pierce College	Orange	1.39	1,752	876	438	12	8	35	21	9	14	6
Soto	Gold	0.55	1,741	871	435	12	4	35	21	9	14	10
Wardlow	Blue	0.71	1,688	844	422	8	16	34	20	12	14	0
South Pasadena	Gold	0.54	1,668	834	417	14	0	33	20	6	13	13
La Cienega / Jefferson	Expo	0.50	1,659	829	415	12	8	33	20	8	13	5
Chinatown	Gold	0.64	1,616	808	404	6	0	32	19	13	13	13
Del Mar	Gold	4.47	1,599	800	400	26	0	32	19	0	13	13
Valley College	Orange	0.52	1,585	793	396	8	8	32	19	11	13	5
Expo / La Brea	Expo	0.30	1,581	791	395	20	0	32	19	0	13	13
Balboa	Orange	0.87	1,575	788	394	12	20	32	19	7	13	0
Expo Park / USC	Expo	3.17	1,575	787	394	10	0	31	19	9	13	13
23rd St	Expo	3.47	1,552	776	388	10	0	31	19	9	12	12
Fillmore	Gold	4.55	1,528	764	382	6	0	31	18	12	12	12
Indiana	Gold	0.65	1,484	742	371	12	0	30	18	6	12	12
Aviation / LAX	Green	0.95	1,455	728	364	24	20	29	17	0	12	0

Allen	Gold	2.00	1,444	722	361	28	0	29	17	0	12	12
Canoga	Orange	2.36	1,442	721	361	32	24	29	17	0	12	0
Pacific	Blue	1.95	1,402	701	351	0	0	28	17	17	11	11
Laurel Canyon	Orange	0.84	1,373	687	343	8	8	27	16	8	11	3
Lincoln Heights / Cypress Park	Gold	0.66	1,327	663	332	10	0	27	16	6	11	11
Jefferson / USC	Expo	3.23	1,219	609	305	10	0	24	15	5	10	10
Douglas	Green	0.78	1,180	590	295	6	12	24	14	8	9	0
Redondo Beach	Green	0.85	1,162	581	291	12	6	23	14	2	9	3
Sherman Way	Orange	2.22	1,119	560	280	12	16	22	13	1	9	0
Pico / Aliso	Gold	0.57	976	488	244	6	0	20	12	6	8	8
Roscoe	Orange	2.25	974	487	244	12	8	19	12	0	8	0
Woodman	Orange	0.61	933	467	233	12	8	19	11	0	7	0
Farmdale	Expo	0.26	916	458	229	10	0	18	11	1	7	7
Mariachi Plaza / Boyle Heights	Gold	0.66	902	451	225	6	0	18	11	5	7	7
5th Street	Blue	1.84	892	446	223	0	0	18	11	11	7	7
Mariposa	Green	0.72	878	439	219	4	0	18	11	7	7	7
Southwest Museum	Gold	1.00	867	433	217	6	0	17	10	4	7	7
Woodley	Orange	0.88	829	415	207	8	8	17	10	2	7	0
El Segundo	Green	0.59	821	411	205	10	0	16	10	0	7	7
Heritage Square / Arroyo	Gold	0.78	821	410	205	4	0	16	10	6	7	7
East LA Civic Center	Gold	0.24	807	403	202	20	0	16	10	0	6	6
De Soto	Orange	2.41	693	347	173	12	8	14	8	0	6	0
Tampa	Orange	0.98	587	294	147	12	8	12	7	0	5	0
1st Street	Blue	1.90	541	270	135	0	0	11	6	6	4	4
Nordhoff	Orange	1.38	532	266	133	12	8	11	6	0	4	0

Future Stations													
4th / Colorado	Expo 2	2.57	n/a	n/a	n/a	10	320	--	--	--	--	--
Colorado / 17th	Expo 2	2.30	n/a	n/a	n/a	10	32	--	--	--	--	--
Olympic / 26th	Expo 2	1.98	n/a	n/a	n/a	6	8	--	--	--	--	--
Expo / Bundy	Expo 2	1.82	n/a	n/a	n/a	10	16	--	--	--	--	--
Expo / Sepulveda	Expo 2	1.14	n/a	n/a	n/a	10	16	--	--	--	--	--
Expo / Westwood	Expo 2	1.03	n/a	n/a	n/a	6	8	--	--	--	--	--
National / Palms	Expo 2	1.36	n/a	n/a	n/a	6	8	--	--	--	--	--
Arcadia	Gold Foothill	0.61	n/a	n/a	n/a	20	24	--	--	--	--	--
Monrovia	Gold Foothill	1.38	n/a	n/a	n/a	20	24	--	--	--	--	--
Duarte / City of Hope	Gold Foothill	0.23	n/a	n/a	n/a	20	24	--	--	--	--	--
Azusa Downtown	Gold Foothill	0.48	n/a	n/a	n/a	10	24	--	--	--	--	--
APU/Citrus	Gold Foothill	0.90	n/a	n/a	n/a	10	24	--	--	--	--	--
Irwindale	Gold Foothill	0.16	n/a	n/a	n/a	10	24	--	--	--	--	--

[a] The percent of workers who commute by bicycle, within a three-mile travel shed
[b] Aggregate boardings are used for stations serving multiple Metro Rail lines
[c] Peak period boardings are assumed to represent 50% of daily boardings
[d] AM peak period boardings are assumed to represent 50% of peak period boardings

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Table 2: Bicycle Parking Supply Requirements for Metro Rail Stations, by Model

		Existing Conditions						Metro Model					TCRP Model					APBP Model					Adjusted Metro Model					Notes
Station	Line	Bicycle Mode Share (%)[a]	Daily Boardings[b]	Peak Period Boardings[c]	AM Peak Period Boardings[d]	Existing Short-Term Spaces[e]	Existing Long-Term Spaces[e]	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	
7th Street / Metro Center	Red/Purple/ Blue/Expo	0.90	48,829	24,414	12,207	0	0	305	183	183	122	122	750	450	450	300	300	1099	244	244	855	855	977	586	586	391	391	
Union Station	Gold/Red/ Purple	0.92	33,775	16,888	8,444	16	300	211	127	111	84	0	300	180	164	120	0	760	169	153	591	291	676	405	389	270	0	Planned Metro Bike Hub. Bike parking will be phased over 3 years; initial hub will open with ~100 spaces; additional spaces installed as demand grows
North Hollywood	Red/Orange	1.03	24,232	12,116	6,058	101	200	151	91	0	61	0	646	388	287	258	58	545	121	20	424	224	485	291	190	194	0	Planned Metro Bike Hub. Bike parking will be phased; initial hub will open with ~80-100 spaces; additional spaces provided in the expansion in conjunction with Joint Development property
Willowbrook (Rosa Parks)	Blue/Green	0.69	13,942	6,971	3,485	14	6	87	52	38	35	29	295	177	163	118	112	314	70	56	244	238	279	167	153	112	106	
Wilshire / Vermont	Red/Purple	0.55	12,472	6,236	3,118	8	16	78	47	39	31	15	333	200	192	133	117	281	62	54	218	202	249	150	142	100	84	
Pershing Square	Red/Purple	1.09	10,803	5,401	2,701	4	0	68	41	37	27	27	288	173	169	115	115	243	54	50	189	189	216	130	126	86	86	
Westlake / McArthur Park	Red/Purple	0.65	9,218	4,609	2,305	18	0	58	35	17	23	23	246	148	130	98	98	207	46	28	161	161	184	111	93	74	74	
Harbor Gateway Transit Center	Silver	0.61	9,146	4,573	2,287	0	0	57	34	34	23	23	244	146	146	98	98	206	46	46	160	160	183	110	110	73	73	
Hollywood / Highland	Red	1.23	8,877	4,438	2,219	0	0	55	33	33	22	22	237	142	142	95	95	200	44	44	155	155	178	107	107	71	71	
Long Beach Blvd	Green	0.45	8,673	4,337	2,168	8	0	54	33	25	22	22	231	139	131	92	92	195	43	35	152	152	173	104	96	69	69	
Universal City	Red	0.46	7,806	3,903	1,951	16	32	49	29	13	20	0	208	125	109	83	51	176	39	23	137	105	156	94	78	62	30	
Hollywood / Vine	Red	1.31	6,507	3,253	1,627	12	72	41	24	12	16	0	174	104	92	70	0	146	33	21	114	42	130	78	66	52	0	Planned Metro Bike Hub
Civic Center	Red/Purple	1.03	6,415	3,208	1,604	10	8	40	24	14	16	8	171	103	93	68	60	144	32	22	112	104	128	77	67	51	43	
Pico	Blue	2.96	6,392	3,196	1,598	0	0	40	24	24	16	16	126	76	76	50	50	144	32	32	112	112	128	77	77	51	51	
El Monte Busway	Silver	1.47	6,386	3,193	1,597	26	56	40	24	0	16	0	170	102	76	68	12	144	32	6	112	56	128	77	51	51	0	Planned Metro Bike Hub
Vermont / Santa Monica	Red	0.96	6,286	3,143	1,571	26	4	39	24	0	16	12	168	101	75	67	63	141	31	5	110	106	126	75	49	50	46	
Wilshire / Western	Purple	0.77	5,677	2,839	1,419	12	16	35	21	9	14	0	151	91	79	60	44	128	28	16	99	83	114	68	56	45	29	
Hollywood / Western	Red	1.27	5,249	2,625	1,312	36	2	33	20	0	13	11	140	84	48	56	54	118	26	0	92	90	105	63	27	42	40	
Vermont / Sunset	Red	0.82	4,805	2,402	1,201	10	4	30	18	8	12	8	128	77	67	51	47	108	24	14	84	80	96	58	48	38	34	
Florence	Blue	0.74	4,745	2,373	1,186	12	0	30	18	6	12	12	127	76	64	51	51	107	24	12	83	83	95	57	45	38	38	
Compton	Blue	0.56	4,653	2,326	1,163	4	0	29	17	13	12	12	124	74	70	50	50	105	23	19	81	81	93	56	52	37	37	
Vermont / Beverly	Red	0.62	4,599	2,300	1,150	24	0	29	17	0	11	11	123	74	50	49	49	103	23	0	80	80	92	55	31	37	37	
Grand	Blue	3.31	4,422	2,211	1,106	0	0	28	17	17	11	11	98	59	59	39	39	100	22	22	77	77	88	53	53	35	35	
Culver City	Expo	1.35	4,179	2,090	1,045	20	72	26	16	0	10	0	111	67	47	44	0	94	21	1	73	1	84	50	30	33	0	Planned Metro Bike Hub
Willow	Blue	1.40	4,119	2,059	1,030	16	8	26	15	0	10	2	110	66	50	44	36	93	21	5	72	64	82	49	33	33	25	
Artesia	Blue	0.09	4,051	2,026	1,013	6	0	25	15	9	10	10	108	65	59	43	43	91	20	14	71	71	81	49	43	32	32	
Hawthorne / Lennox	Green	0.88	3,767	1,883	942	4	0	24	14	10	9	9	100	60	56	40	40	85	19	15	66	66	75	45	41	30	30	
103rd Street / Watts Towers	Blue	0.65	3,635	1,817	909	0	0	23	14	14	9	9	97	58	58	39	39	82	18	18	64	64	73	44	44	29	29	
Van Nuys	Orange	0.62	3,488	1,744	872	12	8	22	13	1	9	1	93	56	44	37	29	78	17	5	61	53	70	42	30	28	20	
DT Long Beach/ Transit Mall	Blue	2.03	3,408	1,704	852	0	62	21	13	13	9	0	91	55	55	36	0	77	17	17	60	0	68	41	41	27	0	52 upstairs spaces. 10 downstairs spaces are shared with rental bicycles and occasionally occupied.
Del Amo	Blue	0.14	3,353	1,676	838	10	12	21	13	3	8	0	89	53	43	36	24	75	17	7	59	47	67	40	30	27	15	
Wilshire / Normandie	Purple	0.75	3,350	1,675	838	0	0	21	13	13	8	8	89	53	53	36	36	75	17	17	59	59	67	40	40	27	27	
Harbor Freeway	Green	0.46	3,321	1,660	830	10	0	21	12	2	8	8	89	53	43	36	36	75	17	7	58	58	66	40	30	27	27	
Anaheim	Blue	1.84	3,203	1,601	801	0	0	20	12	12	8	8	85	51	51	34	34	72	16	16	56	56	64	38	38	26	26	
Firestone	Blue	0.59	3,156	1,578	789	8	0	20	12	4	8	8	84	50	42	34	34	71	16	8	55	55	63	38	30	25	25	
Vermont / Athens	Green	0.38	3,120	1,560	780	0	0	20	12	12	8	8	83	50	50	33	33	70	16	16	55	55	62	37	37	25	25	
Lakewood	Green	0.29	3,099	1,550	775	22	12	19	12	0	8	0	83	50	28	33	21	70	15	0	54	42	62	37	15	25	13	
Avalon	Green	0.58	3,057	1,528	764	12	0	19	11	0	8	8	82	49	37	33	33	69	15	3	53	53	61	37	25	24	24	
PCH	Blue	1.72	2,978	1,489	744	0	0	19	11	11	7	7	79	47	47	32	32	67	15	15	52	52	60	36	36	24	24	
Vernon	Blue	1.27	2,939	1,470	735	0	0	18	11	11	7	7	78	47	47	31	31	66	15	15	51	51	59	35	35	24	24	
Crenshaw	Green	0.86	2,811	1,405	703	12	4	18	11	0	7	3	75	45	33	30	26	63	14	2	49	45	56	34	22	22	18	
Sierra Madre Villa	Gold	0.18	2,784	1,392	696	10	16	17	10	0	7	0	74	44	34	30	14	63	14	4	49	33	56	33	23	22	6	
Slauson	Blue	0.90	2,681	1,341	670	4	0	17	10	6	7	7	71	43	39	28	28	60	13	9	47	47	54	32	28	21	21	
Norwalk	Green	0.42	2,654	1,327	663	36	40	17	10	0	7	0	71	43	7	28	0	60	13	0	46	6	53	32	0	21	0	
Little Tokyo / Arts District	Gold	0.93	2,626	1,313	656	12	2	16	10	0	7	5	70	42	30	28	26	59	13	1	46	44	53	32	20	21	19	
Highland Park	Gold	0.76	2,594	1,297	649	10	16	16	10	0	6	0	69	41	31	28	12	58	13	3	45	29	52	31	21	21	5	
Reseda	Orange	0.95	2,540	1,270	635	6	16	16	10	4	6	0	68	41	35	27	11	57	13	7	44	28	51	30	24	20	4	
San Pedro	Blue	2.91	2,507	1,254	627	0	0	16	9	9	6	6	48	29	29	19	19	56	13	13	44	44	50	30	30	20	20	
Expo / Vermont	Expo	2.80	2,408	1,204	602	10	0	15	9	0	6	6	45	27	17	18	18	54	12	2	42	42	48	29	19	19	19	
Memorial Park	Gold	3.62	2,327	1,164	582	8	16	15	9	1	6	0	56	34	26	22	6	52	12	4	41	25	47	28	20	19	3	
Expo / Western	Expo	1.59	2,313	1,156	578	10	0	14	9	0	6	6	62	37	27	25	25	52	12	2	40	40	46	28	18	19	19	
Expo / Crenshaw	Expo	0.28	2,180	1,090	545	10	0	14	8	0	5	5	58	35	25	23	23	49	11	1	38	38	44	26	16	17	17	
Atlantic	Gold	0.58	2,031	1,016	508	12	8	13	8	0	5	0	54	32	20	22	14	46	10	0	36	28	41	24	12	16	8	
Warner Center Transit Hub	Orange	1.60	1,836	918	459	0	0	11	7	7	5	5	49	29	29	20	20	41	9	9	32	32	37	22	22	15	15	
Washington	Blue	1.64	1,829	915	457	0	0	11	7	7	5	5	49	29	29	20	20	41	9	9	32	32	37	22	22	15	15	
Sepulveda	Orange	0.77	1,795	898	449	12	12	11	7	0	4	0	48	29	17	19	7	40	9	0	31	19	36	22	10	14	2	
Chatsworth	Orange	0.17	1,772	886	443	16	16	11	7	0	4	0	47	28	12	19	3	40	9	0	31	15	35	21	5	14	0	

		Existing Conditions						Metro Model					TCRP Model					APBP Model					Adjusted Metro Model					Notes
Station	Line	Bicycle Mode Share (%)[a]	Daily Boardings[b]	Peak Period Boardings[c]	AM Peak Period Boardings[d]	Existing Short-Term Spaces[e]	Existing Long-Term Spaces[e]	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	Total Spaces Req'd	Short-Term Spaces Req'd	Add. Short-Term Spaces	Long-Term Spaces Req'd	Add. Long-Term Spaces	
Lake	Gold	2.83	1,753	876	438	18	0	11	7	0	4	4	33	20	2	13	13	39	9	0	31	31	35	21	3	14	14	
Pierce College	Orange	1.39	1,752	876	438	12	8	11	7	0	4	0	47	28	16	19	11	39	9	0	31	23	35	21	9	14	6	
Soto	Gold	0.55	1,741	871	435	12	4	11	7	0	4	0	46	28	16	18	14	39	9	0	30	26	35	21	9	14	10	
Wardlow	Blue	0.71	1,688	844	422	8	16	11	6	0	4	0	45	27	19	18	2	38	8	0	30	14	34	20	12	14	0	
South Pasadena	Gold	0.54	1,668	834	417	14	0	10	6	0	4	4	44	26	12	18	18	38	8	0	29	29	33	20	6	13	13	
La Cienega / Jefferson	Expo	0.50	1,659	829	415	12	8	10	6	0	4	0	44	26	14	18	10	37	8	0	29	21	33	20	8	13	5	
Chinatown	Gold	0.64	1,616	808	404	6	0	10	6	0	4	4	43	26	20	17	17	36	8	2	28	28	32	19	13	13	13	
Del Mar	Gold	4.47	1,599	800	400	26	0	10	6	0	4	4	48	29	3	19	19	36	8	0	28	28	32	19	0	13	13	
Valley College	Orange	0.52	1,585	793	396	8	8	10	6	0	4	0	42	25	17	17	9	36	8	0	28	20	32	19	11	13	5	
Expo / La Brea	Expo	0.30	1,581	791	395	20	0	10	6	0	4	4	42	25	5	17	17	36	8	0	28	28	32	19	0	13	13	
Balboa	Orange	0.87	1,575	788	394	12	20	10	6	0	4	0	42	25	13	17	0	35	8	0	28	8	32	19	7	13	0	
Expo Park / USC	Expo	3.17	1,575	787	394	10	0	10	6	0	4	4	33	20	10	13	13	35	8	0	28	28	31	19	9	13	13	
23rd St	Expo	3.47	1,552	776	388	10	0	10	6	0	4	4	36	22	12	14	14	35	8	0	27	27	31	19	9	12	12	
Fillmore	Gold	4.55	1,528	764	382	6	0	10	6	0	4	4	46	28	22	18	18	34	8	2	27	27	31	18	12	12	12	
Indiana	Gold	0.65	1,484	742	371	12	0	9	6	0	4	4	40	24	12	16	16	33	7	0	26	26	30	18	6	12	12	
Aviation / LAX	Green	0.95	1,455	728	364	24	20	9	5	0	4	0	39	23	0	16	0	33	7	0	25	5	29	17	0	12	0	
Allen	Gold	2.00	1,444	722	361	28	0	9	5	0	4	4	39	23	0	16	16	32	7	0	25	25	29	17	0	12	12	
Canoga	Orange	2.36	1,442	721	361	32	24	9	5	0	4	0	38	23	0	15	0	32	7	0	25	1	29	17	0	12	0	
Pacific	Blue	1.95	1,402	701	351	0	0	9	5	5	4	4	37	22	22	15	15	32	7	7	25	25	28	17	17	11	11	
Laurel Canyon	Orange	0.84	1,373	687	343	8	8	9	5	0	3	0	37	22	14	15	7	31	7	0	24	16	27	16	8	11	3	
Lincoln Heights / Cypress Park	Gold	0.66	1,327	663	332	10	0	8	5	0	3	3	35	21	11	14	14	30	7	0	23	23	27	16	6	11	11	
Jefferson / USC	Expo	3.23	1,219	609	305	10	0	8	5	0	3	3	26	16	6	10	10	27	6	0	21	21	24	15	5	10	10	
Douglas	Green	0.78	1,180	590	295	6	12	7	4	0	3	0	31	19	13	12	0	27	6	0	21	9	24	14	8	9	0	
Redondo Beach	Green	0.85	1,162	581	291	12	6	7	4	0	3	0	31	19	7	12	6	26	6	0	20	14	23	14	2	9	3	
Sherman Way	Orange	2.22	1,119	560	280	12	16	7	4	0	3	0	30	18	6	12	0	25	6	0	20	4	22	13	1	9	0	
Pico / Aliso	Gold	0.57	976	488	244	6	0	6	4	0	2	2	26	16	10	10	10	22	5	0	17	17	20	12	6	8	8	
Roscoe	Orange	2.25	974	487	244	12	8	6	4	0	2	0	26	16	4	10	2	22	5	0	17	9	19	12	0	8	0	
Woodman	Orange	0.61	933	467	233	12	8	6	3	0	2	0	25	15	3	10	2	21	5	0	16	8	19	11	0	7	0	
Farmdale	Expo	0.26	916	458	229	10	0	6	3	0	2	2	24	14	4	10	10	21	5	0	16	16	18	11	1	7	7	
Mariachi Plaza / Boyle Heights	Gold	0.66	902	451	225	6	0	6	3	0	2	2	24	14	8	10	10	20	5	0	16	16	18	11	5	7	7	
5th Street	Blue	1.84	892	446	223	0	0	6	3	3	2	2	24	14	14	10	10	20	4	4	16	16	18	11	11	7	7	
Mariposa	Green	0.72	878	439	219	4	0	5	3	0	2	2	23	14	10	9	9	20	4	0	15	15	18	11	7	7	7	
Southwest Museum	Gold	1.00	867	433	217	6	0	5	3	0	2	2	23	14	8	9	9	20	4	0	15	15	17	10	4	7	7	
Woodley	Orange	0.88	829	415	207	8	8	5	3	0	2	0	22	13	5	9	1	19	4	0	15	7	17	10	2	7	0	
El Segundo	Green	0.59	821	411	205	10	0	5	3	0	2	2	22	13	3	9	9	18	4	0	14	14	16	10	0	7	7	
Heritage Square / Arroyo	Gold	0.78	821	410	205	4	0	5	3	0	2	2	22	13	9	9	9	18	4	0	14	14	16	10	6	7	7	
East LA Civic Center	Gold	0.24	807	403	202	20	0	5	3	0	2	2	22	13	0	9	9	18	4	0	14	14	16	10	0	6	6	
De Soto	Orange	2.41	693	347	173	12	8	4	3	0	2	0	18	11	0	7	0	16	3	0	12	4	14	8	0	6	0	
Tampa	Orange	0.98	587	294	147	12	8	4	2	0	1	0	16	10	0	6	0	13	3	0	10	2	12	7	0	5	0	
1st Street	Blue	1.90	541	270	135	0	0	3	2	2	1	1	14	8	8	6	6	12	3	3	9	9	11	6	6	4	4	
Nordhoff	Orange	1.38	532	266	133	12	8	3	2	0	1	0	14	8	0	6	0	12	3	0	9	1	11	6	0	4	0	
Maravilla	Gold	0.15	515	258	129	12	0	3	2	0	1	1	14	8	0	6	6	12	3	0	9	9	10	6	0	4	4	
FUTURE STATIONS																												
4th / Colorado	Expo 2	2.57	n/a	n/a	n/a	10	320	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Bike Hubs operated independently. 555 2nd St: 154 spaces. 1502 4th St: 166 spaces. Short-term spaces are planned.
Colorado / 17th	Expo 2	2.30	n/a	n/a	n/a	10	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Olympic / 26th	Expo 2	1.98	n/a	n/a	n/a	6	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Expo / Bundy	Expo 2	1.82	n/a	n/a	n/a	10	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Expo / Sepulveda	Expo 2	1.14	n/a	n/a	n/a	10	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Expo / Westwood	Expo 2	1.03	n/a	n/a	n/a	6	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
National / Palms	Expo 2	1.36	n/a	n/a	n/a	6	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Arcadia	Gold Foothill	0.61	n/a	n/a	n/a	20	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Monrovia	Gold Foothill	1.38	n/a	n/a	n/a	20	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Duarte / City of Hope	Gold Foothill	0.23	n/a	n/a	n/a	20	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Azusa Downtown	Gold Foothill	0.48	n/a	n/a	n/a	10	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
APU/Citrus	Gold Foothill	0.90	n/a	n/a	n/a	10	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.
Irwindale	Gold Foothill	0.16	n/a	n/a	n/a	10	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Planned spaces only.

[a] The percent of workers who commute by bicycle, within a three-mile travel shed
[b] Aggregate boardings are used for stations serving multiple Metro Rail lines
[c] Peak period boardings are assumed to represent 50% of daily boardings
[d] AM peak period boardings are assumed to represent 50% of peak period boardings
[e] Existing bicycle parking supply includes planned parking, as available (i.e. for planned stations and Bike Hubs