# Overview of 2022 Air Quality Management Plan (AQMP)

Board Meeting

March 4, 2022

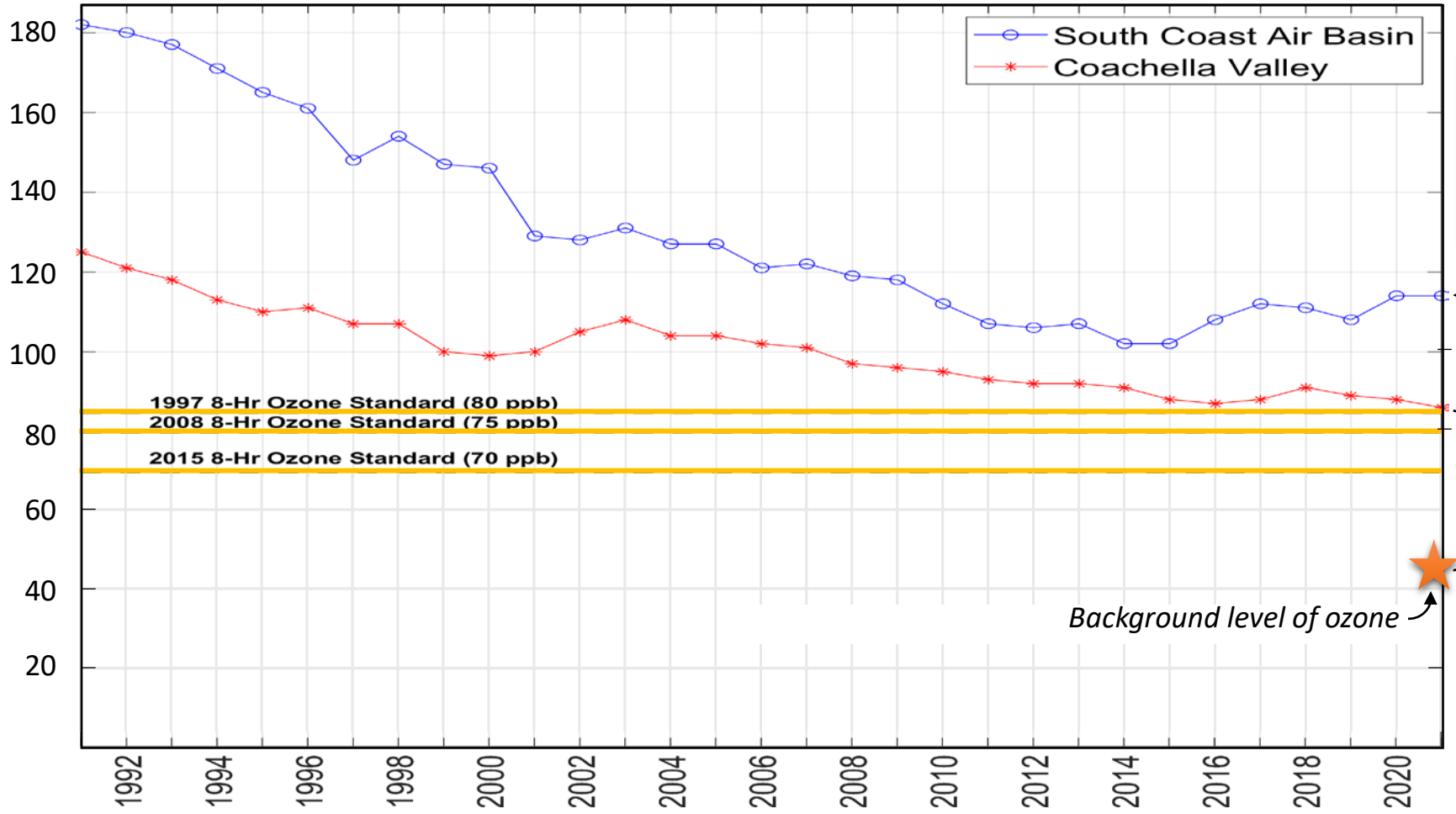
# Background – Air Quality Management Plans

- An Air Quality Management Plan (AQMP) is the region's blueprint on how it will attain air quality standards
- When U.S. EPA revises a National Ambient Air Quality Standard*
  - South Coast AQMD is required to prepare an AQMP if the region does not meet the standard
  - Each plan is prepared for a specific standard and does not address all standards at once
- In 2015, U.S. EPA strengthened the ozone NAAQS from 75 to 70 parts per billion (ppb)
  - EPA does not consider costs when setting health-based standard
- 2022 AQMP focuses on 2015 8-hour ozone standard with attainment year in 2037**


*NAAQS cover ozone, particulate atter, lead, carbon monoxide, sulfur dioxide, and nitrogen dioxide*

** State standards also addressed, whereas upcoming deadlines for other standards (e.g., 2023 ozone deadline) not part of this plan*

# Ozone Trends in the South Coast Air Basin*



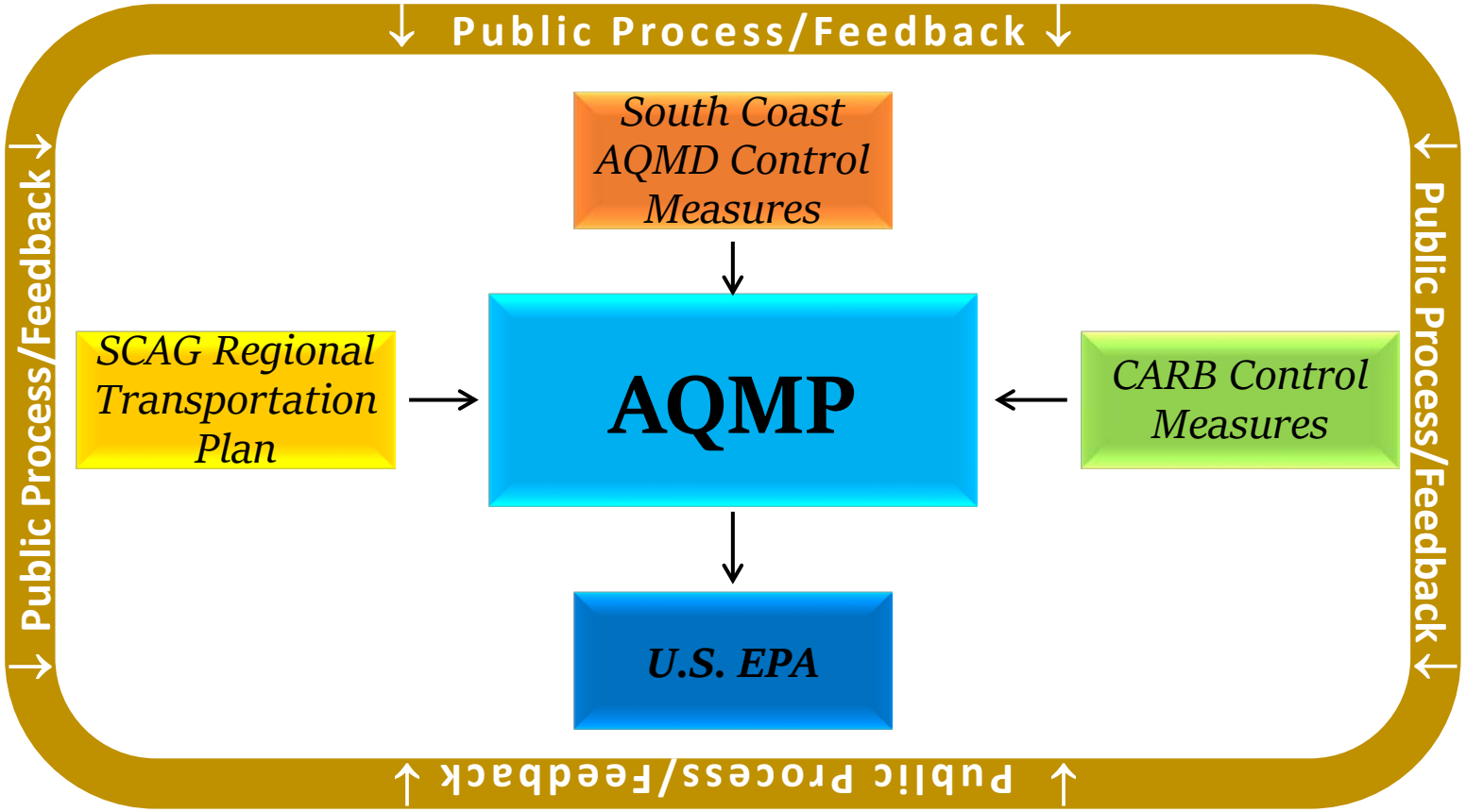

*Poor meteorology and complex photochemistry have resulted in recent poor ozone air quality despite on-going emission reductions*

*Standards allow for some air pollution*

*Background level of ozone*

* *Design values shown, Preliminary data for 2021*

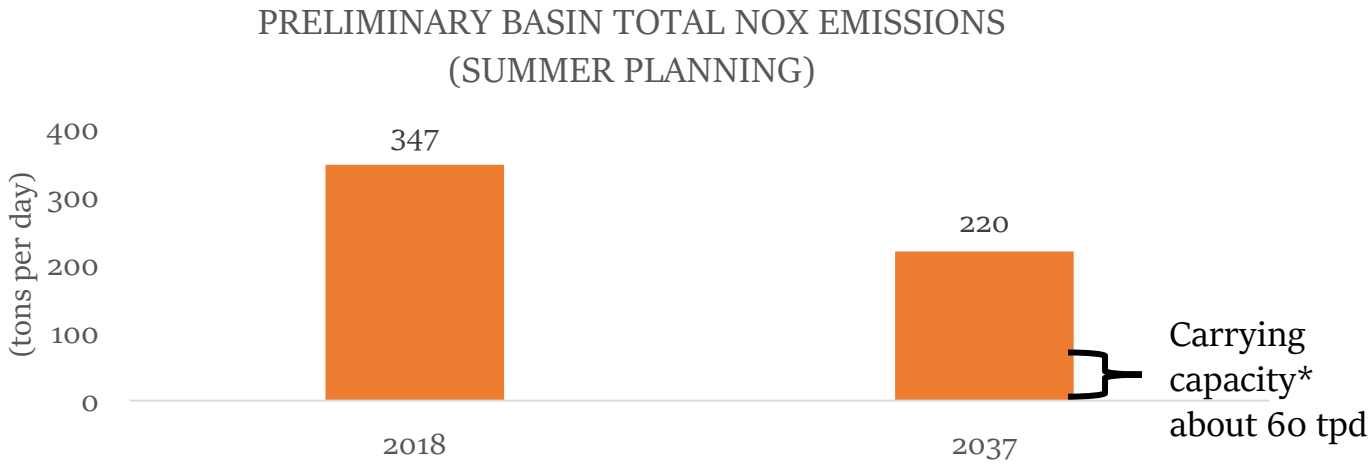
# 2022 AQMP Input

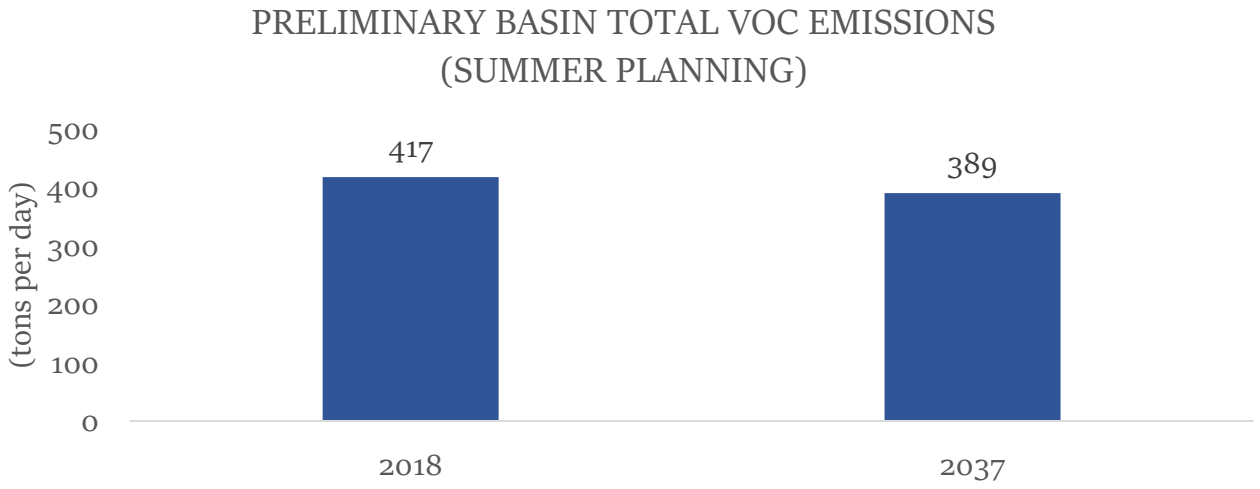


# Key Pollutants for Ozone Attainment

- NOx is key pollutant to attain ozone standards
- VOC reductions
  - Can reduce PM and can also reduce ozone at high NOx levels
  - Much less effective for reducing ozone at the low NOx levels needed for attainment

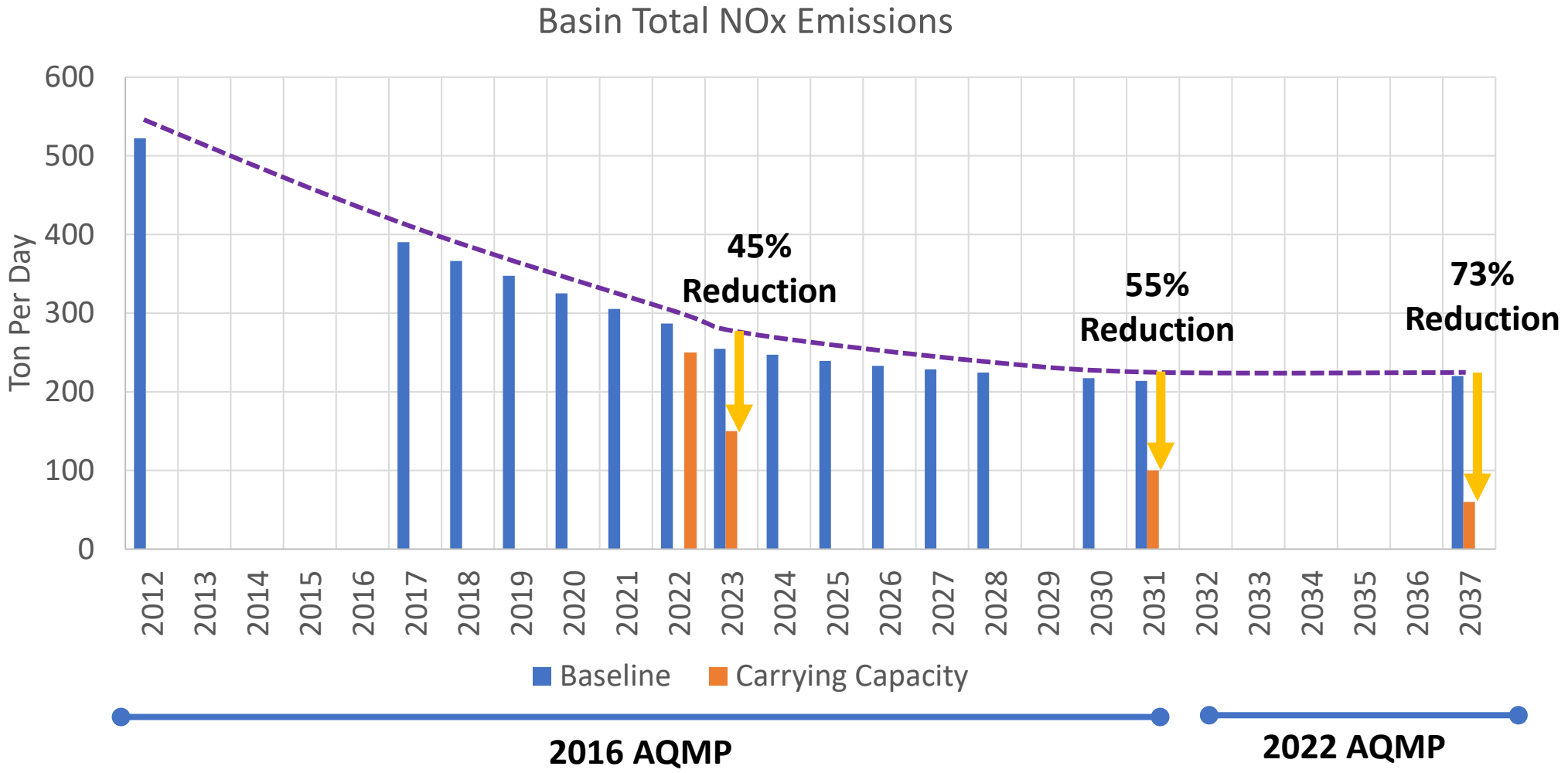
**No path for attainment from VOC reductions without substantial NOx reductions**



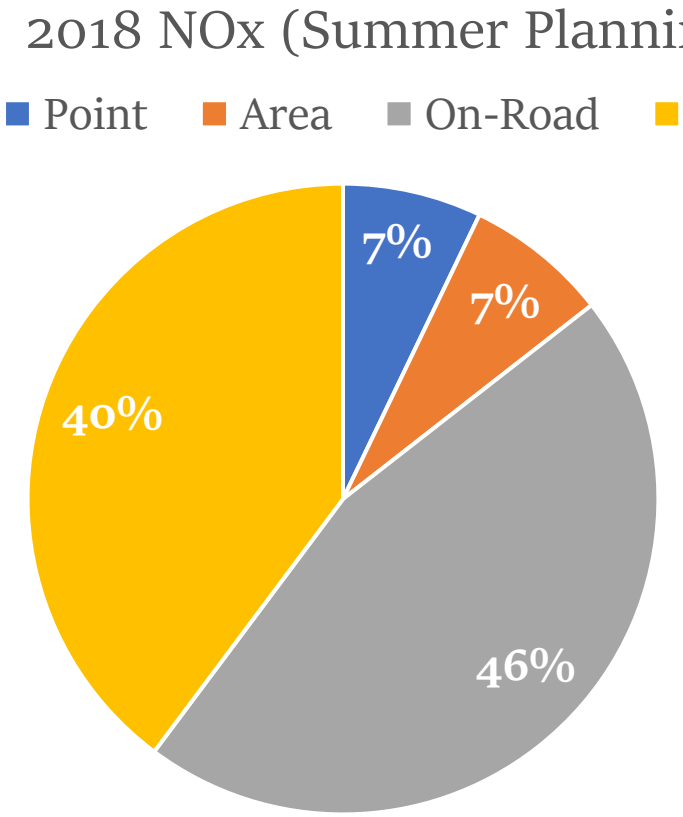

*Carrying Capacity is maximum allowable NOx emissions to attain a standard

# NOx Emissions and Reduction Goals

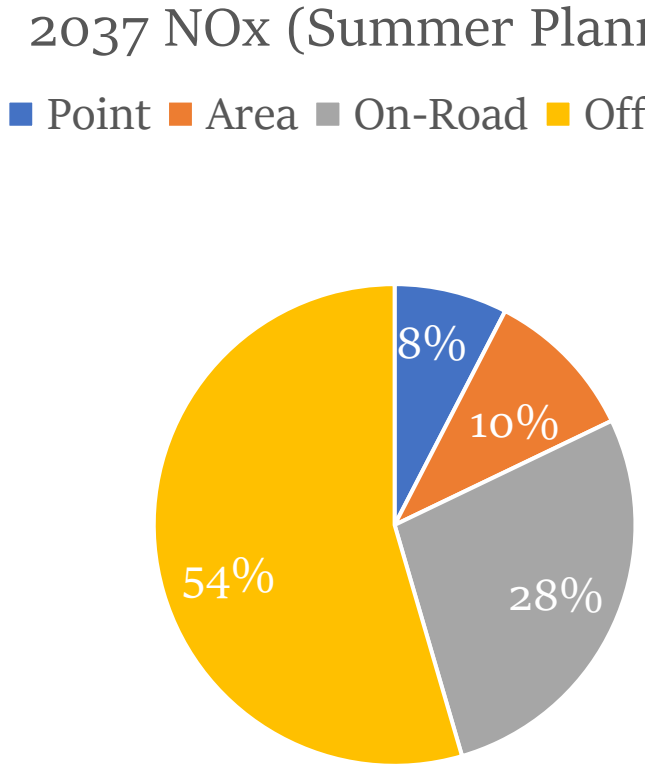



2016 AQMP emissions inventory for 2012 to 2031, and 2022 AQMP preliminary emissions inventory for 2037

# Distribution of Preliminary NOx Baseline Emissions in 2018 vs 2037




347 tons per day

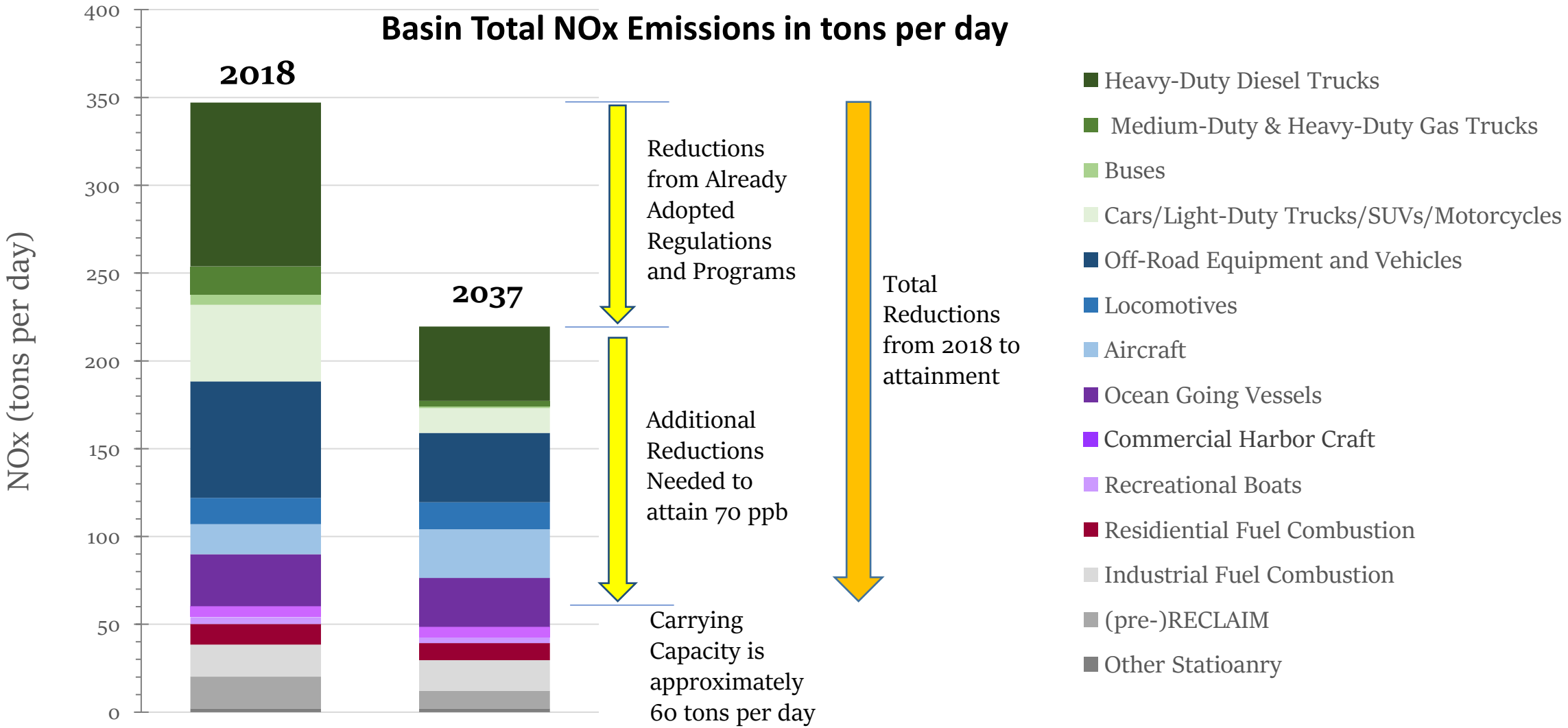



220 tons per day

***This ozone standard requires shifting focus beyond on-road and more to off-road sources***

These are Business-As-Usual (baseline) inventories, which reflects implementation of adopted regulations and programs

# NOx Reductions Needed for Attainment

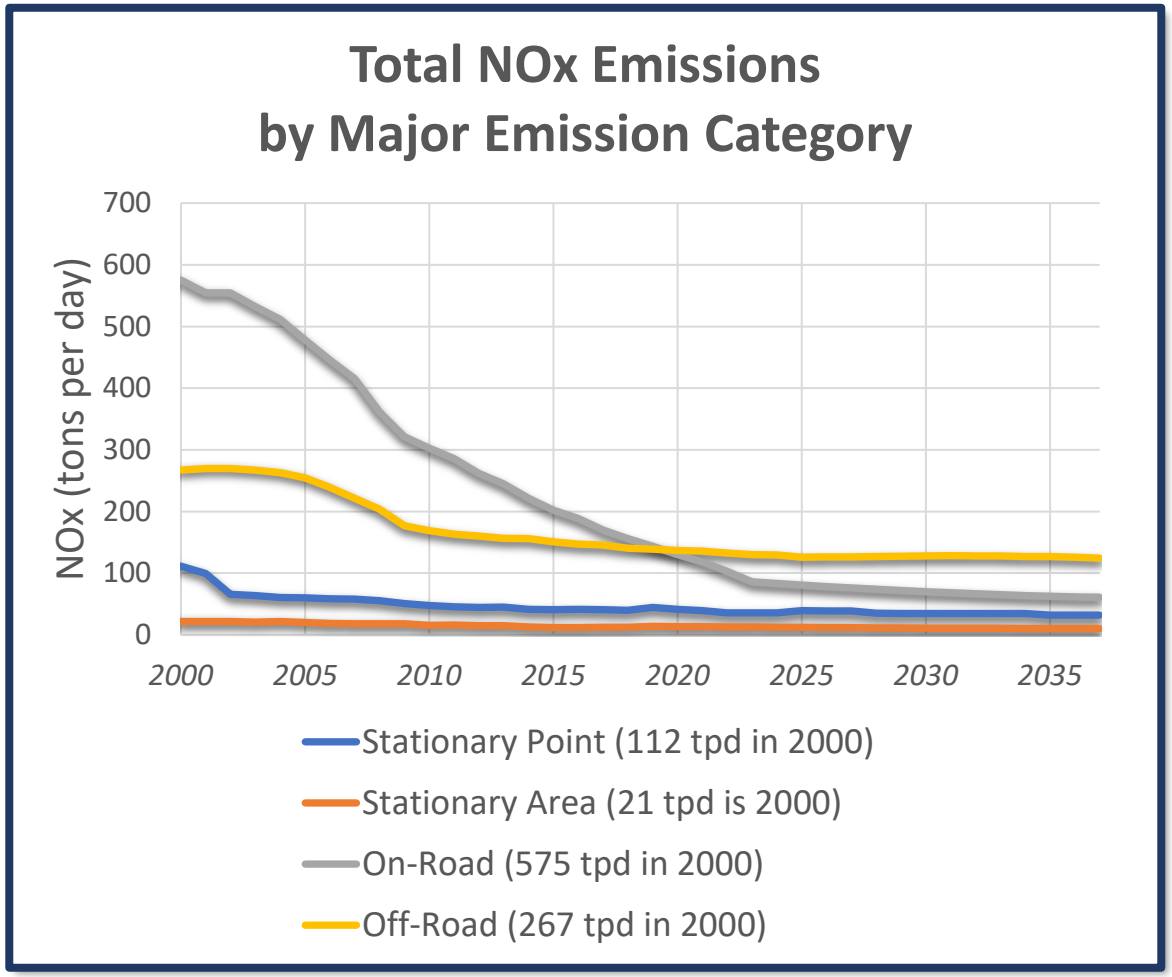


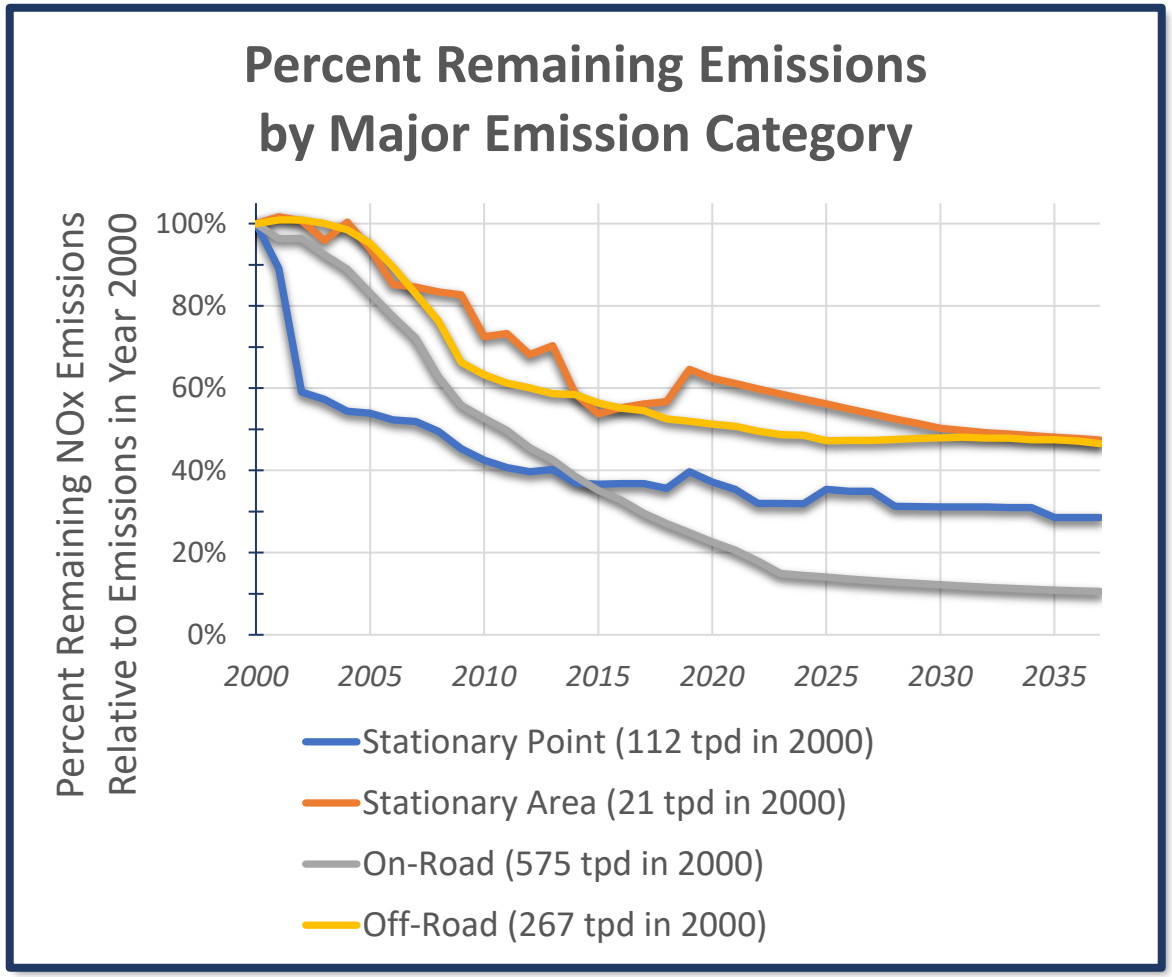
# Is Attaining the Ozone Standard in 15 Years Possible?

***Attaining this standard is possible, but…***

- ***Will be difficult***
- ***Cannot be achieved alone***
- ***Will be expensive with existing technologies***
- ***Will require flexibility provided by Clean Air Act***
  - ***'Black Box'***

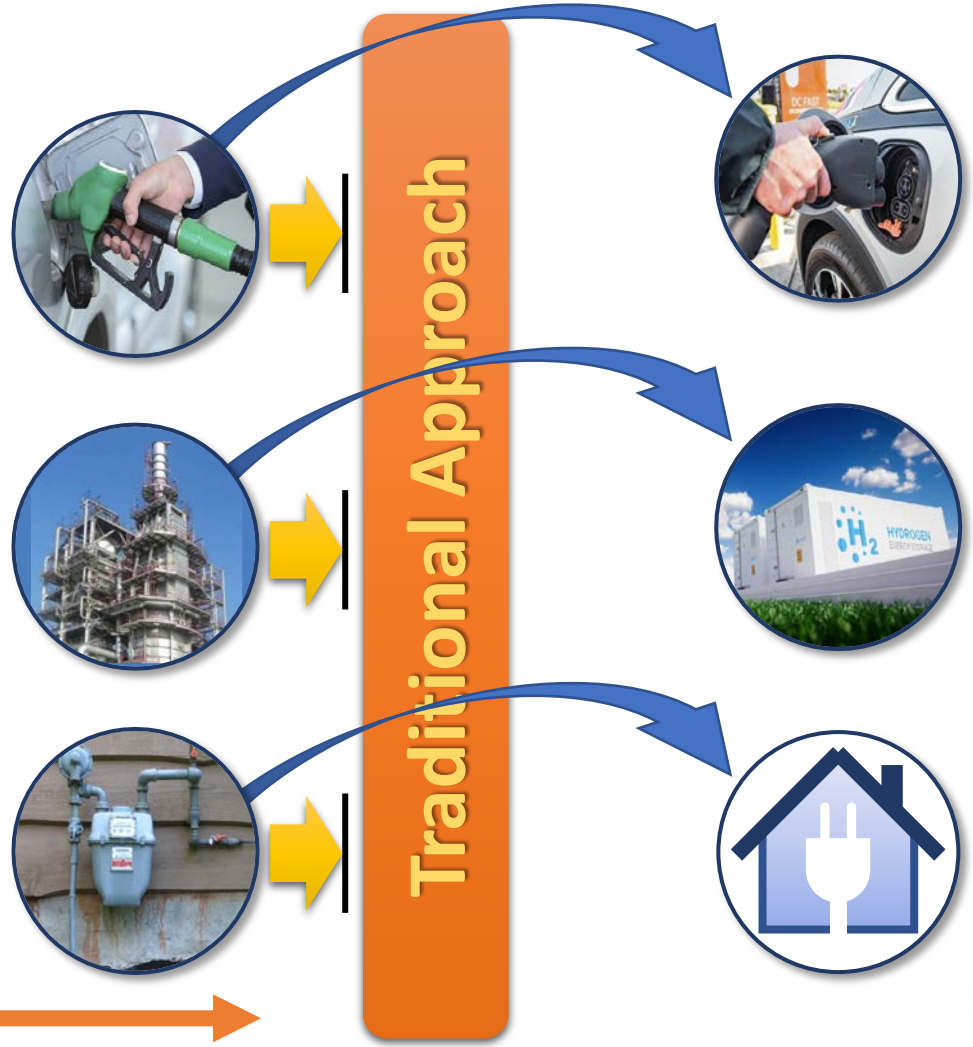
# Historic and Projected Baseline NOx Emissions in South Coast



# Traditional Air Quality Planning Won't Work

**Traditional approach relies on additional *tailpipe/exhaust stack controls*, *new engines technology*, or *fuel improvements* tailored to individual use cases**




***These traditional approaches on already highly controlled sources cannot achieve additional ~73% reduction in South Coast and must be bypassed wherever possible***

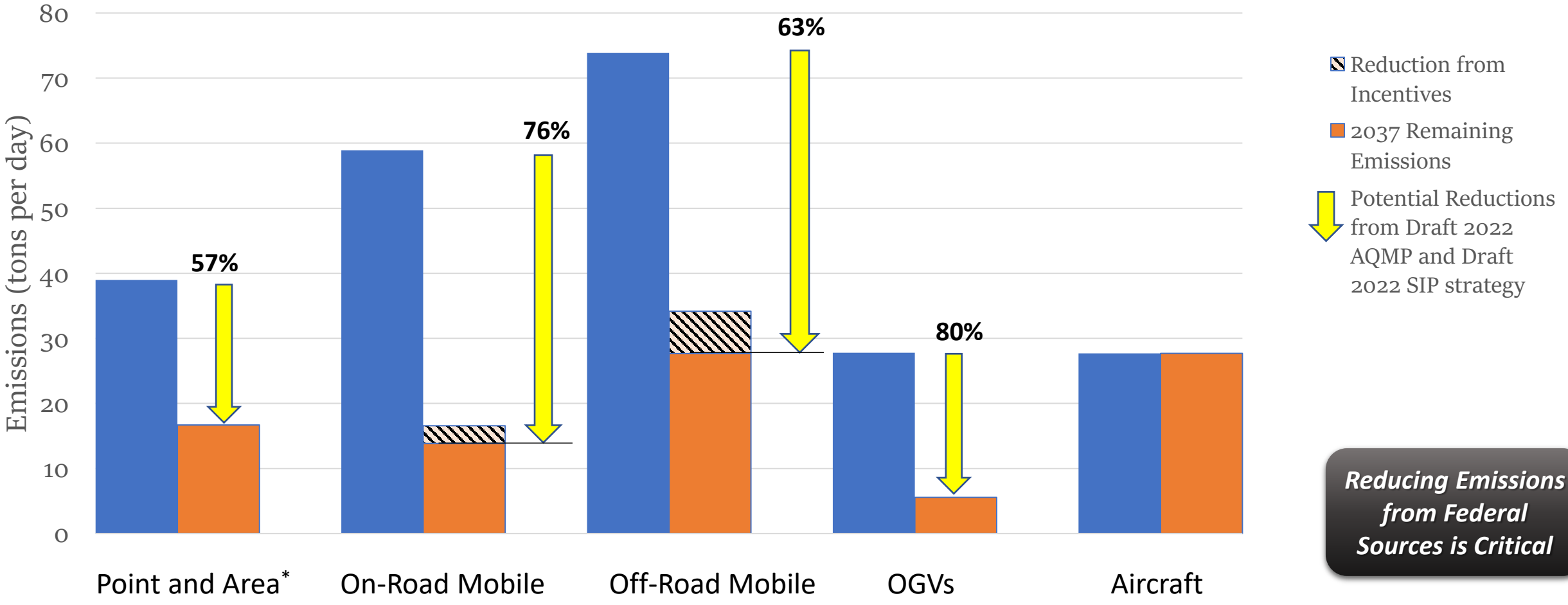
# Key Considerations on a Zero Emissions Approach

- **What does the pathway look like through time?**

- **Which fuels for which applications?**


- **How can this be made most affordable?**
  - **Ensures adoption at scale, and available equitably**

# Summary of Potential Approach to Reducing NOx by Major Source Category




***Reducing Emissions from Federal Sources is Critical***

**Some incentives also anticipated for area sources, but not yet defined*

# Anticipated Key Issues

## *Large Magnitude of Emission Reductions*

- Amount needed from Stationary & Mobile measures, Federal & State measures

## *Transition to Zero Emissions*

- Infrastructure (grid, hydrogen, reliability, affordability)
- Fuels pathway given earlier attainment dates for other standards

## *Building Electrification*

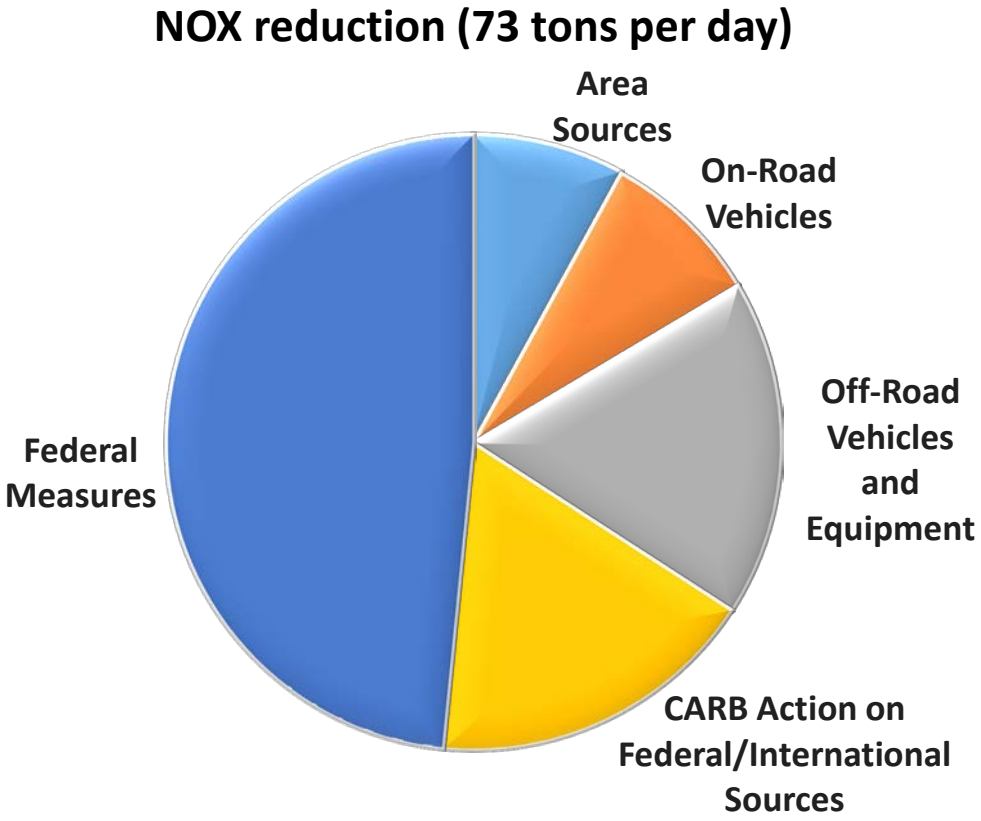
- Coordination with other agencies

# Federal and International Sources

- Approximately 1/3 of the 2037 baseline emissions inventory is regulated primarily under federal and international jurisdiction, with limited authority for CARB/South Coast AQMD
  - Ships, aircraft, locomotives
- Cannot assign responsibility to federal government to reduce emissions, even from federal sources
- Foreseeable emission reductions from SIP/AQMP are therefore limited for these categories – requires 'black box' flexibility
- Attainment is not possible without significant reductions from these sources

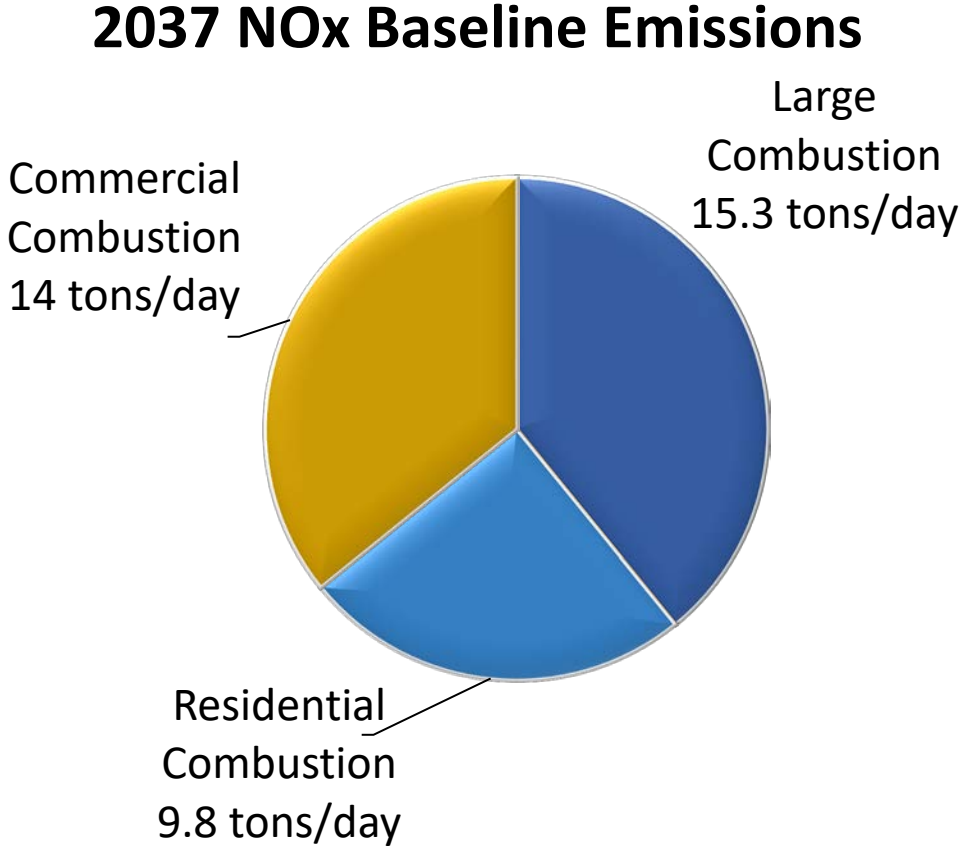
# CARB Measures

- Draft 2022 AQMP will include CARB measures for the following categories
  - Area sources (2 Measures)
  - On-Road Vehicles (3 Measures)
  - Off-Road Vehicles and Equipment (7 Measures)
  - CARB's measures for federally and internationally regulated sources (1 Measure)
  - Federally and internationally regulated sources that required federal action (5 Measures)



# 2037 Stationary & Area Source NOx Baseline Emissions

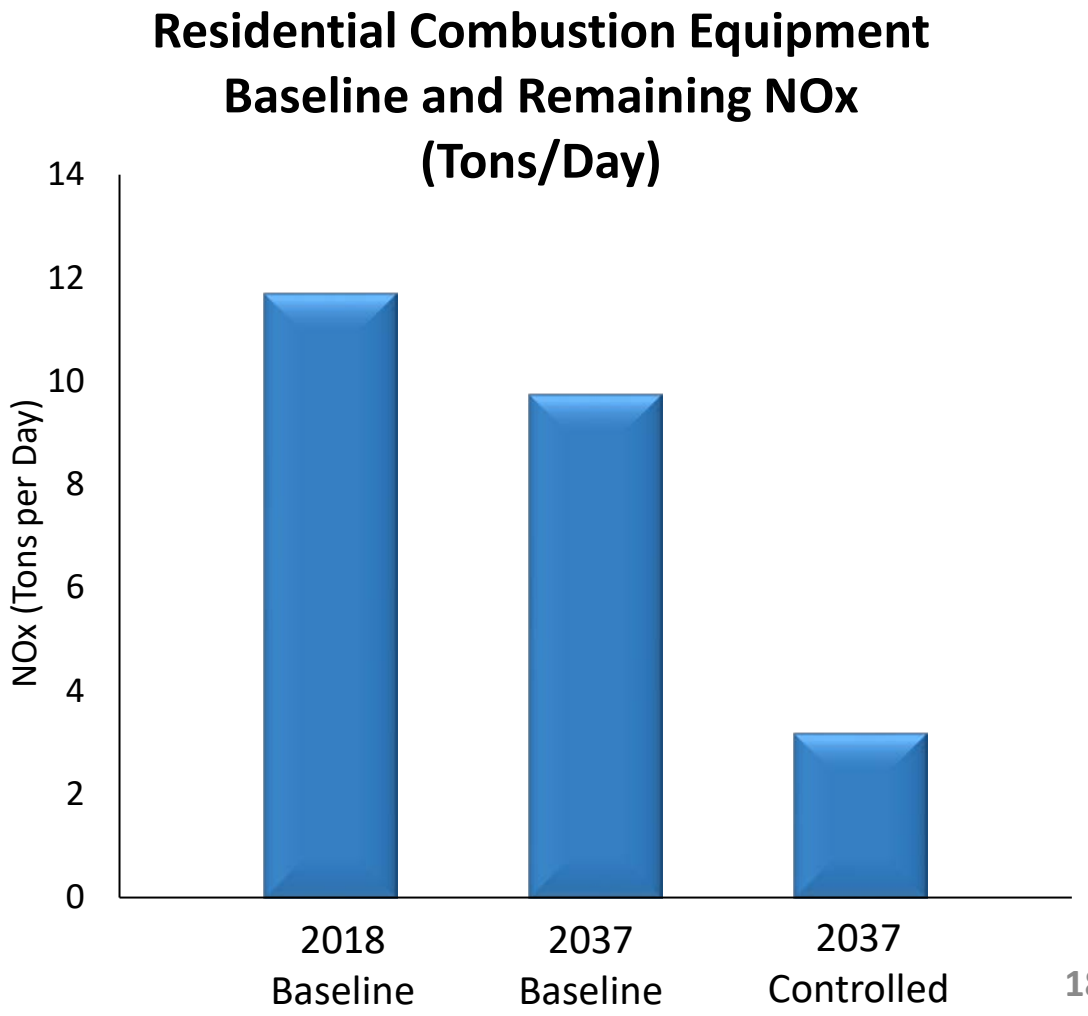
- Three main categories:
  - Residential Combustion Sources
  - Commercial Combustion Equipment
  - Large Combustion Equipment




**Total NOx: 39 Tons/Day**

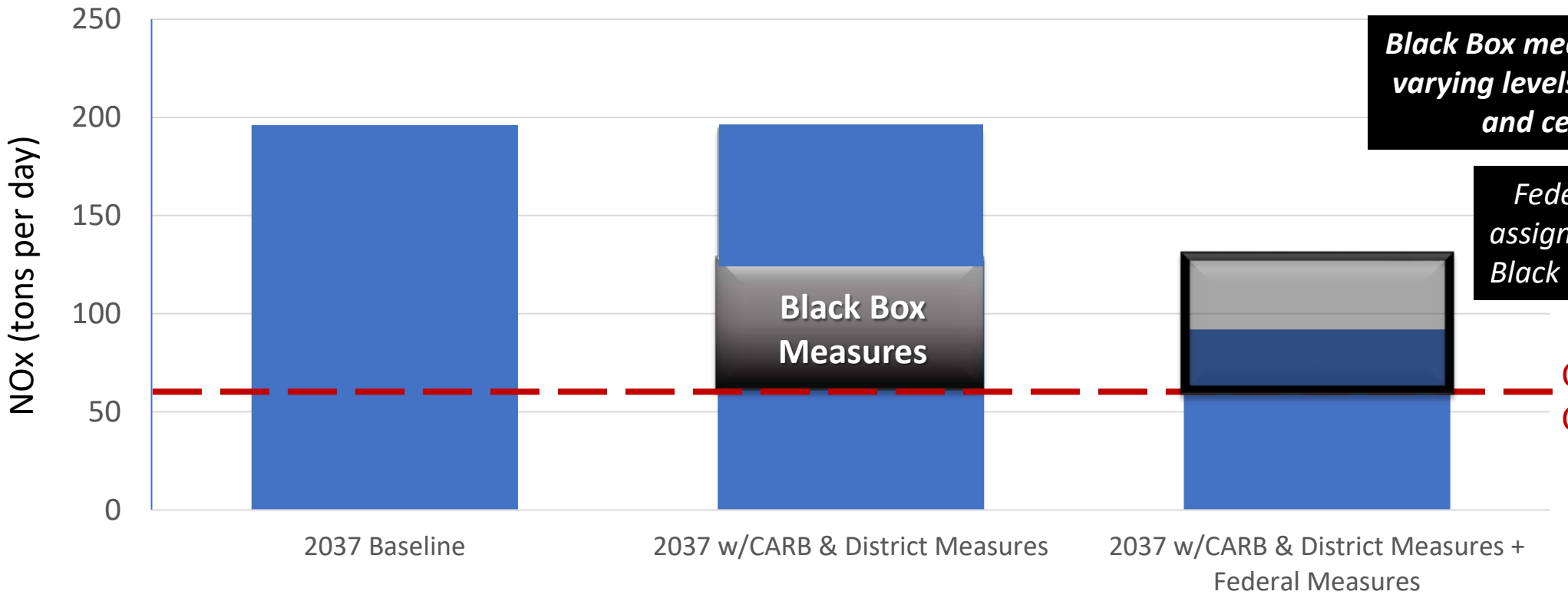
# Overview of Residential and Commercial Combustion Sources Control Strategy

- Residential combustion:
  - A combination of zero-emission and other low-NOx technology approaches
  - 2037 Goal: ~70 percent reduction
- Commercial combustion
  - A combination of zero-emission, near-zero, and other NOx combustion reduction technology approaches
  - 2037 Goal: ~70 percent reduction
- Coordination with other agencies is key



# Results of Draft Control Strategy

**2037 South Coast NOx Emissions with CARB & South Coast AQMD Draft Measures and Federal Actions***




***Defined Measures are specific control measures with estimated reductions***

***Black Box measures include varying levels of definition and certainty***

*Federal action cannot be assigned in AQMP, therefore Black Box remains same size*

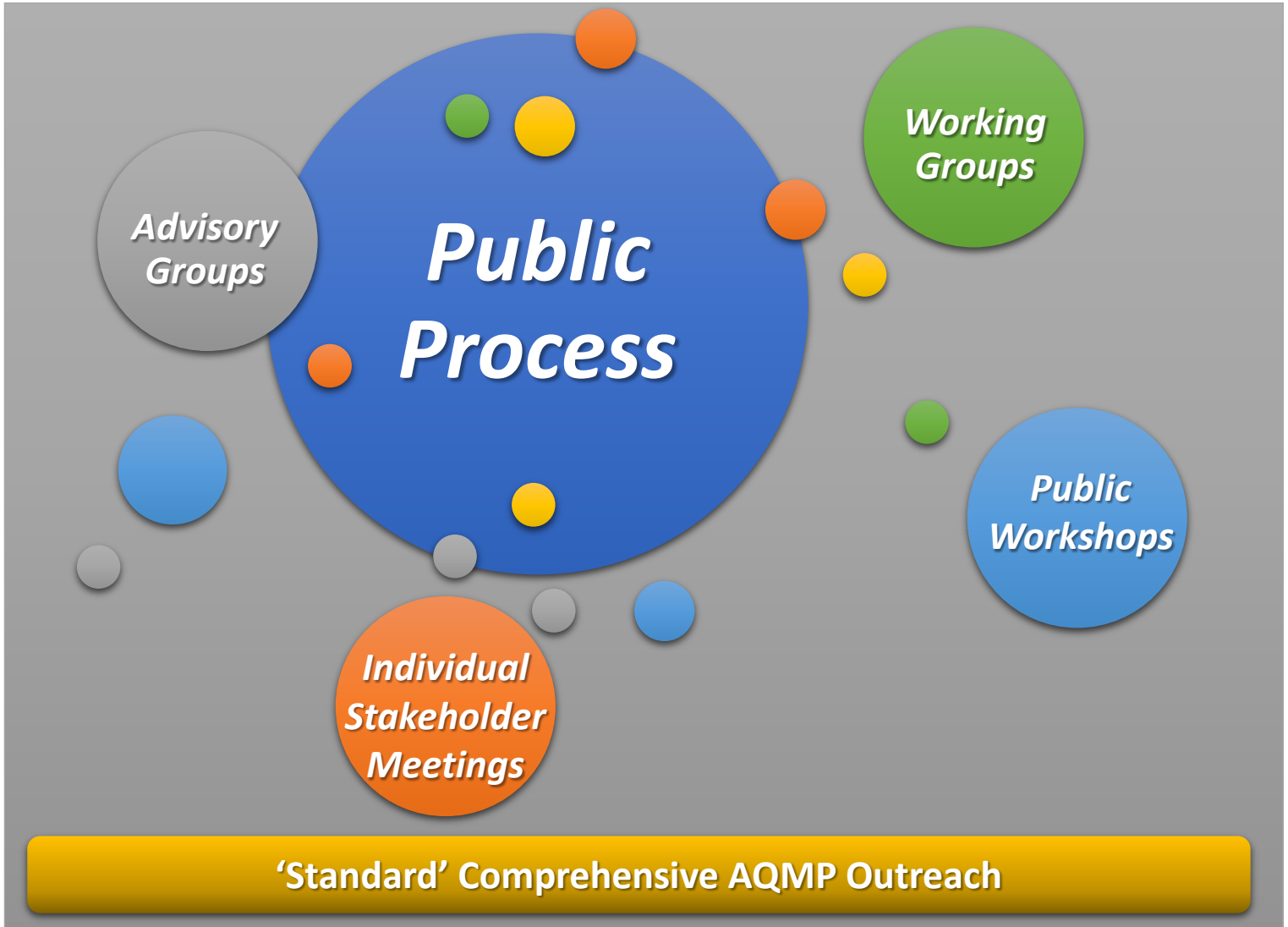


**NOx ton/day from CARB's Draft SIP Strategy*

# Other Key Issues

- Coachella Valley
- Emission reductions in adjacent air basins can affect South Coast carrying capacity
- Cost-effectiveness and affordability

# Outreach




'Standard' Comprehensive AQMP Outreach

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***State Agencies***
CARB
Energy Comm.
Public Util. Comm.
GoBIZ
etc.

***Federal Agencies***
EPA
Dept. of Energy
Dept. of Transp.
Council Env. Qual.
etc.

Additional Critical Outreach

# Next Steps


Draft AQMP – March 2022
Regional Workshops and CEQA Scoping Meeting – March/April 2022
Draft Final AQMP – May 2022
Regional Hearings – July 2022
South Coast AQMD Board Consideration – August 2022
CARB Board Consideration – August 2022
EPA Consideration – 18 months after submission