



2007/08 State Implementation Plan Workshop

Planning and Technical Support Division
April 2007



Overview

- Attainment challenge
 - State Strategy measure discussion
 - Next steps
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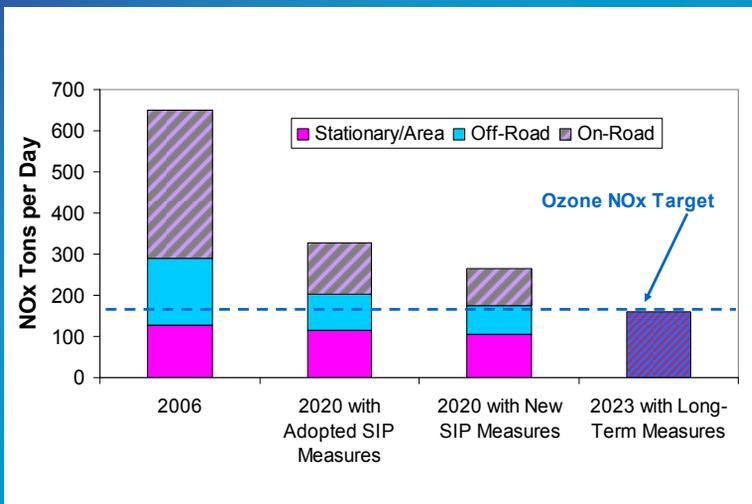
Attainment Challenge



◆ SIP Development Overview

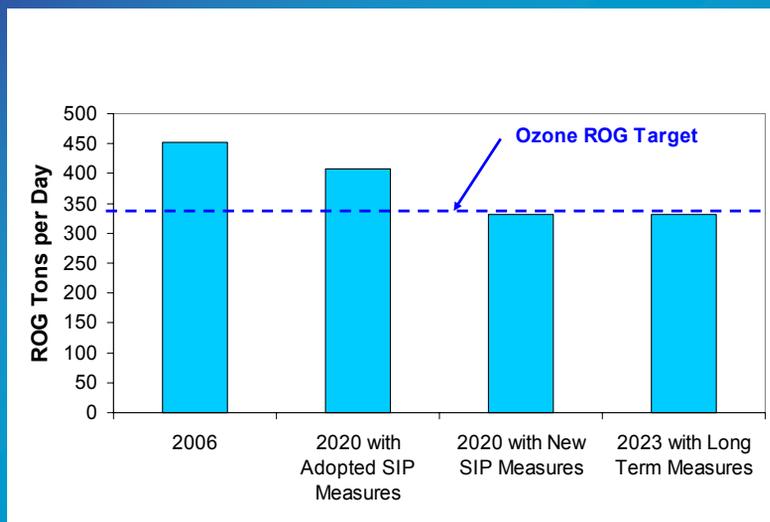
- San Joaquin PM2.5 – on track for 2015 attainment
 - South Coast PM2.5 – incomplete
 - South Coast and San Joaquin ozone – controversial but federally approvable
 - Sacramento ozone attainment 2019
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San Joaquin Valley Ozone Attainment - NOx



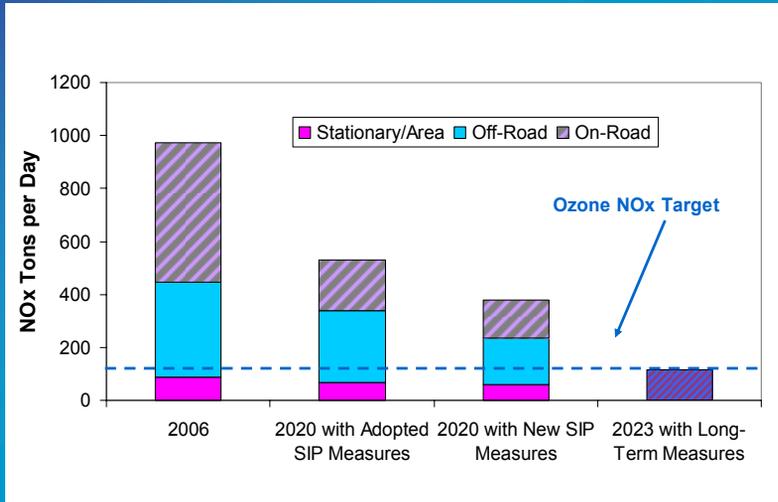
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San Joaquin Valley Ozone Attainment - ROG

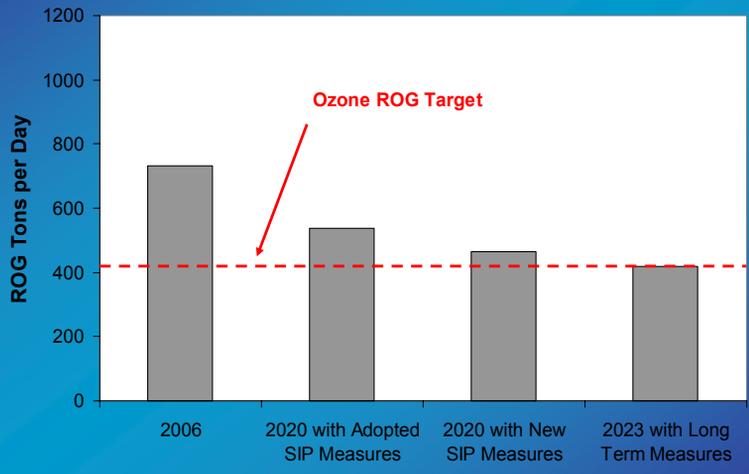


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South Coast Ozone Attainment - NOx



South Coast Ozone Attainment - ROG



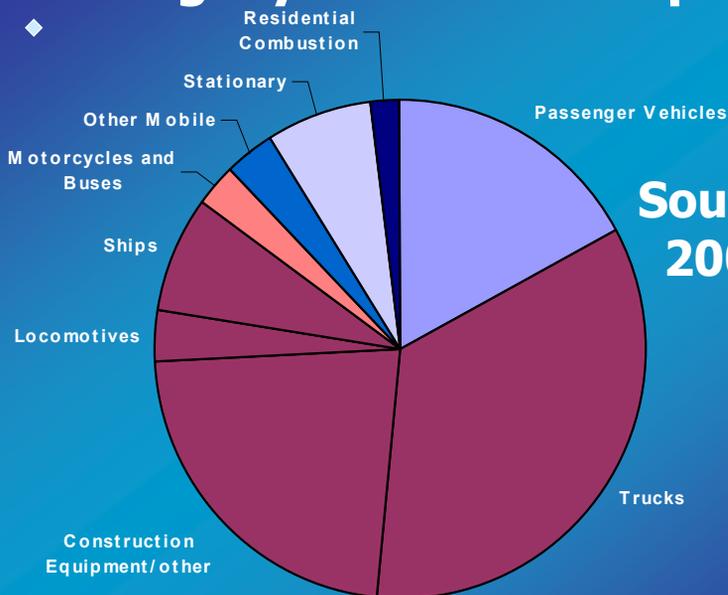


South Coast PM2.5 Problem

- Clean-up of legacy diesel fleet is key
- Future U.S. EPA NOx standards:
 - Construction: 2013-15
 - Trucks: 2010
 - Locomotives: 2017 (proposed)
 - Marine: 2017 (proposed)
 - Ships: (none yet)



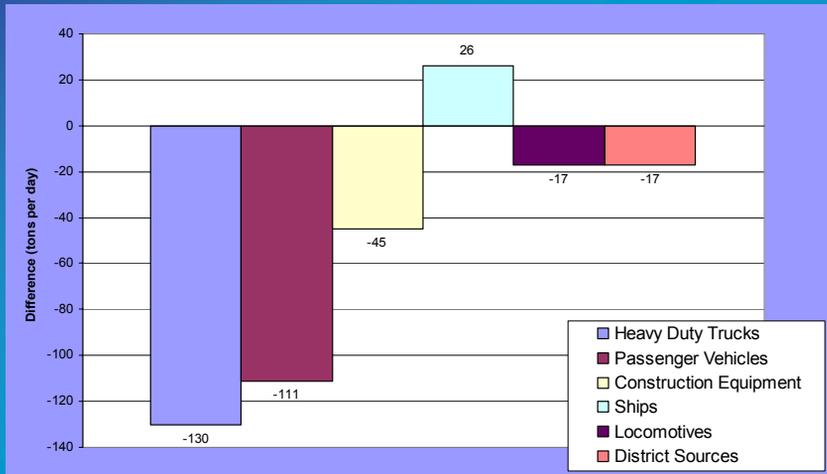
Legacy Fleet Clean-up is Key



South Coast
2006 NOx



NOx Emission Changes South Coast, 2006 - 2015



Dual Diesel PM and NOx Goals

- Near-term diesel PM reductions
ARB focus since 2000
- Now overlaying NOx reductions
needed for PM2.5 and ozone
attainment
- ARB rulemaking balancing dual
goals

Approach for Diesel Fleets

- PM retrofits where available
- Engine/equipment replacement for NOx
- NOx retrofits not currently available
- Pursue early PM retrofits and accelerate introduction of NOx technology as it becomes available

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Staff Proposed Targets for ARB Action

	South Coast NOx Reductions	
	<u>2014</u>	<u>2020</u>
Diesel Equipment	10.5	18.7
Truck Fleet	49.3	34.9
Ships & Harbor Craft	43.1	65.7
Locomotives	4.3	13.4
Passenger Vehicles	14.4	9.6
TOTAL	122	142

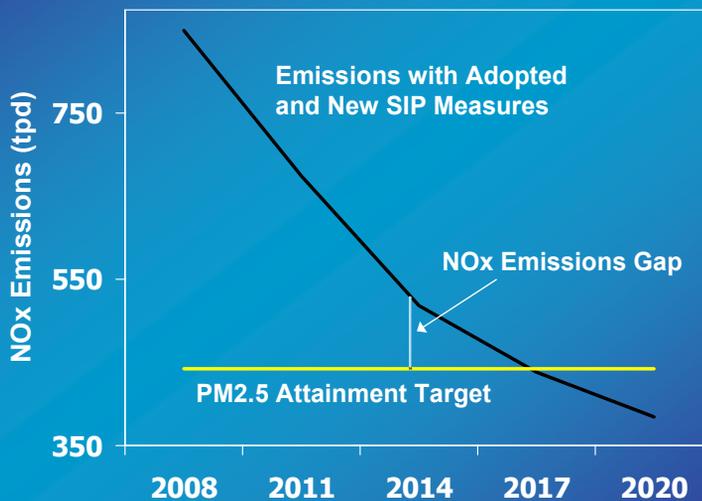
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2014 Emissions Shortfall (tons per day)

	NOx	ROG	SOx	Direct PM2.5
Emission Reductions Needed	203	59	24	14
Reductions from New Measures	129	52	23	11
Shortfall	74	7	1	3

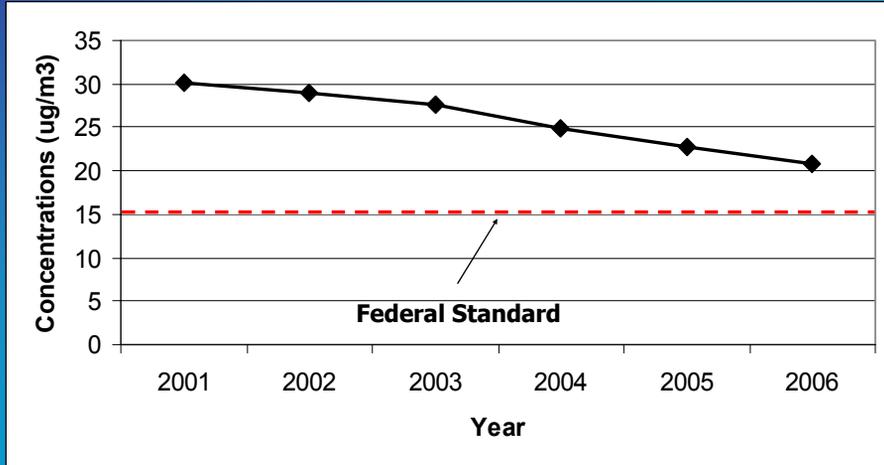
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NOx Emission Trend



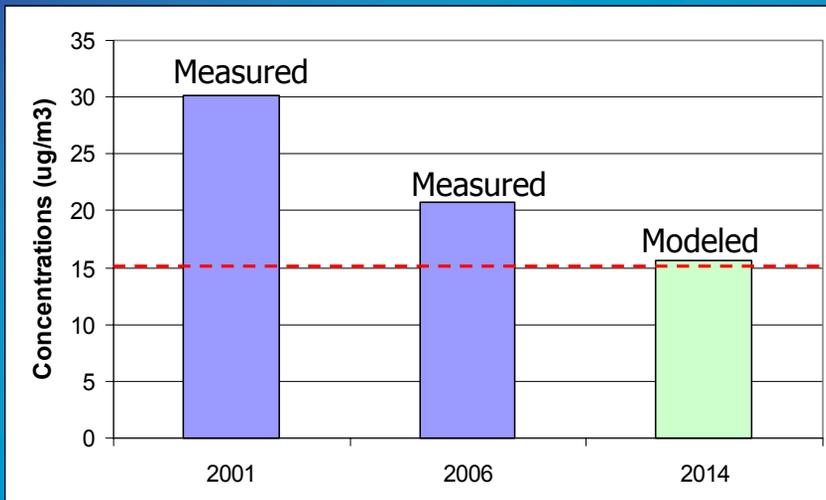
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South Coast PM2.5 Monitoring (Rubidoux)



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South Coast PM2.5 Air Quality and Modeling (Rubidoux)



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Practical Nature of California SIPs

- Existing program is starting point for most of needed reductions
- Additional commitments for aggregate tons from new near-term measures
- Need to rely on technology developments and future incentives for last increments

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SIP Legal Framework

- Federal Clean Air Act requires that SIPs be enforceable
- U.S. EPA rules establish criteria for SIP approval
- Court decisions frequently factor in
- EPA PM_{2.5} implementation rule just released
- State law charges ARB with ensuring SIPs are approvable

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◆ Nature of Board Commitments

- Staff will propose tonnage commitments for attainment
- Staff will propose schedule for measure consideration
- Adopted commitments are enforceable once approved by U.S. EPA

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State Strategy Measure Discussion

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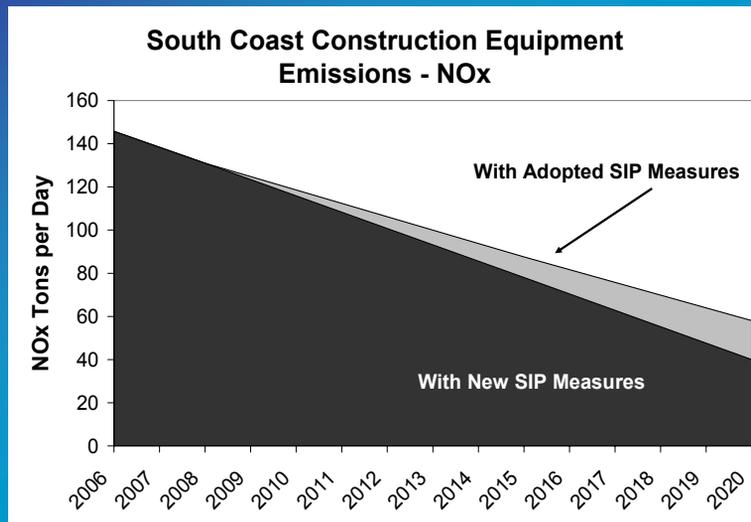
Diesel Equipment

Challenge: Federal standards don't fully phase in until 2014

- Rule impacts
 - Largest fleets to owner/operator fleets
 - ARB cost estimate is \$3.0-3.4 billion
- May Board meeting
- Strategy - retrofit and turnover

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Diesel Equipment Reductions



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Diesel Trucks

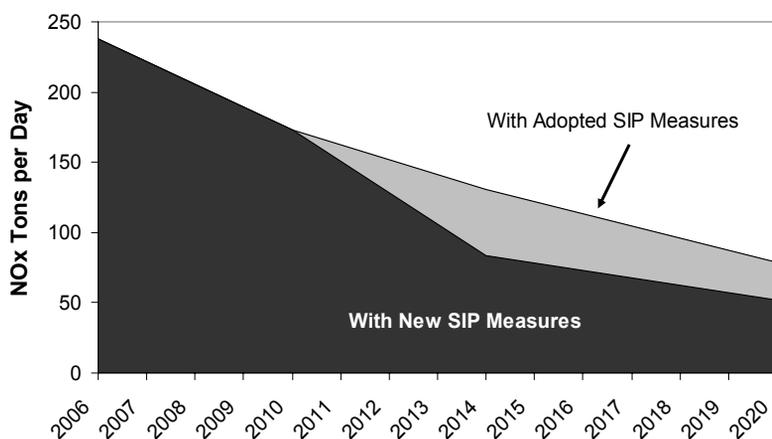
Challenge: Cleanest trucks not available until 2010

- Rule impacts
 - Reduction target equivalent to replacing 30% of fleet between 2010 and 2014
 - Will impact largest fleets down to owner/operator
- 2008 Board hearing
- Strategy – retrofit and turnover

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Truck Reductions

South Coast Truck Emissions - NOx



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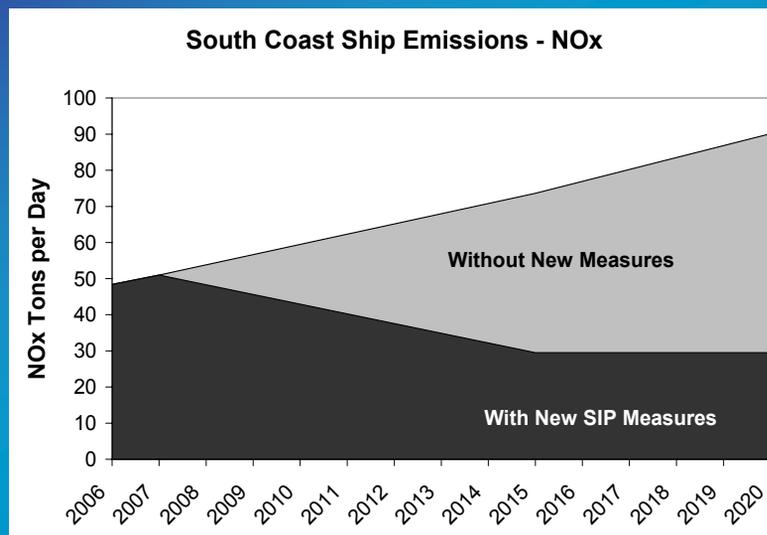
Ships

Challenge: Coordinated action

- Rule impacts
 - Ships, harbor craft, tugboats, etc.
- Several ARB rulemakings underway
 - Main engine fuel standard
 - Cold ironing
 - Vessel speed reduction
- Strategy: cleaner fuels and electrification

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Ship Reductions



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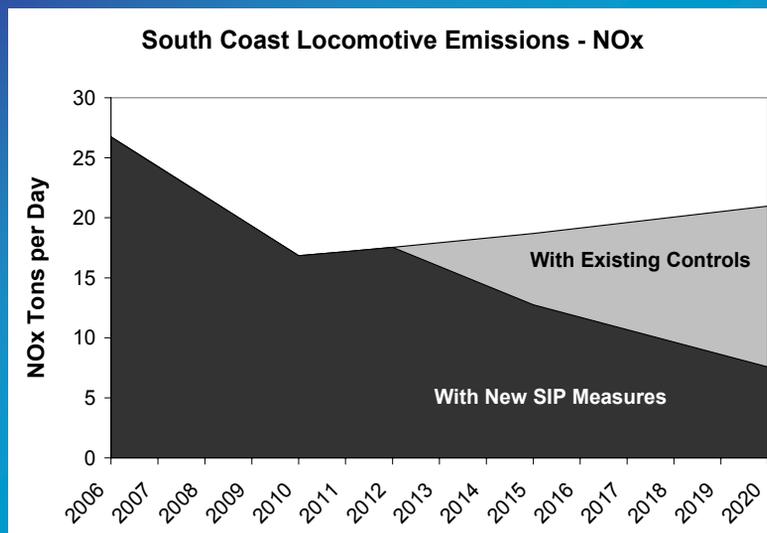
Locomotives

Challenge: Cleaner engine availability

- Issues:
 - Federal source
 - New standard PM 2015
 - New standard NOx 2017
- Strategy: fleet turnover

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Locomotive Reductions



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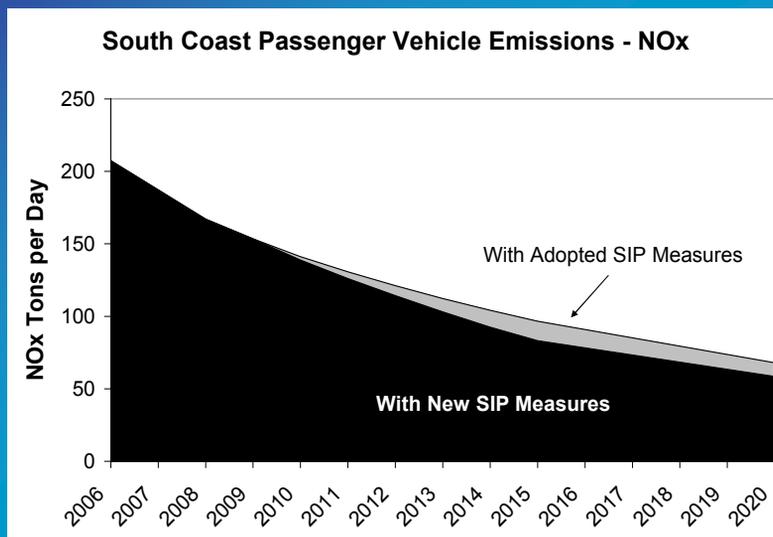
Passenger Vehicles

Positive: Existing program provides large benefits

- Strategy: reduce excess in-use emissions
 - Smog Check improvements
 - Accelerated vehicle retirements

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Passenger Vehicle Reductions



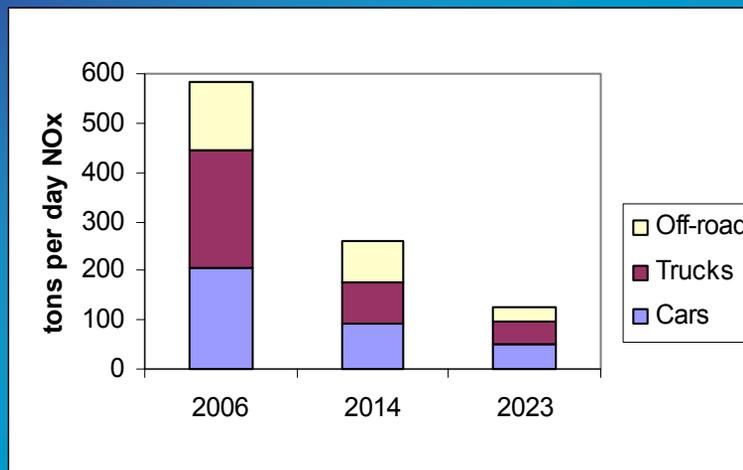
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Other Categories

- Zero evaporative goals
- Exhaust standards
- Consumer products

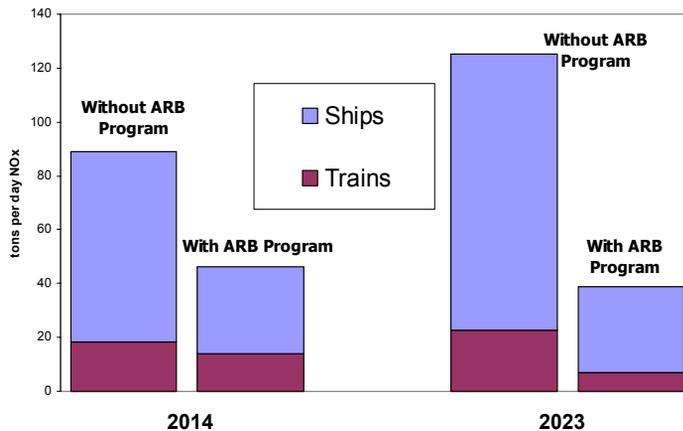
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Impact of State Strategy South Coast – Mobile Sources



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Impact of State Strategy South Coast – Federal Sources



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Issues

- How could NOx reductions be accelerated?
- Can we “buy” sufficient tons by 2014?
- Is it legal to rely on NOx retrofit technology not currently available?
- Is there an alternative attainment strategy (focused on PM emissions)?

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Next Steps

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ARB Public Process

- Third round of ARB Workshops – April 5, 10 and 12
- ARB staff proposed SIP commitments - Early May
- ARB staff reports on SC and SJV local plans – Mid May
- Noticed ARB public hearings - June 14 (SJV) and June 21 (SC)

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