



OFFICE OF
SUSTAINABILITY

COUNTY OF SAN MATEO



RICAPS Community GHG Emission Inventories

Presentation to C/CAG RMCP Committee

April 21, 2021



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GHG Inventory Overview

- *Estimate* the GHG emissions produced by a given community for a single year
 - We use the ICLEI U.S. Community Protocol
- Reported in MTCO_{2e}
- Consistent methodology allows for comparison over time
- Allows agencies to track progress towards climate goals and adapt approach as necessary



RICAPS GHG Inventory Support

- Provides annual Community GHG Inventories for all C/CAG member agencies
 - 2005, 2010-2017
- CY 2018 and 2019 GHG Inventories in progress
- Foundation for additional climate action support including:
 - Emissions forecasting
 - Emission reduction calculations
 - Climate Action Plan Template



How are emissions calculated?

General Calculation: Usage x Emissions Factor = Emissions



- Key sectors are Energy, Transportation, Waste and Water
- 40+ unique datasets at federal, state and local level



Energy Sector GHG Emissions

- Electricity
 - PG&E Residential & Commercial
 - PCE Residential & Commercial
 - Direct Access
- Methane
 - PG&E Residential & Commercial
- Stationary Sources
 - Diesel generators
 - Stationary equipment



Energy Sector GHG Emissions

Data Sources:

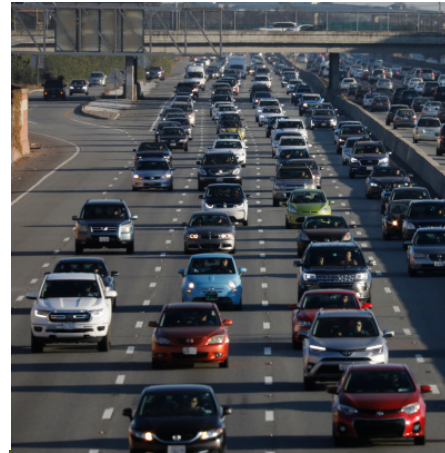
- Electricity
 - PG&E community usage data
 - PCE community usage data
 - PG&E and PCE emission factors
 - CEC usage data
- Methane
 - PG&E community usage data
- Stationary Sources
 - BAAQMD Facility Reports



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Transportation Sector GHG Emissions

- On-Road
 - Passenger vehicles
 - Commercial transport
 - Public Transportation
- Off-Road
 - Farm equipment
 - Airport ground support (does not include planes)
 - Small-engine equipment
 - Lawnmowers
 - Leafblowers
 - Boats



Transportation Sector GHG Emissions

Data Sources:

- On-Road:
 - Vehicle Miles Traveled
 - Caltrans HPMS
 - MTC Travel Model
 - Emission Rates
 - EMFAC Model
- Off-road
 - CARB Off-road 2007
 - Updated model soon
 - SFO Data
- Rail
 - Caltrain
 - National Transit Database



Solid Waste Sector GHG Emissions

- Closed Landfills
 - Methane leakage as organics break down
- Waste Generated
 - Jurisdictional contributions to landfills
 - Includes landfills outside of San Mateo County
 - Includes Alternative Daily Cover (ADC)



Solid Waste Sector GHG Emissions

Data Sources:

- Closed Landfills
 - Individual facility reporting
 - FOD Model
- Waste Generated
 - CalRecycle Disposal Reports
 - CalRecycle Waste Composition Studies



Water and Wastewater GHG Emissions

- Embedded energy in water
 - Upstream pumping outside of San Mateo County
- Wastewater Treatment Plants
 - Methane and Nitrous Oxide resulting from treatment processes



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Water and Wastewater GHG Emissions

Data Sources

- Embedded energy in water
 - BAWSCA Annual Reports
 - PG&E Emission Rates
- Wastewater Treatment Plants
 - Individual system reporting
 - BAAQMD Reports



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GHG Inventory Challenges

- Reliability of models
 - Created at a point in time and may require updates as new information becomes available
- Consistent methodology
 - Need to balance new methodologies with historic estimates
- Data availability
 - Timing of data
 - Access to accurate, complete datasets



Energy Data & Privacy Requirements

CPUC Decision 97-10-031, “15/15 Rule”

- Customer data sets must be sufficiently aggregated to anonymize individual customers
 - Must include more than 15 customers
 - No customer can account for more than 15% of total usage
- Creation of PCE complicates application of 15/15 Rule



15/15 Rule in San Mateo County

City	Year	Residential Electricity	Commercial Electricity	Industrial Electricity	Agricultural Electricity	Direct Access Electricity	Residential Natural Gas	Commercial Natural Gas	Industrial Natural Gas
Atherton	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	No Consumption
Belmont	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	PASS	No Consumption
Brisbane	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	FAIL
Burlingame	2019	FAIL	FAIL	FAIL	No Consumption	PASS	PASS	PASS+IND	IN COM
Colma	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	No Consumption
Daly City	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	PASS-COM ONLY	FAIL
East Palo Alto	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	FAIL
Foster City	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	PASS	No Consumption
Half Moon Bay	2019	FAIL	FAIL	No Consumption	FAIL	PASS	PASS	PASS-COM ONLY	FAIL
Hillsborough	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	No Consumption
Menlo Park	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	PASS+IND	IN COM
Millbrae	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	No Consumption
Pacifica	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	PASS	No Consumption
Portola Valley	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	FAIL
Redwood City	2019	PASS	FAIL	FAIL	No Consumption	PASS	PASS	PASS+IND	IN COM
San Bruno	2019	PASS	FAIL	No Consumption	No Consumption	PASS	PASS	PASS	PASS
San Carlos	2019	PASS	FAIL	FAIL	No Consumption	PASS	PASS	PASS+IND	IN COM
San Mateo	2019	PASS	FAIL	FAIL	No Consumption	PASS	PASS	PASS+IND	IN COM
South San Francisco	2019	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS+IND	IN COM
Uninc. County	2019	PASS	FAIL	No Consumption	FAIL	PASS	PASS	FAIL	FAIL
Woodside	2019	FAIL	FAIL	No Consumption	No Consumption	PASS	PASS	FAIL	No Consumption



Looking Forward

- Need to address privacy requirements
 - Alternate data sources/methodology
 - Changes to privacy requirements
- Working with PCE on Countywide Inventory
- COVID Impacts break certain models
- Continue to incorporate new tools/methodologies





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QUESTIONS?

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