



Metro

DECEMBER 20, 2019

TO: BOARD OF DIRECTORS

THROUGH: PHILLIP A. WASHINGTON PAW
CHIEF EXECUTIVE OFFICER

FROM: RICHARD CLARKE RFC
CHIEF PROGRAM MANAGEMENT OFFICER

SUBJECT: MOVING BEYOND SUSTAINABILITY PLAN

ISSUE

Moving Beyond Sustainability (MBS) is Metro's ten-year sustainability strategic plan that serves as an update to the 2008 Metro Sustainability Implementation Plan (MSIP). MBS is designed to optimize the integration of sustainability into Metro's world-class transportation system and supports Metro's Long-Range Transportation Plan and the Vision 2028 Strategic Plan. The plan outlines achievable goals covering the areas of environmental, economic, and social sustainability. MBS will outline a unified, comprehensive vision for sustainability in Metro over the next ten years and will be released in Spring 2020.

A draft of the document was released to the Metro Sustainability Council (Council) members this past week by e-mail. The Council will be providing input as well as consulting with their stakeholder groups throughout our region for additional comments. Although stakeholder engagement meetings have been conducted in the past few months leading up to the release of the draft MBS, the Board may separately receive independent information on the draft MBS through constituents who are also Metro Sustainability Council members or members of their affiliated groups.

BACKGROUND

Starting in 2007, with the creation of the Board's Ad Hoc Sustainability Committee and codified in 2008 with the adoption of the MSIP, Metro's sustainability program took root. Since then, Metro's sustainability program has blossomed, sprouting several plans and initiatives that reduced Metro's environmental impact and integrated sustainability principles and practices into agency activities. The Program also created Metro's Countywide Sustainability Planning Policy and Implementation Plan, which complemented Metro's efforts to improve air quality, increase transportation choices, and facilitate greater coordination and collaboration across transportation modes, planning disciplines and government agencies. Metro's Sustainability Council was formed as a stakeholder group that is designed to provide input to Metro's sustainability and environmental activities. The Metro Board

approved the formation of the Sustainability Council in September 2016 as part of the response to the February 2016 Board Motion 57. The Sustainability Council acts as an advisory group independent of our agency.

DISCUSSION

In recent years, Metro has laid a strong vision for the future of transportation in the Los Angeles region, which includes creating a more diverse, responsive, and resilient transportation system and affiliated infrastructure that will be better equipped to adapt to a changing climate and mitigate impacts. MBS supports the achievement of these goals and performance outcomes that are core to Metro's mission by outlining a comprehensive sustainability strategy for the next ten years.

MBS is designed to be Metro's most comprehensive sustainability planning document to date and sets goals, strategies, and actions that align with and emanate from other key guidance documents, including Vision 2028, our Long-Range Transportation Plan, our 2019 Climate Action and Adaptation Plan, our Equity Platform Framework, and our Resiliency Indicator Framework. It is also designed to align with and support parallel efforts and plans underway at LA County and the City of Los Angeles, including the Our County Plan and The Sustainable City pLAN..

In developing the MBS, Metro's team has engaged with almost 30 internal and external stakeholder groups since early 2019 to get input and guidance on the plan's development. Several workshops and presentations were conducted with Metro's Sustainability Council; with at least one more planned prior to Board adoption in Spring 2020. A public input period is planned for the February/March 2020 timeframe. An engagement plan will be developed to ensure the widest dissemination of the MBS, and to highlight Metro's role as a global leader in sustainability and as a catalyst for rapid growth in sustainable practices in the region.

Staff committed to releasing a draft version of the MBS to the Sustainability Council in December 2019 for further input.

NEXT STEPS

After receiving additional input from the Metro Sustainability Council, staff will finalize and release the draft MBS for public input. The final MBS Plan will be presented to the Board for adoption in Spring 2020. A copy of the draft MBS is provided herein as Attachment A.

ATTACHMENT

Attachment A. Draft, Moving Beyond Sustainability



Metro

Moving Beyond Sustainability

10-Year Sustainability Strategic Plan

DRAFT PLAN – December 2019

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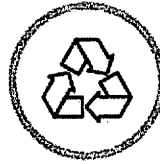
Targets

colors and icons are NOT final



Water

- 1** Reduce potable water use **22%** from the 2030 business as usual scenario.
- 2** Increase runoff infiltration and reclamation capacity for stormwater by **10%** from 2018 Levels.



Solid Waste

- 1** Reduce annual operational solid waste disposal **24%** from 2030 business as usual scenario.
- 2** Achieve **50%** landfill diversion rate for operational waste by 2030.
- 3** Achieve **90%** construction landfill diversion rate by 2030.



Emissions & Pollution Control

- 1** Displace **903,300 MTCO₂e** annually by 2030.
- 2** Reduce total GHG emissions by **79%** from 2017 baseline.
- 3** Reduce total Nitrogen Oxides (NOx) Emissions **54%** from 2018 baseline by 2030.
- 4** Reduce total Particulate (PM) Emissions **62%** from 2018 baseline by 2030.



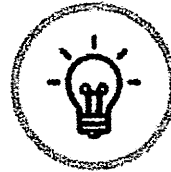
Resilience and Climate Adaptation

- 1** Develop an approach for climate adaptation into **planning, procurement, asset management and operations** by 2025, using the flexible adaptation pathways method.
- 2** Identify all acute shocks or stressors for critical and/or vulnerable areas at or near Metro infrastructure and **prioritize improvements** to locations, facilities, infrastructure, equipment and operations to reduce risk by 2025.



Materials Construction and Operations

- 1 Achieve LEED Silver Certification for all new facilities over 10,000 sqft.
- 2 Design and build 100% of capital projects to CALGreen Tier 2 standards.
- 3 Increase percentage of annual acquisition spent that includes sustainability considerations to 50%.



Energy Resource Management

- 1 Reduce energy consumption by 17% at facilities from the 2030 Business as Usual Scenario.
- 2 Increase Onsite Renewable Energy Generation by 7MW.



Economic and Workforce Development

- 1 Review job classifications on a regular basis and eliminate obsolete requirements that create barriers to career advancement.
- 2 Recruit employees from diverse sources, including vocational schools, community colleges, groups supporting formerly incarcerated persons and organizations supporting persons with disabilities and older adults.
- 3 Achieve triennial DEOD contracting goals related to small, disadvantaged-, women and veteran-owned businesses.



Livable Neighborhoods

- 1 Under Development
- 2 Under Development
- 3 Under Development
- 4 Under Development

3.3 WATER

GOALS

Optimize and manage Metro's water use

Manage wastewater and stormwater constructively

2030 TARGETS

Reduce potable water use by 22% as compared to the 2030 business as usual scenario

Increase runoff in filtration and reclamation capacity for stormwater by 10% from 2018 Levels

OVERVIEW

The state of California faces urgent challenges related to water availability; aquifers across the state are still in recovery after years of drought and continued import of water from elsewhere is unsustainable in the long term. The scarcity of local and state water resources over time will be exacerbated by climate change and the ramifications will be felt especially in Southern California. Thus, we recognize the importance of being a responsible steward of water use.

To address these challenges, Metro is actively monitoring water use and finding new ways to manage conservation. We have reduced potable water use by 34% since 2013 through conservation efforts, system enhancements and efficiency upgrades aligned with the 2010 Water Action Plan. These actions supported the City of Los Angeles goal of reducing consumption by 20% over the same timeframe. Our efforts have included bus wash system retrofits and smart irrigation controller installations. We will continue identifying technical and behavioral strategies to reduce water consumption systemwide.

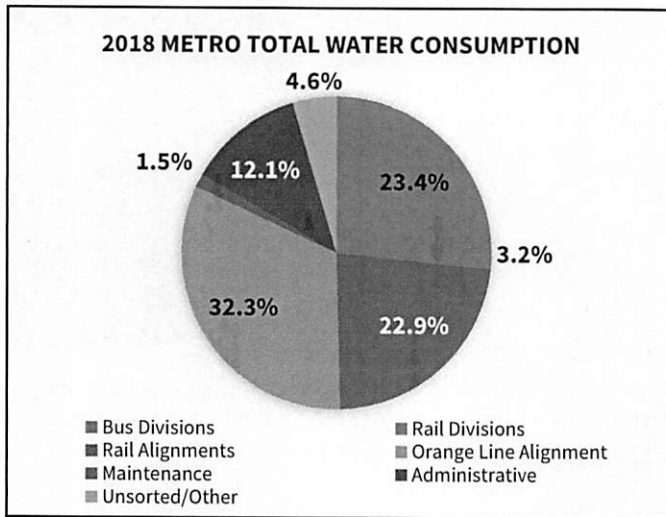
Water reclamation and reuse will be an equally critical component of our water use strategy through 2030, as we will identify and evaluate opportunities to implement capture and reuse strategies and low-impact development measures such as stormwater runoff infiltration,. We expect these actions will retain or recycle water for beneficial uses and reduce current contamination levels in stormwater discharge. Moreover, we expect that this intentional and responsible water consumption and resource management will contribute to community-wide resilience..

TARGETS

TARGET 1

Reduce Potable Water Use 22% from the 2030 Business as Usual Scenario

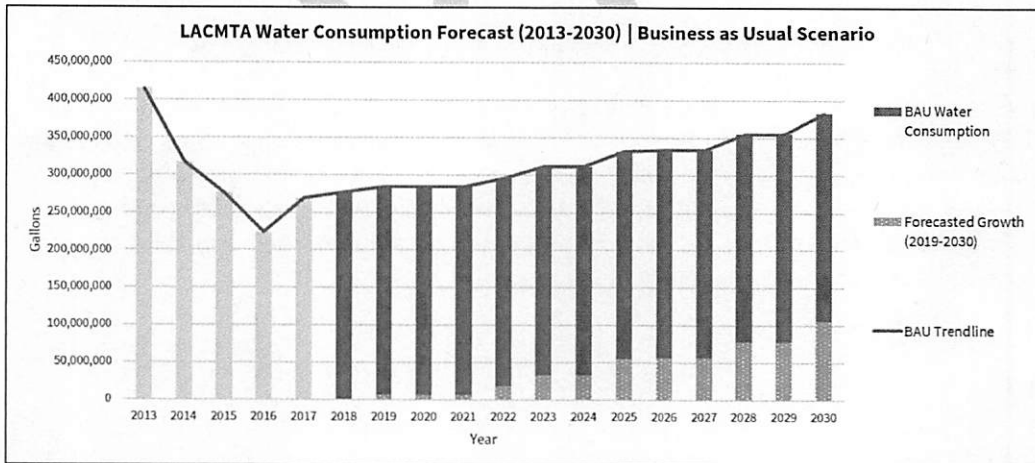
As of 2018, 97.4% of our water consumption is potable water. More than half of Metro’s water use goes toward irrigation along rail and bus alignments (55.2%), and nearly another quarter of our consumption goes toward operational divisions (23.4%).



Potable water consumption is expected to increase due to our “Twenty-Eight by ‘28” Initiative, featuring transit and facility expansion projects set to come online by 2028. In a business as usual scenario, system growth is estimated to increase overall water use by 38.1% by 2030 (from 2018 levels).

To mitigate anticipated growth in water consumption, we have identified, approved and implemented several strategies to reduce potable water consumption, including: bus and rail car wash facility improvements, upgrades and fixture

replacements and an upgrade to smart irrigation controllers along the Orange Line alignment. Conservative estimates suggest these strategies will yield a 22% reduction in water consumption from 2030 levels in a business as usual scenario.



Metro is developing additional water use reduction strategies focused on technical improvements, as well as behavioral change.

TARGET 2

Increase Run-off Infiltration and Capture Capacity for Stormwater by 10% from 2018 Levels

Reductions in potable water use can be increased through implementing advanced water capture. Captured water can be utilized for irrigation purposes, offsetting or reducing use of potable water.

Permeable surface installations at divisions with large asphalt surface area could reduce runoff, increasing infiltration capacity systemwide. Installations along rail alignments or near current and forthcoming facilities, such as bioswales, also have the potential to increase stormwater capture and infiltration capacity. Together, these efforts will produce long-term water savings as more water can safely infiltrate into soil and replenish groundwater sources and local aquifers. Such installations also have filtration features that capture and prevent pollutants from entering land and water ecosystems and harming wildlife.

ACHIEVEMENTS AND CURRENT INITIATIVES



Low Flow Nozzle Pilot Installation for Bus Washes

Metro's pilot study at Division 15 evaluated the effect of a decreased flow rate (gallons per minute) on water use during washes. The nozzle modifications proved effective, reducing overall consumption by 19% while maintaining bus cleanliness levels at pre-pilot cleanliness levels. Following this success, similar modifications will be made at other bus divisions, accompanied by monitoring practices to quantify water and cost savings. It is estimated that nozzle replacements systemwide will save over 20 million gallons of water per year.



Orange Line Upgrades: Smart Irrigation, Recycled Water and Use Efficiency

32.3% of Metro's overall water consumption in 2018 was used along the Orange Line alignment or *right-of-way*. To reduce potable water consumption along the line, multiple reduction measures and fixtures have been identified and implemented. Forty-one conventional irrigation controllers were replaced with smart controllers in 2018, which is anticipated to save at least 21 million gallons of water per year. In addition, we completed installation of purple pipe recycled water between Vesper Avenue and Sepulveda Boulevard along the Orange Line (which accounts for 2.6% of Metro's overall water use), with plans to install more in 2020 between Tujunga and Laurel Canyon boulevards.



Permeable Pavement and Bioretention Pilot Project

In 2018, Metro replaced 40,000 square feet of asphalt at the Division 4 bus facility in Downey with permeable pavement and a landscaped bioretention area. The pilot installation of permeable pavement and bioretention surface area at Division 4 estimated that the 40,000 square foot installation could capture and filter more than 300,000 gallons of rainwater during a single rain event.



Low-to-No Flow Sanitary Fixtures

Several low-flow and no-flow sanitary fixtures have been installed across Metro facilities over the last few years. Several other sanitary fixtures are set to be remodeled at various division locations through 2030, which are anticipated to save roughly 3.1 million gallons per year.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
W1 Identify and implement operational water conservation and efficiency projects	1.1 Implement all identified water conservation projects		ECSD Operations
	1.2 Update 2010 Water Action Plan to outline operational water conservation, efficiency and reuse strategies through 2030 to fulfill the goals of the 20119 CAAP and MBS		ECSD
	1.3 Prioritize the new Water Action Plan strategies for phased implementation		ECSD Operations
	1.4 Conduct pilot studies on rail wash facilities to reduce potable water use and replace existing equipment with more efficient equipment based on the pilot results		ECSD Operations
	1.5 Further develop of and conduct training on water conservation strategies		ECSD
W2 Increase the use of non-potable water sources to offset operational potable water use	2.1 Identify opportunities to expand water capture for reuse		ECSD Operations
	2.2 Transition to recycled water where purple pipe is available and coordinate with local water providers to expand purple pipe access near Metro facilities		ECSD Operations
	2.3 Determine the feasibility of including graywater and other water reuse strategies in Metro's design specifications		ECSD Engineering

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>2.4 Evaluate grant opportunities to study and implement innovative reclaimed water strategies</p>	<input type="radio"/>	<p>ECSD Planning</p>
	<p>2.5 Evaluate the potential to use water from system dewatering activities</p>	<input type="radio"/>	<p>ECSD Operations</p>
<p>W3 Implement water monitoring and reporting systems</p>	<p>3.1 Install smart sub-meters where appropriate to improve the collection of water usage data</p>	<input checked="" type="radio"/>	<p>ECSD Operations</p>
	<p>3.2 Explore the feasibility of automated data communications systems to provide real-time water consumption information and leak alerts to facility managers</p>	<input checked="" type="radio"/>	<p>ECSD Operations</p>
	<p>3.3 Install and utilize an environmental management reporting system to issue reminders of upcoming compliance deadlines, monitor trends in consumption and costs and facilitate the recognition of emerging issues</p>	<input type="radio"/>	<p>ECSD Program Management</p>
<p>W4 Integrate water conservation and efficiency best practices into operational policies, SOPs and specifications</p>	<p>4.1 Further integrate and regularly update water conservation approaches into contractor requirements to better mitigate water use impacts from construction through operations</p>	<input type="radio"/>	<p>ECSD</p>
	<p>4.2 Establish a policy requiring all new construction projects to achieve 75% or greater available points for the Water Efficiency category of LEED or most applicable sustainable design or construction rating system</p>	<input checked="" type="radio"/>	<p>ECSD Engineering</p>
	<p>4.3 Establish procedures requiring the regular review and update of SOPs for water use that reflect best water conservation and efficiency practices</p>	<input checked="" type="radio"/>	<p>ECSD Operations</p>
	<p>4.4 Establish and implement specifications for high-efficiency</p>	<input type="radio"/>	<p>ECSD Operations</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>water fixtures and systems for all new construction and renovations</p> <p>4.5 Establish and implement specifications for native, climate appropriate landscaping for all new construction and renovations</p> <p>4.6 Integrate a triple bottom line analysis into cost and value assessments of all planned water efficiency measures</p>	<p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD Operations</p> <p>ECSD V/CM</p>
<p>W5 Partner with other public agencies and community groups to advance regional water goals</p>	<p>5.1 Establish on-going evaluation of local partner policies, procedures, mandates, requirements and best practices to identify collaborative opportunities</p> <p>5.2 Collaborate with MS4 municipal stormwater permittees for implementation of enhanced watershed management programs</p> <p>5.3 Work with regional partners to maximize stormwater capture and recycled water use opportunities that support Measure W or an alternative compliance program.</p> <p>5.4 Engage with external stakeholders to identify collaboration opportunities that advance regional water goals</p>	<p><input checked="" type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input checked="" type="radio"/></p>	<p>ECSD Engineering</p> <p>ECSD Engineering</p> <p>ECSD Operations</p> <p>ECSD</p>
<p>W6 Develop strategic resources and collaborative relationships across the agency to advance the water program and drive behavior change</p>	<p>6.1 Expand partnerships with Operations staff across the agency to develop and implement water initiatives and projects</p> <p>6.2 Use the Metro Intranet and other digital media tools to communicate water program goals, initiatives and achievements internally</p> <p>6.3 Develop and conduct trainings, workshops and other outreach events for staff to drive water</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD Operations</p> <p>ECSD Marketing and Comms.</p> <p>ECSD Marketing and Comms.</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	conservation, behavior change in areas of greatest impact		
W7 Implement best management practices to minimize stormwater run-off and keep stormwater clean	7.1 Characterize stormwater quality at operating division discharge locations to identify opportunities for improvement	<input checked="" type="checkbox"/>	ECSD Operations
	7.2 Develop a strategy to improve stormwater quality	<input type="checkbox"/>	ECSD Operations
	7.3 Identify stormwater management opportunities and constraints for underground, at grade and above grade rail/busway stations	<input type="checkbox"/>	ECSD Operations
	7.4 Determine the feasibility of installing drywells, treatment trenches and other BMPs at operating divisions and discharge locations	<input type="checkbox"/>	ECSD Operations
W8 Prioritize the infiltration, capture and /or use of stormwater	8.1 Evaluate and prioritize opportunities to retrofit existing facilities using a whole systems approach including lifecycle, maintenance needs and potential system impacts	<input type="checkbox"/>	ECSD Operations
	8.2 Integrate green infrastructure strategies into specifications	<input type="checkbox"/>	ECSD Operations
	8.3 Support regional water initiatives through collaborative capture/reuse strategies	<input type="checkbox"/>	ECSD Operations
W9 Reduce pollutants in industrial wastewater	9.1 Develop a source control pollution prevention plan focused on decreasing the volume and increasing the quality of wastewater	<input type="checkbox"/>	ECSD Operations
	9.2 Develop a screening process for new materials based on their potential to affect discharge	<input type="checkbox"/>	ECSD V/CM

3.4 SOLID WASTE

GOALS
Reduce Metro's waste disposal
Increase diversion from landfill

2030 TARGETS

Reduce annual operational solid waste disposal 24% from 2030 business as usual scenario

Achieve 50% landfill diversion rate for operational waste by 2030

Achieve 90% construction landfill diversion rate by 2030

OVERVIEW

As one of the largest transit authorities in the United States, Metro acquires, moves, uses and disposes of thousands of tons of material each year. While we are always improving how we measure and reduce waste generation, we must also continue to identify opportunities to divert waste from landfills and to ultimately reduce the amount of waste that is generated. Through multiple municipal solid waste (MSW) initiatives, we have concurrently made strides to mitigate regional GHG emissions, develop a robust sustainable acquisition program and reduce operational expenses.



In alignment with the City of Los Angeles and Los Angeles County, Metro is actively applying the **Integrated Waste Management Hierarchy (IWMH)**¹. Using this hierarchy, we are prioritizing waste reduction and sustainable procurement as the first and most important steps toward managing and reducing solid waste. The IWMH is also an integral component of

multiple agency-wide policies and programs, including our *Solid Waste Management Plan*, *Sustainable Acquisition Program* and *Construction and Demolition Debris Policy*. These efforts help us comply with and support California state legislation and CalRecycle regulations.

Waste reduction and diversion strategies through sustainable procurement and operational improvements will be critical to meet our 2030 targets. We are building on waste characterization

¹ U.S. Environmental Protection Agency. "Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy." < <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy> >

studies and our growing Sustainable Acquisition Program to identify strategies to change existing behavioral and purchasing practices to minimize both the upstream and downstream impacts of procured material.

DEFINITIONS

Generation: The amount of waste that is produced before it is recycled, diverted or sent to the landfill

Disposal: The amount of waste that is sent to the landfill or treated as “trash”

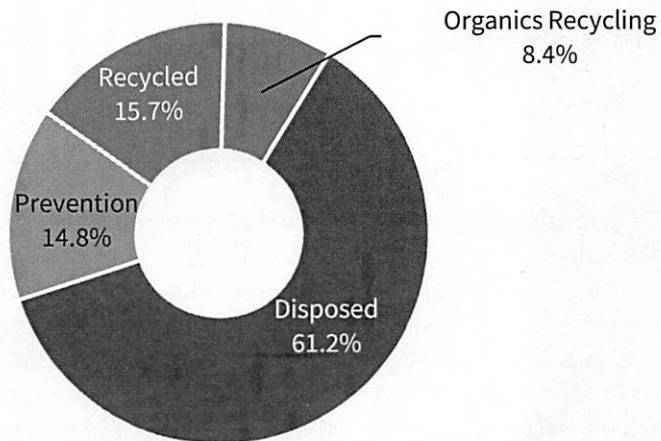
Diversion: The percentage of waste that is recycled, composted or avoided

TARGETS

TARGET 1: Reduce annual operational solid waste disposal vs. 2030 Business as Usual Scenario by 24%

In 2018, 61.2% of our solid waste was landfilled (see figure 3.4.1) While we have made substantial progress over the last five years to capture and divert waste from landfills, disposed waste has still increased steadily during that time period. In a business as usual scenario, we anticipate a 21.6% increase in waste sent to landfills from 2018 levels due to system growth.

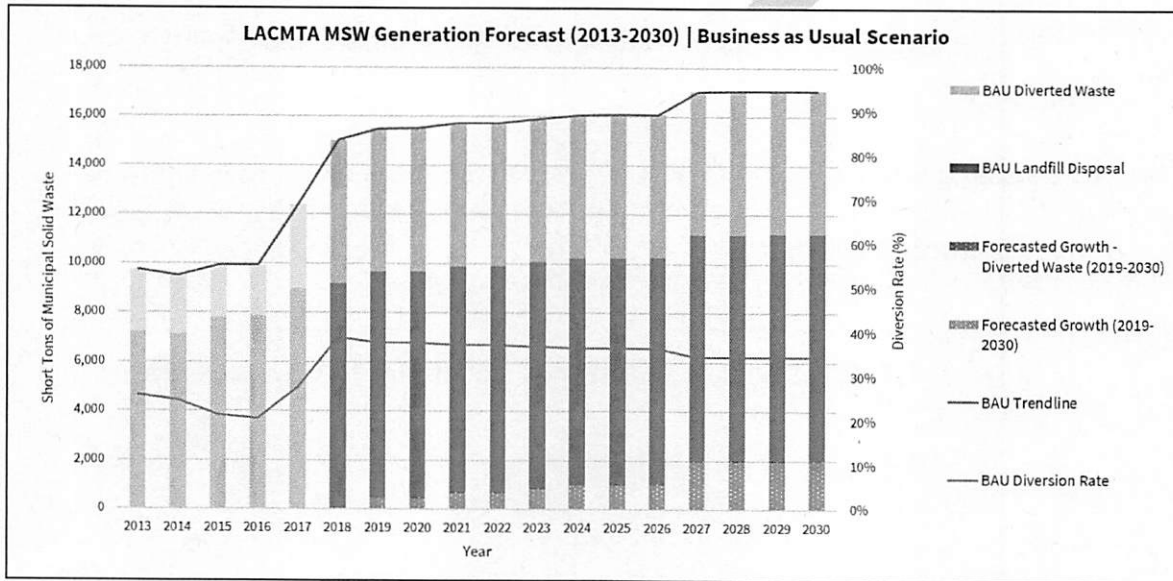
Figure 3.4.1: 2018 Metro Municipal Solid Waste Composition



Planned waste prevention and diversion strategies are expected to minimize the impact of expected system growth on waste generation. The strategies, outlined under Target 2, will contribute toward reducing waste sent to landfills. By 2030, we expect to reduce landfill waste disposal from 2030 BAU levels by 24%.

TARGET 2: Achieve 50% landfill diversion rate for operational waste by 2030

We anticipate that new diversion and prevention programs will assist with reducing waste sent to landfills. Not only will this reduce our overall landfill disposal tonnage, but it will also increase our overall diversion rate (the percentage of organics, recycled and prevented waste out of total generated waste). Strategies to increase waste diversion at Metro include the launch of a food waste collection program at Metro Headquarters and increased attention on sorting recyclables across all Metro facilities among other waste prevention strategies. It is also expected that the launch and growth of the *Sustainable Acquisition Program* will lead to increased opportunities for diversion. We anticipate achieving a 50% diversion rate by the year 2030.



TARGET 3: Achieve 90% construction landfill diversion rate by 2030

Materials generated during construction and demolition activities have the greatest potential to be diverted from typical landfills. The recycling of construction and demolition waste is responsible for approximately 68% of Metro's total waste diverted from landfills. CALGreen code currently requires 65% diversion of construction and demolition materials, yet we are committed to diverting at least 90% of our construction waste. To achieve this, we are updating our construction waste management specifications and creating a central electronic repository to track and monitor all project construction and demolition waste prevention and landfill diversion rates for reporting. In addition, through the construction *Sustainability Plan Program*, we are developing tools and procedures to help contractors develop more comprehensive waste plans.

ACHIEVEMENTS AND CURRENT INITIATIVES



Solid Waste Baseline and Characterization Studies

In 2017, we completed a solid waste baseline study and multiple waste characterization studies to evaluate existing activities and performance at Metro headquarters and multiple bus and rail facilities. The baseline study evaluated existing operational practices and procedures and identified the material composition of the agency's waste streams. The results provided insight into our current reduction and recycling activities and quantified diversion activities that were not previously reported, including multiple organics, recycling and reuse programs. The studies provided compliance thresholds for regulated waste streams, giving us metrics with which to track compliance to AB 939 and AB 1826.



Solid Waste Management Plan

Our 2019 *Solid Waste Management Plan* provides a roadmap to address climate change and reduce greenhouse gas emissions by managing solid waste sustainably and effectively. The plan prioritizes upstream solutions to prevent waste, which reflect the IWMH and consider the benefits of prevention, recycling, conversion and minimization of landfill disposal. This plan will help the agency set up the infrastructural framework necessary for the implementation of disposal reduction programs that achieve regulatory compliance and progress toward meeting sustainability goals.



Pallet Return Program

Metro's Central Maintenance Facility (CMF), which fulfills nearly 360,000 inventory requests a year, implemented a Pallet Return Program in 2018 to reduce waste output from pallets used for inventory storage and distribution. The program replaced standard wooden pallets with heavy-duty block wooden pallets, which are far more durable than conventional slatted pallets and survive an average of five times as many trips. In 2018, the Program prevented approximately 2,100 tons of wood waste from going to landfills.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
<p>S1 Implement operational waste prevention and material reuse programs which support a circular economy</p>	<p>1.1 Add waste prevention and reuse specifications to major product/service contracts</p> <p>1.2 Develop strategies to support Extended Producer Responsibility requirements for bulky and non-recyclable items</p> <p>1.3 Partner with regional stakeholders to develop and implement material reuse/exchange programs for surplus materials</p> <p>1.4 Implement paperless systems and paper reduction programs and systems (e.g., Safety Data Sheets)</p> <p>1.5 Explore strategies to minimize single use consumable supplies and provide alternatives</p> <p>1.6 Look at the feasibility of implementing a reuse program for materials like furniture and other items that may be discarded in a remodel</p> <p>1.7 Identify opportunities for waste reduction by aligning with the Sustainable Acquisition Program (SAP) and the principles of a circular economy</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD V/CM</p> <p>ECSD</p> <p>ECSD Operations General Services</p> <p>ECSD Operations General Services</p> <p>ECSD Operations General Services</p> <p>ECSD Operations General Services</p>
<p>S2 Implement operational recycling and organics diversion programs, including those that support compliance with AB 939, AB 341, AB 1826 and SB 1383</p>	<p>2.1 Add recycling specifications to major product/service contracts</p> <p>2.2 Update agency-wide recycling programs to streamline collection bins and standardize signage</p> <p>2.3 Update specifications and contractor SOWs to require compliance with organics regulations</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD V/CM</p> <p>ECSD Marketing and Comms.</p> <p>ECSD Engineering</p>

STRATEGIC OBJECTIVES	ACTIONS	STATUS	RESPONSIBLE DEPARTMENT
	<p>2.4 Establish programs to divert organic waste from landfills, including edible food donation, anaerobic digestion and composting</p> <p>2.5 Evaluate and prioritize facilities for implementation of organics programs</p> <p>2.6 Conduct a feasibility study on the costs and diversion potential of utilizing waste-to-energy for conversion of hard to divert materials such as bus blow-out trash</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD Operations General Services</p> <p>ECSD Operations</p> <p>ECSD</p>
<p>S3 Establish and integrate best waste management practices into agency-wide operations</p>	<p>3.1 Adopt and implement a Solid Waste Management Plan</p> <p>3.2 Integrate waste management best practices into the SOPs and policy of strategic business units</p> <p>3.3 Develop and deploy staff training on sustainable waste management principles and compliance obligations</p> <p>3.4 Integrate waste collection and diversion systems into the planning process in order to includes space considerations for separating and storing waste</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD Operations</p> <p>ECSD Operations</p> <p>ECSD</p> <p>Planning</p>
<p>S4 Establish comprehensive monitoring and reporting practices to drive continuous improvement</p>	<p>4.1 Standardize solid waste/recycling monitoring protocols and incorporate into the Environmental Management System (EMS)</p> <p>4.2 Develop mechanisms to track and report waste generation and diversion accomplishments</p> <p>4.3 Partner with waste haulers to improve data accuracy by refining bin subscription levels and reporting protocols</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD</p> <p>ECSD Operations</p> <p>ECSD</p>
<p>S5 Implement construction waste prevention and</p>	<p>5.1 Update Metro's Waste Management specification</p>	<p><input type="radio"/></p>	<p>ECSD</p>

landfill diversion best practices	<p>5.2 Update the Construction and Demolition Debris Policy</p> <p>5.3 Update vendor and construction specifications to support agency waste reduction and diversion targets</p> <p>5.4 Provide supporting tools and procedures to help contractors develop and implement more comprehensive waste plans</p> <p>5.5 Explore new technologies and cutting-edge practices that further construction waste prevention and diversion</p> <p>5.6 Create a central electronic repository to track and monitor all project construction and demolition waste prevention and landfill diversion rates</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD Engineering</p> <p>ECSD V/CM</p> <p>ECSD</p> <p>ECSD</p> <p>ECSD</p>

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3.5 MATERIALS, CONSTRUCTION AND OPERATIONS

GOALS
Demonstrate sustainable design and construction practices throughout all phases of capital improvement projects
Optimize sustainable operations and maintenance of fleet, infrastructure and facilities

TARGETS

Achieve LEED Silver Certification for all new facilities over 10,000sqft

Design and build 100% of capital projects to CALGreen Tier 2 standards

Increase percentage of annual acquisition spent that includes sustainability considerations to 50%

OVERVIEW

Metro has embarked on an extensive major capital construction program to expand its world-class transportation system to further enhance quality of life for all who live, work and play within LA County. To support this capital program, LA County voters approved two half-cent sales tax measures, Measure R in 2008 and Measure M in 2016. The resources from these efforts have catalyzed rapid growth to the system - construction of new transit alignments and support infrastructures for rail lines, rapid bus lines and bike paths. These regional improvements require the movement and purchase of goods and the use of building and construction equipment. New facilities require water and fuels to power them and generate waste as part of on-going operations.

Metro has established many programs to reduce the impacts associated with the growth of its system. Adoption of The *Green Construction Policy (GCP)* is specifically aimed at reducing emissions during construction and the *Sustainability Plan (SP) Program* assists contractors with meeting CALGreen obligations. Sourcing materials plays another large role in Metro's impact. Measure M projects alone will earmark \$120 Billion for the expansion of the transit system. In order for Metro to move beyond sustainability, we need to identify funding for, define and prioritize sustainable purchases.

TARGETS

Target 1: Achieve LEED Silver Certification for all new facilities over 10,000 square feet

Metro has committed to build all new buildings over 10,000 square feet to LEED Silver standard or higher. To date, eleven buildings have been certified to LEED Silver or higher including Metro headquarters and several transportation and maintenance buildings. Additionally, Metro has six facilities undergoing the certification process.

Target 2: Design and build 100% of capital projects to CALGreen Tier 2 building standards

Metro capital projects are designed and constructed based on approved design criteria, standards and specifications. In 2016, Metro developed and updated its Metro Rail Design Criteria (MRDC) section related to project environmental and sustainability elements and requirements as related to energy conservation and efficiency, renewable energy, water conservation, biological and cultural resources and climate change and adaptation. In 2017 Metro developed a new Sustainability Technical Requirements Specification (13 60 00) requiring contractors to integrate sustainable elements into the design and construction of the project and to comply with mandatory and voluntary (Tier 2) sustainability measures per the latest version of the California Green Building Standards Code (Part 11) California Code of Regulations, Title 24 (CALGreen); as well as mandatory federal, state and local requirements.

Capital projects designed and built to CALGreen Tier 2 building standards include buildings and stations. Applicable sections of the CALGreen building standard shall be applied to infrastructure improvements including rights-of-way and alignments.

Target 3: Increase percentage of annual acquisition spent that includes sustainability considerations to 50%

Metro strives to integrate environmental considerations into procurement decisions and evaluate the environmental consequences of a product throughout its lifecycle. To this end, new products and technologies are evaluated for their ability to advance resource efficiency, pollution reduction and air quality. Metro's Sustainable Acquisition Program will apply a more structured and comprehensive approach to considering the direct social and environmental impacts of products and services, as well as the operational practices of vendors along key points in the supply chain. As a result, the Program will operationalize commitments in Metro's Environmental Policy, advance our sustainability initiatives and continue Metro's leadership regionally and among transit agencies nationally.

ACHIEVEMENTS AND CURRENT INITIATIVES



Metro Environmental Management System (ISO 14001)

Metro integrates sustainability and environmentally friendly practices into the lifecycle of its projects, including the planning, design, construction and operations and maintenance (O&M) phases. One tool to achieve this is through Metro's robust Environmental Management System (EMS), which is certified to the ISO 14001:2015 standard and serves as a system for internal and external stakeholders to help Metro continually improve its environmental and sustainability efforts. As of 2019, the Metro EMS covers 19 operational facilities (as defined by ISO 14001), bus and rail divisions and recently introduced construction (CEMS) as part of its scope. EMS seeks to continually improve sustainable building and construction processes through a rigorous process (plan-do-check-act) within an overall framework for managing the challenges of a project.



Sustainability Plan Program and Specifications

In 2018, Metro’s baseline specifications were updated to require the development and implementation of a project-specific Sustainability Plan (Specification 01 35 63) regardless of the project size. These plans outline the environmental and sustainability commitments for each project. The commitments are consistent with statutory and regulatory requirements. The Sustainability Plan meets or exceeds Metro’s environmental and sustainability requirements as well as the requirements of the California Green Building Code. The Sustainability Plan Specification requires the contractor to provide a project-specific Sustainability Coordinator to oversee all resiliency and long-term sustainability-related requirements for the project and assist the agency’s Chief Sustainability Officer in achieving Metro’s sustainability metrics.



Metro Rail Design Criteria Update

The environmental considerations within the Metro Rail Design Criteria (MRDC), were updated in 2010 and 2018 to include consideration of sustainability requirements, multi-mobility hubs with various first and last mile strategies, climate change adaptation principles and green infrastructure.



Certification Report Card

The following Metro facilities have achieved LEED certification:

Facility	Certification	Level	Year/Status
Division 16 Southwest Yard	NC	Silver	2019
Location 64	NC	Gold	2019
Division 14	NC	Gold	2017
Division 24	NC	Silver	2016
Division 7 Campus	EBOM	Silver	2015
Division 10 Campus	EBOM	Silver	2014
Division 3 Maintenance Annex	NC	Gold	2010
Union Station Gateway	EBOM	Gold	2010
El Monte Station	NC	Gold	2009
Division 13	NC	Gold	2009
Division 3 Maintenance Building	NC	Certified	2008
Division 9 Transportation Building	NC	Gold	2008
CMF Building 6	NC	Gold	2007

The following projects are in the process of LEED certification:

Facility	Certification	Level	Year/Status
Emergency Security Operations Center	NC	TBD	In design
Airport Metro Connector 96 th Street Station	NC	Silver	In design
Willowbrook/Rosa Parks Station – Security Hub	NC	TBD	2020 – under construction

Willowbrook/Rosa Parks Station – Bike Hub	NC	TBD	2020 – under construction
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Envision: Expo Line - Section 2 and Purple Line Extension --- Section 1 achieved Platinum Envision certification. With the focus on planning and process from design stage through operations and maintenance, there is much in this system that helps Metro consider the best sustainability practices throughout the life of our projects.



Metro’s Environmental Construction Awareness (MECA)

Contractors play a critical role in helping Metro transform Los Angeles into a more livable and sustainable ecosystem. Launched at the end of 2017, MECA is an online platform that provides information and resources about environmental requirements to support the development of effectively prepared proposals. By communicating expectations and upholding Metro’s foundational commitment to protecting the environment, MECA reinforces the importance of environmental compliance and sustainability from project design through construction.

















Sustainable Acquisition Program







Metro has already implemented a robust supplier outreach program that incorporates many social considerations into Metro’s acquisition process including: Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE), Women Business Enterprise (WBE), Minority Business Enterprise (MBE) and Disabled Veteran Business Enterprise (DVBE). In June of 2019, the Metro Board adopted the sustainable acquisition program, Metro’s first top-down and enterprise-wide program for green purchasing. This Program formalizes and enhances the agency’s acquisition practices ensuring that sustainability considerations consistently inform such decisions.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
M1 Continuously improve sustainability standards and requirements for project design and construction	1.1 Adopt CALGreen Tier 2 building standards for all capital projects		ECSD Engineering
	1.2 Ensure continuous improvement in alignment with MRDC, BRT, design criteria and language with current CALGreen codes and Board policies		ECSD Engineering
	1.3 Increase early engagement of ECSD by identifying sustainability standards		ECSD

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>that are required during early project planning phases</p> <p>1.4 Require future design and construction projects to use sustainable building materials</p> <p>1.5 Require Environmental Product Declarations for construction materials</p> <p>1.6 Update requirements for urban greening actions on all applicable project specifications</p> <p>1.7 Evaluate the opportunity to hold an annual supplier symposium where contractors, including primes and subs, can present green alternatives for products and services</p> <p>1.8 Develop a green infrastructure decision making framework</p>	<p></p> <p></p> <p></p> <p></p> <p></p>	<p>ECSD V/CM</p> <p>V/CM ECSD</p> <p>Planning ECSD</p> <p>ECSD</p> <p>Planning</p>
<p>M2 Pursue green certification standards for buildings and infrastructure construction</p>	<p>2.1 Assess available environmental certifications for adoption as Metro's standard</p> <p>2.3 Collaborate with designers to determine achievable green certification options for specific projects</p>	<p></p> <p></p>	<p>ECSD</p> <p>ECSD</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
M3 Commission all projects to ensure optimal performance	3.1 Develop a commissioning policy and specifications identifying the size and frequency of buildings to undergo commissioning and retro-commissioning		ECSD Program Management Engineering
	3.2 Provide oversight for project commissioning and retro-commissioning efforts		ECSD Program Management Engineering
	3.3 Perform Metro enterprise-wide assessment of Building Management System (BMS) and update performance specifications with results of data		ECSD Program Management Engineering
	3.4 Provide training on commissioning requirements to Metro engineers and project managers		ECSD
	3.5 Perform upgrades and improvements to the existing BMS and install BMS at those facilities that do not yet have one		ECSD
	3.6 Install an Energy Management System to monitor, control and remotely audit the BMS at each Metro Facility		ECSD
	3.7 Perform regular energy audits on the Energy Management system to		ECSD

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>ensure it is running efficiently and effectively and that the BMS at each facility is connected and transmitting data to the Energy Management System</p>		
<p>M4 Expand the Green Construction Policy (GCP) and Sustainability Plan (SP) Programs</p>	<p>4.1 Evaluate the SP Program to identify opportunities to increase contractor compliance and project sustainability commitments</p> <p>4.2 Develop sustainability budget allowances or add-alternates in project bid documents to fund sustainability elements for projects</p> <p>4.3 Develop a set of tools and strategies to assist contractors in meeting CALGreen and Metro sustainability requirements</p> <p>4.4 Investigate expanding the GCP to include or favor electric equipment</p>	<p></p> <p></p> <p></p> <p></p>	<p>ECSD Program Management</p> <p>ECSD Program Management V/CM</p> <p>ECSD</p> <p>ECSD</p>
<p>M5 Develop and implement an agency-wide Sustainable Acquisition Program</p>	<p>5.1 Develop tools and procedures to guide implementation of the Sustainable Acquisition Program</p> <p>5.2 Conduct annual spend analyses to identify and prioritize product replacement and other high impact acquisition opportunities</p>	<p></p> <p></p>	<p>ECSD V/CM</p> <p>ECSD V/CM</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>5.3 Assess environmental impacts of products and materials using life cycle cost analysis</p> <p>5.4 Engage the Metro vendor community to evaluate opportunities for supplier leadership</p> <p>5.5 Assess feasibility of electronic bid submission system for all procurements</p> <p>5.6 Include Disadvantaged Business Enterprises as part of the Sustainable Acquisition Plan</p>	<p>○</p> <p>○</p> <p>○</p> <p>◐</p>	<p>ECSD V/CM</p> <p>ECSD V/CM</p> <p>ECSD V/CM</p> <p>V/CM ECSD</p>
<p>M6 Integrate resource conservation, life cycle and efficiency considerations into Metro's operational policies, Standard Operating Procedures (SOPs) and specifications</p>	<p>6.1 Explore implementing a hierarchical sustainability decision matrix as a tool for prioritizing procurement and overall programmatic decisions</p>	<p>○</p>	<p>ECSD</p>
<p>M7 Develop and implement Materials, Construction and Operations related training for Metro staff, partners and community to facilitate a culture of sustainability</p>	<p>7.1 Develop a certification program within (MECA) to improve contractor and subcontractor's knowledge of environmental and sustainability requirements</p> <p>7.2 Expand Growing a Greener Workforce (GGW) Program to include additional curriculum and partners to raise awareness about sustainable materials,</p>	<p>◐</p> <p>◐</p>	<p>ECSD</p> <p>ECSD</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>construction and operations</p> <p>7.3 Implement Metro staff training on sustainable materials, construction and operations goals, targets and strategies</p> <p>7.4 Provide Sustainable Design Training to support the selection of sustainable design materials for Metro discretionary grant recipients and public agency partners</p>	<p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD</p> <p>Planning</p>

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3.6 ENERGY | Energy Resource Management

GOALS

Optimize and Manage Metro's Use of Energy

TARGETS

Reduce energy consumption by 17% at facilities from the 2030 Business as Usual Scenario

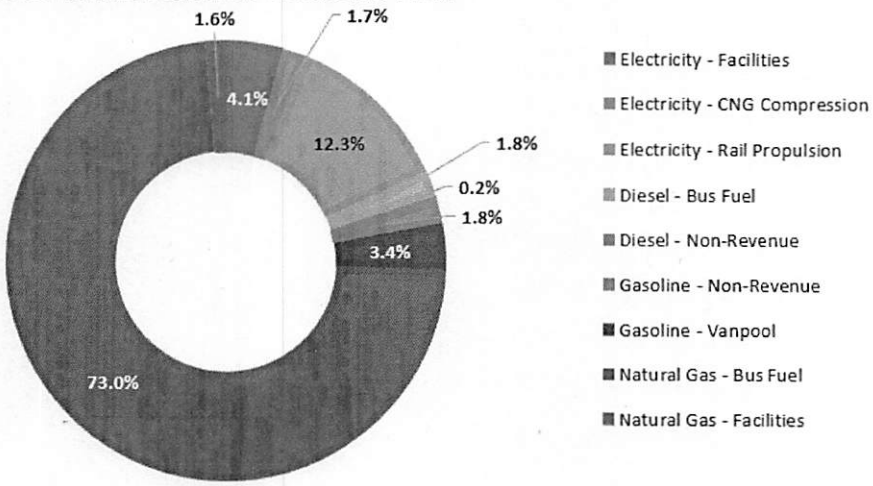
Increase Onsite Renewable Energy Generation to 7.5 MW

OVERVIEW

Metro currently purchases electricity and natural gas from seven (7) utility providers. The use of these resources has significant environmental, fiscal and resiliency impacts on the agency. While providing public transit is an inherently energy-intensive endeavor, proactive measures such as procuring renewable energy sources, deploying renewable energy generation, designing energy efficient buildings and implementing energy conservation practices can make significant strides towards reducing energy use and costs for the agency and increasing resiliency

Eighty percent of our energy footprint comes from vehicle fuels. The *Zero Emissions Bus Master Plan* and transition of all non-revenue vehicles to electric motors will create a significant shift in the energy Metro uses. While greenhouse gas emissions from fuels will be greatly reduced, there will be a large increase in purchased electricity (See the Emissions and Pollution Controls section for more information).

2018 LACMTA ENERGY CONSUMPTION



FACILITY ENERGY

Metro's building energy consumption alone accounts for just over 100 gigawatt-hours of electrical consumption per year across its extensive inventory of facilities in Los Angeles County. Building operation is the foundation that supports over 1.2 million weekday rail and bus transit patrons. Note: a percentage of the total is provided for vehicle fleet and traction power, by not for this category.

VEHICLE FLEET ENERGY

Metro's Vehicle fleet accounts for 84% of total energy consumption per year. Vehicle fuels include bus transit alignments, vanpool and all non-revenue vehicle fuels. Strategies to minimize Metro's fleet energy impact is more thoroughly discussed in the Emissions and Pollution Controls section.

RAIL TRACTION POWER ENERGY

Rail propulsion power accounts greater than 200 gigawatt-hour electric energy consumption and accounts for 12% of the agency's energy consumption. Metro's coverage includes over 100 miles of light and heavy rail transit across Los Angeles County, with an expected 51 miles additional route miles by 2030.

A GROWING FUTURE, A GROWING RESPONSIBILITY

Metro's total energy consumption is expected to increase as a result of aggressive expansion of the transit system. In November 2016, Measure M was passed by the people of LA County to help ease traffic and improve transportation. Within the Measure M Program Management Plan, the Twenty-Eight by '28 Initiative highlights the highest priority developments to complete prior to the 2028 Olympic Games. Key developments include the Purple Line Extension Sections 1-3, the Airport Metro Connector and the Gold Line Foothill Extension.

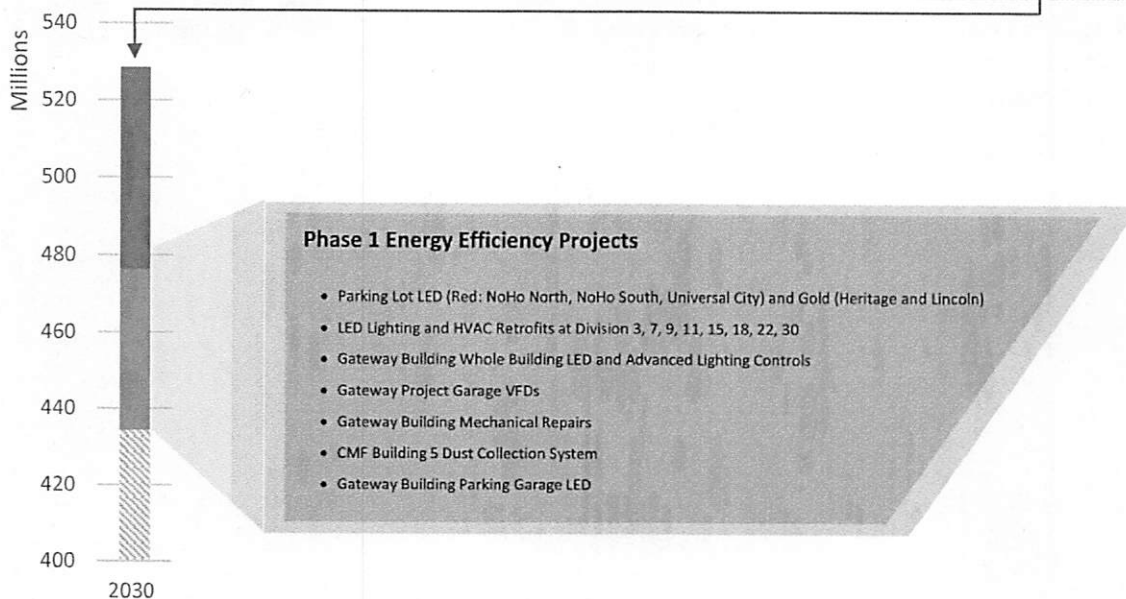
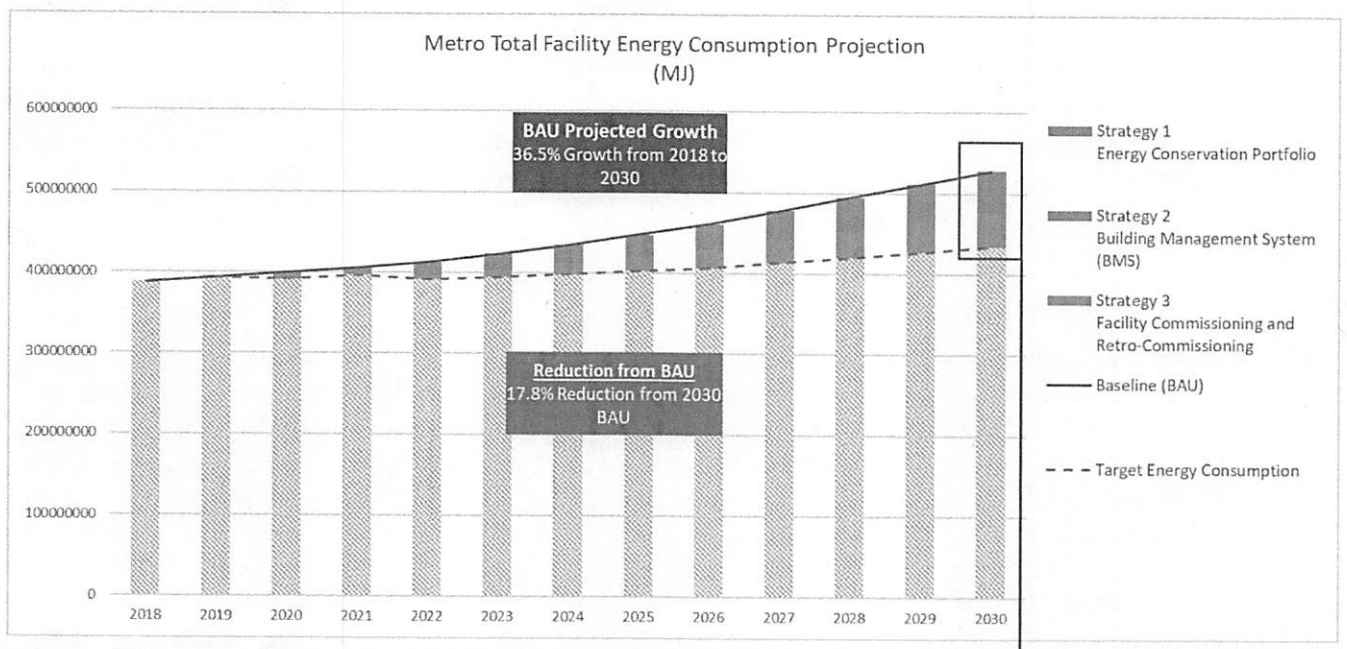
Using a detailed, data-driven analysis of infrastructure growth, we calculated a Business as Usual Scenario (BAU). The 2030 energy BAU scenario is developed through a review of organizational practices and energy use and an outward looking analysis of energy market evolution. The BAU incorporates accounts for planned construction and improvements.

GOALS AND TARGETS

TARGET 1: Reduce energy consumption at facilities by 17% from the 2030 Business as Usual Scenario

Despite system growth and increasing demand, Metro is committed to minimizing its energy consumption. Identified energy opportunities include:

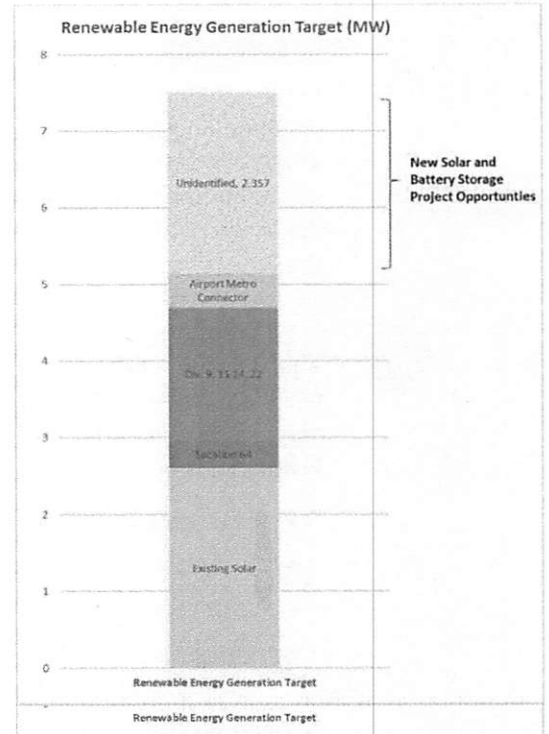
- Implementing Metro's ongoing identified energy projects;
- Instituting an enterprise level building management system; and
- Adopting a formal facility commissioning and retrocommissioning policy.



TARGET 2: Increase Renewable Energy Generation to 7.5 MW

Solar PV technology is a key component of Metro’s overall renewable energy strategy Metro generated 2.9 million kilowatt hours (kWh) from our PV installation in 2018 and is expecting additional PV systems to begin generating renewable energy in 2019 and beyond.

Metro currently owns and operates 2,600 kW Solar PV projects across eight facilities. This onsite renewable energy generation represents an estimated 2.93 MWh in 2018. Metro is working to aggressively increase its clean energy generation capacity through existing and future projects. With the inclusion of the landmark 2019 PPA at Divisions 11, 14, and 22 (1.275MW), 275 new construction of Location 64 (353 kW), and the Airport Metro connector (450kW), Metro’s solar generation is minimally expected to double from a 2018 baseline to 5,133 kW. Through the abundance of new facility construction and the Measure M expansion, Metro aspires to triple to the 2018 baseline by 2030 to 7,500 kW renewable energy generation.



ACHIEVEMENTS AND CURRENT INITIATIVES



Union Station Gateway Parking Garage Lighting Retrofit

The Union Station Gateway parking garage is being retrofitted with new LED lamps to replace the existing lighting. This project is estimated to reduce energy consumption by 866,000kWh annually. After installation, on-going measurement and verification will be pursued in order to track electricity and cost reductions resulting from this initiative.



Parking Structure Lighting Upgrades

Metro’s Parking Management Department completed a retrofit/upgrade lighting at four parking structures in 2018. These projects reduced a total of 1.2M kWh of energy savings. On-going measurement and verification will be pursued in order to track electricity and cost reductions resulting from this initiative.



Photovoltaic Preventative Maintenance Program

To support our renewable energy investments, Metro launched the PV Operations and Maintenance Program in 2014, providing technical training and resources to Metro maintenance personnel at facilities that host PV systems. Since program inception, Metro has

provided over 700 hours of training to 120 personnel, resulting in faster response time and more system uptime.

Working side by side with industry experts, this program teaches Metro staff to benchmark energy generation and troubleshoot issues, ensuring that the PV systems safely perform at capacity. As a result, system performance has improved year over year. The system output in 2018 represent a 25% increase since 2016 and a 9% increase since 2017. In 2018, Metro expanded the PV program by creating site-specific operation and maintenance resources and developed standard operating procedures, helping Metro care for its sustainability assets for the long term



Energy Conservation Portfolio






A portfolio of energy conservation measures (ECMs) have been identified across maintenance facilities, terminals and administrative buildings. On-going measurement and verification plans are in place in order to track electricity and cost reductions resulting from this initiative. Planned projects include:

- LED lighting, air compressor upgrades at Location 30
- Installation of retrofit LED lighting at Divisions 7, 9, 10, 11, 15, and 22
- Installation of electrical sub-meters at all Metro Bus and Rail Maintenance Facilities
- Energy efficient dust collection system installation at Metro’s Central Maintenance Facility, Building 5 Paint Shop

Planned HVAC system retrofits at Division 5, 11 and 22

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
E1 Implement Projects Identified in the Energy Conservation Project Portfolio	1.1 Complete Gateway LED Lighting Project		ECSD Engineering Facilities Maintenance
	1.2 Complete ECSD’s Phase 1 Energy Project portfolio		
	1.3 Identify additional energy conservation measures for Implementation.		
	1.4 Consolidate existing energy studies into a comprehensive Energy Efficiency Study.		
	1.5 Consolidate energy data and develop formal management and analysis plan for quality-controlled agency reporting		

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
<p>E2</p> <p>Optimize BMS at All Divisions and Gateway Facility</p>	<p>2.1 Perform an enterprise level BMS assessment</p> <p>2.2 Implement recommended repairs identified by BMS assessment</p> <p>2.3 Install BMS controls at divisions without pre-existing system to streamline operations and maintenance</p> <p>2.4 Incorporate BMS into brand-agnostic and uniform user interface for improved quality assurance</p> <p>2.5 Develop BMS maintenance and training program</p>	<p></p> <p></p> <p></p> <p></p> <p></p>	<p>ECSD Maintenance and Engineering Facilities Maintenance ITS</p>
<p>E3</p> <p>Implement an agency-Wide Facility Commissioning and Retro-Commissioning Program</p>	<p>3.1 Develop Commissioning Standards, Guidelines and Commissioning Specifications</p> <p>3.2 Onboard an in-house Commissioning Team</p> <p>3.3 Develop a 5-year rolling cycle of energy auditing and retro-commissioning for all major facilities</p>	<p></p> <p></p> <p></p>	<p>ECSD Engineering Facilities Maintenance</p>
<p>E4</p> <p>Expand the On-site Renewable Energy Portfolio</p>	<p>4.1 Complete installation of identified solar PV projects</p> <p>4.2 Expand PV Operations and Maintenance Program</p> <p>4.3 Update renewable energy inventory and include Distributed Energy Resources</p> <p>4.4 Develop and refine solar design guidelines for all Metro projects</p>	<p></p> <p></p> <p></p> <p></p>	<p>ECSD Engineering Facilities Maintenance</p>

3.7 EMISSIONS AND POLLUTION CONTROL

GOALS
Reduce regional GHG emissions
Reduce Metro's GHG and Criteria Air Pollutant Emissions ²

OVERVIEW

Transportation is a major contributor to regional GHG emissions. By providing more convenient, efficient and appealing transportation options, we can move more people while reducing GHG emissions for each trip taken— thereby mitigating the impact that transportation has on the environment and public health.

We have obligation to recognize and mitigate the negative environmental impacts of operating our system. We understand the urgency posed by climate change projections, which are expected to present risks affecting our riders and employees, as well as our infrastructure and services. The Intergovernmental Panel on Climate Change's (IPCC) *Special Report on Global Warming of 1.5°C* provides clear information about these risks and the consequences of inaction.

In addition, the state of California has passed ambitious climate and renewable energy legislation and regulations, including Assembly Bill 32 (AB 32) in 2006 and Senate Bill 100 (SB 100) in 2018. Accordingly, Metro released our *2019 Climate Action and Adaptation Plan (CAAP)*, where we commit to reducing GHG emissions and building climate change resilience within our transit system and across the region. Thus far, we have completed several energy studies, assessments and implemented large-scale projects, including LED lighting retrofits, transitioning to renewable natural gas for our bus fleet, creating a bus electrification schedule and installing various system upgrades at rail and bus maintenance divisions. Each action is a step toward achieving regional and statewide emissions goals and ultimately achieving a zero-carbon energy transportation system.

However, the impacts of our transit system and its operations extend beyond GHG emissions. We operate within the South Coast Air Basin, the most polluted air basin in the United States. Our fuel consumption and use of chemicals contribute to our air quality issues. We recognize

TARGETS

Displace 903,000 MTCO₂e annually by 2030

Reduce total GHG emissions by 79% from 2017 baseline

Reduce total Nitrogen Oxides (NO_x) Emissions 54% from 2018 baseline by 2030

Reduce total Particulate (PM) Emissions 62% from 2018 baseline by 2030

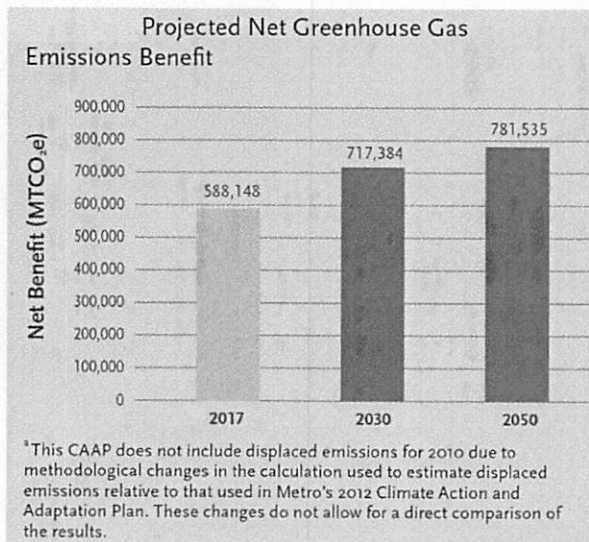
² Air Pollutant Emissions: Nitrogen Oxides (NO_x), Particulate Matter (PM), and Hydrocarbons (HC)

that our commitments to mitigate emissions must include strategies that reduce the formation of smog and other air pollution – which will be critical to protecting regional public health.

TARGETS

TARGET 1: Displace 903,000 MTCO₂e annually by 2030

Metro consistently displaces more GHG emissions than we produce, having avoided nearly one million tons of carbon dioxide equivalent (MTCO₂e) in 2017 alone. A fifth of those emissions are displaced when individuals select riding Metro over driving their own vehicles. The rest are displaced indirectly through land use patterns based on our transit services. Without Metro, LA County's GHG emissions in 2017 would have been 3.7% higher.



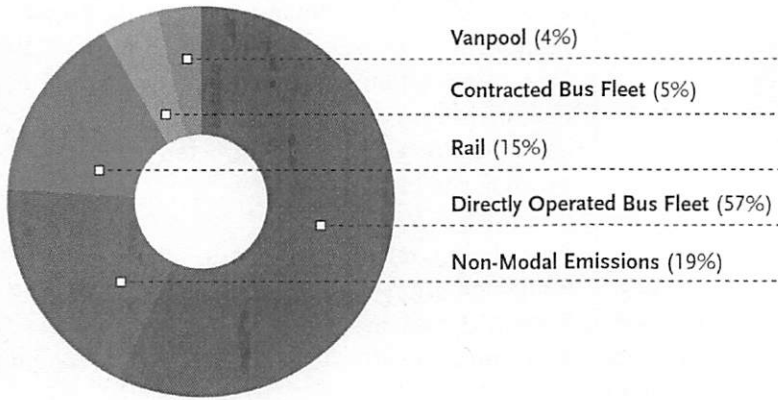
It is anticipated that planned system expansion will attract additional ridership. The business as usual scenario laid out in the CAAP forecasts an increase in passenger miles traveled of 21% by 2030 and 29% in 2050 (from 2017), preventing additional emissions via mode shift and changes to land use. However, increased fuel efficiency standards for private vehicles are expected to reduce displaced emissions (12% by 2030 and 15% by 2050). We anticipate that net GHG benefits (emissions displaced minus direct emissions) will increase over time, but increasing ridership through improved access, quality and affordability will

harness additional benefits.

TARGET 2: Reduce total GHG emissions by 79% from 2017 baseline

From operational activities alone, we emitted over 432,000 MTCO₂e in 2017 (or a year's worth of GHG emissions from 88,000 passenger vehicles), 81% of which are attributable to transit. The single largest component of our emissions is our directly operated bus fleet (57%).

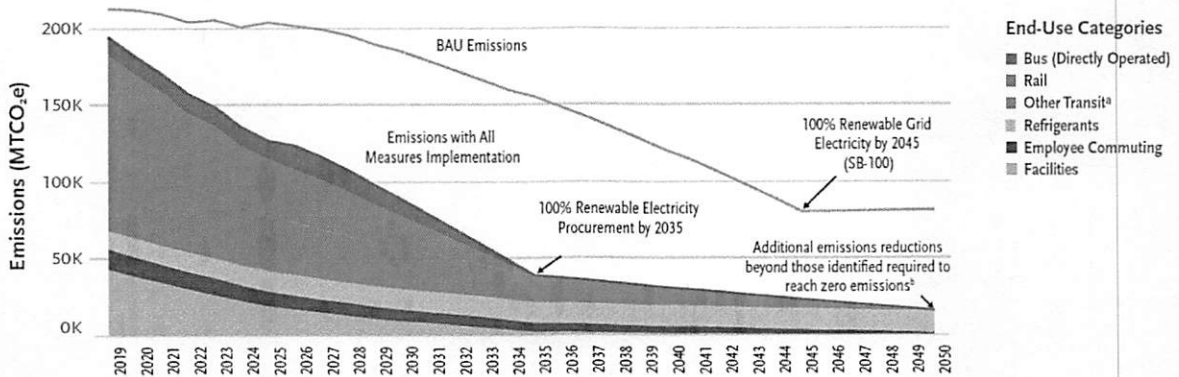
Metro Emissions by Mode, 2017



Metro estimates that our emissions will decrease 57% from the 2017 baseline by 2030 and 81% by 2050 in a business as usual scenario (CAAP, 2019). Anticipated reductions are largely anticipated based on expected shifts in fuel sourcing from compressed natural gas to renewable natural gas through 2020. However, the CAAP identified 13 measures to expedite and increase the

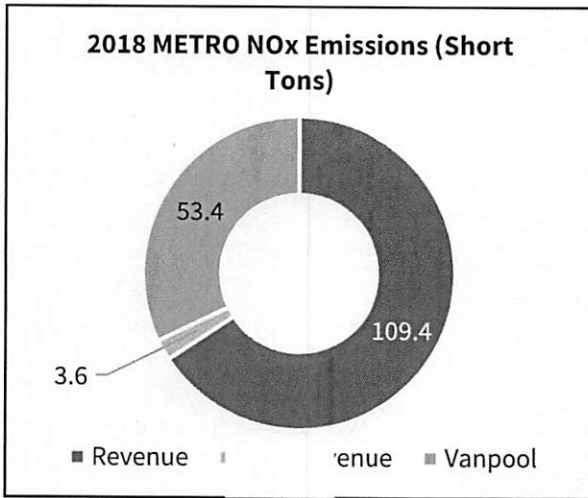
anticipated GHG emissions reductions, including the electrification of our vehicle fleet; an increase in renewable energy sourcing and storage; and improved electricity, water and other facility fixtures. By implementing the CAAP, Metro expects to achieve a 79% reduction in emissions from 2017 levels by 2030.

: Metro GHG Emissions Forecast by End-use Category



* Other transit includes CNG compression, contracted buses, vanpool and non-revenue vehicles.

TARGET 3: Reduce total Nitrogen Oxides (NO_x) Emissions 54% from 2018 baseline by 2030



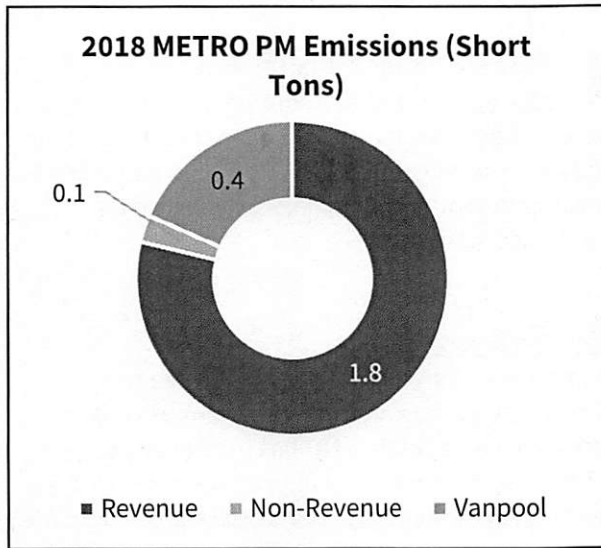
Reducing criteria air pollutant emissions is critical to protecting public health and reducing air pollution. Metro is expediting the transition of our directly operated bus fleet engines to “near-zero emissions” engines, already yielding substantial reductions in Nitrogen Oxides (NO_x) emissions. We have committed to completely electrifying this bus fleet by 2030, as well as to ramping up electrification across our contracted bus, non-revenue and vanpool fleets.

We will soon release our Electric Vehicle (EV) Implementation Plan, committing Metro to

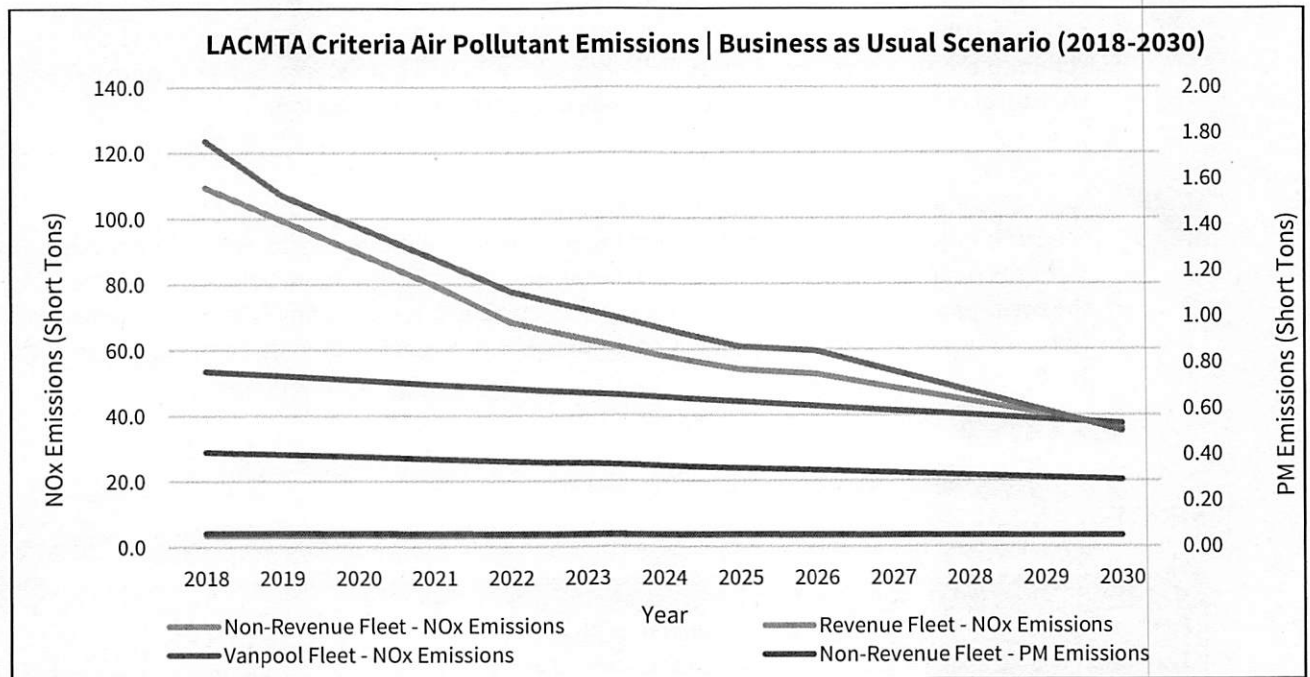
increase support of bus and non-revenue fleet electrification at divisions and facilities, as well as increase EV charging access for community members and employees. Through this plan, 70% of our non-revenue light-duty vehicles will be electric by 2030.

These shifts in fleet composition will lower overall NO_x emissions by just over 65% by 2030 (from 2018 levels). We will continue to evaluate additional opportunities to expand and expedite vehicle electrification across our fleet.

TARGET 4: Reduce total Particulate (PM) Emissions 62% from 2018 baseline by 2030



Metro is committed to reducing Particulate Matter (PM) emissions by replacing older engines with “near-zero emissions” engines and transitioning to battery electric buses and vehicles. These efforts are expected to yield substantial reductions in PM emissions - amounting to a 62% reduction in PM by 2030 from the 2018 baseline.



ACHIEVEMENTS AND INITIATIVES



Climate Action and Adaptation Plan (CAAP)

The 2012 CAAP was updated in 2019, clearly describing Metro's commitment to identifying what we can do to reduce the negative impacts of climate change and build climate resilience. The 2019 CAAP identifies 13 measures to reduce GHG emissions by 79% by 2030 and 100% by 2050 (from 2017 levels). It also lays out our commitment to make climate resilience an organizational priority, as well as approaches to adaptation.



Transition from Compressed Natural Gas (CNG) to Renewable Natural Gas (RNG)

As of 2018, 85% of Metro's GHG emissions came from vehicle fuels. Metro turned to renewable natural gas (RNG) as a cost-effective, low-carbon alternative to compressed natural gas (CNG). Derived from waste sources such as landfills, RNG has proven effective in reducing emissions and fuel costs. Our 2017 pilot realized a 3.5% reduction in fleet emissions and a 19% cut to fuel costs. The directly operated bus fleet completed its full transition to RNG fuel sourcing in 2019.



Green Construction Policy Program

The GCP was updated in 2018, requiring contractors to use renewable diesel for all diesel engines, reducing the health impacts from diesel exhaust. This effort reaffirms Metro's commitment to protecting all neighborhoods where Metro is building a better system to serve LA, especially those already disproportionately affected by air pollution.












Near-Zero Emission Engines and Bus Electrification

Metro has already replaced over 220 aging bus engines with near-zero emission engines and plans to continue, replacing at a rate of 180 engines per year. This initiative is not only increasing the operating life of existing buses, but more importantly, it is reducing NOx and PM emissions from our bus fleet. This is a step in our plan to electrify our entire directly operated bus fleet by 2030.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
EP1 Transition Metro's Fleet to Zero Emissions Technology	1.1 Adopt and implement Metro's Zero Emission Bus Master Plan.		Operations ECSD
	1.2 Transition bus fleets from diesel and CNG to electric power.		Operations ECSD

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	1.3 Identify targets for vehicle electrification of non-revenue medium-to-heavy duty vehicles and vanpool fleet		ECSD Non-Revenue
EP2 Decarbonize Metro's Energy and Fuel Supply	2.1 Complete fleet transition to renewable natural gas (RNG)		ECSD Program Management
	2.2 Apply renewable diesel requirements for contractors and identify opportunities to decarbonize fuel sources at construction sites		ECSD
	2.3 Adopt an Energy Supply Plan to establish a clear pathway to 100% renewable energy supply		ECSD
EP3 Improve Methodology for Monitoring and Measuring Emissions	3.1 Develop a GHG Inventory Plan to improve GHG accounting practices, including additional Scope 3 emissions sources and alignment with the ISO 14064 standard		ECSD
	3.2 Enhance accounting practices for air quality to include both operations and construction activities		ECSD
	3.3 Inventory and phase out high global warming potential refrigerants for both mobile and stationary sources		ECSD
	3.4 Develop associated performance metrics in Metro's Long Range Transportation Plan		Planning
EP4 Implement a Scheduled Maintenance Program for	4.1 Inventory all portable engines to ensure PERP compliance		ECSD

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
Stationary and Mobile Emissions Sources to Reduce Emissions	4.2 Implement a tracking system for off-road vehicles and engines to monitor maintenance, fuel type and engine hours	<input type="radio"/>	ECSD
EP5 Adopt a Goods Movement Strategy That Supports the Reduction of Regional GHG and Criteria Air Pollutant Emissions	5.1 Adopt and maintain a <i>Goods Movement Strategic Plan</i> . 5.2 Support the state of California's ZEV action plan by using ZE freight service equipment.	<input type="radio"/> <input type="radio"/>	Planning Operations
EP6 Create incentives that prioritize Use of ZEVs in the Green Construction Policy	6.1 Implement strategies for the electrification of medium and heavy-duty equipment used during construction.	<input type="radio"/>	ECSD

3.8 RESILIENCE AND CLIMATE ADAPTATION

GOALS
Increase responsiveness to shocks or stresses that impact Metro services, to maintain a safe, reliable, equitable and comfortable service for our customers, even as the climate changes over time
Expand Metro's leadership as a key partner in establishing a regional resilience network

OVERVIEW

Metro understands that planning for uncertainty is challenging. Changes in climate projections, population, land use, technology and other factors can influence how the Metro system is planned, used and operated. It is therefore important to develop solutions that can be implemented gradually and modified as new information becomes available, minimizing cost and disruptions to service.

Metro's quality of service and service continuity has the potential to affect several million people directly or indirectly. To reduce the potential of service disruption, Metro has been assessing the resiliency of its systems against the anticipated changes to climate since 2012 and is developing an all hazard mitigation plan to address these findings. This plan will support development of strategies that prevent and respond to hazards, maintain system reliability and contribute regional resiliency to the communities we serve.

Metro, along with a growing number of other agencies and jurisdictions, is pursuing an approach known as *flexible adaptation pathways*, a conceptual framework that can guide decisions about where, when and how to select adaptation actions while providing the flexibility needed for the future. Using this approach, Metro will identify and set thresholds for action as well as metrics to evaluate system resilience.

TARGETS

TARGET 1: Develop an approach for climate adaptation into planning, procurement, asset management and operations by 2025, using the flexible adaptation pathways method

The flexible pathways approach creates a structure for thoughtful, incremental integration of clear adaptation objectives into Metro business units, by identifying options and establishing triggers that initiate action. This process will be supported by a monitoring program that evolves over time as data and information become available. Integrating this approach into Metro's state-of-the-art asset

TARGETS

Develop an approach for climate adaptation into planning, procurement, asset management and operations by 2025, using the flexible adaptation pathways method

Identify all acute shocks or stressors for critical and/or vulnerable areas at or near Metro infrastructure and prioritize improvements to locations, facilities, infrastructure, equipment and operations to reduce risk by 2025

management practice as well as the agency's project planning processes and maintenance practices will minimize risk to business continuity.

TARGET 2: Identify all acute shocks or stressors for critical and/or vulnerable areas at or near Metro infrastructure and prioritize improvements to locations, facilities, infrastructure, equipment and operations to reduce risk by 2025

Metro will identify potential acute or chronic hazards to critical and/or vulnerable assets through assessments like the Triennial Threat and Vulnerability Assessment Program, all hazard mitigation planning efforts and climate vulnerability assessments. Additionally, Metro will develop and prioritize improvements for areas at or near Metro infrastructure that are considered critical or vulnerable based on set metrics or standards. Metrics to define criticality or vulnerability may include mission essential vulnerable areas (MEVAs) or equity focused communities. Improvements to reduce risks may include increasing redundancy of power systems, installing back-up power, coordinating regional community-based resilience programs, or preparing to provide resources to meet employee and commuter needs post-disaster.

ACHIEVEMENTS AND CURRENT INITIATIVES



Metro-wide Climate Action and Adaptation Plan (CAAP) Working Group

The CAAP working group was established during the development of the 2019 Plan and is composed of key members from Countywide Planning, Vehicle Technology/Non-Revenue Vehicles, Engineering, Asset Management and other key departments. The working group is responsible for updating the CAAP every five years to analyze strategies that reduce emissions from regional transportation; support vehicle technology with emissions calculations; and review estimates, plans and programs related to biomethane, bus electrification and other fleet improvements. The working group assesses existing legislation and guidance from local, regional, state and federal entities and completes an inventory of all new and/or existing emission-reducing projects.



Resiliency Indicator Framework

In 2015, Metro released the Resiliency Indicator Framework which established a mechanism to measure and evaluate climate adaptation implementation priorities to ensure infrastructure resilience and maintain a good state of repair. These indicators could have a broader application across Metro as they facilitate continual improvement, tracking the effectiveness of Metro's planning, construction and operational activities in meeting Metro's climate management goals over time.



Local All Hazard Mitigation Plan

Metro’s Local All Hazard Mitigation Plan is an interdepartmental effort to improve Metro’s resiliency by identifying all assets, their threats and vulnerabilities, reducing and/or mitigating potential hazards or limiting the negative effects of such hazards to Metro’s Enterprise Operation. The goal is to identify actions that will minimize or eliminate threats associated with major hazards impacting Metro properties and secure eligibility to pursue additional federal funding.



Transportation Mutual Assistance Compact (TransMAC):

The TransMAC is a mutual aid compact of more than 20 southern California transit agencies designed to streamline the transit mutual aid process to respond to planned and unplanned emergencies and events. Currently, a resource guide based on a Metro-developed template is being compiled to identify the types of resources owned by transit entities (i.e., vehicles, fuel, equipment, personnel) and associated costs to ensure requestor and provider parties are aligned during emergencies.



Earthquake Early Warning System

Metro’s Emergency Management Department and Technology Services (ITS) are working together to expand the current US Geological Survey (USGS) ShakeAlert earthquake early warning system enterprise-wide. Phase One went live in 2018 to alert Metro Rail Operations Control Center of pending ground shaking to minimize train derailments and injuries on the system. Phase Two is underway and expands access of the warning system to all employee-occupied facilities, including all bus and rail divisions, locations and Gateway headquarters. Phase Three is planned to expand the system to all buses.



Enterprise Global Information System (GIS) Platform for Spatial Data Management:

As of July 2019, ITS is leading the initiative to consolidate the disparate GIS systems, in collaboration with Planning, Operations, Safety, ECSD, Real Estate, Security and Engineering departments and with the Enterprise Asset Management System (EAMS) Project team. This initiative is critically linked to the EAMS and Real Estate Management System (REMS) projects to centrally manage spatial data to create a connected spatial environment and functionality for the agency. This initiative includes standardizing datasets and providing access to data collection, analytical and visualization tools to improve decision making. This platform will provide the agency with a key decision-making framework that can be applied to evaluation of risks across projects and assets.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
R1 – Conduct, and maintain a multi-hazard risk assessment to understand	1.1 Regularly preform detailed natural and manmade risk assessments for all critical Metro properties, assets and operations	○	SSLE Emergency Management

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
vulnerabilities of the transportation system	1.2 Assess climate change hazards to the transportation system, with an emphasis on equity-focus communities (EFCs), utilizing best available data from recognized sources like CalAdapt, FEMA, USGS, and other research institutions	<input type="radio"/>	ECSD Planning
	1.3 Develop an Energy Resiliency Roadmap addressing major potential system hazards resulting from detailed natural and manmade risk assessments	<input type="radio"/>	ECSD
	1.4 Identify data gaps on all hazards and Metro properties, assets and operations to improve vulnerability and risk assessment	<input type="radio"/>	ECSD SSLE Planning
	1.5 Create and integrate climate hazard data into a geodatabase enterprise for use by relevant departments	<input type="radio"/>	ITS
	1.6 Deploy and manage an enterprise GIS platform with appropriate infrastructure and applications to enable better data sharing.	<input checked="" type="radio"/>	ITS
R2 –Incorporate considerations for all hazards into Metro decision-making about capital planning, procurement, asset management and operations	2.1 Establish a Metro Resilience Policy	<input type="radio"/>	ECSD SSLE
	2.2 Establish a decision-making framework that integrates all hazard considerations into capital planning, procurement, asset management and operations	<input type="radio"/>	ECSD Planning Engineering Operations Emergency Risk Management VCM
	2.3 Develop prioritization criteria for the implementation of all hazard mitigation actions across the transportation system, leveraging existing decision-making support tools such as the Transit Asset Management / State of Good Repair	<input type="radio"/>	ECSD SSLE Planning Enterprise Transit Asset Management Engineering

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>Program and focusing efforts by utilizing evaluation criteria like equity-focus communities</p> <p>2.4 Develop and implement a climate adaptation decision support framework (flexible adaptation pathways) that defines triggers to initiate adaptation actions</p> <p>2.5 Develop a monitoring system allowing Metro to adjust the adaptation approach over time as climate science data improves</p>	<p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD</p> <p>ECSD</p>
<p>R3 – Regularly update resilience and climate adaptation plans and policies to address changing hazards and risks to system service</p>	<p>3.1 Regularly update Metro hazard and emergency management plans, studies and reports, incorporating new data and information about hazards and the effectiveness of mitigation and preparedness strategies</p> <p>3.2 Integrate the <i>Resiliency Indicator Framework</i> into existing risk assessment processes</p>	<p><input type="radio"/></p> <p><input type="radio"/></p>	<p>ECSD</p> <p>ECSD SSLE Emergency Management Operations</p>
<p>R4 Implement hazard mitigation and climate adaptation strategies to increase transportation system resilience and passenger safety</p>	<p>4.1 Adjust existing operations, procedures and behaviors to minimize the impacts of hazards</p> <p>4.2 Include climate resilience of materials in the Sustainable Acquisition Program e.g., heat, water-, fire-resilient materials)</p> <p>4.3 Institute a Reliability-Entered Maintenance Program for critical systems to track persistent maintenance and repair issues</p> <p>4.4 Pilot and implement earthquake early warning systems for train vehicles and facilities, including Metro shake alert mobile application</p>	<p><input checked="" type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>Operations ECSD SSLE V/CM Asset Management Engineering Planning</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>4.5 Deploy emergency supply kits and communication devices at key locations and facilities</p> <p>4.6 Protect and harden Metro infrastructure to better withstand hazards</p> <p>4.7 4.7 Increase passenger comfort and safety through:</p> <ul style="list-style-type: none"> • Shading and cooling features at transit stations • Ensuring HVAC equipment functionality on Metro buses • Identifying and partner with local municipalities with jurisdiction over sensitive bus stops 	<p>○</p> <p>○</p> <p>○</p>	<p>Operations ECSD SSLE V/CM Asset Management Engineering Planning</p> <p>ECSD Engineering Planning</p> <p>ECSD Engineering Planning Operations SSLE</p>
<p>R5 – Develop and implement all hazard-related trainings for Metro staff and partners to facilitate a culture of sustainability</p>	<p>5.1 Develop and update trainings for Metro staff on mitigation practices and hazards, how to keep Metro resilient, and awareness about emergency supplies on site</p> <p>5.2 Regularly update the Employee Personal Preparedness Guide</p> <p>5.3 Identify key internal staff with a role in all hazard mitigation implementation and convene regularly to track key vulnerabilities and mitigation opportunities</p> <p>5.4 Provide climate adaptation and resilience training to contractors and engineers.</p> <p>5.5 Identify, train, and state certify additional licensed professionals (engineers, architects, building</p>	<p>◐</p> <p>◐</p> <p>◐</p> <p>○</p> <p>○</p>	<p>SSLE Emergency Management Talent Development SSLE</p> <p>SSLE ECSD</p> <p>SSLE</p> <p>ECSD</p> <p>SSLE</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	inspectors, etc.) to expand Metro’s Safety Assessment Program Teams for evaluations of Metro’s structures in the aftermath of a disaster, providing refresher trainings as needed along with drills to maintain resilient and responsive Safety and Damage Assessment Teams		
R6 – Build a greater Los Angeles resilience network	<p>6.1 Maintain the Transportation Mutual Assistance Compact (TRANSMAC) and other information sharing mechanisms with relevant agencies</p> <p>6.2 In conjunction with health care providers, first responders and other emergency managers, develop redundant transportation service plans in equity-focus communities to be deployed after a disaster</p> <p>6.3 Maintain a coordinated, multi-lingual public awareness campaign to educate and engage the public about hazard risks, preparedness and safety on or around the Metro system</p> <p>6.4 Establish real-time communication protocols and tools for use during hazard events (e.g., Metro’s earthquake early warning system)</p> <p>6.5 Partner with regional leaders to provide real-time information on care resources available for short term shocks such as extreme heat or poor air quality warning days</p> <p>6.6 Create communication portals for riders about redundant bus/rail lines due to disruption</p> <p>6.7 Use Metro digital infrastructure to communicate emergency information to riders</p>	<p><input checked="" type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>SSLE</p> <p>SSLE Operations</p> <p>SSLE Marketing and Comms. ECSD</p> <p>SSLE Operations Marketing and Comms.</p> <p>SSLE Operations Marketing and Comms.</p> <p>SSLE Operations Marketing and Comms.</p>

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	<p>6.8 Coordinate with regional agencies involved in resilience planning, e.g., LA County, City of LA, SCAG, LADWP, Caltrans, the Councils of Governments (COGs) and other cities and municipalities to collaborate and partner to leverage resources</p> <p>6.9 Coordinate with local jurisdictions and licensed and certified Safety Assessment Program members to evaluate structural integrity of retrofit systems and buildings to withstand seismic activity, including collapse threats from other non-Metro structures to Metro structures, transit-ways and support facilities</p>	<p>○</p> <p>○</p>	<p>ECSD Planning</p> <p>SSLE ECSD Planning Engineering Operations</p>

3.9 ECONOMIC AND WORKFORCE DEVELOPMENT

GOALS
Provide opportunities for continual career growth within the agency
Prepare for the talent needs of the future
Utilize Metro investments to support the regional economy and increase opportunity for LA County residents

OVERVIEW

The economic impact of transit on the economy includes job creation, resource procurement, economic output and the ability to catalyze investment and development. Metro investments in new infrastructure and on-going expenditures related to operating our existing transportation system can generate high-quality employment, new career pathways and business opportunities for a wide array of residents and businesses. Measure M is projected to generate more than 778,000 new job opportunities in the transportation industry over the next 40 years. Metro must expand our highly skilled and diverse workforce to meet this expected workforce demand, recognizing that as of today, 46% of Metro's workforce will be eligible for retirement over the next five years. Succession planning is crucial to maintaining business continuity and Metro needs qualified professionals to deliver its aggressive infrastructure program over the coming decades. To meet the on-going need for talent and expertise, we are creating clear pathways for existing employees to advance their careers while we expand our recruitment efforts and create proactive pipelines for the next generation of employees to follow.

TARGETS

TARGET 1: Review job classifications on a regular basis and eliminate barriers to career advancement

Job classifications should be reviewed regularly to ensure that minimum requirements related to education, expertise, experience and capacity are appropriate and align with industry standards. Descriptions should ensure that potentially qualified applicants are not dissuaded from applying or unintentionally screened out of consideration for positions.

2030 TARGETS

Review job classifications on a regular basis and eliminate obsolete requirements that create barriers to career advancement

Recruit employees from diverse sources, including vocational schools, community colleges, groups supporting formerly incarcerated persons and organizations supporting persons with disabilities and older adults

Achieve triennial DEOD contracting goals related to small, disadvantaged-,

TARGET 2: Recruit employees from diverse sources, including vocational schools, community colleges, groups supporting formerly incarcerated persons and organizations supporting persons with disabilities and older adults

Metro's workforce plays a critical role in providing a world-class transportation system that enhances quality of life for all who live, work and play within LA County. In this era of expansion, we must attract, develop and retain expertise to further the agency's innovative work. Recruitment efforts should be multi-faceted and make extra effort to engage those groups and communities that Metro has traditionally had difficulty reaching. We recognize the need for a well-trained workforce to build, run and maintain our growing transportation system. The agency is investing in preparing local residents, often from underrepresented populations, for positions with Metro and in the transportation industry as a whole.

TARGET 3: Achieve triennial DEOD contracting goals related to small, disadvantaged, woman and veteran-owned businesses

Metro will increase efforts to provide access to opportunity for local businesses, small business enterprise (SBE), women-owned businesses, disadvantaged business enterprise (DBE) and/or disabled business enterprise (DVBE) at Metro. We know from experience that the ingenuity, innovation and expertise of such businesses are the forefront of our region's economic development. Metro needs to harness this workforce in order to build, operate and maintain our fast-growing transportation system. Currently, Metro's SBE goal is 30%, DBE goal is 27%, and DVBE goal is 3%.

CURRENT ACHIEVEMENTS AND INITIATIVES



Workforce Initiative Now (WIN-LA)

WIN-LA launched in 2018 to attract, hire and grow a world-class transportation workforce locally - from the communities of LA County. WIN-LA creates career pathways in construction and non-construction operations and maintenance, administration and professional services within Metro and throughout the transportation industry. The program provides support in areas including life skills development, skill set enhancement and educational attainment services. WIN-LA increases resources needed for training and placement focused on traditionally hard-to-fill positions in our industry.

Metro leverages the successful outcomes of our Project Labor Agreement and Construction Careers Policy (PLA/CCP) to deliver construction career opportunities and a collaborative model of trainers, service providers and partners to identify, assess, train and employ WIN-LA participants for career pathways in construction and non-construction.



E3 (Expose – Educate – Employ) Initiative and Transportation School

The mission of E3 is to prepare LA County youth for career and college pathways in the global transportation infrastructure industry by teaching them transferrable STEAM (Science, Technology, Engineering, Arts and Math-based industry skills). The centerpiece of the E3 Initiative is Metro's Transportation School, designed to prepare students for STEAM careers, with a specialized focus on the transportation and infrastructure industries. To maximize its potential impact on LA County youth, Metro also plans to offer a range of supplemental E3 programs that complement the

school program by providing students direct exposure, education and real-world work experience.



Transportation Career Academy Program (TCAP)

TCAP provides paid summer internships to junior and senior high school students who are transit dependent, reside in LA County, live near a Metro rail station and whose school is located near Metro’s rail expansion efforts. TCAP offers students an opportunity to learn about careers in transportation and apply classroom theories and concepts to real work situations at one of the nation’s largest public transportation agencies. Interns establish professional relationships with mentors who provide on-the-job guidance and help students explore their interests in the industry.



Environmental Training Institute (ETI)

Metro is investing in the future of the LA region, which starts with investing in our greatest asset – people. Metro’s ETI offers environmental and sustainability-focused trainings and certifications designed to build support for sustainability initiatives, ensure regulatory compliance and fostering an agency-wide culture of sustainability. ETI not only ensures the success of Metro’s sustainability program over time, but also helps develop a regional workforce equipped for the expanding green economy. ETI includes environmental compliance training for employees, Metro’s Environmental Construction Awareness (MECA) online training for contractors and Growing a Greener Workforce (GGW) Program, offering in-person courses in environmental concepts for employees and the public. Through ETI, Metro is driving a cultural revolution and transforming Metro employees and community members alike into agents of change.

STRATEGY AND ACTION TABLES

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
EWD1 Eliminate Barriers to Career Pathways and Advancement	1.1 Review hiring and advancement criteria for relevance to current tasks	○	Talent Development Civil Rights & EEO
	1.2 Identify and eliminate barriers or bias in current job descriptions	○	Talent Development Civil Rights & EEO
	1.3 Review and update policies, procedures and practices to eliminate barriers or bias	○	Talent Development Civil Rights & EEO
EWD2 Reach Out to Traditionally Underrepresented	2.1 Create effective, targeted communication to communities typically unresponsive or under-represented in hiring practices	○	Talent Development DEOD

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
Communities About Hiring Opportunities	2.2 Retain employees from targeted communities through authentic engagement	○	Talent Development Civil Rights & EEO
	2.3 Establish a Board policy based on the tenants of WIN-LA	○	Talent Development Civil Rights & EEO
EWD3 Offer Quality Training on Skills Needed for Metro's Future Workforce	3.1 Evaluate the efficacy of and expand the E3 and Transportation School initiatives	○	Talent Development
	3.2 Raise awareness about Metro as a future employer with local junior colleges and universities	○	Talent Development
	3.3 Offer vocational opportunities that combine classroom learning within the field experience.	○	Talent Development
	3.4 Plan training that will be needed by future employees	○	Talent Development
	3.5 Leverage GGW and MECA with WIN-LA and other programs to increase sustainability-based skills across LA County.	○	Talent Development ECSD
	3.6 Offer sustainability and environmental stewardship curriculum as part of E3 and Transportation School programs.	○	Talent Development ECSD
EWD4 Increase awareness of Metro opportunities among SBE, DBE and DVBE firms	4.1 Provide assistance in navigating the Metro business registration and procurement process	◐	DEOD
	4.2 Reach targeted businesses through workshops, various forms of media and publication, and trade organizations	○	DEOD
EDW5 Increase the Region's Economic Viability and Growth	5.1 Complete a Goods Movement Strategic Plan	○	Federal/State Policy & Programming
	5.2 Define the transit-related manufacturing sector in the region and support them in providing for	○	Federal/State Policy & Programming

STRATEGIES	ACTIONS	STATUS	RESPONSIBILITY
	Metro's future needs (vehicles, services or equipment)		