



OVERVIEW OF DRAFT 2022 AQMP

Item #2

AQMP Advisory Group Meeting

March 24, 2022

Background – Air Quality Management Plans

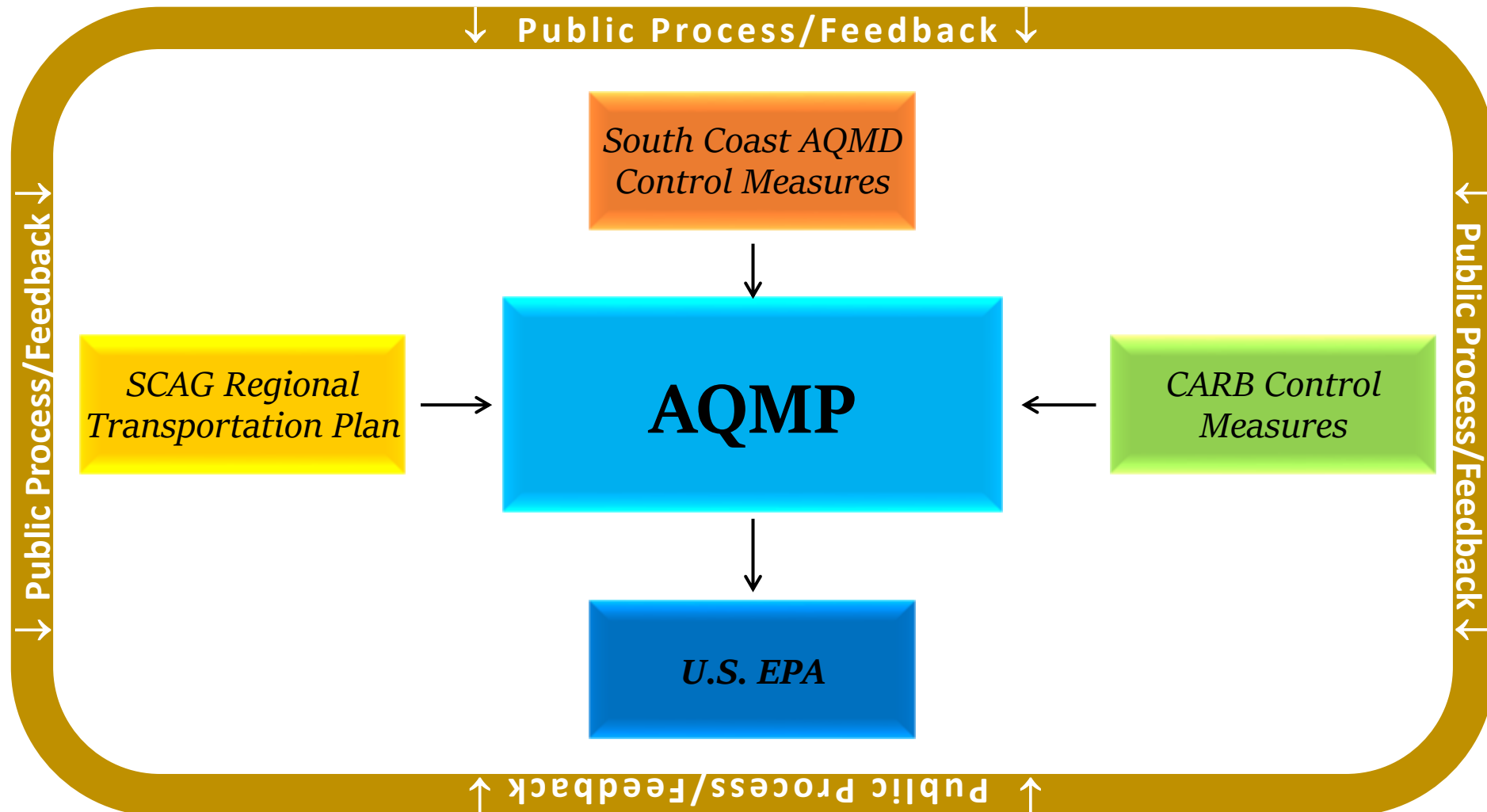
- An Air Quality Management Plan (AQMP) is the region’s blueprint on how it will attain air quality standards
- When U.S. EPA revises a National Ambient Air Quality Standard*
 - South Coast AQMD is required to prepare an AQMP if the region does not meet the standard
 - Each plan is prepared for a specific 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 matter, 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

2022 AQMP Input

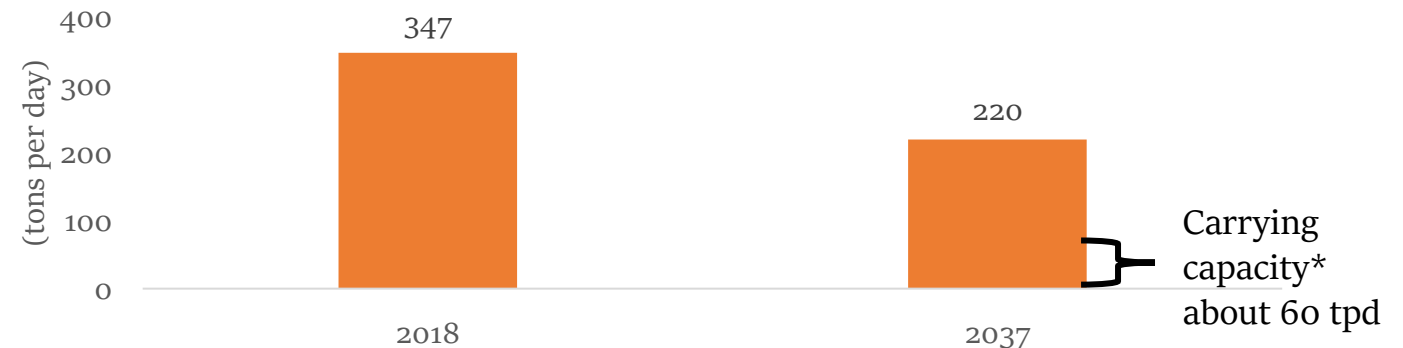


Key Pollutants for Ozone Attainment

- 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

PRELIMINARY BASIN TOTAL NOX EMISSIONS
(SUMMER PLANNING)



PRELIMINARY BASIN TOTAL VOC EMISSIONS
(SUMMER PLANNING)

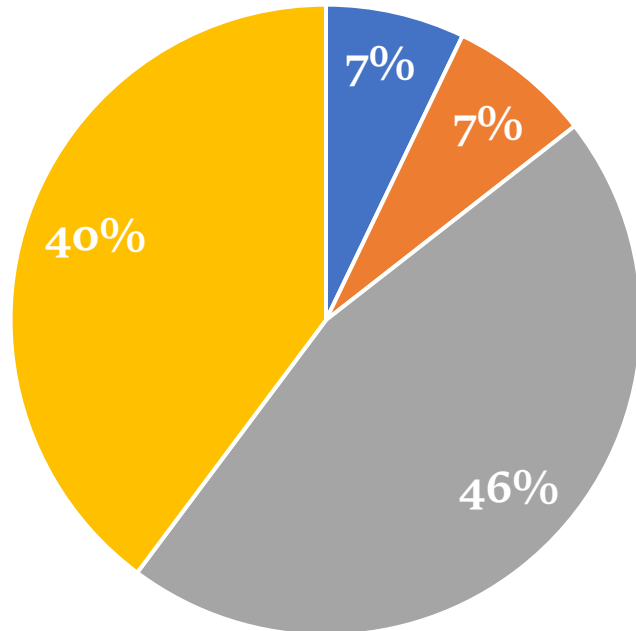


*Carrying Capacity is maximum allowable NOx emissions to attain a standard

Distribution of Preliminary NOx Baseline Emissions in 2018 vs 2037

2018 NOx (Summer Planning)

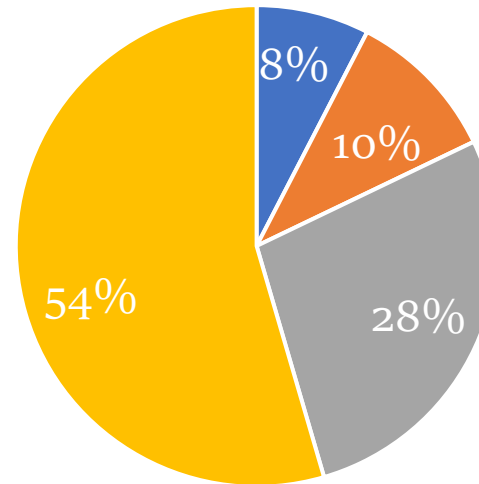
■ Point ■ Area ■ On-Road ■ Off-Road



347 tons per day

2037 NOx (Summer Planning)

■ Point ■ Area ■ On-Road ■ Off-Road

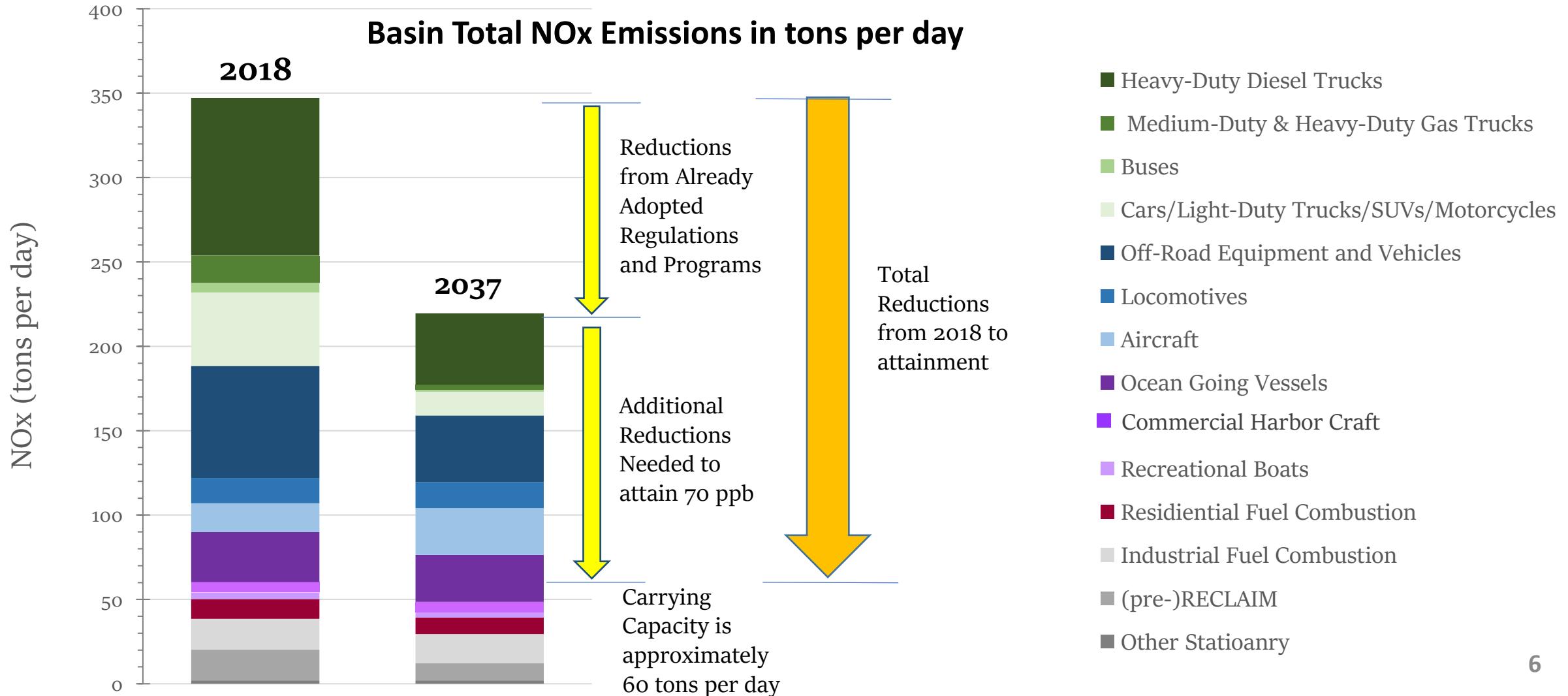


220 tons per day

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...*

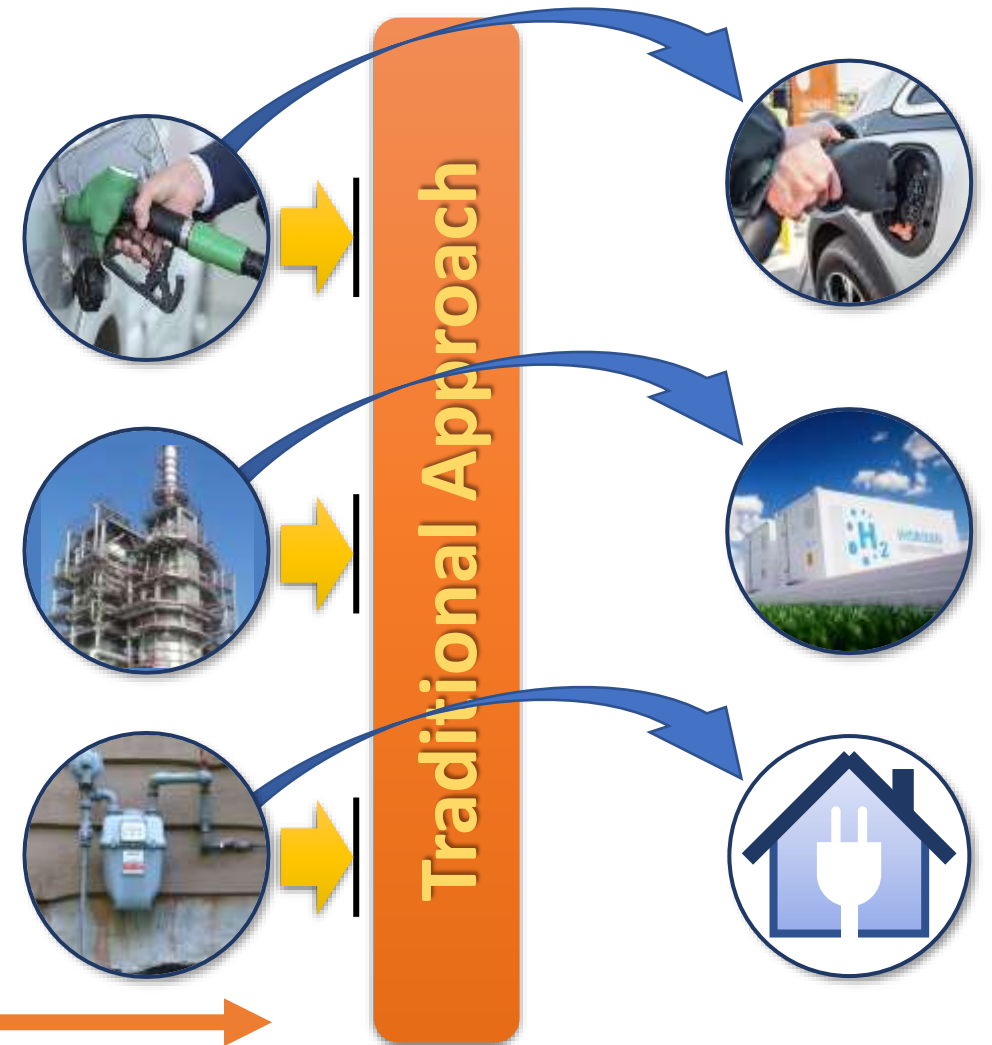
- *Will be difficult*
- *Cannot be achieved alone*
- *Will be expensive with existing technologies*
- *Will require flexibility provided by Clean Air Act*
 - *'Black Box'*

2037

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?

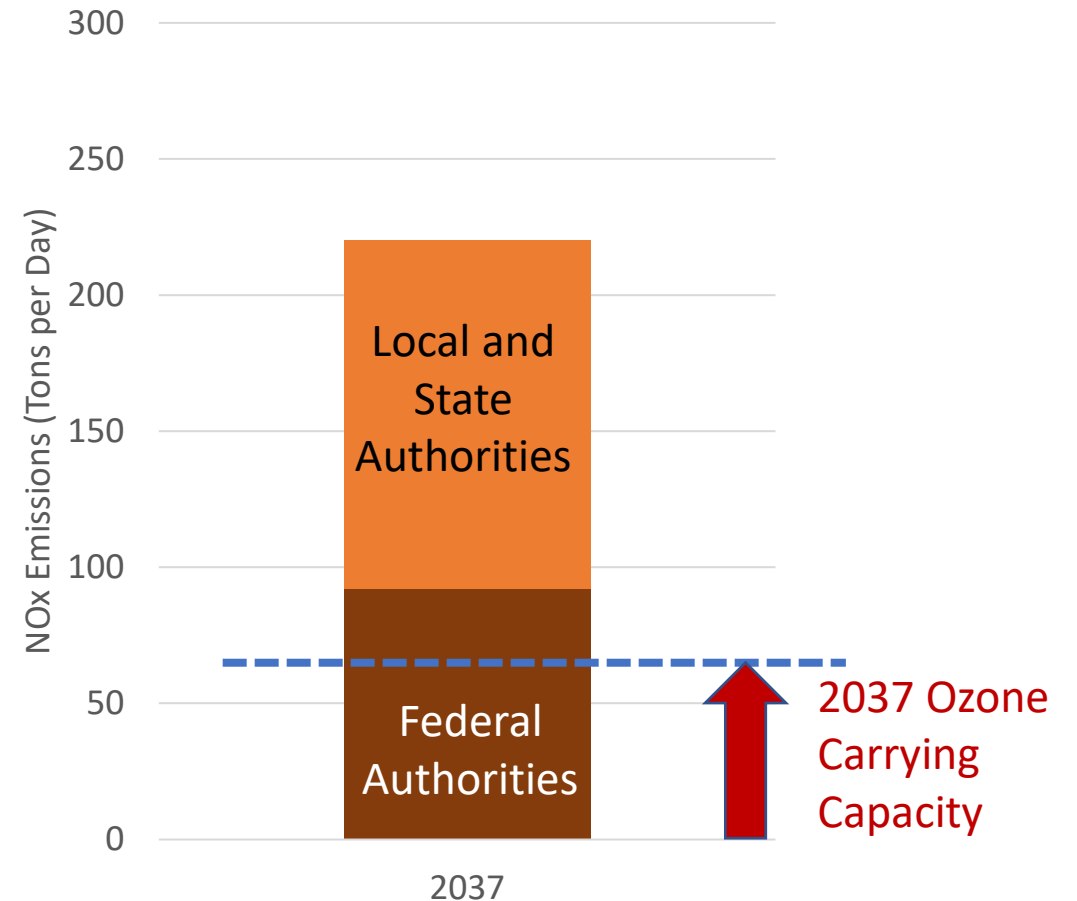


How can this be made most affordable?

- Ensures adoption at scale, and available equitably

Federal and International Sources

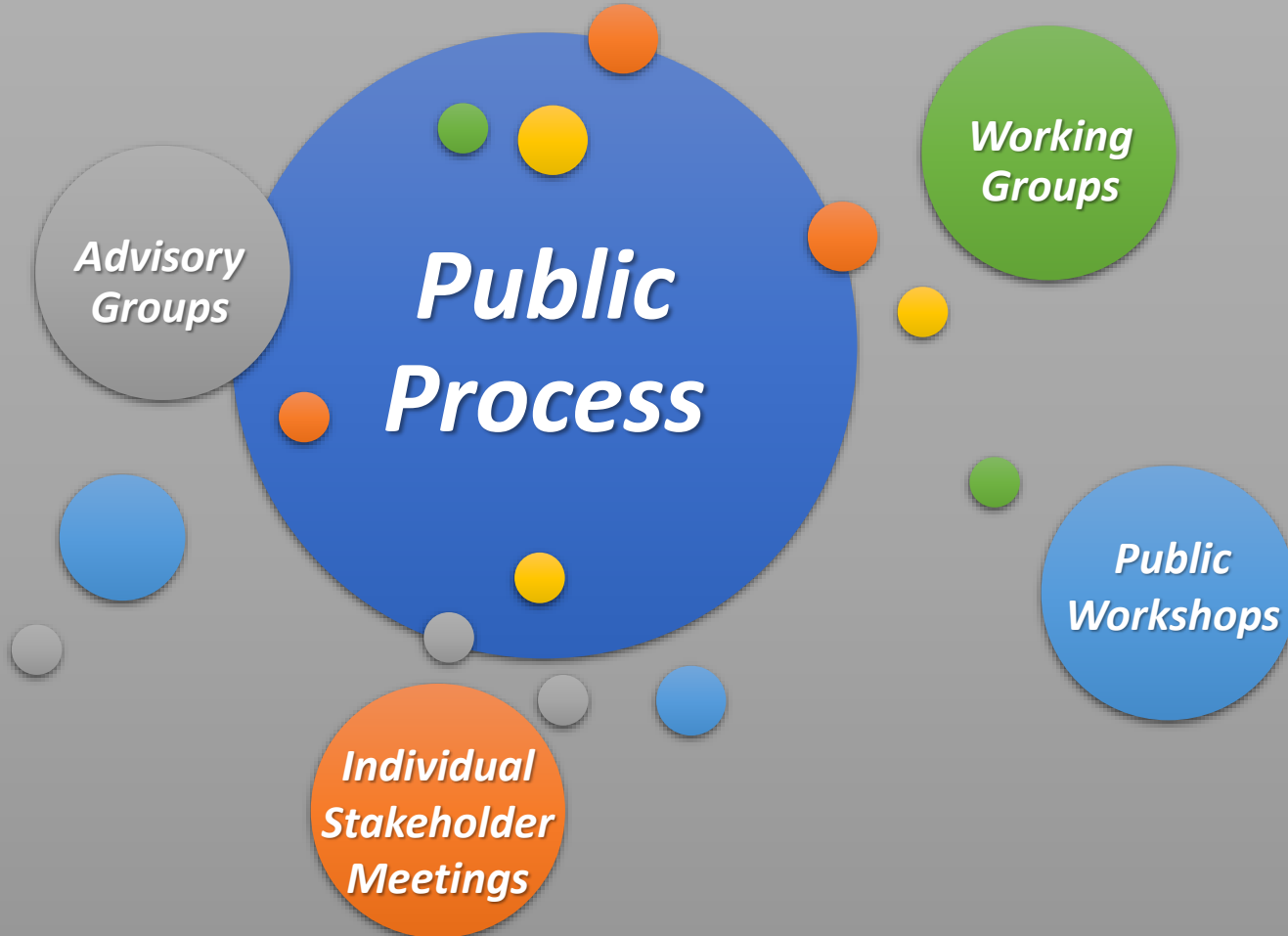
- Approximately 1/3 of the 2037 baseline emissions inventory is regulated primarily under federal and international jurisdiction, with limited authority for CARB/South Coast AQMD
 - Ships, aircraft, locomotives, etc
- Cannot assign responsibility to federal government to reduce emissions, even from federal sources
- Attainment is not possible without significant reductions from these sources



Coachella Valley

- Designated as “Severe” nonattainment for the 2015 8-hour ozone standard with attainment year 2032
- Coachella Valley’s ozone attainment depends on emission reductions placed in the South Coast Air Basin
- South Coast Air Basin’s attainment has measures subject to CAA Section 182(e)(5), which is allowed only in an extreme nonattainment area
- It is likely necessary to bump-up Coachella Valley to “extreme” with attainment in 2037
- Coachella Valley is already “extreme” nonattainment for the 1997 8-hour ozone standard (80ppb)

Outreach

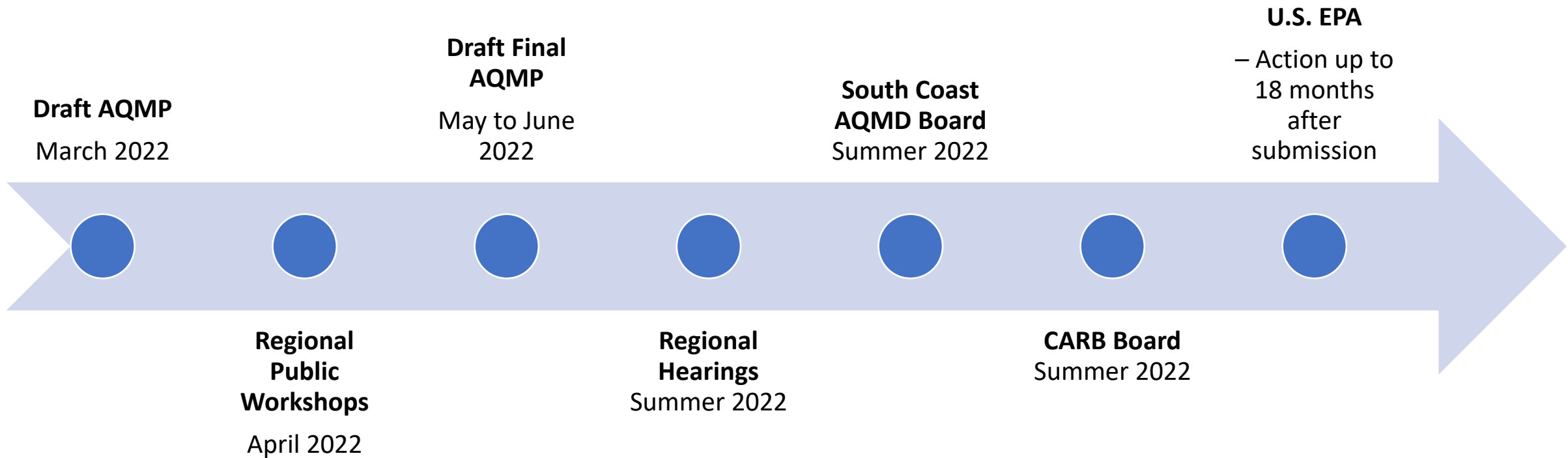


'Standard' Comprehensive AQMP Outreach



Additional Critical Outreach

Next Steps





UPDATES ON 2022 AQMP PROPOSED CONTROL STRATEGY

Item #3

AQMP Advisory Group Meeting

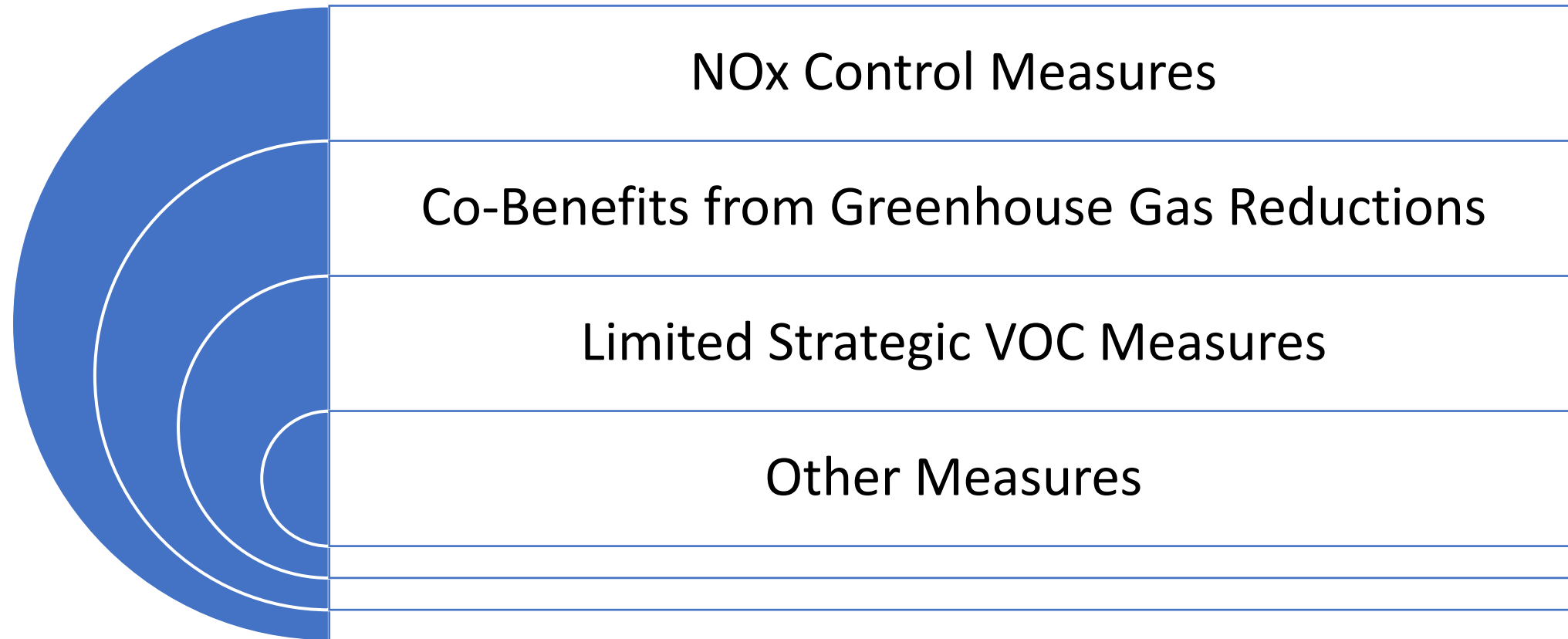
March 24, 2022

Control Strategy - Background

- Purpose: to provide the NO_x emissions reductions needed to attain the 2015 8-hour ozone standard by 2037
- Control strategy includes emission reductions from:
 - Point sources (South Coast AQMD)
 - Area sources (South Coast AQMD and CARB)
 - Mobiles sources including federal and international sources (South Coast AQMD and CARB)

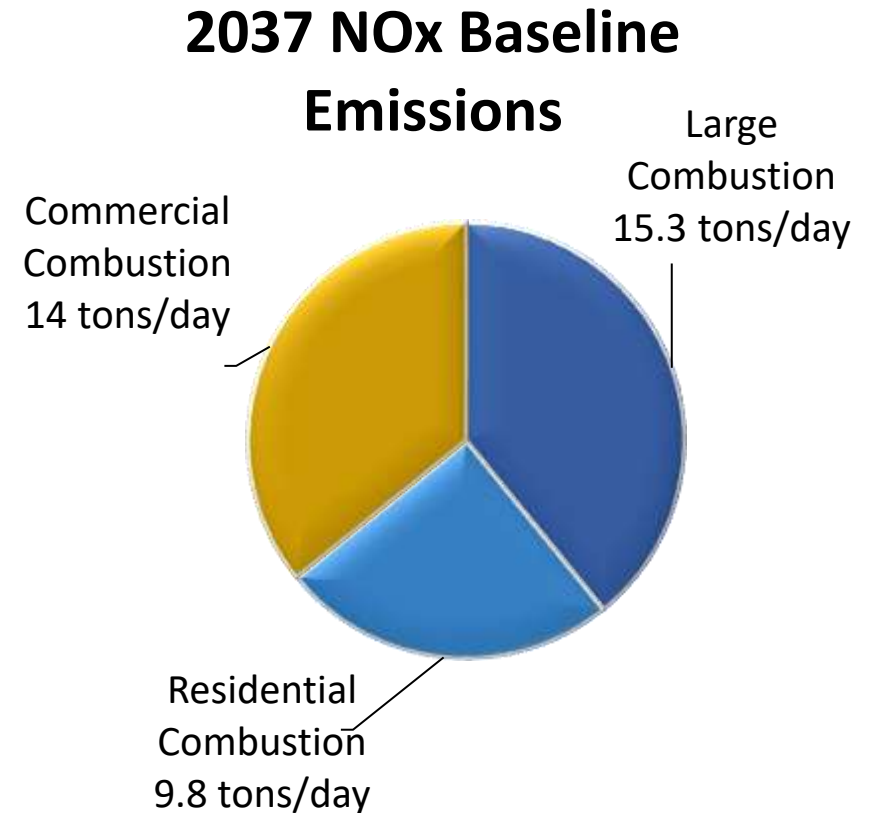


Overview of Draft South Coast AQMD Stationary and Area Source Control Strategy



Draft Stationary and Area 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
- Large Combustion Equipment
 - Focus on traditional source-specific and industry-specific command and control rules
 - 2037 Goal: ~ 37 percent reduction from commercial combustion equipment



Total NOx: 39 Tons/Day

Draft Stationary Source NOx Control Measures

Residential Combustion Sources

- R-CMB-01: Residential Water Heating
- R-CMB-02: Residential Space Heating
- R-CMB-03: Residential Cooking
- R-CMB-04: Residential Other Combustion Sources

Commercial Combustion Equipment

- C-CMB-01: Commercial Water Heating
- C-CMB-02: Commercial Space Heating
- C-CMB-03: Commercial Cooking
- C-CMB-04: Small Internal Combustion Engines (Non-permitted)
- C-CMB-05: Small Commercial Miscellaneous Combustion Equipment (Non-permitted)

Large Combustion Equipment

- L-CMB-01: NOx RECLAIM (formerly CMB-05)
- L-CMB-02: Large Boilers and Process Heaters
- L-CMB-03: Large Internal Combustion Engines (Prime Engines)
- L-CMB-04: Large Internal Combustion Engines (Emergency Standby Engines)
- L-CMB-05: Large Turbines
- L-CMB-06: Electric Generating Facilities
- L-CMB-07: Petroleum Refineries
- L-CMB-08: Landfills and POTWs
- L-CMB-09: Incinerators
- L-CMB-10: Miscellaneous Combustion



Residential and Commercial Building Measures

Future Work Plans for Residential and Commercial Combustion Sources Control Strategy

- California's pathways to decarbonize buildings
 - CARB's Scoping Plan
 - CEC's AB3232 Assessment
- Coordination with other agencies is key
 - CARB's Draft State SIP Strategy includes measures for buildings
 - CPUC and CEC's policies and incentive programs for building decarbonization
 - Local utilities
- 54 California cities and counties have enacted mandates requiring electric-only power in new buildings or have enacted policies limiting gas use*



State Agencies Building Policies

- Current California Energy Commission (CEC) Title 24 (2022 Code) sets the energy baselines that builders must adhere to in new construction from 2023 onward, including mandatory requirements for:
 - Single family, multi-family, and commercial new buildings electric ready measures
- California Air Resource Board (CARB), “Zero-Emission Standard for Space and Water Heaters” from the Draft 2022 SIP Strategy
 - CARB would develop and propose zero GHG emission standards for space and water heaters sold in California
 - Beginning in 2030, 100 percent of new space and water heaters (for either new construction or replacement of equipment at the end of useful life in existing buildings) sold in California would need to meet the zero-emission standard

Local Agencies Building Policies

- Bay Area AQMD (Workshop Report: Draft Amendments to Regulation 9, Rule 4 and Rule 6. September 2021) is:
 - In a rulemaking process for zero NOx emissions standard for space and water heating units with a compliance date of 2027 to 2031
- City of Berkeley (Ordinance No. 7,672–N.S. Chapter 12.80. Prohibiting Natural Gas Infrastructure In New Buildings) (Existing Buildings Electrification Strategy. November 2021)
 - Effective January 1, 2020, prohibits natural gas infrastructure (i.e., gas hookups) in new buildings of all types,
 - On November 30, 2021, adopted a plan to transition existing buildings from natural gas appliances to all-electric alternatives focusing on low-rise residential buildings by 2045

Local Agencies Building Policies (cont'd)

- Over 50 cities/counties in California have adopted building codes to support all-electric new constructions*.
 - Over 40 cities mandate all-electric appliances for residential new constructions, and some for commercial new constructions
 - Others require all-electric readiness and higher energy efficiency standards
- Most of those cities are near Bay Area
- Santa Monica (the only city in the South Coast) requires additional energy-efficiency measures for new residential and nonresidential buildings that use gas. Approved 9/10/2019



* [Reference: California's Cities Lead the Way to a Gas-Free Future | Sierra Club](#)

South Coast AQMD Approach for Residential and Commercial Building Measures

1

Coordinating with local and state agencies to build upon existing programs

2

Requiring zero emission water/space heating and cooking through a regulatory approach

- For both new and existing residences and commercial buildings
- Earlier implementation for new buildings

3

Allowing near-zero and other lower NOx technologies as a transitional alternative when installing a zero emission unit is determined to be infeasible

4

Utilizing incentives to accelerate the adoption of zero emission units and address inequities

Draft Stationary Source Measures Reductions

Control Measure	NOx Baseline (tpd)	NOx Reduction (tpd)	Remaining NOx (tpd)
Residential Combustion Sources	9.8	6.4	3.4
Commercial Combustion Equipment	11.5	7.4	4.1
Large Combustion Equipment	17.9	6.9	11.0
Further Deployment of Cleaner Technologies (Stationary Sources)	N/A	3	N/A
Total South Coast AQMD Stationary and Area Source Measures	39.3	23.8	15.5

Draft Stationary Source GHG, VOC and Other Measures

Co-Benefit from GHG Reductions

- ECC-01 Co-Benefits from Existing and Future GHG Programs, Policies, and Incentives
- ECC-02 Co-Benefits from Existing and Future Residential and Commercial Building Energy Efficiency Measures
- ECC-03 Additional Enhancements in Reducing Existing Residential Building Energy Use

Strategic VOC Measures

- FUG-01 Improved Leak Detection and Repair
- FUG-02 Emission Reductions from Cooling Towers
- CTS-01 Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants
- FLX-02 Stationary Source VOC Incentives
- BIO-01 Assessing Emissions from Urban Vegetation

Other Measures

- MCS-01 Application of All Feasible Measures
- MCS-02 Wildfire Prevention
- FLX-01 Improved Education and Public Outreach

Limited Strategic VOC Controls

- CTS-01 Further Emission Reduction from Select Coatings, Adhesives, and Sealants is VOC control program to address air toxics
 - Phase out of exemption status pCBtF and tBAC due to health concerns
- Multiple VOC coating, adhesive, and solvent rules will be assessed to determine appropriate VOC limits
 - Limits will be evaluated category by category
 - Some VOC limits may need to be increased due to removing exemption status/others may need to be reduced
- Technology assessment will include review of available low-toxicity, zero and near-zero VOC materials for potential further VOC reductions
- Approach will maximize co-benefits of NO_x and greenhouse gas reductions



Overview of Draft South Coast AQMD Mobile Source Control Strategy

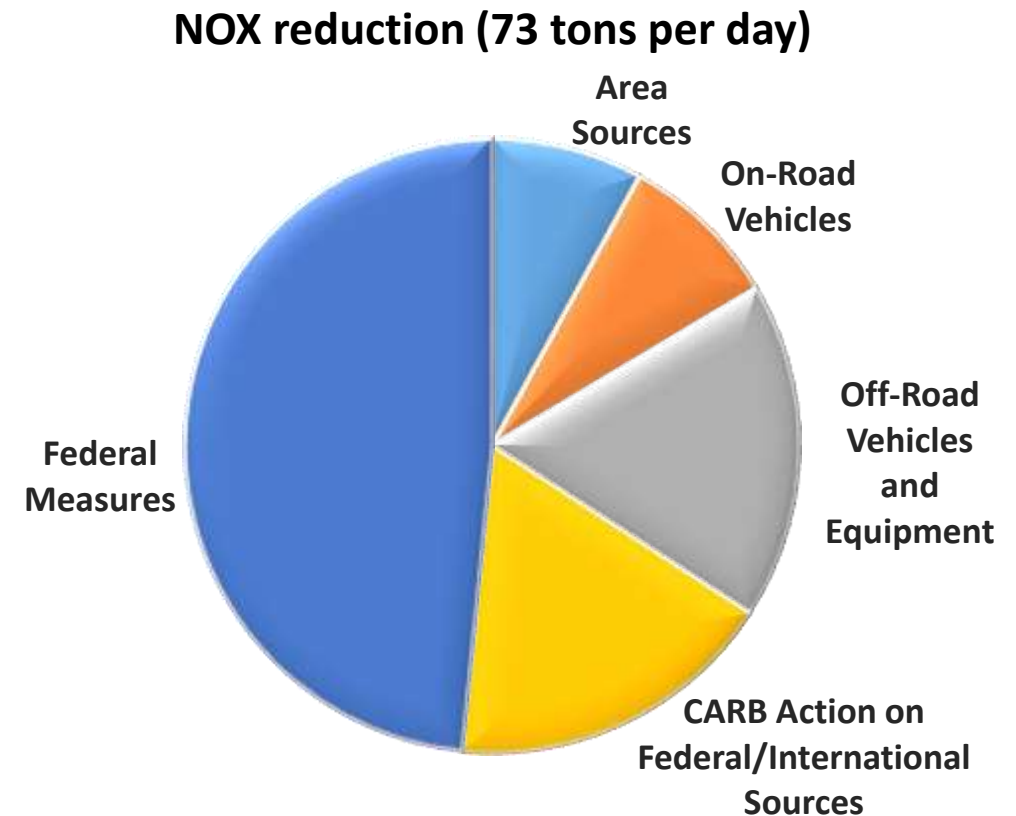


Draft Mobile Source Measures Reductions

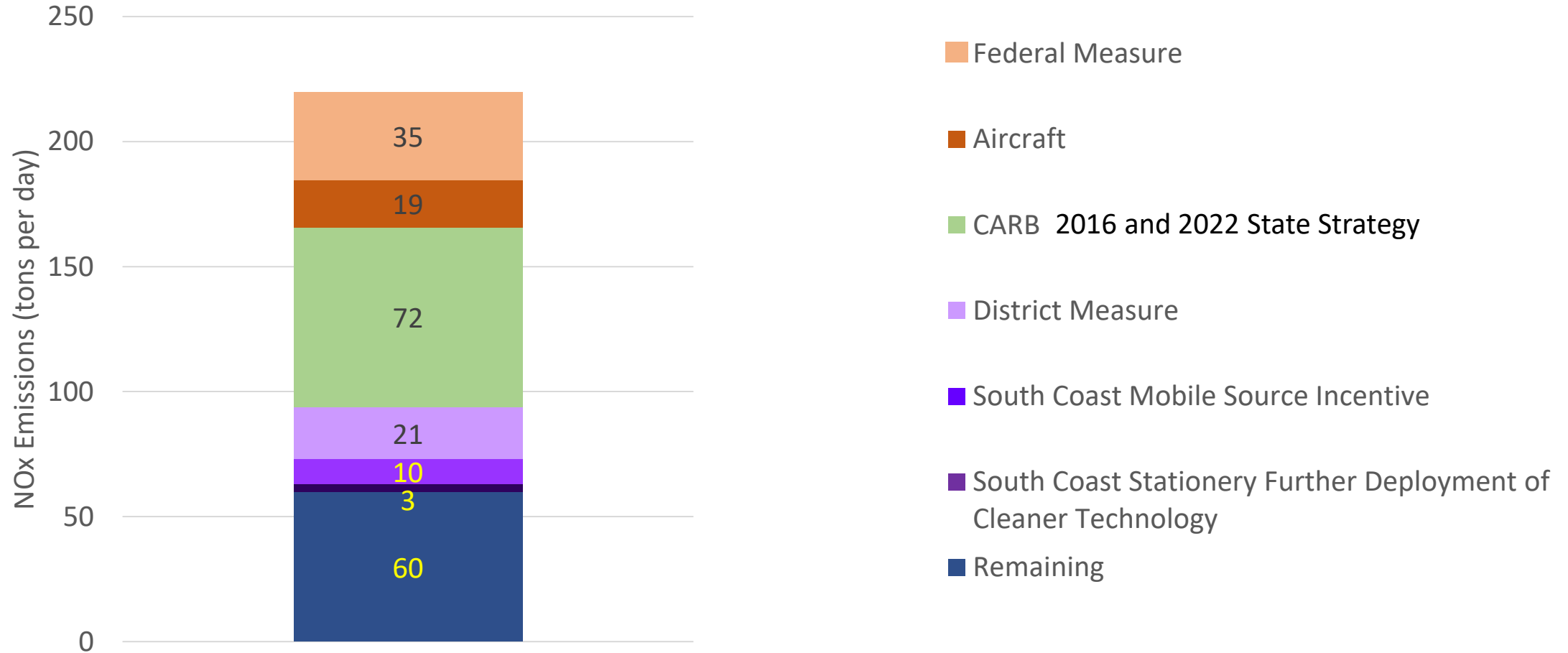
Control Measure	NOx Baseline (tpd)	NOx Reduction (tpd)	Remaining NOx (tpd)
South Coast AQMD MOB-05 Accelerated Retirement of Older Light-Duty and Medium-Duty Vehicles	N/A	0.1	N/A
South Coast AQMD MOB-11 Emission Reductions from Incentive Programs	N/A	9.9	N/A
Total South Coast AQMD Mobile Source Measures		10.0	
Aircraft	27.7	19.4	8.3

CARB Measures – Draft 2022 SIP Strategy

- Released on January 31, 2022
 - 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)



Results of Draft Control Strategy

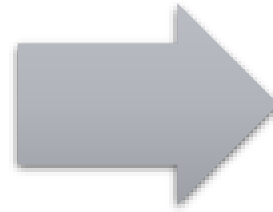


NOx ton/day from CARB's Draft SIP Strategy is based on CARB's draft internal inventory, while South Coast measures are based on CEPAM 2022 v.1.00 with external adjustments. Revised SIP strategy and AQMP will use consistent emissions inventory

Upcoming Milestones

*Draft AQMP – March/April
2022*

- 45-day Comment Period



*Regional Workshops and CEQA
Scoping Meeting*

Mid April

Two meetings for South Coast Air
Basin

One meeting for Coachella Valley



Attainment Demonstration for the 2015 8-hour Ozone Standard

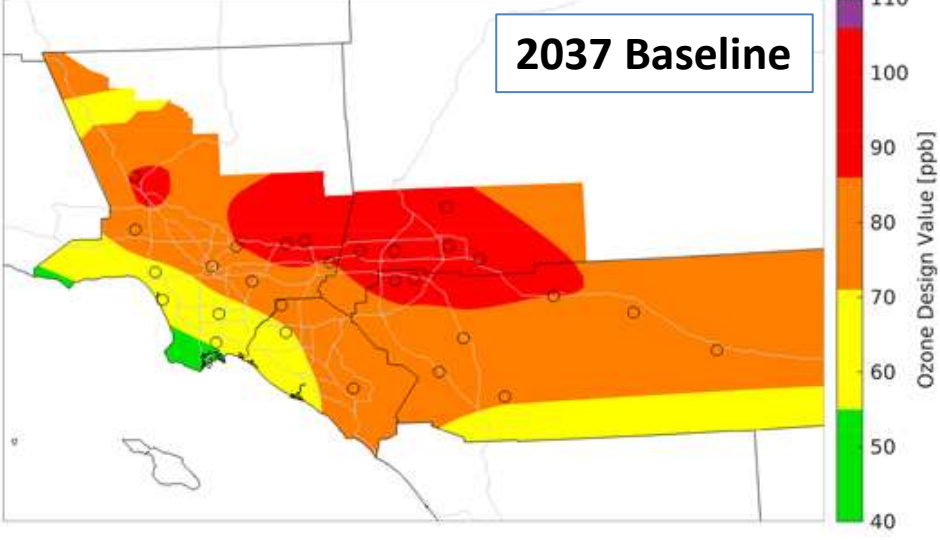
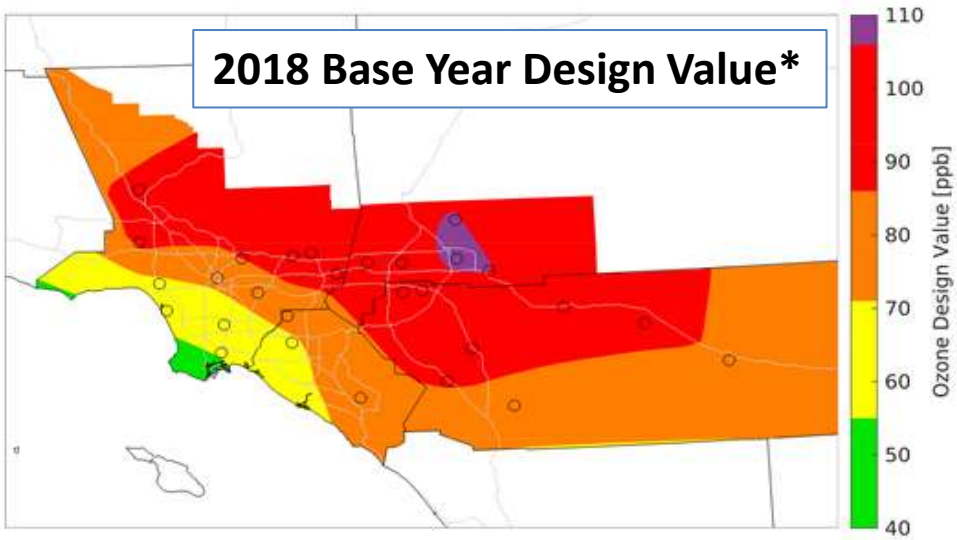
Item #4

AQMP Advisory Group Meeting
March 24, 2022

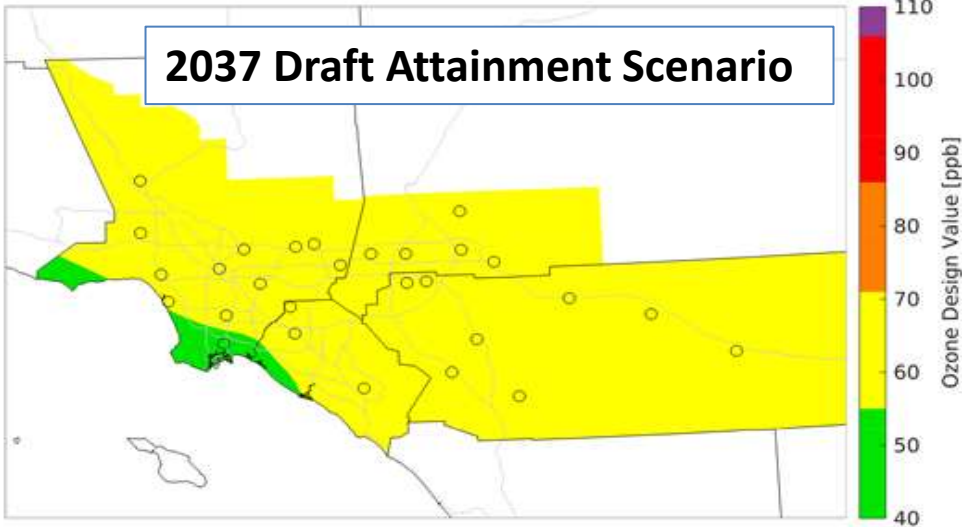
2022 Air Quality Management Plan

- 2022 AQMP focuses on attaining the 2015 federal 8-hour ozone National Ambient Air Quality Standard (NAAQS), 70 ppb
 - South Coast Air Basin's (SCAB) attainment due – 2037
 - Coachella Valley's attainment due – 2032
- Baseline NOx emissions in SCAB in 2037 are 220 tpd
- Preliminary NOx carrying capacity* is approximately 60 tpd to attain the 70ppb ozone standard

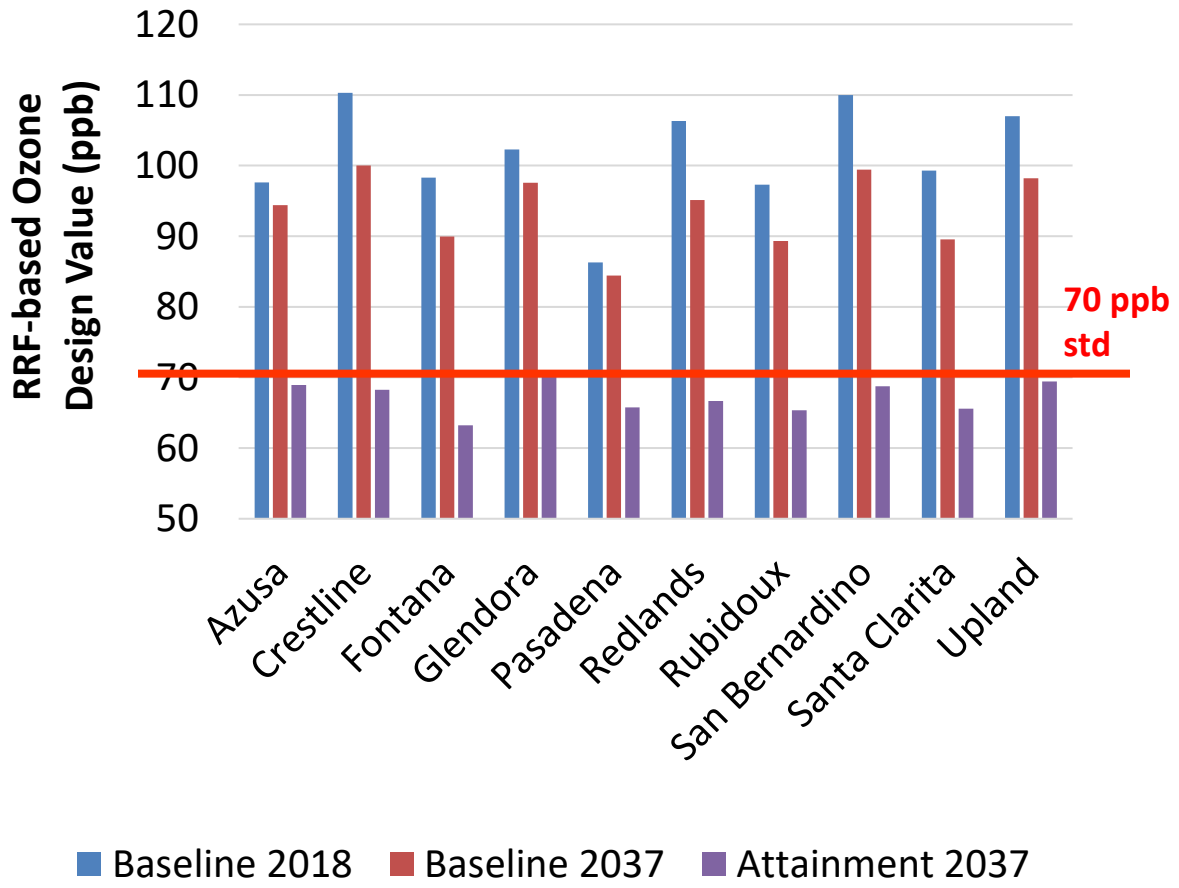
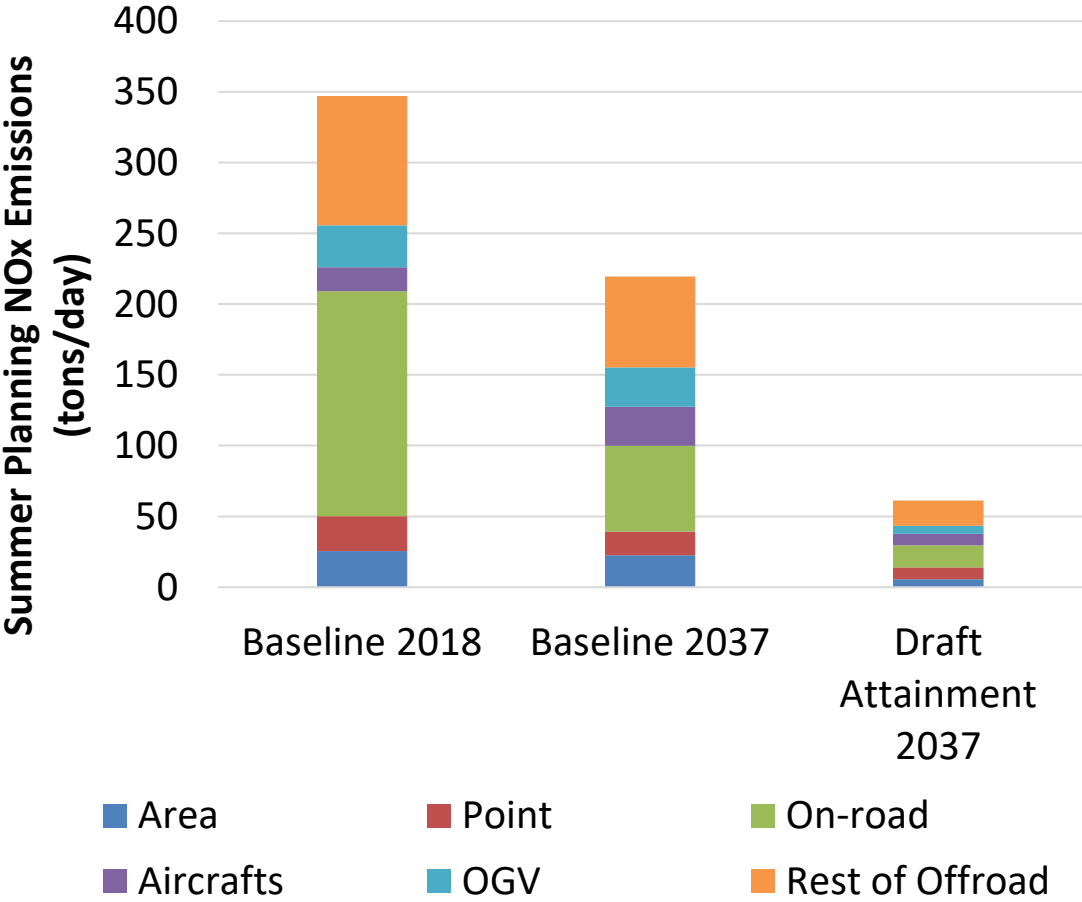
Maximum Daily 8-hour Average (MDA8) Ozone – Base Year (2018)



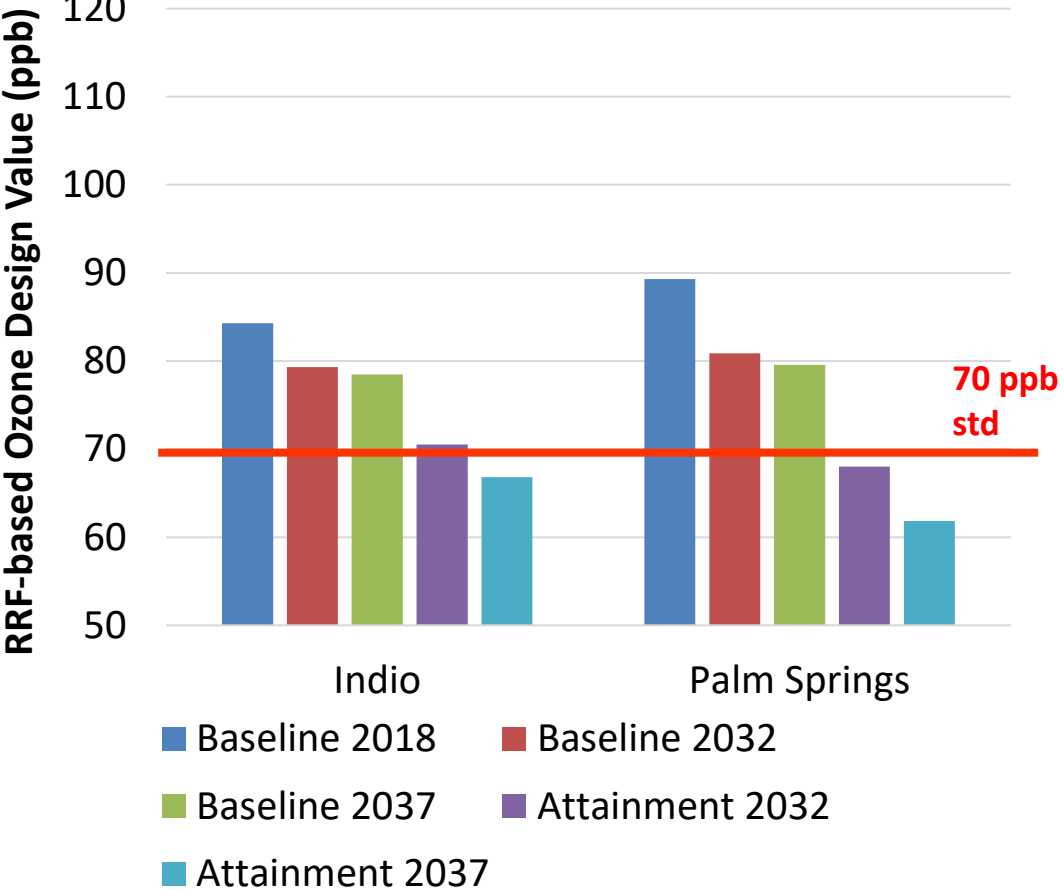
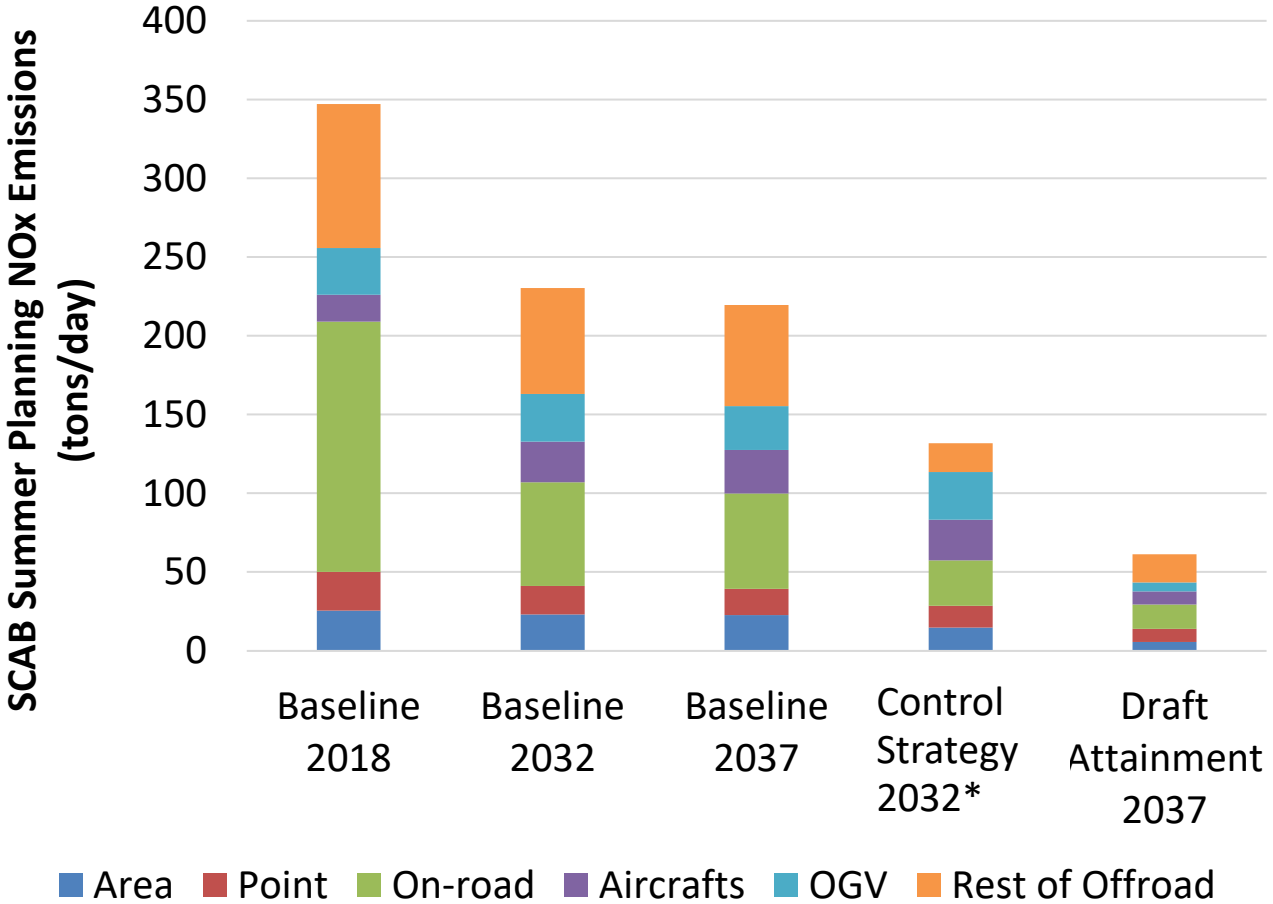
The proposed controls by South Coast AQMD and CARB are expected to lead the South Coast and Coachella Valley to attainment of the 2015 ozone federal standard



Preliminary Attainment Demonstration at Selected Stations



Preliminary Attainment Scenario for Coachella Valley



* South Coast strategy – approximately 2/3 of the commitment for 2037
 CARB strategy – year specific control factors based on the draft 2022 SIP Strategy
 No reductions in aircraft emissions

Summary

- Carrying capacity plots based on draft inventory and air quality modeling are completed:
 - The preliminary attainment scenario relies on control profiles specified for individual source category
 - Preliminary attainment scenario suggests carrying capacity, maximum allowable NOx emissions to attain the standard, is approximately 60 tons per day of NOx emissions
 - Glendora is expected to be the design site in 2037
- Attainment for Coachella Valley in 2032 requires control measures subject to CAA section 182(e)(5), which is not allowed for nonattainment area other than “extreme”. In 2037, the South Coast Air Basin’s preliminary attainment scenario leads to attainment in Coachella Valley.