Diamond Valley Lake

The Metropolitan Water District of Southern California

2024 Climate Action Plan Implementation Third Annual Progress Report

2023 Greenhouse Gas (GHG) Inventory & Implementation Update

(through December 2024)

Prepared by:

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

700 North Alameda Street
Los Angeles, California 90012
(213) 217-6000

mwdh2o.com

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April 2025

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Supervising Manager

Carolyn Schaffer
Sustainability and Resilience Section Manager

Program Manager

Ursula Schmidt
Climate Action Plan Program Manager

Bay-Delta Initiatives

Malinda Stalvey

Diversity, Equity and Inclusion

Ricardo Duarte

Engineering Services

Winston Chai
Mike Claisse
Majid Nazari
Ha Nguyen

External Affairs

Maritza Fairfield
Chris Foley
Kevin Mann
Kevin Mapp

Finance and Administration

Ben Calmes
Ashley Tucker

Integrated Operations, Planning and Support

Alec Brok
Julio Donayre
Christopher Gabelich
Ricardo R. Hernandez
John Jontry
Ashley Lopez
Mike Patel
John Poli
Victor Ramirez
Scot Rolfe
Nathan Shuy
Ron Taraporewala
Nigel Wallace

Legal

Catherine Stites

Safety, Security and Protection

Jolene Fuentes
Carol Kaufman
Kiersten Melville
Ofelia Perez

Sustainability, Resilience and Innovation

Kieran Callanan
Jon Chang
Lisa Gorman
Jennifer Harriger
Adrian Hightower
Brenda Marines
Phyvin Mok
Kevin Webb

Water Resource Management

Warren Teitz
Gary Tilkian
Christina Vallejo

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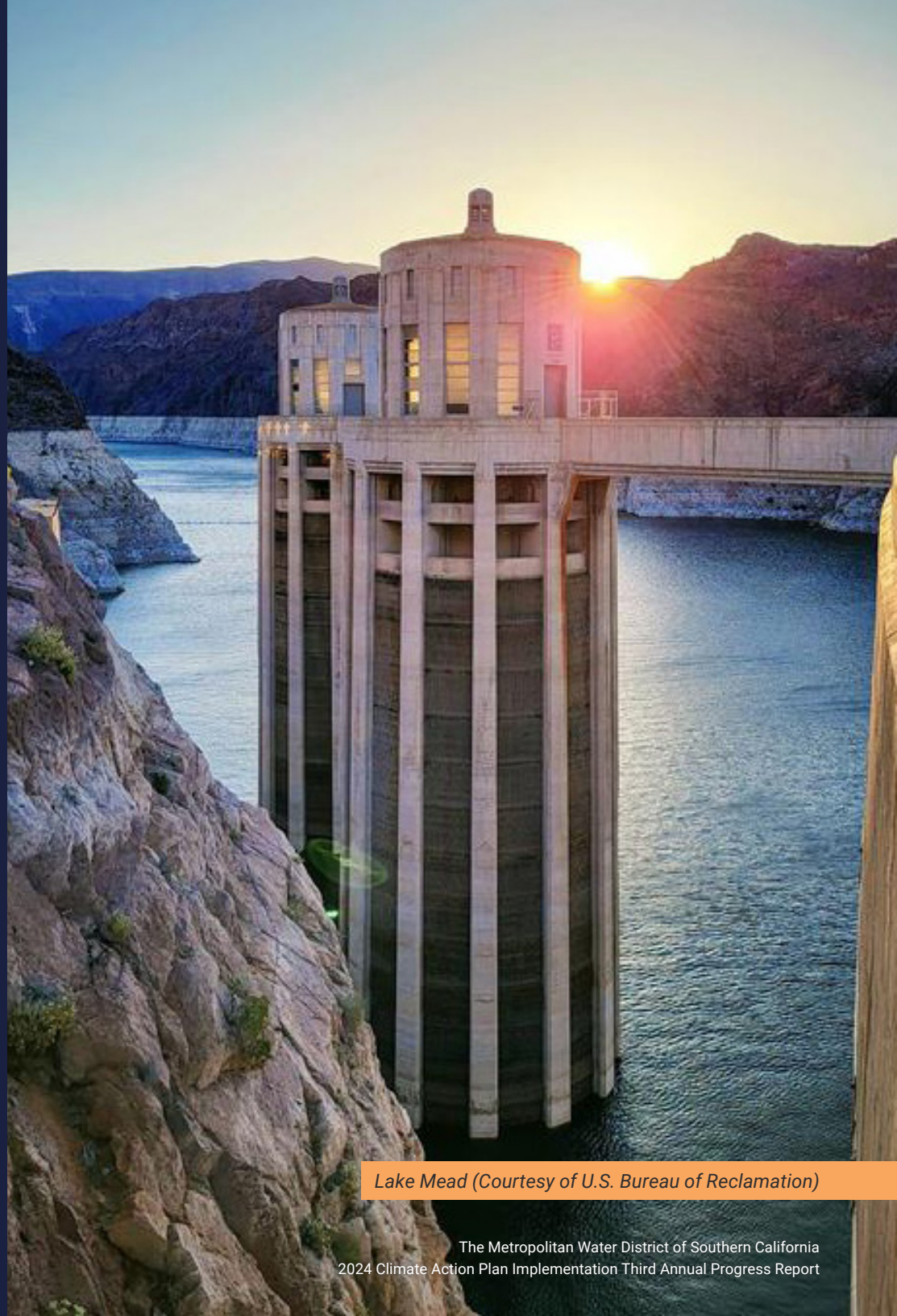


Lake Mead (Courtesy of U.S. Bureau of Reclamation)

Message From the Chief Sustainability, Resilience and Innovation Officer

“As 2024 unfolded, climate change remained one of California’s most urgent challenges, particularly in managing our most precious resource – water. The state experienced dramatic shifts between extreme and increasingly intense wet and dry weather patterns. This volatility, along with heatwaves and firestorms, further underscored the need for continued climate action and adaptation efforts at Metropolitan.

Across the agency this year, Metropolitan made significant progress on the strategies outlined in our Climate Action Plan (CAP) to reduce greenhouse gas (GHG) emissions, with the ultimate goal to reach carbon neutrality by 2045. Our board committed to increase the number of zero-emission vehicles (ZEVs) in our fleet, entered into an option agreement to build a large solar farm and battery energy storage system (BESS) on our land, and supported the use of the best available climate science in our planning and decision-making processes. Staff also shifted our primary data center energy use to 100% renewable energy.

Even as we further these clean energy solutions, several projects on the horizon will potentially increase our electricity use, including our planning for a large, advanced water purification facility, installation of new pumping and conveyance structures and expansion of charging infrastructure to support more ZEVs. Although these advancements are necessary to ensure Southern California’s long-term water and energy reliability and resilience, we must also consider the GHG emissions associated with these projects and additional opportunities to use carbon-free energy within our system. In 2025, we will begin to focus on strategic planning for our power supply as we adapt our water infrastructure to be more climate resilient.

I am proud of the work we accomplished this year and remain optimistic that, despite challenges ahead, our team of experienced and committed public servants will continue to deliver results for Metropolitan, our member agencies, our communities and our planet.

Liz Crosson
Chief Sustainability, Resilience and Innovation Officer

Metropolitan is a public agency and regional water wholesaler that delivers water to 26 member agencies that serve nearly 19 million people across six Southern California counties. Metropolitan is governed by a 38-member board of directors comprising representatives from each of Metropolitan’s member agencies. Metropolitan’s mission is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Introduction

Southern California's extreme temperatures, wildfires and abrupt swings in weather are clear signs of the disruption caused by climate change. To meet our mission to provide a reliable water supply for our service area, Metropolitan is answering the call to action to combat climate change by implementing our compre hensive CAP, adopted by Metropolitan's Board of Directors on May 10, 2022.

With a goal to reach carbon neutrality by 2045, the CAP is a blue print for how Metropolitan will cost-effectively reduce emissions from its operations, including those associated with delivering water through Metropolitan's Colorado River Aqueduct (CRA)[1]. The CAP sets targets for reducing GHG emissions from Metropolitan's operations, including conveyance, storage, treatment, and delivery of water . The plan complements Metropolitan's existing long-range planning efforts, including the Climate Adaptation Master Plan for Water (CAMP4W), Energy Sustainability Plan (ESP), and Capital Investment Plan.[2,3,4] The CAP also helps Metropolitan prepare for future regulations while supporting California's GHG emission reduction goals.

1. *Metropolitan's CAP only includes emissions from sources within its operational control, including the CRA. Emissions associated with water deliveries from the State Water Project, which is owned and operated by the California Department of Water Resources (DWR), are covered in DWR's CAP.* ***https://water.ca.gov/Programs/All-Programs/Climate-Change-Program/Climate-Action-Plan*** *For transparency Metropolitan includes the aggregated emissions of water delivered to Southern California from all sources on its CAPDash website at:* ***https://cap.rinconconsultants.com/Metropolitan_Water_District.***
2. ***https://www.mwdh2o.com/planning-for-tomorrow/addressing-climate-change/***
3. ***https://www.mwdh2o.com/media/16848/mwd_esp_report-1630_vol_1.pdf?key words=energy sustainability plan***
4. ***https://d1q0afiq12ywwq.cloudfront.net/media/wxdazp1i/fy-2024_25-and-2025_26-cip-ap pendix-web.pdf***

To promote transparency and demonstrate Metropolitan is meeting its GHG reduction targets, the CAP includes a timeline for completing each action and requires annual reporting and a five-year update in 2027.[5] Additionally, the CAP meets state environmental regulations that allow Metropolitan to streamline future projects requiring GHG emissions analyses.

This third Annual Progress Report (APR) highlights Metropolitan's achieve-ments in 2024 and provides an overview of its progress to complete the actions outlined in the CAP. The report also updates its GHG inventory and carbon budget, which tracks how Metropolitan has advanced its GHG reduction goals. Building on the comprehensive data publicly available via the online CAPDash website[6], this APR highlights the success stories over the past year, including the leadership, contributions, and ingenuity across Metropolitan's departments as the organization continues on its path to reduce emissions and promote environmental stewardship and innovation.

CAPDash™

click on image above to view latest data

5. ***https://www.mwdh2o.com/media/12469/final-cap.pdf***
6. ***https://cap.rinconconsultants.com/Metropolitan_Water_District***

How the CAP and CAMP4W Work Together

In April 2025, Metropolitan's Board approved the CAMP4W Implementation Strategy, which provides a roadmap to guide future investments and decision-making and institutionalize climate adap tation across the District. CAMP4W will ensure resilience efforts extend to water supplies, water quality, infrastructure, power supply, operations, workforce, public health, and financial sustainability.

The CAP and CAMP4W work together – projects and programs created through these initiatives complement one another and achieve common goals. While the CAP is focused on reducing Metropolitan's GHG emissions that are contributing to climate change, CAMP4W helps Metropolitan make decisions about the future to better prepare the region for the impacts of climate change. For example, new BESS systems at three water treatment plants give Metropolitan the ability to store power generated from existing solar powered-energy systems this meets CAMP4W objectives because it provides more diverse energy sources that improve Metropolitan's resilience and reliability. At the same time, the BESS systems deliver benefits under the CAP due to the improved air quality from the use of carbon-free power (CAP Scope 2, Measure E-4). Metropolitan will evaluate all future projects with consideration of strategies within CAMP4W and CAP to support objectives of both initiatives.

CAMP4W

Climate Adaptation Master Plan for Water

Glossary of Terms

AB – Assembly Bill

ACF – Advanced Clean Fleet

APR – Annual Progress Report

AZNM – Arizona New Mexico subregion for electricity production

BAU – Business-As-Usual. Typically referring to BAU emissions, which are the expected emissions if no mitigative actions are taken.

BESS – Battery Energy Storage System

CAISO – California Independent System Operator

CAMP4W – Climate Adaptation Master Plan for Water

CAP – Climate Action Plan

CRA – Colorado River Aqueduct

CVRA – Climate Vulnerability and Risk Assessment

Diemer WTP – Robert B. Diemer Water Treatment Plant

ENV-SP – Envision Sustainability Professional

EV – Electric Vehicle

GHG – Greenhouse Gas

HVAC – Heating, Ventilation, and Air Conditioning

Jensen WTP – Joseph P. Jensen Water Treatment Plant

LADWP – Los Angeles Department of Water and Power

Metropolitan – The Metropolitan Water District of Southern California

Mills WTP – Henry J. Mills Water Treatment Plant

MMBTu – Metric Million British Thermal Unit

MT CO_2e – Metric Tons of Carbon Dioxide Equivalent

MWh – Megawatt-hour

PWSC – Pure Water Southern California

RFP – Request for Proposals

RRWP – Regional Recycled Water Project (evaluated in the CAP), now known as Pure Water Southern California

SB – Senate Bill

SCE – Southern California Edison

SF6/HFC Fugitive Emissions – Fugitive emissions of sulfur hexafluoride (SF6) from electrical equipment and hydrofluorocarbon (HFC) emissions from refrigerator units and use of welding gas.

Skinner WTP – Robert A. Skinner Water Treatment Plant

SRI – Sustainability, Resilience and Innovation

SUV – Sport Utility Vehicle

SWP – State Water Project

T&D – Transmission and Distribution. Referring to the delivery system of purchased electricity.

TCR – The Climate Registry

VMT – Vehicle Miles Traveled

Weymouth WTP – F.E. Weymouth Water Treatment Plant

WRM – Water Resource Management

WSO – Water System Operations

WTP – Water Treatment Plant

ZEV – Zero Emission Vehicle

Annual Progress Report Snapshot

Metropolitan's CAP identifies 42 measures to reduce Metropolitan's GHG emissions. The measures are divided into two categories – Phase 1 measures are designed to help Metropolitan reach their target to cut emissions by 40 percent by 2030. Phase 2 measures support the district's long-term goal to achieve carbon neutrality by 2045. These targets are consistent with Senate Bill 32, which requires GHG reductions of at least 40 percent below 1990 levels by 2030, and Assembly Bill 1279, mandating carbon neutrality as soon as possible, but no later than 2045.

Measures are considered either "quantifiable" or "supportive." Quantifiable measures have clear GHG tracking metrics and performance standards, allowing Metropolitan to monitor their progress. Supportive measures do not directly reduce GHG emissions, but are critical to the overall success of the CAP. These supportive measures include studies that serve as a foundation for future projects, as well as set up the needed structure so that Metropolitan can carry out the actions outlined in the CAP, while also supporting collaboration across departments and organizations. This report summarizes key areas of progress made on the quantifiable and supportive measures included in Phase 1, and in some cases, Phase 2. For a summary of the implementation status of all CAP measures, please refer to the two summary tables in the Appendix.

Progress Recap: 2024 Highlights

- **Measure WC-3 (Turf Replacement):** The turf replacement program has achieved 196 percent of the 2030 water savings target, surpassing the 10,634 acre-feet goal by nearly 10,000 acre-feet (an acre-foot is about 326,000 gallons, enough water to serve roughly three Southern California households).
- **Measure EC-5 (Telecommuting):** The flexible schedules and telecommuting patterns of Metropolitan employees have saved an estimated 28,433,519 vehicle miles traveled (VMT) over the last three years, surpassing the 2030 target, and achieving 183 percent of the VMT savings goal.
- **Measure EE-1 (LED Conversion):** The continued efforts of facilities staff to convert lighting or replace burned out bulbs with LED lighting has achieved approximately 56 percent conversion to LED across facilities, representing 112 percent of the 2030 target.
- **Measure EC-3 (Commuter Fleet Electrification):** A recent commuter survey found that approximately 15.5 percent of the employee commuter fleet is comprised of zero emission vehicles (ZEV)/electric vehicles (EV), which is approximately 103 percent of the 2025 target. Further electrification will be supported by the investments made through the ZEV taskforce and related programs as well as EV charger projects.
- **Measure E-3 (Carbon-free Retail Electricity):** In 2023, approximately 65 percent of the retail electricity Metropolitan purchased was renewable or carbon-free, achieving 74 percent of the 2030 target to have 88 percent of Metropolitan's retail electricity come from renewable sources.

Metropolitan has made significant progress on several of its quantifiable and supportive measures. Figure 1 summarizes the progress as of December 2024. Implementation status for quantifiable measures is indicated by the percent complete bar. Progress on supportive measures is indicated with one of the following implementation statuses.

Figure 1. Measure Implementation Progress

LEGEND

- **Pending or No Action =** No action has been taken or action is pending.
- **Underway =** Measure is in progress. Action has been taken but the measure is not yet complete.
- **Ongoing =** Measure is fully implemented and will continue.
- **Complete =** Measure is fully implemented. No additional action is required.
- 26% **Quantitative =** Measure has a quantifiable metric to track. Percent value represents progress towards the goal.
- NO DATA **No Data =** Action has been taken, but there is insufficient data to quantify progress.

Scope 1: Direct Emissions

DC-1: Conduct a survey of all natural gas consuming devices in offices, control buildings, and residential structures and establish a schedule to replace natural gas equipment with electric by 2025.

25% **DC-2:** Reduce natural gas emissions by 50 percent by 2030 and 100 percent by 2045 through electrification.

DC-3: Update Metropolitan building standards to require all-electric construction for new buildings and retrofits.

FL-1: Conduct a ZEV/EV Feasibility Study to determine which fleet vehicles can be converted, what chargers/fueling stations are required, and where they should be located by the end of 2022.

FL-2: Adopt an ZEV/EV first policy for fleet vehicles to obtain ZEVs when technological, operational, or cost effectiveness parameters are met.

FL-3: Replace fossil fuel passenger fleet vehicles as identified in the ZEV/EV Feasibility Study (FL-1).

FL-4: Install EV charging and/or ZEV infrastructure at facilities pursuant to the findings of the ZEV/EV Feasibility Study (FL-1).

AF-1: Complete a pilot project on the use of renewable diesel rather than conventional diesel for all stationary equipment by 2025.

AF-2: Complete a pilot project of renewable diesel use in on-road and off-road vehicles by providing at least one renewable diesel tank at Metropolitan-owned fueling depots in 2021.

54%* **AF-3:** Based on the results of the study in AF-2, Metropolitan will begin using renewable diesel fuel in 100 percent of Metropolitan's diesel-consuming on-road and off-road vehicles by 2025.

* Percent complete based on 2023 data.

Scope 2: Indirect Emissions

E-1: Analyze marginal emissions rates and evaluate the feasibility of shifting energy use to lower emission periods.

0%

E-2: Connect the Yorba Linda Hydroelectric Power Plant behind Metropolitan's Southern California Edison (SCE) electricity meter to directly utilize carbon-free electricity at Metropolitan's Diemer WTP by 2025.

74%

E-3: In markets where available, Metropolitan will switch its retail accounts to green tariff options offered by power providers by 2025 to reduce the Scope 2 GHG emissions associated with retail electricity use.

0%

E-4: Install 3.5 MW battery storage systems at the Jensen, Skinner, and Weymouth WTPs. Investigate the use of a software system to track and optimize GHG emissions reduction due to time-of-use strategies by 2025.

53%

E-5: Manage Metropolitan's energy purchases to ensure cost-effective energy supply while achieving the required GHG emissions objective.

112%

EE-1: Convert all interior and exterior lighting at 50 percent of Metropolitan facilities to light emitting diode (LED) technologies by 2030 and 100 percent by 2045.

EE-2: Continue programs to analyze CRA pump efficiency and replace or refurbish pumps when cost effective.

Lake Mathews

Scope 3: Other Indirect Emissions and Sequestration

EC-1: Expand subsidized transit commute program to reduce employee commute miles.

EC-2: Expand employee use of carbon-free and low carbon transportation by providing education programs on the benefits of commute options including public transportation, EV/ZEV options, and vanpools.

103%

EC-3: Install ZEV and/or EV infrastructure as directed by the ZEV/EV Feasibility Study to support at least a 15 percent transition of employee-owned vehicles to ZEVs/EVs by 2025.

EC-4: Continue to offer benefits to employees who use alternative modes of transportation (e.g., public transportation, bikes).

183%

EC-5: Allow 50 percent of employees located at Metropolitan's headquarters to telecommute or utilize flexible schedules through 2030 to reduce travel time, VMT, and GHG emissions.

0.7%

WA-1: Develop and implement net zero-waste policies and programs at all facilities to reduce landfilled waste by 30 percent by 2030 and achieve zero landfilled waste by 2045.

WA-2: Implement a program to reduce organic waste at Metropolitan's Union Station building. Contract or team with local organizations and waste disposal companies to route organic waste to anaerobic digestion or composting facilities and edible food-to-food recovery centers.

WA-3: Develop and implement a sustainable procurement policy.

WC-1: Expand programs that educate customers on water conservation initiatives through workshops and speaking engagements.

WC-2: Continue to implement innovative water use efficiency programs.

196%

WC-3: Continue Turf Removal Program to install an average of 1,500,000 square feet of water efficient landscapes per year through 2030 through the use of a rebate program.

WC-4: Provide funding for the development and monitoring of local stormwater recharge and use projects to evaluate the water supply benefit of stormwater.

WC-5: Continue to promote water efficiency technologies and innovative practices that can be adopted into future water conservation program updates.

CS-1: Study carbon capture protocols in the Sacramento-San Joaquin River Delta.

CS-2: Conduct a five-year research program to increase Metropolitan's knowledge of regenerative agriculture and carbon sequestration opportunities on Metropolitan properties in the Palo Verde Valley.

2024 Highlights

Metropolitan staff continue to drive progress on the CAP goals with their expertise, hard work, and experience, increasing resilience and spurring innovation across the district.

Envisioning Success

Metropolitan is committed to constructing and operating more sustainable and resilient infrastructure to deliver a reliable water supply to its 5,200-square-mile service area. To support professional development and employee engagement on sustainability initiatives, Metropolitan continues to offer the Institute for Sustainable Infrastructure Envision® training to help staff become certified Envision Sustainability Professionals (ENVSPs). All the Envision® performance indicators advance sustainability, with one focusing on minimizing emissions. The training enables staff to communicate and apply Envision® practices and sustainability strategies directly to their specific roles and responsibilities during project development, construction, and day-to-day operations. As of February 2025, Metropolitan has 136 members of the Institute for Sustainable Infrastructure and 56 active Envision® Certified Professionals.

Sustainable Infrastructure Envision® training for staff

Metropolitan Headquarters Building Courtyard

Building the ZEV Program

ZEV Fleet

In 2024, Metropolitan continued to purchase zero-emission vehicles to meet CAP goals and the California Air Resources Board's (CARB's) Advanced Clean Fleets (ACF) regulation. Metropolitan purchased eight additional ZEVs in 2024, bringing the total number of fleet ZEVs to twenty. To comply with ACF requirements and ensure operational reliability, Metropolitan updated a 2023 study of its fleet inventory to develop short- and long-term vehicle replacement strategies, identifying high-priority vehicles to be replaced with ZEVs when feasible. The Fleet Services Unit is committed to meeting CAP goals without compromising the reliability of operations.

In addition to electric and hybrid vehicle purchases, Metropolitan continues to reduce emissions with the use of 15 electric forklifts and over 40 electric carts at its warehouses and at its Pure Water Southern California demonstration facility. The Fleet Services Unit is also replacing lower-tier diesel engines in portable and offroad equipment with new Tier 4 Final engines. These Tier 4 Final engines are the newest technology and the highest EPA-certified engine tier currently on the market, which can significantly reduce particulate matter and NOx emissions.

> **The CARB ACF regulation requires that as of Jan. 1, 2024, 50 percent of California's large fleet owners' purchases of new medium- and heavy- duty vehicles be ZEVs, with a mandate for a complete transition to a zero-emission fleet by Jan. 1, 2027.**

Staff with latest additions to Met fleet electric vehicles

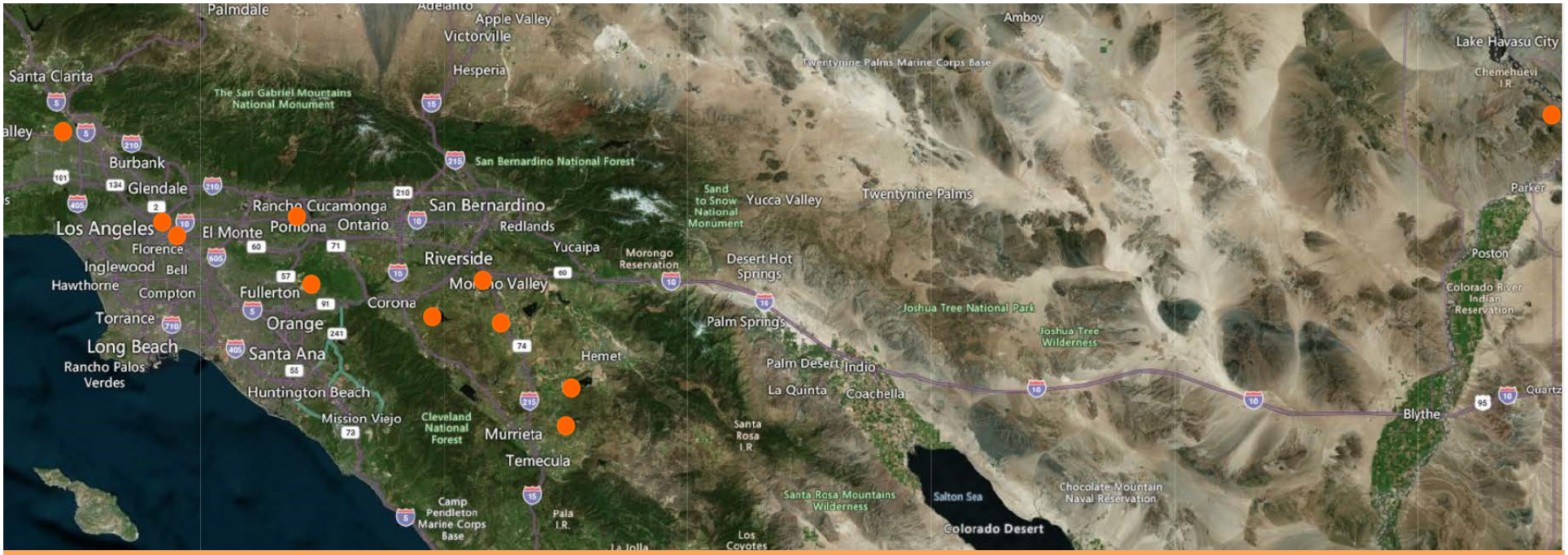
Electric Cart at Pure Water Southern California

Charging Infrastructure

In 2024, the long-term capital project to build charging infrastructure for Fleet, Rideshare, and employee ZEVs continued, with an anticipated project completion date of 2031. Metropolitan conducted site visits for interested parties throughout Metropolitan to refine site plans and requirements for facilities requiring retrofits to build the infrastructure upgrades. While each facility's full-scale infrastructure is being designed and constructed, the Operations and Engineering groups collaborated on installing 16 chargers to support the ZEV fleet. To provide more charging options, the Fleet Services Unit established agreements for ZEV drivers to access commercial charging networks when on-site charging is not available. Commercial charging networks provide public EV charging for a fee.

Site investigation for charging infrastructure

Weymouth WTP Pilot Charger



Map of Metropolitan-owned ZEV chargers within service area

ZEV Equipment Trials

Metropolitan's ZEV transition team continued to partner with EV and equipment vendors in "try before you buy" efforts in 2024. These trials provide Metropolitan staff with the opportunity to test out new ZEV technology and determine if the vehicles meet Metropolitan's operational needs. At the same time, employees are able to provide vendors with valuable input about their experiences using the equipment. In 2024, staff at the Construction Services Unit and the Mills WTP test drove a Class 8 heavy duty electric dump truck to transport sludge. Staff at Lake Mathews and Skinner water treatment plants tested a Class 5 electric stake bed truck to explore possible operational uses of the vehicle at other locations. Fleet and Operations worked with warehouse employees to test a Class 7 electric box truck to deliver mail and equipment throughout Metropolitan's service area. Metropolitan shared feedback with the dealer on the usefulness, possible applications, and advancements in range and capacity for these vehicles.

Mechanics looking at the Class 7 electric truck at Weymouth WTP

ZEV Success Story

In 2024, the team at Jensen WTP quickly integrated use of a new Ford Lightning truck, which provides technology and function, while eliminating vehicle emissions.

"Smooth drive - inspired me to buy my own Lightning. As an operator these vehicles have helped us do our job more efficiently in different scenarios such as using the power outlets on the truck to pump out sumps without having to run extremely long extension cords possibly creating tripping hazards or shock hazards," said Cristian Zuniga, an operator for the Treatment and Water Quality Group's Jensen Unit.

"They are very quiet. I like the many sensors for the enhanced safety aspect. For use at the treatment plant, they seem like an amazing alternative due to not needing a combustible engine and the use of gas. I would like to see our whole fleet changed to EV at Jensen," said Jeffrey Potter, a team manager for the Treatment and Water Quality Group's Jensen Unit.

Metropolitan will continue to expand the number of electric trucks at Jensen and other facilities in 2025 and beyond.

A Jenson WTP operator drives a ZEV

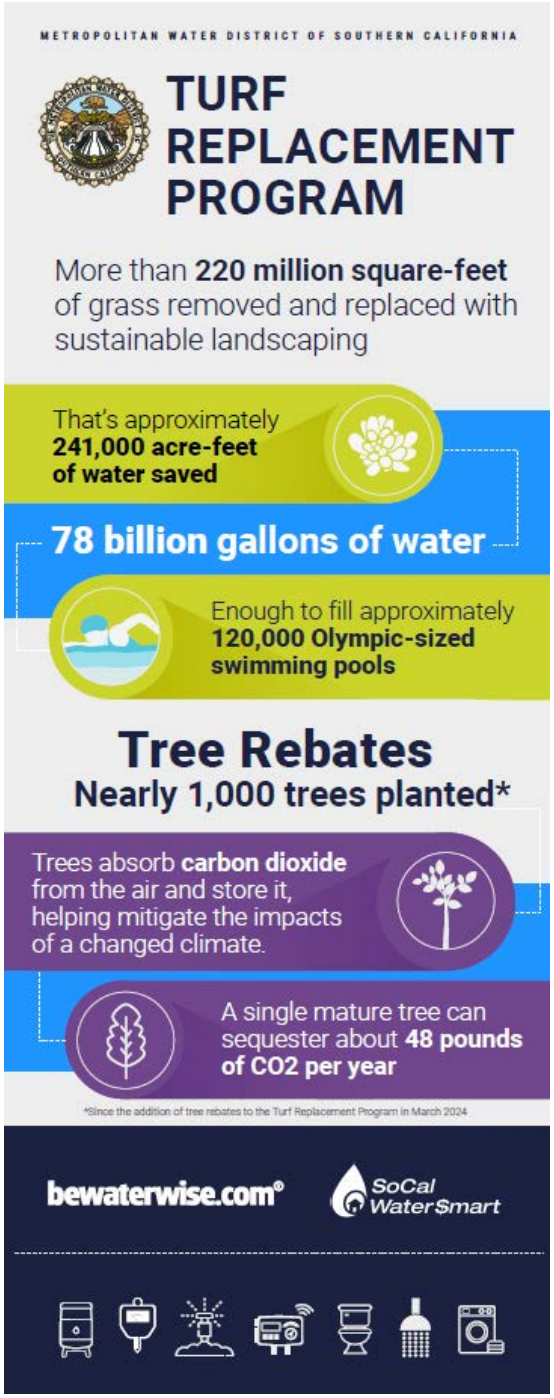
Using Green Energy for Data Center

In 2024, Metropolitan helped meet its renewable energy goals by using a vendor-operated off-site information technology data center that houses Metropolitan's high-performance servers, storage systems and networking equipment. Powered by green energy, this approach reduces GHG emissions, while also enhancing operational efficiency and produces cost savings because Metropolitan does not need to manage its own in-house data center, as done previously. This achievement is thanks to Metropolitan's Information Technology Group, which led the charge in 2022 to successfully migrate the data centers at its primary headquarters building and secondary location at Lake Mathews to off-site facilities.

This data center migration has yielded significant environmental benefits as the offsite facility offers demonstrably greener operations compared to Metropolitan's previous onsite data centers. These benefits include the use of 100 percent renewable energy, a closed-loop water recycling system that doubles the return of used cooling water to local resources, as well as efficiencies created by multiple tenants using the vendor's off-site facility. Metropolitan gains access to these advancements without incurring the capital expenditure, time, and risk associated with implementing them independently at its own facilities. The resulting reduction in carbon footprint, coupled with the secure locations and clean energy usage of the new facilities, strengthens Metropolitan's operational resilience.

Increasing Southern California's Tree Canopy

Metropolitan added a tree rebate to its Turf Replacement Program in March 2024 to help expand the region's tree canopy and produce environmental benefits. This rebate provides $100 per tree for up to 5 trees planted as part of a turf replacement project. Metropolitan developed resources, including a recommended tree list and a tree planting and care guide, to encourage the installation of climate-appropriate trees and ensure proper tree health. This rebate is popular with turf replacement program participants, with over 1,400 trees planted to date.



Using Nature-based Solutions to Reduce GHG Emissions

In 2024, Metropolitan embarked on two ambitious projects located on Webb Tract, one of four Metropolitan-owned islands located in the Sacramento-San Joaquin Delta region of Contra Costa County. Funded by a $20.9 million Nature-Based Solutions grant from the Sacramento-San Joaquin Delta Conservancy, one project will plant a rice crop on approximately 1,350 acres and another will convert over 2,000 acres to wetland habitat that will benefit the local ecosystem. Together, the two multi-benefit projects will stop and/or reverse subsidence on the deeply subsided island, reduce GHG emissions released by current and historical farming practices, and restore much needed habitat.

By reducing GHG emissions and sequestering carbon, the converted rice fields and wetlands will generate carbon credits that can be used to offset emissions under Metropolitan's CAP or sold on the open market to fund ongoing maintenance activities on the islands. When completed, the wildlife-friendly rice will provide wetland-adjacent ecosystem benefits, particularly for over-wintering waterfowl, and will also add to the overall climate benefits of Metropolitan's management actions on Webb Tract. If successful, the lessons learned from the projects will inform other farming or wetland projects on other subsided islands throughout the Delta region.

The grant from the Sacramento-San Joaquin Delta Conservancy assists a farming partner in converting the existing agriculture to rice. A request for proposals (RFP) to farm rice on Webb Tract was released in February 2025. Metropolitan expects to award a lease in early summer 2025, with the first 300 acres of rice planted spring 2026. The wetlands project design and environmental documentation is expected to be completed in late 2025 with construction expected to begin in spring 2026.

Metropolitan-owned Webb Tract in the Sacramento-San Joaquin Delta

Carbon-Free Energy Generation and Storage on Metropolitan's Property

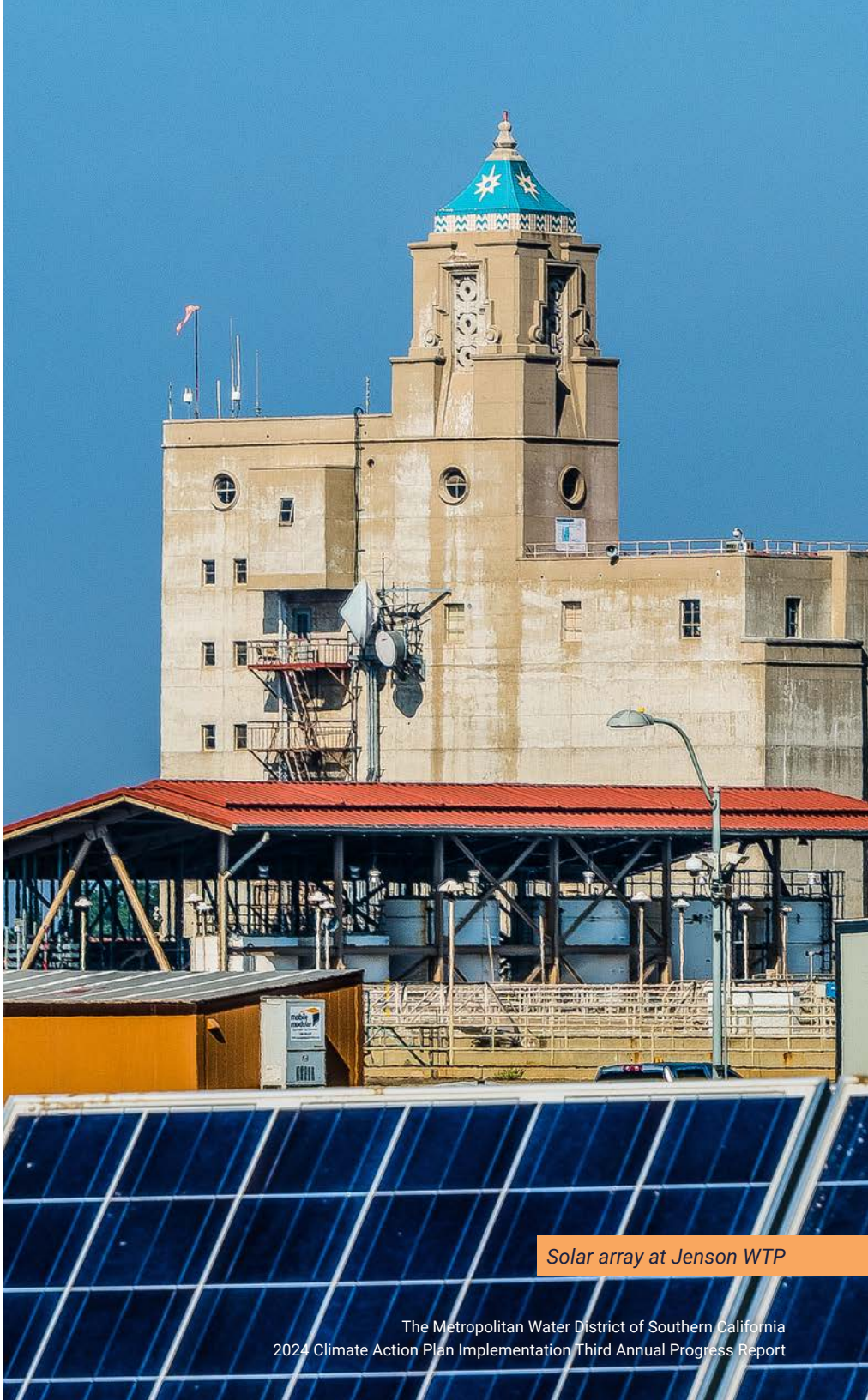
Metropolitan recently entered into an agreement with a subsidiary of AES Corporation for the long-term lease of up to 6,742 acres of property Metropolitan owns in the Palo Verde Valley for carbon-free energy production and storage, contingent upon further project permits, approvals, and environmental clearances under CEQA. If the agreement moves forward, Metropolitan could generate significant revenues, depending on the size of the approved project. If successfully implemented, this project would contribute to progress in achieving California's renewable electricity targets.

Pursuing Sustainable Procurement

Metropolitan will be purchasing more sustainable products, equipment and supplies, thanks to a new Sustainable Procurement Guidebook featuring recommendations on preferred purchases for building maintenance products, cleaning equipment and supplies, electronics, appliances, energy-related products, fleet equipment and supplies, food service products and equipment, landscaping and outdoor products, and office supplies.

The guide, developed by the Finance and Administration Group's Contracting Services Unit and the Office of Sustainability, Resilience and Innovation, will be distributed in 2025, with employee training and interactive workshops on how to put the new guidelines into practice. Metropolitan is also reviewing its current vendor agreements for office supplies and janitorial agreements to identify opportunities to replace products with greener options that may also result in cost savings.

To further these efforts, Metropolitan will form employee "Green Teams" to provide interested staff with the opportunity to suggest more environmentally friendly products and services that meet Metropolitan's procurement standards.



Solar array at Jenson WTP

Progress on CAP Goals

Metropolitan's CAP established a carbon budget designed to achieve carbon neutrality by 2045. To track its progress and ensure Metropolitan stays within its carbon budget, a GHG emissions inventory is completed on an annual basis. This section summarizes Metropolitan's 2023 GHG emissions inventory, discusses notable drivers of emissions changes, and provides a carbon budget status update.

Annual GHG Inventories and Carbon Budget Update

During development of the CAP, Metropolitan prepared annual GHG emissions inventories for 2005 through 2020. Taken together, the historical inventories highlight the aspects of Metropolitan operations that drive overall GHG emissions, and the largest opportunities for reductions to meet Metropolitan's targets.

Metropolitan has continued to prepare annual inventories to provide an understanding of its GHG emissions over time. This APR includes a GHG inventory update and provides an overview of Metropolitan's GHG emissions data from 2005 through 2023. The 2023 inventory was prepared in accordance with protocols from The Climate Registry (TCR) and the International Council for Local Environmental Initiatives.[7],[8] Emissions are grouped into categories, as defined below:

Scope 1: Direct Emissions – associated with fuel use and unintended fugitive emissions.

Scope 2: Indirect Emissions – associated with the purchase and consumption of electricity. Electricity use is directly impacted by water pumping requirements.

Scope 3: Other Indirect Emissions – includes other indirect emissions not captured in Scope 2, such as those associated with employee commutes, waste generation, water consumption at Metropolitan facilities, and emissions from construction projects.

7. *TCR.* ***https://theclimateregistry.org/registries-resources/protocols/****.*
8. *International Council for Local Environmental Initiatives. 2010. Local Government Operations Protocol.* ***http://icleiusa.org/GHG-protocols/****.*

Metropolitan's organization-wide GHG emissions for 2023 were estimated at 144,279 metric tons of carbon dioxide equivalent (MT CO_2e). Figure 2 details the breakdown of Metropolitan emissions by scope. Table 1 shows Metropolitan's GHG emissions across all emissions sources for 2023, compares them to 2022, and indicates the absolute (in MT CO_2e) and percent change year over year. This comparison provides an overview of the changes in emission sources over those two years. Overall, Metropolitan's annual GHG emissions decreased 57 percent, from 336,583 MT CO_2e in 2022 to 144,279 MT CO_2e in 2023. This decline was largely driven by a 61 percent drop in Scope 2 electricity emissions, although as shown in Figure 2 and Table 1, electricity remains the primary source of overall emissions at 125,513 MT CO_2e.[9]

By comparison, Scope 1 (direct emissions from fuel use, fugitive emissions) and Scope 3 (other indirect emissions) continue to comprise only a small part of the overall GHG emissions each year. Scope 1 emissions increased, with mobile emissions down by less than 1 percent, stationary emissions up by 23 percent, and fugitive (SF6/HFC) emissions more than doubling. Scope 3 emissions remained static at an estimated 10,740 MT CO_2e, representing 7 percent of the total. Although electricity-related emissions still constitute the largest share of total emissions, the 2023 electricity GHG emissions total is among the lowest absolute levels observed in the 2005 2023 timeframe.

9 *This total is inclusive of transmission and distribution losses which account for 2,205 MT CO_2e of the 125,513 MT CO_2e Scope 2 emissions.*

Figure 2. 2023 GHG Emissions by Scope (MT CO_2e)

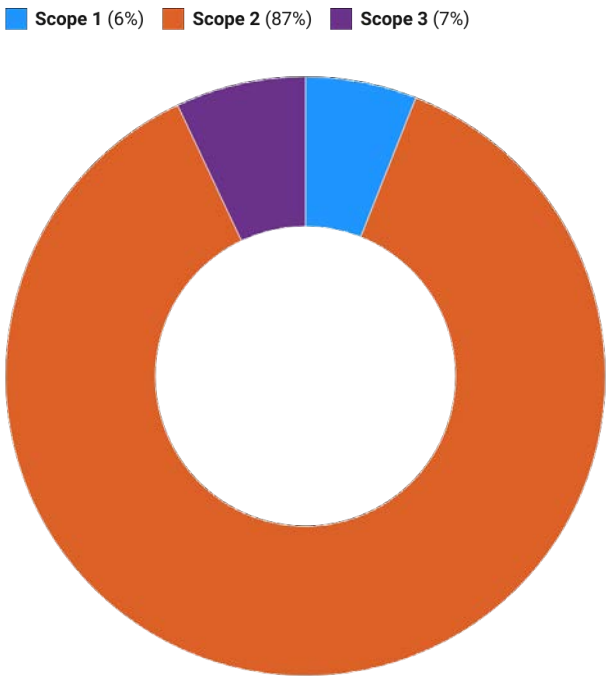


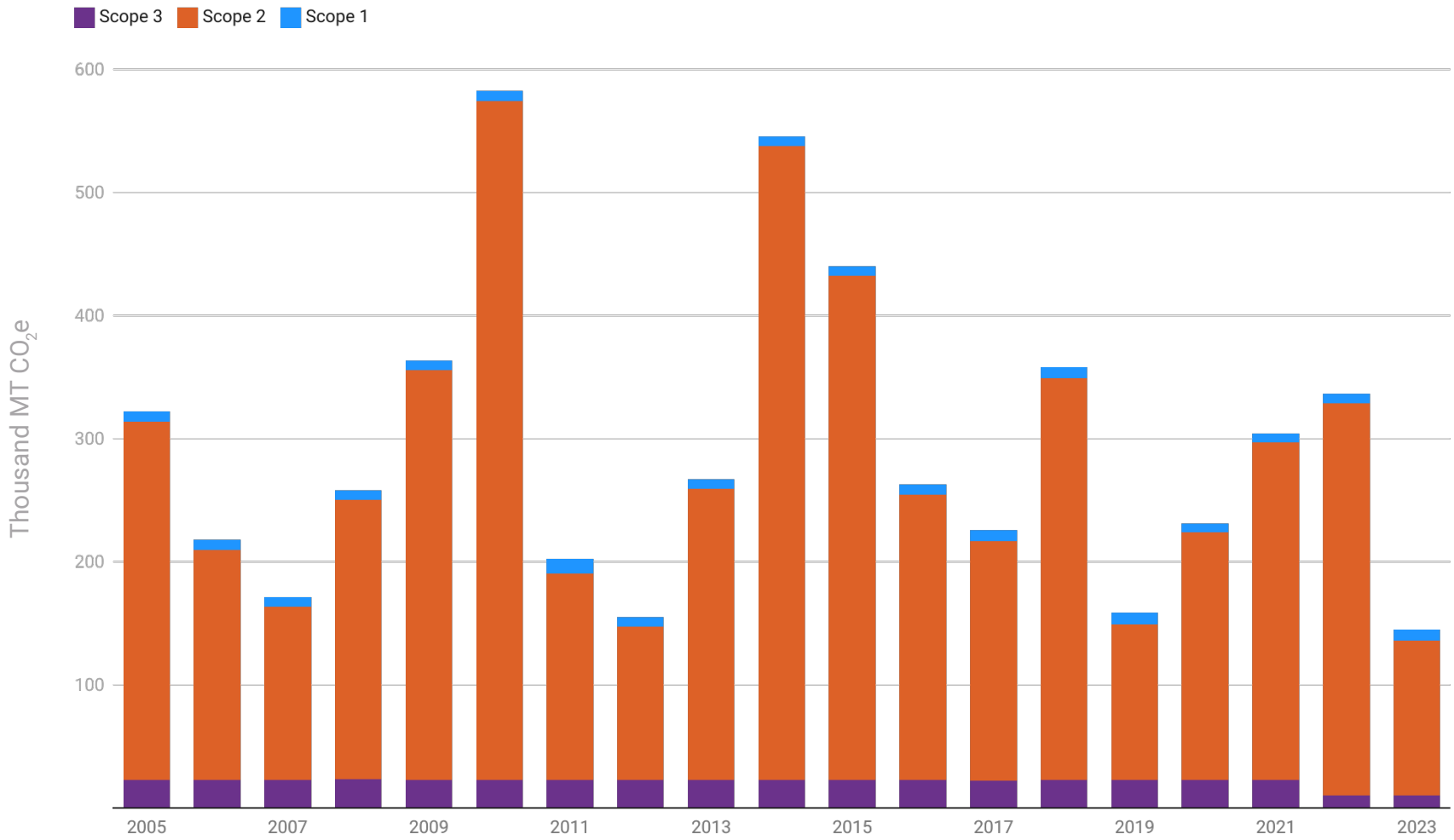
Table 1. 2022 and 2023 GHG Emissions Comparison (MT CO_2e)

Scope	Emissions Source	2022 Annual Emissions*	2023 Annual Emissions	Change in Emissions	Percent Change Year Over Year
1	Mobile Emissions	6,315	6,293	-21	-0.3%
	Stationary Emissions	1,324	1,626	302	23%
	SF6/HFC Fugitive Emissions	53	107	54	102%
2	Electricity	312,229	123,308	-188,921	-61%
	T&D Losses	5,922	2,205	-3,717	-63%
3	All other Indirect Emissions	10,740	10,740	0	0%
Total		**336,583**	**144,279**	**-192,303**	**-57%**

Values are rounded to the nearest whole number.
**2022 Annual Emissions updated to reflect The Climate Registry (TCR) verified data.*

Metropolitan's GHG emissions fluctuate from year to year, depending on the amount of water being pumped from the Colorado River Aqueduct (CRA), which Metropolitan owns and operates. Higher availability of State Water Project (SWP) supplies, operated by the State of California, allows Metropolitan to reduce CRA pumping and lower its GHG footprint. Conversely, in drought years with reduced SWP allocations, more CRA pumping is required, increasing electricity demand and associated GHG emissions. This relationship between electricity use and annual emissions is demonstrated in Figure 3, which shows annual emis sions by scope from 2005 through 2023.

Figure 3. Annual Emissions by Scope 2005-2023 (MT CO_2e)



2023 GHG Inventory – Drivers of Change

Overall, total emissions decreased by about 57 percent in 2023 compared to 2022 (dropping from 336,583 MT CO_2e in 2022 to about 144,279 MT CO_2e in 2023). This decrease is primarily driven by a significant reduction in the amount of electricity used for pumping along the CRA, due to the availability of water from the SWP.

Meanwhile, Scope 1 emissions trended slightly upward (particularly stationary fuels), but those increases were more than offset by the large drop in electricity-related (Scope 2) emissions. Additionally, Metropolitan is continuing efforts to reduce gasoline/diesel consumption and increase the number of ZEVs in the fleet. Progress in decarbonizing electricity use and refining Scope 3 data collection remains central to achieving long-term carbon-reduction targets.

Scope 1: Direct Emissions

Emissions from Combustion and Fugitive Emissions

Metropolitan's 2023 Scope 1 emissions comprised approximately 6 percent of total emissions—an increase in share compared to 2022 when Scope 1 was roughly 2 percent of total emissions. While Scope 1 emissions increased in 2023, the proportional increase in emissions is mostly due to Scope 2 emissions decreasing substantially in 2023. The largest source of Scope 1 emissions continues to be mobile combustion of fossil fuels (gasoline and diesel), which made up the majority of Scope 1 emissions in 2023. The increase in Scope 1 emissions overall occurred despite an increase in use of renewable diesel in all of the diesel engines in trucks, portable and stationary generators, and off-road equipment (water trucks, excavators, bulldozers) as well as the use of ZEVs in 2023. However, the increase in emissions would have been larger if the renewable diesel and zero emissions vehicles had not been deployed.

EV Charger at Weymouth WTP

MOBILE COMBUSTION

Mobile-fuel combustion remains the largest source of Scope 1 emissions, comprising approximately 78 percent of Scope 1 emissions. Mobile-fuel emissions decreased from 6,315 MT CO_2e in 2022 to 6,293 MT CO_2e in 2023 (a less than 1 percent decrease). The key changes by fuel type are:

- **Gasoline** emissions rose from about 5,024 MT CO_2e in 2022 to about 5,479 MT CO_2e in 2023 (a 9 percent increase).
- **Diesel (fossil and renewable)** emissions decreased from 1,035 MT CO_2e in 2022 to 627 MT CO_2e in 2023 (a 39 percent decrease).[10]
- **Renewable diesel** emissions climbed from 8 MT CO_2e in 2022 to 23 MT CO_2e in 2023 (a 198 percent increase), but avoided 717 MT of emissions compared to combustion of the same amount of fossil-fuel based diesel.
- **Jet fuel** lowered from 197 MT CO_2e to 134 MT CO_2e (a 32 percent decrease).
- **Compressed Natural Gas** emissions dropped from 51 MT CO_2e to 30 MT CO_2e (a 41 percent decrease).

Water quality testing at Pure Water Southern California

10 *For the purposes of reporting to TCR, Metropolitan applies the fossil diesel emission factor to renewable diesel, resulting in an increase in reported emissions from mobile combustion of diesel; however, for the CAP APR and tracking operational emissions against the carbon budget, using a calculated renewable diesel emissions factor better reflects the GHG reduction benefits of renewable diesel. Since renewable diesel is derived from organic feedstocks the carbon is considered net neutral, and therefore is removed from the emission factor for renewable diesel.*

STATIONARY COMBUSTION

Stationary fossil-fuel combustion at Metropolitan facilities is the second largest source of Scope 1 emissions, comprising approximately 20 percent of Scope 1 emissions in 2023. In 2023, stationary equipment combustion of fuels resulted in 1,626 MT CO_2e, an increase of 23 percent from 1,324 MT CO_2e in 2022. Key changes by fuel type include:

- **Diesel (fossil)** emissions increased from 430 MT CO_2e in 2022 to 608 MT CO_2e in 2023 (a 41 percent increase).
- **Natural Gas** emissions increased from 869 MT CO_2e in 2022 to 992 MT CO_2e in 2023 (a 14 percent increase).
- **Propane** emissions increased marginally from 25 MT CO_2e in 2022 to 26 MT CO_2e in 2023 (a 4 percent increase).

The overall increase in diesel use was driven by operations along the CRA including the use of diesel-powered equipment such as heavy-duty trucks, construction equipment, and portable generators.

FUGITIVE EMISSIONS

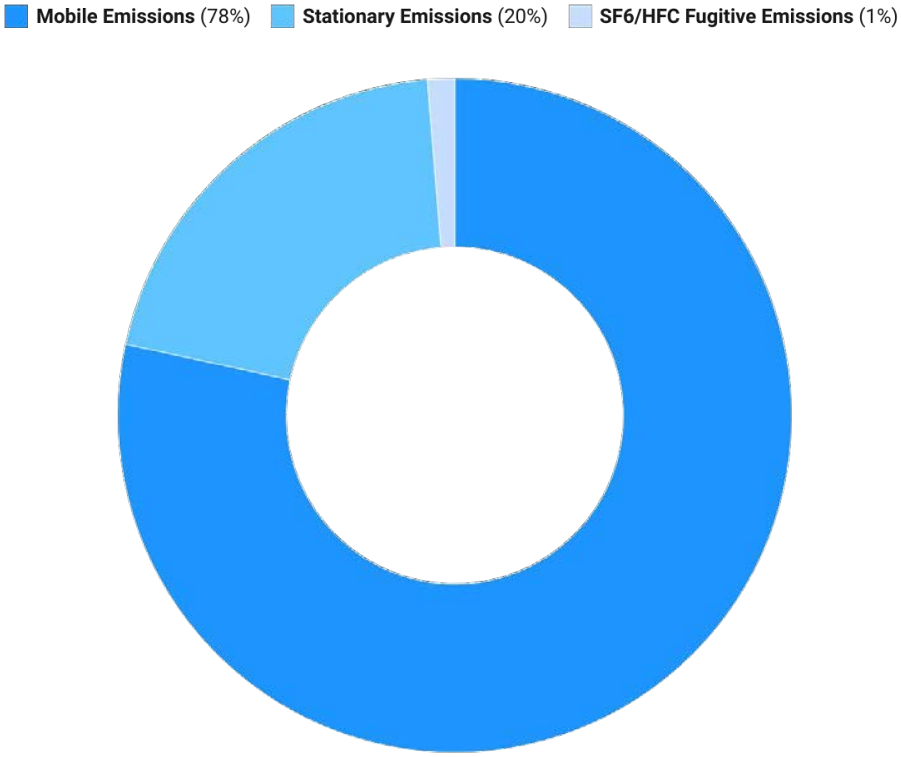
Fugitive emissions of sulfur hexafluoride (SF_6) from electrical equipment and hydrofluorocarbons (HFCs) from refrigerants/welding gases remain a small fraction of Scope 1 emissions.

- **SF_6** decreased from 11 MT CO_2e in 2022 to zero (0) MT CO_2e in 2023
- **HFC** fugitive emissions more than doubled, from 53 MT CO_2e in 2022 to 107 MT CO_2e in 2023 (a 155 percent increase).

Overall, total Scope 1 emissions increased by approximately 4 percent between 2022 and 2023, driven by increases in usage across the primary fuel types, gasoline and diesel for mobile combustion and diesel for stationary combustion; however, Metropolitan's ongoing strategy of replacing fossil-fuel based diesel with renewable diesel continues to mitigate a portion of these emissions.

Figure 4 shows Metropolitan's Scope 1 emissions by source. In 2023, Metropolitan replaced 54 percent of its diesel fuel use with renewable diesel, a shift expected to further reduce Scope 1 emissions in future inventories.[11]

Figure 4. 2023 Scope 1 Emissions by Source (MT CO_2e)



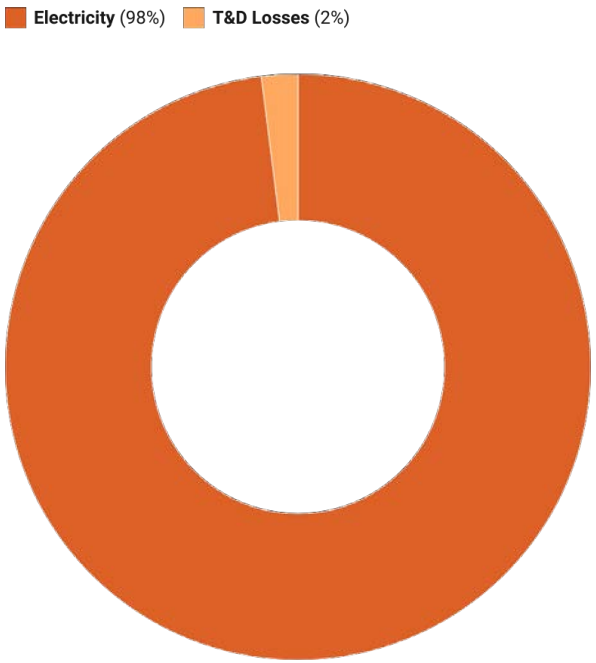
11 The second APR, published in April of 2024 incorrectly stated that in 2023 Metropolitan had replaced 96 percent of fossil diesel use with renewable diesel. This was based on preliminary data which was incomplete. The updated percentage of renewable diesel for 2023 provided in this APR reflects the TCR verified fuel use amounts and accurately reflects Metropolitan's renewable diesel fuel use.

Scope 2: Indirect Emissions

Emissions from Electricity Use

Historically, Scope 2 (purchased electricity) has comprised the majority of Metropolitan's emissions. In 2023, Scope 2 still constitutes the largest share of overall GHGs, despite decreasing by over 60 percent in absolute terms due to reduced pumping along the CRA. In 2022, Metropolitan used over 2.3 million MWh of electricity, bringing Scope 2 emissions to about 95 percent of total emissions. In 2023, electricity use decreased to 1.3 million MWh, lowering Scope 2 emissions to about 87 percent of Metropolitan's total GHG inventory. Transmission and distribution losses comprise 2 percent of Scope 2 emissions, the same percentage as 2022, though absolute emissions decreased proportionally with electricity use, from 5,922 MT CO_2e in 2022 to 2,205 MT CO_2e in 2023. Figure 5 shows Metropolitan's Scope 2 emissions by source.

Figure 5. 2023 Scope 2 Emissions by Source (MT CO_2e)



Overall electricity emissions decreased from 312,229 MT CO_2e in 2022 to 123,308 MT CO_2e in 2023 (a 61 percent decrease). This is less than the electricity used for any year during the 2005 – 2022 timeframe, with 2012 being the closest year on record in terms of emissions, when the annual total was 124,094 MT CO_2e, marginally higher than the 2023 total electricity emissions. By comparison, in 2023 Metropolitan used more electricity than in 2012, showing the GHG reduction benefits of Metropolitan's renewable energy transition. The year-over-year decrease in pumping and associated emissions compared to 2022 was primarily driven by improved hydrological conditions for the State Water Project.

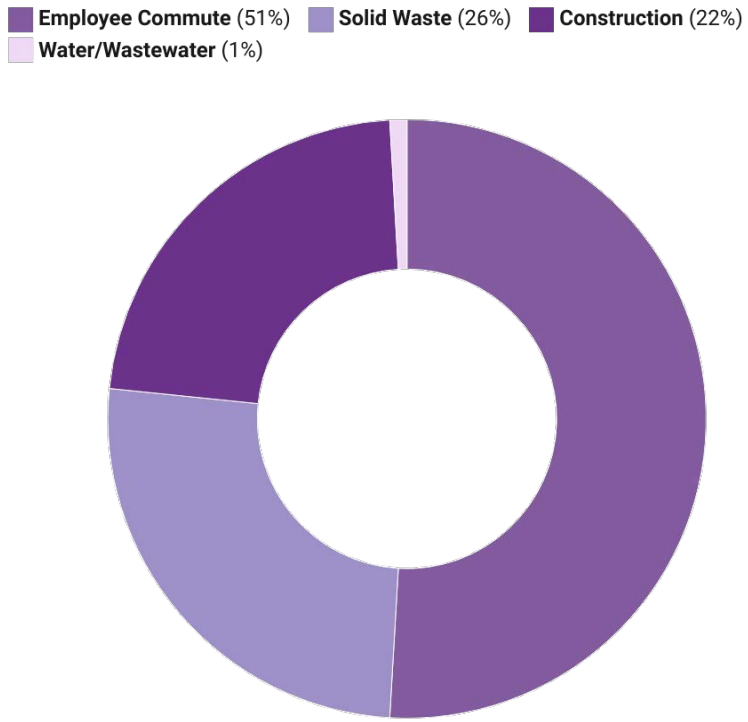
Scope 2 emissions comprising a majority of Metropolitan's overall GHG footprint despite inter-annual variability is consistent with historical trends. Ongoing efforts, such as switching to green tariff options (Measure E-3), investing in carbon-free energy to operate along the CRA and prioritizing lower-emission wholesale electricity (Measure E-5), are crucial to decarbonizing the power supply and will remain Metropolitan's most impactful Scope 2 mitigation strategies.

Emissions from Employee Commutes, Water/Wastewater, Solid Waste, and Construction Projects

Scope 3 emissions are the second largest source of emissions for Metropolitan, representing approximately 7 percent of total emissions. Monitoring these emissions requires a significant amount of coordination and data collection. In 2023 Metropolitan continued to use the average emissions established by the CAP for solid waste, water, and wastewater. However, Metropolitan began using an employee commute survey and construction emissions tracking log to provide updated and more accurate estimates for employee commute emissions and construction emissions activities.

As a result of these enhanced tracking efforts, the 2023 inventory reflects updates in the estimated annual emissions for employee commutes and construction. Compared to the CAP averages, emissions from employee commutes decreased, reflective of large increases in telecommuting by Metropolitan staff, a change that was part of CAP strategy EC-5, but was accelerated due to the COVID-19 pandemic. The decrease in reported construction-related emissions from earlier "worst-case" estimates demonstrates the benefit of better data collection. In 2023, the largest share of Scope 3 emissions still comes from employee commutes (51 percent), followed by solid waste (26 percent), construction (22 percent), and water/wastewater (1 percent). Figure 6 illustrates the breakdown of Scope 3 emissions by source.

Figure 6. 2023 Average Scope 3 Emissions by Source (MT CO_2e)



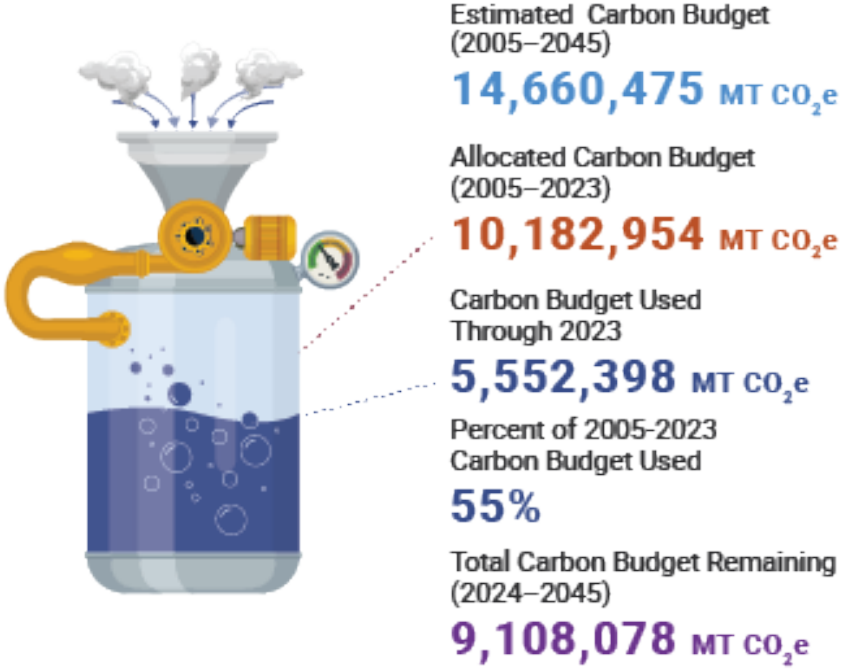
Carbon Budget Update

Metropolitan's carbon budget is analogous to a tank with a set capacity for, or a cap on, the total mass emissions Metropolitan can produce between 2005 and 2045. The total capacity has been set based on Metropolitan's historical emissions, forecasted emissions, and GHG reduction targets. These targets are consistent with State goals.

All GHG emissions from Metropolitan's operations recorded in the annual GHG inventories are added into the tank each year. The total capacity of the tank represents Metropolitan's total emissions budget, and over time that tank fills up. If Metropolitan keeps its GHG emissions below the capacity of the tank by its target years of 2030 and 2045, the GHG reduction targets will be achieved. To assess progress, Metropolitan will add its annual operational emissions to the total emitted in prior years, comparing the total GHGs emitted to the remaining budgeted amount.

As summarized in Figure 7, the amount of GHG emissions in Metropolitan's entire carbon budget from 2005 through 2045 is 14,660,475 MT CO_2e. The portion of the carbon budget allocated for 2005 through 2023 is approximately 10,182,954 MT CO_2e. During this period, Metropolitan emitted approximately 5,552,398 MT CO_2e, representing roughly half (55 percent) of the maximum emissions allowable through 2023. The annual carbon budget for 2023 was 405,678 MT CO_2e, but Metropolitan only emitted 144,279 MT CO_2e, creating an additional "buffer" of 261,398 MT CO_2e. This buffer may be needed in the future if drought or other conditions require Metropolitan to increase its pumping and subsequent emissions. Continuing to implement the strategies outlined in the CAP as well as identifying new opportunities to reduce emissions will be important as the overall budget is depleted year after year. **Metropolitan's carbon budget has 9,108,078 MT CO_2e remaining for the period of 2024 to 2045.**

Figure 7. Carbon Budget Summary



Because Metropolitan is well under its carbon budget, the CAP is considered on pace for achieving the long-term GHG emission reduction goals.

Pure Water Southern California Estimated Emissions

The Pure Water Southern California Program is a partnership between Metropolitan and the Los Angeles County Sanitation Districts to develop a large-scale regional recycled water program that would purify and reuse cleaned wastewater that currently flows into the ocean. Pure Water would construct and operate a new Advanced Water Purification (AWP) Facility in the city of Carson, as well as a conveyance system and associated pump stations from the AWP Facility to deliver the new water source as far north as the cities of Azusa and La Verne.

The expected GHG emissions associated with the construction and operation of Pure Water were estimated and included in Metropolitan's CAP in the GHG emissions forecast and mitigated through the GHG emission reduction strategies included in the CAP. Since the CAP analysis was completed, the assumptions and project specifics for Pure Water have been refined. The updated GHG emissions estimate from the September 2024, Pure Water Southern California Air Quality, Greenhouse Gas Emissions, and Energy Technical Report[12] were compared to those of the 2020 CAP to assess the impact of the updated Pure Water GHG emissions estimate on Metropolitan's carbon budget and Metropolitan's ability to reach the 2030 and 2045 GHG targets.

Key takeaways from this comparison of forecasted emissions and impacts on carbon budget include:

- **While the updated Project GHG emissions estimates are higher than in the CAP, they will not significantly affect Metropolitan's ability to achieve its GHG emission reduction targets.**
- **Metropolitan is projected to reach its 2030 targets under all scenarios and 2045 targets for both the low and average scenarios, without CAP implementation.**
- **With CAP implementation, Metropolitan reaches its 2030 and 2045 targets under all scenarios.**
- **As identified in the CAP, additional strategies and technologies are needed to achieve carbon neutrality, and future CAP updates will more specifically deal with the 2045 target once the 2030 horizon year has passed, consistent with state guidelines.**

The refined Pure Water emissions estimate will be used to update forecasted emissions as part of Metropolitan's forthcoming 2025 CAP update (scheduled for completion and consideration for adoption in 2027).

12 *Metropolitan Pure Water Southern California:* ***https://www.mwdh2o.com/building-local-supplies/pure-water-southern-california/***

Implementation Progress Through 2024

This section highlights Metropolitan's progress on Phase 1 mea sures. Progress reporting on this phase is organized by scope, including Scope 1: Direct Emissions, Scope 2: Indirect Emissions, and Scope 3: Other Indirect Emissions. The summaries in this section highlight key measures where progress has been made. Each measure highlighted in this section includes information on its current implementation status, along with a narrative of Metropolitan's progress. For an overview of the implementation status for all CAP measures, see the summary tables in the Appendix.

California Friendly® plants

Colorado River Aqueduct maintenance

Scope 1: Direct Emissions Reduction Progress

Scope 1 sources are composed of emissions resulting from direct combustion of fuels used in Metropolitan's fleet vehicles and other stationary equipment as well as natural gas used at Metropolitan's facilities. To reduce Scope 1 emissions, Metropolitan has begun identifying opportunities for electrification and has shifted to renewable fuels for near term GHG emissions reductions.

STRATEGY 1: Phase Out Natural Gas Combustion at Facilities

Measure DC-1 Conduct a Natural Gas Audit and Develop a Phase Out Plan.

STATUS: **Complete**

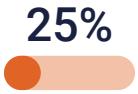
COMPLETE

This measure consists of conducting a survey of natural gas consuming equipment in offices, control buildings, and residential structures, and establishing a schedule by 2025 to replace natural gas equipment with electric equipment.

The natural gas equipment audit was completed in 2022 and described in the inaugural APR published in April 2023. Following this effort, Metropolitan created a natural gas phase out plan, completed in 2024, that included guidance on cost-effective and efficient replacement options currently available on the market, considerations when replacing natural gas equipment, and sample language for an "Electric-Upon-Replacement" policy. The natural gas audit and phase out plan supports Measures DC-2 and DC-3, discussed further below. Metropolitan is working to develop and adopt an electrification first policy as part of the sustainable procurement policies under development, which will prioritize the purchase and installation of electric equipment upon replacement.

Measure DC-2 Reduce Natural Gas Usage by 50 percent by 2030 and 100 percent by 2045.

STATUS: **25%**



Measure DC-2 consists of reducing natural gas usage by 50 percent by 2030 and 100 percent by 2045. Despite natural gas equipment remaining in use across many Metropolitan facilities, total MMbtu of natural gas used has decreased overall since the baseline year of 2017 and resulted in a cumulative savings of approximately 13,556 MMbtu, which is 25 percent of the savings target identified in the CAP. This decreased usage is likely due to the retirement of on-site co-generation units. Additional savings will be gained through the phase out of natural gas water heating and HVAC units identified in the natural gas audit.

Measure DC-3 Require New Construction and Retrofits to be All-Electric.

STATUS: **Pending**

PENDING/NA

Measure DC-3 consists of updates to Metropolitan building standards to require new construction and retrofits to be all-electric, ensuring progress on natural gas reduction continues as new facilities are constructed and existing ones are updated. Metropolitan is currently developing new policies and standards with regards to new construction and retrofits.

STRATEGY 2: Zero Emission Vehicle Fleet

Measure FL-2 Adopt a ZEV/EV First Policy for Fleet Vehicles.

STATUS: **Underway**

UNDERWAY

Measure FL-2 directs Metropolitan to develop a ZEV First purchasing policy and implement the fleet transition to ZEV/EVs to meet the GHG emissions reduction targets, comply with state regulatory requirements, and maintain system resilience. The ZEV Task Force, formed in October 2022, continues to lead coordination and policy development and is comprised of employees representing all Metropolitan departments with the background and expertise needed to successfully implement the transition.

See the 'Building the ZEV Program' in the Highlights section of this report for additional detail about the progress made to electrify Metropolitan's fleet and prepare the necessary infrastructure to support the fleet transition.

STRATEGY 3: Use Alternative Fuels to Bridge the Technology Gap to ZEV Fleet and Equipment

Measure AF-3 Use Renewable Diesel Fuel in 100% of Diesel-Consuming On-Road and Off-Road Vehicles by 2025.

STATUS: **54%***

54%*

Measure AF-3 directs Metropolitan to use renewable diesel for all mobile fuel uses by 2025. Renewable diesel is chemically identical to fossil diesel, but is derived from renewable sources such as waste gas and plant or animal fats rather than fossil-fuel petroleum. Because the carbon contained in renewable diesel was removed from the atmosphere by the materials used to produce it, it is not contributing additional non-renewable fossil-fuel carbon emissions into the atmosphere. Use of renewable diesel is a key near-term strategy for reducing combustion emissions before vehicle fleets can be fully electrified.

In February 2023, Metropolitan switched all available fuel contracts to renewable diesel. This resulted in purchases of 70,966 gallons of renewable diesel in 2023, bringing the share of total mobile diesel to approximately 54 percent. This number represents the percent progress towards Metropolitan's target of 100 percent renewable diesel use for diesel-consuming mobile equipment. The use of renewable diesel resulted in an estimated emissions savings of 717 MT CO_2e relative to using traditional diesel fuel and puts Metropolitan over halfway to achieving the 2025 target. In 2024, Metropolitan used renewable diesel in 100 percent of its diesel-consuming on-road and off-road vehicles, reaching the 2025 target. This will be reflected in next year's GHG inventory and APR. Renewable diesel will continue to be used as a cleaner fuel source until the transition to ZEVs is complete.

**Percent complete based on 2023 data.*

Solar Panels at Jenson WTP

Scope 2: Indirect Emissions Reduction Progress

Scope 2 or indirect emissions are driven by electricity use at Metropolitan facilities. This category represents the largest emissions source from Metropolitan's operations. Metropolitan has made significant progress in reducing the emissions associated with both retail and wholesale electricity consumption by changing to accounts that prioritize increasingly renewable sources. These changes have continued to keep electricity emissions low. In addition, Metropolitan is continuing to reduce electricity demand through efficiency upgrades like LED lighting.

STRATEGY 4: Utilize Low-Carbon and Carbon-Free Electricity

Measure E-3

Switch Retail Electricity Accounts to Green Tariff Options.

STATUS: **74%**

74%

Measure E-3 directs Metropolitan to change its retail electricity accounts (electricity purchased from a utility) from the standard electricity mix to a green tariff option, which includes higher rates of carbon-free and renewable electricity. The target for 2025 is to procure at least 88 percent of electricity from carbon-free sources.

Metropolitan continues to procure the maximum amount of 100 percent green rate electricity from SCE, which is enough energy to switch over all facilities covered by this energy provider, except Skinner WTP. This continues to be the maximum capacity of green energy available from SCE. The cost of green rate options for Los Angeles Department of Water and Power (LADWP) retail energy accounts continues to be too high to switch additional accounts. Additional retail accounts will be switched when more green energy capacity is available from SCE and Clean Power Alliance, or when green energy rates from LADWP decrease. In 2023, Metropolitan procured almost 8 million kWh of carbon-free electricity purchased through 100 percent renewable retail accounts. Additionally, over 31 million kWh of carbon-free electricity was purchased through retail electricity accounts as part of the power mix. In total, Metropolitan procured an estimated 65 percent carbon-free electricity for its retail accounts, representing 74 percent of the 2025 target.[13]

13. *The percent total renewable electricity is estimated using historical electricity procurement data for retail accounts and actual green electricity procurement data from 2023, as well as the power content labels for the retail electricity providers.*

Measure E-5

Manage Energy Purchases to Ensure Cost-Effective Energy Supply While Achieving Emissions Objectives.

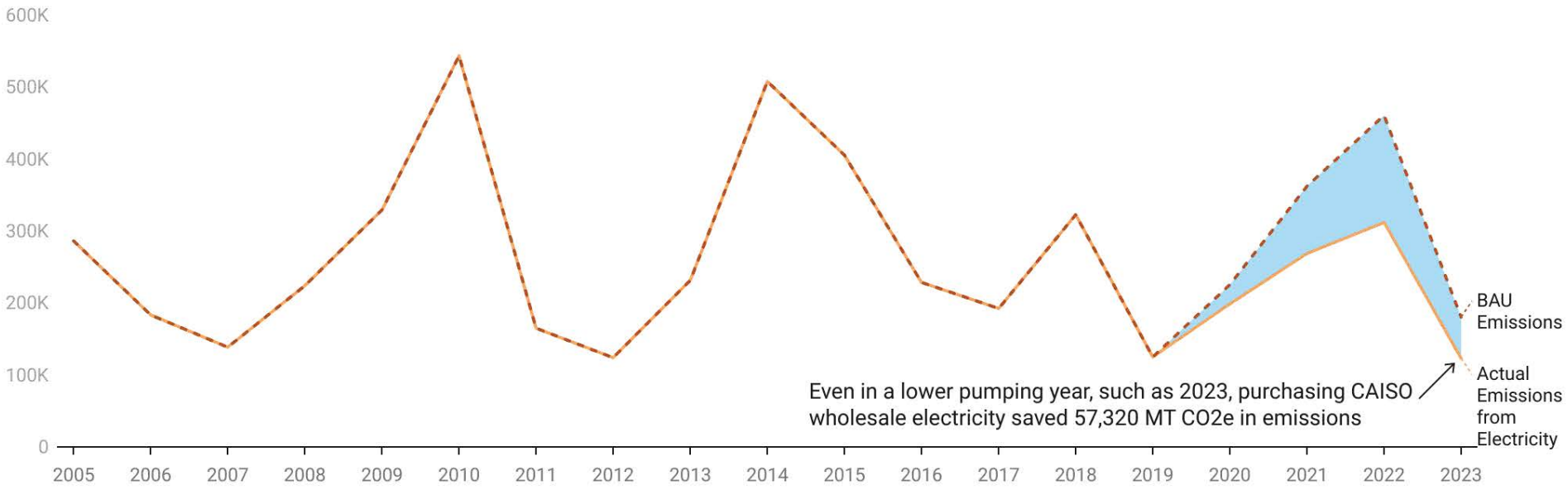
STATUS: **53%**

53%

Implementation of this measure began in 2020, including changes to energy procurement policies to reduce reliance on out-of-state electricity from the Arizona New Mexico (AZNM) subregion, which is used to power the pumps along the CRA. This measure also directs Metropolitan to increase the use of energy from the California Independent System Operator (CAISO) subregion, which has a lower GHG emission factor as a result of greater use of renewables compared to the AZNM regional grid. Metropolitan set a goal to save 610,245 MT CO_2e by 2030 through the purchase of electricity from CAISO instead of AZNM. Making this switch reduces emissions overall, but the impact is the greatest during higher CRA pumping years, and is particularly beneficial during periods of prolonged drought when additional pumping is required over numerous years. Emissions associated with CAISO electricity purchases will also likely continue to decrease over time due to Senate Bill 100, which requires 100 percent of electricity retail sales to be sourced from renewable or zero carbon sources by 2045, and Senate Bill 1020, which sets interim targets for 90 percent of electricity to come from renewable or zero carbon sources by 2035, followed by 95 percent by 2040, and 100 percent clean energy utilization by 2045.

This change in electricity procurement has already reduced Metropolitan emissions associated with electricity purchases by approximately 326,216 MT CO_2e between 2020 and 2023, compared to business-as-usual (BAU) emissions if Metropolitan had not made this switch. In addition, decreasing the use of electricity purchased from outside of California reduces Metropolitan's costs associated with California's Cap and Trade program, providing a win/win scenario.

Figure 8. Electricity Emissions Savings from Switching to CAISO from AZNM (MT CO_2e)



STRATEGY 5: Improve Energy Efficiency

Measure EE-1 Convert 50 Percent of Interior and Exterior Lighting at All Metropolitan Facilities to LED Technologies by 2030 and 100 Percent by 2045.[14]

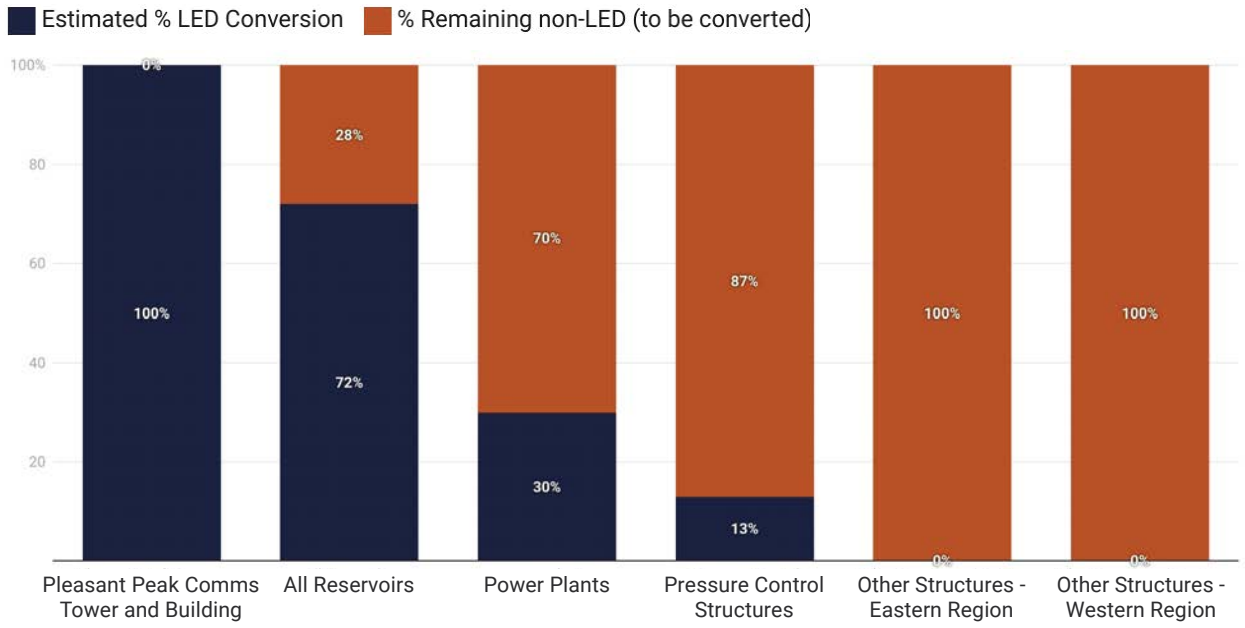
STATUS:**112%**

112%

Measure EE-1 directs Metropolitan to convert 50 percent of interior and exterior lighting to LED by 2030 and 100 percent by 2045. As described in previous CAP APRs, staff coordinated with electrical team managers to develop an inventory of lighting converted to LED technology at all occupied facilities and unoccupied field sites. As of 2024, the LED conversion inventory update indicated an estimated 56 percent of lighting had been converted. This surpasses the 2030 target ahead of schedule thanks to the support of managers and the staff at Metropolitan facilities. This achievement has been driven by rapid LED conversion at Metropolitan's water treatment plants, and continued LED retrofits as well as replacement of older non-LED lighting with LED technology on an as-needed basis across other facilities, resulting in an overall increase of 7 percent over the previous year. The LED retrofits to date are summarized in Figure 9 and Figure 10.

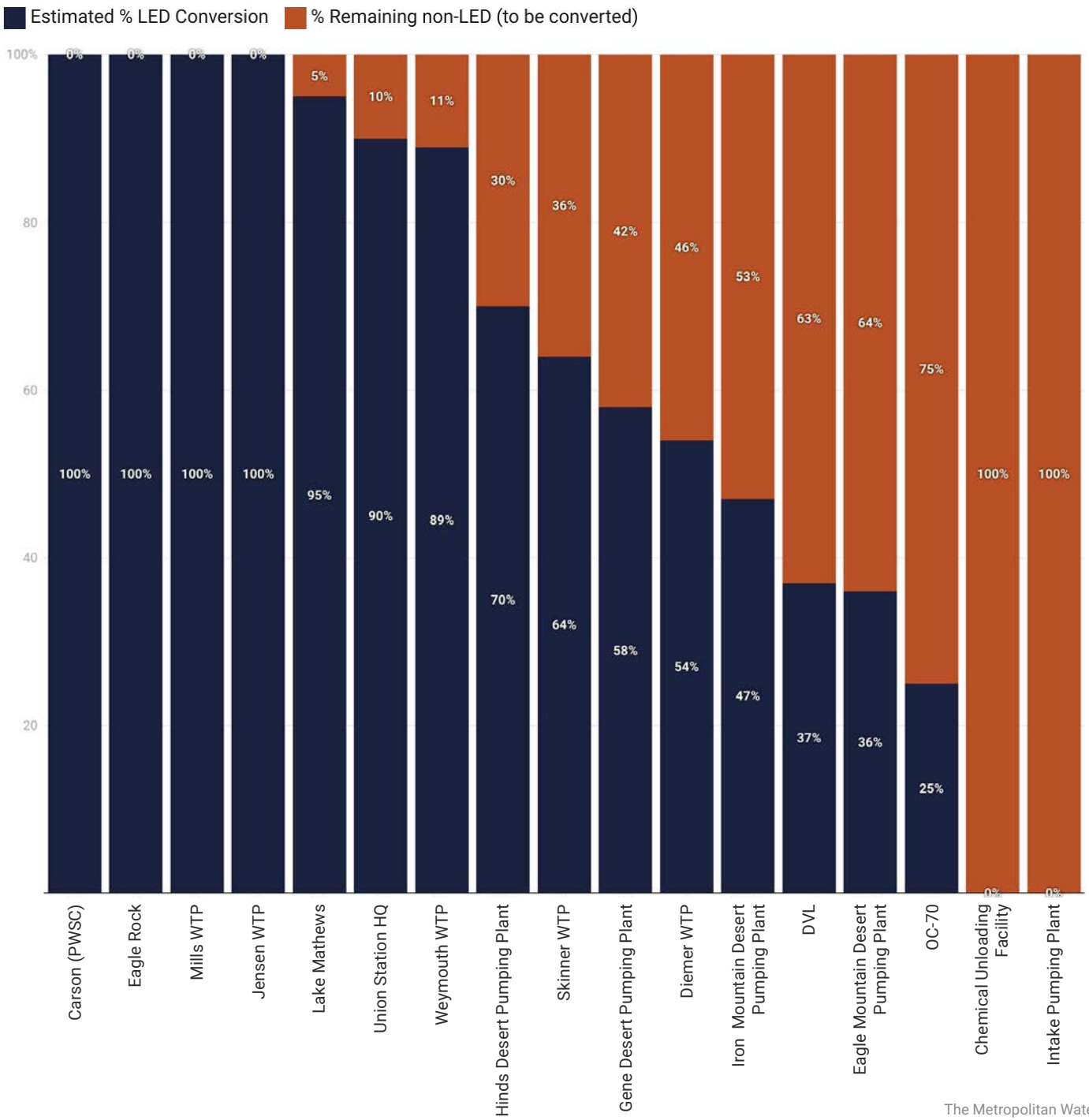
Plans are in place for additional LED conversions at several facilities, and are expected to be completed between by 2026. Ongoing replacement of older non-LED lighting with LED technology on an as-needed basis will continue at many of the desert facilities and unoccupied field facilities.

Figure 9. Percent Conversion to LED Technology at Unoccupied Facilities



14. *The original measure language in the CAP directs Metropolitan to convert all interior and exterior lighting at 50 percent of Metropolitan facilities by 2030 and at 100 percent of facilities by 2045. This assumed that LED conversion would take place at one facility at a time. However, Metropolitan has begun converting lighting to LED technology at many facilities on an ongoing basis. The updated measure language in this report and on the CAP Dash represents the same outcome as the original CAP measure language through a different implementation approach that more accurately reflects Metropolitan's progress.*

Figure 10. Percent Conversion to LED Technology at Occupied Facilities



Construction on the Second Lower Feeder

Scope 3: Other Indirect Emissions Progress

Scope 3 emissions sources include other indirect emissions including those from water, wastewater, solid waste, construction, and employee commutes. Metropolitan has made continuous progress on reducing its Scope 3 emissions and is moving to increase the accuracy of its data tracking. In addition, Metropolitan has already exceeded its goals for turf replacement and water conservation.

STRATEGY 6: Incentivize More Sustainable Commutes

Measure EC-5 Allow 50 Percent of Employees at Headquarters to Telecommute to Reduce VMT and GHG Emissions Through 2030.

STATUS: **183%**

183%

Measure EC-5 directs Metropolitan to allow 50 percent of the employees located at its Headquarters building to telecommute or use flexible schedules through 2030 to reduce travel time, VMT, and GHG emissions.

In early 2021, Metropolitan initiated a work from home policy due to the COVID-19 pandemic and eventually developed a hybrid schedule (2 days in the office, 3 days at home) for employees based at its Headquarters building in downtown Los Angeles. This hybrid schedule ultimately exceeded the 50 percent goal to reduce travel time, VMT, and GHG emissions established by the CAP.

Metropolitan's periodic employee commute survey helps quantify the VMT and GHG reductions resulting from increased telecommuting and indicates trends in employee commutes. The most recent survey conducted in January of 2025 was assumed to be reflective of 2024 commute patterns. The survey found that over 11 percent of staff commutes are taken using public transit, with a majority of those being by train or light rail. Fewer staff commutes used vanpool compared to the 2023 survey (four percent of commutes in 2024 versus six percent of commutes in 2023). The proportion of telecommuting increased compared to the 2023 survey from 39 percent of staff commutes to 45 percent of staff commutes. Staff reported fewer commutes to work by driving alone compared to 2023, representing roughly 38 percent of commutes in 2024 versus 43 percent of commutes in 2023. The survey found that the staff commuter fleet was made up of 15 percent electric and plug-in hybrid vehicles. Additionally, over eight percent of staff commute vehicles were non-plug-in hybrid vehicles.

The cumulative reductions during the 2022-2024 period were drastic compared to the initial target since the percentage of telecommute days far outpaced the initial goal used in CAP estimates. The CAP target was to reduce commute VMT by 15,560,094 by 2030. The cumulative VMT savings from telecommuting between 2022 and 2024 is an estimated 28,433,519 VMT, which is 183 percent of the 2030 goal. This reduction in VMT translates into a cumulative emissions savings of over 9,000 MT CO_2e through 2024.

While Metropolitan is currently using the hybrid schedule, negotiations between Metropolitan and its bargaining units are in progress and the current hybrid schedule is subject to change.

LA Metrolink train (stock image)

STRATEGY 7: Increase Waste Diversion to Achieve Zero-Waste

Measure WA-1 Develop and Implement Net Zero-Waste Policies and Programs at All Facilities to Reduce Landfilled Waste by 30 Percent by 2030 and Achieve Zero Landfilled Waste by 2045.

STATUS: **0.7%**

0.7%

Metropolitan set a target of diverting landfilled waste by 30 percent across all facilities by 2030, translating into a cumulative target of 22,143 tons of solid waste diverted.

Collecting annually updated data on solid waste tonnage and waste diversion is challenging, and it is unclear whether solid waste produced across Metropolitan facilities has been trending upwards or downwards overall. However, progress at key facilities has been made. Metropolitan implemented a waste reduction program at its Headquarters building located in downtown Los Angeles in 2022. Waste is now separated into organics, compostable, and landfill waste bins and waste pickups are made for each of the three waste streams. Metropolitan has begun tracking the weight of each waste bin on a weekly basis to estimate how much waste is produced and diverted. This is the first CAP APR that reports estimated waste saving from landfill diversion. In 2024, the Headquarters building diverted an estimated 72 percent of solid waste from landfill, setting an impressive example of what is possible. This program serves as a model for potential waste diversion policies and practices that could be implemented at other Metropolitan facilities.The Headquarters waste program diverted an estimated 85.8 MT of solid waste from landfill in 2024, and cumulatively diverted 156 MT since the program began weighing waste in 2023. This waste diversion reduced landfill related emissions by approximately 32 MT CO_2e during the 2023-2024 period, representing 0.7 percent of the 2030 target. Though Metropolitan is not on track to reach its 2030 waste diversion target, beginning to track tonnage of waste diverted, and the continued success of the Headquarters diversion program mark crucial steps towards Metropolitan's waste diversion goals.

Waste bins in the cafeteria of Metropolitan's headquarters building

STRATEGY 8: Increase Water Conservation and Local Water Supply

Measure WC-3

Continue Turf Replacement Program to Install an Average of 1.5 Million Square Feet of Water Efficient Landscapes per Year Through 2030 Through the Use of a Rebate Program.

STATUS: **196%**

196%

Metropolitan's goal is to incentivize residents and businesses to replace an average of 1.5 million square feet of grass each year with water-efficient landscape through 2030 Through its Turf Replacement Program, Metropolitan has provided rebates to help replace an average of 6.7 million square feet of turf per year between 2017 and 2024, far outpacing the target outlined in the CAP. Metropolitan's progress on this measure is a major achievement for water stewardship, as more sustainable, climate-friendly landscapes use significantly less water, as well as provide other benefits such as creating important habitat for local wildlife.

As shown in Figure 11, Metropolitan removed a total of 48.8 million square feet of turf between 2017 and 2024. When turf is removed, it results in water savings from reduced watering requirements both in the initial year the turf is removed and every subsequent year. As part of this CAP APR, the method for calculating water savings was updated to separate residential and commercial turf replacement, reflecting best practice and allowing for more tailored water savings estimates. The estimated water saving increased as a result of the methodology update. This was primarily due to the updated water conservation rates associated with residential and commercial turf removal. Residential turf removal conserves an estimated 34.4 gallons per square foot, while commercial turf replacement conserves water at a rate of 44 gallons per square foot, which is higher than the standard water conservation rate (35 gallons per square foot) applied previously to all turf removal. The historical water and emissions savings were updated in addition to calculating the water and emissions savings for 2024, the most recent year for which data is available.

The estimated water savings from turf replacement projects in Metropolitan's service area from 2017 through 2024 is approximately 20,818 acre-feet as shown in Figure 12, which translates to an emissions savings of approximately 1,894 MT CO_2e.[15] This surpasses Metropolitan's target of a cumulative savings of 10,634 acre-feet, by almost 10,000 acre-feet and putting Metropolitan at 196 percent of its goal.

Turf Replacement

Figure 11. Square Feet of Turf Replacement

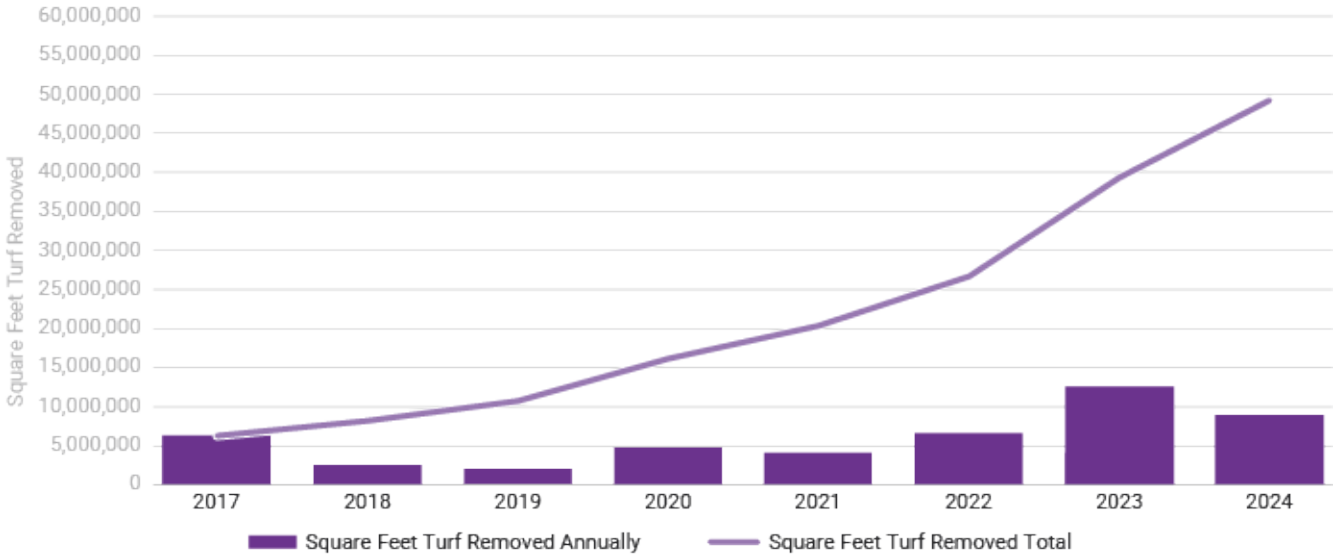
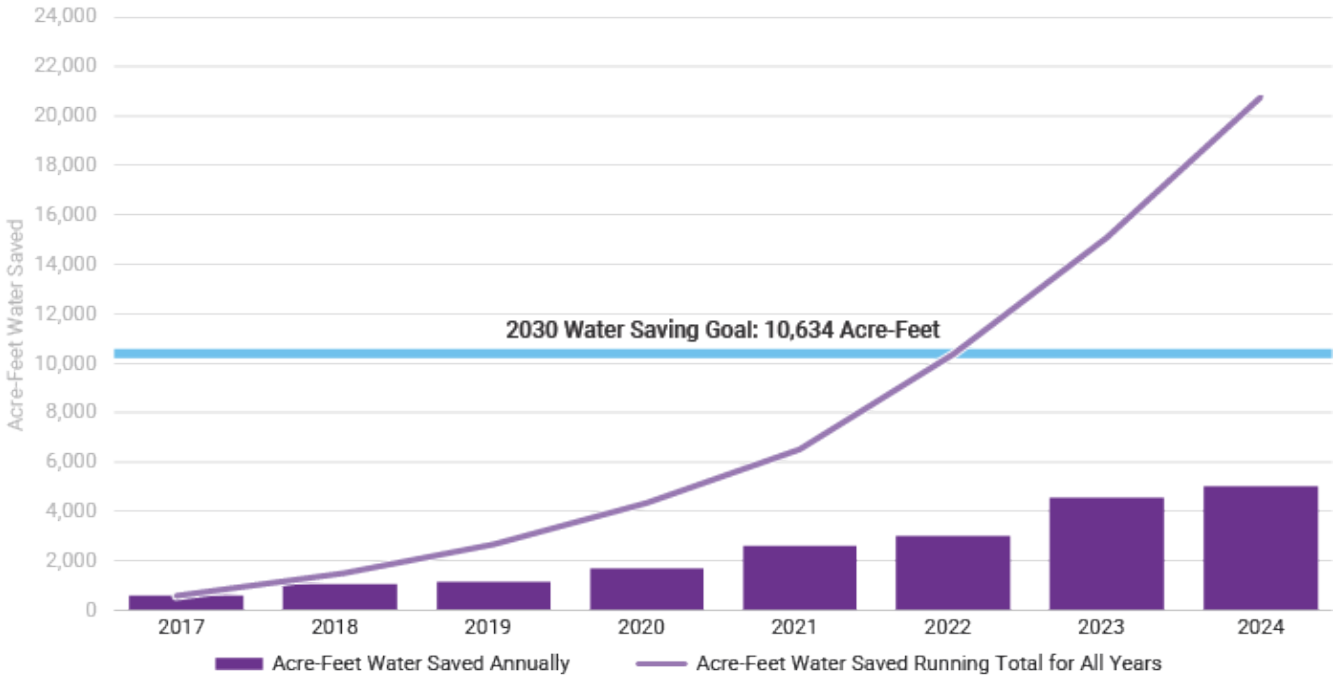


Figure 12. Acre-Feet of Water Savings

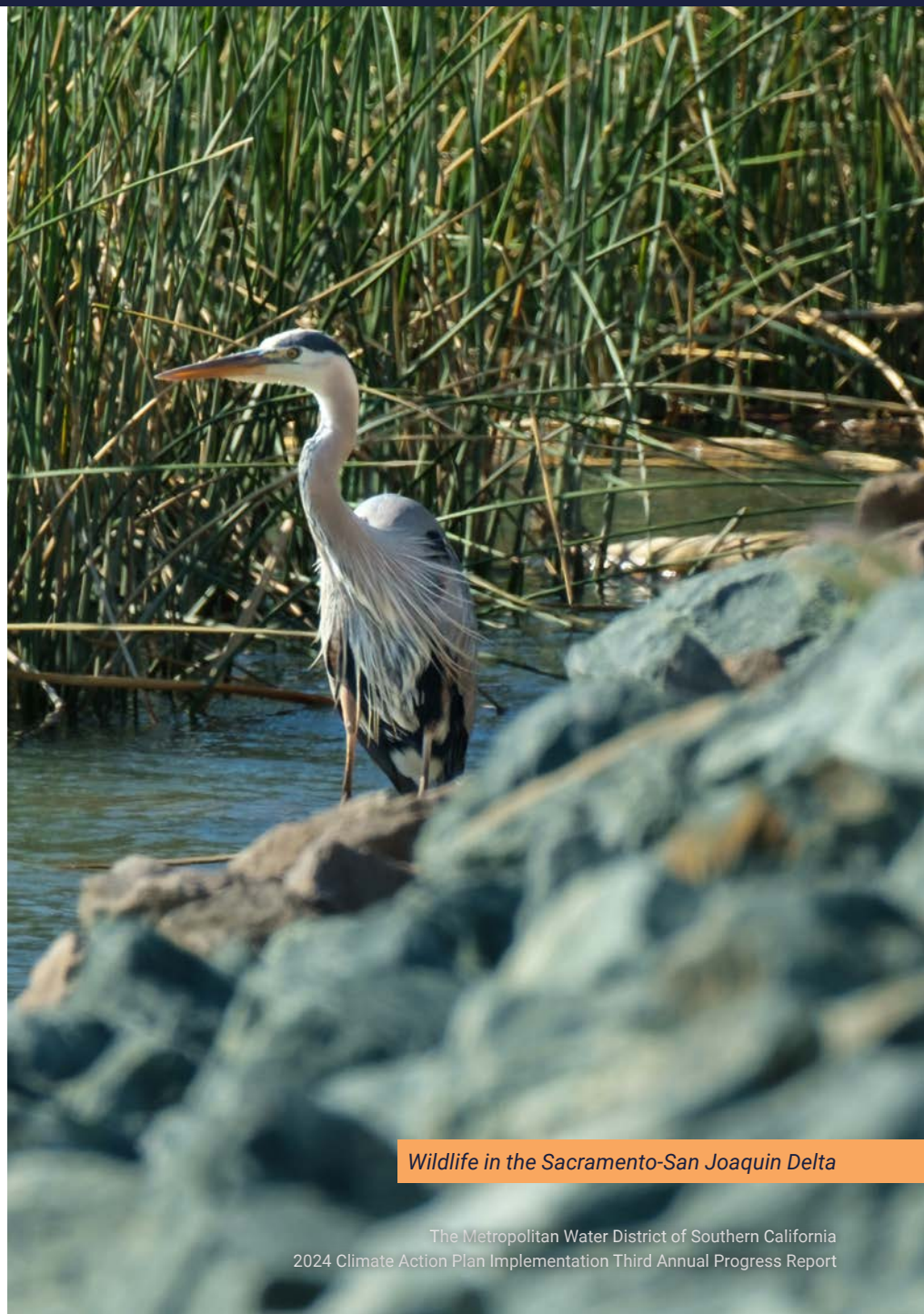


Progress Summary

Metropolitan continues to make progress towards achieving the goals set out in the CAP and further promoting and enhancing sustainability and resilience throughout the organization and its Southern California service area. Metropolitan continues to benefit from the lower emissions electricity purchased through its wholesale and retail procurement policies, which has reduced overall emissions despite variability in pumping requirements year to year.

Initiatives and projects such as the organics waste diversion program at the Headquarters building, LED conversion, ZEV transition, telecommute policy, renewable diesel use, and turf replacement program are already making positive impacts consistent with Metropolitan's environmental goals by conserving water, diverting waste, and reducing emissions now, while laying the groundwork for greater emissions reductions in the future.

Of the 31 Supportive measures, six have been completed, 10 are ongoing, 10 are underway, one is pending, and four have not made progress. Of the 11 Quantitative measures, four have met or exceeded their 2030 target, three measures are over 50 percent of the way to meeting their 2030 target, two measures have achieved less than 50 percent of their 2030 targets, and only two measures have not yet made quantifiable progress towards their 2030 targets, though preparatory work is underway on those measures.



Wildlife in the Sacramento-San Joaquin Delta

Appendices

Lake Mathews

Supportive Measures - Status Summary Table

Strategy ID	Action #	Strategy Language	Phase	Target Year	Status
Scope 1: Direct Combustion					
Strategy 1–Phase Out Natural Gas Combustion at Facilities					
Strategy 1	**DC-1**	Conduct a survey of all natural gas consuming devices in offices, control buildings, and residential structures and establish a schedule to replace natural gas equipment with electric by 2025.	**1**	**2025**	Complete
Strategy 1	**DC-3**	Update Metropolitan building standards to require all-electric construction for new buildings and retrofits.	**1**	**2030**	Pending
Strategy 2–Zero Emission Vehicle Fleet					
Strategy 2	**FL-1**	Conduct a ZEV/EV Feasibility Study to determine which fleet vehicles can be converted, what chargers/fueling stations are required, and where they should be located by the end of 2022.	**1**	**2030**	Complete
Strategy 2	**FL-2**	Adopt an ZEV/EV first policy for fleet vehicles to obtain ZEVs when technological, operational, or cost effectiveness parameters are met.	**1**	**2030**	Underway
Strategy 2	**FL-3**	Replace fossil fuel passenger fleet vehicles as identified in the ZEV/EV Feasibility Study (FL-1).	**1**	**2030**	Underway
Strategy 2	**FL-4**	Install EV charging and/or ZEV infrastructure at facilities pursuant to the findings of the ZEV/EV Feasibility Study (FL-1).	**1**	**2030**	Underway
Strategy 3–Use Alternative Fuels to Bridge the Technology Gap to Zero Emission Vehicles and Equipment					
Strategy 3	**AF-1**	Complete a pilot project on the use of renewable diesel rather than conventional diesel for all stationary equipment by 2025.	**1**	**2025**	Complete
Strategy 3	**AF-2**	Complete a pilot project of renewable diesel use in on-road and off-road vehicles by providing at least one renewable diesel tank at Metropolitan-owned fueling depots in 2021.	**1**	**2021**	Complete
Scope 2: Electricity					
Strategy 4 – Utilize Low-Carbon and Carbon-Free Electricity					
Strategy 4	**E-1**	Analyze marginal emissions rates and evaluate the feasibility of shifting energy use to lower emission periods.	**1**	**2030**	Ongoing
Strategy 4	**EE-3**	Investigate feasibility of a large-scale (100 MW) battery storage system for the CRA.	**2**	**2045**	Complete

Strategy ID	Action #	Strategy Language	Phase	Target Year	Status
Strategy 5 – Improve Energy Efficiency					
Strategy 5	**EE-2**	Continue programs to analyze CRA pump efficiency and replace or refurbish pumps when cost effective.	**1**	**2030**	Ongoing
Strategy 5	**EE-4a**	Replace pump impellers at the Iron Mountain pumping plant if directed by findings of the pump assessment (Measure EE-2).	**2**	**2045**	No Action
Strategy 5	**EE-4b**	Replace pump impellers at Eagle Mountain or Hinds pumping plants if directed by findings of the pump assessment (Measure EE-2).	**2**	**2045**	No Action
Strategy 5	**EE-4c**	Refurbish motors at Iron Mountain if applicable based on the findings of the pump assessment (Measure EE-2).	**2**	**2045**	No Action
Strategy 5	**EE-4d**	Refurbish motors at Eagle Mountain or Hinds pumping plants if directed by findings of the pump assessment (Measure EE-2).	**2**	**2045**	No Action
Strategy 5	**EE-5**	If the proposed RRWP (Pure Water Southern California) is ultimately constructed, install an inter-stage pumping system on the reverse osmosis brine stream to reduce energy use.	**2**	**2045**	Underway
Scope 3: Other Indirect Emissions					
Strategy 6 – Incentivize More Sustainable Commutes					
Strategy 6	**EC-1**	Expand subsidized transit commute program to reduce employee commute miles.	**1**	**2030**	Underway
Strategy 6	**EC-2**	Expand employee use of carbonfree and low carbon transportation by providing education programs on the benefits of commute options including public transportation, EV/ZEV options, and vanpools.	**1**	**2030**	Ongoing
Strategy 6	**EC-4**	Continue to offer benefits to employees who use alternative modes of transportation (e.g. public transportation, bikes).	**1**	**2030**	Ongoing
Strategy 6	**EC-6**	Replace all Metropolitan vanpool vehicles with ZEVs. Start with a pilot study (Measure FL-1) to evaluate the best approach.	**2**	**2045**	Underway

Strategy ID	Action #	Strategy Language	Phase	Target Year	Status
Strategy 7 – Increase Waste Diversion to Achieve Zero Waste					
Strategy 7	**WA-2**	Implement a program to reduce organic waste at Metropolitan's Union Station building. Contract or team with local organizations and waste disposal companies to route organic waste to anaerobic digestion or composting facilities and edible food to-food recovery centers.	**1**	**2030**	Ongoing
Strategy 7	**WA-3**	Develop and implement a sustainable procurement policy.	**1**	**2030**	Underway
Strategy 7	**WA-4**	Partner with municipal agencies, like the City of Los Angeles, to create programs that will allow Metropolitan to provide its fair share of diversion and help local jurisdictions meet the goals of SB 1383 for organics diversion, including food waste and composting.	**2**	**2045**	Underway
Strategy 8 – Increase Water Conservation and Local Water Supply					
Strategy 8	**CS-3**	Establish baseline soil carbon quantities through science-based approaches then develop pilot projects to enhance carbon sequestration and implement larger scale carbon sequestration projects as deemed feasible.	**2**	**2045**	Underway
Strategy 8	**WC-1**	Expand programs that educate customers on water conservation initiatives through workshops and speaking engagements.	**1**	**2030**	Ongoing
Strategy 8	**WC-2**	Continue to implement innovative water use efficiency programs.	**1**	**2030**	Ongoing
Strategy 8	**WC-4**	Provide funding for the development and monitoring of local stormwater recharge and use projects to evaluate the water supply benefit of stormwater.	**1**	**2030**	Ongoing
Strategy 8	**WC-5**	Continue to promote water efficiency technologies and innovative practices that can be adopted into future water conservation program updates.	**1**	**2030**	Ongoing
Strategy 8	**WC-6**	Implement advanced technology systems to increase Metropolitan owned recycled and groundwater recovery systems to maintain local water supply (e.g., proposed RRWP).	**2**	**2045**	Underway

Strategy ID	Action #	Strategy Language	Phase	Target Year	Status
Strategy 9 – Investigate and Implement Carbon Capture and Sequestration Opportunities					
Strategy 9	**CS-1**	Study carbon capture protocols in the Sacramento-San Joaquin River Delta.	**1**	**2030**	Complete
Strategy 9	**CS-2**	Conduct a five-year research program to increase Metropolitan's knowledge of regenerative agriculture and carbon sequestration opportunities on Metropolitan properties in the Palo Verde Valley.	**1**	**2030**	Underway

Quantifiable Measures - Status Summary Table

Strategy ID	Action #	Strategy language	Sector	Metric - Goal	Metric - Unit	Implementation Target Year	% Complete
Scope 1: Direct Combustion							
Strategy 1–Phase Out Natural Gas Combustion at Facilities							
Strategy 1	**DC-2**	Reduce natural gas emissions by 50 percent by 2030 and 100 percent by 2045 through electrification.	Natural Gas Stationary	53,404	MMBtu	**2030**	25%
Strategy 3–Use Alternative Fuels to Bridge the Technology Gap to Zero Emission Vehicles and Equipment							
Strategy 3	**AF-3**	Based on the results of the study in AF-2, Metropolitan will begin using renewable diesel fuel in 100 percent of Metropolitan's diesel-consuming on-road and off-road vehicles by 2025.	Diesel Mobile	100	Percent Renewable Diesel	**2025**	54%

Strategy ID	Action #	Strategy language	Sector	Metric - Goal	Metric - Unit	Implementation Target Year	% Complete
Scope 2: Electricity							
Strategy 4 – Utilize Low-Carbon and Carbon-Free Electricity							
Strategy 4	**E-2**	Connect the Yorba Linda Hydroelectric Power Plant behind Metropolitan's SCE electricity meter to directly utilize carbon-free electricity at Metropolitan's Diemer WTP by 2025.	Electricity	53,400	MWh	**2030**	0%
Strategy 4	**E-3**	In markets where available, Metropolitan will switch its retail accounts to green tariff options offered by power providers by 2025 to reduce the Scope 2 GHG emissions associated with retail electricity use.	Electricity	88	Percent Renewable Retail Electricity	**2025**	74%
Strategy 4	**E-4**	Install 3.5 MW battery storage systems at the Jensen, Skinner, and Weymouth WTPs. Investigate the use of a software system to track and optimize GHG emissions reduction due to time-of-use strategies by 2025.	Electricity	219	MT CO_2e Saved From Battery Arbitrage	**2030**	0%
Strategy 4	**E-5**	Manage Metropolitan's energy purchases to ensure cost-effective energy supply while achieving the required GHG emissions objective. (High emissions scenario)	Electricity	610,245	MT CO_2e Saved Compared to Baseline	**2030**	53%
Strategy 5 – Improve Energy Efficiency							
Strategy 5	**EE-1**	Convert all interior and exterior lighting at 50 percent of Metropolitan facilities to LED technologies by 2030 and 100 percent by 2045.	Electricity	50	Percent of LED retrofits completed	**2030**	112%

Strategy ID	Action #	Strategy language	Sector	Metric - Goal	Metric - Unit	Implementation Target Year	% Complete
Scope 3: Other Indirect Emissions							
Strategy 6 – Incentivize More Sustainable Commutes							
Strategy 6	**EC-3**	Install ZEV and/or EV infrastructure as directed by the ZEV/EV Feasibility Study to support at least a 15 percent transition of employee-owned vehicles to ZEVs/EVs by 2025.	Employee Commute	15%	Percent of EVs in Commuter Fleet	**2025**	103%
Strategy 6	**EC-5**	Allow 50 percent of employees located at Metropolitan's headquarters to telecommute or utilize flexible schedules through 2030 to reduce travel time, vehicle miles traveled (VMT), and GHG emissions.	Employee Commute	15,560,094	Reduced Commuter VMT	**2030**	183%
Strategy 7 – Increase Waste Diversion to Achieve Zero Waste							
Strategy 7	**WA-1**	Develop and implement net zero-waste policies and programs at all facilities to reduce landfilled waste by 30 percent by 2030 and achieve zero landfilled waste by 2045.	Solid Waste	22,143	Tons	**2030**	0.7%
Strategy 8 – Increase Water Conservation and Local Water Supply							
Strategy 8	**WC-3**	Continue Turf Replacement Program to install an average of 1,500,000 square feet of water efficient landscapes per year through 2030 through the use of a rebate program.	Water/ Wastewater	10,634	Acre-Feet	**2030**	196%

Intake Pump Plant at Lake Havasu

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

700 North Alameda Street
Los Angeles, California 90012
(213) 217-6000

mwdh2o.com

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