2022 APTA Sustainability Performance Report

Overview

As a founding member of the American Public Transportation Association's (APTA) Sustainability Commitment, Metro reports annually on a framework of performance metrics that enable transit agencies to measure and report sustainability performance over time. LA Metro was a founding signatory of the APTA Sustainability Commitment program in 2009 and has since achieved Platinum-level recognition – the highest level of achievement – for significant reductions in areas such as energy, water use, and greenhouse gas emissions. Metro is the first public transportation agency in North America to receive Platinum level recognition.

Under the APTA Sustainability Commitment, Metro reports annually on a framework of ten sustainability performance metrics. The APTA guidance recommends that transit agencies use normalization factors when reporting these metrics to measure and compare sustainability performance over time, especially during years of service growth or change.

Metro uses Vehicle Revenue Miles (VRM) as its primary normalization factor. VRM represents the total number of miles Metro vehicles travel during revenue service (i.e., the time when a vehicle is available to the public and is expected to carry passengers). Using this factor enables an annual evaluation of the efficiency of Metro's operations relative to the amount of service being provided. The reporting framework and methodology that govern these metrics conform to APTA's *Recommended Practice* "Quantifying and Reporting Transit Sustainability Metrics."

The APTA Sustainability Commitment and associated methodology are currently under review by APTA. Metro will review the applicability of the new methodology once released and will adapt how we report these metrics in all subsequent reports.

Metro®

2021 Performance Summary

Metro achieved favorable performance in 2021 on 7 of the 12 APTA metrics, including operational efficiency, air quality, greenhouse gas emissions, energy, and waste diversion from landfill. These achievements are especially consequential considering the pandemic conditions in 2021, which reduced Metro's normalization factor of VRM by 3.2% and nudged metrics in a negative direction, while simultaneously the agency faced increased resource consumption to meet COVID-19 related hygiene requirements. As a result, the normalized metrics presented in this report may show exaggerated changes that do not accurately reflect Metro's sustainability program accomplishments.

While the APTA methodology provides a valuable framework for disclosing the sustainability performance of a transit agency, these metrics alone do not provide the complete picture – especially under extraordinary conditions like the COVID pandemic. Due to such unforeseen circumstances, Metro is revisiting how to best maintain the sustainability of its investments in the long term. Performance on these metrics should be considered in combination with the agency's programs, policies, projects, and other activities which cannot be captured through these metrics.

Operational Efficiency

The metrics included under Operational Efficiency are: Unlinked Passenger Trips, Vehicle Miles Traveled, Vehicle Revenue Miles, and Operating Expenses.

> **Unlinked Passenger Trips** (UPTs) per capita increased by 8.6% in 2021, resulting from a significant increase in bus trips (13.5%) compared to 2020. While trips using other modes declined in 2021, bus trips account for over three-quarters of all trips taken on Metro and have a weighted impact. The increase in bus ridership is likely associated with the Fare-less System Initiative and a rebound in ridership from the pandemic. An approximate 30% decrease in the Vanpool ridership was also observed in 2021, which could be attributed to increases in telecommuting resulting from social distancing requirements.

> Both the **Vehicle Miles Traveled** per capita in personal vehicles and the population of LA County declined in 2021, by 9.7% and 2.2% respectively. These reductions are thought to be driven primarily by pandemic conditions.

> Metro continued to offer reduced services during the pandemic, as evident from the decrease (3.2%) in transit **Vehicle Revenue Miles** (VRM) for 2021. Consistent with the trend in Unlinked Passenger Trips, VRM declined for all modes except the Metro bus fleet (increased by 2.2%), and a significant reduction in VRM (17.8%) was observed for Vanpool.

> Metro's **Operating Expenses** per VRM also declined by 11.6% in 2021. This change in expenses represents a correction from elevated expenses in 2020 due to the additional cleaning and safety requirements needed to maintain service levels during the COVID pandemic. However, the agency's expenses continue to be higher than pre-pandemic levels in 2019.

Air Quality

Metro continues to invest in zero emission electric buses and "near-zero" emission engine replacements which improve air quality. The increased electric fleet size and mileage, combined with the increased mileage of the low-NOx engine buses (5.39%), resulted in an approximate 50% reduction in the criteria pollutants from the bus fleet in 2021, even after an increase in the total bus miles traveled in 2021 (6.83%). The Vanpool fleet emissions also decreased by 16.2% because of a significant reduction in program utilization associated with telecommuting at Metro and across the County. Combined, these changes resulted in a 45.5% reduction in criteria air pollutant emissions per VRM in 2021.

Climate

The metrics included under Climate are: Greenhouse Gas (GHG) Emissions, GHG Displacement, and Net GHG Emissions.

> Metro's **GHG Emission**s per VRM declined by 35.6% in 2021 due to completing the transition to 100% RNG for the bus fleet, roll-out of Metro's first electric buses, and the electricity grid becoming cleaner in California. In addition, employee commuting emissions – which accounted for 10% of total emissions in 2020 – declined by 10% due to staff telecommuting.

> As the APTA methodology for estimating **GHG Displacement** is based on transit ridership, Metro's GHG displacement for 2021 declined by 51.5% compared to 2020. This leads to an overall 57.8% reduction in the **Net GHG Emissions** for 2021. However, Metro continues to displace more GHG emissions than it releases into the atmosphere.

While these metrics provide some indication of Metro's GHG performance with respect to the modes and programs we operate, a more detailed GHG displacement study was recently conducted at Metro, which uses a regionally specific methodology for estimating displaced emissions by mode. The estimated displacement emissions resulting from this

study are different from the results of the APTA metric due to differences in methodology. Metro is also working to develop a more robust, Metro-specific methodology for measuring the impacts of our programs by mode, which will ultimately be used to set regional GHG goals that could be accomplished through Metro's investments.

Energy
Metro's energy use per VRM declined by 0.4% in 2021. The reduction in Metro's transit service levels in 2021 was the primary driver for energy use reductions, resulting in reduced energy usage for facilities (1.4%), vehicle fuel (3.4%), and rail propulsion (6.6%). The reduction in vehicle fuel energy usage was driven primarily by a 14.7% reduction in Vanpool mileage and fuel use.

Water
Compared to 2020, Metro's total water consumption in gallons increased by 21% in 2021 (24.8% when normalized to reduced VRM). However, when compared to 2019 levels, total water consumption only increased by 7.8%. This indicates the variable demand for water based on operational conditions throughout the pandemic. A return to in-person operations and building occupancy accounts for a significant portion of the increase in water consumption. Additionally, water use increased at several operating divisions associated with cleaning and sanitation efforts required to restore service levels during the pandemic. While total water use increased, Metro's efforts to connect to recycled water sources resulted in a 126% increase in recycled water use, offsetting over 10 million gallons of potable water.

Solid Waste
Metro nearly doubled its reporting of organic waste generation in 2021, which led to a 9.9% increase in solid waste generated per VRM. However, 100% of the organic waste was diverted from landfill through composting, resulting in a 2.4% increase in waste diverted from landfill by Metro in 2021.

APTA Sustainability Indicators 2020-2021 Performance Trends

APTA CATEGORY	2020	2021	% CHANGE	PROGRESS
Operational Efficiency				
Unlinked Passenger Trips *(per Capita x 100)*	2,118	2,301	8.6%	✓
Vehicle Miles Traveled *(per Capita)*	7,562	6,826	-9.7%	✓
Operating Expenses[1] *(Dollars per Vehicle Revenue Mile)*	$19.80	$17.51	-11.6%	✓
Vehicle Revenue Miles *(1,000,000)*	97	94	-3.2%	✗
Air Quality				
Criteria Air Pollutant Emissions[2] *(Pounds per 10,000 Vehicle Revenue Miles)*	18.5	10.1	-45.5%	✓

KEY: ✓ Favorable ✗ Not Favorable

APTA Sustainability Indicators 2020-2021 Performance Trends *continued*

APTA CATEGORY	2020	2021	% CHANGE	PROGRESS
Climate				
Greenhouse Gas Emissions[3] *(Pounds CO_2e per Vehicle Revenue Mile)*	5.24	3.37	-35.6%	✓
Greenhouse Gas Displacement *(Metric Tons CO_2e)*	-742,229	-359,673	-51.5%	✗
Net Greenhouse Gas Emissions *(Metric Tons CO_2e)*	-510,950	-215,429	-57.8%	✗
Energy				
Energy Use *(1,000 British Thermal Units per Vehicle Revenue Mile)*	52.3	52.1	-0.4%	✓
Water				
Water Use *(Gallons per Vehicle Revenue Mile)*	2.30	2.87	24.8%	✗
Waste				
Total Solid Waste[4] *(Tons per 100,000 Vehicle Revenue Miles)*	11.08	12.17	9.9%	✗
Diversion from Landfill *(Percent Diverted)*	45%	46%	2.4%	✓

KEY: ✓ Favorable ✗ Not Favorable

Notes:

[1] United States Dollars (USD) in this table are normalized to be presented in 2021 USD.

[2] Criteria air pollutant (CAP) emissions are a normalized aggregate of hydrocarbon (HC), nitrogen oxide (NOx) and particulate matter (PM) emissions.

[3] In 2020, Metro updated its GHG emissions calculation methodology to calculate Scope 2 emissions using both market-based and location-based emission factors. The former reflects the emissions intensity of purchased electricity from utilities based on the sources from which they procure energy, and the latter reflects the average emissions intensity of the regional grid on which our energy consumption occurs. In this table, emissions totals are based on market-based emissions factors.

[4] Waste metrics in this table only reflect solid waste generated and diverted from operations, not from construction.