

# Mobile Source Control Measures



Denver Regional Air Quality Council

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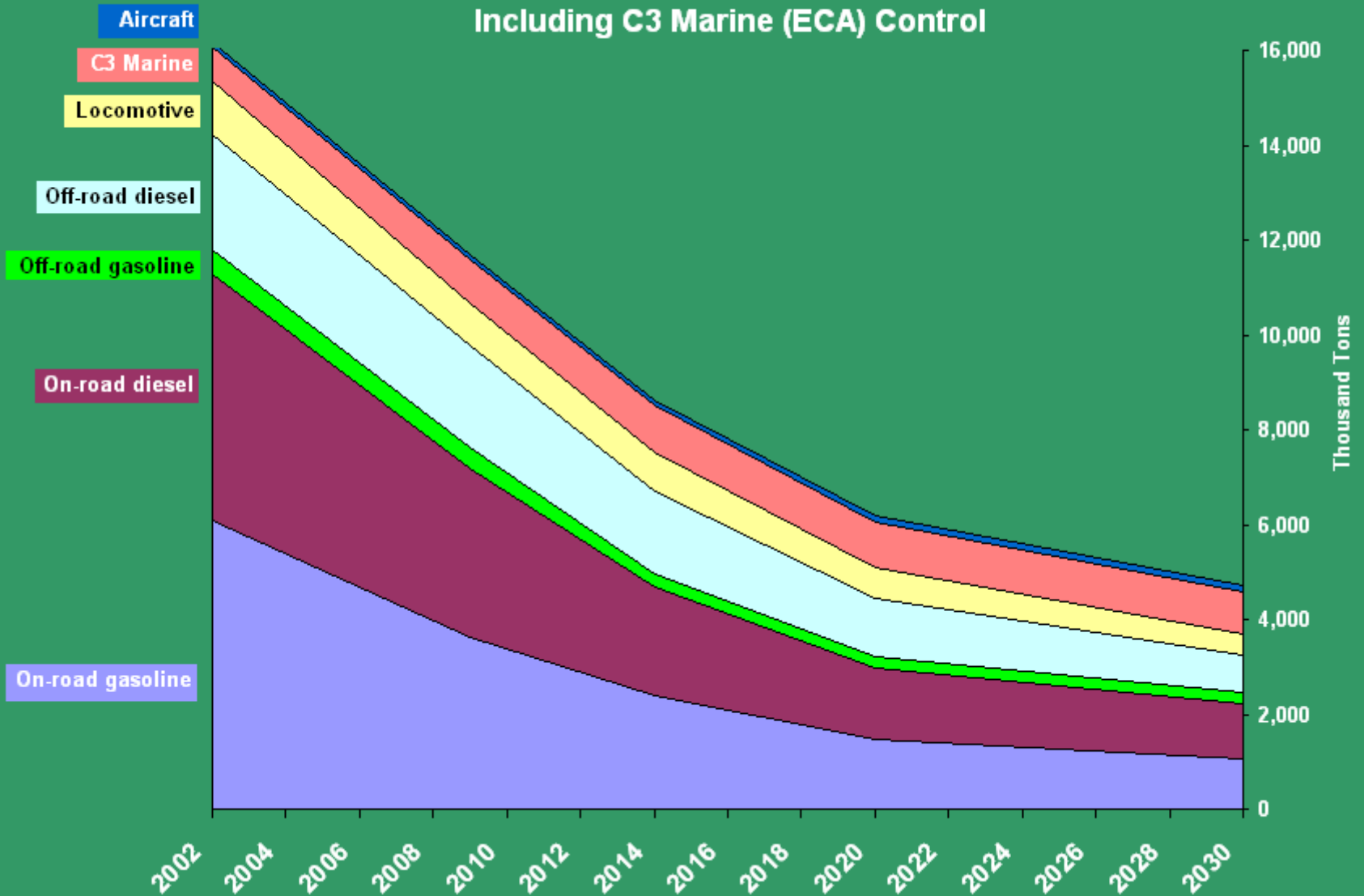
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# Helping States Achieve the NAAQS for PM, Ozone, NO<sub>2</sub> and CO

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- Despite our successes, air pollution remains a public health problem.
  - A new vehicle today is up to 95% percent cleaner than a new vehicle in 1970.
- By 2020, mobile sources are still projected to account for up to 50% of the NO<sub>x</sub> emissions, and substantial hydrocarbon and PM emissions.
- Even with the control strategies “in the pipeline,” mobile sources will continue to significantly contribute to air pollution problems in many parts of the country.
- OTAQ is continually evaluating the potential for new mobile source measures – for both vehicles and fuels - that could help States as they work to achieve new NAAQS standards.

# Annual U.S. Mobile Source NOx Emission Projections Including C3 Marine (ECA) Control



# Mobile Source Clean Air Rules:

## *Comprehensively Addressing Air Pollutants*

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### □ **Clean Cars and Passenger Trucks –Tier 2**

- Stringent emissions standards for new gasoline and diesel light trucks and cars beginning in 2004
- National emissions reductions in 2030 of 3 million tons per year (tpy) of NO<sub>x</sub> and 800,000 tpy of VOCs

### □ **Clean Heavy-Duty Trucks and Buses**

- Stringent emissions standards for new buses and trucks beginning in 2007
- Up to a 90% reduction in NO<sub>x</sub> and PM emissions



# Mobile Source Clean Air Rules:

## *Comprehensively Addressing Air Pollutants*

- ❑ **Clean Non-road Diesel Engines and Equipment**
  - Stringent emissions standards many types of non-road equipment
  - Standards phase-in between 2008 and 2015 depending on engine size
  - NOx and PM emissions reductions of more than 90 percent
- ❑ **Locomotive and Marine Diesel Standards**
  - Reduces PM by 90 percent and NOx by 80 percent for newly-built locomotives and marine diesel engines
  - New engine standards phase-in beginning in 2009
  - Tightens standards for existing locomotives and large marine diesel engines when they are remanufactured
- ❑ **Small Gasoline and Recreational Marine Standards**
  - New exhaust emission standards take effect in 2010-2012 depending on engine type/size
  - Covers lawn and garden, utility vehicles, generator, a variety of other equipment, personal watercraft and outboard engines
  - First time ever evaporative emission standards for these sources
  - National emissions reductions in 2030 of 600,000 tpy of VOCs, 130,000 tpy of NOx, 5,500 tpy of PM, and 1.5 million tpy of CO.



# Mobile Source Clean Air Rules:

## *Comprehensively Addressing Air Pollutants*

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### □ Mobile Source Air Toxics Rule

- Fuel benzene standards beginning in 2011;
- Cold temperature hydrocarbon standards for vehicles phased in between 2010 and 2015; and
- Portable fuel container requirements beginning in 2009
- Significantly reduces hydrocarbon air toxics while delivering PM co-benefits
- National emissions reductions in 2030 of 1 million tpy of VOCs and 19,000 tpy of PM



# Addressing the Legacy Fleet through the National Clean Diesel Campaign

- ❑ There are about 11 million existing, high-polluting diesel engines not subject to our new standards.
- ❑ Focus on Key Sectors:
  - School buses, marine ports, construction, agriculture, freight
- ❑ Promoting retrofitting, early replacement, and idle reduction
  - Recent years have allowed national grants to fund retrofits which reduced NOx emissions and PM emissions.
- ❑ Program activities:
  - Technology verification
  - Technical and policy analysis
  - Coalitions and outreach
  - Innovative funding for projects
    - ❑ Federal grants, loans and tax incentives



**National Clean Diesel Campaign**

# Clean Diesel Funding

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- Fiscal Year 2008 **\$49.2 M Awarded**
- 2009 Recovery Act **\$300 M Awarded**
  - 160 Grants
  - Preliminary projected results
    - 33,000 engines, vehicles, vessels
    - 5000 tons PM
    - 120,000 tons NOx
    - 850,000 tons CO2
    - \$1.2B - \$2.8B in health benefits (Pope, Laden)
- Fiscal Years 2009 & 2010: **\$120 M Award in May-July**
  - Almost 400 applications requesting about \$600 Million
  - Offering over \$1 Billion in matching funds

# Fuel Programs as Control Measures

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## □ **EPA Approved State SIP Fuel Programs**

- Fuel measures have been identified by Congress as measures of last resort.
- State must make “necessity demonstration” that reductions are needed to meet a NAAQs and that no other non-fuel program exists or that they are impracticable to implement.
- Fuel program choice determined by boutique fuel restrictions and necessity determination.
  - 7.0 PSI fuel available to the Denver metro area (with or without 1 psi waiver).

## □ **Federal Fuel Programs/Regulatory Actions**

### ■ **RFG**

- Nonattainment areas classified under subpart 2 are able to opt-in to the Federal RFG program upon request by the Governor. EPA sets the effective start date.

### ■ **RVP**

- CAA Section 211(h) provides EPA authority to waive the 1 psi RVP allowance for 9-10% ethanol blends upon a request by the State accompanied with supporting documentation that the allowance contributes to air pollution.
  - Current Federal 7.8 psi RVP requirement w/out the 1 psi waiver would be available to Denver metro area

# Vehicle Inspection Changes Likely

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- ❑ The current Denver vehicle inspection and maintenance (I/M) program is not required to meet minimum federal requirements for such programs because the area is maintenance for carbon monoxide and falls below the classification level for the 1997 ozone standard that would trigger full I/M requirements.
- ❑ Once areas are designated and classified for the 2010 ozone standard, Denver may need to revise its I/M program to require failure and repair of vehicles that have the onboard diagnostic (OBD) system's "Check Engine" light illuminated.
- ❑ "Clean Screen" program will need to be updated to ensure that vehicles with "Check Engine" lights on do not avoid repairs
- ❑ Updating Denver's program will have several benefits:
  - VOC and NOx emissions reductions needed for ozone attainment
  - Tests will be quicker, less expensive, more accurate and more protective of consumers
  - Opportunity for increased customer convenience through options such as self-serve kiosks and remote OBD

# Travel Efficiency Strategies

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- **Travel efficiency strategies include, e.g.:**
  - Public transit and smartgrowth
  - Pricing policies, speed limit reductions and urban parking restrictions
  - Intelligent transportation and eco-driving
  - HOV / vanpool / carpool / commute strategies
  - Freight efficiencies (SmartWay)
  - Most provide criteria and ghg, and other co-benefits

# Resources for State and Local Agencies

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□ EPA's State Resources website at:

<http://www.epa.gov/otaq/stateresources/index.htm> includes links to:

- Guidance documents, models and calculators for quantifying emissions reductions from a wide range of mobile source measures
- Regulations for on-road and non-road sources
- Clean Diesel State and Local Tool Kit
- Information on various funding sources

□ EPA's MOVES website at:

<http://www.epa.gov/otaq/models/moves/index.htm> includes links to:

- The MOVES 2010 software to be downloaded
- Instructions for downloading and installing the model
- Technical and Policy Guidance on using the model
- A users guide for the model