



### San Joaquin Valley Ozone Workshop

ARB's Mobile Strategy  
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Air Resources Board  
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California Environmental Protection Agency  
Air Resources Board

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### Existing Mobile Strategy Provides Significant Reductions

- \* By 2031, NOx emissions will be reduced by over
  - \* 70% for Light-duty vehicles
  - \* 60% for Heavy-duty trucks
  - \* 40% for Off-road mobile
- \* Existing mobile source control program provides for 140 tpd of NOx emission reductions by 2031

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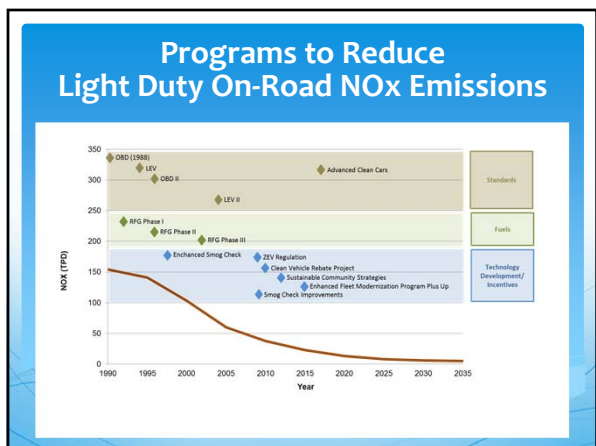
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## Key Light-Duty Controls

- \* New vehicle engine standards
  - \* ACC LEV III vehicles 75% cleaner in 2025 than LEV II vehicles today
  - \* On-Board Diagnostics
- \* Reformulated gasoline
- \* Enhanced Smog Check Inspection
  - \* Lower cut points
  - \* Ensures prompt repair of emission control failures

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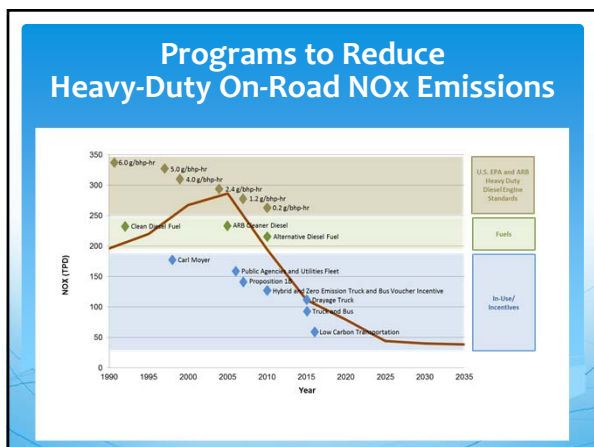
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## Key Heavy-Duty Controls

- \* New Heavy-Duty engine standards
  - \* 2010 engine about 85% cleaner than 2007 engine
- \* ARB Cleaner Diesel Fuel
- \* Truck and Bus Regulation
  - \* Accelerated fleet turnover requirements
  - \* Every truck has a 2010 engine by 2023

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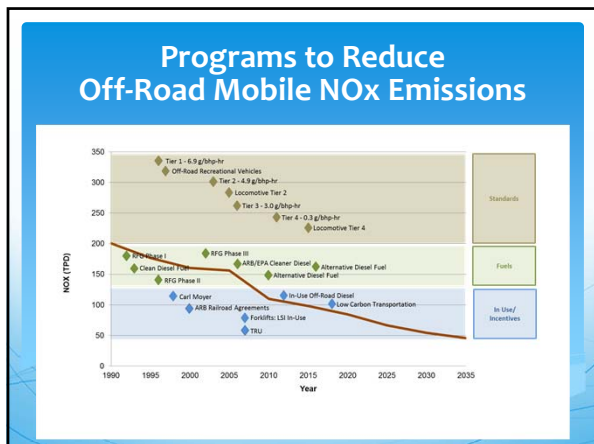
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- ### Key Off-Road Mobile Controls
- \* Off-road engine standards
    - \* Tier 4 engine about 95% cleaner than Tier 1 engine
  - \* Locomotive Standards
    - \* Tier 4 locomotives 90% cleaner than uncontrolled
  - \* ARB Cleaner Diesel Fuel
  - \* In-Use Off-Road Diesel Rule
    - \* Accelerated engine turnover requirements
    - \* All fleets can only add Tier 3 engines by 2023

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### Building Blocks of Planning Process

- \* Current programs provide blueprint for successful strategies
- \* Technology assessments identify status of advanced technologies and fuels
- \* Scenario analysis provides framework for coordinated air quality and climate assessment

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### ARB's Mobile Strategy

- \* Multi-pollutant prospective
- \* State SIP Measures for 2016 SIPs
- \* Discussion Draft released in September 2015
- \* Workshop in October 2015
- \* ARB Board discussion in October 2015

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### SIP Measures

- \* Current mobile source control program of 140 tpd NOx reductions provides for attainment
- \* New SIP measures accelerate progress
- \* Provides 15-20 tpd of NOx reductions reflecting State and federal action

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### Proposed Measure Concepts: Passenger Vehicles

- \* Expand Advanced Clean Cars requirements
- \* Assessments to ensure durability of passenger vehicle technologies



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### Proposed Measure Concepts: Heavy Duty Trucks

- \* Establish low-NOx engine standard and ensure durability
- \* Need for US EPA action in parallel with California; implementation no later than 2024
- \* Last Mile Delivery
- \* Advanced Clean Transit
- \* ZEV Airport Shuttle Buses



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### Proposed Measure Concepts: Off-Road Mobile

- \* Establish requirements for ZEV technologies in:
  - \* Forklifts
  - \* Airport ground support equipment
- \* Develop new engine standards and increase penetration of electric lawn and garden equipment
- \* Develop more stringent requirements for locomotives
- \* Develop new low-emission diesel fuel



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**Next Steps**

- \* Release Mobile Strategy in April with environmental and economic analyses
- \* Meeting PM2.5 standards is key challenge; will require large reductions

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