



## **California's Heavy-Duty Inspection and Maintenance (HD I/M) Program**

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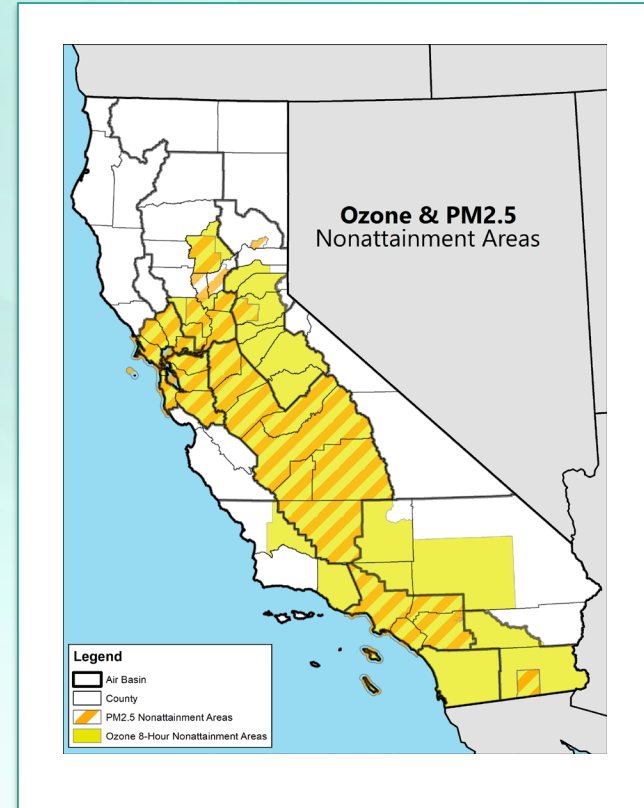
# Outline

- California's emission challenges
- CARB's existing heavy-duty vehicle programs
- New HD I/M program requirements
- CARB information and contacts



# California's Air Quality Challenges

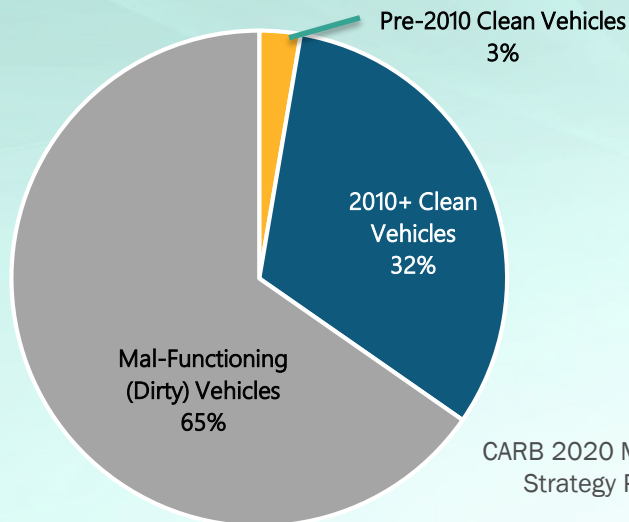
- ~70% of Californians still breathe unhealthy air
  - Over 12 million people
- Serious challenges to meeting ozone and particulate matter standards in non-attainment areas
- HD trucks remain one of the largest emissions contributors in the state
  - 52% of NO<sub>x</sub> from on-road sources
  - 54% of PM from on-road sources



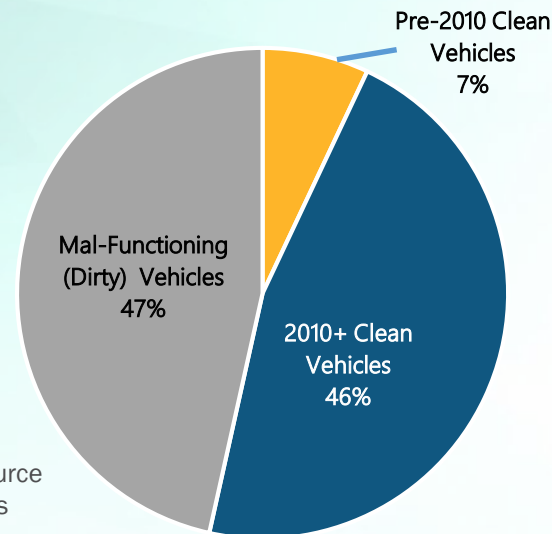
# Malmaintenance Emissions

- Excess emissions due to malmaintained emissions control equipment represent the largest emissions impact from the HD vehicle sector.
  - Up to 5200% more PM, 1200% more NOx on a vehicle by vehicle basis

PM2.5 Emissions in 2031



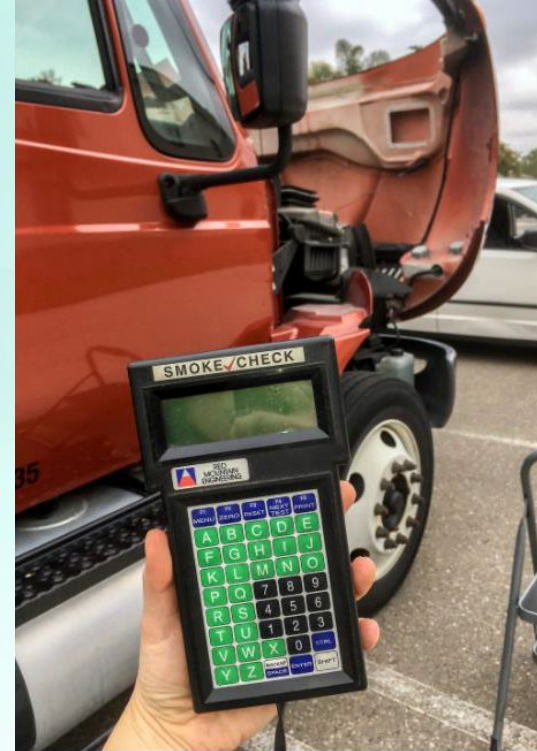
NOx Emissions in 2031



CARB 2020 Mobile Source  
Strategy Projections

# CARB's Existing Inspection Programs

- HDVIP: Heavy-Duty Vehicle Inspection Program
  - Roadside inspections
- PSIP: Periodic Smoke Inspection Program
  - Annual self-testing for California fleets of 2+ vehicles
- 5% opacity limit for vehicles with diesel particulate filters (DPFs)
- Existing inspection programs inadequate for monitoring modern diesel engines and aftertreatment



# Revamping CARB's HD Inspection Efforts

## Enhancing Identification & Repair of Malfunctioning Parts

- Expanded applicability to all fleets operating in CA
- More Frequent Periodic Testing
- Utilization of Remote Emissions Monitoring Devices (REMD)
- Revamped Compliance Tests
- Compliance Testing Device Certification

## Improved Enforcement Tools

- Freight Contractor/ Facility Requirements
- Referee Network and Tester Training
- New HD I/M Database
- Improved Coordination with other Agencies
- Link to DMV Registration



# Vehicles Subject to the HD I/M Program

- All non-gasoline heavy-duty vehicles operating in California with a GVWR greater than 14,000 pounds
- This includes:
  - All diesel, alternative fuel, and hybrid vehicles
  - All California, out-of-state (OOS), and out-of-country registered vehicles that operate within California



# Phased In Vehicle Testing Requirements

January 2023

High Emitter Enforcement Screening



2024

Periodic Testing Requirements





# High Emitter Enforcement Screening

- Mobile and stationary remote emissions monitoring devices established throughout the state
- Screen for vehicles with abnormally excessive emissions that suggest malmaintenance issues may be present
- Flagged vehicles required to submit a passing compliance test within 30 days of notification



# Periodic Testing Requirements



- Semiannual (2x per year) periodic compliance testing requirements starting in 2024
  - Annual testing requirement for motor homes and agricultural vehicles
- After three years, periodic testing frequency increases to 4x per year for OBD equipped vehicles
  - Agricultural vehicles and motor homes remain at annual inspection frequencies

# Compliance Test Requirements

- OBD vehicles: OBD diagnostics inspection
  - Submission of CARB/US EPA regulated OBD data
    - 2013 model year (MY) and newer diesel and diesel hybrid engines
    - 2018 MY and newer alternative fuel and alt fuel hybrid engines
- Non-OBD vehicles:
  - SAE J1667 opacity test
  - Visual inspection of the vehicle's emissions controls



# OBD Testing Device Requirements



- Telematics and plug-in scan tool OBD devices
- Utilize OBD device submission requirements in Periodic Smoke Inspection Program Regulation for initial phase of HD I/M Program
- OBD devices required to be certified to meet HD I/M program standards once periodic testing is implemented
  - Appendix B of HD I/M regulation



# Enhancing Enforceability

## Freight Contractor, Broker, Facility Requirements

- Contractors/Brokers: Verify vehicle compliance prior to entering into contracts
- Seaport/Railyard Facilities: Verify vehicle compliance prior to allowing onto property

## Referee Network

- Third-party inspection and verification
- Flexibility to handle novel compliance scenarios

## Tester Training

- Online training course required prior to perform HD I/M compliance tests

## New HD I/M Database

- Streamline test submission and payments
- Automate compliance determinations



# Close Coordination with other State Agencies

- California Highway Patrol
  - Ensure vehicles have compliance certificate
  - Perform inspections
- DMV registration tied to compliance
- Establishing inspection locations with CDFA, Caltrans, and CHP





# For More HD I/M Program Information

- For general HD I/M program information, visit CARB's website at:  
<https://ww2.arb.ca.gov/our-work/programs/heavy-duty-inspection-and-maintenance-program>
- For formal HD I/M rulemaking documents, visit:  
<https://ww2.arb.ca.gov/rulemaking/2021/hdim2021>
- Subscribe to receive HD I/M email updates at:  
[https://public.govdelivery.com/accounts/CARB/subscriber/new?topic\\_id=hdim](https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=hdim)
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