

Metro

*Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
3rd Floor Board Room*



Agenda - Final

Wednesday, November 16, 2016

10:00 AM

**One Gateway Plaza, Los Angeles, CA 90012,
3rd Floor, Metro Board Room**

Ad-Hoc Sustainability Committee

Pam O'Connor, Chair, SCAG

Mike Bonin, Vice Chair

Marisa Creter, San Gabriel Council of Governments

John Fasana

Nancy Pfeffer, Gateway Cities Council of Governments

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CALL TO ORDER**ROLL CALL**

5. RECEIVE AND FILE update on the **Metro/SCAG Joint Work Program.** [2016-0799](#)
6. RECEIVE AND FILE **Countywide Sustainability Program update.** [2016-0800](#)
Attachments: [Attachment A - 2016 Sustainability Annual Report](#)
[Attachment B - Board Box on New State Climate Legislation REV](#)
7. RECEIVE AND FILE update on **Affordable Housing and Sustainable Communities Implementation of Strategy and Policy Framework.** [2016-0798](#)

Adjournment

Consideration of items not on the posted agenda, including: items to be presented and (if requested) referred to staff; items to be placed on the agenda for action at a future meeting of the Committee or Board; and/or items requiring immediate action because of an emergency situation or where the need to take immediate action came to the attention of the Committee subsequent to the posting of the agenda.

**Board Report**

File #: 2016-0799, **File Type:** Informational Report

Agenda Number: 5.

**AD HOC SUSTAINABILITY COMMITTEE
NOVEMBER 16, 2016**

SUBJECT: UPDATE - METRO/SCAG JOINT WORK PROGRAM

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE update on the **Metro/SCAG Joint Work Program**.

ISSUE

On July 2, 2015, the Southern California Association of Governments (SCAG) adopted the Updated Sustainability Joint Work Program between SCAG and Metro, which was approved by the Metro Board on May 28, 2015. Some of the highlights of the updated program include coordinating efforts for respective planning grant programs, First/Last Mile training, and the implementation of the Regional Active Transportation Safety and Encouragement Campaign. This report is to update the Board of Directors on recent progress made.

DISCUSSION

Staff provides regular progress reports on the SCAG/Metro Joint Work Program. We are reporting on the updated program as adopted on May 28, 2015.

Highlighted Project: SCAG Sustainability Grant Program/Go Human Campaign Events

At prior meetings of the Ad Hoc Sustainability Committee, staff provided an overview of SCAG's Go Human Campaign, a region-wide effort to encourage active transportation usage and safety. Among various activities, the program includes a series of "pop-up" events around the region to highlight active transportation themes and messages and to engage the public. To date, SCAG has implemented three Go Human events in Los Angeles County. The most recent event was implemented in north Long Beach on October 1 to highlight the city's newest protected bikeway on Artesia Boulevard and to gain input on upcoming safety projects on Myrtle Avenue.

SCAG will be providing technical assistance for additional Go Human events, along with other active transportation plans and programs, as part of the 2016 Sustainability Call for Proposals. The Call for Proposals was released on September 29, 2016 and applications are due to SCAG on November 18, 2016. Metro is collaborating with SCAG to promote the program across Los Angeles County, and the two agencies have planned to co-host a workshop for city and county staff focused on opportunities

to apply for first-last mile planning and programs. In addition, SCAG has been providing on-line trainings and presentations to its policy committees and sub-regional agencies, as requested, to increase awareness and interest in the program.

SCAG's Sustainability Call for Proposals is anticipated to award approximately \$11 million to projects in three categories: Active Transportation, Integrated Land Use, and Green Region Initiative. Proposals will be evaluated based on project need, goals, objectives, outcomes and community support. All cities, counties and Councils of Governments (COGs) are encouraged to apply. Guidelines, application forms, and submission information are available on SCAG's Sustainability website at <http://sustain.scag.ca.gov/Pages/default.aspx>.

As part of the Joint Work Program and efforts to better align and leverage regional and local funding, Metro and its counterparts in the other five counties in Southern California collaborated with SCAG to develop a funding strategy for the Call for Proposals that includes a commitment of five percent of the region's share of the 2017 California Active Transportation Program. Metro also supported SCAG's successful application to the Mobile Source Reduction Committee, adding an additional \$2.5 million to the program for active transportation proposals. The guidelines for the Sustainability Call for Proposals establish funding minimums for each county to ensure geographical equity.

Highlighted Project: Arizona State University Study on GHG Impacts Associated with First/Last Mile strategies

Also included in the Joint Work Program is a recently completed study prepared by Arizona State University. The lead researcher, Mikhail Chester, will present on the findings of the study at the November 16, 2016 meeting of the committee.

Updates

- SCAG developed a screening tool for localities considering implementing tax increment financing, including Enhanced Infrastructure Finance Districts and Community Revitalization Investment Authorities. Metro and SCAG will co-host a workshop on use of these financing tools, and Metro staff anticipates including funding for consideration of these tools in the next round of TOD Planning Grants. Any recommended updates to the TOD Grant program will be brought to the Board for consideration.
- First/Last Mile: SCAG and Metro are collaborating on a First/Last Mile Training program for local staff and officials. A consultant is currently under contract with Metro and developing curriculum. Trainings will be scheduled for early 2017.
- SCAG and Metro recently completed a Memorandum of Understanding to collaborate on the Bicycle Data Clearinghouse, including cost-sharing.

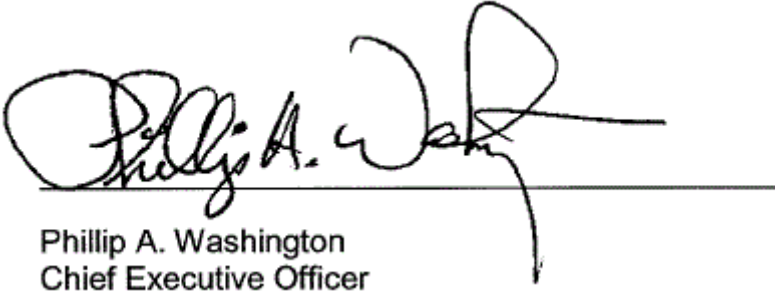
NEXT STEPS

Staff will continue to provide periodic updates to the committee on activities associated with the Joint Work Program.

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Phillip A. Washington
Chief Executive Officer

First-last mile environmental life-cycle assessment of multimodal transit in Los Angeles

CHRISTOPHER G. HOEHNE – DOCTORAL STUDENT

MIKHAIL V. CHESTER – ASSOCIATE PROFESSOR

CIVIL, ENVIRONMENTAL, & SUSTAINABLE ENGINEERING

ARIZONA STATE UNIVERSITY



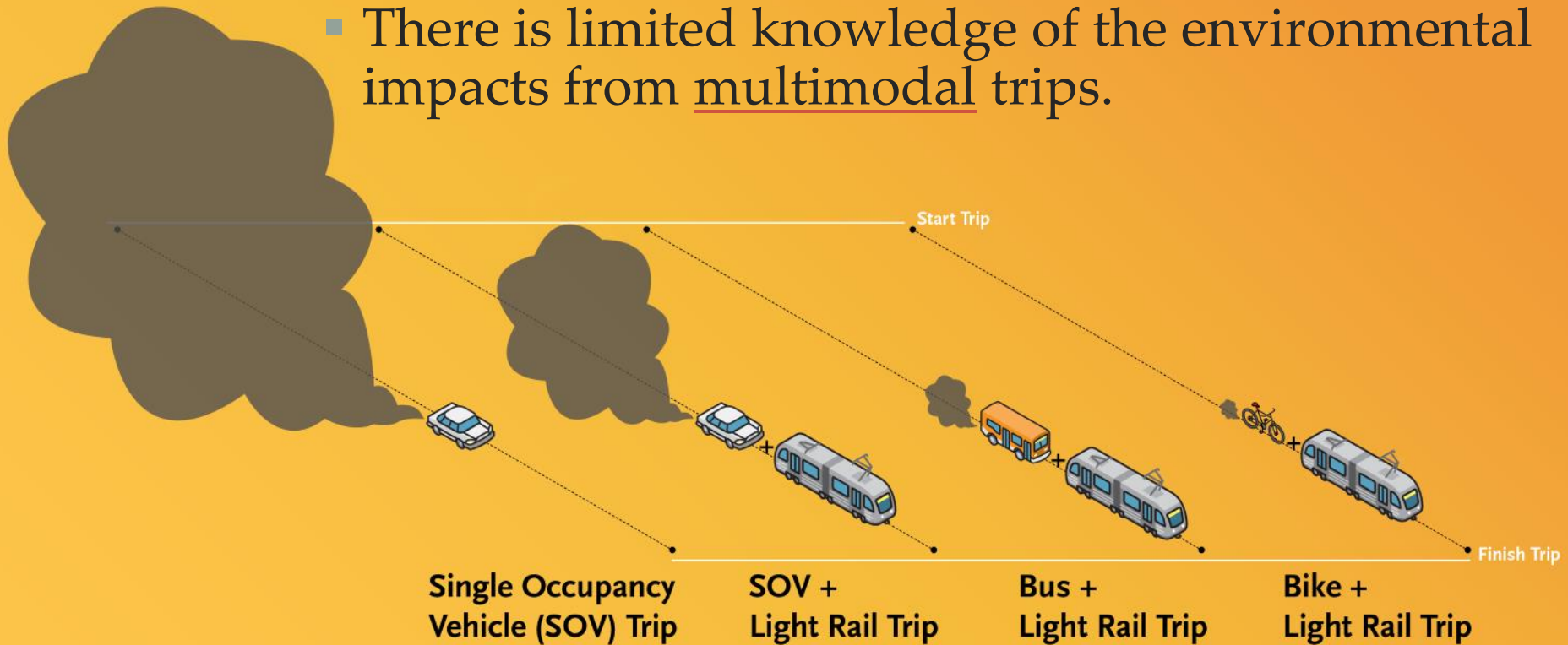
Outline

- Project motivation
- Project overview and scope
- Project methodology & data
- Life cycle impacts (per passenger mile)
- Multimodal impacts (per passenger trip)
- Reducing 10% of system GHG impacts



Motivation in transportation

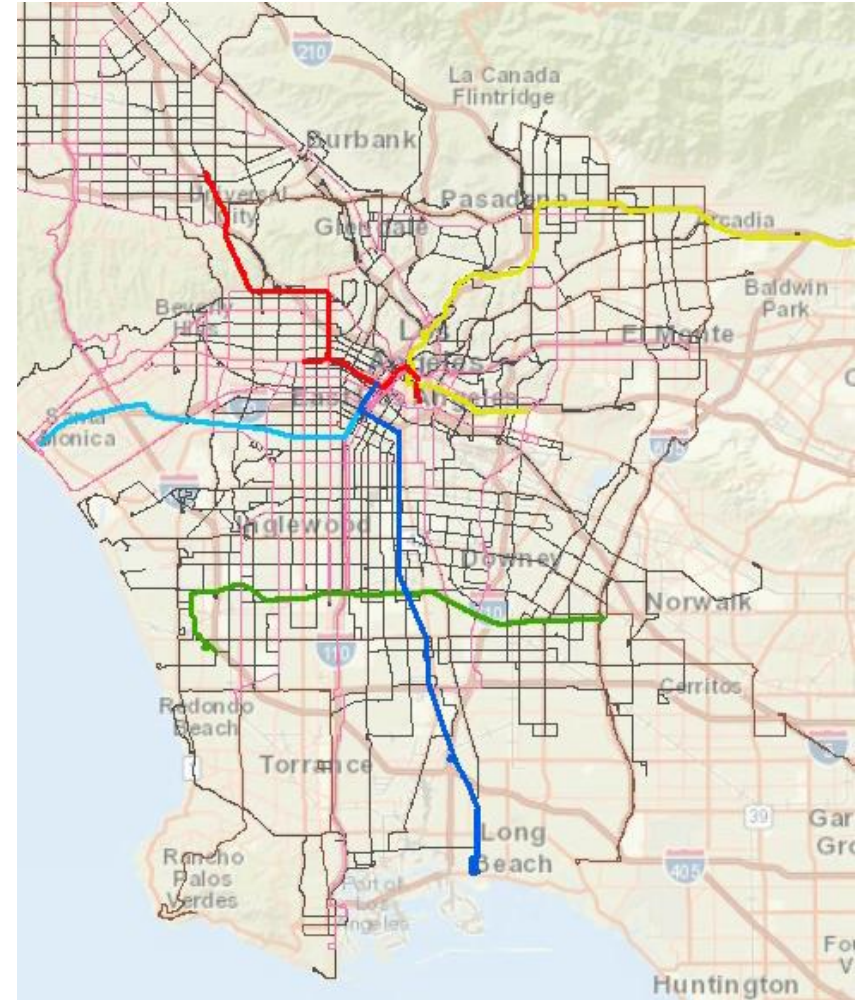
- There is a strong understanding of the environmental impacts from unimodal trips.
- There is limited knowledge of the environmental impacts from multimodal trips.



- Very limited knowledge of impacts from automobile access and egress with transit.

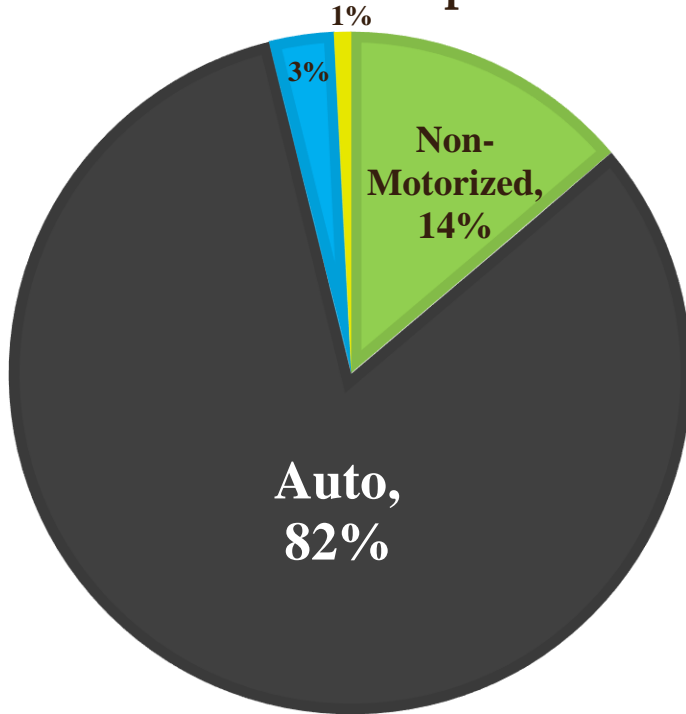
Project Overview

- Assess impacts generated from 10 LA transit systems and LA automobiles.
- Transit systems included:
 - Metro Light Rail Transit (LRT, 4 lines)
 - Metro Heavy Rail Transit (HRT, 1 line)
 - Commuter Rail Transit (CRT, 1 line)
 - Metro Local Bus
 - Metro Rapid Bus
 - Metro Express Bus
 - Bus Rapid Transit (BRT, 1 line)
- LA Auto:
 - 25 MPG sedan



Modal Split in LA

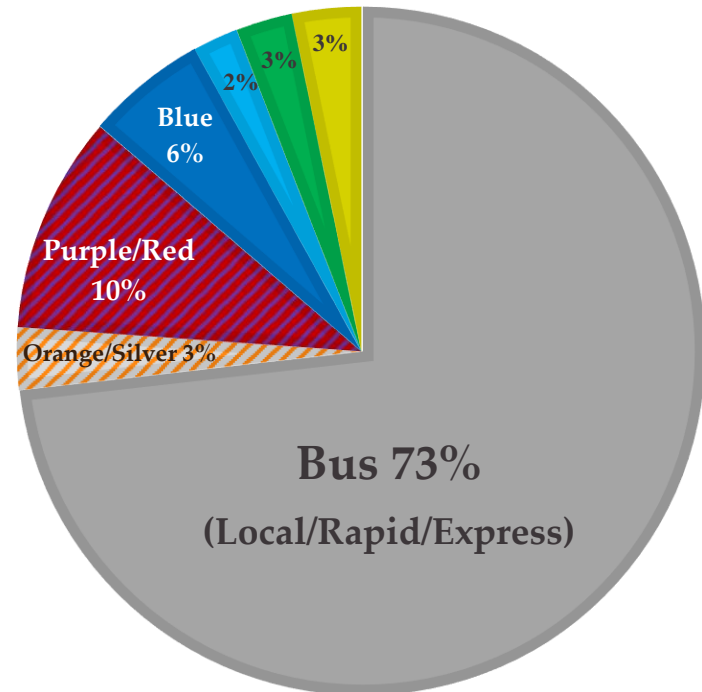
Modal Split



- Non-Motorized
- Auto
- Metro Transit
- Other

Estimate via California Household Travel Survey (Caltrans, 2013)

Transit Modal Split



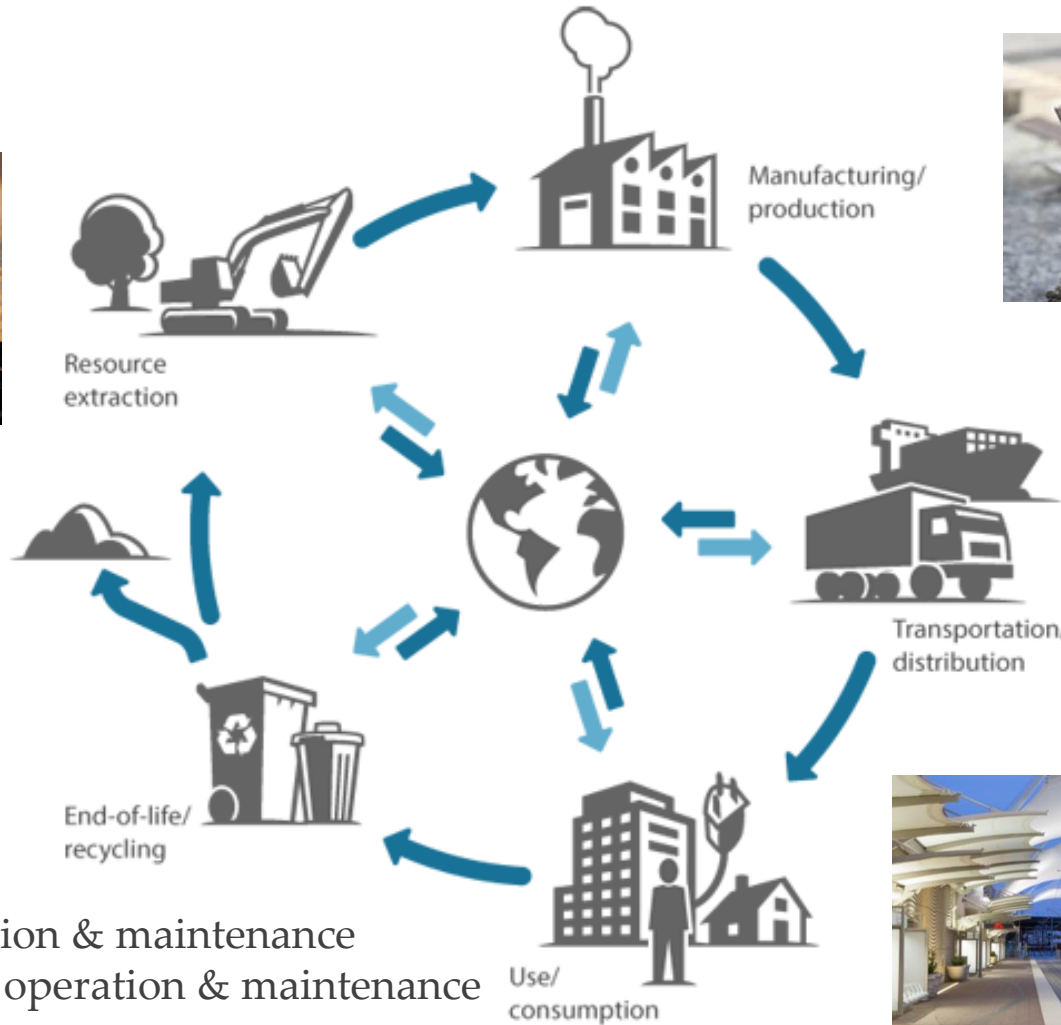
- Bus
- Blue
- Gold
- BRT
- Expo
- Heavy Rail
- Green

Estimate via LA Metro boardings (LA Metro, 2016)

Life-Cycle Assessment Scope



- Material and fuel extraction



- Vehicle manufacturing
- Infrastructure construction
- Electricity production and generation

- Vehicle operation & maintenance
- Infrastructure operation & maintenance



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Data & Tools

Trip data:

- California Household Travel Survey (CHTS, 2012-13)
- LA Metro On-board Surveys (2013 – current)



Transit operational data:

- Ridership & Operation Reports (2013 – current)
- Engineering design documents, Google Earth

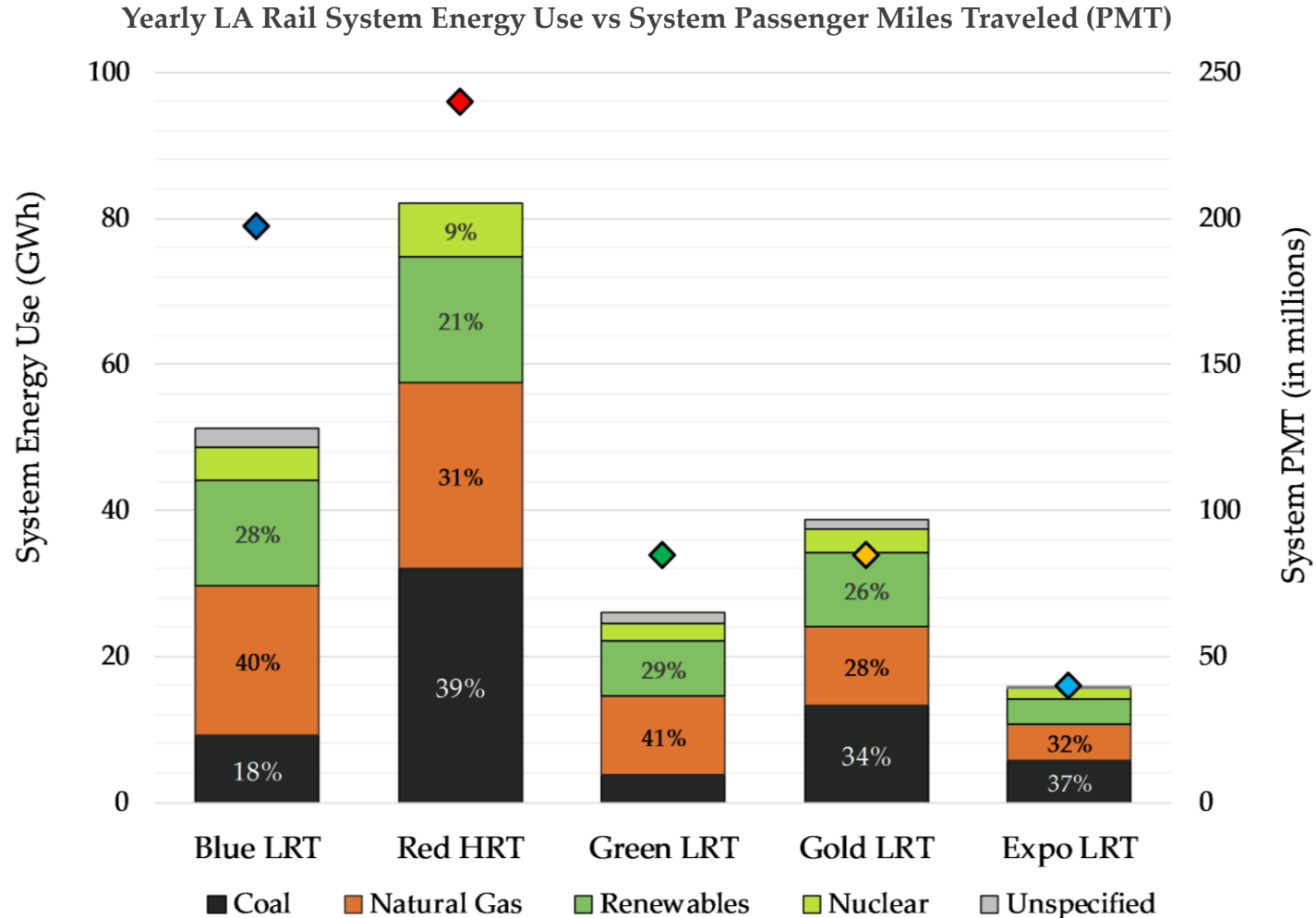


Life-cycle Modeling:

- Modeling tools including SimaPro, GREET, CiRN-LCA, and other components
- EcoInvent and EIOLCA database and empirical studies



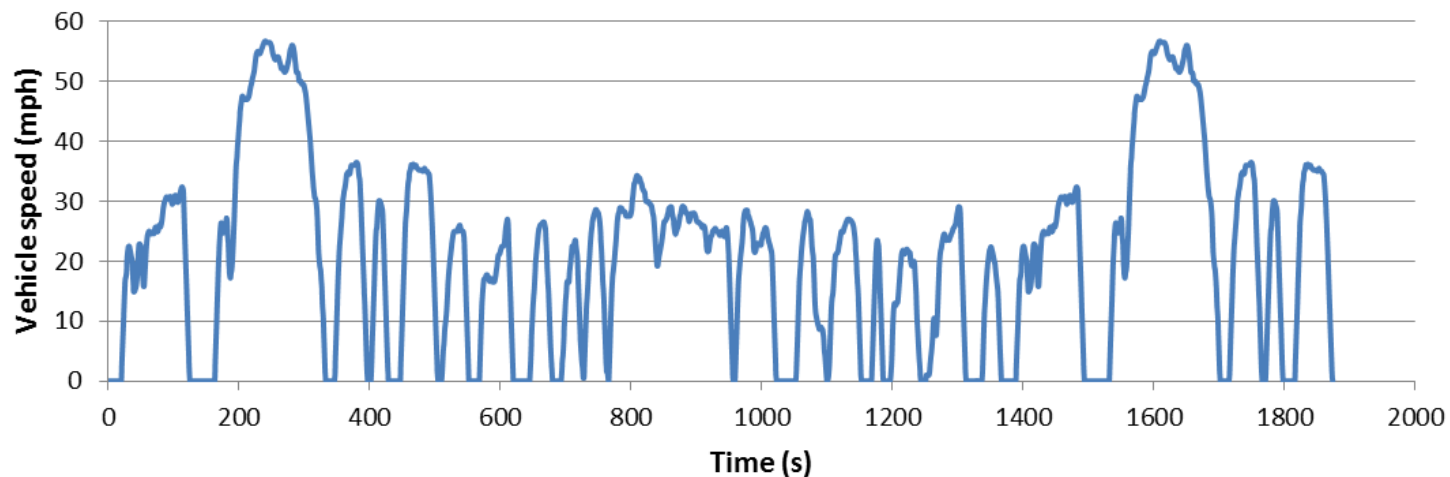
LA Metro Rail Energy Use



* Reflects 2013-2014 data

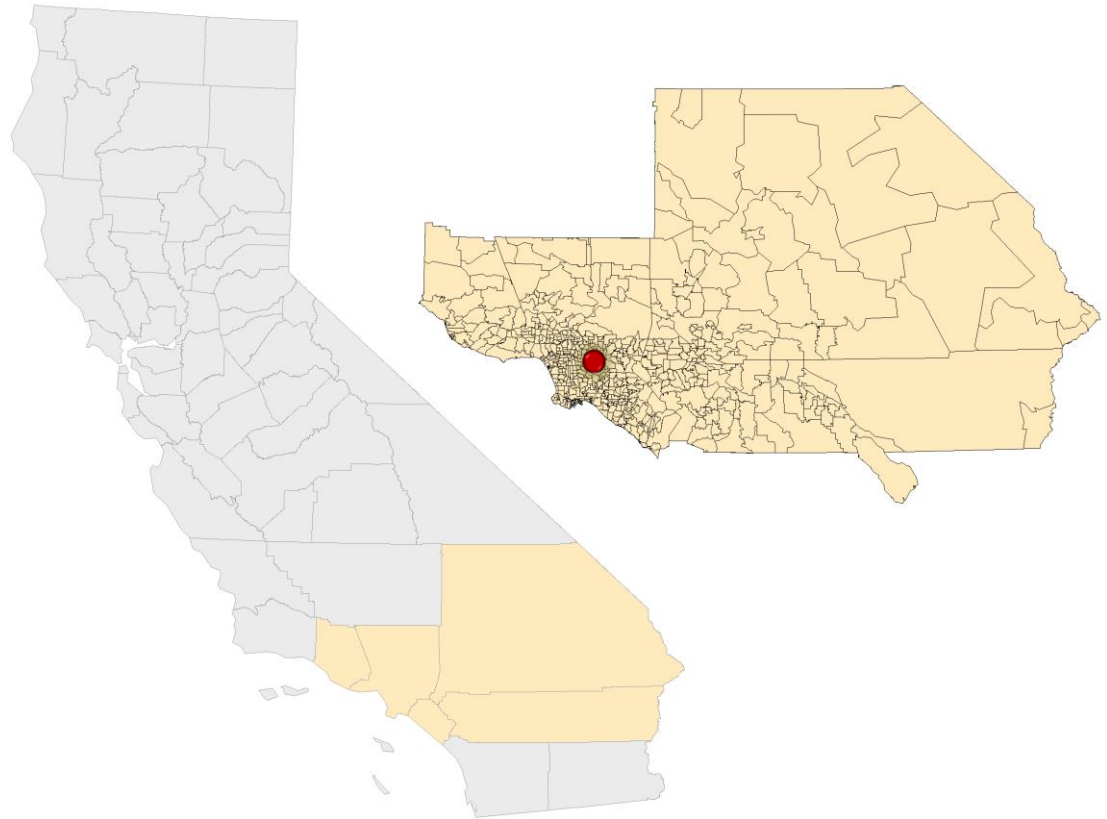
Bus & Metrolink Drive Cycles

- Local, Express, and Rapid Bus drive cycles were estimated by matching similar empirically tested cycles in similar buses (excluding Orange BRT).
- Estimated system fuel consumption (based on mileage) was 4% lower for buses, and 7% lower than locomotives.
- Metrolink drive cycles developed from similar locomotive operation impacts from Fritz (1994).



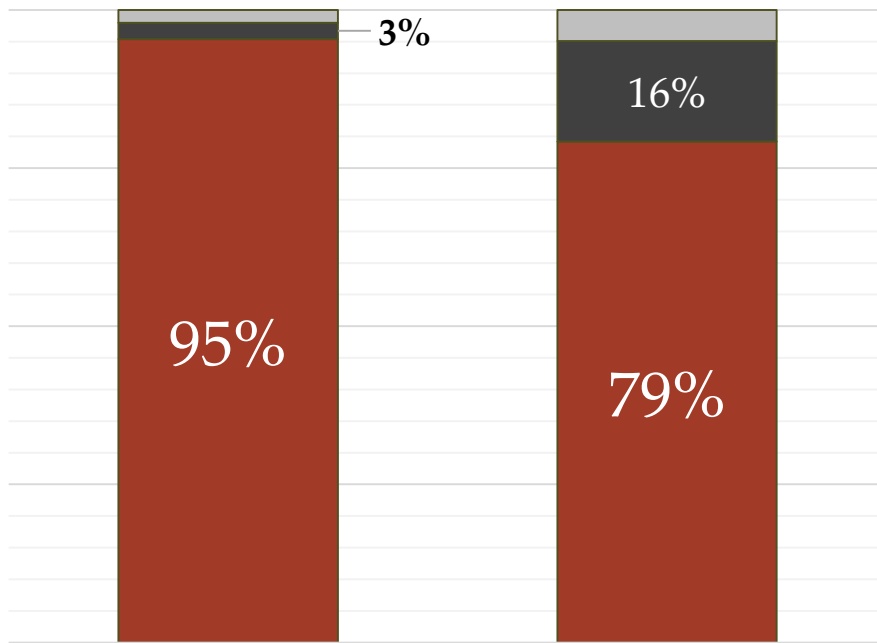
Trip Characteristics (CHTS)

- Trip characteristics determined for each region/transit system.
- Aggregation at the zip code level, over 900 sub-regions.
- Auto trips are shorter distance than transit for same ODs.



Transit Access & Egress in LA

Access & Egress Modes
(2012-13 CHTS)

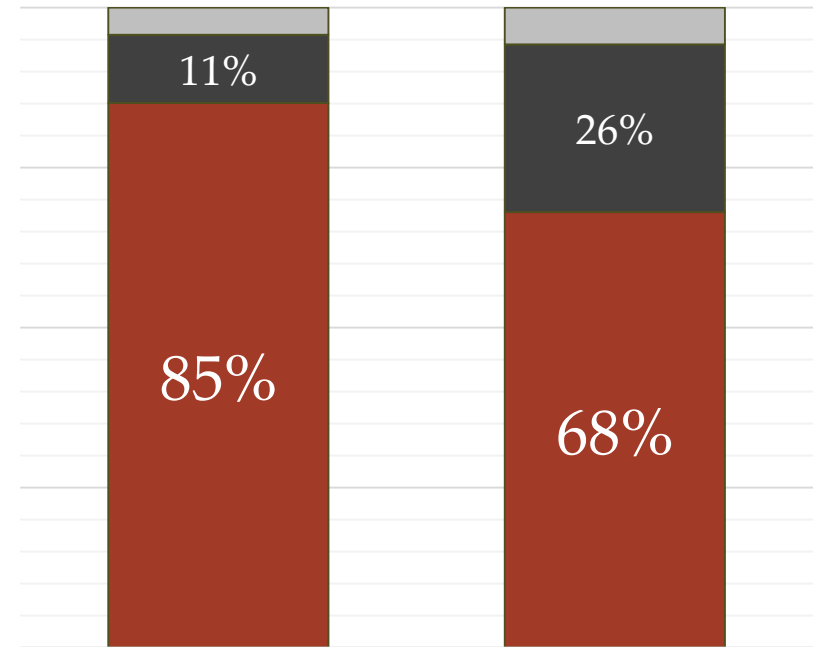


Metro Bus

Metro Rail

■ Walk/Bike ■ Auto ■ Other

Access Mode
(2012-13 Metro Surveys)



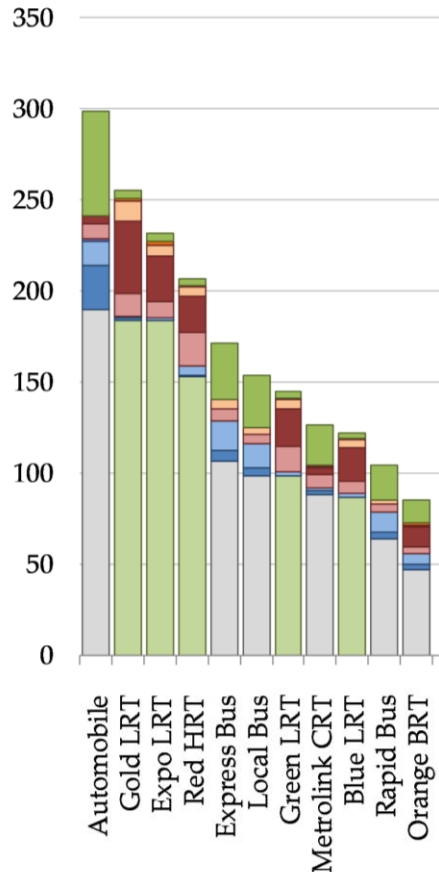
Metro Bus

Metro Rail

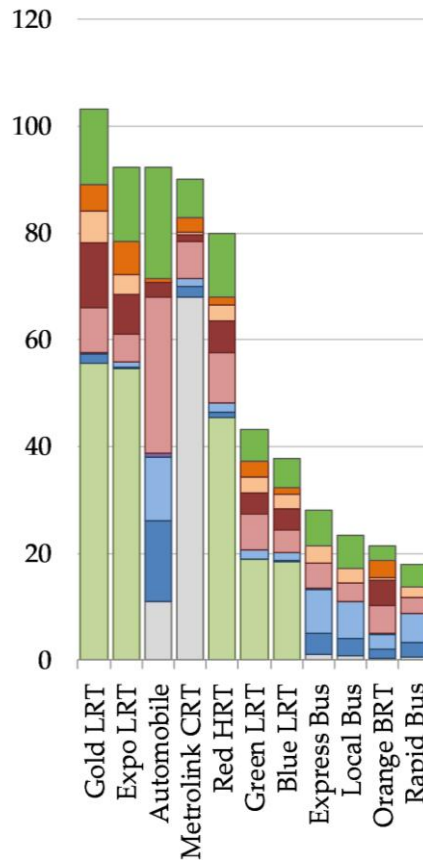
■ Walk/Bike ■ Auto ■ Other

Per Passenger-mile Impacts

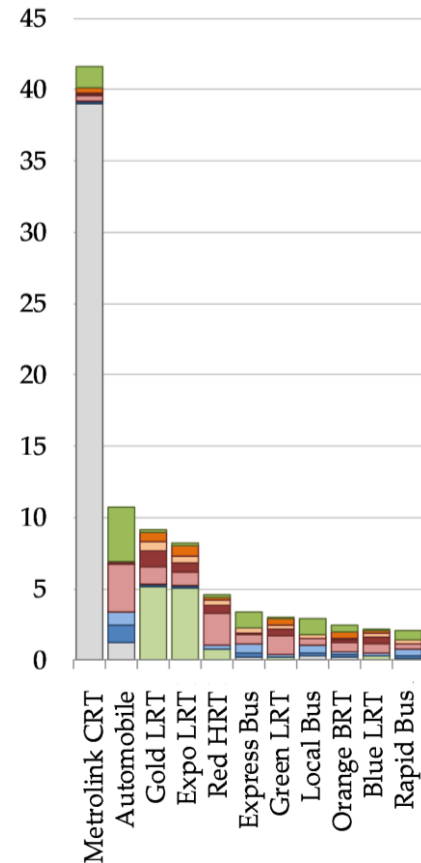
GHGs (g CO₂e/PMT)



Respiratory (mg PM_{2.5}e/PMT)



Smog (g O₃e/PMT)

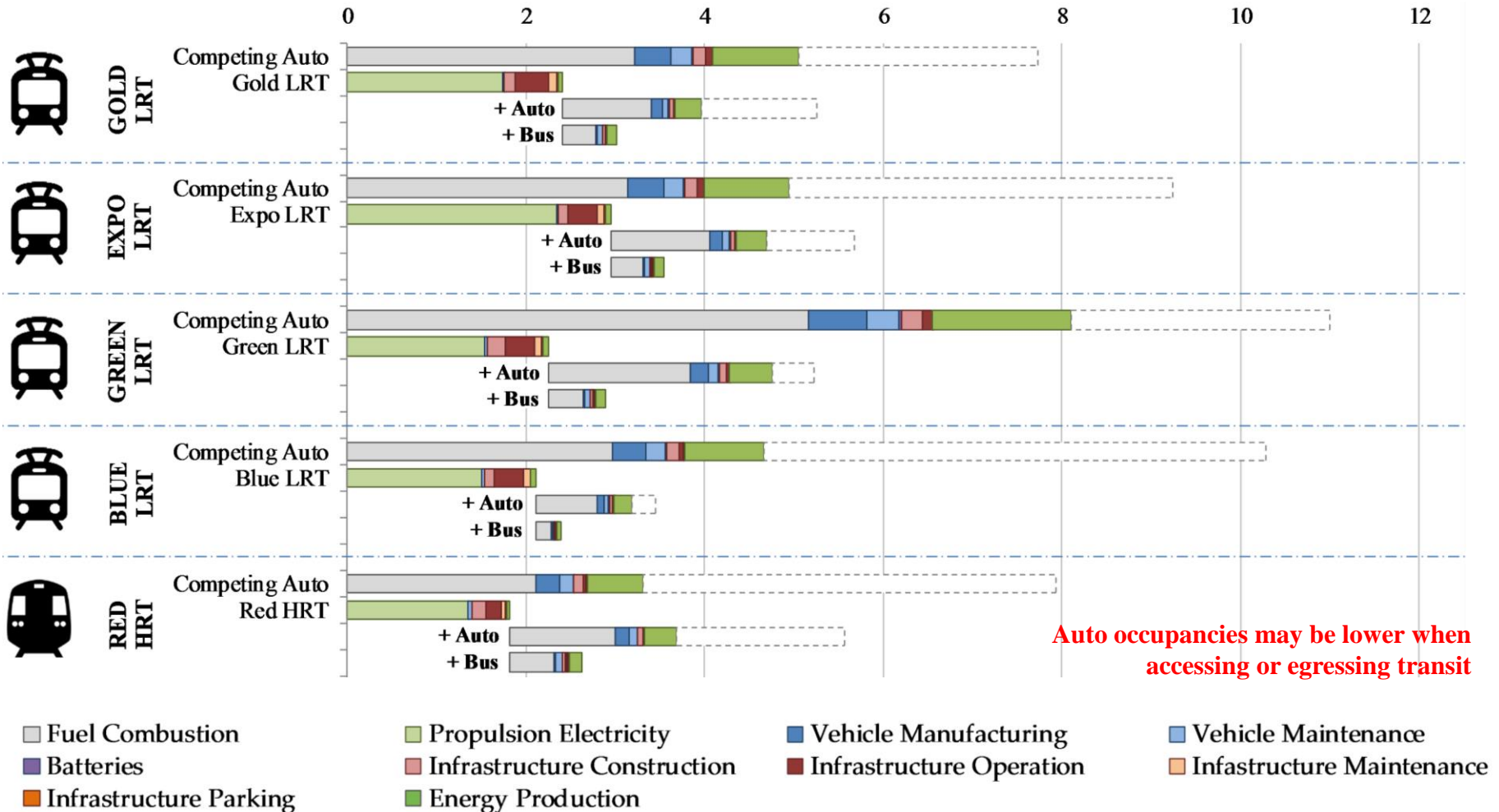


Note that auto trips in LA are ~2 pax per trip

- Fuel Combustion
- Propulsion Electricity
- Vehicle Manufacturing
- Vehicle Maintenance
- Batteries
- Infrastructure Construction
- Infrastructure Operation
- Infrastructure Maintenance
- Infrastructure Parking
- Energy Production

GHGs per Passenger-Trip

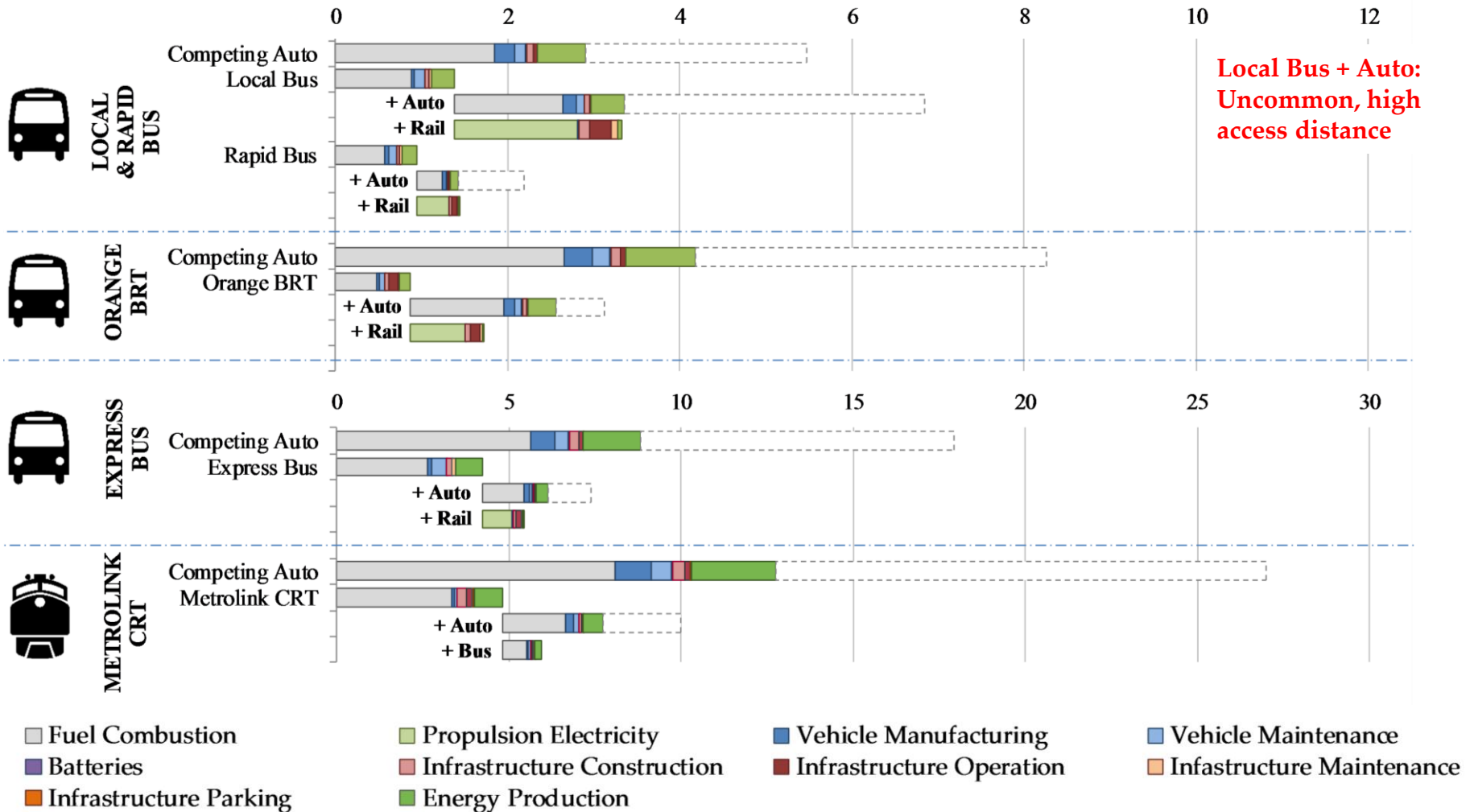
GREENHOUSE GAS EMISSIONS (kg CO₂e per passenger trip)



Auto occupancies may be lower when accessing or egressing transit

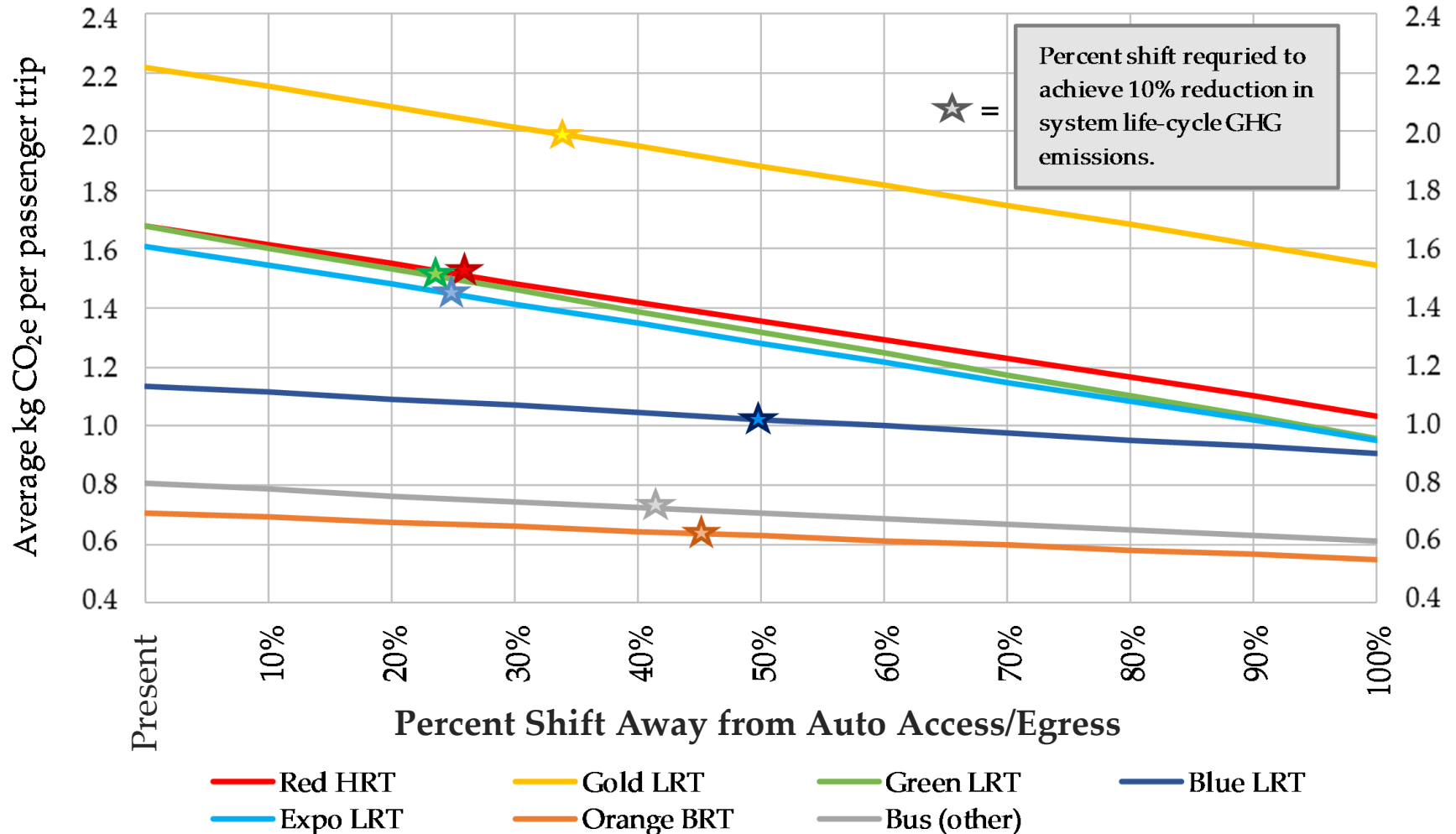
GHGs per Passenger-Trip

GREENHOUSE GAS EMISSIONS (kg CO₂e per passenger trip)



Reducing 10% of GHG Impacts

Average GHG emissions per passenger trip vs auto shift



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REPORT and DATA



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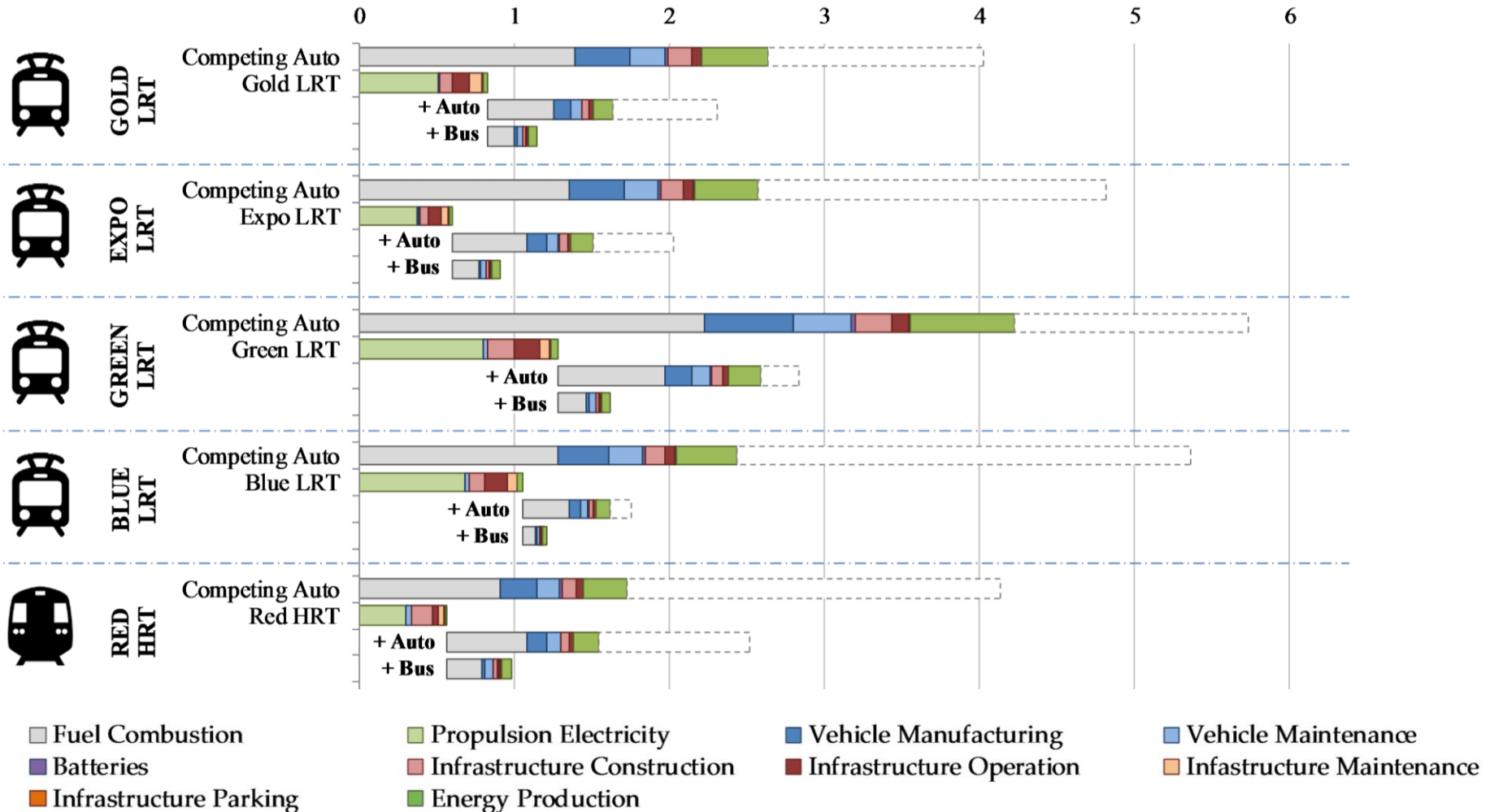
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System Boundary

Life Cycle Grouping	Automobiles/Buses	Rail
Vehicle		
Manufacturing	<ul style="list-style-type: none"> ▪ Vehicle Manufacturing ▪ Battery Manufacturing ▪ Transport to Point of Sale 	<ul style="list-style-type: none"> ▪ Train ▪ Transport to Point of Sale
Operation	<ul style="list-style-type: none"> ▪ Propulsion ▪ Idling 	<ul style="list-style-type: none"> ▪ Propulsion ▪ Idling
Maintenance	<ul style="list-style-type: none"> ▪ Typical Maintenance ▪ Tire Replacement ▪ Battery Replacement 	<ul style="list-style-type: none"> ▪ Typical Train Maintenance ▪ Train Cleaning ▪ Flooring Replacement
Infrastructure		
Construction	<ul style="list-style-type: none"> ▪ Roadway 	<ul style="list-style-type: none"> ▪ Track ▪ Station
Operation	<ul style="list-style-type: none"> ▪ Roadway Lighting ▪ Herbicide Use 	<ul style="list-style-type: none"> ▪ Track, Station, and Parking Lighting ▪ Herbicide Use ▪ Train Control ▪ Miscellaneous (Escalators, Equipment)
Maintenance	<ul style="list-style-type: none"> ▪ Roadway Maintenance 	<ul style="list-style-type: none"> ▪ Track and Station Maintenance
Parking	<ul style="list-style-type: none"> ▪ Curbside Parking 	<ul style="list-style-type: none"> ▪ Dedicated Parking
Energy Production		
Extraction, Processing, & Distribution	<ul style="list-style-type: none"> ▪ Gasoline/Diesel/Natural Gas Extraction, Processing, & Distribution 	<ul style="list-style-type: none"> ▪ Raw Fuel Extraction and Processing, Electricity Generation, Transmission & Distribution

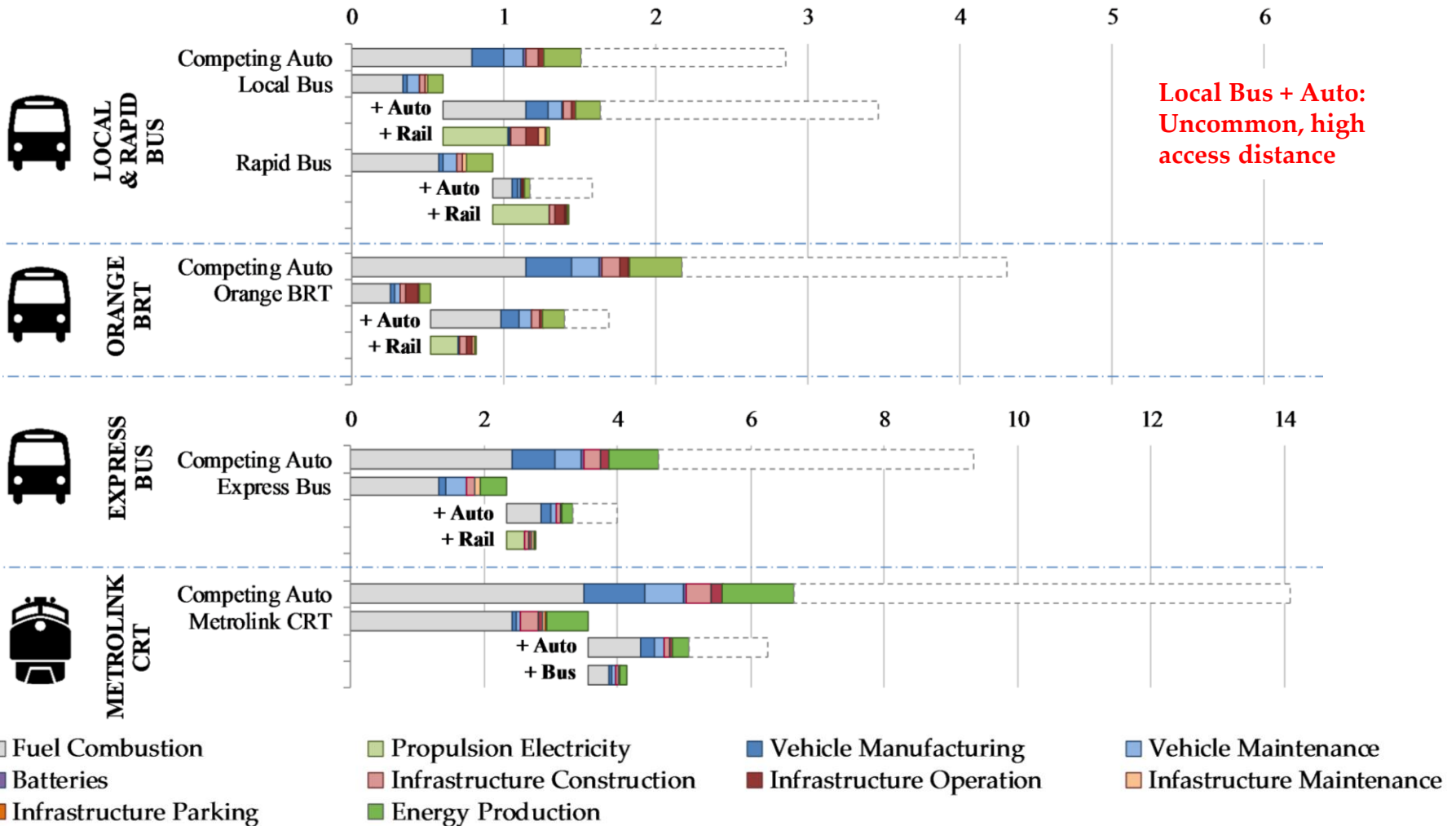
GHGs per Passenger-Trip (LT)

GREENHOUSE GAS EMISSIONS (kg CO₂e per passenger trip)

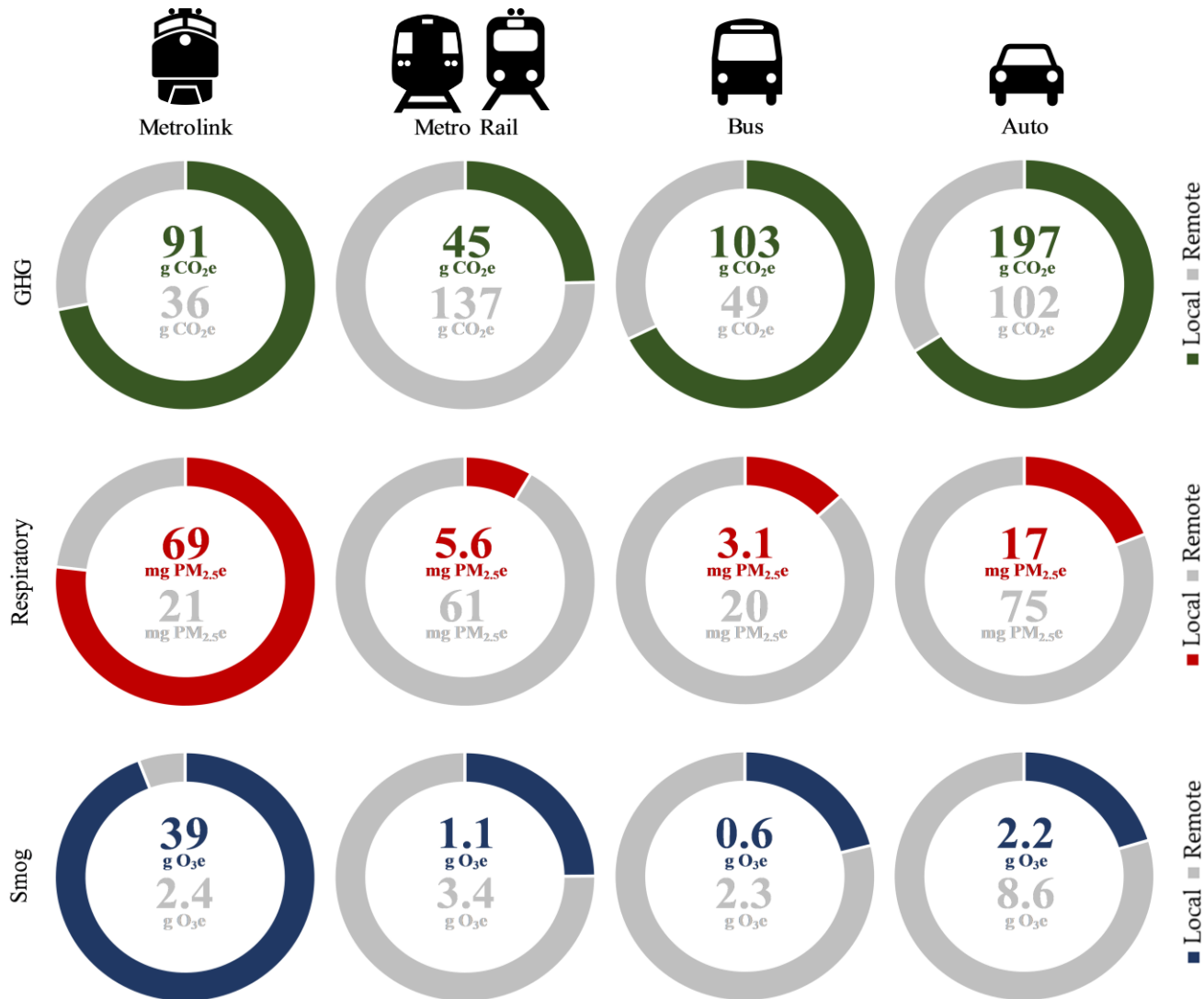


GHGs per Passenger-Trip (LT)

GREENHOUSE GAS EMISSIONS (kg CO₂e per passenger trip)



Local vs Remote Impacts Per Passenger Trip





Board Report

File #: 2016-0800, **File Type:** Informational Report

Agenda Number: 6.

AD HOC SUSTAINABILITY COMMITTEE NOVEMBER 16, 2016

SUBJECT: COUNTYWIDE SUSTAINABILITY PROGRAM UPDATE

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE **Countywide Sustainability Program update.**

ISSUE

In December 2012, the Metro Board of Directors adopted the Countywide Sustainability Planning Policy (CSPP) which, among other items, directed the preparation of a Sustainability Annual Report. This report provides an update on issues related to the CSPP and prompts discussion of implementation priorities going forward.

DISCUSSION

CSPP Background

The Board-adopted CSPP creates an overall framework for sustainability for Metro and directs action to incorporate sustainability in all aspects of Metro's planning, programming and project delivery. The policy establishes three principles: connecting people and places, creating community value, and conserving resources. In addition, the policy establishes Metro's interest and role in shaping how people experience living, working and recreating in Los Angeles County including the economy, community, environment, and sense of place.

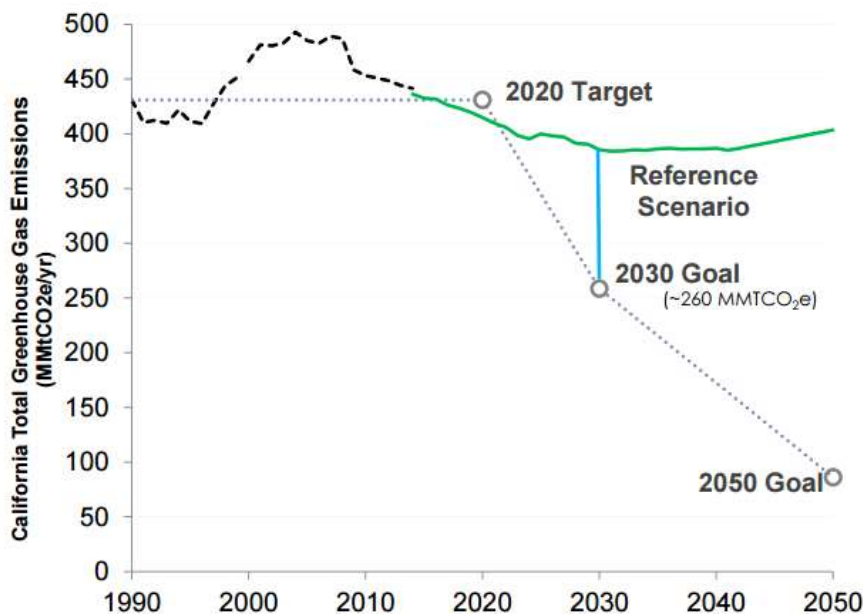
The CSPP and its accompanying implementation plan reflect the thinking and the political and legislative forces in play at the time of its adoption in 2012. Four years later, the policy background particularly at the state level, Metro's own priorities and projects and the broader realm of sustainable transportation, especially related to technology, have changed considerably.

New Climate Legislation

The CSPP was explicitly and intentionally responsive to state climate policy including AB 32 (2006) and SB 375 (2008). The California legislature this year passed several new bills related to climate change that have broad implications for the state. State climate policy also impacts Metro in a number of ways including funding and potential direct regulation, as well as providing impetus and support for Metro sustainability policies. The newly-adopted Senate Bill 32 and Assembly Bill 197 extend and update California's policies on global climate change and set a framework for subsequent regulations and programming. Key legislation can be broadly summarized as follows:

- SB 32 (Pavley) extends AB 32 (2006, Nunez), by extending the horizon date from 2020 to 2030.
- At the same time, SB 32 also significantly deepened the targets for greenhouse gas emission reduction by 2030 and 2050.
- AB 197 (Garcia) impacts climate change programs by creating new legislative oversight, and prioritizing certain types of emission reductions over others.

The state is on track to exceed the original 2020 goal. However, the state must cut emissions nearly in half from the 2009 peak to achieve the new 2030 target from SB 32. A Board box was prepared that reviewed the ramifications of these and other new climate related laws in detail (Attachment A). The scope and scale of the new target and the steep level of change necessary to meet it is best illustrated by the chart here:



Source: California Air Resources Board, 2016

Sustainability Annual Report and Performance Metrics

A key on-going sustainability implementation item, the 2016 Sustainability Annual Report documents progress made toward achieving sustainability goals for the region (Attachment A). Included in the report are case studies from throughout the county that highlight the sustainability principles adopted by Metro in the CSPP. These case studies serve as inspiration for future, multi-benefit projects and include details about how each project was funded and implemented, as well as lessons learned. The report also provides an update on the status of various Metro policies, plans and projects that support the CSPP sustainability goals.

In the 2015 Annual Report, a set of Countywide Performance Metrics accompanied the program metrics section of the report. The Performance Metrics measured various aspects of sustainability

countywide, influenced by both Metro activities and activities outside of Metro's influence. In July 2015, the Ad Hoc Sustainability Committee directed staff to consider new metrics, including equity, job access, technology, vehicle ownership, activity centers, bicycle and pedestrian safety, emerging technologies and shared mobility, environmental justice and income in Los Angeles County. This will allow Metro to obtain a more comprehensive measure of sustainability countywide. Metro anticipates bringing on board a consultant in the first quarter of calendar-year 2017 for the development of the 2017 Annual Report and Performance Metrics.

Potential Update to Implementation Items in CSPP

The 2012 CSPP identified an implementation plan that specified 22 discrete steps to integrate sustainability into Metro actions. As noted above, many of these action items are in progress or have been completed. New and updated implementation steps are needed to continue to enact the goals of the CSPP and respond to the changing landscape of climate laws, new technologies and mobility options that exist today. Following discussion by the committee at this meeting, staff would update the implementation items to align with current needs and priorities and report back at the next committee meeting where committee action on the revised implementation items would be anticipated. An updated implementation program would include recently committed activities such as the Urban Greening Implementation Action Plan/demonstration projects, the Parks Access Plan, and updates/improvements to Sustainability Performance Metrics. Further activities may include additional coordination with regional partners around newly emerging state policies related to SB 375, CEQA transportation impact analysis, and the development of the AB 32 Scoping Plan.

NEXT STEPS

As discussed above, staff anticipates an item at the next Ad Hoc Sustainability Committee meeting to consider a revised and updated set of CSPP implementation actions.

ATTACHMENTS

Attachment A - 2016 Sustainability Annual Report

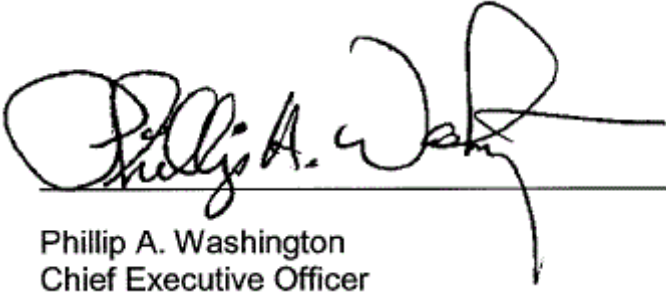
Attachment B - Board Box on New State Climate Legislation

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Phillip A. Washington
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Metro Countywide Sustainability

ANNUAL REPORT — OCTOBER 2016



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Acknowledgements

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Katie Lemmon

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Stacie Endler, Metro
Michael Forbes, City of Temple City
Natalia Gaerlan, The Trust for Public Land
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Gene Higginbotham, City of Santa Monica
Cris Liban, Metro
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Zach Pollard, City of Santa Monica
Marcel Porras, City of Los Angeles
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Avital Shavit, Metro
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Introduction

This report is the second Metro Countywide Sustainability Annual Report. The purpose of the report is to communicate progress made toward improving sustainability in Los Angeles County based on the broad definition of sustainability laid out in Metro's Countywide Sustainability Planning Policy (CSPP), adopted in 2012. The CSPP considers various aspects of the role that Metro's activities have in continually shaping Los Angeles County, including economy, community, environment, and sense of place.

This year's report includes two main sections:

1) sustainability case studies and 2) program metrics providing status updates on Metro's efforts in implementing the CSPP. The case studies are intended to inspire future sustainability projects countywide and highlight a variety of new and innovative sustainability initiatives. The projects in this section exemplify Metro's sustainability principles, represent different geographies throughout the county, and were implemented during the past six years.

Following the case studies are program metrics. This section provides a status update on implementation action items related to CSPP and various Metro sustainability programs. The 2015 Annual Report also included Countywide Performance Metrics that tracked countywide sustainability outcomes. At the direction of the Metro Board of Directors, Metro staff is currently updating and improving the Countywide Performance Metrics and intends to resume inclusion of those metrics, once updated, for the 2017 Sustainability Annual Report.

Sustainability Case Studies

Imagine living and working in an interconnected neighborhood that you are able to seamlessly explore; a place where it is safe, easy and pleasant to walk or bike where you need to go while you enjoy some fresh air along the way. You can easily interact with the neighbors in your community. You regularly use cutting-edge technology to find transportation options. And at the end of the day, you know you are doing something good for your health and the environment, too.

The case studies in this report illustrate that vision. They are representative of sustainable transportation-related projects in the county that have been implemented in the last six years. The sustainability principles, which are aligned with those identified by Metro as priorities through our sustainability policy, highlighted for each project fall into three overarching categories: connect people and places, create community value, and conserve resources. The case studies span various land use conditions, geography, and travel patterns throughout the county.

Two types of case studies are included in this report: 1) Spotlight case studies and 2) Overviews. To be of the most use to the reader, the Spotlight case studies include a description of the project, details on project process, key players and lessons learned that can be applied to future projects. The Overviews showcase additional case studies that exemplify the CSPP sustainability principles.

Many of the projects demonstrate multiple principles of sustainability; however, a primary sustainability principle has been identified for each case study, and that is how they have been categorized in this report, as follows:

Healthy Neighborhoods

- > Emerald Necklace Implementation
- > Metro Open Streets Program

Access

- > Rosemead Boulevard Safety Enhancement and Beautification Project
- > Santa Monica Colorado Esplanade Project

Green Modes

- > Zero Emission Vehicle Charging Stations in Pasadena
- > Foothill Transit Electric Bus Program

Urban Greening

- > Avalon Green Alley Network Demonstration Project: Avalon Green Alley South

Environmental Stewardship

- > Terminal Island Freeway Environmental Sound Barrier a.k.a. "The Great Wall of Mulch"
- > Metro Gold Line Maintenance Campus
- > Metro Division 13 Bus Maintenance and Operations Facility

System Productivity

- > Metro Carshare Program

Emerald Necklace Implementation

Multiple Benefits!

PRIMARY SUSTAINABILITY PRINCIPLE

Healthy Neighborhoods

LEAD

Community Group

Two major projects have been completed as part of the 2005 Emerald Necklace Vision plan introduced by Amigos de los Rios: the San Gabriel River Greenway Improvements and the Peck Water Conservation Park Trail Head. The Emerald Necklace Vision plan was inspired by the 1929 Olmsted-Bartholomew Plan, and calls for an interconnected network of enhanced, multi-objective trails that will provide recreational areas for communities and address social and health issues.¹

San Gabriel River Greenway Improvements: West Bank (Phase 1):

Description

The San Gabriel River Greenway project is a case study meant to bring to life the area between the Santa Fe Dam and the Whittier Narrows. Improvements included trash removal, site grading, planting of native habitat trees and shrubs, a San Gabriel Mountain abstract mural installation, and site amenities such as exercise equipment, benches, tables and nature-based play elements. Additional elements included decomposed granite pedestrian trails as well as wayfinding and interpretive signage. The project established the greenway that connected six schools located adjacent to the river.

The San Gabriel River Greenway improvements promote access and community development by improving connections between schools, which are important community destinations. The project supports green modes and healthy neighborhoods by encouraging active transportation, fostering outdoor learning opportunities and providing exercise and play elements. It exhibits context sensitivity and urban greening by highlighting locally inspired art and using native plants.

Project Process

The project utilized a community-based design process, gathering input from stakeholders from the school districts and the community. The final design elements reflect the feedback received, including native plants and trees to help shade the existing Class A bikeway, which formerly was very hot; cultural history elements and wayfinding features. School children expressed interest in understanding more about the native habitat for the region, which inspired the placement of whimsical large-scale features such as a desert tortoise, an Arroyo toad and a steelhead trout along the greenway.

The completed greenway is a living landscape that requires care and attention. Hundreds of community members are



currently involved in this upkeep, primarily through a weekly Saturday morning greening program. This includes a number of high school students, who use the opportunity to log community service hours as they learn how to take care of the network while engaging in citizen science, a process where members of the public collaborate with professional scientists on large scale projects.

Key Players

Key partners for the San Gabriel River Greenway project were Amigos de los Rios, the LA County Public Works Department, the Recreation and Parks Department and the adjacent school districts, including El Monte city school district, Mountain View school district and El Monte Union High School district. The budget for the project totaled \$1,510,000 which included \$995,000 in both planning and project funding from the California Strategic Growth Council via an Urban Greening Grant; \$350,000 from the Environmental Enhancement and Mitigation Program which was run by CalTrans at the time; \$100,000 from the California Community Foundation for exercise equipment; and \$65,000 from San Gabriel Mountains Urban Fund. The total amount also includes approximately 2,500 Community Equity hours.

Lessons Learned

A key takeaway for the project was the realization of how strongly the vision for a regional network connecting local mountains to the ocean resonated with people of all ages in the community. Anecdotal evidence has shown that creating connective tissue between the schools and the publicly held lands along the river affects community members on a daily basis, including daily walks on the pedestrian trails before school for families and teachers, a reduction in the heat island effect in areas around the schools and expanded outdoor physical education (Phys Ed) possibilities.

Peck Water Conservation Park Trail Head



Description

This 180 acre former gravel quarry is a unique habitat in that 250 of the 500 bird species that exist in California can be seen at the site. Enhancements, which resulted in the creation of a nature preserve setting with a clear view of the San Gabriel mountains, included low water use irrigation, wayfinding and interpretive signage, an extensive native plant restoration area and native tree canopy to support the local bird habitat.

This project exemplifies green modes and healthy neighborhoods by promoting active transportation. The project also showcases urban greening and environmental stewardship through its water conservation efforts and native landscaping.

Project Process

The California Department of Forestry and Fire Protection was the catalyst for the project, providing the initial vision and funding. Community participation was a key component of the project. Local students from Arroyo High School and others in the area have become involved with the project, working on initiatives such as habitat restoration.

Key Players

In addition to organizing partner Amigos de los Rios, other partners included Cal Fire and Forestry, Caltrans, the Los Angeles County Department of Public Works and the County Recreation and Parks Department. The budget for the project totaled \$800,000, including \$350,000 from Cal Fire, \$350,000 from EEMP, \$100,000 from the SGMF Fund and approximately 2500 Community Equity hours.

Lessons Learned

One of the main lessons learned during this ongoing project was the need for patience and perseverance. With funding and support, Amigos de los Rios was able to begin to establish a presence in the community and start a conversation about the need for urban greening and environmental stewardship. But this is only the beginning of realizing the vision for the project, and more work is required to continue to build on the improvements made.

Metro Open Streets Program

PRIMARY SUSTAINABILITY PRINCIPLE

Healthy Neighborhoods

LEAD

Metro

Description

In September 2013 the Metro Board approved the Open Streets Competitive Grant Program framework to fund a series of regional car-free events. Open Streets initiatives temporarily close streets to automobile traffic and open them to cyclists, pedestrians and other modes of non-motorized transportation. The goals of the Open Streets Grant Program are 1) to provide opportunities for taking transit, walking and riding a bike, possibly for the first time; 2) to encourage future mode shift to more sustainable transportation modes; and 3) to encourage civic engagement to foster the development of multi-modal policies and infrastructure at the city/community level.

This program is included as a case study because it provides a framework to support events that allow communities to experience first-hand what it is like to go car-free, promoting green modes and healthy neighborhoods.

In addition to offering LA County residents the opportunity to experience active transportation in a safe and more protected environment, Open Streets events familiarize residents with transit options and destinations along routes that can be accessed without an automobile, promoting first/last mile solutions. These events also take thousands of cars off the streets, thereby decreasing carbon emissions² as well as providing opportunities for economic development and the improvement of public health by getting people out on the street patronizing local businesses while exercising and interacting with their community.³

Project Process

On March 14, 2014, 21 project applications were received for Cycle One of the program. These applications included a total of \$5.2 million in funding requests. The diverse events were evaluated based on their ability to meet the Metro Board-approved project feasibility and route setting guidelines that stressed readiness, partnership expertise and connections to transit and existing active transportation infrastructure.⁴

Cycle One of the program funded 12 events throughout the County totaling 92 miles of Open Streets. The budget for the program totaled \$4 million, which included \$3.7 million in grant awards and an additional \$300,000 to conduct comprehensive evaluations of the events and evaluate the costs and benefits. The source of funds for these Open Street Events was Congestion Mitigation Air Quality (CMAQ), with



Metro serving as a pass-through agency for the CMAQ funds with local cities invoicing Metro directly.⁵

Key Players

Thus far 10 Cycle One events have been implemented. One event was canceled due to financial constraints at the City, and one event is postponed until spring due to safety and first responder mobility issues surrounding adjacent wildfires.

Implemented Cycle One events include:⁶

City/County	Open Street Event Name	Date of Event
Los Angeles – City	CicLAvia: Heart of LA	10/4/2014
Los Angeles – City	CicLAvia: The Valley	3/22/2015
Pasadena	CicLAvia: Pasadena	5/31/2015
Long Beach	Beach Streets: Bixby Knolls & North Long Beach	6/6/2015
Culver City	CicLAvia: Culver City	8/9/2015
Lawndale	Lawndale Community Bicycle Ride and Open Street Event	4/23/2016
Downey	Downey Ride & Stride Open Street Event	5/1/2016
Huntington Park	CicLAvia: Southeast Cities	5/15/2016
Santa Monica	COAST	6/5/2016
El Monte	Viva SGV	6/12/2016

Ridership data collected during Cycle 1 showed an average 10% increase in system wide ridership on the day of events, and a 17% increase in system wide day pass sales on the day of events. Specific event data shows:

- > Boarding on the Metro Expo Line increased 26% during CicLAvia: South LA.
- > Metro Gold Line boarding increased by 32% during the May Pasadena CicLAvia.⁷

The Metro Outreach Booth at Open Streets events provides a platform for public input on Metro active transportation corridor projects such as the LA River and Rail to River, as well as other programs such as the Countywide Bike Share Program. During Cycle Two events the booth will continue to provide a location in the community to promote Metro programs.⁸

On March 16, 2016, the Metro Board approved the Metro Open Streets Grant Program Cycle Two Application and Guidelines, directing staff to award up to \$2 million annually to support Open Streets events. The Cycle Two guidelines and application process build on the Cycle One framework, with events expected to begin in the fall of 2016.

Per board direction extra points were given to Cycle Two event applications from disadvantaged communities, first time applicants and multijurisdictional events.

Lessons Learned

Additional post-event reporting requirements to be implemented in Cycle Two as a result of knowledge gleaned from Cycle One include counts of bicyclists exiting at all rail transit stations directly adjacent to the event route and Day Of event surveys of participants arriving to Open Streets on rail to determine frequency of Metro Rail ridership.⁹

OVERVIEW

Rosemead Boulevard Safety Enhancement and Beautification Project

PRIMARY SUSTAINABILITY PRINCIPLE

Access

LEAD

Local City

Description

The Rosemead Boulevard Safety Enhancement and Beautification Project resulted from Temple City's vision to improve safety and enhance multi-modal access along Rosemead Boulevard after Caltrans relinquished jurisdiction of the state highway to the City in 2008. As the City was preparing to celebrate its 50th anniversary, there was much discussion about the next 50 years and how to redefine a cutting-edge, forward-thinking Temple City. Major priorities included updating aging infrastructure, creating community and reviving the local economy. A Rosemead Boulevard street plan was a prime opportunity to address all of those issues.



This project exemplifies the sustainability principles of access, prosperity, green modes, healthy neighborhoods and community development. By bundling complementary strategies to addressing pedestrian safety, quality of life, economic development and sustainability, the roadway improvement plan comprehensively addresses issues that will face the community over the next 50 years, thus ensuring the long-term viability of the multimodal transportation system. Community involvement in the project was encouraged through an interactive design process that resulted in a community-driven streetscape which reflected the interests and priorities of those who engaged in the process. Neighborhoods of Temple City are now more connected, and enhanced safety features will encourage exploration of the city via all modes of transit, including active transportation.

Project Process

The \$20.7 million project was completed in May 2014 with a budget that included various federal, state and local sources, such as grants from Caltrans for bike lanes, CalRecycle for recycled asphalt concrete pavement and **\$2.25 million in funding from Metro's 2011 Call for Projects**.

The new, modernized boulevard encourages people to rediscover the street in new ways by utilizing new sidewalks, bike lanes, and paved roadways; seeing public art and visiting their favorite local businesses. The project includes the first protected bicycle lane in the San Gabriel Valley, transit stop improvements, energy efficient lighting, improved sidewalks and pedestrian accessibility, and pedestrian amenities such as street furniture and public art.

Green elements were incorporated in the project in various ways, including the addition of nearly 500 trees and 5,000 plants, as well as the use of Rubberized Asphalt Concrete – a 'green' material made from recycled tires – to repave the streets. The bicycle lanes include landscaped islands with small openings in the curb face to collect storm water runoff. The depressed curbs on the side facing the bike lane – mainly a safety feature for cyclists – also help to collect runoff.

Placemaking and context sensitivity was enhanced by the selection of artists who created a series of artworks that celebrate the history and legacy of Temple City, including sidewalk mosaics with historically accurate text features; bronze sculptures; and tile murals depicting modern day Temple City.

Key Players

In addition to organizing partner Amigos de los Rios, other partners included Cal Fire and Forestry, Caltrans, the Los Angeles County Department of Public Works and the County Recreation and Parks Department. The budget for the project totaled \$800,000, including \$350,000 from Cal Fire, \$350,000 from EEMP, \$100,000 from the SGMF Fund and approximately 2500 Community Equity hours.

Lessons Learned

A number of lessons have been learned from this project.

- > Rosemead Boulevard through Temple City is a predominantly residential street and therefore there are multiple curb cuts. The presence of multiple curb cuts is one thing to consider as they can impact the "user-friendliness" of the protected bike lane.
- > Another consideration for a residential street with a protected bike lane is where residents will place trash cans on trash pick-up day. Public outreach and education is a needed first step.
- > Education and signage is needed both to prevent people from driving and parking in the bike lane, as well as to teach people how to properly use bike lanes, including where and in which direction to ride.
- > Protected bike lane maintenance, which may require specialized equipment, should be considered. Regular street sweepers are too wide to fit in protected bike lanes.
- > It takes a long time for drivers to adjust to changed roadway conditions, therefore increased signage and education may be needed to alert motorists to island curbs and placemaking features.
- > Long-term maintenance, repair, and related costs should be considered up front when designing a project. Planners must weigh the place-making benefits of custom-built pieces against their often higher and more time-consuming maintenance and repair costs.

² Motion 72: Motion by Mayor Antonio R. Villaraigosa, Supervisor Gloria Molina, Director Ara Najarian, Director Mel Wilson. Planning and Programming Committee. June 19, 2013. *Los Angeles County "Open Streets" Program*.

³ *Open Streets Grant Program Cycle Two: Approve Recommendation*. Planning and Programming Committee. March 16, 2016. Motion prepared by Avital Shavit, Laura Cornejo, Diego Cardoso, Cal Hollis.

⁴ *2014 Open Streets Grant Program: Approve 2014 Open Streets Grant Program – Cycle One*. Planning and Programming Committee. June 18, 2014. Motion prepared by Brett Thomas, Avital Shavit, Laura Cornejo, Diego Cardoso.

⁵ *2014 Open Streets Grant Program: Approve 2014 Open Streets Grant Program – Cycle One*.

⁶ metro.net/projects/active-transportation/metro-open-streets-grant-program

⁷ *Open Streets Grant Program Cycle 2: Approve Recommendation*.

⁸ *Open Streets Grant Program Cycle Two: Approve Recommendation*.

⁹ *Open Streets Grant Program Cycle Two: Approve Recommendation*.

Santa Monica Colorado Esplanade

Multiple Benefits!

PRIMARY SUSTAINABILITY PRINCIPLE

Access

LEAD

Local City

Description

Completed in June 2016, the Colorado Avenue Esplanade in Santa Monica forms a first/last mile gateway into the city from the Expo Line station and provides pedestrian and bicycle linkages to Santa Monica destinations. Colorado Avenue has been transformed from a vehicular corridor into a linear multi-modal hub connecting the station, downtown Santa Monica, the Santa Monica Pier, Tongva Park and the Civic Center area. The construction of the project on Colorado Avenue extends from the new Downtown Santa Monica Expo Line Station at 4th Street to the Santa Monica Pier entrance on Ocean Avenue.

The Colorado Esplanade project promotes the sustainability principles of access, prosperity, and community development by connecting a major rail line to the economic center of downtown Santa Monica, illustrating first/last mile connectivity. It encourages walking and biking, which supports green modes and healthy neighborhoods. Active transportation is further encouraged by place-making elements and incorporation of trees. This project also illustrates context sensitivity and urban greening.

Project Process

The project originated in the Santa Monica City Planning department with the goal of creating a gateway from the end of the Expo Line to the Santa Monica Pier. Recognizing that the Expo Line would provide a connection for people to more easily access the services, businesses and attractions of Santa Monica, they wanted to find a way to accommodate increased pedestrian traffic. Another motivating factor for the new sidewalks and bike lanes was the desire to provide a connection via active transportation to services in downtown Santa Monica and the Civic Center as well as to and from low-income housing units in the area.

The Colorado Esplanade project elements include tree-lined, 20-foot wide sidewalks of decorative, two-color textured paving; festival lighting; wooden tree wells; and a separate bicycle track. Additional place-making and wayfinding elements include artistic medallions, outdoor furniture, landscaping, lighting, signals and signage.

One of the most notable features of the Esplanade is that active transportation and vehicular traffic are managed by different signal systems, which is part of the larger effort to



create safe, intuitive and convenient travel options for people who walk and bike. The separated, two-way bicycle lane runs parallel to the westbound-only vehicular traffic lane and is separated from vehicular traffic by a raised median. The bike lane has its own traffic signal system that is distinct from the vehicular traffic signal system. At each intersection – 4th Street, 2nd Street and Ocean Avenue – signals indicate whether cars or pedestrians and bicyclists have the right of way. When cars are moving, bicyclists and pedestrians are not, and vice versa. Additionally, diagonal crossings are in place at intersections and benefit pedestrians by reducing crossing distances. Paving materials at the intersections have been improved to clearly mark pedestrian crossings.

A unique place-making feature of the Esplanade is the “wavy pavers” – custom-made individual pavers shaped like waves. These are meant to give visitors the feel of the ocean as they traverse the sidewalk. Interspersed with the pavers are wooden tree wells, which suggest the wood decking at the pier, conveying a cohesive feeling of one landscape. At night, string lights at 50-foot intervals lend the Esplanade a festival environment, giving visitors the feeling of walking under a canopy of light.

In consideration of water restrictions, the City has made several efforts within the project to significantly reduce the use of potable water for irrigation, including using treated urban runoff and recycled water, and underground drip irrigation. Only .23 acres of the 5.5 acre project area utilize spray irrigation, resulting in a 40% reduction in spray irrigated areas.

The budget for the project was \$15.2 million, **which included Metro Call for Projects funding**. Approximately \$4.4 million was provided by Federal funding sources, \$1 million came from development agreements, and the remaining \$9.7 million – which includes the planning and design budget – came from varied City funds.

Key Players

The development of the project included an outreach component with broad community involvement and feedback, including Colorado Avenue businesses and other downtown stakeholders. The outreach was designed to build public support and allow interested parties to give input into such matters as station area amenities, street design and landscaping.

Lessons Learned

In the few months since the Esplanade has been completed, one of the biggest surprises has been how many people are using it. Planners anticipated that a 20-foot sidewalk on one side and a 10-foot sidewalk on the other would accommodate a lot of visitors. But with approximately 5000 pedestrians visiting daily by train, the sidewalks are already being well used.

OVERVIEW

Zero Emission Vehicle Charging Stations

PRIMARY SUSTAINABILITY PRINCIPLE

Green Modes

LEAD

Local City



Through the **Metro Call for Projects** grant program, the City of Pasadena has upgraded 38, Level 2 electric vehicle charging stations in public parking facilities, and funded the installation of 12 new Level 2 chargers at private properties with the condition to allow for public access for charging. These charging stations are intended to reduce vehicle miles traveled by locating them near light rail stations and employment destination points.

Vehicle electrification promotes healthy neighborhoods and green modes by reducing tailpipe emissions and allowing for utilization of sustainable electricity sources. The fueling stations promote transportation system productivity due to their coordinated locations with transit and employment destination points, as well as economic development due to the availability of free EV charging in commercial districts.

The project was completed in June 2015 for a total cost of \$391,951. The funding sources included **\$313,561 provided by Metro** and the remaining \$78,390 coming from AQMD MSRC. Currently, there is the possibility for future expansion of the number of charging stations to as high as ten at each site. The incremental cost of such expansion is minimal, in part due to the guiding principle of “keeping it simple” and avoiding proprietary network-based charging stations.

Highlights of the project include collaborating with UCLA's Smart Grid Energy Research Center (SMERC) to manage and control the cost-effective base model EV charging stations, and providing Pasadena residents and visitors with free plug and charge options without the need for a network membership.

Foothill Transit Electric Bus Program

PRIMARY SUSTAINABILITY PRINCIPLE

Green Modes

LEAD

Local City

Description

Foothill Transit has committed to operating a 100% electric bus fleet by the year 2030 to further its sustainable transportation efforts and promote vehicles with zero tailpipe emissions. The project began in 2010 in response to policies from the Air Resources Board encouraging transit agencies to replace their fleets by 2020 with zero emissions vehicles.

This project promotes the sustainability principles of green modes and healthy neighborhoods by providing transportation options that lower greenhouse gas emissions and laying the groundwork for zero emission city bus fleets.



Project Process and Key Players

The program began with three buses in 2010, which helped to determine the challenges of running such a fleet. By 2014, Foothill Transit had procured 15 Proterra electric buses and was operating a fully electrified bus line, line 291. This year, the agency added two more electric buses to its fleet. The City of Pomona allowed Foothill Transit to use their transit center for a charging station, giving Foothill a 40-year lease for two stations in return for the transit agency making improvements to the facility. These included landscaping for the historic transit center, which required approval from the state Historic Preservation Officer.

Each of the first 3 buses was \$1.2 million, and each charger cost \$1 million. Construction and infrastructure costs for the charging stations totaled \$590,000. All of these items were wholly funded by American Recovery and Reinvestment Act (ARRA) funds.

In 2014, Foothill purchased 12 BEBs from Proterra through a \$10.2 million grant under the FTA's Transit Investments for Greenhouse Gas and Energy Reduction (TIGER) Program.¹⁰

In 2016 they acquired two 40-foot Catalyst fast charging buses for \$825,000 each. The Catalyst buses were eligible for the California Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP), in the amount of \$140,000 per bus.¹¹

Additionally in 2016, Foothill ordered 13 40-foot Catalyst extended range fast charging buses at a cost of \$789,000 each.

The electric buses run on Foothill Transit's line 291, which serves its riders by acting as a good substitute to traditional buses. The riding experience is very similar, and in fact, electric buses are quieter than their greenhouse gas-emitting counterparts. Foothill Transit anticipates that by the first week of September 2016 their fleet of 15 electric buses will have accumulated over 1 million miles, while experiencing fewer breakdowns and maintenance costs than traditional buses.

Lessons Learned

Lessons learned so far from this project include:

- > Study the routes. Look at available technology and which routes might apply to electric buses.
- > Look at capital investment and land availability.
- > Consider whether you want end depot charging, where the bus charges to 100% capacity in the bus depot and then runs as far as it can on charge before coming back to depot, or en-route charging, by which the bus charges at locations along the route as it boards passengers.
- > Manufacturers can help a lot by doing route studies and simulations.
- > Work with utility providers based on route simulation results. Look at how rates compare to diesel and compressed natural gas (CNG) rates and see if the utility provider can help.
- > Reach out directly to other agencies using electric buses for information.
- > A challenge to the program is the high cost of electricity. This is a statewide problem and Foothill is working with SoCal Edison to explore the possibility of a lower rate.

Avalon Green Alley Network Demonstration Project: Avalon Green Alley South

Multiple Benefits!

PRIMARY SUSTAINABILITY PRINCIPLE

Urban Greening

LEAD

Local City and Community Group

Description

Avalon Green Alley South, completed in September 2015, is the first section of a new network of Green Alleys that will give residents of one of South Los Angeles' most densely populated neighborhoods a new interconnected open space with shady pedestrian walkways and gathering spaces outside their homes. Renovating existing alleyways created a healthier, more pleasant environment for local residents with vines and espalier fruit trees; designs that encourage walking and interaction; community-designed murals and even a first-of-its-kind pedestrian zone.

This project illustrates many aspects of sustainability. It improves access between locations in the community and promotes community development by supporting social activity and engaging the community as long-term stakeholders. It exemplifies principles related to green modes and healthy neighborhoods by improving pathways for active transportation. The vegetation and LID infrastructure added illustrate urban greening and environmental stewardship of water resources. Lastly, the project exemplifies context sensitivity through its community-designed murals, public engagement, and native vegetation.



Key Players

The total cost for Avalon Green Alley South was \$3.7 million, split between planning, design and community outreach (\$1.6 million) and construction (\$2.1 million). The main project partners were The Trust for Public Land and the City of Los Angeles Bureau of Sanitation, both of whom were involved for the entire process. Additional partners and supporters included Council District 9 Curren D. Price, Jr.; Avalon Alley Green Team; SALT Landscape Architects; Breen Engineering; Council for Watershed Health; the Coalition for Responsible Community Development; Los Angeles Conservation Corp; TreePeople; Dr. Maya Angelou Community High School; and Main Street Elementary.

One noteworthy element of the project is the robust community involvement over time. Organizers began engaging with the community in 2008. The project relied on in-depth research and information gathering on the site beforehand, creating community and local agency partnerships for support and funding; community engagement to create long-term resident stakeholders, beginning with a pilot project to ease concerns about the project; and a tiered development system to prioritize improvements and capitalize better on limited funds.¹²

The Avalon Green Alleys “Equipo Verde,” or “Green Team,” was a key part of this. Composed of a group of mothers and neighbors, their monthly Platicas are an open and collaborative environment where residents could learn about current issues affecting their neighborhood, brainstorm effective ways to inform the design and development of the alley projects,

The alleys also include Low Impact Development (LID) infrastructure features that showcase ways to address the heat island effect and water problems, improving water quality and flood control through the use of permeable surfaces, native plantings and natural filtration.

Project Process

The Avalon project sits in the heart of South Los Angeles. The network is bordered by Main Street and Avalon Boulevard on the east and west, and 51st Street and 54th Street on the north and south. This specific neighborhood was chosen because of the rich potential for a network of green alleys to provide multiple benefits to a disadvantaged area. By creating a safer and more attractive environment for residents, the network would create the ability to walk to neighborhood amenities such as parks, churches and schools. Additionally, the soil conditions allowed for water infiltration into the local aquifer. The project also created the opportunity to provide more cooling, as it was an area with very little tree canopy and cooling features previously in place.

engage fellow community members about events and updates related to the Network and address additional community concerns.¹³ In addition to serving as a source of information for community members about the project, the Green Team was involved in many hands-on ways, such as helping obtain signatures from residents and planting and watering trees.

Community members were also involved in a unique art project that brought together a poet, local school children, Green Team members, and an artist in the creation of poetry and murals featured throughout the Network.

Lessons Learned

One of the main takeaways from the project was the importance of working with as many partners as possible. In addition to the previously mentioned community partners, the project relied on support from City Council District 9. The City Council had to pass a motion to agree to close off a portion of the alley to vehicular traffic. Additionally, the Council donated materials for alley clean up events and helped with communicating with residents regarding construction issues. Going forward, the city will be responsible for maintaining the alleys.

This project also spotlights the importance of ongoing stewardship. Ideally, the community will not just use the Network as a path to get from one place to another, but will take advantage of the newly beautified open spaces to have events such as block parties. The community must feel like they have ownership over the space if they are to initiate this usage, and involving them from the beginning of the process encourages this.

Post-construction water testing of the green alley has demonstrated a reduction in flooding. There has been very rapid infiltration of storm water through the porous pavement and the infiltration trenches. While adjacent streets experienced flooding during intense rain events, the alleys remained puddle free. Testing has also shown that concentrations of metals in the groundwater have gone down through the first year post-construction. This demonstrates effective removal of pollutants from the storm water prior to infiltrating into the groundwater.

OVERVIEW

Terminal Island Freeway Environmental Sound Barrier aka “The Great Wall of Mulch”

PRIMARY SUSTAINABILITY PRINCIPLE

Environmental Stewardship

LEAD

Local City



The Mulch Wall, completed in August of 2013, demonstrates an alternative soundwall, located on the east side of the Terminal Island Freeway in West Long Beach. The wall is made from 800 cubic yards of locally repurposed wood chips derived from street tree trimming operations and is contained in a reinforced chain link box, 600 feet long, 12 feet high and 3 feet wide. The wall blocks sound just as well as a traditional masonry block sound wall, but at a much lower cost. The wall was completed for \$125,000 and was 100% funded by the Port of Long Beach.

This project promotes the sustainability principle of environmental stewardship by re-purposing natural materials for use in transportation improvements, thus minimizing material and resource usage.

¹⁰ NREL Foothill Transit Battery Electric Bus Demonstration Results. Leslie Eudy, Robert Prohaska, Kenneth Kelly, and Matthew Post. January 2016. Page 7. Accessed at nrel.gov/docs/fy16osti/65274.pdf.

¹¹ NREL Foothill Transit Battery Electric Bus Demonstration Results. Pg 10.

¹² Lindt, R., Callahan, C., & DeShazo, J. R. (2015). *The Avalon Green Alley Network Demonstration Project: Lessons Learned from Previous Projects for Green Alley Development in Los Angeles and Beyond*. Retrieved from tpl.org/sites/default/files/files_upload/ca-green-alley-avalon-green-alleys-demo-project.pdf

¹³ The Avalon Green Alleys “Green Team.” Brief provided by The Trust for Public Land.

¹⁴ Gold Line Foothill Extension Operations Campus Factsheet. Accessed on 9/22/16 at: http://foothillgoldline.org/images/uploads/FINAL_GLOC_factsheet.pdf

OVERVIEW

Gold Line Maintenance Campus

PRIMARY SUSTAINABILITY PRINCIPLE

Environmental Stewardship

LEAD

Metro



The 24-acre Gold Line Maintenance Campus, located in the City of Monrovia, was constructed by the Metro Gold Line Foothill Extension Construction Authority. It was designed and built to meet the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Gold standards. It aims to reduce the consumption of natural resources and reduce pollution during operations, as well as provide a healthy work environment for the staff at the campus.

The Gold Line Maintenance Campus is an integral part of the six-station, 11.5-mile Foothill Gold Line light rail project from Pasadena to Azusa. The full-service, state-of-the-art facility houses up to 84 light rail vehicles. The total cost of the campus is \$265 million.¹⁴ Features built into the facility include the capture of up to 100% of the stormwater that will infiltrate into the groundwater. Other key sustainable features are: an on-site solar power array that will generate 22,000 kilowatt hours/month; irrigation using Smart Technology and reclaimed water; use of nearly 50% recycled materials on campus and the local sourcing of building materials, to the highest extent possible.

This project exemplifies the principles of environmental stewardship through resource conservation and recycling and promotes healthy neighborhoods in aiming to reduce pollution from operations.

Metro Division 13 Bus Maintenance and Operations Facility

PRIMARY SUSTAINABILITY PRINCIPLE

Environmental Stewardship

LEAD

Metro

Description

The Division 13 Bus Maintenance and Operations facility, built by Metro, is located in downtown Los Angeles. The facility is designed to accommodate up to 200 compressed natural-gas buses. The Division 13 facility has been granted LEED Gold Certification by the U.S. Green Building Council, and is a national example of how innovative design and focus on the triple bottom-line (social/financial/environmental) can be incorporated into operations, maintenance and construction practices.

The project exemplifies the sustainability principles of environmental stewardship and urban greening through water conservation, water reuse, recycled building materials, and the green roof. The artwork and native vegetation exemplify context sensitivity.

The project exemplifies the sustainability principles of environmental stewardship and urban greening through water conservation, water reuse, recycled building materials, and the green roof. The artwork and native vegetation exemplify context sensitivity.

Project Features

The building utilizes reflective white roofs and concrete as well as a green roof to address the effects of the urban heat island effect and reduce the need for air conditioning inside the building. Also on the roof are photovoltaic panels that produce energy.

Many of the materials specified in the construction of this project are regionally sourced and/or have a high recycled content. Attention has been paid to the use of significantly less potable water during facility operations. Service and vehicle equipment include a bus wash system utilizing reclaimed water and chassis and non-revenue vehicle wash systems utilizing 100% recycled water. Storm water run-off capture and the urban heat island effect are also addressed through a demonstration green roof on the transportation building. In addition, the site incorporates native vegetation.

Division 13 also features the unique local context with its artwork of a sycamore tree, entitled "El Aliso de Los Angeles," which hangs like a lantern and is lit by LED lighting. The piece,



created by artist Christine Ulke and commissioned by Metro Art, received a merit award from CODAworx Collaboration of Art and Design in the transportation category.¹⁶ The artwork commemorates an iconic sycamore tree that once stood for nearly 400 years a few blocks south of the building.

Project Process

The total project cost is \$120 million.¹⁵ This included \$53.2 million in federal grants. The construction cost was \$98 million. The site area is 7.4 acres and the total building area is 520,000 square feet.

¹⁵ The Source. "Metro's new 'green' Division 13 officially opens." <http://thesource.metro.net/2016/02/08/metros-new-green-division-13-officially-opens/>

¹⁶ CEO Brief: Every Voice Counts. 9/2/16. Washington, Philip A. "Division 13 Artwork Receives International Award."

OVERVIEW

Metro Car Share Program

PRIMARY SUSTAINABILITY PRINCIPLE

System Productivity

LEAD

Metro



In May of 2015, Metro launched a car share program with ten locations at Metro stations. The program helps transit patrons by providing an additional option - short-term car rental - for making the first/last mile connection. Zipcar, the first carshare company to join the program, helped make this option feasible by putting in place a one-way policy: after using a car, users can drop it off at any other available Zipcar spaces; users do not have to worry about bringing the car back to the space from which they picked it up. The program is currently growing; at the time of publication, the Metro Carshare Program operates at 14 locations with 51 spaces.

The locations include the following stations:

- > Willow
- > La Cienega/Jefferson
- > Lincoln/Cypress
- > Indiana
- > Pierce College
- > Van Nuys
- > North Hollywood
- > Universal City
- > Westlake/MacArthur
- > El Segundo
- > Sierra Madre
- > 17th St/SMC
- > Expo/Bundy
- > Expo/Sepulveda

This case study illustrates ways of expanding transit access by providing convenient connections to more travel modes. It also demonstrates system productivity, in that it provides a solution to the problem of first/last mile connectivity for transit users. This is a no or low cost effort, demonstrating flexible use of space.

Metro’s Sustainability Program Metrics

The Program Metrics provide a status update on the implementation items associated with the CSPP and Metro’s sustainability activities. These updates allow Metro to evaluate how the CSPP goals of connecting people and places, creating community value, and conserving resources permeate Metro planning actions.

The following section covers the two aspects outlined in the Countywide Sustainability Planning Policy: 1) Metro actions completed to implement the policy and 2) Metro’s projects and activities advancing sustainability policies. To track the actions completed to implement the policy, an updated Implementation Plan is included. The Implementation Plan was laid out in the CSPP in 2012. Four years later, some of the items have been completed and new actions that were not anticipated in the implementation plan have transpired. The second aspect of the Program Metrics covered in this section is an overview of Metro policies, programs, plans, and projects that show how Metro has taken the sustainability policy and turned it into action.

	CONNECT	CREATE	CONSERVE	MEASUREMENT INTERVAL
Program Metrics				
Actions Completed to Implement Policy	x	x	x	Annual
Projects and Activities Advancing Universal Policies and Place-Based Policies in Appropriate Accessibility Clusters	x	x	x	Annual

At the time the sustainability policy, CSPP, was released, it included the Implementation Plan which specified next steps to integrate sustainability into Metro actions. The Implementation Plan focuses on Metro activities and aims to integrate sustainability throughout the agency's planning functions and foster collaboration and partnerships for sustainable communities. It

includes 22 discreet action steps for Metro such as developing this sustainability annual report. The following updated chart shows the status of each implementation item at the time of this report. The staff will work with the Ad Hoc Sustainability committee to develop updated and expanded actions to be more in line with current needs and priorities.

IMPLEMENTATION ITEM	INITIATION TIMEFRAME	METRO PARTICIPANTS	STATUS
1. Performance Measurement and Monitoring			
1.1 Develop/Refine Sustainability Assessment Tools to evaluate the sustainability of projects and plans.	0–2 years	Countywide Planning	> The development of the assessment tools is on hold for the time being.
1.2 Include sustainability performance metrics in the Sustainability section of the Short Range Transportation Plan.	0–1 years	Countywide Planning	> The Short Range Transportation Plan is not being updated this year.
1.3 Evaluate and report on progress toward achieving sustainability policies and priorities by developing an annual report on the program and countywide performance metrics.	Annual	Countywide Planning	> This report is the second annual report. > Metro is currently in the process of updating the countywide performance metrics based on input from the Ad Hoc Sustainability Committee.
1.4 Include sustainability performance metrics in the Sustainability section of the Long Range Transportation Plan.	Next Cycle	Countywide Planning	> Metro created new sustainability performance metrics by which all projects for the proposed sales tax measure were evaluated. These same measures will apply to the upcoming LRTP.
1.5 Conduct before and after studies of projects funded through the Call for Projects to quantify impact.	Current and Future Cycles	Countywide Planning, Highway Program	> Projects with a sustainability focus were highlighted as part of board and stakeholder discussions around future call for projects (Agenda Number 23 of the September 2015 Board Meeting). Additional assessment pending as part of process toward 2017 Call.

IMPLEMENTATION ITEM	INITIATION TIMEFRAME	METRO PARTICIPANTS	STATUS
2. Integration of Sustainability Principles into Metro's Planning Functions			
2.1 Strengthen Call for Projects link to Metro's sustainability commitments.	0–1 years	Countywide Planning, Highway Program	<ul style="list-style-type: none"> > Criteria used to evaluate project applications for the 2015 Call included a “Complete Streets” integrated, multimodal transportation network, consistency with Senate Bill 375 goals of reducing Vehicle Miles Traveled and Greenhouse Gas Emissions, and First/Last Mile access to the transit system.
2.2 Continue to offer the Transit Oriented Development Planning Grant Program and provide related technical support and resources to cities and the county, including a model TOD ordinance, to encourage local land use changes that provide transit and sustainability benefits.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > A total of 35 TOD Planning Grants totaling in \$21.5 million have been allocated to Los Angeles County municipalities. > The development of the Toolkit for Transit Supportive Planning is underway. The Toolkit will include a series of Los Angeles County relevant best practices that local municipalities can utilize to advance transit supportive planning and local and regional sustainability goals.
2.3 Per Board Direction, continue development of an Active Transportation and Design Policy that will advance the Context Sensitivity, Green Modes and Healthy Neighborhoods policy priorities.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > This is now referred to as the Metro Complete Streets Policy, which was adopted by the Metro Board in October 2014. As part of implementation of Metro's Complete Streets Policy, Metro developed an Active Transportation Strategic Plan (Plan), which identifies needs, resources and strategies to improve and increase walking, bicycling and transit use in LA County. The Metro Board adopted of the Plan in May 2016.
2.4 Organize staff webinars and briefings, as needed, to highlight trends and promote continuous learning within Countywide Planning, as well as between departments, on sustainability issues.	Ongoing	Countywide Planning, Other Departments as applicable	<ul style="list-style-type: none"> > Metro received report from pro-bono communications team (Seed-LA) on proposed methods to foster continuous communication and created internal briefing as needed on issues of interest (e.g. CEQA guidelines update)
2.5 Per Board Direction, develop a Countywide Safe Routes to School initiative to promote active transportation among school-age children.	1–3 years	Countywide Planning	<ul style="list-style-type: none"> > Staff is currently managing a Safe Routes to School Pilot Program working with ten schools to provide education and encouragement to promote a safer environment for students to walk and bike to school. This program will help inform the development of the Countywide Safe Routes to School Initiative. > Staff has convened a Countywide Safe Routes to School Technical Advisory Committee and conducted a series of six Safe Routes to School Stakeholder Summits across all Sub-regions to provide input and guidance as Metro and its Partners continue to identify strategies to promote safe walking and bicycling among children and their families to and from schools, and to improve mobility and health in communities throughout Los Angeles County.
2.6 Per Board Direction, develop safe routes to transit programs that target families as well as youth, senior, and low-income populations.	1–4 years	Countywide Planning	<ul style="list-style-type: none"> > Staff developed a scope for upcoming Blue Line first/last mile study that will focus on community engagement and needs.

IMPLEMENTATION ITEM	INITIATION TIMEFRAME	METRO PARTICIPANTS	STATUS
3. Pilot Projects & Community Partnerships			
3.1 Subject to management and board approval, develop a Sustainable Transportation Demonstration Program to support city partners in implementing innovative capital or operations improvements that apply guidance from the policy. Seek funding from SCAG, AQMD, State Strategic Growth Council, and federal/state grants.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > Three demonstration projects have been selected. One of the three is underway. Metro staff is in communication with the respective Council of Government for each project.
3.2 Per Board Resolution, partner with the Department of Public Health and Tree People to develop a Systemwide Urban Greening Plan to improve placemaking, increase environmental stewardship, and create livable streets around transit stations with funds awarded by the State Strategic Growth Council.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > The Urban Greening Plan was completed and is available on the Metro Sustainability in Countywide Planning website. > The Urban Greening Implementation Action Plan was approved by the Ad-Hoc Sustainability Committee in January 2016 and includes a demonstration project component to fund four (4) urban greening projects that improve access to transit.
4. Collaboration/Outreach/Education			
4.1 External: Disseminate information on the policy, associated strategies, and tools to regional stakeholders and the greater public.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > Staff is continuing outreach through meetings and presentations with Councils of Government on our current efforts. > Staff updated the Metro Countywide Planning Sustainability website to better disseminate information on policies and events, as well as collect feedback from the public. The website update included the development of a new searchable database that catalogues tools for sustainable improvements, projects, activities and case studies.
4.2 Internal: Disseminate information on the policy, associated strategies, and tools for inter- and intra-department coordination and collaboration.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > Staff created sustainability considerations, focused on first/last mile, in the joint development process. > Staff developed agency-wide approach for cap-and-trade Affordable Housing and Sustainable Communities program.
4.3 Organize forums and workshops to promote and inform cities, industry professionals, and other stakeholders of best practices in the areas of active transportation, transportation demand management, and other sustainability topics.	Ongoing	Countywide Planning	<ul style="list-style-type: none"> > Staff developed curriculum and conducted Sustainable Design Trainings for successful Call for Projects funding recipients. The intent of the trainings is to assist cities in drafting a sustainable design plan for each call project starting with the 2013 Call for Projects. > Metro held an Active Transportation Summit in 2016 which connected stakeholders to resources and services that can help lead to implementation of safer and more accessible streets for all users.

IMPLEMENTATION ITEM	INITIATION TIMEFRAME	METRO PARTICIPANTS	STATUS
5. Regional Planning & Policy Development			
5.1 Partner with SCAG to conduct a First-Last Mile Strategic Plan to explore opportunities to increase ridership through access improvements adjacent to transit stops.	0–2 years	Countywide Planning	<ul style="list-style-type: none"> > Completed in 2014 with the release of the First Last Mile Strategic Plan. Additional first/last mile implementation activities were directed by the Board in May 2016 with motions 14.1 and 14.2 on First/Last Mile. > Additionally, Metro is partnering with SCAG to update the Bicycle Clearinghouse including cost sharing.
5.2 Serve on advisory committees to develop regional policies and plans that seek to implement the 2012 Regional Transportation Plan/Sustainable Communities Strategy.	0–4 years	Countywide Planning	<ul style="list-style-type: none"> > Metro takes part in SCAG’s CEO Sustainability Working Group.
5.3 Continue efforts to coordinate a Countywide Zero-Emissions Truck Collaborative to accelerate market adoption of zero and near-zero vehicles in Los Angeles County.	0–2 years	Highway Program, Countywide Planning	<ul style="list-style-type: none"> > In 2012 Metro formed a Countywide Zero-Emission Trucks Collaborative to promote consistency among public agencies working to catalyze the development and deployment of zero-emission trucks in Los Angeles County. This collaborative includes the ports of Long Beach and Los Angeles, Caltrans, SCAG, and the Southern California AQMD. These stakeholders meet on an ad-hoc basis and have shared information on upcoming state and federal funding opportunities, evaluated non-solicited proposals, continuously discussed ways to increase our regional competitiveness for grant funding, and pursued eligible funding for testing and demonstrating new zero and near-zero emission truck technologies.
5.4 Provide leadership for the development of the 2016 Regional Transportation Plan/Sustainable Communities Strategy by working with SCAG and engaging other County Transportation Commissions to share best practices, advance innovation, and develop coalitions to advocate for greater federal and state funding.	0–4 years	CEO’s Office, Countywide Planning	<ul style="list-style-type: none"> > Metro has extensively coordinated with the Southern California Association of Governments on the Regional Transportation Plan/Sustainable Communities Strategy.

IMPLEMENTATION ITEM	INITIATION TIMEFRAME	METRO PARTICIPANTS	STATUS
6. Funding			
6.1 Seek federal, state, and local funds to implement planning guidance and strategies to advance both Metro's sustainability goals and those of the RTP/SCS.	0-4 years	Countywide Planning	<ul style="list-style-type: none"> > Metro assisted in developing Affordable Housing and Sustainable Communities applications and participates in a Southern California Technical Assistance group to advise applicants and cities on first/last mile and transportation infrastructure improvements to include in applications. > Metro developed a transportation component menu for developers and cities available on Metro's Sustainability in Countywide Planning website.
7. Policy Updates			
7.1 Review and consider updates to the policy at least every five years.	Ongoing	Metro Board, Countywide Planning	<ul style="list-style-type: none"> > As part of this report to the committee, staff is considering updated/streamlined reporting mechanisms and prioritization of implementation actions

Universal Policies and Metro Planning Activities

In addition to the specific actions in the above Implementation Plan, there are Metro projects and activities that advance the CSPP sustainability policies that apply countywide. The table on the next page provides a status update on these plans and projects. As more of the planning efforts are completed in line with the principles and priorities of the CSPP (green bars), more projects are developed to implement these efforts (gold stars). Ultimately, the policies outlined in the CSPP come to life through on-the-ground projects for implementation.

The Sustainability Policies on the left side of the table on the next page encompass the universal policies that are relevant throughout the county. The universal policies originate in the 2012 CSPP. The right side of the table shows the Metro planning activities that are related to each sustainability policy. Some Metro activities fall under more than one policy; however, each Metro activity is listed only once as an example of the main policy that the activity supports. For more detailed descriptions of the universal policies, please reference page 15 of the CSPP (media.metro.net/projects_studies/sustainability/images/countywide_sustainability_planning_policy.pdf). Please note: This overview is not intended to be an exhaustive list of all Metro sustainability activities.

SUSTAINABILITY POLICIES
WITH COUNTYWIDE RELEVANCE

METRO COUNTYWIDE PLANNING AND DEVELOPMENT
WITH COUNTYWIDE RELEVANCE

RTP/SCS

Green Design	Urban Greening Plan <i>COMPLETE</i>	Urban Greening Implementation Action Plan <i>ONGOING</i>
Vehicle Technology	Sustainability Demonstration Projects Metro/SCAG Joint-Work Program – EV Readiness Plan <i>ONGOING</i>	
Local Access	First/Last Mile Strategic Plan <i>COMPLETE</i>	LA River Bike Path Gap Closure Feasibility Study <i>COMPLETE</i>
	Rail to River Intermediate ATC Feasibility Study <i>COMPLETE</i>	First/Last Mile Demonstration Program
	Connect US Action Plan <i>COMPLETE</i>	Open Streets Program Cycle 2 Eastside Access Improvements
	Blue Line First/Last Mile Study <i>IN PROGRESS</i>	Bicycling Outreach, Education and Encouragement
	Active Transportation Strategic Plan <i>IN PROGRESS</i>	Rail to River Int. ATC Project Safe Routes to School Pilot
	Safe Routes to School Countrywide Initiative <i>IN PROGRESS</i>	Connect US Action Plan Rail to Rail ATC Connector Project – Segments A & B <i>ONGOING</i>
Performance Measurement	Quality of Life Study <i>COMPLETE</i>	Mobility Matrices <i>ONGOING</i>
	South Bay Climate Action Plan <i>IN PROGRESS</i>	
System Productivity	Car Share Pilot Program Bike Share Pilot – Downtown LA Vanpool <i>ONGOING</i>	Bike Hub Bike Parking
Complete Streets	Complete Streets Policy <i>COMPLETE</i>	Call for Projects <i>ONGOING</i>
Transit-Oriented Development	Union Station Master Plan <i>COMPLETE</i>	AHSC Policy Framework <i>COMPLETE</i>
	TOD Toolkit <i>IN PROGRESS</i>	TOD Planning Grants <i>ONGOING</i>
TDM/Virtual Access (e.g. emerging technologies)	Regional Rideshare including: Ridematching, Guaranteed Ride Home, Metro Rewards, Go Metro to Work Free, Bike Week, Rideshare Week <i>ONGOING</i>	

What's Next

Future Annual Reports will continue to document the changing state of the art of sustainability. The reports will document exemplary projects throughout the region and track measures of sustainability. To keep pace with Metro's work on these issues, the Implementation Plan will evolve in coming years. As implementation action items are successfully completed, items will be updated to ensure that Metro furthers its mission to act on the principles and priorities of the CSPP.

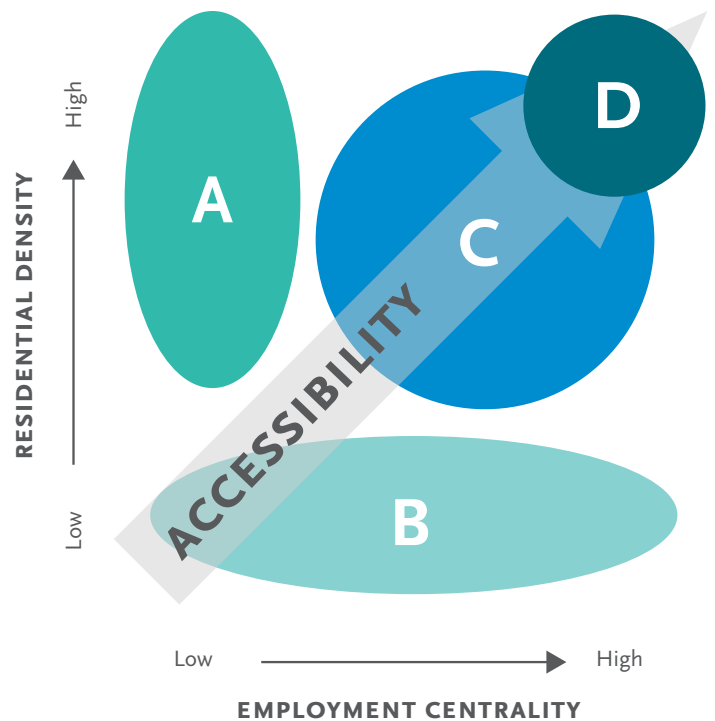
In the 2015 Annual Report, a set of Countywide Performance Metrics accompanied the program metrics section of the report. The Performance Metrics measured various aspects of sustainability countywide, influenced by both Metro activities and activities outside of Metro's influence. Previously, the metrics were:

- > Vehicle miles traveled
- > Total person trips for carpool and active transportation
- > Number of jobs within a half-mile radius of station
- > Population within a half-mile radius of station
- > Pedestrian and cyclists killed or injured in car crashes
- > Daily total CO₂ emissions for LA County
- > Daily total vehicle delay for LA County
- > Average trip lengths for auto trips
- > Average trip lengths for total trips
- > Metro transit ridership total annual boarding

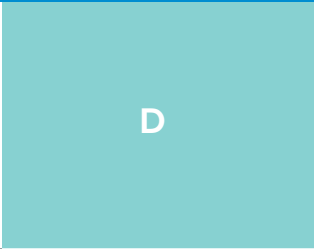

In July 2015, The Metro Board's Ad Hoc Sustainability Committee directed staff to consider new metrics, including equity, job access, technology, vehicle ownership, activity centers, bicycle and pedestrian safety, emerging technologies and shared mobility, environmental justice and income in Los Angeles County. Data sources for the new metrics are being investigated. It is anticipated that the 2017 Annual Report will cover new sustainability performance metrics. The updated performance metrics will allow Metro to obtain a more comprehensive measure of sustainability countywide.

Appendix A

Spanning land use characteristics throughout the county, the case studies represent each of the accessibility clusters defined in the Countywide Sustainability Planning Policy. Cluster A is defined as small districts and corridors with a higher density residential pattern, often serving as centers in lower density communities. Cluster B locations have low average residential density and varied job centrality and include special use areas such as airports and ports. Cluster C is defined as residential and mixed-use areas near economic activity centers that can support active transportation and transit. Cluster D areas have high concentrations of economic, entertainment, and cultural activity.



PROJECT NAME	SUSTAINABILITY PRINCIPLE	ACCESSIBILITY CLUSTER	FUNDING AND PARTNERS
Emerald Necklace Implementation: San Gabriel River Greenway Improvements – West Bank (Phase 1)	<ul style="list-style-type: none"> > Access > Green Modes > Healthy Neighborhoods > Community Development > Urban Greening > Context Sensitivity 	A	Amigos de los Rios, Mountain View, El Monte Union and El Monte City School Districts, Los Angeles County Department of Public Works, Watershed Projection and Los Angeles County Recreation and Parks
Peck Water Conservation Park Trail Head in unincorporated County – as part of the Emerald Necklace – Rio Hondo trails	<ul style="list-style-type: none"> > Green Modes > Healthy Neighborhoods > Urban Greening > Environmental Stewardship 	A	Amigos de los Rios, Los Angeles County Department of Public Works, Watershed Projection and Los Angeles County Recreation and Parks
Foothill Transit Electric Bus Program	<ul style="list-style-type: none"> > Green Modes > Healthy Neighborhoods 	A	Foothill Transit
Rosemead Boulevard Safety Enhancement and Beautification Project	<ul style="list-style-type: none"> > Access > Prosperity > Green Modes > Healthy Neighborhoods > Community Development 	A	City of Temple City
Avalon Green Alley Network Demonstration Project	<ul style="list-style-type: none"> > Access > Green Modes > Healthy Neighborhoods > Community Development > Urban Greening > Context Sensitivity > Environmental Stewardship 	A	The Trust for Public Land, City of Los Angeles Bureau of Sanitation
Gold Line Maintenance Campus	<ul style="list-style-type: none"> > Healthy Neighborhoods > Environmental Stewardship 	B	Foothill Gold Line Construction Authority, Metro
Terminal Island Freeway Environmental Sound Barrier aka “The Great Wall of Mulch”	<ul style="list-style-type: none"> > Environmental Stewardship 	B	City of Long Beach
Zero Emission Vehicle Charging Stations	<ul style="list-style-type: none"> > Green Modes > Healthy Neighborhoods > System Productivity 	C	City of Pasadena
Metro Division 13 Bus Maintenance and Operations Facility	<ul style="list-style-type: none"> > Urban Greening > Context Sensitivity > Environmental Stewardship 	D	Metro
Metro Carshare Program	<ul style="list-style-type: none"> > System Productivity > Green Modes 	D	Metro

PROJECT NAME	SUSTAINABILITY PRINCIPLE	ACCESSIBILITY CLUSTER	FUNDING AND PARTNERS
Santa Monica Colorado Esplanade Project	<ul style="list-style-type: none"> > Access > Prosperity > Green Modes > Healthy Neighborhoods > Community Development > Urban Greening > Context Sensitivity 		City of Santa Monica
Metro Open Streets Program	<ul style="list-style-type: none"> > Green Modes > Healthy Neighborhoods > Community Development 		Metro

Appendix B

Universal Policies and Metro Planning Activities

Brief Project Descriptions

ACTIVE TRANSPORTATION STRATEGIC PLAN

The Active Transportation Strategic Plan (ATSP), adopted in May 2016, identifies strategies to improve and expand the active transportation network in order to improve access to transit for all patrons. This Plan provides guidance to Metro and partner organizations, such as local jurisdictions, regional government, and other stakeholders, in setting regional active transportation policies and guidelines to meet transportation goals and targets in support of the Regional Transportation Plan/Sustainable Community Strategy and other future planning efforts.

AHSC POLICY FRAMEWORK

Metro developed a policy framework (adopted on January 16, 2016) for the Affordable Housing and Sustainable Communities (AHSC) program, a program in the California Cap-and-Trade portfolio that provides opportunities to fund affordable housing along with mobility and urban greening improvements intended to reduce greenhouse gas emissions. The purpose of the framework is to clearly communicate Metro's preferences for development and local transportation infrastructure in areas surrounding Metro transit stations, to prompt project applications with the greatest regional benefit, and to allow communities a clear way to position projects for competitive advantage.

BICYCLING OUTREACH, EDUCATION AND ENCOURAGEMENT

Metro engages in several active transportation education and encouragement programs throughout the county. An annual safety awareness and encouragement campaign launches each May, with a new targeted message every year. Past campaigns have included outdoor, on-line, and radio advertising spots with messages such as "Every day is a bike day" and "Every lane is a bike lane." Through an

Office of Traffic Safety grant, Metro also holds hands-on bicycle safety education classes. During summer months, Metro contracts local bicycle professionals to hold several series of classes catering to varied urban cycling skill levels reaching thousands of Los Angeles County residents each year. Additionally, Metro holds community bicycle rides on an almost monthly basis. These group rides are facilitated by trained professionals to practice safe urban cycling, and highlight unique neighborhood features and local businesses.

BIKE LOCKER PROGRAM AND BIKE HUB/BIKE PARKING

The Metro Bike Locker Program provides bicycle commuters with a secure, long-term bicycle parking option and bike lockers are rented on a six-month term with a refundable security deposit. Bike lockers are located at stations with available Metro property across Rail and Bus Rapid Transit stations. These include the Blue, Gold, Green, Expo, and Red/Purple rail lines and the Orange and Silver bus lines. System-wide Metro provides 844 total bike lockers. There are 88 new bike lockers along the Expo Line extension and 144 new bike lockers along the Gold Line Foothill Extension. More bike lockers are planned at future stations for the Crenshaw line, the Purple Line extension, and the Regional Connector.

Metro is implementing high-capacity bike parking in a secure-accessed environment, known as a Metro Bike Hub, at key transit stations. Like bike lockers, these facilities offer secure bike parking in a 24/7 controlled access room for a nominal fee. Other services may include bike repair/retail, bike rental, and bike education workshops. The first Metro Bike Hub is located at the El Monte Transit station, which opened in September 2015. Metro Bike Hubs are also planned for operations at other locations including Hollywood/Vine (currently under construction), Culver City, Union Station, North Hollywood from mid-2016 to 2018 and more.

BLUE LINE FIRST/LAST MILE STUDY

Metro received a planning grant from the State of California's Active Transportation Program to study first and last mile access to the Metro Blue Line stations. This study will develop conceptual first last mile improvements for the corridor, utilize innovative community engagement strategies, and present a methodology for prioritizing improvements.

CALL FOR PROJECTS

This program provides local agencies with funding through a competitive process for regional capital transportation projects within LA County. Federal, state and local funds are awarded to regionally significant projects in seven modal categories: Regional Surface Transportation Improvements; Goods Movement Improvements; Signal Synchronization & Bus Speed Improvements; Transportation Demand Management; Bicycle improvements; Pedestrian improvements; and Transit Capital.

CAR SHARE PILOT PROGRAM

In May of 2015, Metro launched a car share program to provide transit patrons an additional option, short-term car rental, for making the first-last mile connection. The program currently operates at 14 Metro station locations with a total of 51 spaces.

COMPLETE STREETS POLICY

Metro has developed a Complete Streets Policy (adopted October 2014) to help advance state, regional and local efforts to create a more "complete" and integrated transportation network for all modes of travel in LA County.

CONNECT US ACTION PLAN

The Connect US Action Plan (formerly Union Station and 1st/Central Station Linkages Study) was developed to improve historical and cultural connections in downtown Los Angeles by enhancing pedestrian and bicycle travel options to Los Angeles Union Station, the 1st/Central Regional Connector Station, and through and between surrounding communities. The Plan provides a community-prioritized list of improvement projects to strengthen bicycle and pedestrian connectivity between communities and destinations. As a result of a council motion introduced by City of Los Angeles Councilmember Jose Huizar, Metro has been working with the City of Los Angeles Departments of City Planning and Transportation to identify the best mechanism for the City of Los Angeles to adopt the Connect US Action Plan.

DOWNTOWN LOS ANGELES BIKE SHARE PILOT

This project, which launched in July of this year, provided an implementation plan for a phased bike share program in downtown Los Angeles and identified a business model, the number and specific locations for bike share stations, sponsorship and advertising plan, marketing program,

revenue splits, and phase 2 and 3 cities. The plan also considers separate parallel bike share development processes in Santa Monica and Long Beach.

EASTSIDE ACCESS IMPROVEMENTS

This project includes streetscape, pedestrian and bicycle access improvements within a one-mile radius of the 1st/Central Station of the Regional Connector rail line. The purpose of this project is to enhance the livability in Little Tokyo and facilitate linkages to Union Station through first/last mile strategies.

FIRST/LAST MILE STRATEGIC PLAN

The First / Last Mile Strategic Plan aims to better coordinate infrastructure investments in station areas to extend the reach of transit, with the ultimate goal of increasing ridership. These guidelines help facilitate the integration of mobility solutions in a complex, multi-modal environment. The purpose is to: 1) provide a coordination tool and resource for Metro, LA County, municipal organizations, community groups, and private institutions; 2) serve as a key source of direction for LA Metro when undertaking planning and design efforts aimed at improving first and last mile connections to transit; and 3) clearly articulate the Pathway concept including objectives, characteristics, and the role the Pathway plays in supporting transit access and regional planning goals.

LOS ANGELES RIVER BIKE PATH GAP CLOSURE FEASIBILITY STUDY

The Los Angeles River Revitalization Master Plan and other plans such as River LA's Greenway 2020 have established the goal of connecting all 51-miles of the Los Angeles River through a system of bike and pedestrian paths. Metro conducted a feasibility study to address the largest remaining gap: an 8-mile stretch of the river from Atwater Village to the City of Vernon. The study found that closing the gap and connecting the path to surrounding communities is feasible with creative engineering solutions. The project will move into the Project Approval and Environmental Documentation phase pending Metro Board approval in August 2016.

METRO/SCAG JOINT-WORK PROGRAM

This Program formalizes collaboration between Metro and SCAG on activities in support of Regional Transportation Plan/Sustainable Communities Strategy and to advance sustainable transportation options. The Program outlines specific work items for Metro and SCAG staff to address.

MOBILITY MATRICES

The Mobility Matrices were developed as a subregional tool for multimodal transportation needs assessment and strategy. The Mobility Matrix will serve as a starting point for the update of the Metro Long-Range Transportation Plan (LRTP) currently scheduled for adoption in 2017. To ensure proposed projects and programs reflect the needs and

interests of the subregion, the Mobility Matrices followed a “bottom-up” approach guided by a Project Development Team (PDT) selected by the subregion, consisting of city, stakeholder, and subregional representatives.

OPEN STREETS PROGRAM

The Open Streets Program goals include: increase sustainability transportation mode share; provide opportunities for first time transit usage; and encourage cities to develop multi-modal policies. Open Streets events are one day when streets are closed to car traffic and other users reclaim the street on bike, foot, scooter, stroller, or roller blade.

RAIL TO RIVER ACTIVE TRANSPORTATION CORRIDOR (ATC) PROJECT

Completed in October 2014, the Rail to River Intermediate Active Transportation Corridor Feasibility Study determined the technical feasibility of utilizing an 8.3-mile segment of the Harbor Subdivision, a Metro owned rail right-of-way in South Los Angeles to facilitate a multi-modal, active transportation corridor. The report included project benefits, opportunities and constraints, costs and funding strategies, and project development recommendations for interim implementation of an active transportation corridor (bicycle/pedestrian transportation facility). Approved by the Board October 23, 2014, the Rail to River ATC project is moving forward with environmental, design, engineering, final route analysis, and comprehensive public outreach on segments A and B.

REGIONAL RIDESHARE

Regional Rideshare is part of Metro’s Long Range Plan and specifically supports Metro’s Transportation Demand Management goals for LA County. The program provides support to AQMD-regulated worksites in LA County to help them meet their AVR targets and thereby reduce emissions and reduce congestion. Metro supports Employee Transportation Coordinators (ETCs) by assisting with their Average Vehicle Ridership (AVR) reports, providing workshops and training on implementing a rideshare program and outreach through the On the Go newsletter, a bi-monthly regional publication. Metro also provides information to commuters seeking rideshare information through Metro’s call center, 511 and *metro.net* and through general outreach events such as Bike Week LA and Rideshare Week LA. A number of rideshare programs are implemented and funded through a regional partnership or by Metro only:

Ridematching using Regional Database – This program connects commuters on *ridematch.info* who share a similar travel route and provides them with personalized information on carpooling, vanpooling, finding a bike buddy, and taking public transit through RideGuides.

Guaranteed Ride Home (Regional) – This program offers commuters who carpool, vanpool, take transit, bicycle or walk to work two rides per year to get them home in case of an unexpected emergency for themselves or their carpool or vanpool.

Metro Rewards – This is a MSRC-funded incentive program offered to participants who have shared the ride for at least eight work days a month for at least three consecutive months.

Go Metro to Work Free – Metro offers employers in LA County who are implementing a rideshare program at their worksites, 7-Day TAP cards for newly-hired employees at no cost.

Bike Week LA (May) and Rideshare Week LA (October) Annual Campaigns – These annual campaigns offer commuters an opportunity to learn more about the benefits of ridesharing and bicycling to work.

QUALITY OF LIFE REPORT

Metro released its first “Quality of Life” report in May 2016. The purpose of the report is to establish benchmarks against which the agency’s progress can be measured and compares 2008 – the year that Measure R was approved – to 2015. This 7 to 8 year window represents the first steps in the 30-year Measure R implementation program. This initial report will be followed by a full report later in 2016 and periodic updates in the future.

SAFE ROUTES TO SCHOOL COUNTYWIDE INITIATIVE

This Program identifies strategies to help local communities establish new Safe Routes to School programs and sustain and enhance existing efforts. This effort includes six summits throughout the region to gather input from the community and develop and Implementation Plan.

SAFE ROUTES TO SCHOOL PILOT PROGRAM

Metro’s Safe Routes to School Pilot Program encourages the use of alternative travel modes among students, such as walking, biking, and public transit. The pilot program benefits neighborhoods and school communities by promoting safe travel, exercise, traffic congestion reduction and air quality improvements around schools. The program currently includes ten pilot schools.

SUSTAINABLE SOUTH BAY CLIMATE ACTION PLAN

Metro, the South Bay Cities Council of Governments (SBCCOG), San Diego State University (SDSU) and the Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC), a program of UCLA, have formed a partnership, to develop tools to implement the Sustainable South Bay strategy (SSBS), a policy framework of mutually

reinforcing land use and transportation initiatives that have been field tested and are now ready for implementation by cities and incorporated into the regional policy framework. The new tools consist of Climate Action Plan transportation and land use chapters that identify GHG reduction strategies at the sub-regional and local levels, a Sub-Regional Implementation Toolkit to provide technical assistance for local level adoption of GHG reduction strategies and a Mobility Matrix for the South Bay, which includes evaluation and screening criteria for identifying priority projects.

SUSTAINABILITY DEMONSTRATION PROJECTS

These projects stem from the Metro/SCAG Joint Work Program. Three projects have been identified, working with South Bay, San Gabriel Valley, and Gateway Cities COG. The South Bay project, developing a Slow Speed Lane Network Strategic Plan, is underway. The other two are in the procurement process.

TOD TOOLKIT

Metro is developing a Transit-Oriented Development Land Use Planning Toolkit (TOD Toolkit) that will serve as a resource for local jurisdictions to develop and adopt transit-supportive land use 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). The TOD Toolkit will include an assessment of locally relevant transit-related planning and development best practices and an analysis of the economic and environmental benefits of transit supportive developments. The Toolkit is a component of a countywide climate action and sustainability plan entitled A Greater LA: A Regional Framework for Climate Action and Sustainability.

TOD PLANNING GRANTS

The TOD Planning Grant Program is designed to spur the adoption of local land use regulations that are supportive of Transit Oriented Development in Los Angeles County. Goals for the program include the following:

- > Increase access to transit by assisting local governments to accelerate the adoption of TOD regulatory frameworks;
- > Improve utilization of public transit by reducing the number of modes of transportation necessary to access regional and local transit;
- > Further the reduction of greenhouse gases through encouraging in-fill development along transit corridors and transit use; and
- > Support and implement sustainable development principles.

Since the Program first launched in 2011, Metro has awarded 36 grants for a total of \$21.5 million in funds.

UNION STATION MASTER PLAN

The Union Station Master Plan (USMP) establishes Metro's vision and plan to guide future growth and development at the Los Angeles Union Station, including transit operations and new private and/or public real estate development. The USMP includes three major program goals: Transit Optimization, Destination, and Connectivity that will be effectuated through a series of short- to long-term improvements. Currently, the Program EIR is underway. Metro is preparing CTC allocation request of ATP Cycle 2 funds for the Alameda Esplanade for environmental (NEPA) and design; preparing a grant application for ATP Cycle 3 for the Los Angeles Crossing component of the USMP Stage 1 Perimeter Improvement; working with the City of Los Angeles City Planning Department on the amendment to the Alameda District Specific Plan; procuring a consultant to prepare a Sustainability Strategic Plan for the USMP that will include a series of short-to-long-term sustainability-focused funding strategies; and engaging in ongoing coordination with SCRIP and HSR.

URBAN GREENING PLAN

Metro's urban greening plan is a website resource called Metro Green Places. Green Places is a greening and placemaking toolkit for areas around Metro's fixed-guideway stations to improve the experience of accessing transit. The greening and placemaking tools facilitate environmental and community-focused projects in these areas in conjunction with first and last mile improvements.

URBAN GREENING IMPLEMENTATION ACTION PLAN

The Urban Greening Implementation Action Plan was approved in January 2016 after the completion of the Metro Green Places website. The Implementation Action Plan includes next steps for implementing the tools in the Green Places website. These steps include developing a carbon calculator, training and outreach to cities, demonstration projects, inter-agency collaboration, internal training, consideration in Metro programs, an online mapping tool, and funding options research.

VANPOOL

The Metro Vanpool Program provides alternative transportation choices to commuters, improves air quality, and reduces traffic congestion in Los Angeles County. The Metro Vanpool Program offers up to a \$400 monthly lease subsidy – not to exceed 50% of the lease costs – for commuter vanpools of 7-15 passengers that have a destination to a Los Angeles County worksite for which a completed Program application and agreement has been submitted and approved by Metro.

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Attachment B



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October 11, 2016

TO: BOARD OF DIRECTORS

THROUGH: PHILLIP A. WASHINGTON *PAW*
CHIEF EXECUTIVE OFFICER

FROM: THERESE McMILLAN *ecm*
CHIEF PLANNING OFFICER
PAULETTA TONILAS *P.T.*
CHIEF COMMUNICATIONS OFFICER

SUBJECT: NEW CALIFORNIA STATE CLIMATE LAWS

ISSUE

At the close of the legislative session, the California Legislature passed several bills related to climate change that have broad implications for the State and will likely have impacts for Metro. This Board Box provides overview of two key statutes (SB 32 and AB 197) that will establish the big picture framework for climate related regulation and programming to follow.

DISCUSSION

A. Overview

On September 8, 2016, Governor Brown signed SB 32 and AB 197. Taken together these two laws extend and update California's policies on global climate change and set a framework for subsequent regulations and programming. This report provides a preliminary review of the two new laws and their significance for Metro.

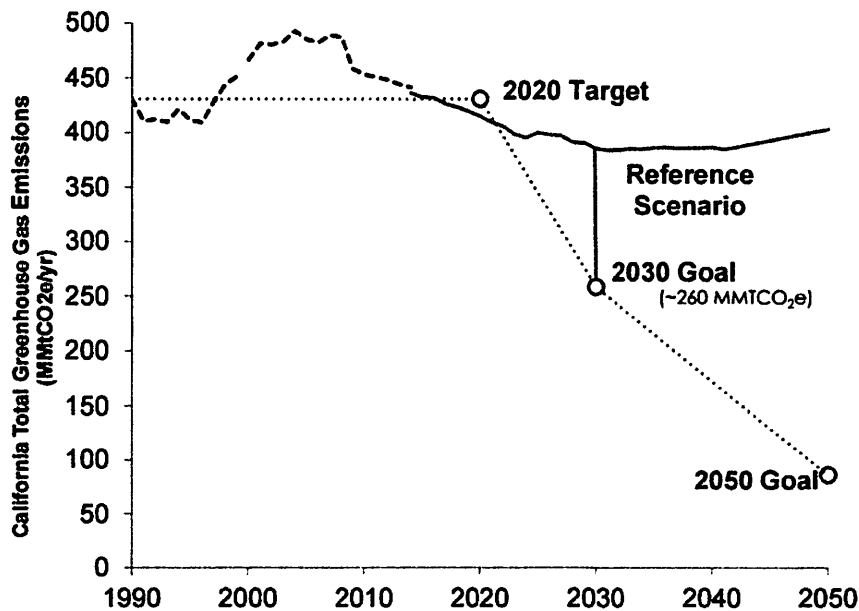
In summary, SB 32 (Pavley) extends AB 32 (2006, Nunez), by extending the horizon date from 2020 to 2030, and setting much deeper targets for greenhouse gas (GHG) emission reduction. AB 197 (Garcia) shapes climate change programs by creating new legislative oversight, and preferencing certain types of emission reductions over others. In addition, the Governor recently signed AB

1550 (Gomez) which increases the requirements for investments in disadvantaged communities.

SB 32 and AB 197 were co-joined meaning that they both needed to pass for the other to take effect. AB 197 helped to resolve key concerns relative to the authority granted to ARB. AB 197 adds two legislative appointees to ARB and requires additional reporting by ARB. In addition, the Legislature will also create a legislative oversight committee which will examine the implementation of this Legislation.

Metro will most likely be impacted by this new legislation and the rulemaking, programming, and legal decisions that will follow. These impacts can be summarized as generally positive as relates to Metro's mission, projects and programs insofar as improving transit, active transportation, and livable and connected communities are essential components of the State's climate policy. That said, the new law and deeper target signal the possibility of tighter regulation for fleets and fuels that may create challenges for Metro. Regulations offered by ARB could further result in a number of unfunded mandates on our region through efforts such as the Zero Emission Bus rule as well as regulations on the freight sector.

The scope and scale of the new target and the level of change necessary to meet it is best illustrated by the chart here, noting that the State is on track to exceed the 2020 goal, but must cut emissions nearly in half from the 2009 peak:



Source: California Air Resource Board, 2016

Climate policies and programs will continue to take shape over the next several months and beyond. Metro staff will continue to monitor and engage in these

issues and keep the Board up-to-date. Of note, there remains considerable uncertainty regarding cap-and-trade programs, as discussed below.

B. Context/Prior Law and Programming

California first passed a comprehensive climate change law in 2006 when AB 32 was enacted. As the first state-level climate policy in the United States that committed mandatory economy-wide emissions reductions, AB 32 was effectuated in a number of ways including:

- Created a mandatory cap on greenhouse gas emissions; requiring emissions to be reduced to 1990 levels by 2020;
- Empowered the California Air Resources Board (ARB) to regulate sources of emissions in all sectors including transportation along with energy, waste, agriculture, forestry and others;
- Directed ARB to develop and adopt a “Scoping Plan” to guide emissions reductions across sectors;
- Authorized market-based incentive programs that became the basis for cap-and-trade.

The first Scoping Plan was adopted by ARB in 2008 and updated in 2014. The plan outlines a set of programs to meet the statewide goal. Each program is then subject to its own rule-making and implementation process. Transportation makes up about 35% of the total emissions profile for California, and is subject to a substantial body of effort in 3 major categories:

- Accelerating turnover of vehicle fleets to cleaner technologies;
- Reducing the carbon intensity of vehicle fuels; and
- Reducing vehicle usage (or vehicle miles of travel, VMT).

AB 32, as passed in 2006, contained an emissions target only for the year 2020, and did not explicitly authorize any regulation or program beyond that year. The 2030 target was first put forward in the Governor’s Executive Order B-30-15 (2015), which prompted the current Scoping Plan update. Nevertheless, the lack of legislative action prior to SB 32, along with on-going litigation on cap-and-trade created uncertainty around the program. As such, recent cap-and-trade auctions have resulted in low proceeds.

The new laws do not fully address on-going uncertainty regarding the Low Carbon Fuel Standard. Metro has had some level of active participation in the Low Carbon Fuel Standard Carbon market by voluntarily opting in. Our participation has netted revenue that is being used to implement sustainability-related infrastructure throughout Metro. Staff is trying to determine the long-term implication of the new statutes to the LCFS program. There has been some concern that in the course of resolving the long-term viability of the State’s greenhouse gas reductions policies, the LCFS would be sacrificed in order to

develop broader support for the programs. While the LCFS was not eliminated in the current negotiations, the program could still face a threat through future actions.

C. New Law Provisions

SB 32 is notable for three reasons:

- extends State climate programs to 2030,
- sets a new, and *substantially deeper* target for emission reductions (40% below 1990 levels by 2030),
- specifically acknowledges Disadvantaged Communities (DACs) as an emphasis area for emission reduction efforts.

SB 32 was accompanied by companion legislation, AB 197, which has four major components:

- requires consideration of “social costs” of emissions in developing regulations, and links GHG reductions to other efforts targeting toxic air contaminants,
- provides for an oversight committee composed of members of the Legislature and dictates substantially greater public disclosure and reporting,
- provides direction to ARB preferencing direct emission controls over indirect measures,
- changes the composition of ARB to include ex-officio members from the Legislature.

As noted above, State climate policy impacts Metro in a number of ways including funding, potential direct regulation, as well as providing impetus and support for Metro sustainability policies. While these measures are supportive in principle and concept the fact still remains that the state is providing very little funding to actually address these priorities beyond whatever is available through the cap-and-trade program. Another challenge with the overall program structure is that while Metro makes significant investments in projects and programs that reduce emissions, we are not allowed to count those investments to offset the impacts of regulations such as in the Zero Emission Bus regulation. Specific impacts are not known at this time, but rather will be dictated by subsequent process, including but not limited to:

- **Scoping Plan** – the Scoping Plan will describe the range of measures used to meet the 2030 target. As such, it prefaces regulatory processes for specific sectors. The process to update the Scoping Plan is underway, with a public draft to be released in the fall of 2016 and adoption in 2017. Of note, the 2017 update will likely include significant GHG reductions

attributed to the freight sector, with the recently released Draft California Sustainable Freight Action Plan used as a framework.

- **Mobile Source Strategy.** ARB is also considering a State Implementation Plan as a part of its Mobile Source Strategy. This implementation plan includes a number of mechanisms which could impact Metro's projects and programs. Staff is monitoring the process of this document as it is being considered by ARB.
- **Transit regulation** – under the Scoping Plan, transit fleets are subject to ARB's Advanced Clean Transit program, which seeks to transition transit fleets to zero emissions by 2040. Previous versions of the rule have been based around incentives, tools, and pilots. Given the deeper target in SB 32, ARB is currently developing a proposed update to the regulation that may result in more direct regulation.
- **Subsequent legislation/litigation, especially related to cap-and-trade** – SB 32 and AB 197 do not specifically deal with cap-and-trade authorization. Further, the cap-and-trade program is currently being litigated with plaintiffs (California Chamber of Commerce) contending that it constitutes an illegal tax. At the same time, there is some concern that AB 197's direction to prioritize direct emission reduction may preface a move toward tightly controlled regulation in lieu of market-based programs, which may prompt renewed consideration in the next legislative term. Cap-and-trade will remain in flux until litigation is resolved and/or it is specifically treated by the Legislature. Metro has been successful in pursuing cap-and-trade funding for various transit capital and operations efforts, and will continue to monitor this issue.
- **SB 375 targets** – SB 375 directs ARB to adopt GHG reduction targets for Regional Transportation Plans/Sustainable Communities Strategies for 2020 and 2035. For the 2012 RTP/SCS prepared by the Southern California Association of Governments (SCAG), targets were set at 8% per capita for 2020 and 13% per capita for 2035. These targets remained unchanged for the 2016 RTP/SCS. In early discussions on the Scoping Plan, ARB has suggested that the SB 375 targets may be raised. Metro is indirectly responsible for SB 375 targets by inputting transportation projects to the RTP/SCS that, together with SCAG's growth and land use assumptions, must demonstrate achieving emission reductions. Further, Metro collaborates with SCAG in activities to implement the plan. Both the 2012 Countywide Sustainability Planning Policy and the on-going Joint Work Program with SCAG are linked to SB 375 implementation.
- **CalEnviroScreen update** – CalEPA develops the CalEnviroScreen tool which forms the basis for the designation of Disadvantaged Communities (DACs). The tool is currently undergoing an update to include new indicators and refresh data inputs.

D. Cap and Trade Expenditures

As mentioned in previous Legislative Alerts, separate legislation (AB 1613) allocated \$900 million to various cap-and-trade programs as part of the FY16/17 State budget, notably \$135 million to the Transit and Intercity Rail Capital Program (TIRCP) and \$10 million to the Active Transportation Program (the first time this program has been supported by cap-and-trade revenues). These allocations are to support the funding of projects awarded through prior TIRCP competitive grant cycles and augment funding available for awards in the pending Active Transportation Program (ATP) competitive grant cycle. Also note that the allocation to ATP, while precedent setting, is still insufficient for a Statewide competitive program that remains highly oversubscribed. The State also did not allocate the entirety of cap and trade funds that are available. Finally, AB 2722 creates a new program, Transformative Climate Communities, to be administered by the Strategic Growth Council, which calls for large multi-component projects that enhance sustainability at a neighborhood scale. This program is funded at \$140 million for FY 16/17, and Metro staff will monitor the development of program guidelines for potential opportunities. Metro will continue to provide the Board with regular updates on cap-and-trade expenditure programs, including more detailed reporting on these new allocations.

NEXT STEPS

As noted, SB 32 and AB 197 set a broad policy framework for subsequent action that could affect Metro. Staff will continue to monitor and engage in these statewide processes, and provide on-going updates to the Board. Further, staff will engage the Ad Hoc Sustainability Committee to update performance metrics and implementation actions in the Countywide Sustainability Planning Policy in light of new State-determined goals.

The Environmental Compliance and Sustainability staff will provide regular updates to the Metro Board on how these statutes will impact Metro's portfolio of responsibilities. Staff is developing an overall sustainability strategy to address greenhouse gas emissions impacts related to the Board's direction in the February 18, 2016 Board Item #57, including metrics.

Metro Government Relations continues to monitor all legislative activity related to greenhouse gas emissions, and its related regulatory, funding and implementation activity.