

Climate Change Mitigation & Greenhouse Gas Emissions Inventory

MARINA COAST WATER DISTRICT
Climate Action & Adaptation Plan



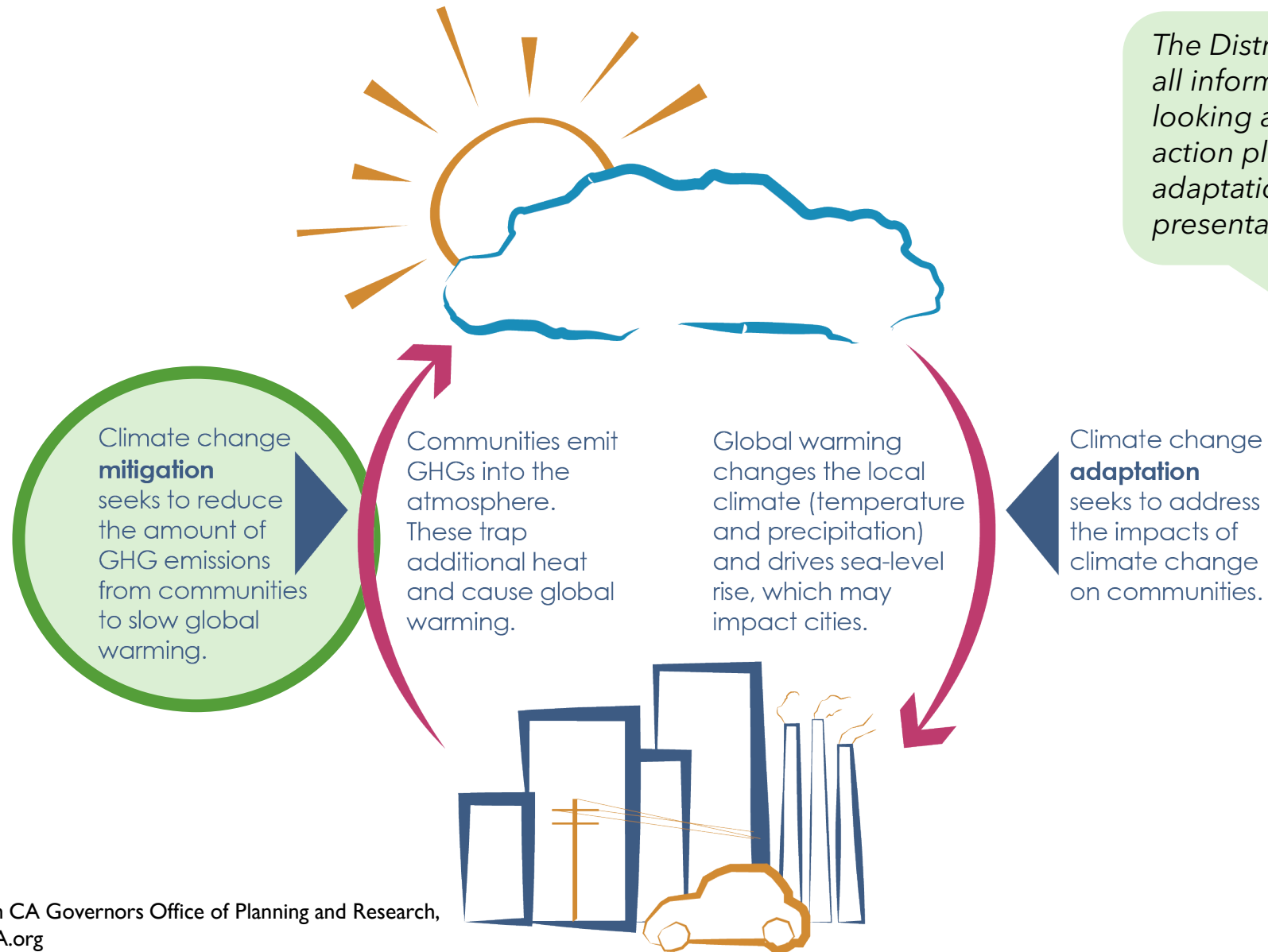
OVERVIEW

- **Background Information**
- **Summary of GHG Emissions Inventory**
- **GHG Emissions by Sector**
- **GHG Emission Reduction Strategies**

Look for these call-outs throughout the presentation for further clarification!

BACKGROUND INFORMATION

Climate Action Planning



GHG Inventory Methodology

- To conduct the inventory, the District joined the organization, [ICLEI-Local Governments for Sustainability \(International Council for Local Environmental Initiatives\)](#) to gain access to ClearPath, an emissions management software
 - ClearPath builds an inventory by entering activity data into the calculators, such as kWh of electricity usage, and computes the emissions using calculations from the Local Government Operations Protocol which is a guide for the quantification and reporting of GHG emissions inventories.
- ClearPath divides emissions into different sectors when calculating emissions. The District's 2018 inventory sectors are:
 - Water & Wastewater Facilities
 - Vehicle Fleet
 - Employee Commute
 - Buildings & Facilities
 - Solid Waste



Local Governments
for Sustainability

MEMBER

A greenhouse gas emissions inventory is an important tool to quantify the number of emissions and identify major sources of emissions for the District.

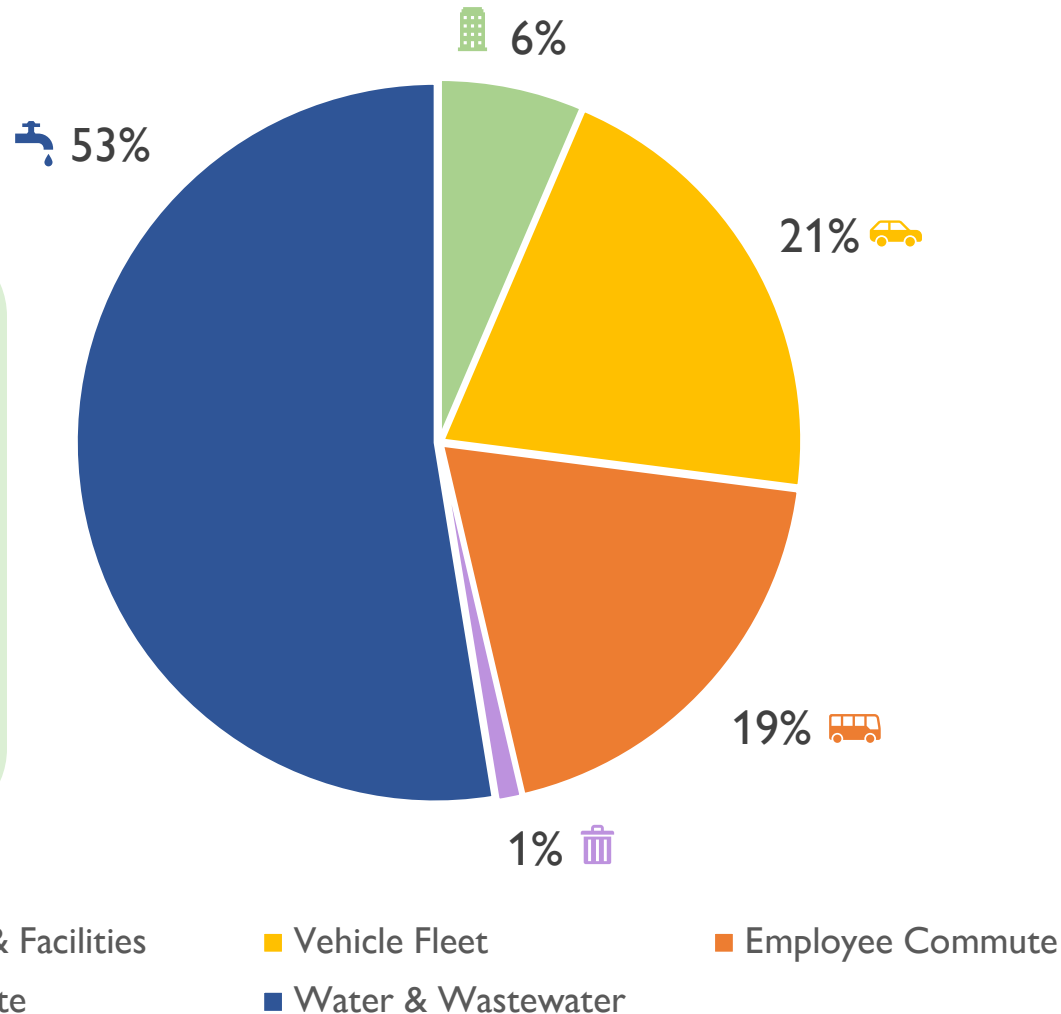
In this software, you can generate a government operations or community inventory. For the District, a government operations inventory was used to look internally at emissions associated with the operations of the jurisdiction.

The image features a background of sand dunes with sparse vegetation, overlaid with a semi-transparent green band. The title text is centered within this band. On the right side of the green band, there are three vertical lines of varying shades of green.

SUMMARY OF GHG EMISSIONS INVENTORY

2018 Greenhouse Gas Emissions Overview

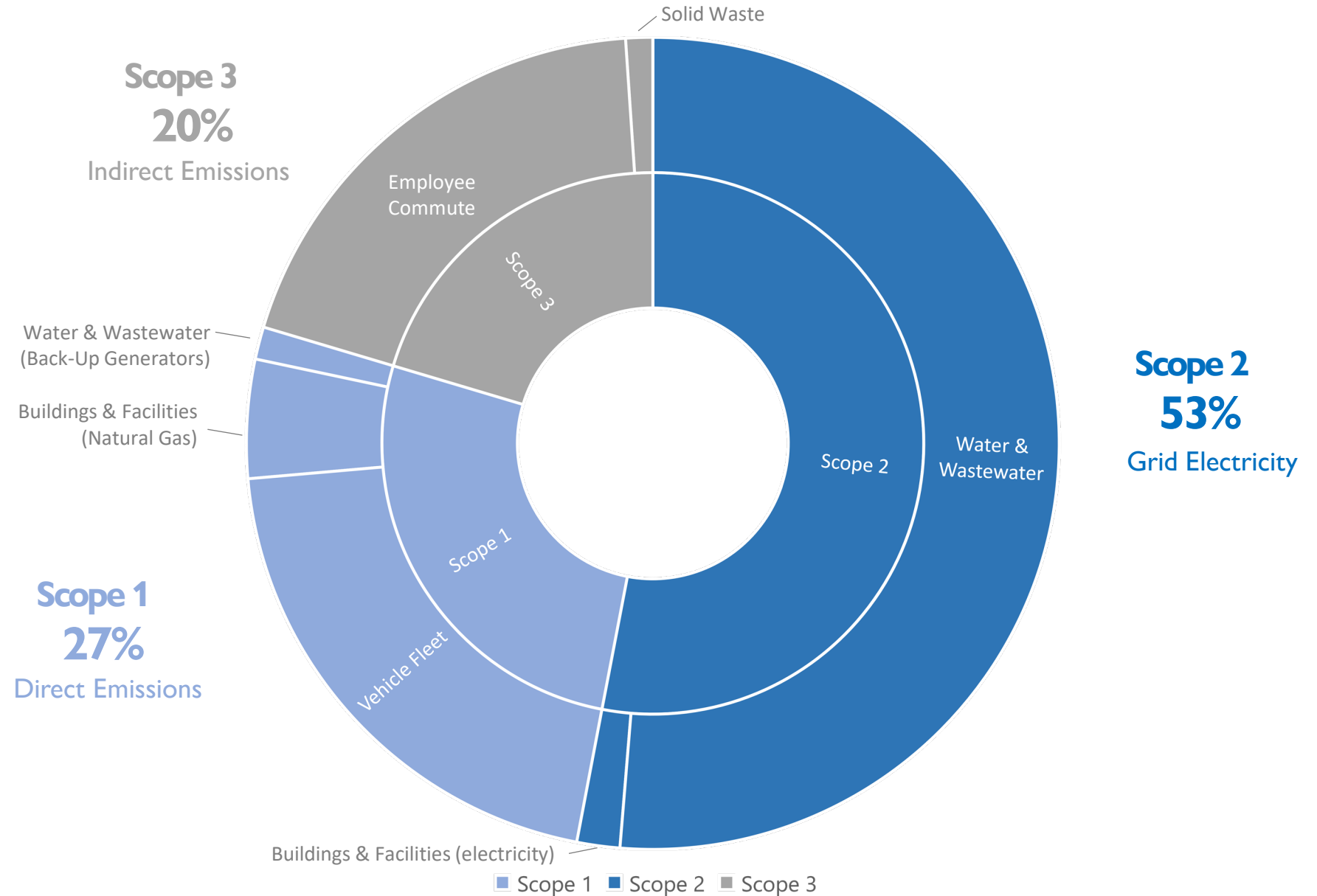
Emissions are calculated in metric tons of carbon dioxide equivalent (MT CO₂e). Converting emissions from all gases to CO₂e allows for the consideration of GHGs in comparable terms.



Sector	Metric Tons (MT) CO ₂ e
Water & Wastewater Facilities	245
Vehicle Fleet	96
Employee Commute	90
Buildings & Facilities	30
Solid Waste	5
TOTAL	466

2018 GHG Emissions by Scope and Sector

Categorizing emissions by scope allows us to break up sectors into different sources which is important when generating reduction strategies. For example, for Buildings & Facilities emissions there will be a different strategy for emissions associated with natural gas usage and emissions associated with electricity usage.

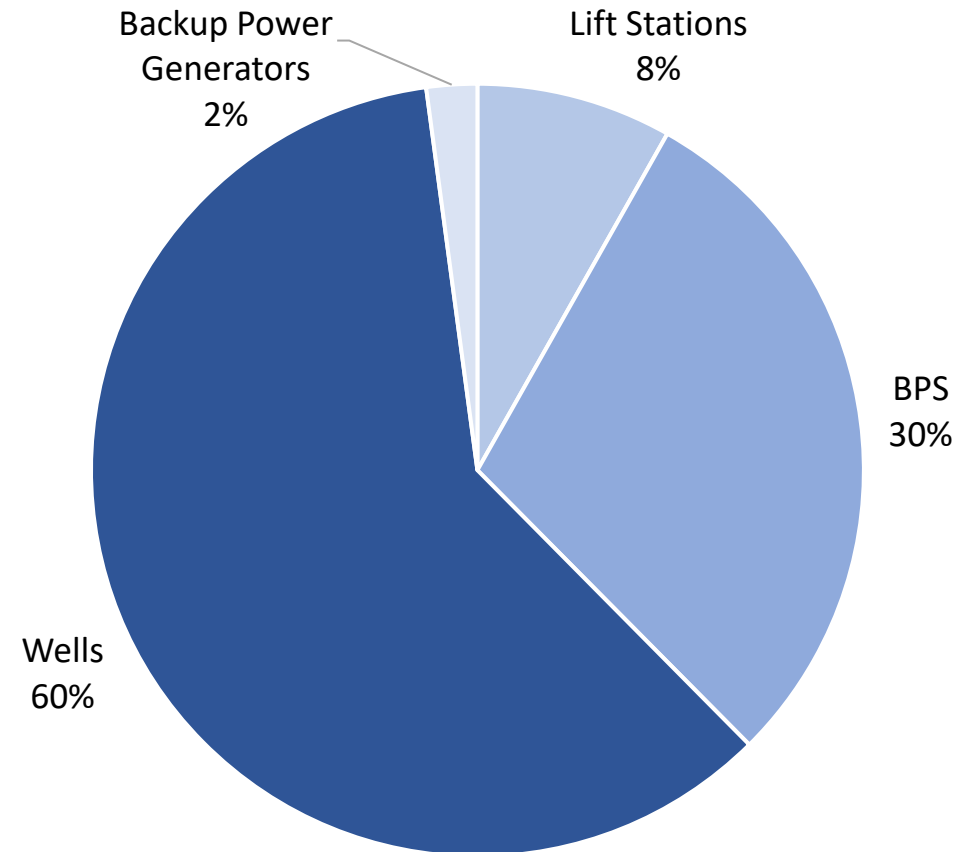


GHG EMISSIONS BY SECTOR

2018 Water & Wastewater Facilities

Facility Type	MT CO ₂ e
Lift Stations	20
Booster Pump Stations (BPS)	72
Wells	146
Backup Power Generators	7
TOTAL	245

Percentage Water/Wastewater Emissions by Facility Type



All emissions except the backup power generators are emissions from grid electricity (Scope 2).

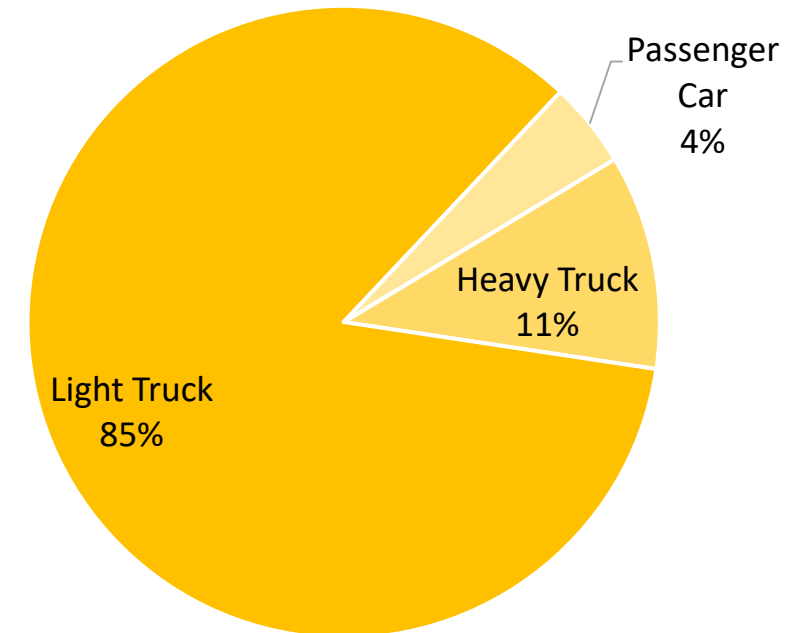
2018 Vehicle Fleet

The District's fleet is mainly composed of light trucks fueled by gasoline. The District's four passenger cars are hybrid vehicles and are aiding in lowering the total amount of gasoline used by the fleet.

	MT CO ₂ e	# Passenger Cars	# Light Truck	# Heavy Truck	TOTAL Vehicles by Fuel
Gasoline Vehicles	84	4*	18	1	23
Diesel Vehicles	12	0	1	7	8
TOTAL	96	4	19	8	31 vehicles

*Hybrid vehicles

Percent of Fuel Consumption by Vehicle Type



2018 Employee Commute

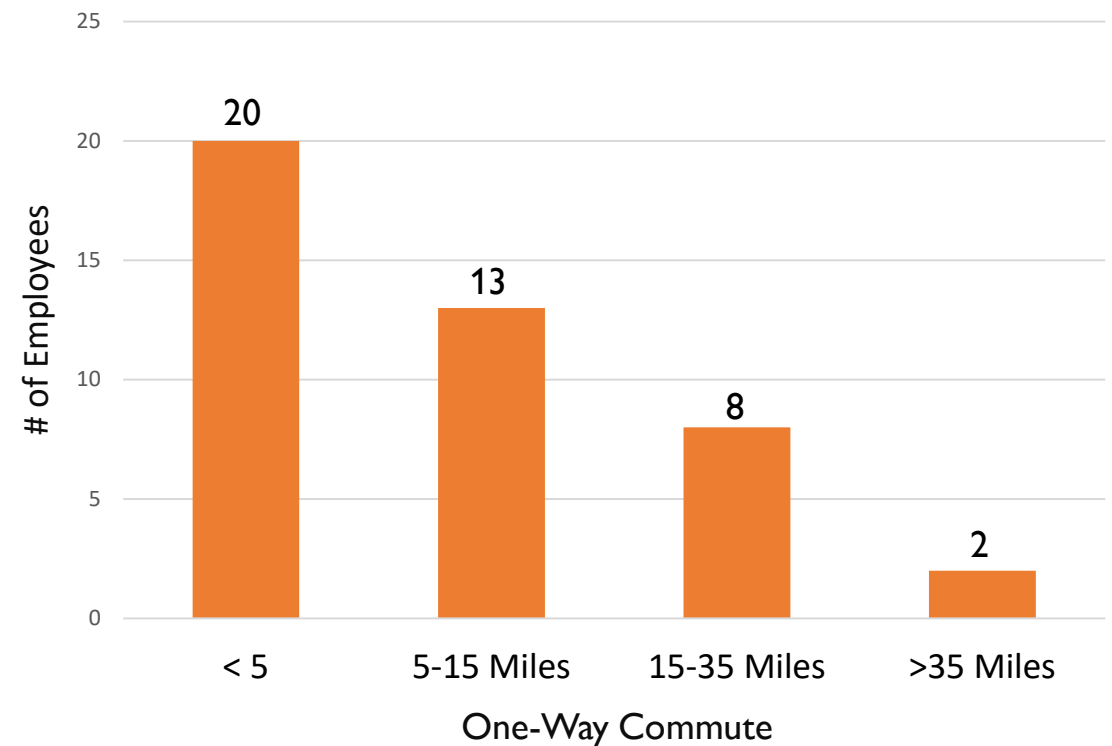
- Since the inventory is for the year 2018 but was conducted in 2022, employees weren't surveyed for the information and instead zip codes provided by HR were used and the following assumptions were made:
 - Assumes all gasoline (no electric, hybrid)
 - Assumes employees take the fastest route on google maps
 - Assumes 240 working days/year (10 holidays, 10 vacation/sick days)
 - Assumes 78% passenger vehicles, 22% light truck

About 77% of employees had a one-way commute 15 miles or less, with 20 employees having a one-way commute of 5 or less miles.

But there are a considerable number of employees with 15-to-35-mile one-way commutes.

	MT CO ₂ e	Vehicle Miles Traveled
Gasoline Vehicles	90	229,680

Employee Commute Distance



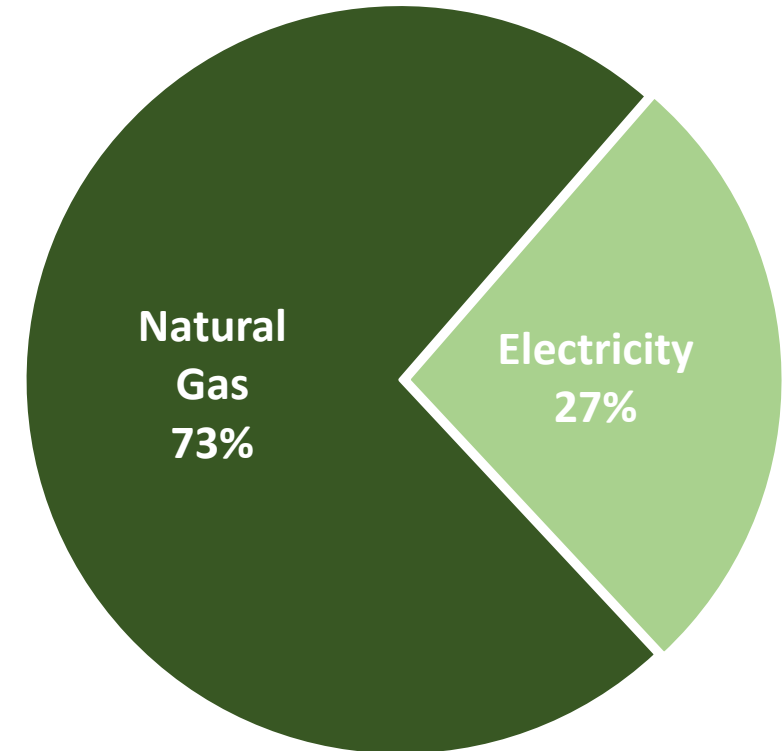
2018 Buildings & Facilities

Although the IOP office is not taken into account in this inventory, it will be captured in future inventories.

	Electricity	Natural Gas	Building Total
	MT CO ₂ e		
Ord Office	3	14	17
Beach Office	5	8	13
IOP Office*	0	0	0
TOTAL	8	22	30

*IOP Office was not occupied by MCWD in 2018

Percent Emissions (MT CO₂e) by Source

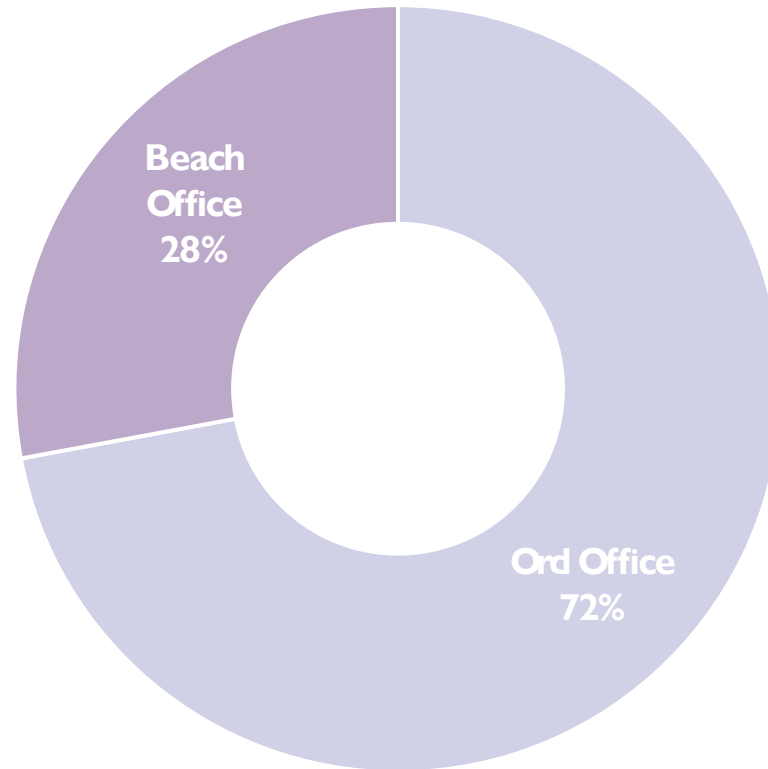


2018 Solid Waste

Emissions from solid waste come from the methane gas that is released at the landfill as the waste breaks down.

	MT CO ₂ e	Tons of Waste
Ord Office	4	9
Beach Office	1	3.5
TOTAL	5	12.5

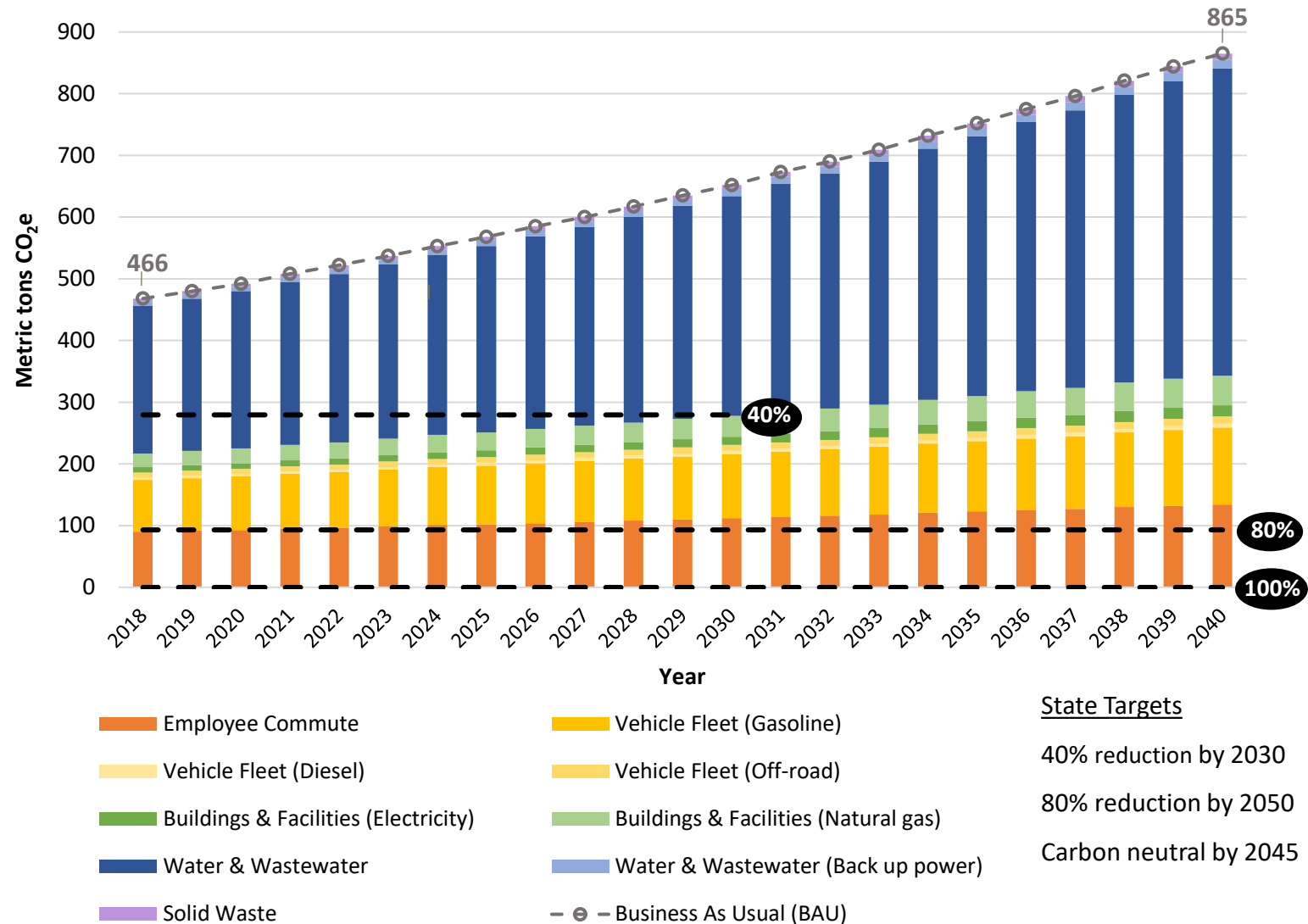
Percent of Waste by Facility



GHG EMISSION REDUCTION STRATEGIES

Emissions Forecast (2018-2040)

2018 Inventory Forecast



Emissions were forecasted to 2040 using growth rates generated from predicted employee and service population growth and applied to each source of inventoried emissions.

As the District determines how to reduce our emissions, the District will set reduction target goals off the BAU line. The State of California's reduction targets as set by SB 32 is a 40% reduction by 2030 and an 80% reduction by 2050 as well as EO-B-55-18 stating the State should maintain carbon neutrality or 100% reduction by no later than 2045.

GHG Emission Reduction Strategies

	Sector	Scope
Building & Facility Energy		
BFE-1: Provide services using 100% renewable energy through from our electricity provider (Central Coast Community Energy)	Buildings & Facilities Water & Wastewater	2
BFE-2: Install onsite renewable energy to power facilities	Buildings & Facilities Water & Wastewater	2
BFE-3: Remove natural gas and convert buildings to 100% electric	Buildings & Facilities	1
BFE-4: Increase building energy efficiency	Buildings & Facilities	2
Sustainable Transportation		
ST-1: Transition fleet to Zero Emission Vehicles (ZEV)	Vehicle Fleet	1
ST-2: Install EV charging stations at District offices	Vehicle Fleet Employee Commute	1,3
ST-3: Transition to alternative fuels in existing diesel fleet vehicles	Vehicle Fleet	1
ST-4: Develop a low emission commuting incentive program	Employee Commute	3
Solid Waste		
SW-1: Increase waste diversion at District offices	Solid Waste	3

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For more information visit www.mcwd.org