



Heavy-Duty Vehicle Inspection and Maintenance (HD I/M) Workgroup Meeting:

Draft Proposed HD I/M Regulatory Concepts

December 17, 2020

Today's Agenda

- Purpose of webinar
- SB 210 review and implementation phase-in
- Overview of primary draft regulatory requirements
- Potential concepts to explore during workgroup dialogue
- Open discussion and Q&A

SB 210 Review



- SB 210 (Leyva; Statutes of 2019) directs CARB to develop and implement a new, comprehensive HD I/M program, in coordination with partner State agencies
 - Target excess NOx and PM emissions from in-use vehicles
 - Require all vehicles operating in California to comply
 - Allow on-board diagnostic (OBD) system checks to identify malfunctioning emissions-related components in applicable engines
- Applicability: On-road heavy-duty vehicles (non-gasoline) with GVWR > 14,000 lbs. operating in California - Section III. (a)
 - In-state, out-of-state/country
 - Diesel, alternative fuel, hybrids
 - Exemptions for zero emission, emergency/military vehicles, and new engines certified to most stringent optional NOx std. (4 year exemption)

HD I/M Implementation: Proposed Program Phase-In Approach

- First Phase – Begins **January 1, 2023**
 - High emitter vehicle screening with focus on the San Joaquin Valley
 - Vehicle owners establish accounts in HD I/M database by July 1, 2023
- Second Phase – Begins **July 1, 2023**
 - Enforcement of compliance certificate requirements starts
 - DMV registration holds for California registered vehicles start
- Third Phase – Begins **January 1, 2024**
 - Periodic testing starts

Vehicle Owner Requirements

(Section III., Pages 12-21)

Owner and Vehicle Registration

**Inspection Methods and Periodic Data Submission
Frequencies**

Vehicles Identified through Emission Screening

Requirements for Vehicles Referred to Referee

Compliance Certificate

Owner and Vehicle Registration

(Section III. (b); Page 12)

- Vehicle owners to establish an account in the CARB HD I/M database system
- Vehicle information from CA DMV and IRP databases to be used as data sources
- Owners to populate required vehicle information not already accessible from these databases
 - Data fields for CA DMV registered vehicles likely already complete
 - Missing data fields for out of state vehicles in IRP or not included in IRP would need to report any required missing data
- Owner account would be used to:
 - Pay compliance fee to obtain compliance certificate
 - Submit any supporting compliance documentation
 - Access each vehicle's compliance status

HD I/M Inspection Methods: OBD-Equipped Vehicles

(Section III. (c) (1); Pages 13-18)

- Certified continuously connected remote OBD tool on the vehicle (CC-ROBD method)
 - Telematics/OEM service providers
 - Basic or full key event monitoring options
 - GPS submission option for intermittent operation in California
- Certified non-continuously connected remote OBD tool (NCC-ROBD method)
 - Registered tools operated by HD I/M Approved Testers
 - Dongles and/or kiosks operated at approved private locations throughout California

OBD vehicles include:

- 2013+ MY diesel engines or diesel hybrid systems
- 2018+ MY alternative fuel engines or alternative fuel hybrid systems

HD I/M Inspection Methods: Non-OBD Vehicles

(Section III. (c) (2); Pages 14-17)

- Maintain current SAE J1667 opacity test procedure and thresholds
- Require submission of opacity test results to HD I/M database
 - Electronic submission, or
 - Manual submission - include legible upload of SAE J1667 test strip
- Perform visual inspection and submit completed inspection form to HD I/M database

Periodic Data Submission Frequencies

(Section III. (c) (3); Pages 17-18)

- OBD-equipped vehicles
 - Standard schedule: quarterly OBD data submissions
 - GPS submission option: exempts a vehicle from quarterly data submission deadline if it has not entered California since its last compliant periodic data submission
- Non-OBD vehicles
 - Biannual (twice/year) passing opacity and visual inspection data submission
- Alternative submission frequencies (OBD and non-OBD vehicles)
 - Low-use vehicles: once/year
 - Partial year registration vehicles: once/year
 - Motorhomes: once/year

Periodic Data Submission Frequencies, cont.

(Section III. (c) (3); Pages 17-18)

- Data submission frequencies based on each vehicle's compliance year
- For vehicles that register annually with DMV:
 - Compliance year = the DMV annual registration interval (e.g., 12/17/2020 – 12/16/2021)
 - Quarterly submittals due by vehicle registration expiration day in months 3, 6, 9, and 12
 - Example: data submittals due 3/16/2021, 6/16/2021, 9/16/2021, and 12/16/2021
 - Biannual submittals due by vehicle registration expiration day in months 6 and 12
- Passing inspection data must be submitted within 45 days before deadline

Periodic Data Submission Frequencies, cont.

(Section III. (c) (3); Pages 17-18)

- For vehicles that register with DMV on a non-annual basis:
 - The recurring compliance year starts on the day and month a vehicle was initially registered with DMV and ends a year later (e.g., 12/17/2020 – 12/16/2021)
 - Same data submission frequencies as annually registered vehicles
- For exempt-plate vehicles (local and state government vehicles)
 - The recurring compliance year would be July 1st – June 30th
 - Same data submission frequencies as annually registered vehicles

Vehicles Identified through Emission Screening

(Section III. (f); Page 20)

- Screening systems identify high emitting vehicles with excess PM and NOx on the road
- High emitters would be required to demonstrate compliance
- Screening levels yet to be determined



Requirements for Vehicles Referred to Referee

(Section III. (g); Pages 20-21)

- Referee inspections would be conducted by a CARB-authorized referee
- Referee services provide an avenue for third party inspection and verification in a number of cases
- Free, except when independent evaluation is sought by a vehicle owner
- Required to submit within 45 days (or 75 days for Ag vehicles) of the request



Compliance Certificate

(Section III. (e); Pages 19-20)

- Criteria to obtain compliance certificate:
 - Meet requirements of the periodic inspection interval
 - No outstanding HD I/M violations
 - Pay compliance fee
- Verifying Compliance
 - DMV registration requires a valid compliance certificate
 - Valid certificate must be verified by freight contractors
 - CARB/CHP Inspectors checking in the field

Requirements for Device Manufacturers/Vendors (Section IX.)



CC-ROBD



NCC-ROBD



Device Certification Overview

(Section IX. (a); Page 42)

- Vendors, manufacturers, and/or service providers of tools submitting OBD data for the HD I/M program required to certify their OBD test tools
 - CC-ROBD
 - NCC-ROBD
- Vendors required to receive an Executive Order (EO) to sell and use their tools for HD I/M compliance determination
- Following successful certification, each individual OBD test tool used in HD I/M program must be registered with CARB

Major Steps of Certification Process

(Section IX.; Pages 42-52)

Certification Requirements	Reg Concepts Section
• Fill-out cert application forms	IX. (b)
• Perform required testing (upcoming slides)	IX. (c)
• Submit supporting documents	IX. (d) and (e)
• Receive Executive Order from CARB upon approval	IX. (f)
• Recertification to obtain new Executive Order each calendar year	IX.(i)

Device Testing Required for Certification

(Section IX. (c); Pages 43-50)

Vendor Initial Validation Testing

CARB Device Verification Testing

Vendor Field Testing

Vendor Initial Validation Testing

(Section IX. (c)(1); Pages 43-45)

- Testing conditions as specified in section IX.(c)(1) shall be demonstrated and submitted as part of the initial certification application package
- Examples of required testing conditions:
 - Test records from each OBD protocol group (e.g., SAE J1939, J1979)
 - Test records from a vehicle with MIL off, no diagnostic trouble code (DTC), and all supported monitors to be ready
 - Test records from a vehicle with MIL on, 1 active DTC, and 1 pending DTC

CARB Device Verification Testing

(Section IX. (c)(2); Page 46)

- Complete certification application package would be reviewed by CARB staff
- Tools to be tested by CARB and/or designee in a laboratory setting to validate initial vendor testing and ensure the tool:
 - Successfully communicates with heavy-duty vehicles following the required specifications in subsection VIII.(c)(2)
 - Collects requested data as required in subsections VIII.(c)(3) and IX.(c)(1)(A), (B), and (C)
 - Meets physical tool requirements in subsection IX.(c)(2)(C)

Vendor Field Testing

(Section IX. (c)(3); Pages 46-50)

- Real-world testing performed on an applicable heavy-duty vehicle population for 180 days
 - Vendor to find applicable vehicles to test devices in the field
 - NCC-ROBD: 1,000 vehicles (test bin specific) in subsection IX. (c)(3)(A) Table 1
 - CC-ROBD: 500 vehicles (test bin specific) in subsection IX. (c)(3)(A) Table 2
 - Test data to be submitted directly to CARB
 - Vendor required to meet specific data collection performance standards as specified in sections VIII. and IX.

Potential Concepts to Explore Further



Inspection and Test Methods

- Each inspection/test method needs its own protocol
 - OBD
 - Opacity
 - Remote Sensing
 - Visual/Functional
- Pass/Fail criteria for each test method
- With more program experience, these criteria may need to evolve

Training and Approving Testers

- Training required to be approved
- Results submitted through tester account
- Online vs. In-person training

Streamlining Data Submission Process

- SB 210 allows for a streamlined data submittal process for fleets that have an established compliance history (H&SC section 44152(a)(3))
- Current concept utilizes CC-ROBD (remote OBD data submittal) to streamline the process
 - No vehicle downtime for inspection
 - Set it and forget it
- We encourage feedback and ideas for other ways to streamline the process

Next Steps: HD I/M Development

- CARB staff seeks feedback and written comments on regulatory concepts by end of February 2021
 - Staff is available for follow-up meetings
 - Email written comments to James Goldstene and Krista Fregoso (contact info on next slide)
- Additional HD I/M workgroup meetings and workshops throughout 2021
 - Enforcement HD I/M workgroup early 2021
- Board hearing: December 9-10, 2021
- Implementation: phase-in starting in 2023

For More HD I/M Program Information

- Visit CARB's website at: <https://ww2.arb.ca.gov/our-work/programs/heavy-duty-inspection-and-maintenance-program>
- Subscribe to receive HD I/M email updates at: https://public.govdelivery.com/accounts/CARB/subscribe/new?topic_id=hdim
- Contacts:
 - Krista Fregoso at Krista.Fregoso@arb.ca.gov
 - James Goldstene at James.Goldstene@arb.ca.gov

OPEN DISCUSSION AND Q & A

Options to ask questions:

- Use Zoom's "raise hand" button in the webinar window. Staff will unmute you.
- Type your question in Q&A in the webinar window.
- For those who joined via a conference call, press #2 to "raise hand."

