

2019 OZONE PLAN

**Community Advisory Council Meeting
August 28, 2019**

**Santa Barbara County
Air Pollution Control District**

**Jim Fredrickson, Division Supervisor
Tim Mitro, Air Quality Engineer
Alex Economou, Air Quality Specialist**



air pollution control district
SANTA BARBARA COUNTY

OZONE STANDARDS

Standard	Year Adopted	Concentration	Original Designation	Current Attainment Status
Federal 1-Hour	1979	0.12 ppm	Serious	Attainment (2002) Standard Revoked (2005)
Federal 8-Hour	1997	0.08 ppm	Attainment	Attainment / Revoked (2015)
	2008	0.075 ppm	Attainment	Attainment
	2015	0.070 ppm	Attainment	Attainment
State 1-Hour	1988	0.09 ppm	Severe	Nonattainment-Transitional*
State 8-Hour	2005	0.070 ppm	Nonattainment	

* District designated as Nonattainment-Transitional for the state standard in April 2017

Note: Federal and state standards use different methodologies to determine attainment



STATE PLAN REQUIREMENTS

- **California Clean Air Act (1988):**
 - Attain the Ozone standard by the earliest practicable date
- **Original plan adopted in 1991**
- **Triennial progress reports:**
1994, 1998, 2001, 2004, 2007, 2010, 2013, 2016
- **Objectives:**
 - 1) Assess the effectiveness of our program
 - 2) Evaluate strategies to obtain additional emission reductions



2019 OZONE PLAN STRUCTURE

- **Chapter 1:** Introduction (Jim)
- **Chapter 2:** Air Quality Trends (Tim)
- **Chapter 3:** Emission Inventory & Forecasts (Alex)
- **Chapter 4:** Stationary Source Control Measures (Tim)
- **Chapter 5:** Transportation Control Measures (Tim)
- **Chapter 6:** Voluntary Incentive Strategies (Jim)
- **Chapter 7:** Maintenance Strategy (Jim)

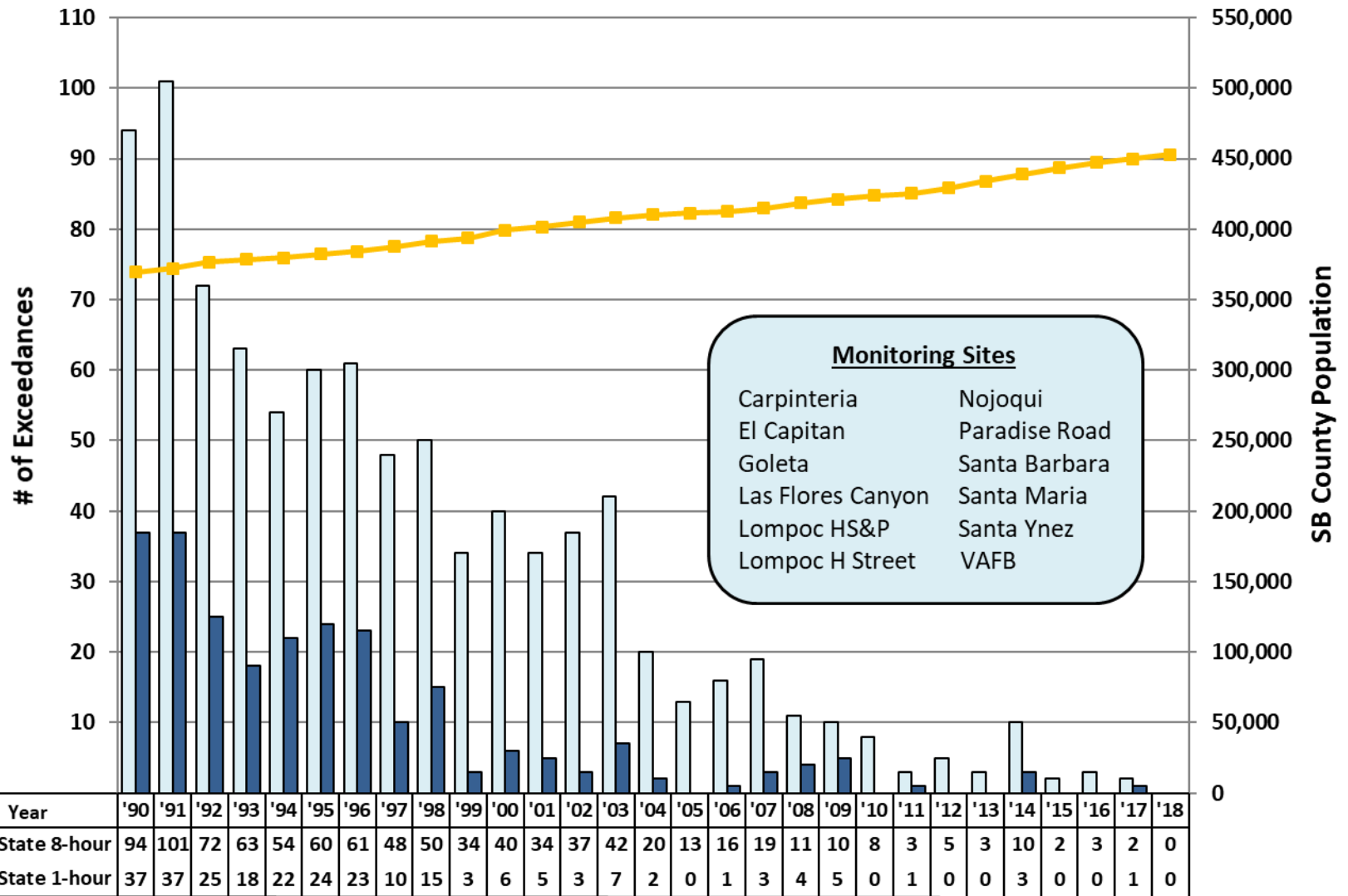


TIMELINE

- **August 28th CAC Meeting:** Solicit feedback
- **October CAC Meeting:** Present complete Plan
- **December 19th Board Meeting:** Target adoption hearing



OZONE EXCEEDANCES (1990–2018)

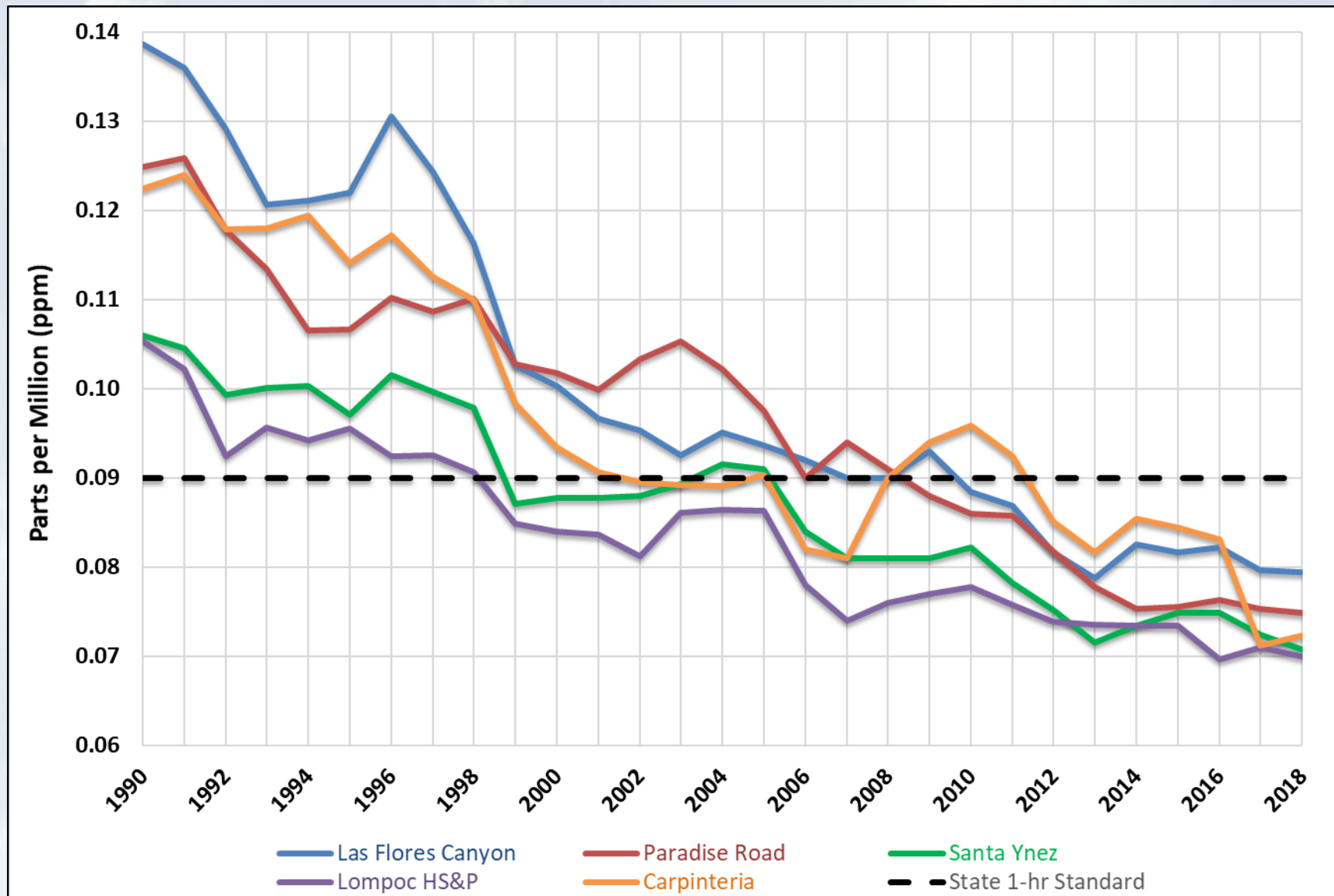


CHAPTER 2 TERMINOLOGY

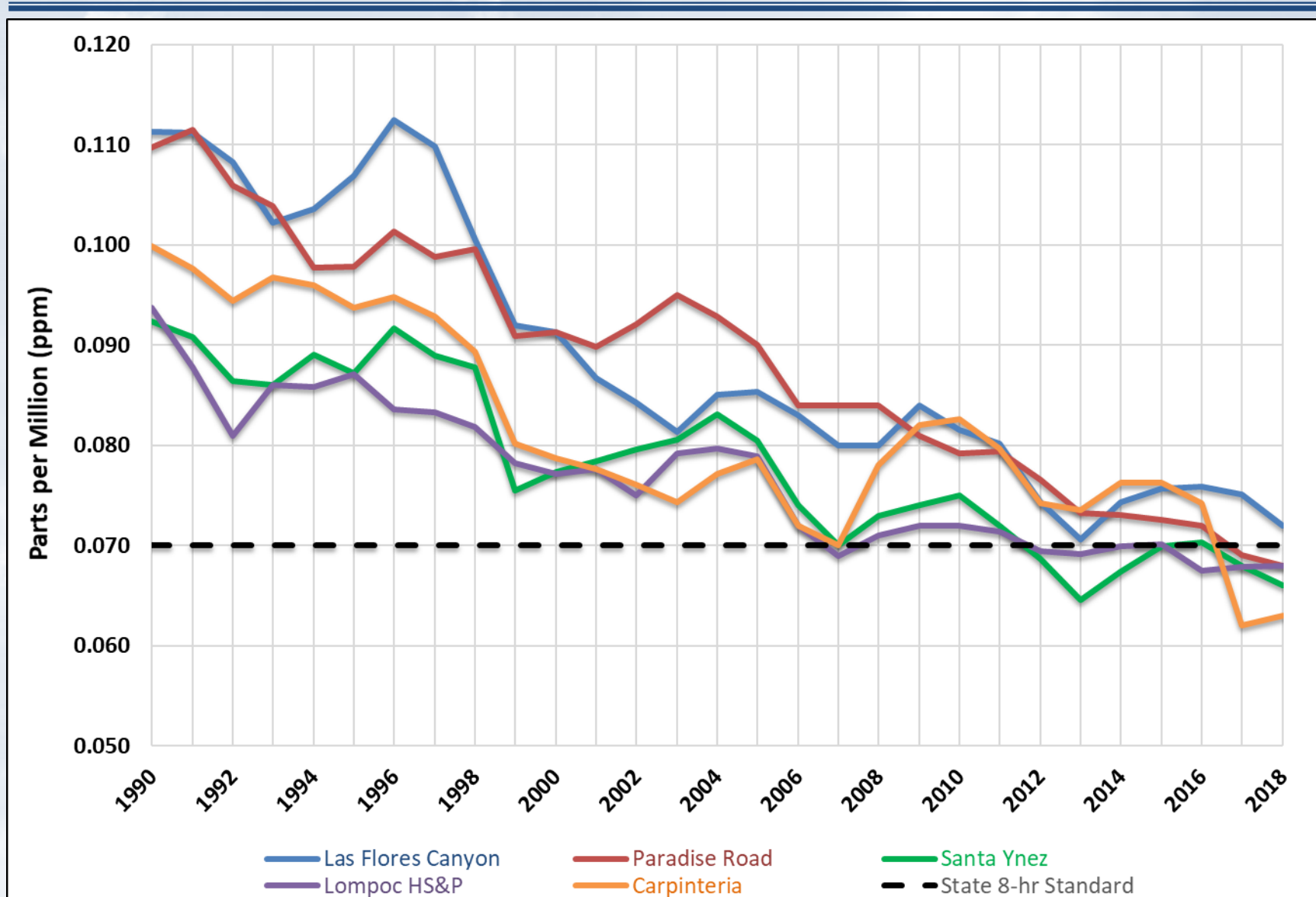
- Exceedance:
 - Measured concentration surpasses the standard
- Expected Peak Day Concentration (EPDC):
 - The highest concentration expected to occur once per year at a monitoring station
 - Calculated by CARB using a statistical model
 - Measured values greater than the EPDC are “extreme events”
- Violation:
 - Measured concentration surpasses the standard, and
 - Measured concentration is equal to or less than the EPDC



1-HOUR OZONE EXPECTED PEAK DAY CONCENTRATIONS



8-HOUR OZONE EXPECTED PEAK DAY CONCENTRATIONS



TOP 5 – LAS FLORES CANYON

Date	Measured Value 8-hr ozone (ppm)	Exceeds standard?	Violation of standard?	Rationale
9/2/2017	0.076	Yes	No	Excluded (higher than EPDC of 0.072)
4/18/2016	0.075	Yes	No	Excluded (higher than EPDC of 0.072)
9/27/2016	0.069	No	No	Less than 0.070 ppm
11/25/2017	0.069	No	No	Less than 0.070 ppm
10/26/2018	0.069	No	No	Less than 0.070 ppm



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- **Designation Value:**

- The highest representative value for the last 3 years
- Las Flores Canyon designation value = **0.069** ppm



CHAPTER 2 SUMMARY

- No violations of the 8-hour standard in the last 3 years
- CARB has indicated we will be redesignated to “attainment”
- District is Nonattainment-transitional until CARB designation is finalized



CHAPTER 2 - QUESTION BREAK

Questions?



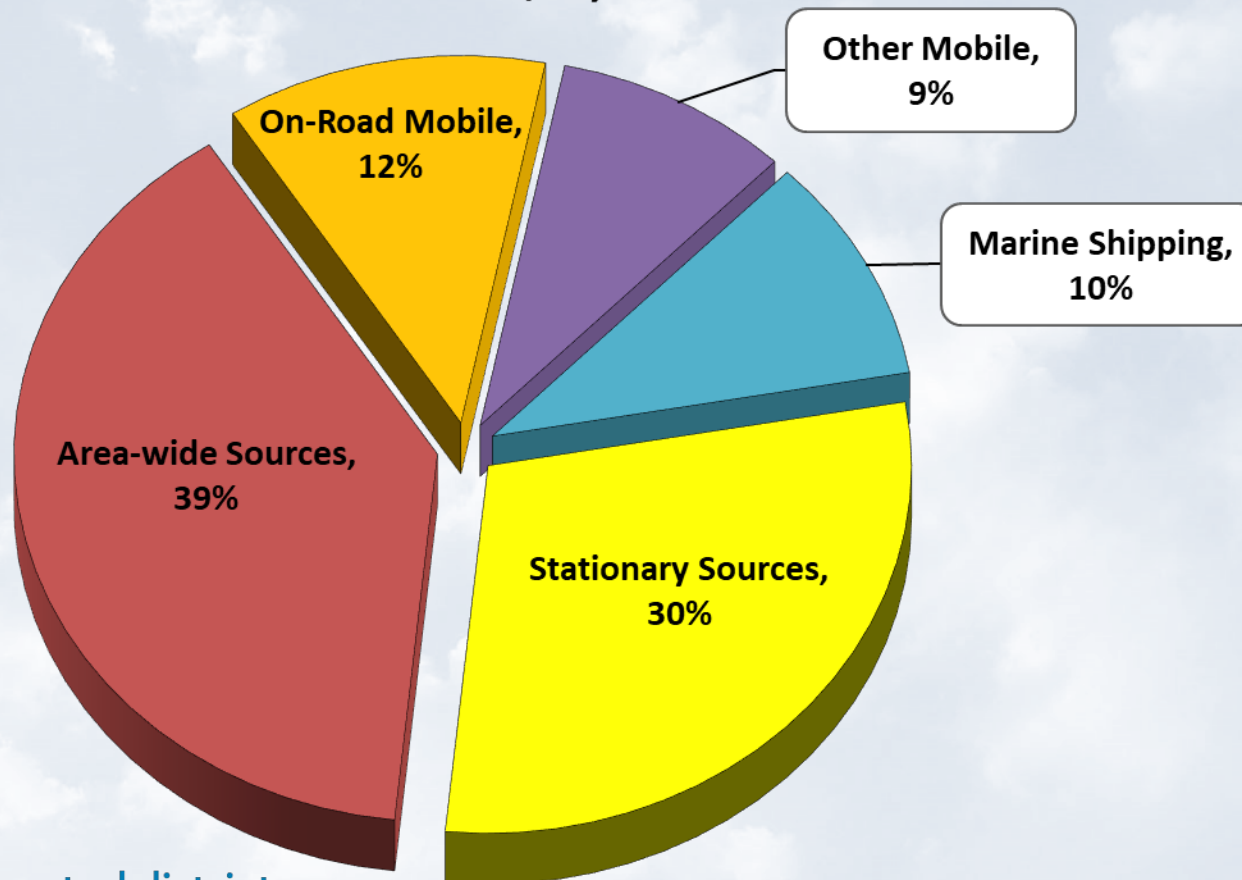
CHAPTER 3 - EMISSION INVENTORY

- Four major categories:
 - 1) **Stationary sources:** Engines, Boilers, Oil Wells
 - 2) **Area sources:** Residential Heaters, Asphalt Paving
 - 3) **On-road vehicles:** Light-duty & Heavy-duty vehicles
 - 4) **Other mobile sources:** Boats, Trains, Airplanes
- “Base year” (2017) and “Future years” (2025, 2035)
 - Future years apply “growth profiles” and “control profiles” from CEPAM (California Emission Projection Analysis Model)
- Planning inventory does not include natural sources:
 - Biogenics, Seeps, Wildfires



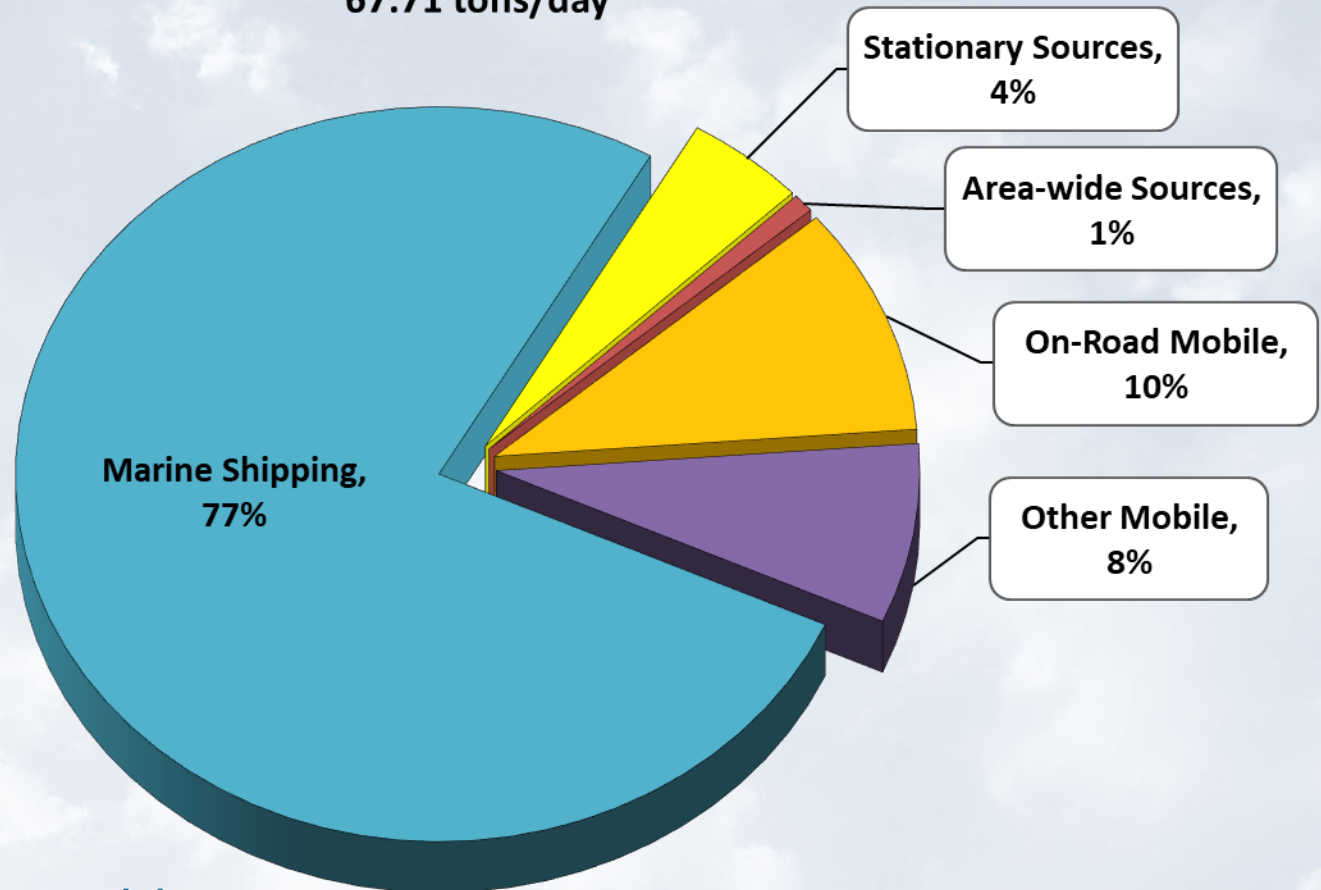
ROC EMISSION INVENTORY

2017 ROC
30.14 tons/day



NOx EMISSION INVENTORY

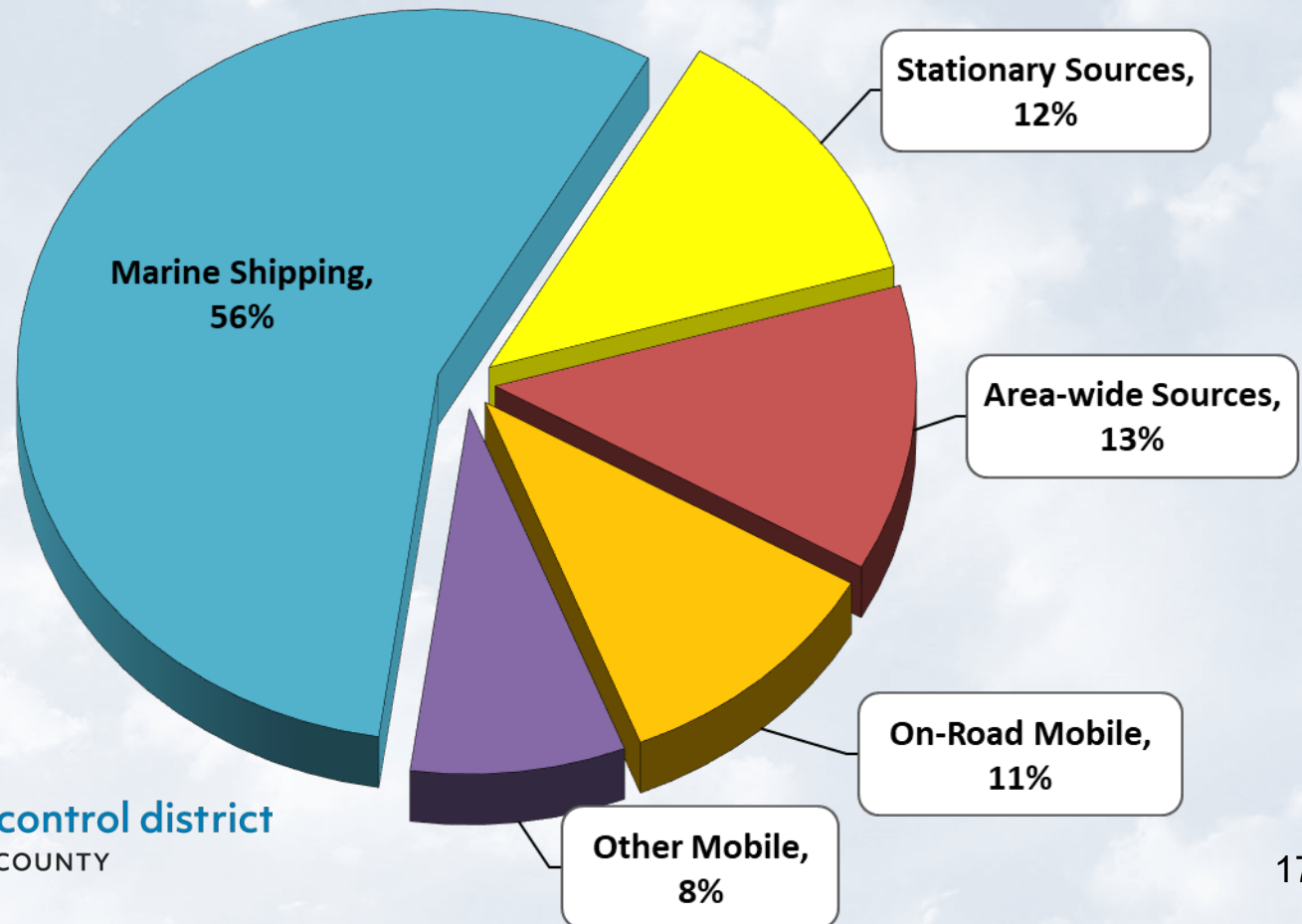
2017 NOx
67.71 tons/day



ROC + NOx EMISSION INVENTORY

2017 ROC + NOx

97.85 tons/day



GROWTH PROFILES

Activity Indicator	Units	Value			Growth Factor	
		2017	2025	2035	2025	2035
Population	Residents	451,700	477,700	505,300	1.06	1.12
Housing	Households	146,800	155,300	164,300	1.06	1.12
Natural Gas Combustion: Residential	Million therms	53.99	55.07	53.43	1.02	0.99
Natural Gas Combustion: Commercial	Million therms	22.09	24.74	26.66	1.12	1.21
Natural Gas Combustion: Industrial	Million therms	9.87	10.39	11.02	1.05	1.12
Ocean Going Vessel: Auto Vehicles	Port of LA/LB ktons	6,223	7,714	9,821	1.24	1.58
Ocean Going Vessel: Container Commodities	Port of LA/LB ktons	49,799	71,910	108,216	1.44	2.17
Ocean Going Vessel: Tanker Products	Port of LA/LB ktons	58,849	61,639	63,672	1.05	1.08
Petroleum Wells	No Units	1	1	1	1	1
Petrol. Production: Onshore	No Units	1	1	1	1	1
Petrol. Production: OCS	No Units	1	1	1	1	1

FORECASTED EMISSION INVENTORY

ROC AND NOx EMISSION FORECASTS, TONS PER DAY

Source Category	<u>2017</u>		<u>2025</u>		<u>2035</u>	
	ROC	NOx	ROC	NOx	ROC	NOx
Stationary Sources	8.86	3.10	9.04	3.07	9.38	3.07
Area-wide Sources	11.85	0.56	12.03	0.47	12.20	0.44
On-Road Vehicles	3.70	6.83	1.81	2.65	1.61	2.11
Other Mobile	2.73	5.35	2.28	3.75	2.04	3.02
Marine Shipping	3.01	51.87	4.25	66.72	6.33	78.84
ERCs	-	-	0.31	0.76	0.31	0.76
Total	30.14	67.71	29.71	77.42	31.87	88.23



MARINE SHIPPING EMISSION INVENTORY

- More than 75% of the county's NOx inventory
- Emissions estimated using CARB methodology
- Activities are projected to increase at the Ports of LA/LB
- Delays in achieving fleet turnover to newer Tier 3 engines
- Based on District review of recent ship speed data, CARB methodology overestimates emissions

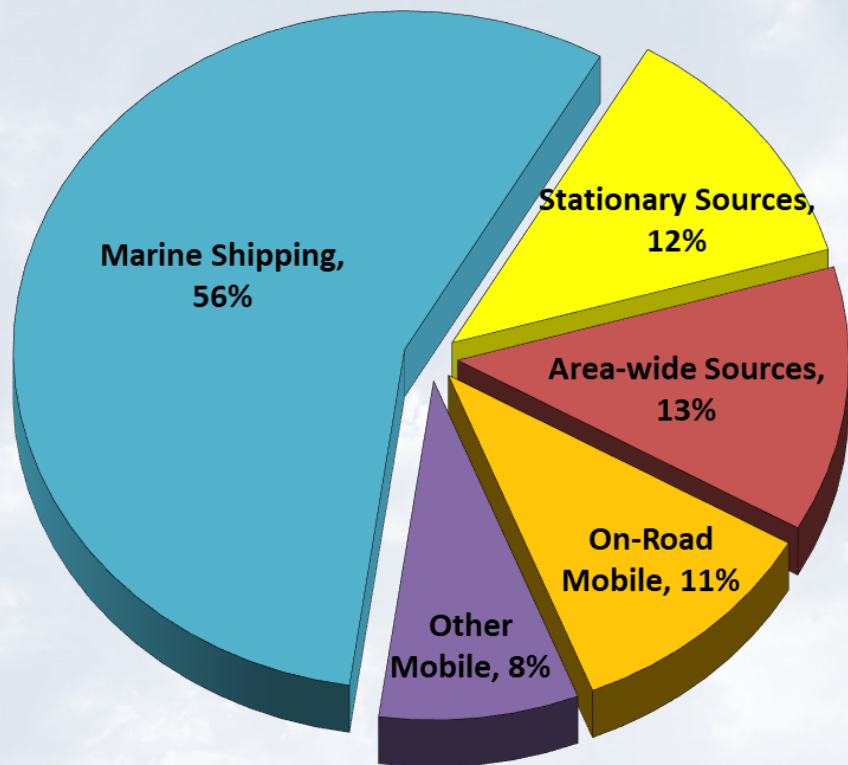


REDUCED MARINE SHIPPING METHODOLOGY

Current Inventory

2017 ROC + NO_x

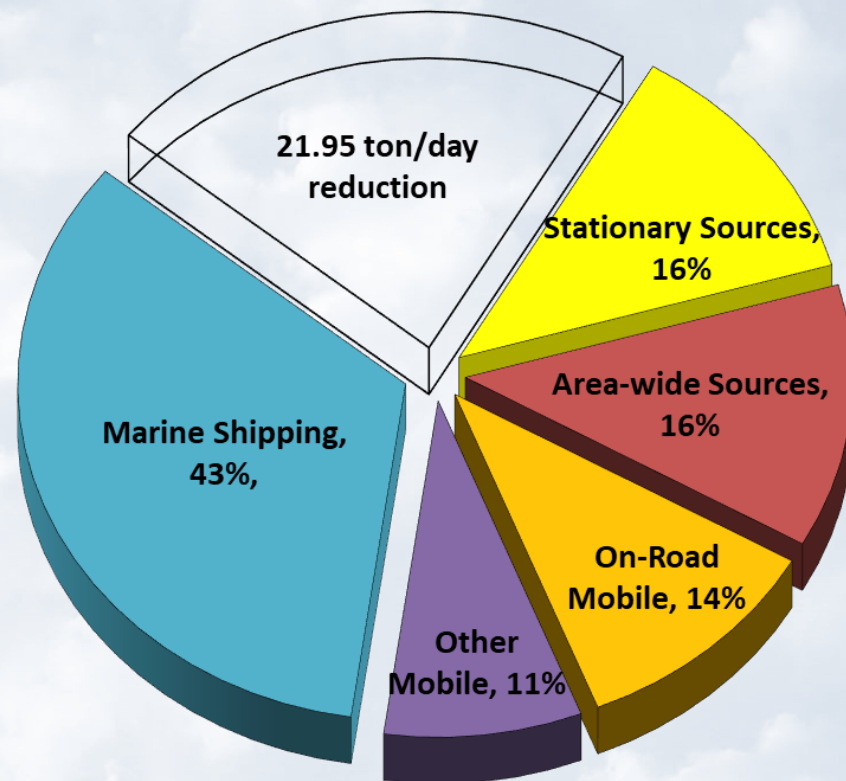
97.85 tons/day



Reduced Methodology

2017 ROC + NO_x

75.89 tons/day



CHAPTER 3 - QUESTION BREAK

Questions?



CHAPTER 4

STATIONARY SOURCE CONTROL MEASURES

- Adopted over 25 control measures since the original 1991 Clean Air Plan
- Example Source Categories:
 - Internal Combustion Engines
 - Fugitive Emissions from Oil and Gas Operations
 - Coating and Solvent Operations
- Historically used “every feasible measure” and “expeditious adoption schedule” strategy. (HSC §40914.b)



STATIONARY SOURCE CONTROL MEASURES

- **2017 Nonattainment-Transitional Designation**
 - Are additional control measures necessary to accomplish expeditious attainment?
 - District is NO_x limited - looking for additional NO_x reductions at this point
 - CAC recommendation & Board action shifted the 3 ROC measures on the 2016 Plan to “contingency”
- Adopted all proposed rules on the 2016 Ozone Plan
 - **Rule 360:** Boilers <2 MMBtu/hr *Adopted March 2018*
 - **Rule 361:** Boilers 2-5 MMBtu/hr *Adopted June 2019*
 - **Rule 342:** Boilers 5+ MMBtu/hr *Adopted June 2019*



STATIONARY SOURCE CONTROL MEASURES

- **2019 Plan:** Still analyzed potential feasible rules
 - Compared our rules to those adopted by other Air Districts
 - Considered the magnitude of the emissions reductions as well as the cost-effectiveness
- District recommends no new stationary source measures for the 2019 Plan
- District will continue to achieve ozone precursor reductions:
 - Transportation Control Measures *Chapter 5*
 - Voluntary Incentive Strategies *Chapter 6*
 - Assembly Bill 617 rules *4 new/modified rules*



STATIONARY SOURCE CONTROL MEASURES

- **New Measures:** None proposed
- **Contingency Measures:** Propose to retain the measures from the 2016 Plan
 - Rule 321: Solvent Cleaning Machines and Solvent Cleaning
 - Rule 351: Surface Coating of Wood Products
 - Rule 354: Graphic Arts
- **Further Study:**
 - Propose to retain the composting measure
 - Propose to remove the solvent measure for O&G operations and the agricultural gas tank rule



CHAPTER 4 - QUESTION BREAK

Questions?

