



Contingency Measure Plan for the 1997 8-hour Ozone Standard

Public Workshop

October 18, 2019

Cleaning The Air That We Breathe...



Presentation Outline

1. Background
2. Air Quality Trends and Progress
3. Clean Air Act Section 182(e)(5) Requirements
4. Draft Contingency Measure Plan
5. Public Process



Ozone National Ambient Air Quality Standards (NAAQS)

- U.S. Environmental Protection Agency (EPA) establishes NAAQS for various air pollutants to be protective of human health
- Areas not meeting the standards are designated as nonattainment areas based on exceedance level (Marginal, Moderate, Serious, Severe, Extreme)



1979 1-hour Standard

1997 8-hour Standard

2008 8-hour Standard

2015 8-hour Standard

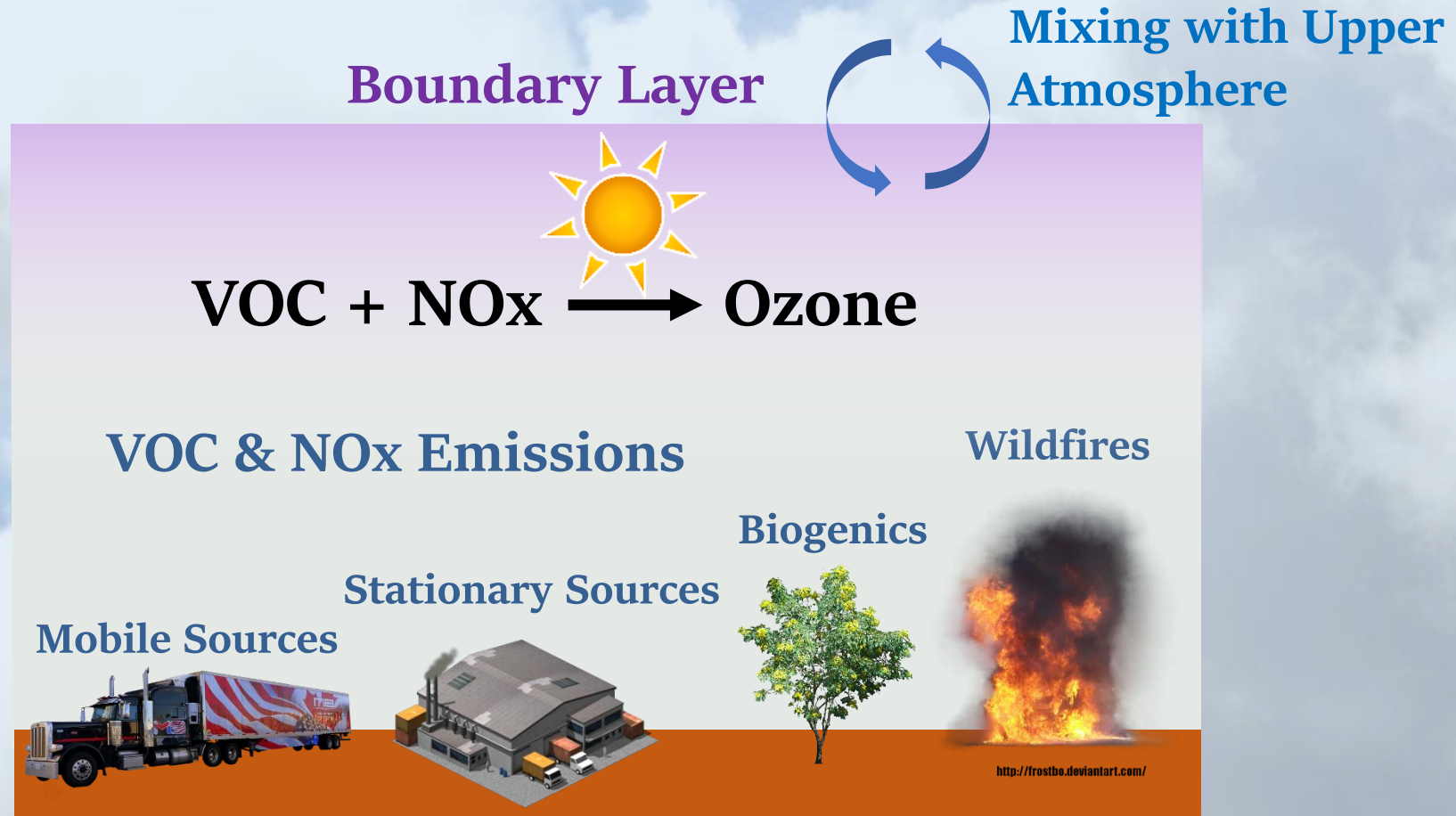


Upcoming Deadlines to Attain Ozone National Ambient Air Quality Standards

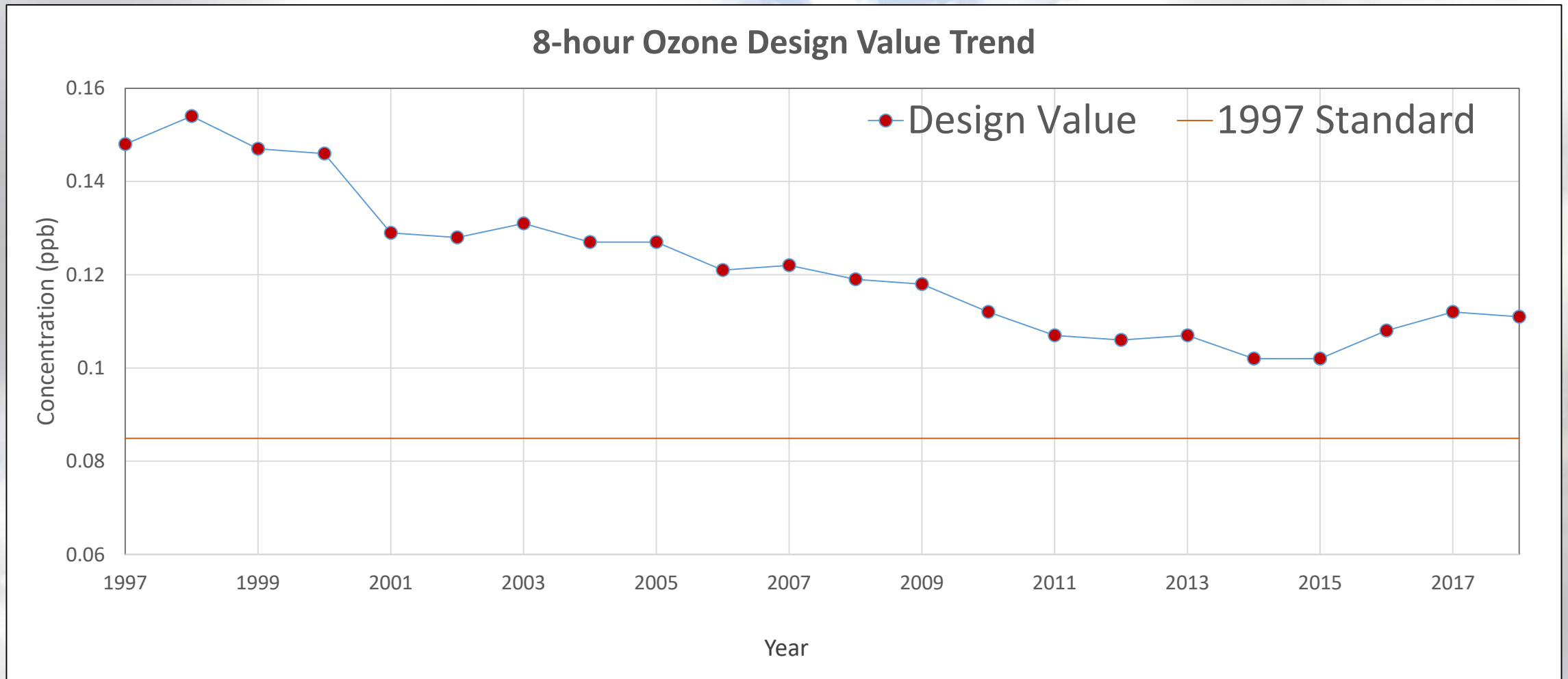


Standard	Concentration	Classification	Attainment Year
1979 1-hour Ozone	120 ppb	Extreme	2022
1997 8-hour Ozone	80 ppb	Extreme	2023
2008 8-hour Ozone	75 ppb	Extreme	2031
2015 8-hour Ozone	70 ppb	Extreme	2037

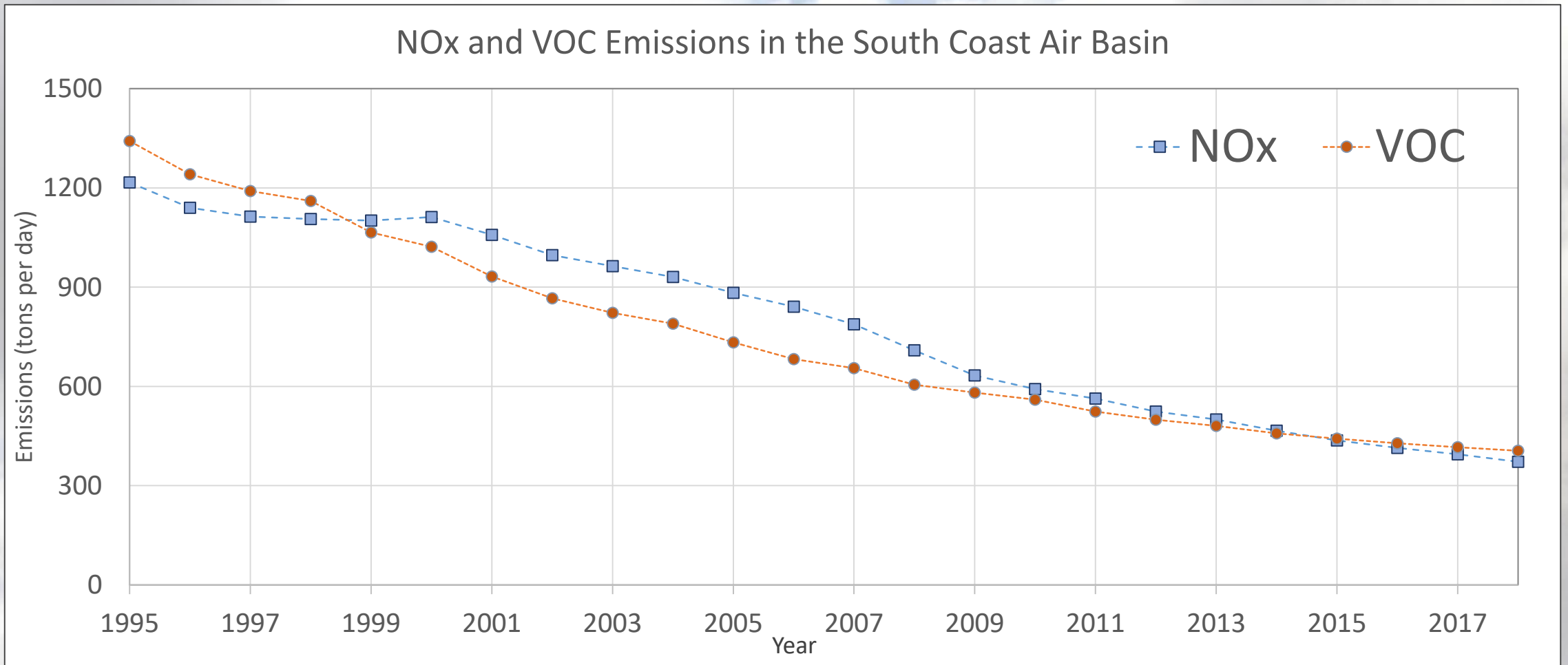
Ozone Formation



Ozone Levels have been Trending Down

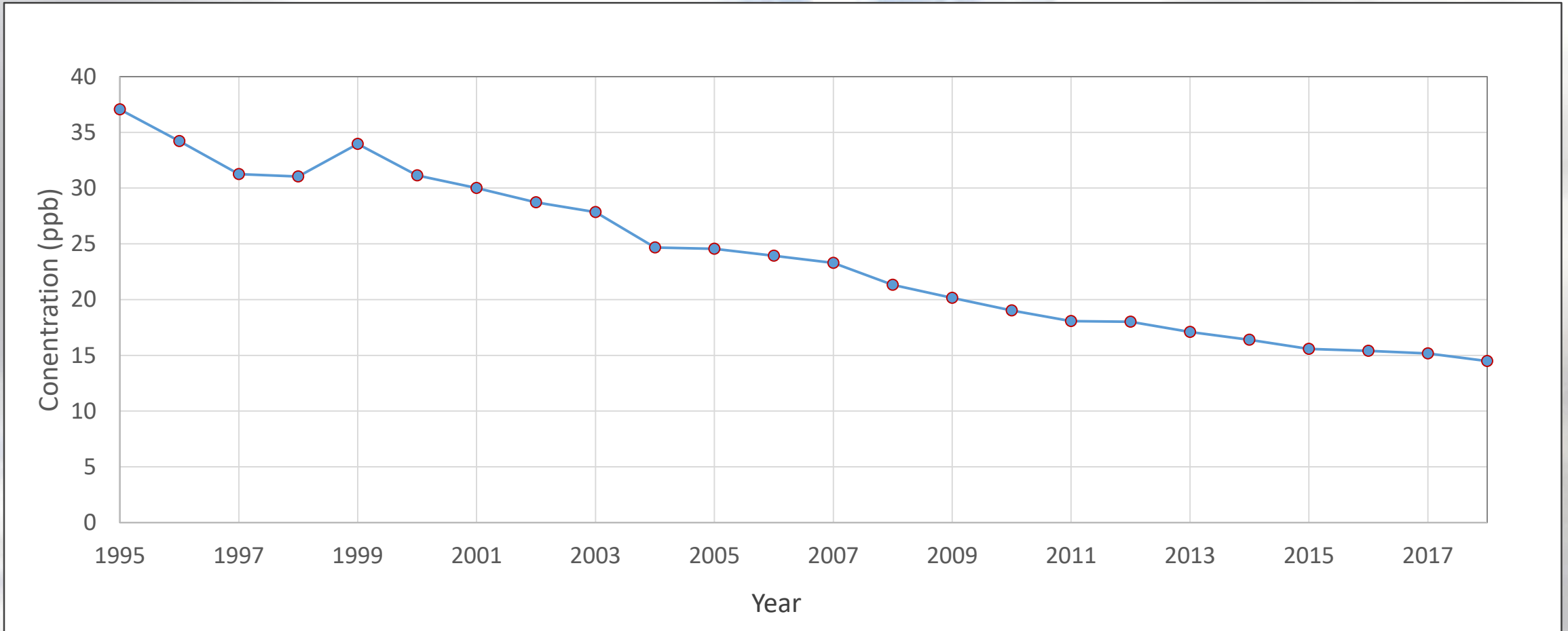


Precursor Emissions Also Decreasing





Annual Average NO₂ Concentrations in The South Coast Air Basin



75% data completeness criteria was applied.

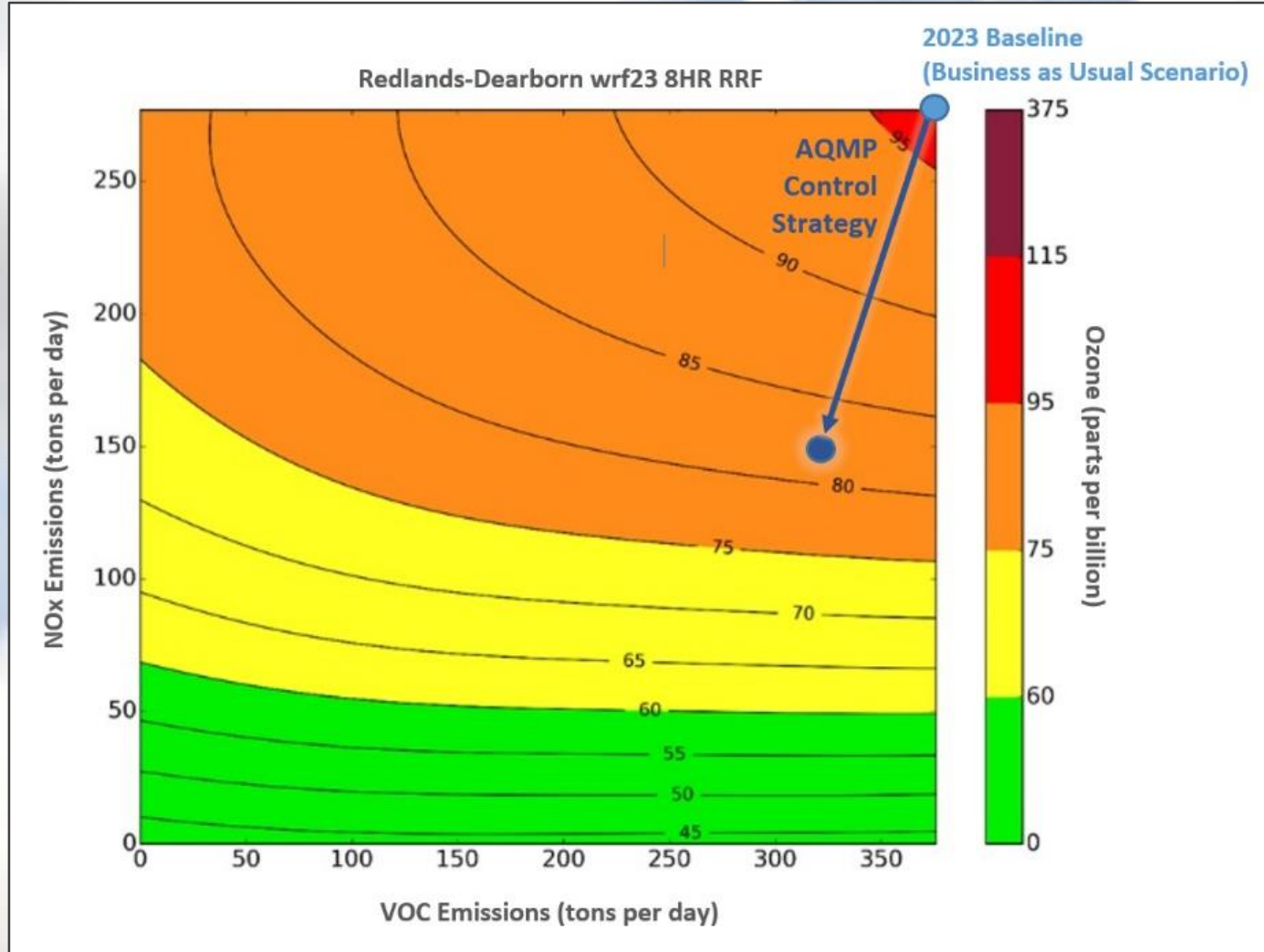
2016 Air Quality Management Plan

- Regional blueprint for achieving air quality goals
- Addressed five federal standards exceeded in South Coast Air Basin:
 - 2008 8-hour Ozone - 75 ppb
 - **1997 8-hour Ozone - 80 ppb**
 - 1979 1-hour Ozone - 120 ppb
 - 2012 Annual PM_{2.5} - 12 µg/m³
 - 2006 24-hour PM_{2.5} - 35 µg/m³



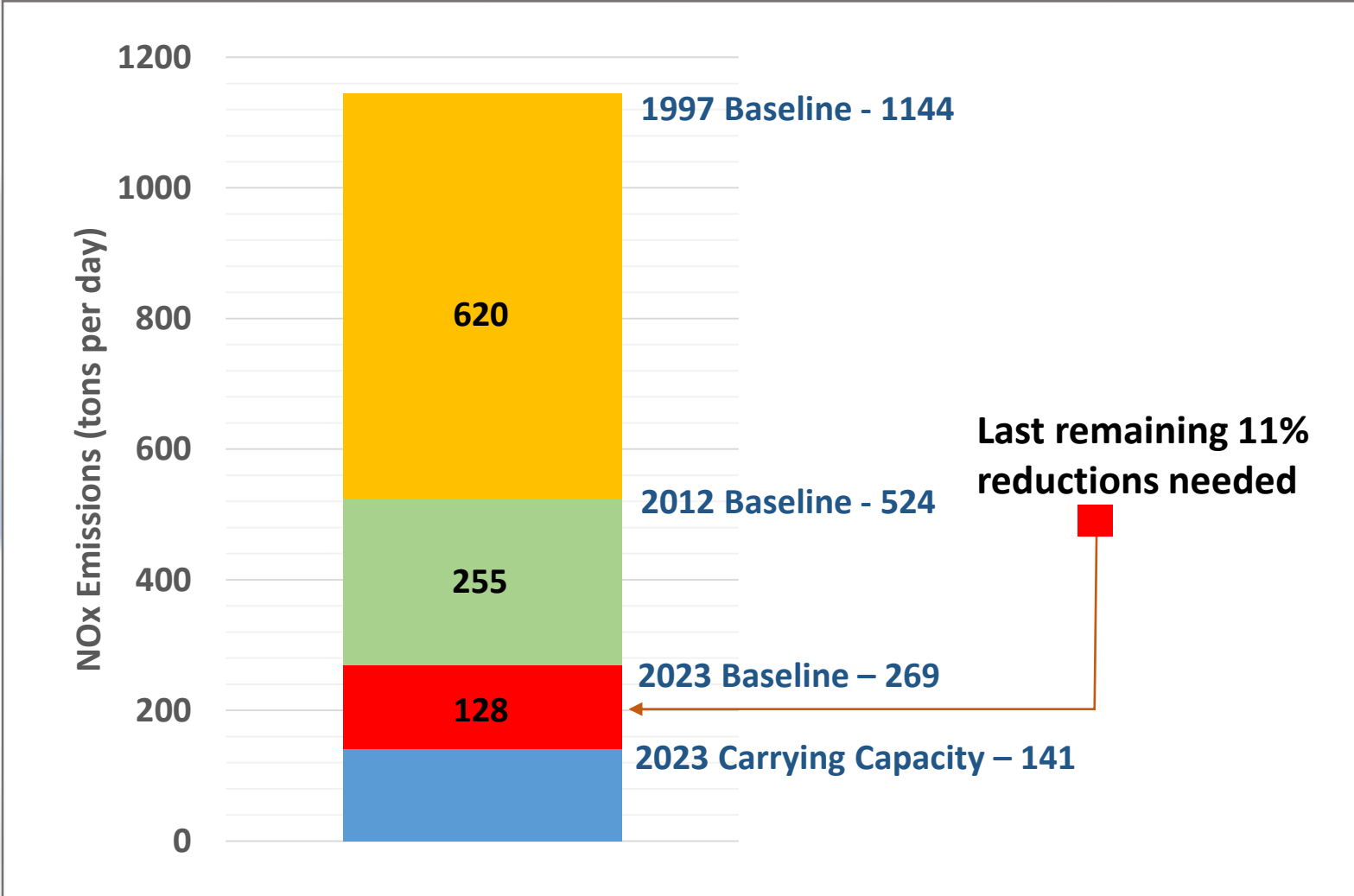


2016 AQMP - NOx Reductions, Most Efficient Control Path For Ozone Attainment





Progress in Overall NOx Reductions Since 1997





2016 AQMP - Overall Control Strategy (NOx)

Sources	NOx (tpd)
Year 2023 Baseline¹	269
Carrying Capacity	141
Total Emission Reductions (All Measures):	135
Defined Measures:	27
South Coast AQMD's Stationary Source Control Measures	7
South Cost AQMD Additional Mobile Source Control Measures	16
CARB's Defined Measures	4
Further Deployment of Cleaner Technologies	108
Set Aside Budget²	3
2023 Remaining Emissions	137³

¹ Reflects CARB's 2018 Updates to the California State Implementation Plan

² As SIP reserve for potential technology assessment and for general conformity purposes

³ Reflects an additional 4.2 tons per day of NOx emission reductions beyond the projected carrying capacity of 141 tons per day to accommodate changes in ocean-going vessel (OGV) emission inventory and CARB's SIP strategy for OGV.

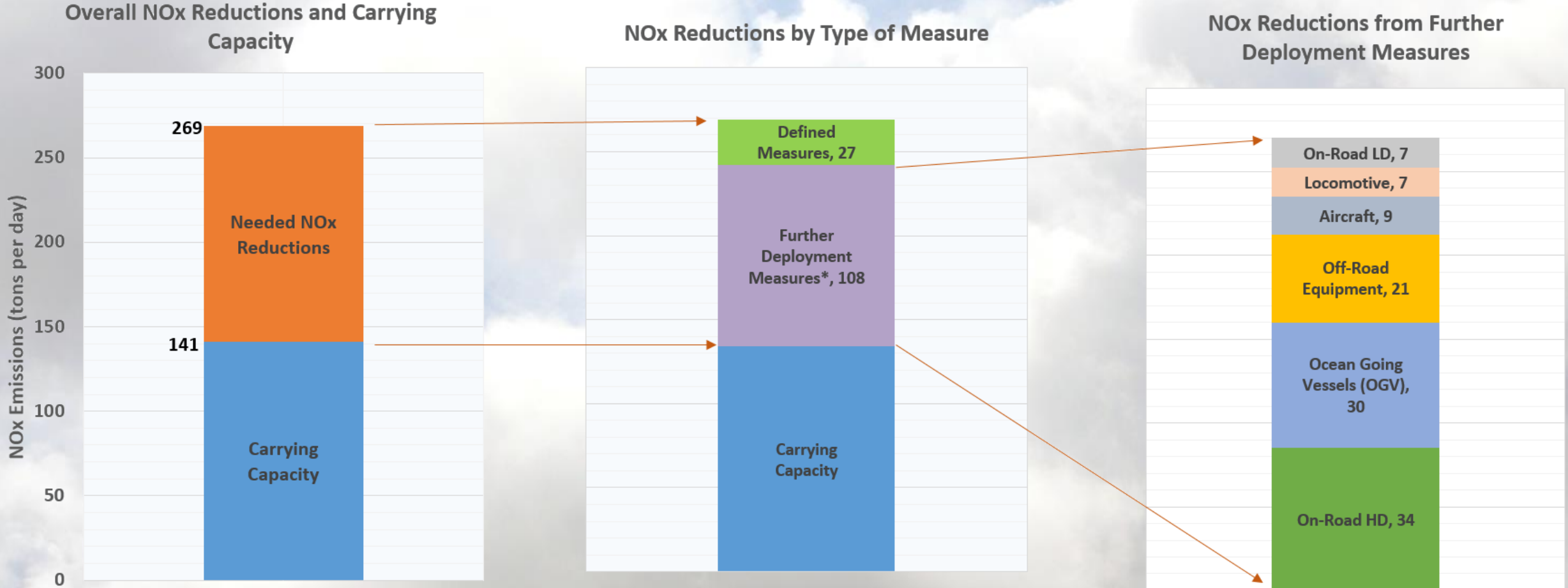


CAA Section 182(e)(5) for Extreme Non-Attainment Areas

- **Allows for reliance on emission reductions from anticipated new technologies or improvement of existing technologies**
- **EPA approved 108 tpd of these Further Deployment measures in the 2016 AQMP**
- **Contingency measures required 3 years prior to implementation of plan provisions (i.e., 2023 attainment date)**
 - **Provide full reductions assigned to 182(e)(5) measures**



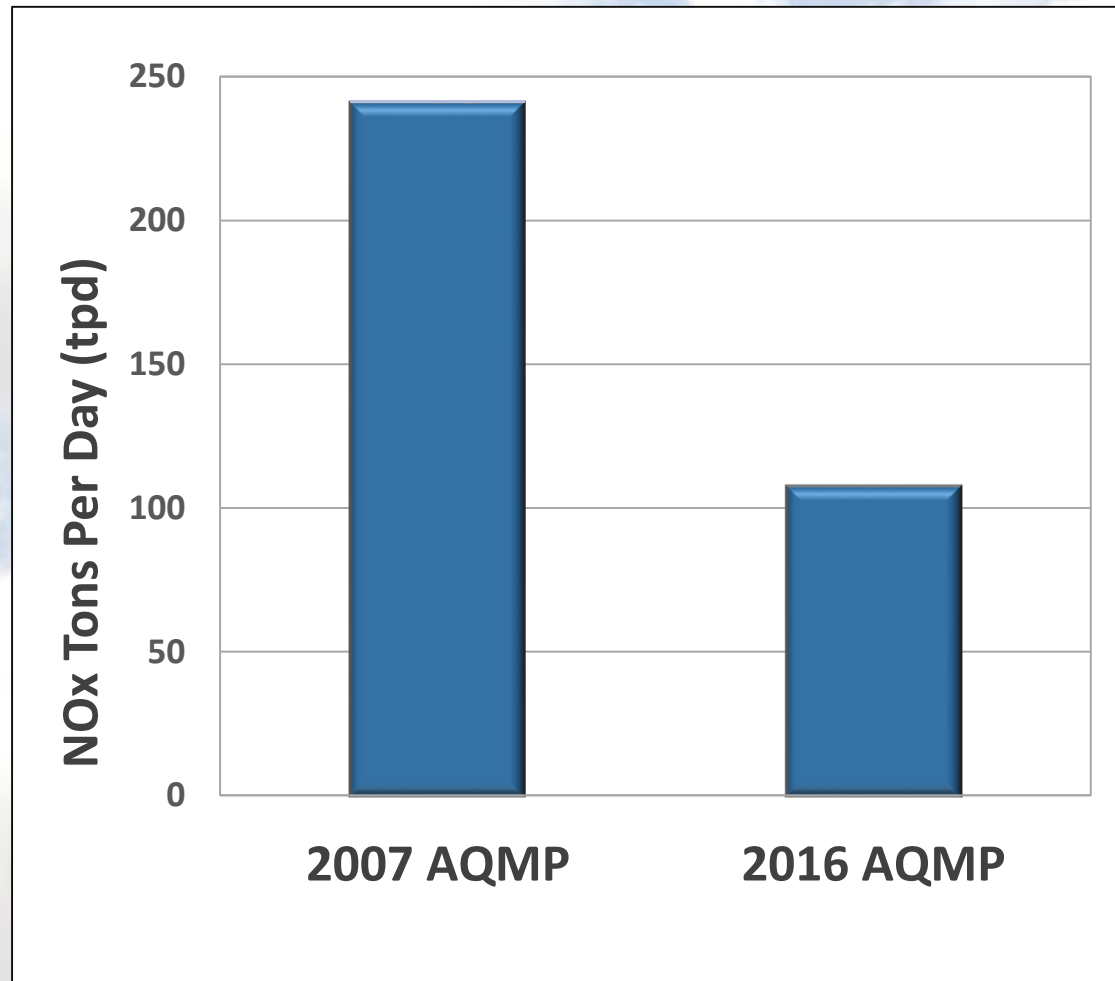
Further Deployment of Cleaner Technologies Measures by Mobile Source Category (2023)



*Further Deployment of Cleaner Technologies (182(e)(5) measures)



Reduced Reliance on Control Strategies Approved Under 182(e)(5) Long-Term/Further Deployment Measures



Draft Contingency Measure Plan



Identified Emission Reduction Strategies



Additional Incentive Funding



Federal Measures/Responsibilities



Identified Emission Reduction Strategies

Measures Description	Agency	NOx Reductions (tpd)
RECLAIM BARCT Rules	South Coast AQMD	2
Ports MOU	South Coast AQMD	3-5
Airports MOU	South Coast AQMD	0.5
Metrolink Locomotives	South Coast AQMD	3
OGV Vessel Speed Reduction	South Coast AQMD	0.2
Funding Incentives (Expected Future Funding)	South Coast AQMD	1.5
Low Carbon Fuel Standard and Alternative Diesel Fuels Regulation	CARB	1.7
ATCM for Portable Engines, and the Statewide Portable Equipment Registration Program Regulation	CARB	0.25
HD Inspection and Maintenance (I/M) program	CARB	4.2
Innovative New Measures	CARB	3.0
Total Reductions Towards 182(e)(5) Commitment*		24-26 tpd

*Preliminary estimates; also includes 4.2 tons per day of reductions associated with updated OGV emissions inventory and CARB's SIP Strategy for OGV 17



CARB's Innovative New Measures (3 tpd)



- **Tier 5 Off-Road Diesel Engine Standard**
- **State Green Contracting**
- **Reduction in Single-Occupancy Vehicle Travel Growth**
- **Locomotive Emission Reduction Measure**
- **VMT and Land Conservation**
- **Regional VMT Reductions**
- **Co-Benefits of Climate Change Scoping Plan Building Electrification**



Additional Incentive Funding

- **2016 AQMP**
 - Estimated need over \$1 billion per year over 14 years
 - Current effort will update this estimate based on latest information
- **Expected Future Funding (approximately \$800 M over 4 years)**
 - AB 617-related Incentives - \$80-90 M/yr
 - Carl Moyer - \$40-50 M/yr
 - Prop 1B - \$30 M
 - VW Settlement - \$67 M
 - AB2766 Subvention Fund - \$22 M/yr
 - Mobile Source Air Pollution Reduction Review Committee - \$17 M/yr
- **Additional Funding Needed**
 - Voting District Authorization legislation - \$1.4 B/yr
 - Other Mechanisms - TBD
 - Expected 2023 NOx Reductions: 15 tons per day

Successful Implementation of Incentive Projects

Carl Moyer Program

- Trucks
- Transit Buses
- Refuse Trucks
- Public Agency/Utility Vehicles
- Emergency Vehicles
- Construction/Ag
- Marine Vessels
- Shore Power
- Locomotives
- Cargo Handling
- Infrastructure



www.AQMD.gov/Moyer



- 1998 – Present
- \$467 Million
- 6,708 vehicles
- Emissions Reduced (tpy):
NOx: 7,598 PM: 222

Prop 1B

- Trucks & Transport Refrigeration Units
- Locomotives
- Shore Power
- Cargo Handling



- 2009 - Present
- \$485 Million
- >7,300 vehicles
- Emissions Reduced (tpy):
NOx: 7,086 PM: 220

Successful Implementation of Incentive Projects

Replace Your Ride

- Light-Duty Vehicles
- Alternative Mobility Options (transit passes, Uber, Lyft)
- Electric Vehicle Chargers

www.ReplaceYourRide.com



- 2015 - Present
- \$24 Million
- 3,100 vehicles
- Emissions Reduced (tpy):
NOx: 29 HC: 67 CO: 8,031

Lower Emission School Bus Program

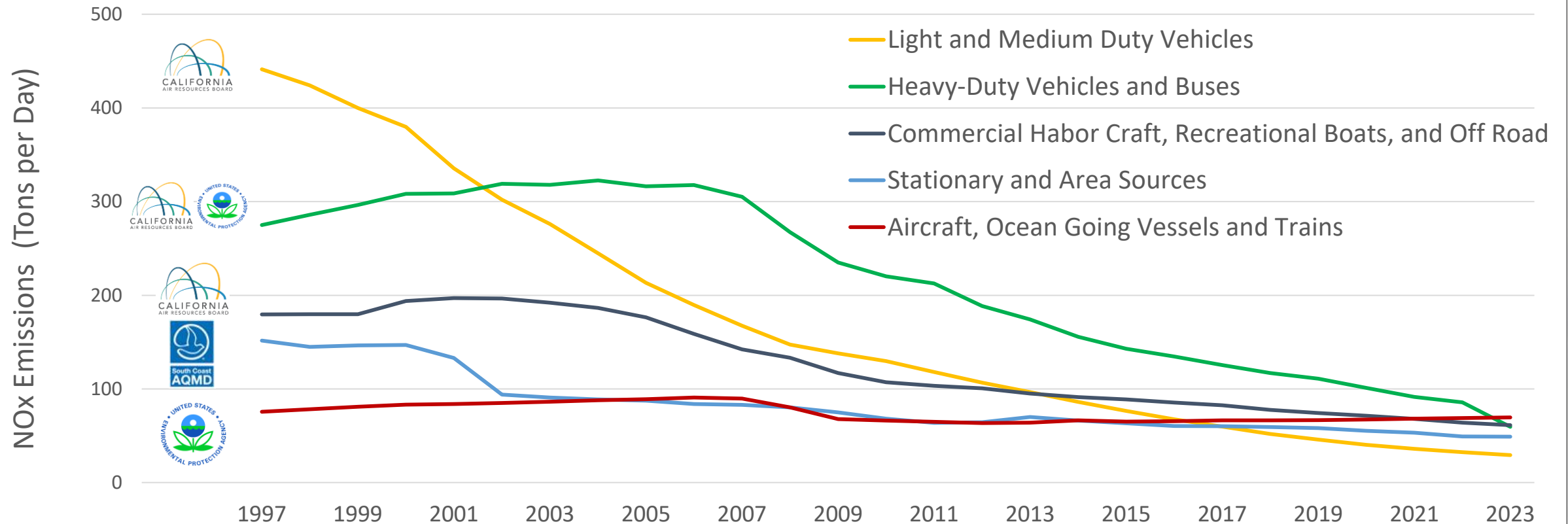
- School Buses
- Infrastructure
- CNG Tank Replacements



- 2001 - Present
- \$280 Million
- 5,000 vehicles
- Emissions Reduced (tpy):
NOx: 219 PM: 25

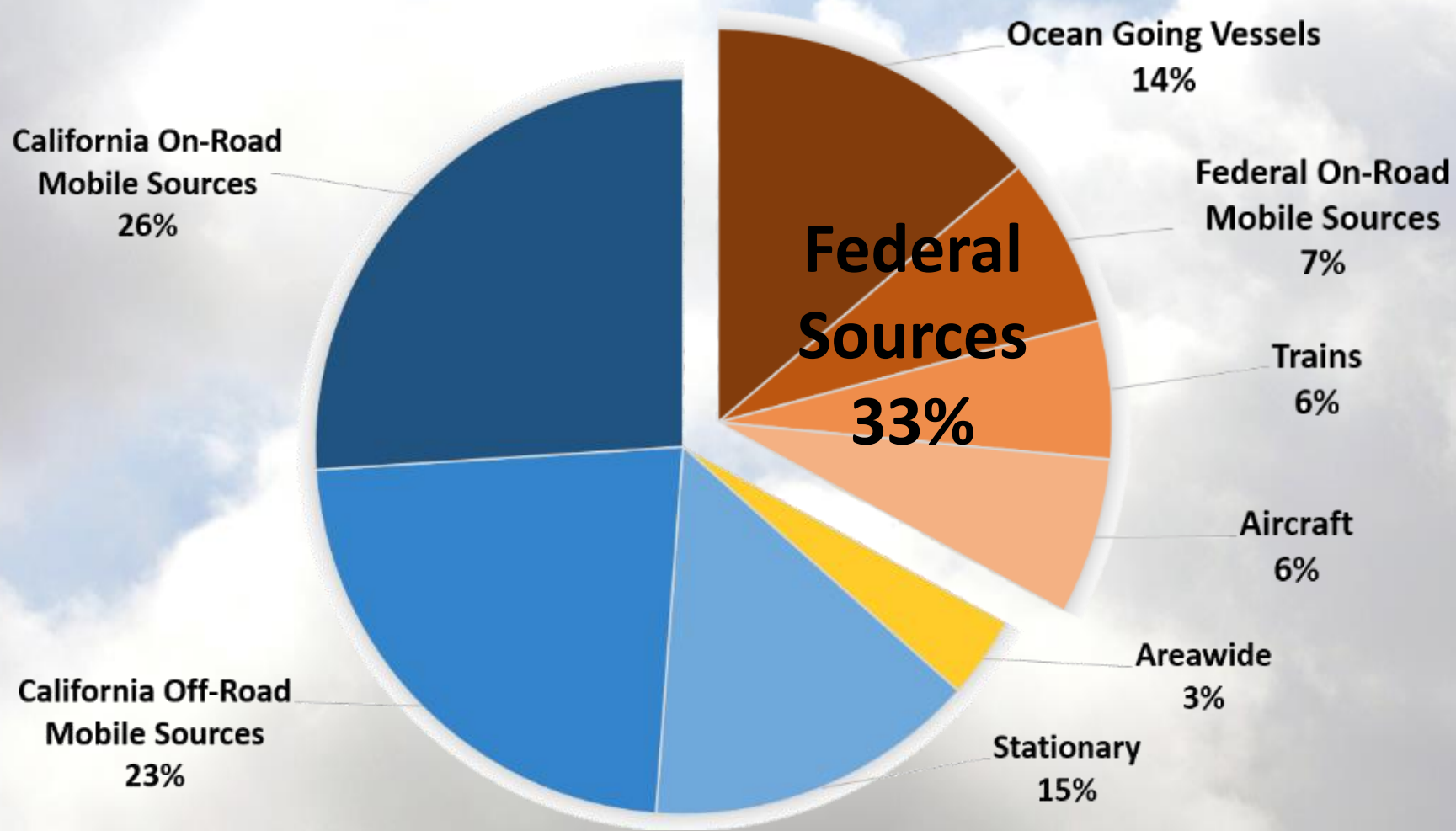
Emission Trends for Major Sources

NOx Emissions from 1997 to 2023





Contribution of Federal Sources (2023 NOx emissions)



Potential Federal Measures



Measures	Measure Description	2023 NOx Reductions (tpd)
Low-NOx Heavy-Duty Vehicles	Heavy-duty vehicles (above 14,000 lbs. GVWR) powered by low-NOx engines in 2023	Up to 35
Low-NOx Ocean-Going Vessels	Ocean-going vessels coming to California powered by Tier 3 engines in 2023	Up to 28
Low-NOx Locomotives	Locomotives coming to California powered by Tier 4 engines in 2023	Up to 11
Low-NOx Aircraft	Aircraft NOx reductions assumption of 20% if emissions are held at 2012 levels.	Up to 4
Total Possible Reductions Towards Further Deployment Commitment		Up to 78 tpd



Contingency Measure Plan for Further Deployment Reductions

Strategy	2023 Reductions (tpd)
Identified Emissions Reduction Strategies	24-26
Additional Incentive Funding	15
Federal Measures and / or Funding	67-69
All Strategies	108



A Call to Action

- **California is doing all we can to reduce emissions with current funding and authority**
- **All levels of government need to take action to reduce emissions**
- **More incentive funding is needed to accelerate turn over of existing fleet to cleaner technologies to meet air quality standards**
- **Federal action is absolutely needed on sources California cannot address**

Public Process





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2016 AQMP

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT



Questions and Answers