



CARB Heavy Duty Vehicle Inspection and Maintenance (HD I/M)

CARB draft proposed HD I/M
regulation



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

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- ✓ **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 utilizing Black Carbon Testing at scales, overpasses, toll booths, roadside portable sites and would include overhead and horizontal exhaust testers. Will include ALP along with front, rear and side cameras.
- High emitters would be required to demonstrate compliance to CARB.
- 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 some cases
- Might be 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 everyone in the chain is responsible for checking compliance. CARB may require you to check for a vehicle's compliance when entering your facility. You wouldn't have to deny a delivery, although reporting the vehicle to CARB if not in compliance would be expected and affirming to not let future non-compliant vehicles onto your facility would be expected.
 - CARB/CHP Inspectors checking in the field



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)

- A. Complete cert application forms
Reg concepts section IX. (b)
- B. Perform required testing (upcoming slides)
Reg concepts section IX. (c)
- C. Submit supporting documents
Reg concepts section IX. (d) and (e)
- D. Receive Executive Order from CARB upon approval
Reg concepts section IX. (f)
- E. Recertification to obtain new Executive Order each calendar year
Reg concepts section IX.(i)



**Device Testing Required for Certification
(Section IX. (c); Pages 43-50)**

1. Vendor Initial Validation Testing
2. CARB Device Verification Testing
3. Vendor Field Testing

1. 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

2. 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)

3. 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

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

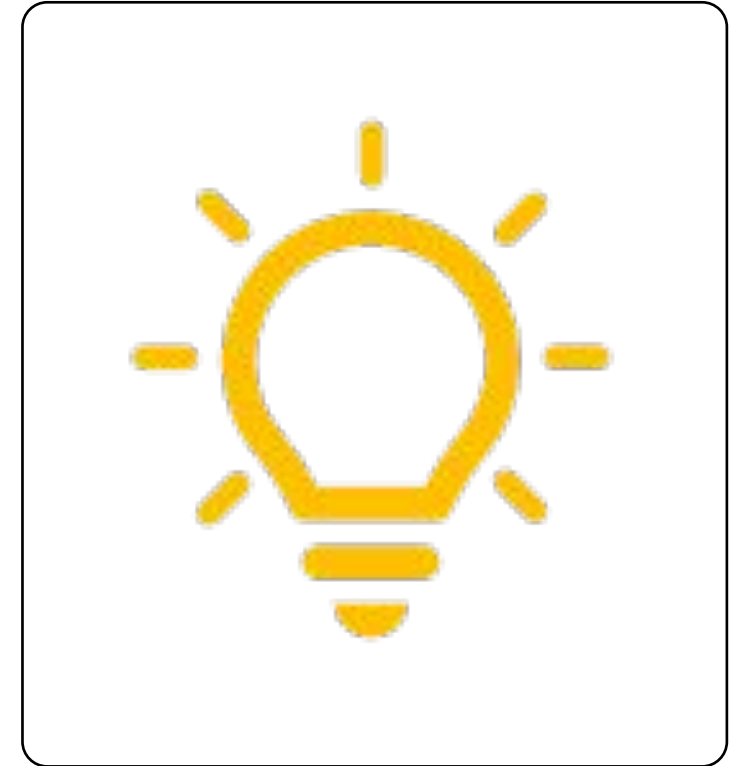


Streamlining Data Submission Process

- 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
- CARB encourages 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
- Additional HD I/M workgroup meetings and workshops throughout 2021
- Enforcement HD I/M workgroup February 22, 2021
- Board hearing: December 9-10, 2021
- Implementation: phase-in starting in 2023





Questions?



David Renschler, CFP®
drenchler@fairfield.ca.gov