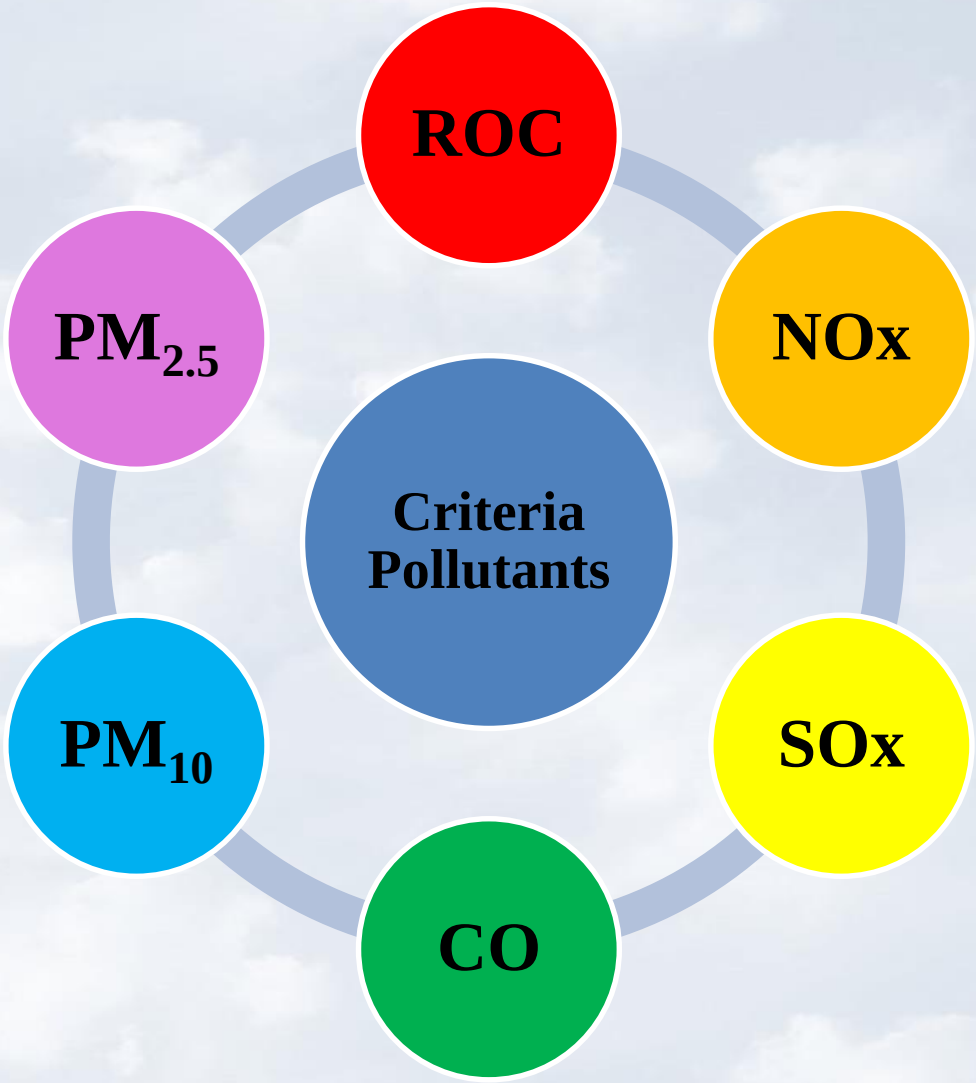
Emission Inventory

Board of Directors
Santa Barbara County
Air Pollution Control District

Our Mission: To protect the people and the environment of Santa Barbara County from the effects of air pollution.

Aeron Arlin Genet
Director / APCO

Alex Economou
Air Quality Specialist
January 17, 2019



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What is an Emission Inventory?

- Bottom-up approach for estimating emissions countywide
- Does not correlate directly with monitoring data
- Emission Inventory is used for:
  - Planning for air quality attainment
  - Developing control measures
  - Observing historical emission trends and forecasting future emissions
  - Ensuring compliance with rules/regulations or permit conditions

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Types of Emission Sources

- Stationary Sources:
  - Permitted sources that can be pinpointed on a map
    - Engines, Boilers, Landfills, Oil & Gas Production Fields

- Area-wide Sources:
  - Small processes that don’t require an air quality permit
    - Asphalt Paving, Residential Natural Gas Combustion

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Types of Emission Sources

- Mobile Sources:
  - On-Road and Off-Road Vehicles and Equipment
  - Boats, Trains and Airplanes

- Natural Sources
  - Biogenic Sources (organic compounds emitted by plants)
  - Geogenic Sources (natural oil & gas seeps)
  - Wildfires and Windblown Dust

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Annual Reporting

- Every year, permitted facilities submit Annual Reports; compliance tool
- Throughput x Emission Factor = Emissions
  - Emission Factor based on Engineering Permit to Operate, Source Test Data, or CARB/EPA
- Data is submitted to CARB, and then U.S. EPA
  - Emission Inventory Reporting Guidelines for Air Districts

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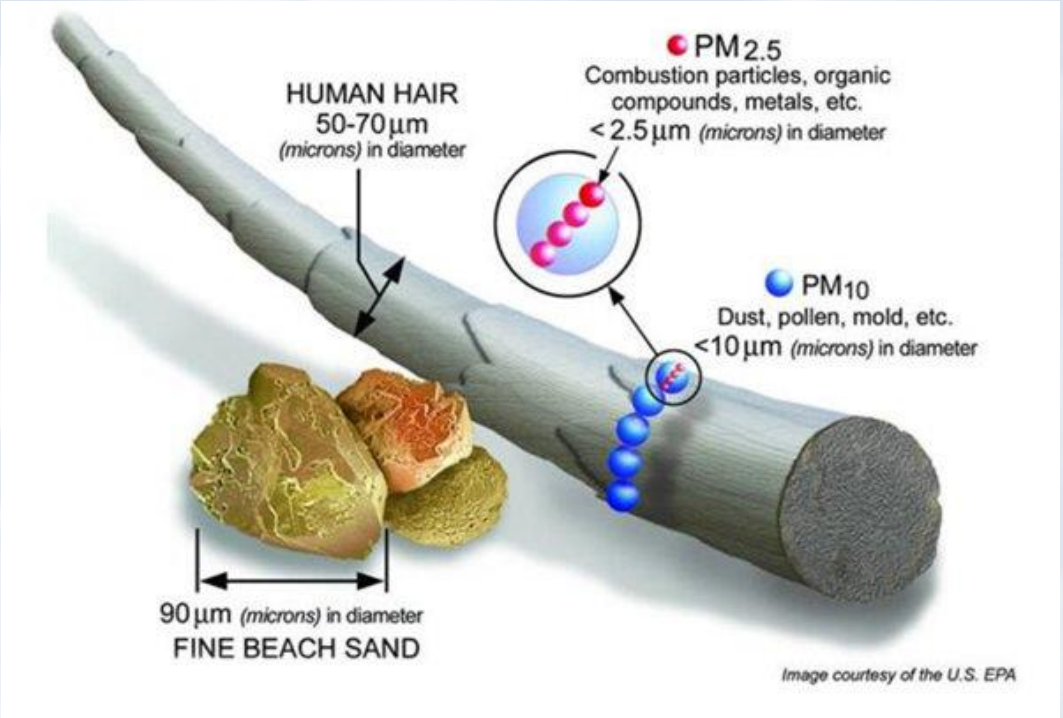
Types of Emission Inventories

- Criteria Pollutants and their precursors:
  - Health-based ambient air quality standards set by the State and U.S. EPA
  - ROC, NOx, PM_{10}, $PM_{2.5}$, SO_2, CO, Lead and NO_2



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Types of Emission Inventories

- Toxic Air Contaminants (TACs):
  - Chemicals causing short-term and/or long-term health impacts
  - CARB has identified more than 200 TACs
  - Hexavalent Chromium, Toluene, Diesel PM are examples

- GHG Pollutants:
  - Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O) and High-GWP gases (SF_6, HFCs, PFCs and NF_3)

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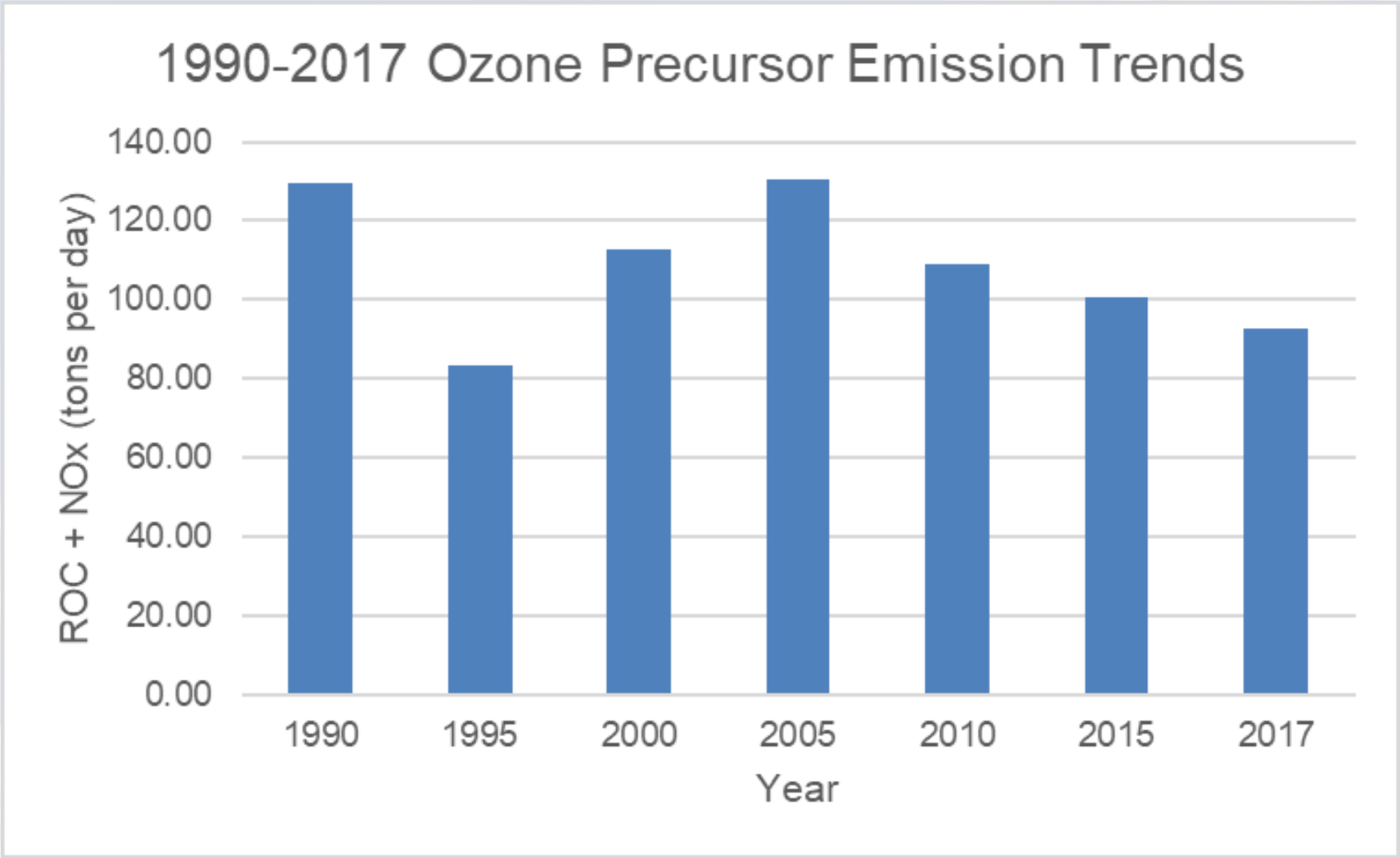
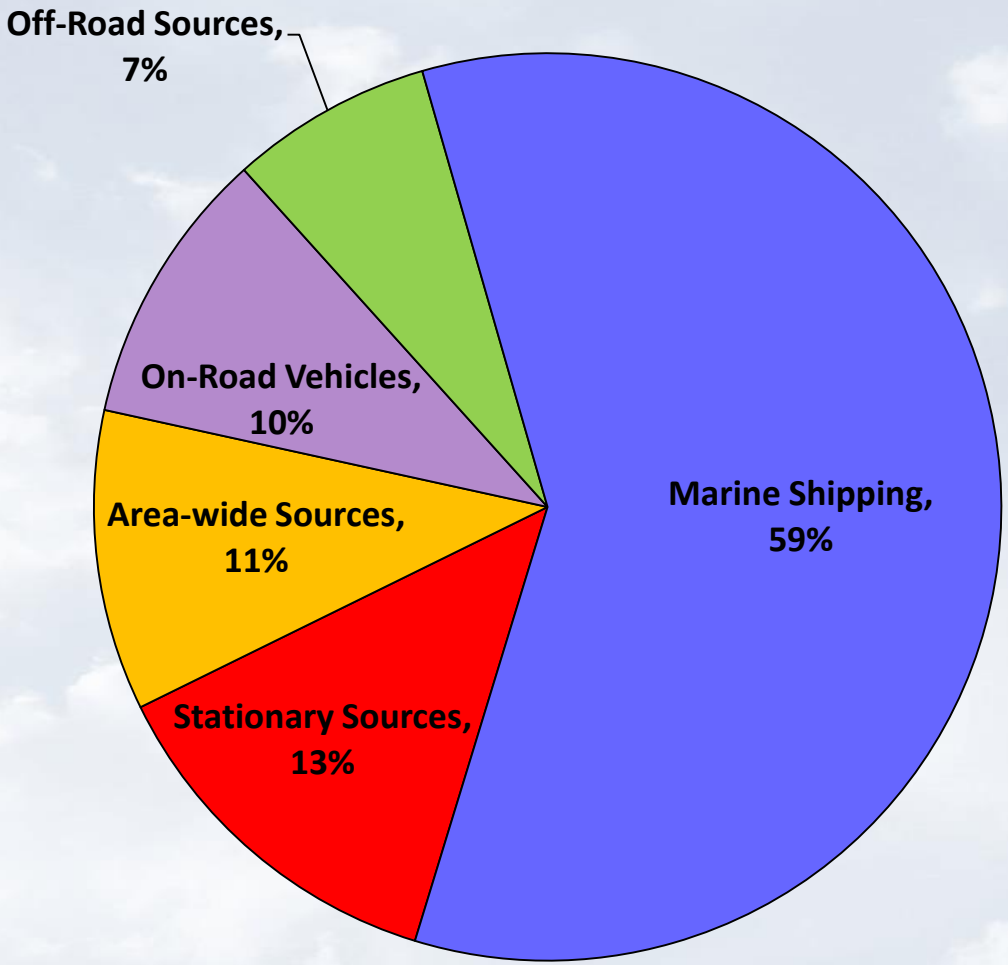
Ozone Precursor Emission Trends

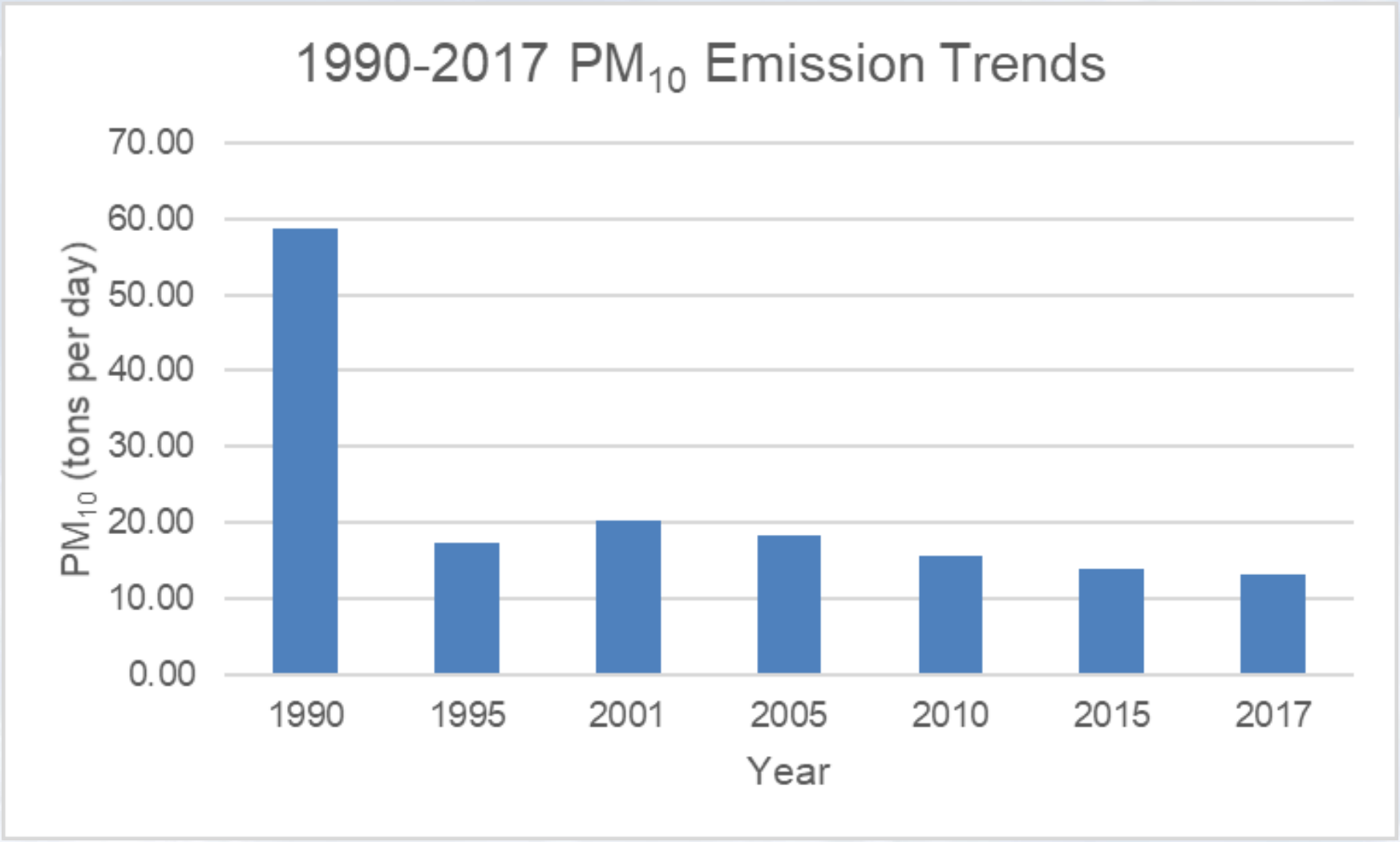


2017 Ozone Precursor Emissions

	Emissions (tons/day)
Ozone	92.74
PM_{10}	13.22
$PM_{2.5}$	3.62



PM_{10} Emission Trends



2017 PM_{10} Emissions

	Emissions (tons/day)
Ozone	92.74
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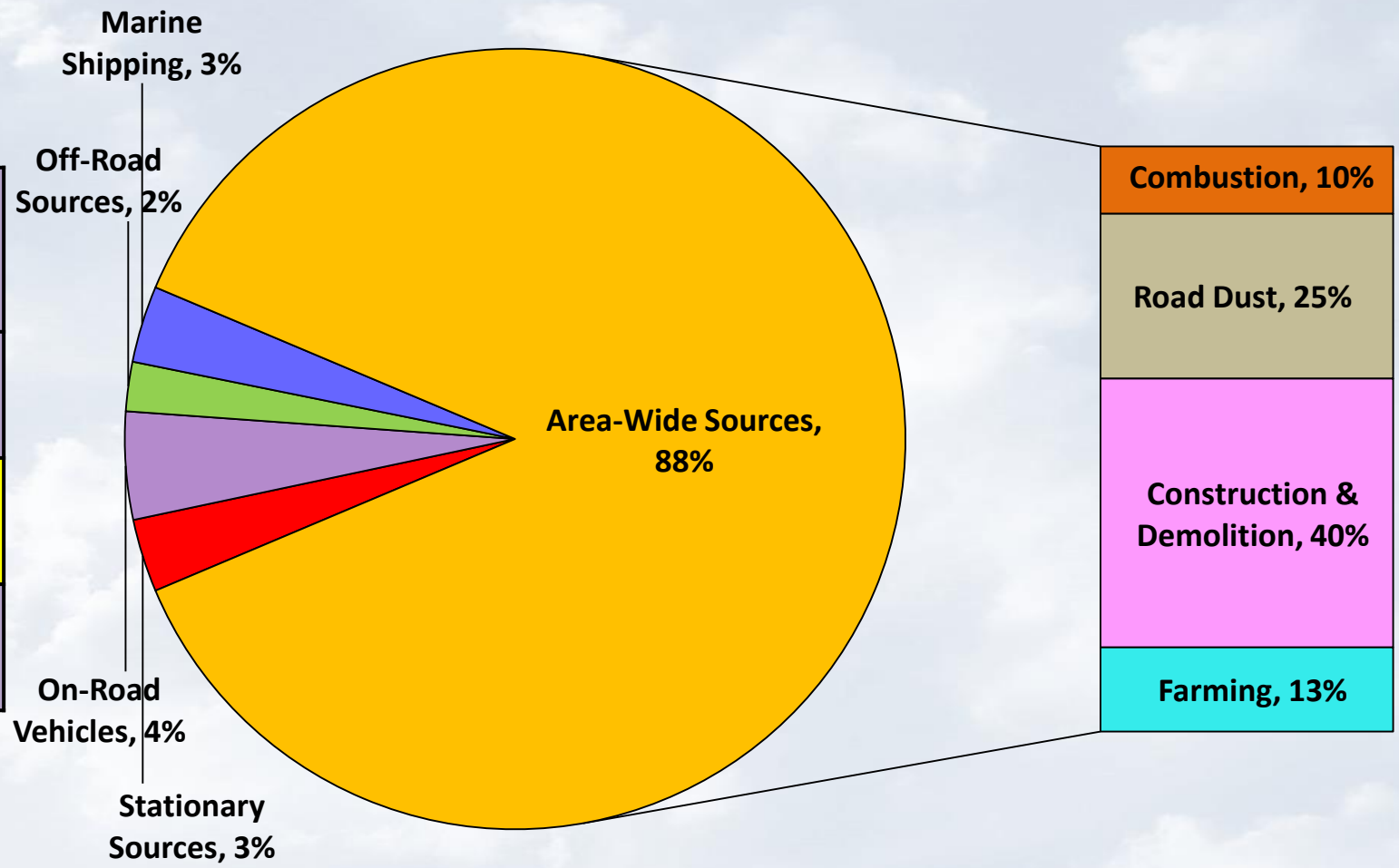
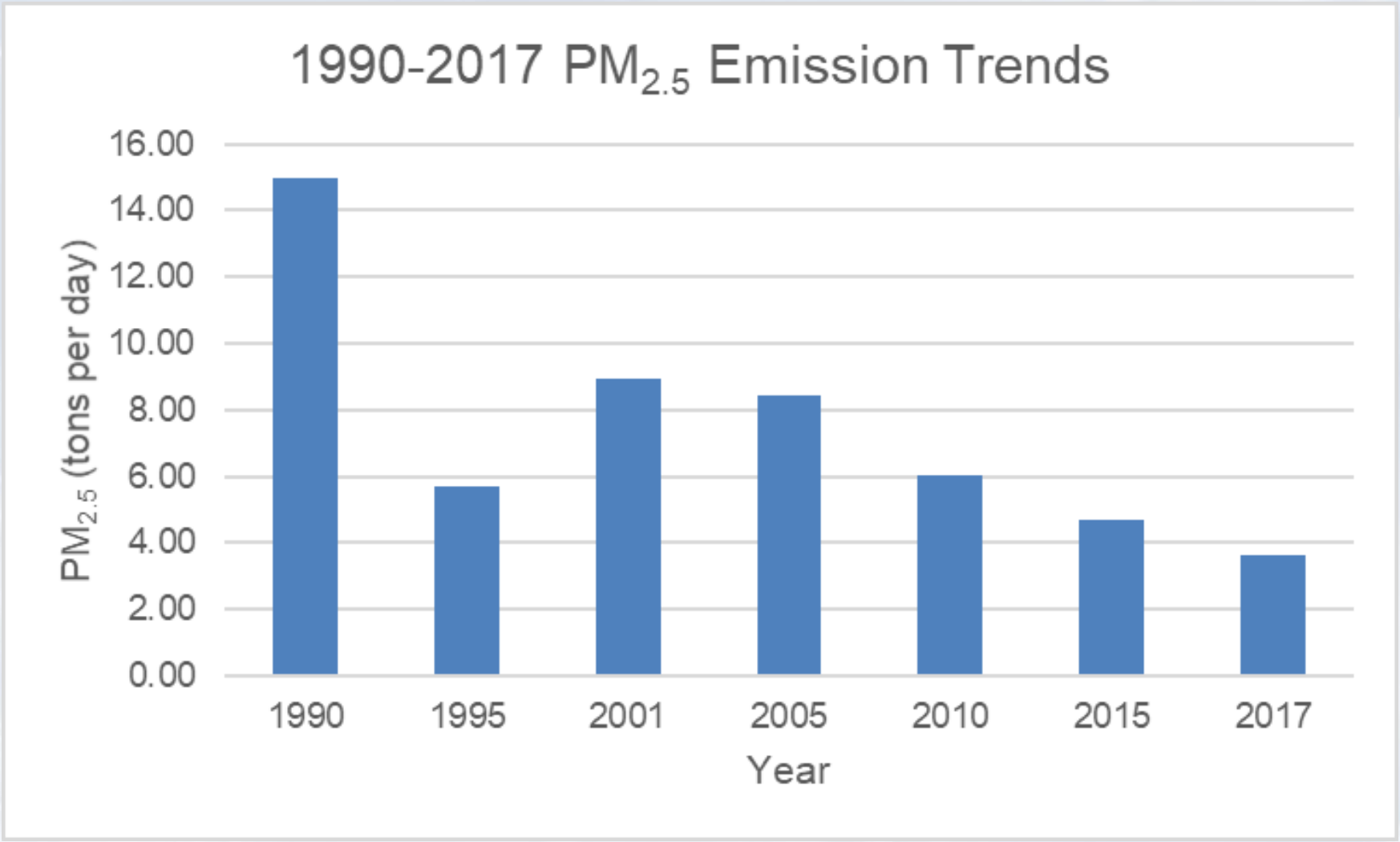


$PM_{2.5}$ Emission Trends



2017 $PM_{2.5}$ Emissions

	Emissions (tons/day)
Ozone	92.74
PM_{10}	13.22
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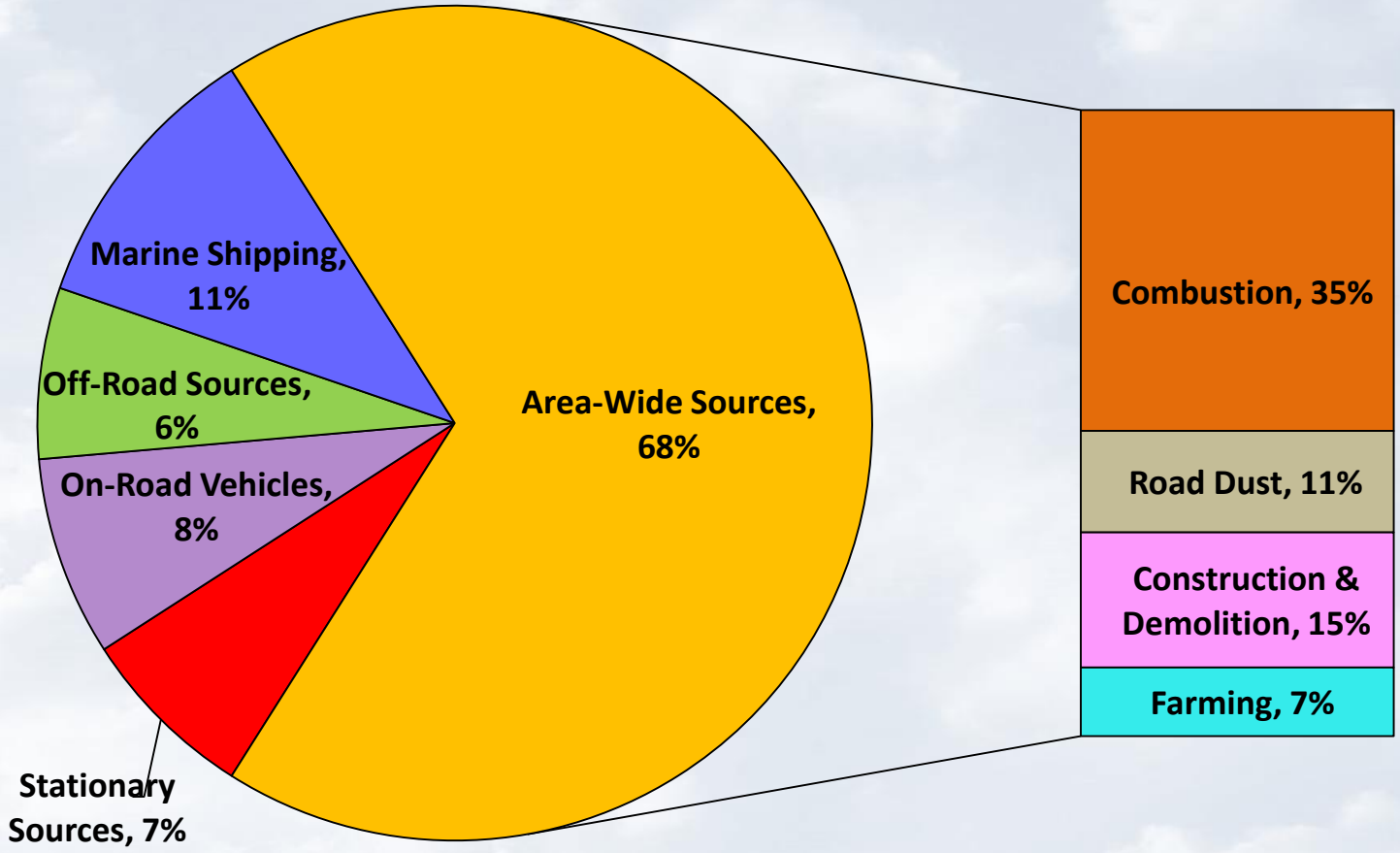
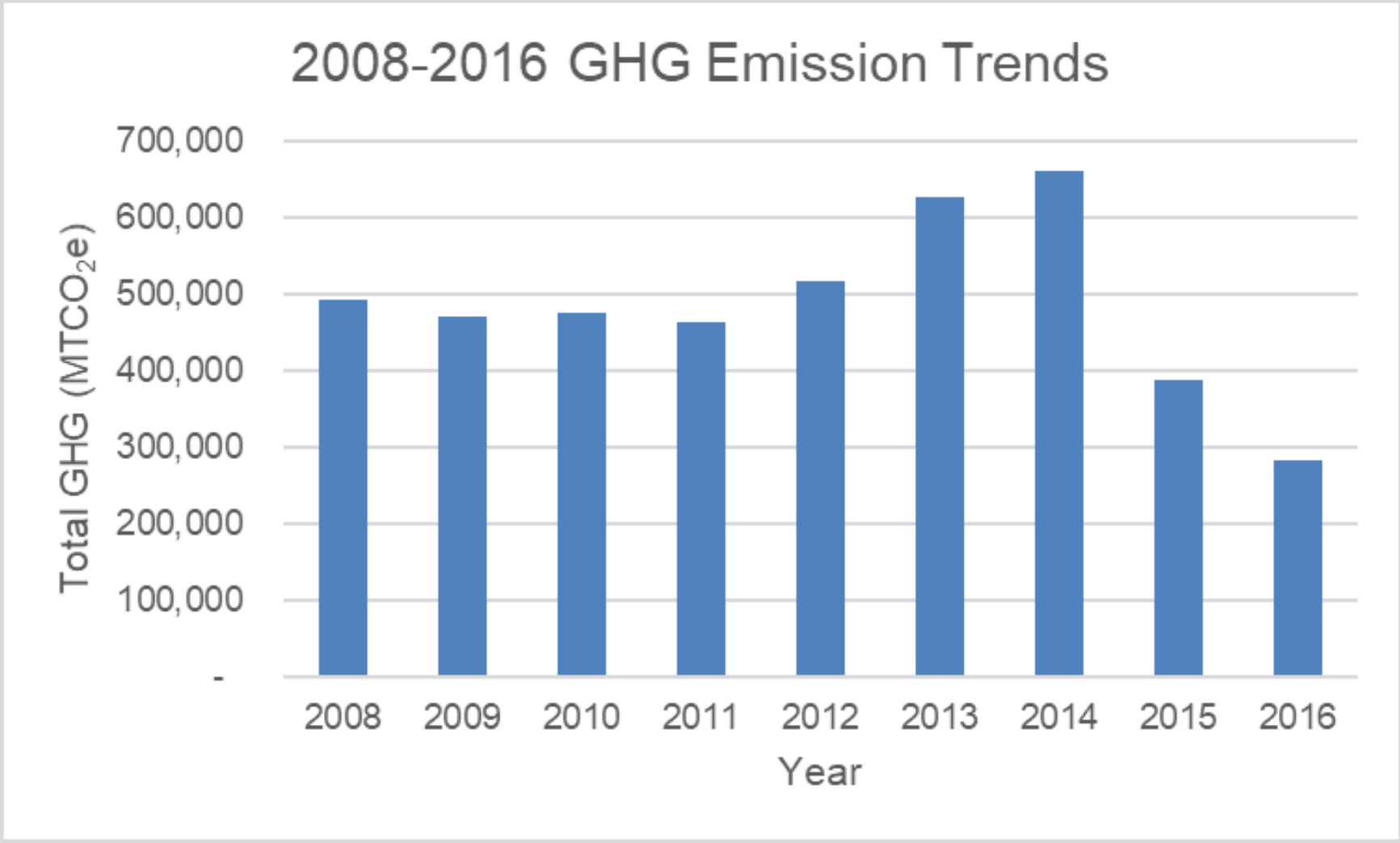
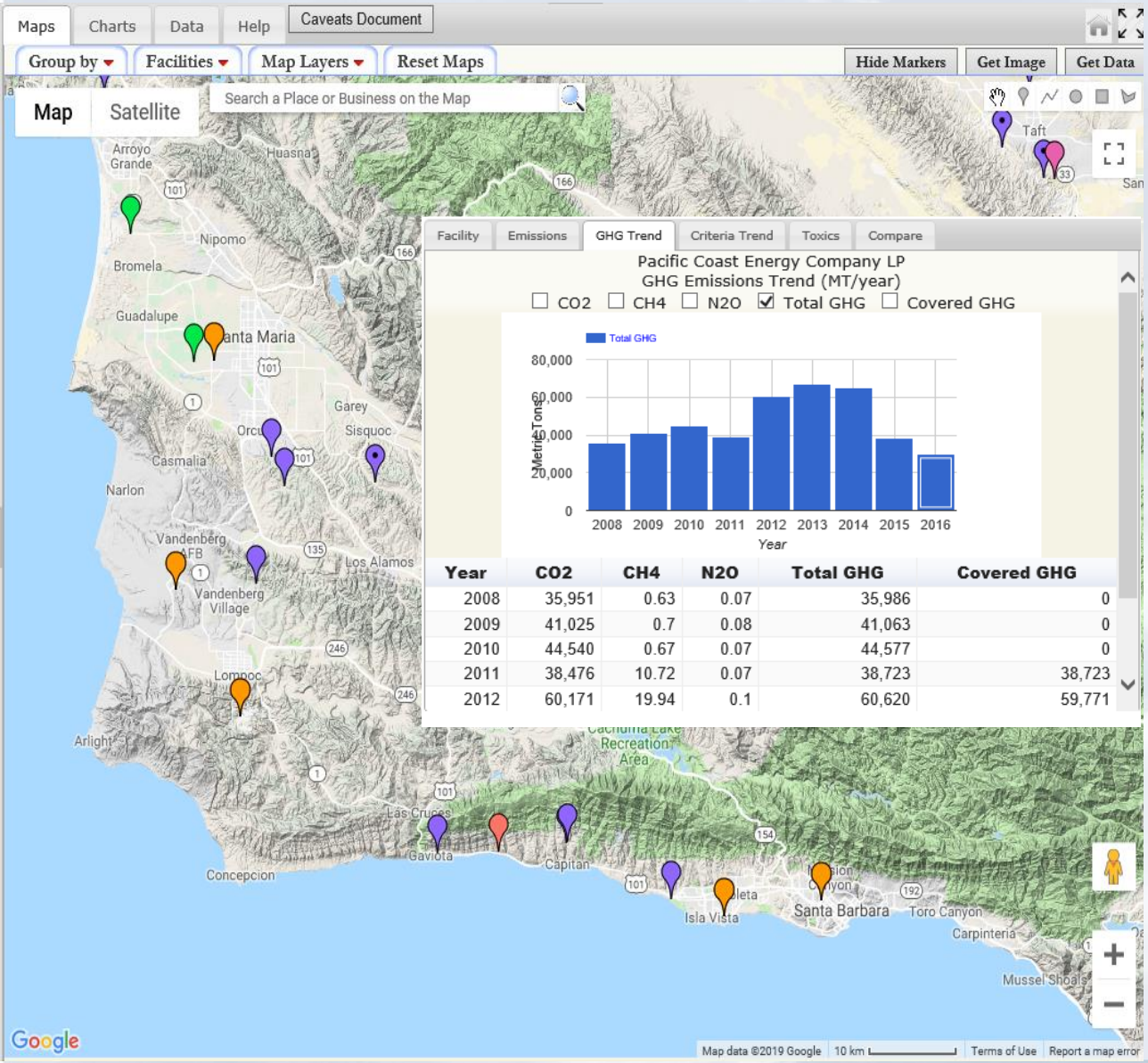


GHG Emission Trends



CARB Pollution Mapping Tool



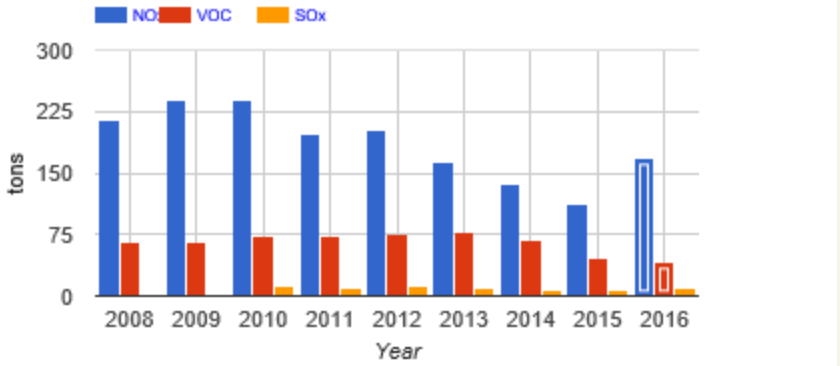
- Shows GHG, criteria and toxic pollutant data for CA facilities subject to the GHG Mandatory Reporting Regulation
- 14 facilities in SB County
- The District is working with CARB to refine emissions data on the Pollution Mapping Tool

Facility | Emissions | GHG Trend | Criteria Trend | Toxics | Compare

Pacific Coast Energy Company LP

Criteria Pollutants Emissions Trend (ton/year)

☑ VOC ☑ NOx ☑ SOx ☐ PM10 ☐ PM2.5



Year	VOC	NOx	SOx	PM10	PM2.5
2008	65.3	214.7	3	2.5	2.5
2009	65.8	240.2	3.3	3	3
	74.4	240.1	13.1		
	74	198	10.8		
	75.3	203.3	11.5		

Facility | Emissions | GHG Trend | Criteria Trend | Toxics | Compare

Pacific Coast Energy Company LP

Pollutant	2016	Unit
CO2	29,518	Metric Tons
CH4	19.984	Metric Tons
N2O	0.045	Metric Tons
Biomass CO2	0	Metric Tons CO2e
Non-Biomass GHG	29,952	Metric Tons CO2e
Total GHG	29,952	Metric Tons CO2e
Covered GHG	29,921	Metric Tons CO2e
VOC	42.6	tons
NOx	168	tons
SOx	9.57	tons
PM10	2.12	tons
PM2.5	2.11	tons
Benzene	1,822.4	lbs
1,3-Butadiene	98.4	lbs
Chromium, Hexavalent		lbs
Diesel PM		lbs

Facility | Emissions | GHG Trend | Criteria Trend | Toxics | Compare

Facility: Pacific Coast Energy Company LP

Click to View All Reported Toxic Pollutants and Emissions for Facility

----- Summary of Selected Toxic Air Pollutants -----

Toxic Air Pollutant	2016 Emissions (lbs/year)	Emissions Vintage	
Benzene	1822.4	2016	Show Trend
1,3-Butadiene	98.4	2016	Show Trend
Chromium, Hexavalent	Not Updated **	2014	Show Trend
Diesel PM	Not Reported *		Show Trend
Formaldehyde	3049.87	2016	Show Trend
Hydrochloric Acid	0.000559	2016	Show Trend
Hydrogen Sulfide	Not Reported *		Show Trend
Nickel	0.8310117	2016	Show Trend

Emission Reporting Requirements

- Criteria and Toxics Reporting Regulation (Dec. 2018)
  - Improve statewide inventory data and increase transparency
  - Uniform statewide methods for calculating and reporting emissions
  - Reporting requirements will tighten over time
    - Increased staff time
    - Additional data reporting from permitted sources

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Staff Contact

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