APPENDIX A: PROGRESS TRACKING TOWARDS CAP MEASURES

Supplement to 2024 Climate Action Plan Annual Report

Inventory Years 2019 - 2023

June 2025

Prepared for the City of San Diego

The City *of* SAN DIEGO

Prepared by the Energy Policy Initiatives Center

EPIC
ENERGY POLICY INITIATIVES CENTER
UNIVERSITY OF SAN DIEGO SCHOOL OF LAW

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INTRODUCTION

The City of San Diego (City) adopted an updated Climate Action Plan (CAP) in 2022 with new targets, measures, and actions.[1] This supplement document is a newly formatted rendition of the second Annual Report tracking progress towards targets outlined in the 2022 Climate Action Plan. The City has published Annual Reports since 2016, previously monitoring progress towards the 2015 CAP Measures[2]. This document summarizes activity related to measures outlined in the 2022 Climate Action Plan. The performance data discussed in this report, along with additional performance indicators, is also available on the City of San Diego's CAP Dashboard. Appendix B details the 2019 - 2023 inventory results, methodology, and any methodological refinements incorporated dating back to the original 2019 CAP baseline inventory.

The six strategies in the 2022 CAP are: (1) decarbonization of the built environment; (2) access to clean and renewable energy; (3) mobility and land use; (4) circular economy and clean communities; (5) resilient infrastructure and healthy ecosystems; and (6) emerging climate action. Under each strategy, the level of emissions in years 2019–2023 is presented first followed by best available data to monitor progress towards each strategy. When data is available prior to the 2019 CAP baseline year, it is provided for context.

2022 PROGRESS MONITORING TOWARDS CAP TARGETS

A.1 Strategy 1: Decarbonization of the Built Environment

A1.1 Activity and Emissions Trends Related to Building Energy Use in the City of San Diego:

Building energy-related emissions (fossil-fuel based electricity and natural gas consumption) accounted for 41% of total citywide emissions in 2023. The sector had a 17% reduction from the 2019 baseline (31% reduction in emissions from electricity and 1% reduction from natural gas) and a 4% reduction from 2022.

Electricity Consumption & Emissions:

The 2019 - 2023 grid-supplied electricity is provided in Table 1. For electricity users with on-site electric generation, only the net electricity from the grid has been included.

TABLE 1: TOTAL CITYWIDE GRID-SUPPLIED ELECTRICITY CONSUMPTION AND EMISSIONS (2019 – 2023)

	2019	2020	2021	2022	2023	% Change 2022-2023	% Change 2019-2023
Electricity Consumption (MWh)	7,312,722	7,198,617	6,957,279	7,137,087	6,907,228	-3%	-6%
Emissions from Electricity ($MTCO_2e$)	2,336,000	2,286,000	1,617,000	1,527,000	1,615,000	6%	-31%

MWh = megawatt hour, MT CO2e = metric tons of carbon dioxide equivalent
The MWhs do not include transmission and distribution losses, or self-serve behind-the-meter electricity generation (i.e., rooftop PV systems). The electricity sales data do not include the electricity sales to San Diego County Regional Airport Authority, San Diego Unified Port District or military. The emissions calculation includes the electricity transmission and distribution losses.
GHG emissions are rounded to the nearest thousand. The emissions from electricity were calculated based on City of San Diego's grid supply and power mix specifically, which may differ from other jurisdictions in San Diego region. The GHG emissions include emissions from transmission and distribution losses.

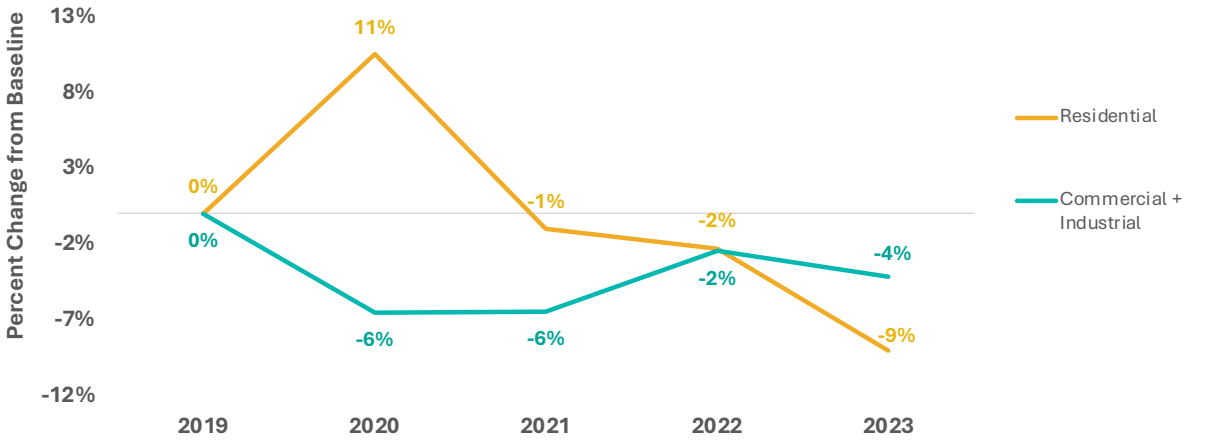
[1] City of San Diego: 2022 Climate Action Plan.

[2] All CAP Annual Reports can be found on the City's website: https://www.sandiego.gov/sustainability-mobility/climate-action/cap

SDG&E 2025, Energy Policy Initiatives Center, University of San Diego 2025

The percent change of grid-supplied electricity consumption by customer class compared to a 2019 baseline is shown in Figure 1.

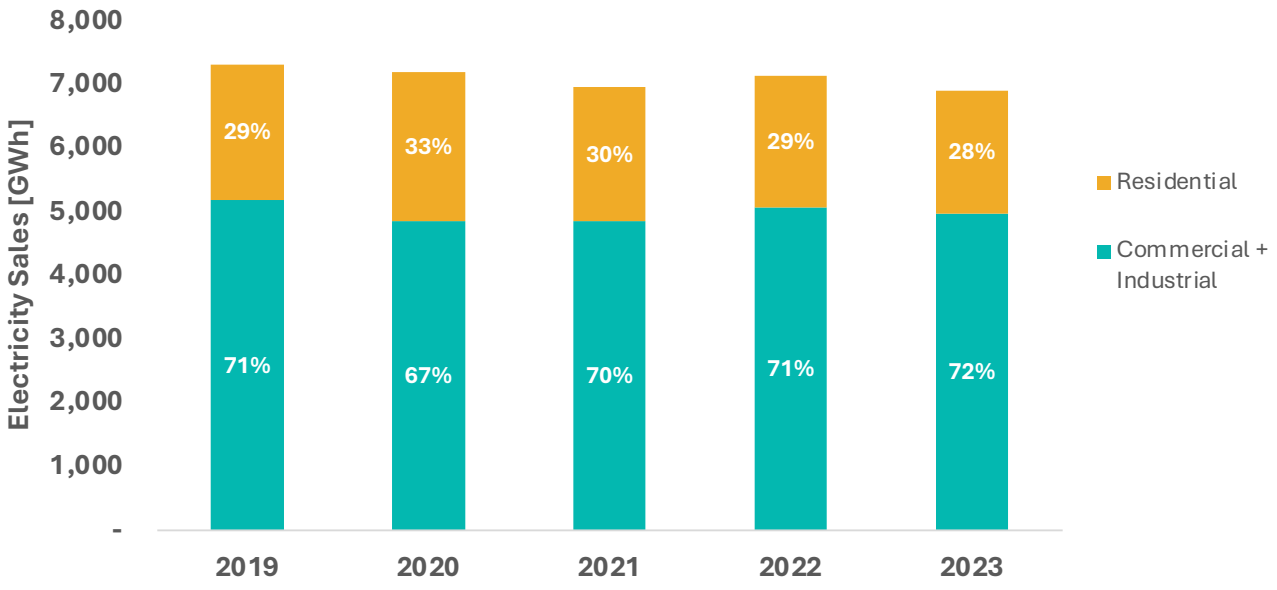
FIGURE 1: PERCENT CHANGE IN GRID-SUPPLIED ELECTRICITY CONSUMPTION BY CUSTOMER FROM 2019 BASELINE



SDG&E 2019 – 2023, SDCP 2021-2023

Total grid-supplied electricity consumption by customer class in 2019–2023 are shown in Figure 2.

FIGURE 2: GRID-SUPPLIED ELECTRICITY CONSUMPTION BY CUSTOMER CLASS IN CITY OF SAN DIEGO (2019 – 2023)



SDG&E's electricity sales in City of San Diego. Sales do not include transmission and distribution losses, and exclude sales to San Diego County Regional Airport Authority, San Diego Unified Port District, and the military.
Percentages may not sum up to totals due to rounding.
SDG&E 2019-2023

Natural Gas Consumption & Emissions:

Table 2 provides natural gas consumption and emissions from 2019–2023. Citywide natural gas consumption in 2023 was 1% lower than the 2019 baseline and 3% higher than 2022. Natural gas consumption can fluctuate annually due to temperatures as natural gas is commonly used in the winter for space heating.

TABLE 2: CITYWIDE NATURAL GAS CONSUMPTION AND EMISSIONS (2019 – 2023)

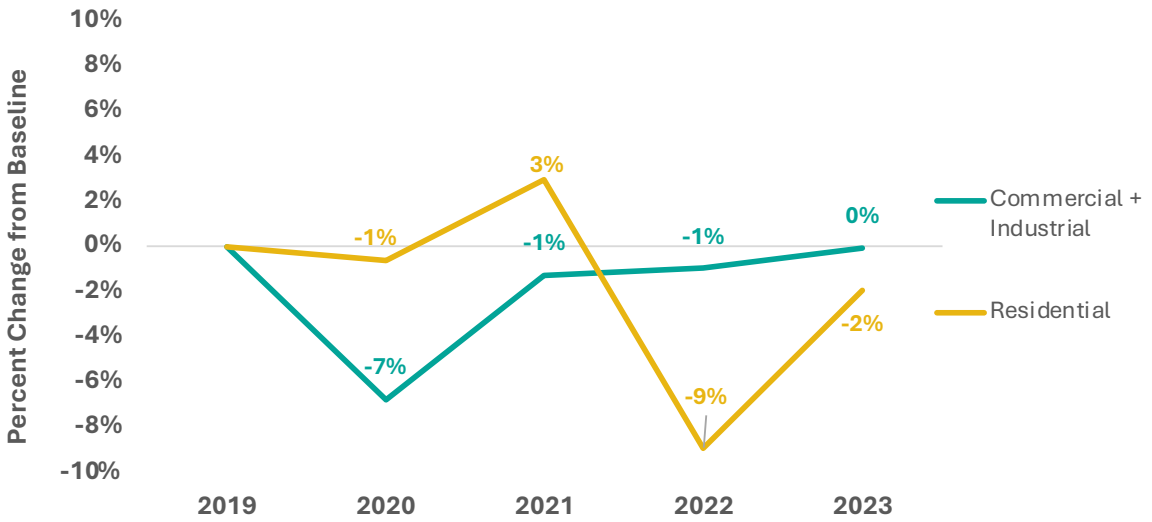
Year	2019	2020	2021	2022	2023	% Change 2022-2023	% Change 2019-2023
Natural Gas Use (million Therms)	351	335	352	337	348	3%	-1%
Emissions from Natural Gas ($MTCO_2e$)	1,912,000	1,827,000	1,918,000	1,837,000	1,898,000	3%	-1%

The natural gas consumption refers to retail sales by SDG&E. Sales data does not include the sales to San Diego County Regional Airport Authority, San Diego Unified Port District, and military.
SDG&E 2025, Energy Policy Initiatives Center, University of San Diego 2025

Natural gas consumption changes compared to a 2019 baseline is shown in

Figure 3.

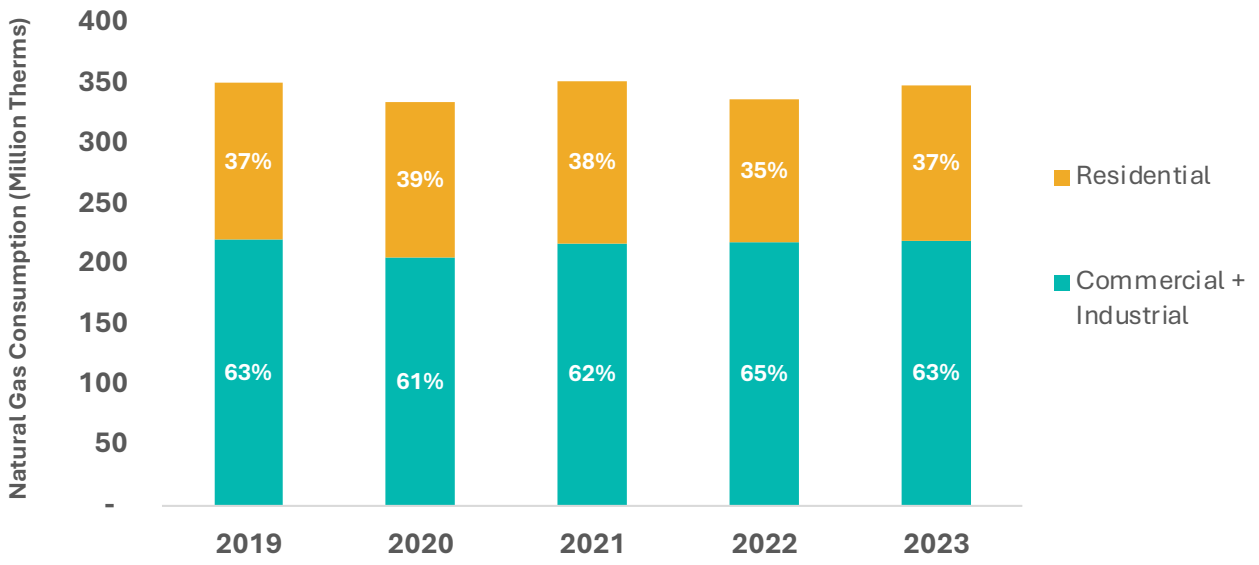
FIGURE 3: PERCENT CHANGE IN NATURAL GAS CONSUMPTION FROM 2019 BASELINE



SDG&E 2019 – 2023

A comparison of the natural gas use by customer class in 2019–2023 is shown in Figure 4.

FIGURE 4: CITYWIDE NATURAL GAS CONSUMPTION BY CUSTOMER CLASS (2019 – 2023)



SDG&E 2019 – 2023

A1.2 CAP Performance Target Progress: Decarbonize New & Existing Buildings

Measure 1.1: Decarbonize Existing Buildings

- *2030 Target: Phase out 45% of natural gas usage from existing buildings*
- *2035 Target: Phase out 90% of natural gas usage from existing buildings*

Measure 1.2: Decarbonize New Building Development

- *2030 Target: All-electric reach code starting 2023 at new residential and commercial development*
- *2035 Target: Ongoing implementation of all-electric new residential and commercial development*

Table 3 provides the total citywide energy consumption, or the total electricity and natural gas consumption combined using million British Thermal Units (MMBtu), and emissions from 2019 - 2023. MMBtu is a common unit of energy used to enable comparison of the energy content of different fuel types. In this case electricity in kilowatt-hours (kWh) and natural gas in therms are converted to the same MMBTU unit. Total 2023 citywide energy consumption was 3% lower than 2019 levels and 1% higher than 2022 levels. Emissions associated with energy use has decreased 17% since the 2019 baseline.

TABLE 3: CITYWIDE ENERGY CONSUMPTION AND EMISSIONS (2019 – 2023)

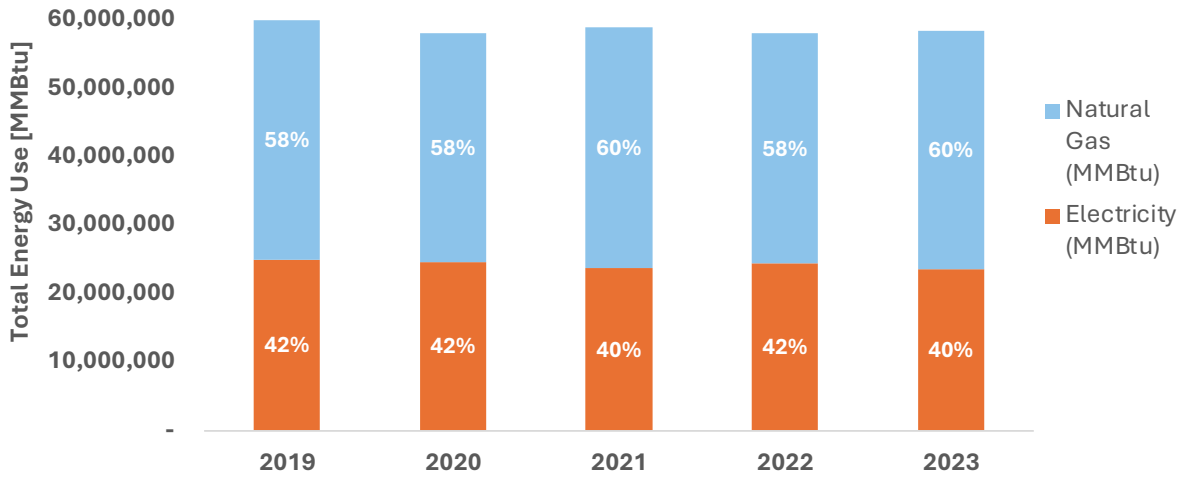
Year	2019	2020	2021	2022	2023	% Change 2022-2023	% Change 2019-2023
Electricity (MMBtu)	24,951,000	24,562,000	23,738,000	24,352,000	23,567,000	-3%	-6%
Natural Gas (MMBtu)	35,057,000	33,483,000	35,159,000	33,673,000	34,789,000	3%	-1%
Total Energy (MMBtu)	60,008,000	58,045,000	58,897,000	58,025,000	58,356,000	1%	-3%

Emissions from Energy Use ($MMTCO_2e$)	4.2	4.1	3.5	3.4	3.5	4%	-17%

MMBtu = million British Thermal Units
Conversion factors are 293 kWh/MMBtu and 10 therms/MMBtu.
MMTCO2e = million metric tons carbon dioxide equivalent
SDG&E 2023, Energy Policy Initiatives Center, University of San Diego 2025

A comparison of the total energy use, including grid-supplied electricity and natural gas, for 2019–2023 is shown in Figure 5.

FIGURE 5: CITYWIDE GRID-SUPPLIED ELECTRICITY AND NATURAL GAS CONSUMPTION (2019 – 2023)



SDG&E 2019 - 2023, Energy Policy Initiatives Center, University of San Diego 2025

A1.3 CAP Performance Target Progress: Decarbonize City Facilities

Measure 1.3: Decarbonize City Facilities

- *2030 Target: Phase out 50% of natural gas usage in municipal facilities*
- *2035 Target: Phase out 100% natural gas usage in municipal facilities*

Total energy use for municipal operations in 2023 was 9% lower than the baseline year of 2019 and 5% higher than in 2022. Table 4 shows both electricity and natural gas use by municipal operations. This data includes energy use for facilities other than buildings (streetlights, traffic lights, etc.) but does not include natural gas use for City vehicles.

TABLE 4: ENERGY USE IN MUNICIPAL BUILDINGS (2019 – 2023)

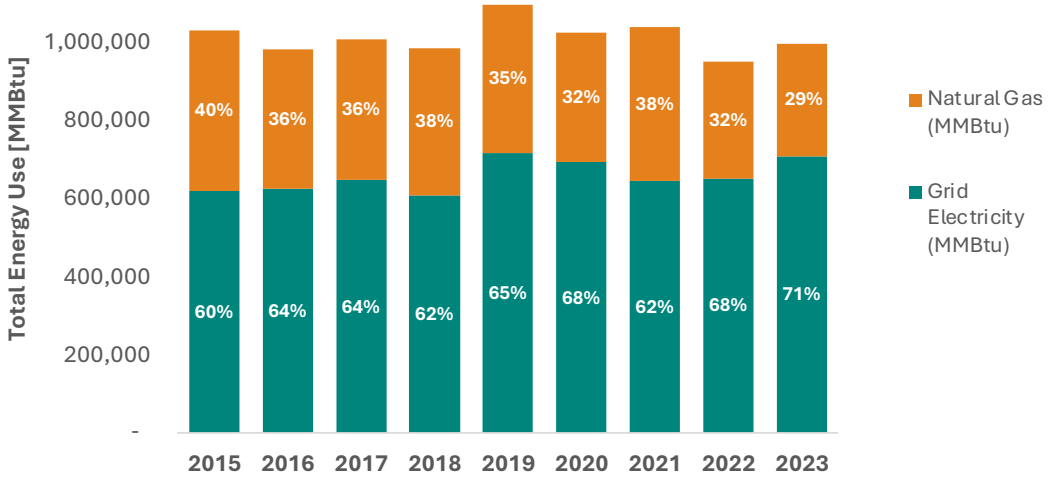
Energy Use	2019	2020	2021	2022	2023	% Change 2022-2023	% Change 2019-2022
Grid Electricity (MWh)	210,794	203,900	190,152	191,155	208,464	9%	-1%
Grid Electricity (MMBtu)	718,704	695,198	648,326	651,744	710,759	9%	-1%
Natural Gas (million therms)	3.8	3.3	3.9	3.0	2.9	-4%	-25%

Natural Gas (MMBtu)	381,302	330,976	394,156	300,436	287,612	-4%	-25%
Total Energy Use (MMBtu)	1,100,006	1,026,174	1,042,482	952,180	998,370	5%	-9%

Natural gas emissions listed in this table do not include natural gas use for vehicles. These emissions are captured in The City's landfill gas power plant at North City Water Reclamation Plant (NCWRP) was put offline in 2023 as the facility transitions to the Pure Water facility. Additionally, in April 2023, the City's co-generation facility with landfill gas privatized owner's power purchase agreement with SDG&E ended. As a result, the owner decided to reduce power generation. The excess output was originally sold back to the grid, but the lowered output in 2023 now powers just the municipal operations.
CAP Performance Target Progress: Increase Municipal Zero Emission Vehicles. Natural gas emissions from vehicles are included in the Natural Gas sector of the citywide inventory due as data is not available at the citywide level to disaggregate between building and vehicle use.
City of San Diego Sustainability & Mobility Department, Energy Policy Initiatives Center 2025

The total energy consumption for municipal operations from 2015 to 2023 is provided in Figure 6. Because a longer time-series of data is available for municipal energy consumption, it is provided for context in Figure 6, though progress towards the CAP target is still assessed in relation to the CAP baseline year of 2019.

FIGURE 6: MUNICIPAL GRID-SUPPLIED ELECTRICITY AND NATURAL GAS CONSUMPTION (2015–2023)



SDG&E grid purchases only. Does not include on-site electricity generation.
Does not include natural gas purchases for CNG vehicles.
City of San Diego Sustainability & Mobility Department

A.2 Strategy 2: Access to Clean and Renewable Energy

A2.1 Activity and Emissions Trends Related to Renewable Energy Access in the City of San Diego

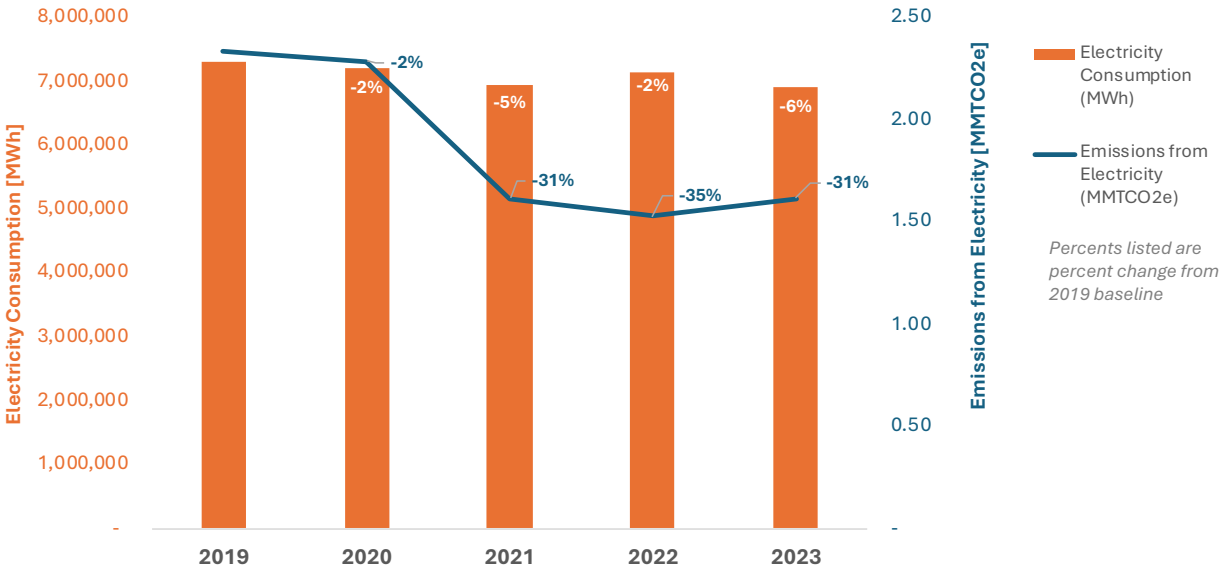
Emissions from the consumption of grid-supplied electricity accounted for 19%% of total citywide emissions in 2023. Grid-supplied electricity consumption has trended downward since 2019, with a 6% reduction from the 2019 baseline as shown previously in Table 1 and in Figure 7. Emissions from the consumption of electricity have reduced even further, with a 31% reduction from the 2019 baseline. This outsized decrease in emissions compared to the decrease in electricity consumption is due to an increase in the supply of electricity from renewables.

San Diego Gas & Electric (SDG&E)'s renewable electricity supply increased from 31% in 2019 to 41% in 2023, as shown in Table 5. In March 2021, San Diego Community Power (SDCP) started serving jurisdictions in the San Diego region, including the City of San Diego. By the end of 2021, eligible commercial and industrial customers from SDG&E's bundled service (i.e. SDG&E's default service) were enrolled in SDCP automatically with the option to opt-out (return to SDG&E) or opt-up to a SDCP product with 100% renewable electricity. In early 2022,

eligible SDG&E bundled residential customers were then enrolled in SDCP automatically with the same option to opt-out or opt-up. Emissions are based on a weighted average of SDG&E bundled, SDCP Power On, SDCP Power 100, and Direct Access consumption and their associated emission factors.

While progress has been made towards reducing emissions from electricity consumption from the 2019 baseline, all load serving entities servicing the City of San Diego saw a reduction in renewables procurement and therefore an increase in emissions intensity of electricity in 2023 when compared to 2022. Percent of renewables in the electricity supply for each load serving entity can be found in Table 5.

FIGURE 7: CITYWIDE GRID-SUPPLIED ELECTRICITY CONSUMPTION AND EMISSIONS (2019 – 2023)



SDG&E 2019 - 2023, Energy Policy Initiatives Center, University of San Diego 2025

A2.2 CAP Performance Target Progress: Increase Access to Grid Renewables

Measure 2.1: Citywide Renewable Energy Generation

- *2030 Target: 100% renewable or GHG-free power for all SDCP customers in the City of San Diego*
- *2035 Target: 100% renewable or GHG-free power for all SDCP customers in the City of San Diego*

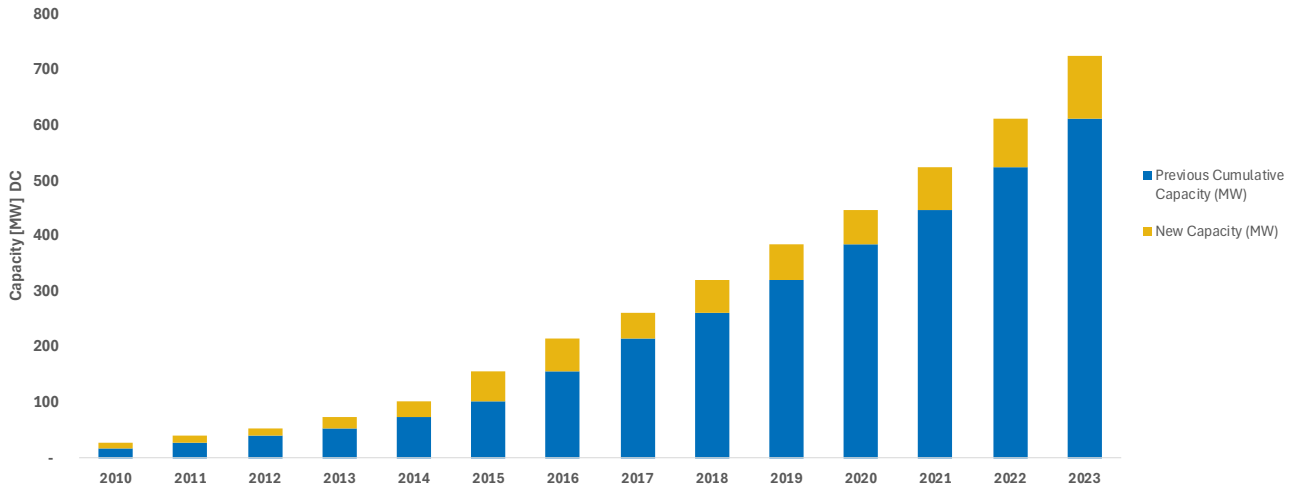
Percent of renewables in grid-provided electricity through both SDG&E and SDCP from 2019 – 2023 is outlined in Table 5.

TABLE 5: PERCENTAGE OF RENEWABLES IN GRID ELECTRICITY SUPPLY (2019 – 2023)				
Year	**SDG&E**	**SDCP "Power On"**	**SDCP "Power 100"**	**Direct Access[3]**
2019	31%	n/a	n/a	No data
2020[1]	31%	n/a	n/a	No data
2021[2]	44.5%	54.9%	100%	23%
2022	44.8%	54.2%	100%	30%
2023	41.4%	51.1%	100%	No data

The percent renewable is for the electricity SDG&E supplied to its bundled customers; it does not represent the renewable content of the electricity supplied to SDG&E's Direct Access customers and does not account for behind-the-meter renewable supply.
[1]The California Energy Commission has updated the method to report renewable content in the Power Source Disclosure Program. The percentage starting 2022 does not reflect the supplier's Renewables Portfolio Standard compliance and does not include unbundled renewable energy credits.
[2] San Diego Community Power started serving jurisdictions in the San Diego region, including the City of San Diego, in March 2021.
[3] Direct Access percent renewables are estimated using a statewide weighted average of all direct access electricity providers. The data needed to estimate this figure is only available for calendar years 2021 and 2022. Due to confidentiality rules, the 2023 data needed to make this estimate are not yet available. In the next annual report, the 2023 Direct Access figure will be updated.
California Energy Commission 2025

In 2023, solar projects for residential customers accounted for 88% of new solar capacity (approximately 76 out of 87 MW) and 99% of projects. The cumulative capacity of interconnected PV systems installed between 1990 and the end of 2023 was 724 MW in the City. Figure 8 shows the new capacity added each year from 2010 to 2023 as well as the prior year's cumulative capacity.

FIGURE 8: BEHIND-THE-METER PV IN CITY OF SAN DIEGO (2010–2023)

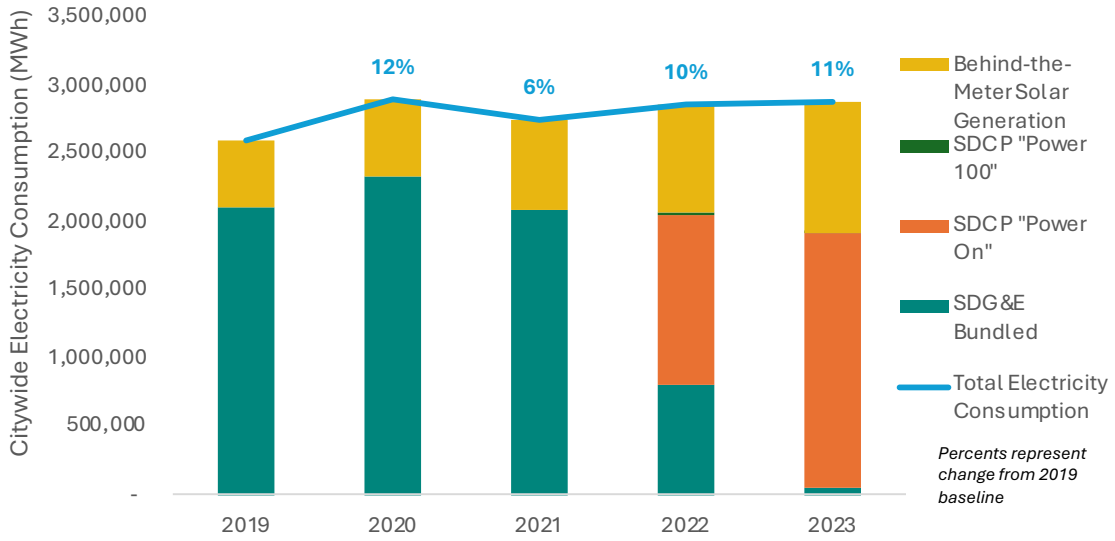


California Distributed Generation Statistics database, net energy metering (NEM)
CPUC created the first NEM policy in 1996, NEM 2.0 went into effect in July of 2017, and NEM 3.0 in April of 2023.
SDG&E Interconnected Project Sites Database
Energy Policy Initiatives Center University of San Diego, 2025

Total citywide electricity consumption and generation source is shown in

Figure 9, including grid-supplied electricity from SDCP and SDG&E bundled, Direct Access, and behind-the-meter PV.

FIGURE 9: TOTAL CITYWIDE ELECTRICITY CONSUMPTION FROM GRID-SUPPLIED AND BEHIND-THE-METER PV (2019 – 2023)



California Distributed Generation Statistics database, net energy metering (NEM)
SDG&E Interconnected Project Sites Database
Energy Policy Initiatives Center, University of San Diego, 2025

The City also has numerous facilities with on-site City-owned or privatized renewable generation, including: (1) combined heat and power generation using landfill gas or digester gas at Metropolitan Biosolids Center (MBC) and Point Loma Wastewater Treatment Plant (PLWTP); (2) hydroelectric generation at Point Loma Wastewater Treatment Plant ocean outfall; and (3) PV systems at office building's roofs or parking lot, water treatment facilities, libraries, recreation centers and fire stations.

Total on-site renewable generation at municipal facilities for 2021 - 2023 is shown in Table 6. On-site renewable generation data from municipal sites was not collected until after the adoption of the 2022 CAP which is why data only goes back to calendar year 2021.

TABLE 6: ON-SITE RENEWABLES GENERATION AT MUNICIPAL FACILITIES (2021 – 2023)

Municipal On-Site Generation	Estimated Annual Output 2021 (kWh)	Estimated Annual Output 2022 (kWh)	Estimated Annual Output 2023 (kWh)
Solar	9,934,962	8,937,068	7,882,119
Hydroelectric	Not estimated	Not estimated	Not estimated
Co-gen with Biogas (PLWTP)	28,156,816	23,200,496	30,466,769
Power Plant with Landfill Gas (NCWRP)	25,107,338	6,084,753	0
Co-gen with Landfill Gas (MBC)	43,463,260	43,462,998	19,511,378

In previous Annual Reports, solar data from smaller City facilities was omitted due to a lack of monitoring data. The City has since installed monitoring systems to better understand energy generation at the smaller facilities. 2021 and 2022 data are updated in this report to reflect this new monitoring data.

City of San Diego Public Utilities Department

The City's landfill gas power plant at North City Water Reclamation Plant (NCWRP) was put offline in 2023 as the facility transitions to the Pure Water facility. Additionally, in April 2023, the City's co-generation facility with landfill gas privatized owner's power purchase agreement with SDG&E ended. As a result, the owner decided to reduce power generation. The excess output was originally sold back to the grid, but the lowered output in 2023 now powers just the municipal operations.

A2.3 CAP Performance Target Progress: Increase Municipal Zero Emission Vehicles

Measure 2.2: Increase Municipal Zero Emission Vehicles

- *2030 Target: Percent of all municipal fleet vehicles to be ZEVs: Cars 75%, LDV 50%, MDV 50%, HDV 50%*
- *2035 Target: Percent of all municipal fleet vehicles to be ZEVs: Cars and LDV 100%, MDV 75%, HDV 75%*

As of 2023, 5% of the City's vehicle fleet of 4,457 vehicles were zero emission vehicles (ZEVs) or near-zero emission vehicles (NZEVs), including 134 battery electric vehicles (BEVs, a ZEV) and 100 plug-in hybrid electric vehicles (PHEVs, a NZEV). Table 7 shows the percentage of ZEVs and NZEVs in the Municipal fleet from 2019 – 2023.

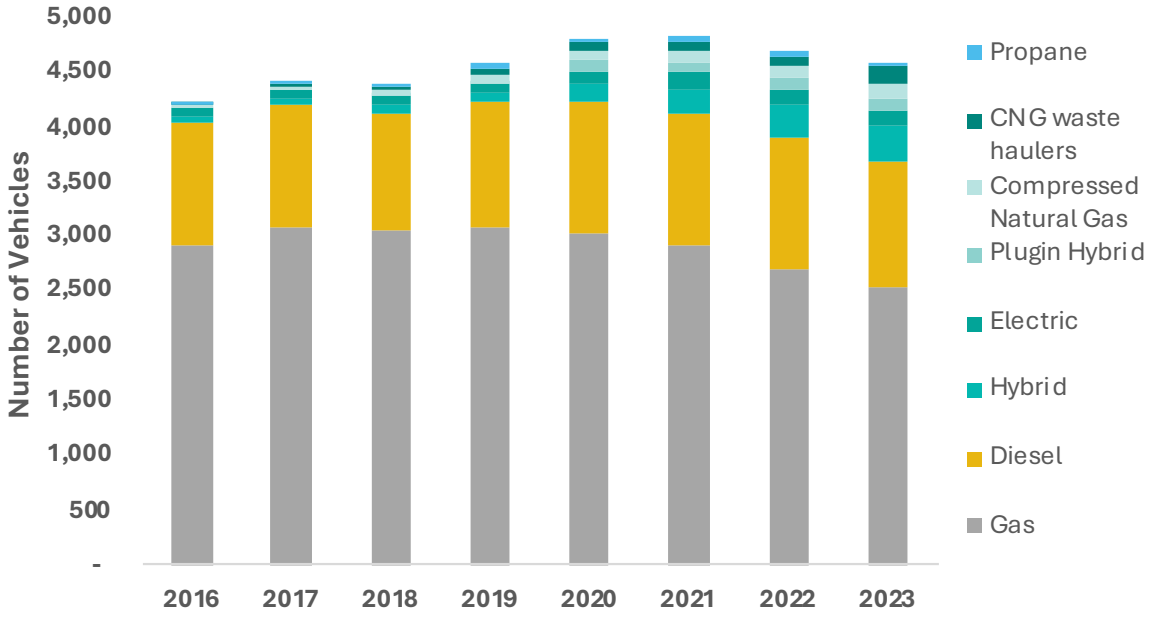
TABLE 7: PERCENT OF ZEV AND NZEVS IN MUNICIPAL VEHICLE FLEET (2019 – 2023)

Calendar Year	2019	2020	2021	2022	2023
Percent of ZEVs in Municipal Fleet	2.2%	4.5%	5.2%	5.4%	5.3%

City of San Diego Sustainability and Mobility Department

The City also had 328 gasoline-electric hybrids and 148 compressed natural gas trucks. Figure 10 shows the breakdown of municipal vehicles from 2016 to 2023. Because a longer time-series of data is available for municipal vehicle fleet, it is provided for context in Figure 10, though progress towards the CAP target is still assessed in relation to the CAP baseline year of 2019.

FIGURE 10: VEHICLES IN MUNICIPAL FLEET BY FUEL TYPE (2016 – 2023)



City of San Diego Sustainability and Mobility Department

The 2019 to 2023 municipal fleet fuel consumption is provided in Table 8.

TABLE 8: MUNICIPAL FLEET FUEL CONSUMPTION (2019 – 2023)			
Year	**Total Gasoline (gallons)**	**Total Diesel (gallons)**	**Compressed Natural Gas (gallons diesel-equivalent)**
2019	2,047,504	2,043,446	587,157
2020	2,154,536	1,509,165	724,295
2021	2,090,527	1,396,446	865,473
2022	2,060,978	1,382,680	912,739
2023	2,087,658	1,643,295	1,178,044
City of San Diego Sustainability and Mobility Department			

A2.4 CAP Performance Target Progress: Increase Citywide Zero Emission Vehicles

Measure 2.3: Increase Electric Vehicle Adoption

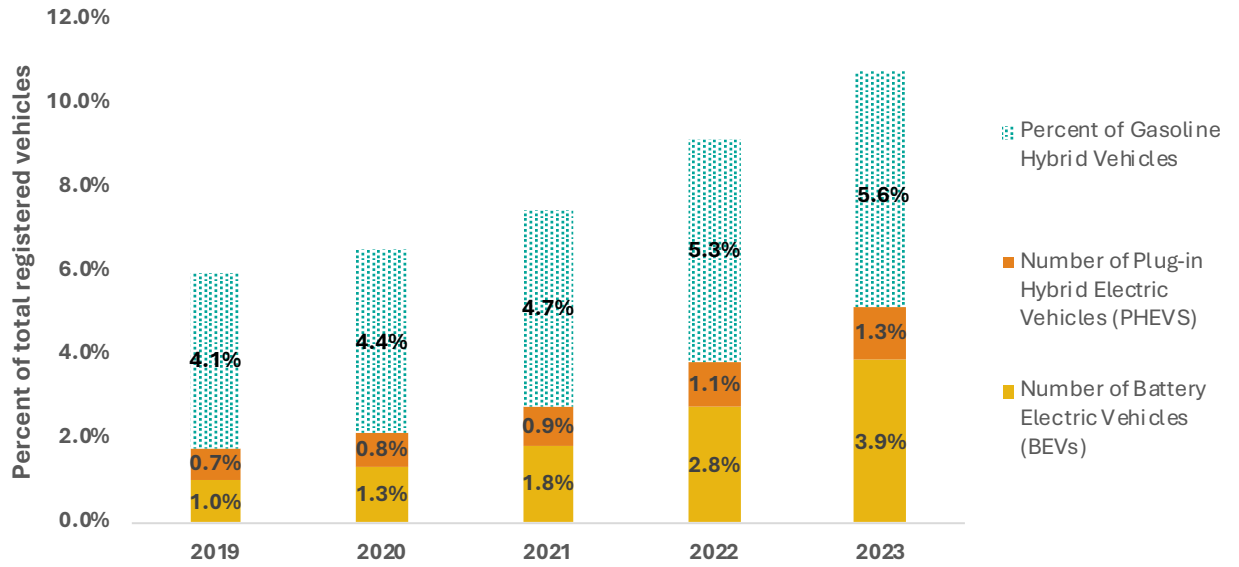
- *2030 Target: 16% e-VMT out of all Light-duty VMT*
- *2035 Target: 25% e-VMT out of all Light-duty VMT*

The emissions impact of zero-emission vehicles (ZEVs) policies and programs is included in GHG reduction from State polices and actions, not as a result of a particular CAP strategy. However, progress towards these State policies can be assessed at the local level. While data for registered ZEVs is not available at the city level, the total number of registered zero and near-zero emission vehicles in San Diego County, including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) shown in Table 9.

TABLE 9: NUMBER OF REGISTERED ELECTRIC VEHICLES IN SAN DIEGO COUNTY (2019 – 2023)							
Number of Vehicles	**2019**	**2020**	**2021**	**2022**	**2023**	**% Change 2022-2023**	**% Change 2019-2023**
Number of Battery Electric Vehicles (BEVs)	25,673	32,057	45,979	67,444	99,528	48%	288%
Number of Plug-in Hybrid Electric Vehicles (PHEVs)	18,309	19,559	23,785	27,165	32,043	18%	75%
Total Number of Electric Vehicles (BEVs + PHEVs)	43,982	51,616	69,764	94,609	131,571	39%	199%
Total Number of Registered Vehicles	2,453,257	2,425,831	2,514,519	2,446,883	2,551,116	4%	4%
Percent of Zero and Near-Zero Emission Vehicles (ZEV and NZEV) to All Registered Vehicles	1.8%	2.1%	2.8%	3.9%	5.2%	33%	188%
California Energy Commission 2019 – 2024							

The number of ZEV and NZEVs have nearly tripled (188% increase) from 2019 to 2023. In 2023, approximately 5% of all registered vehicles in the County were ZEV or NZEVs. Gasoline hybrids, while not considered a ZEV or NZEV, show an increasing trend towards higher efficiency vehicles. Figure 11 shows the BEV, PHEV, and gasoline hybrid vehicle population as a percentage of total registered vehicles in San Diego County. The percentages shown do not represent ZEV market share (the percentage of new ZEVs sold out of all new vehicles sales). ZEVs accounted for approximately 8% of light-duty vehicle market share in the County in 2020 (the first data year available), and 26% in 2023.

FIGURE 11: PERCENT OF ZEV, NZEV, AND GASOLINE HYBRID VEHICLES REGISTERED IN SAN DIEGO COUNTY (2019 – 2023)



California Energy Commission 2019 – 2024

The rising number of EVs increases demand for EV charging. Table 10 shows the cumulative number of electric vehicle charging stations (EVCS) within the City.

TABLE 10: ESTIMATED NUMBER OF ELECTRIC VEHICLE CHARGING STATIONS (2019, 2022, 2023)

Number of Charging Sites or Chargers	2019	2022	2023
Number of EVCS (public and private)	300	719	732
Number of Public Level 2 EVCS at all Sites	932	1,557	1,626
Number of Public DC Fast EVCS at all Sites	230	325	379
Number of SDG&E Power Your Drive EVCS	1,755	0 (Program expired)	

EVCS = electric vehicle charging station
Number of EVCSs are the number of nozzles or plugs. One site may have more than one nozzle or plug. EVCSs installed through SDG&E's Power Your Drive program are not considered public chargers as they are installed primarily at workplaces (including municipal facilities) and multi-family buildings (apartments and/or condo buildings).
Data do not include other private workplace or in-home (e.g. single-family homes) charging stations.
SDG&E 2019, US Department of Energy 2025, Energy Policy Initiatives Center, University of San Diego 2025

A.3 Strategy 3: Mobility and Land Use

A3.1 Activity and Emissions Trends Related to Transportation in the City of San Diego

Transportation accounted for 55% of all citywide emissions in 2023. Strategy 3 aims to reduce vehicle miles traveled (VMT) by increasing the use of transit, bicycling, and walking throughout the city.

The 2019 – 2023 VMT and on-road transportation emissions in the City of San Diego are shown in Table 11. VMT was estimated using SANDAG's most recent Regional Plan Activity Based Model (ABM 2+) which uses the base year estimate of 2016. While a draft version of the 2025 Regional Plan[3] has recently been released, jurisdiction-specific VMT estimates are not yet available. To estimate annual changes since 2016, including the impact of the pandemic, back-to-work policies, and other transportation behavior changes, annual changes in VMT from regional public road VMT monitoring data from Caltrans are applied to SANDAG's 2016 base year estimate. The data sources and method to calculate on-road transportation emissions are provided in Appendix B.

TABLE 11: VEHICLE MILES TRAVELED (VMT) IN CITY OF SAN DIEGO (2019 – 2023)

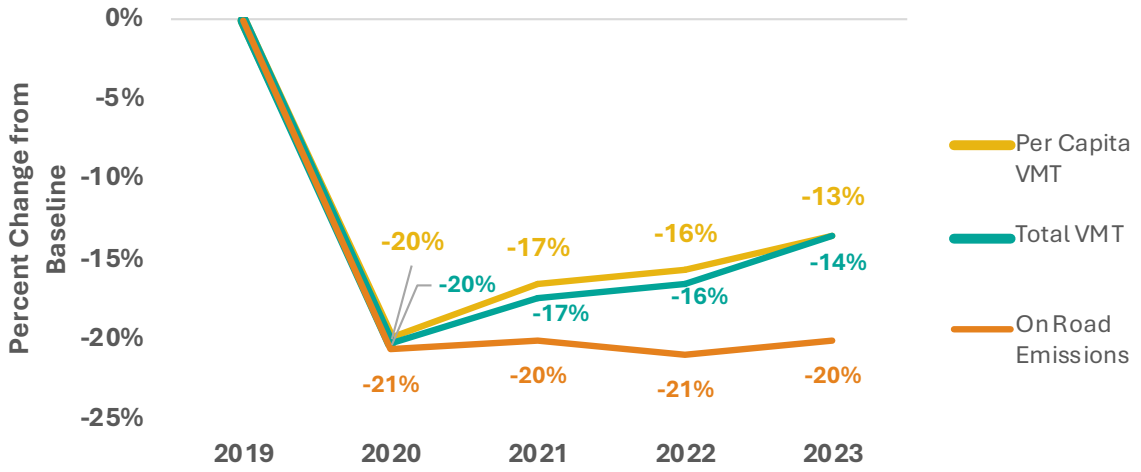
Year	2019	2020	2021	2022	2023	% Change 2022 - 2023	% Change 2019 - 2023
Total VMT (million miles/year)	13,666	10,891	11,228	11,416	11,807	3%	-14%
San Diego Regional Average Vehicle Emission Rate (g CO2e/mile)	428	427	415	405	396	-2%	-8%
GHG Emissions (MT CO2e)	5,854,000	4,650,000	4,683,000	4,628,000	4,674,000	1%	-20%

The 2019 VMT are estimates based on the 2016 City of San Diego VMT estimates from SANDAG's Activity Based Mode l (ABM2+) and Final 2021 Regional Plan, multiplied by the 2016-2022 San Diego regional VMT annual rates of growth. Annual rates of growth are estimated from the annual California Department of Transportation (CalTrans) Highway Performance Monitoring System public road data and Performance Measure System freeway data.
SANDAG 2021, CalTrans, CARB2021, Energy Policy Initiatives Center, University of San Diego 2025

Figure 12 shows the changes to total VMT, per capita VMT, and on-road emissions in relation to the 2019 baseline.

[3] Draft 2025 Regional Plan. SANDAG

FIGURE 12: CHANGES IN VMT, PER CAPITA VMT, AND ON-ROAD EMISSIONS FROM 2019 BASELINE

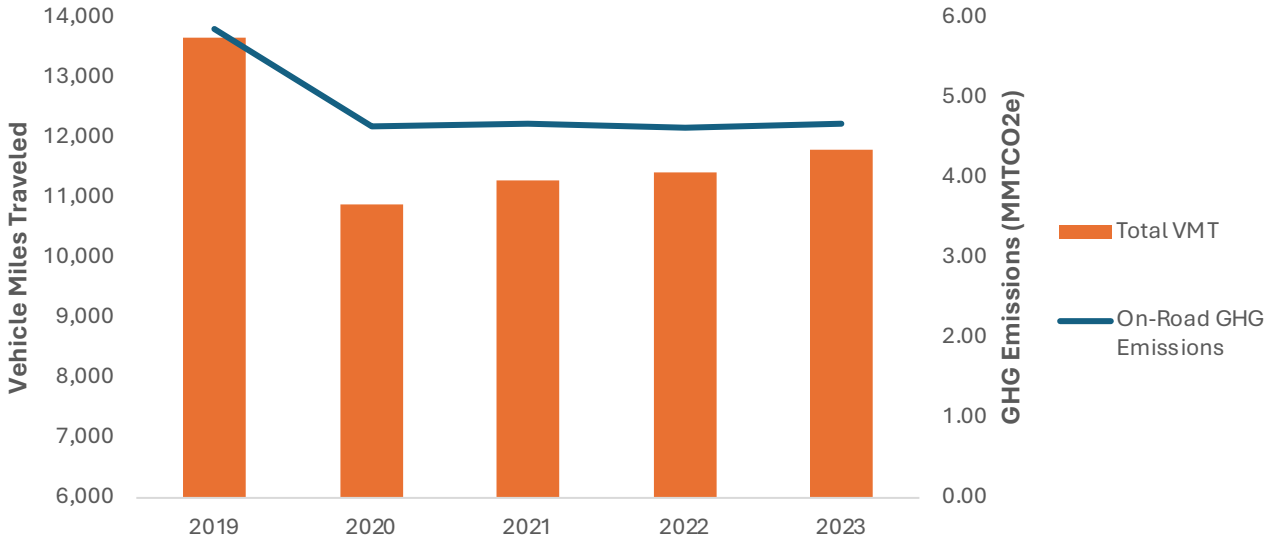


SANDAG 2021, CalTrans, CARB2021, Energy Policy Initiatives Center, University of San Diego 2025

Due to reduction in carbon intensity per mile, emissions from on-road transportation have remained relatively stable since the dip during the 2020 pandemic despite VMT levels increasing from 2020, as shown in Compared to the 2019 baseline, VMT has reduced 13% and on-road emissions have reduced 20%.

Figure 13. Compared to the 2019 baseline, VMT has reduced 13% and on-road emissions have reduced 20%.

FIGURE 13: CITYWIDE ON-ROAD VEHICLE MILES TRAVELED AND EMISSIONS (2019 – 2023)



SANDAG 2021, CalTrans 2024, CARB2021, Energy Policy Initiatives Center, University of San Diego 2025

A3.2 CAP Performance Target Progress: Reducing Vehicle Miles Traveled

Measure 3.1: Safe and Enjoyable Routes for Pedestrians and Cyclists

- *2030 Target: 19% walking and 7% cycling mode share of all San Diego resident trips*
- *2035 Target: 25% walking and 10% cycling mode share of all San Diego resident trips*

While mode share data for all City of San Diego resident trips is not available at this time, data is available for trips related to work commuting. Resident commute trips by transportation mode share are shown in Table 12 . This mode share data is collected by SANDAG surveys and is only available for years 2019 and 2023.

TABLE 12: MODE SHARE FOR EMPLOYEE COMMUTE (2019, 2023)

Mode	2019	2023
Drive Alone	78%	75%
Carpool	12%	13%
Transit	6%	7%
Walk	2%	3%
Bike or E-Bike	2%	3%
TNC or Taxi	<1%	<1%

SANDAG Employment Centers 1.0 and 2.0

Bicycle facility improvements from 2013 to 2023 are shown in Table 13. Because a longer time-series of data is available for bicycle facility improvements, it is provided for additional context, though progress towards the CAP target is still assessed in relation to the CAP baseline year of 2019. Class I bike lanes are paved right-of-way for exclusive use by bicyclists, pedestrians, and other non-motorized modes of travel. Class II bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Class IV bike lanes are referred to as “protected bike lanes” and are lanes specifically separated from motor traffic and distinct from the sidewalk.

TABLE 13: BICYCLE FACILITY IMPROVEMENTS (2013 – 2023)

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total Since 2019
New Class I Bike Lane Miles Added	-		-	-	2.1	-	-	-	-	-	-	0
New Class II Bike Lane Miles Added	6.9	10.5	14.6	12.7	7.9	11.5	10.8	2.2	17.4	52.4	38.3	121.0
New Class IV Bike Lane Miles Added	-	-	-	-	-	-	2	3.7	34.2	34.9	28.8	103.5
Existing Bike Lane Miles Improved	35.7	51.7	42.2	43.6	21.4	2.3	34.6	81.6	65.3	15.2	-	196.7
Existing Bike Lane Miles Replaced	1.3	1.6	-	-	-	27.9	-	-	-	-	-	0
Total Annual Added, Improved, or Replaced Miles	43.9	63.8	56.8	56.3	31.4	41.7	47.4	87.5	116.9	102.4	67.0	421.2

Data provided for bicycle facility improvements pertains to fiscal year progress. The remainder of the report uses calendar years to track emissions and progress.
City of San Diego Transportation and Storm Water Department

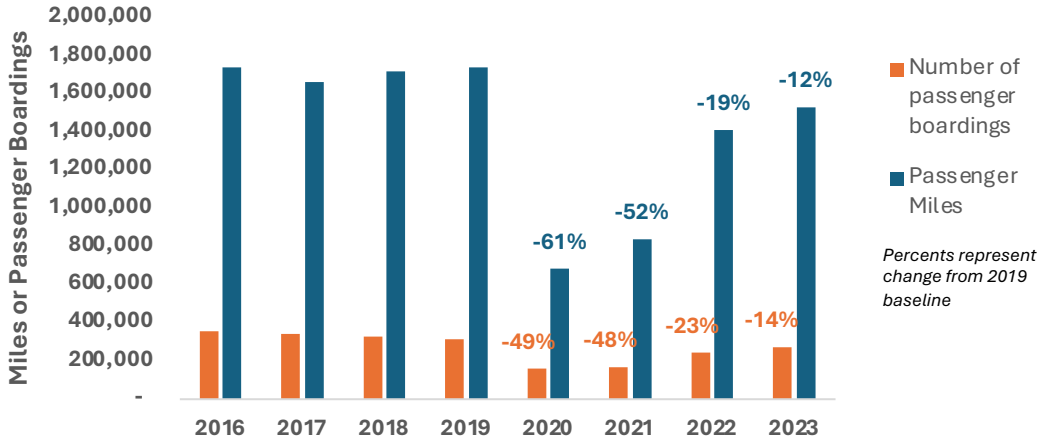
Measure 3.2: Increase Safe, Convenient, and Enjoyable Transit Use

- *2030 Target: 10% transit mode share of all San Diego resident trips*
- *2035 Target: 15% transit mode share of all San Diego resident trips*

Ridership data specific to the City of San Diego does not exist, so regional data is used as a proxy. While regional transit ridership increased between 2020 and 2023, as shown in

Figure 14, regional ridership in 2023 was still below pre-pandemic (pre-2020) levels.

FIGURE 14: REGIONAL TRANSIT BOARDINGS AND PASSENGER MILES (2016 – 2023)



SANDAG Weekday Transit Ridership

Measure 3.3: Work from Anywhere

- *2030 Target: Achieve 4% citywide VMT reduction through telecommute*
- *2035 Target: Achieve 6% citywide VMT reduction through telecommute*

While data specific to the City of San Diego does not exist, SANDAG's regional Survey of Businesses and Employees estimated the percentage of employees able to work from home along with average number of days those employees are able to work from home. Results of their 2021 and 2023 surveys, summarized in Table 14, show that the percentage of employees able to partially work from home dropped after the pandemic but are still higher than pre-pandemic levels. Similarly, the number of days worked fully from home doubled from pre-pandemic levels.

TABLE 14: REGIONAL REMOTE WORK SURVEY (2021, 2023)

Time Era	Pre-Pandemic	During Pandemic	2021 Survey	2023 Survey
Percentage of SD County Employees Able to Partially Work from Home	25%	54%	44%	39%
Average Number of Days per Week Worked Fully from Home	0.6	1.8	1.2	1.3

SANDAG Employee and Business Survey, 2021 and 2023

Measure 3.4: Reduce Traffic Congestion to Improve Air Quality

- *2030 Target: Install 13 new roundabouts*
- *2035 Target: Install 20 new roundabouts*

The City installed one new roundabout in 2023 and re-timed 405 traffic signals in 2023 and 404 traffic signals in 2022, as shown in Table 15. These measures have been shown to reduce emissions by improving vehicle flow and reducing vehicle idling.

TABLE 15: ANNUAL ROUNDABOUTS INSTALLED AND TRAFFIC SIGNALS RETIMED (2016 – 2023)

Year	2016	2017	2018	2019	2020	2021	2022	2023
Roundabouts Installed	2	0	0	0	0	0	7	1
Traffic Signals Retimed	60	70	52	64	75	60	404	405

City of San Diego Transportation and Storm Water Department

Measure 3.5: Climate-Focused Land Use

- *2030 Target: 8% VMT (commuter and non-commuter) reduction per capita*
- *2035 Target: 15% VMT (commuter and non-commuter) reduction per capita*

Measure 3.6: Vehicle Management

- *No associated targets*

The goals of measures 3.5 and 3.6 are to reduce VMT through land use and parking policies. While it is not feasible to accurately attribute changes in VMT to specific land use and parking policies, citywide VMT changes are shown in Table 11 above.

A.4 Strategy 4: Circular Economy and Clean Communities

A4.1 Activity and Emissions Trends Related to Waste and Wastewater in the City of San Diego

Waste and wastewater accounted for 3% of total city-wide emissions in 2023. The 2016 - 2023 waste disposed and diversion rates in the City are shown in Table 16. The waste disposed and diversion rates in recent years has remained relatively consistent. Because a longer time-series of data is available for waste disposal as well as wastewater flow, that data is provided for context, though progress towards the CAP target is still assessed in relation to the CAP baseline year of 2019.

TABLE 16: WASTE DIVERSION RATE AND DISPOSED TONNAGE (2016 – 2023)								
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Waste Disposed in Landfills (tons)	1,521,363	1,576,105	1,639,817	1,569,447	1,543,627	1,543,627	1,543,627	1,607,277
Waste Diversion Rate	66%	66%	65%	66%	67%	67%	67%	67%
Per Capital Waste Disposed (daily pounds per capita)	6.1	6.3	6.5	6.2	6.1	6.5	6.4	6.3
GHG Emissions (MT CO2e)	269,000	278,000	289,000	277,000	273,000	216,000	212,000	213,000
% Emissions Reduction from Baseline				--	-2%	4%	2%	2%
Tonnages were adjusted or corrected from tonnages reported in the CalRecycle database based on City information City of San Diego Environmental Service Department, Energy Policy Initiatives Center								

The 2015 – 2023 wastewater flow and associated emissions are shown in Table 17. In 2022, there was a sharp decrease in emissions associated with wastewater treatment. This is because the on-site generation facilities, power plants using landfill gas, at the North City Water Reclamation Plant were put offline that year.

TABLE 17: WASTEWATER FLOW AND EMISSIONS (2016 – 2023)								
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Wastewater (million gallons)	36,719	37,632	36,391	38,241	38,192	37,591	36,865	39,143
GHG Emissions (MT CO2e)	21,000	21,000	20,000	26,000	23,000	24,000	13,000	13,000
% Emissions Reduction from Baseline				--	-12%	-8%	-50%	-50%
City of San Diego Public Utilities Department, Energy Policy Initiatives Center								

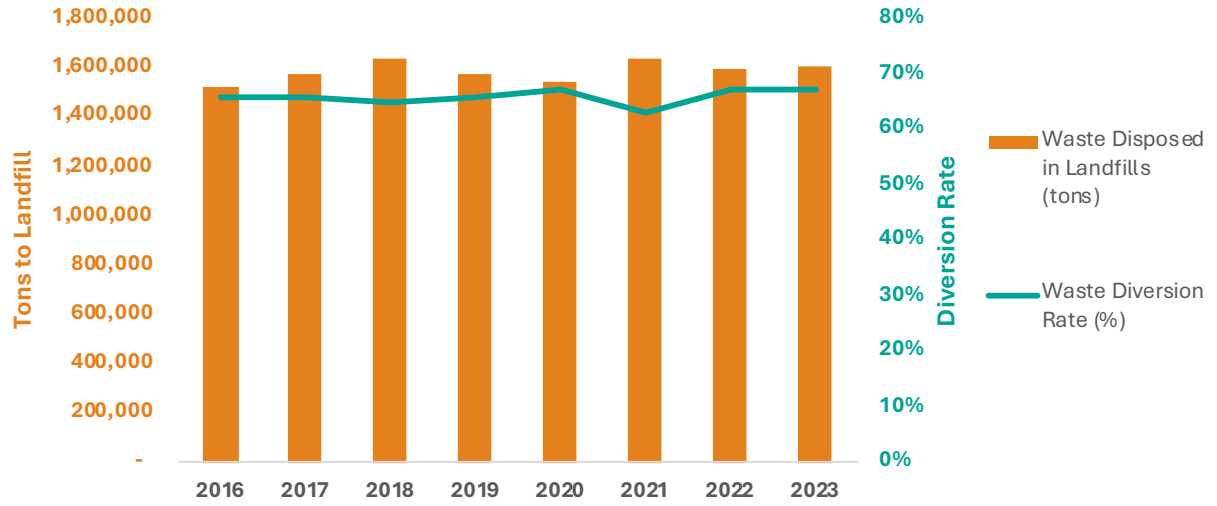
A4.2 CAP Performance Target Progress: Waste and Wastewater

Measure 4.1: Changes to the Waste Stream

- *2030 Target: 82% Waste Diversion Rate and 85% Landfill Gas Capture*
- *2035 Target: 90% Waste Diversion Rate and 90% Landfill Gas Capture*

From 2016 through 2023 the city's waste diversion rate has been steady around 67%, as shown in Table 16 as well as Figure 15.

FIGURE 15: TONS TO LANDFILL AND LANDFILL DIVERSION RATE IN CITY OF SAN DIEGO (2016 – 2023)



City of San Diego Environmental Services Department

The Environmental Services Department completed landfill gas system improvements in 2018 that included additional extraction wells and a new blower system. Additional extraction wells were installed in the West Miramar landfill in 2021. Total quantity of landfill gas collected has increased since 2019 when ownership of the landfill gas rights reverted to the City. Given the complexity in estimating an accurate landfill gas capture rate, an industry-standard landfill gas capture rate of 75% was assumed.

Measure 4.2: Municipal Waste Reduction

- *No defined targets*

Data tracking municipal waste from is not currently available.

Measure 4.3: Local Food Systems and Food Recovery

- *No defined targets*

While improving local food systems and food recovery will have impacts on waste and organics sent to landfill, data is currently not available to track such efforts.

Measure 4.4: Zero Waste to Landfill

- *No defined targets*

As shown previously in Figure 15, the tons sent to landfill by the City of San Diego and waste diversion rate has remained relatively steady since the 2019 baseline.

Measure 4.5: Capture Methane from Wastewater Treatment Facilities

- *2030 Target: 95% Methane Capture*
- *2035 Target: 95% Methane Capture*

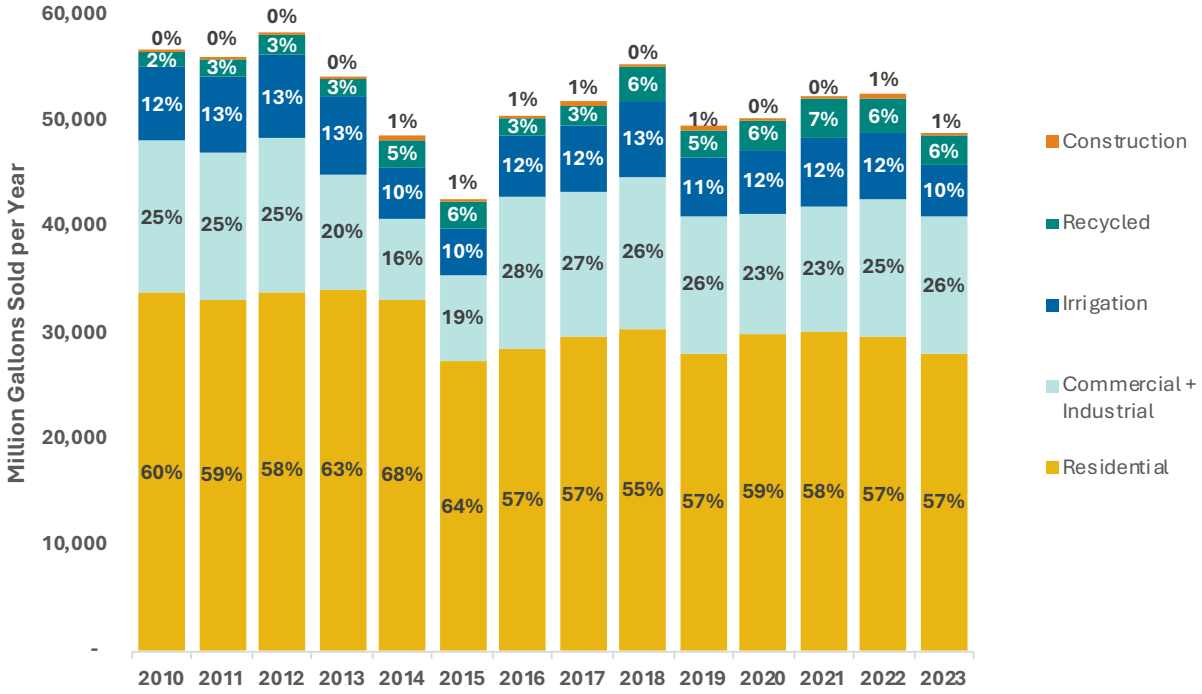
The City of San Diego's Point Loma Wastewater Treatment Plant (Point Loma WWTP) is energy self-sufficient with on-site renewable electricity production using biogas (captured methane from wastewater treatment) and hydropower. The excess renewable electricity generated at the Point Loma WWTP is exported to the grid. The digester capture rate at Point Loma WWTP is now 99.9%.

A.5 Strategy 5: Resilient Infrastructure and Healthy Ecosystems

A5.1 Activity and Emissions Trends Related to Water Use in the City of San Diego

Emissions from the upstream supply, conveyance, treatment, and distribution of water as well as the treatment of wastewater are currently 1% of the total citywide emissions. The breakdown of City of San Diego's water sales by sector including recycled water is given in Figure 16. While overall water use has fluctuated over time, 2023 saw a 1% decrease in total water sales from the 2019 baseline and a 7% decrease from 2022.

FIGURE 16: WATER SALES BY SECTOR (2010–2023)



Sales within City of San Diego only. Does not include sales to other agencies.
City of San Diego Public Utilities Department

A5.2 CAP Performance Target Progress: Habitat, Trees and Water Supply

Measure 5.1: Sequestration

- *2030 Target: Restore 350 acres of salt marsh land and other associated tidal wetland and riparian habitats*
- *2035 Target: Restore 700 acres of salt marsh land and other associated tidal wetland and riparian habitats*

The City had restored 56 acres of wetland prior to 2023. Table 18 shows projects and project phasing that were in progress as of 2023.

TABLE 18: ACRES OF RIPARIAN AND WETLAND RESTORATION IN PROGRESS (2023)

Ecosystem Type	Design, Permitting, Contracting	Restoration Implementation	Long Term Maintenance
Fresh and Saltwater Marsh	4.1	0.0	0.0
Riparian	0.0	0.0	96.1
Other / Unspecified	78.3	1.2	17.0

TABLE 18: ACRES OF RIPARIAN AND WETLAND RESTORATION IN PROGRESS (2023)
City of San Diego Public Utilities Department

Measure 5.2: Tree Canopy

- *2030 Target: 28% urban canopy cover*
- *2035 Target: 35% urban canopy cover*

The City of San Diego has established a target to increase urban tree canopy from the 2019 baseline[4] of 13% total coverage to 28% by 2030 and 35% by 2035. Increasing urban tree canopy contributes to the capture and storage of carbon, as well as other benefits including storm water management, improved air quality, and increased property values. Table 19 shows tree planting and maintenance (trimming, removing, and evaluating) trends from 2020 to 2023; data for the CAP baseline year of 2019 is not available.

TABLE 19: TREE PLANTING AND MAINTENANCE (2020 – 2023)

Tree Planting and Maintenance Year	2020	2021	2022	2023
Trees Planted[1]	1,863	1,707	1,649	1,586
Trees Trimmed[2]	33,254	35,206	61,665	48,754
Trees Removed[1]	1,824	2,151	2,004	2,827
Trees Evaluated[3]	5,316	6,372	5,569	6,376

[1] Planted or removed by the Transportation Street Division and Parks and Recreation Department;
[2] Includes shade trees and palms trees;
[3] Trees are evaluated for species type, tree condition, diameter, and defects to determine the amount of corrective tree work that may be needed for the health of the tree and/or to address public safety adjacent to the tree.
City of San Diego Transportation and Storm Water Department

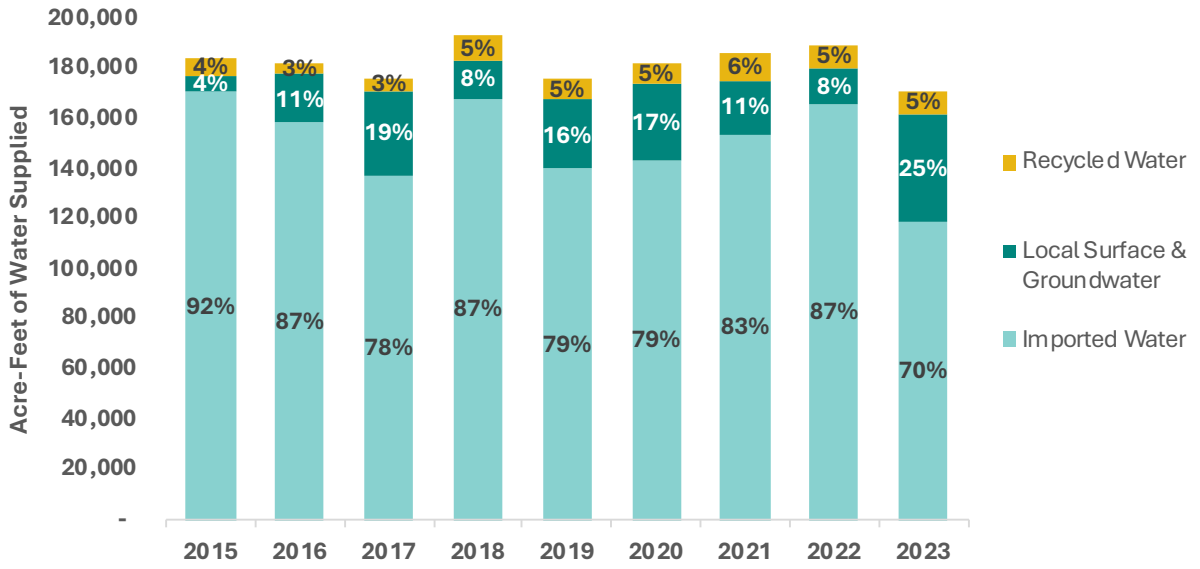
Measure 5.3: Local Water Supply

- *2030 Target Provide 33,000 acre-feet local water supply from PureWater*
- *2035 Target Provide 93,000 acre-feet local water supply from PureWater*

The PureWater project is still under construction, therefore no data is available to report at this time. However, other local water supply versus total water supply has been fluctuating in recent years as shown in Figure 17. The current availability of local water generally depends on rainfall and runoff into City reservoirs. In 2019, 17% of total water supply was from local surface and groundwater, in 2022 it was 8%, and in 2023 it accounted for 25% of water supply. A higher percentage of local water supply reduces the need to import water from San Diego County Water Authority and the energy and GHG emissions associated with imported water. The total acre-feet of water delivered to the City of San Diego according to source (local, imported, and recycled) is shown in Figure 17.

[4]. The updated urban tree canopy coverage for the 2015-2019 period was 13% in the City of San Diego, based on the Urban Tree Canopy Assessment preliminary results developed by the University of Vermont and the USDA Forest Service, funded by California Department of Forestry and the Fire Protection (CalFire) for the City of San Diego.

FIGURE 17: ACRE-FEET OF WATER DELIVERED TO CITY OF SAN DIEGO (2015 – 2023)

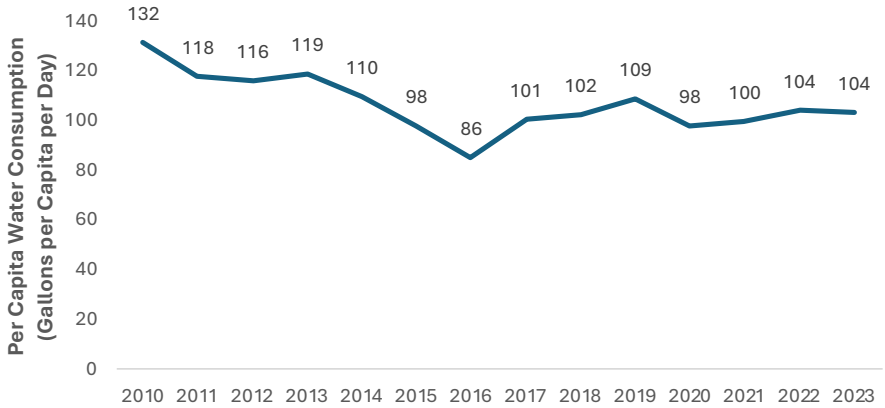


City of San Diego Public Utilities Department

Per capita water use, measured in gallons per capita per day (GPCD), decreased 5% from the 2019 baseline and 21% from the first data year available, 2010 (Figure 18). Governor Brown issued Executive Order B-29-2015 imposing a 25% statewide potable water reduction in April 2015. This drought emergency declaration was lifted by the Governor in April 2017, while retaining a prohibition on wasteful practice. The per capita water use in the City of San Diego has been increasing since the 2015 Executive Order.

The GPCD calculation method (volume of water entering City of San Diego's distribution system divided by distribution system population) is consistent with the GPCD definition in SB X7-7 (the Water Conservation Act of 2009) and the City of San Diego 2020 Urban Water Management Plan (June 2021 final version). However, to be consistent with the CAP, the GPCD is reported by calendar year in this CAP Annual Report, while the GPCD in the Urban Water Management Plan and SB X7-7 are by fiscal year. Therefore, the GPCD reported here cannot be directly compared with the SB X7-7 GPCD target for 2020.

FIGURE 18: PER CAPITA WATER USE (2010–2023)



City of San Diego Public Utilities Department, Energy Policy Initiatives Center, University of San Diego 2025

The amount of recycled water and water used for irrigation from 2019 to 2023 is provided in Table 20. Both recycled and metered irrigation water saw a reduction in consumption in 2023 compared with 2022.

TABLE 20: METERED RECYCLED AND IRRIGATION WATER USE (2019 – 2023)		
Year	**Recycled Water Sales (million gallons)**	**Metered Irrigation Water Use (million gallons)**
2019	2,606	5,631
2020	2,881	5,988
2021	3,688	6,298
2022	3,263	6,217
2023	2,827	4,917
Metered irrigation water, including agricultural and landscape water use. 2021 data updated from previous Annual Report to reflect most up-to-date primary data. City of San Diego Public Utilities Department		

A.6 Strategy 6: Emerging Climate Action

- *2030 Target: Residual Emissions 391,000 additional reduction needed to reach fair-share target*
- *2035 Target: Residual Emissions 2,262,000 additional reduction/removal needed to reach carbon neutrality*

Measure 6.1: Explore further opportunities to achieve net zero GHG emissions

As the City of San Diego assesses and plans future climate action, updates will be provided in future reports and on the City's online CAP Dashboard.