

**Heavy-Duty Vehicle Inspection and Maintenance (HD I/M) Program Workgroup
July 16, 2019, Meeting
1:30 p.m. – 4:00 p.m. (PDT)**

CARB Depot Park Facility
Conference Room 111
8340 Ferguson Avenue
Sacramento, California 95828

These minutes are an informal summary of the July 16th meeting discussion and are provided as a courtesy to attendees and other interested parties. Comments from CARB staff made at the meeting and represented herein do not signify Board review and approval.

Meeting Opening

CARB staff kicked-off the meeting by introducing the agenda items. The agenda can be accessed [here](#). An overview of heavy-duty (HD) vehicle on-board diagnostic (OBD) systems presented by Mike McCarthy, Vehicle Program Specialist, CARB was moved up on the agenda order, while the discussion of the May 14th meeting minutes was deferred until later in the meeting.

Overview of Heavy-Duty OBD Systems

Mike McCarthy's presentation, which is available [here](#), was an outgrowth of the extensive discussion on OBD systems and fault codes at the May 14th workgroup meeting. The presentation described how OBD works; what OBD is designed to do; how it detects emissions component malfunctions; and why standardization is critical for OBD communication protocols and data collection/storage processes.

Open Discussion: Participants and CARB Staff

CARB staff has attempted to summarize the discussion by main topic

OBD Scan Tools and Data Submission Options

The discussion and comments after the HD OBD presentation focused on the need to standardize the tooling that could be used to access and collect engines' OBD data as well as the sequence in which the data are queried. Staff from the Bureau of Automotive Repair (BAR) described BAR's process for developing specifications for data acquisition devices (DADs) to certify for use in California's Smog Check program. Participants mentioned that CARB could implement a similar process for the HD I/M

program, or, alternatively, use one specific tool/manufacture for all testing applications in the future HD I/M program. Either way, the group believed it is important that any of the tools used to collect and submit the OBD data in the HD I/M program are certified to defined specifications to ensure the scan tools function properly and include security and fraud prevention protocols.

Program Design Elements

Remote OBD submission through telematics providers was discussed as a potential submission method as it is already being incorporated in the light duty vehicle sector. BAR staff discussed its remote OBD pilot program that allows public fleets to submit OBD data through telematics to meet the light duty smog check requirements. Some participants raised concerns regarding downtime, costs, and data security related to inspections. Discussions ensued on how the HD I/M program could incorporate a variety of cost-effective methods for OBD data collection and submission such as dongles, hand-held DADs, telematics service providers, and mobile testers in order to give fleets options to meet their specific needs to ensure vehicle downtime is minimized. Standardization to one specification for all devices was mentioned as a way to help reduce potential data security issues and ensure data integrity and validation.

Participants also posed the potential concept of streamlining the inspection process for fleets that already employ good preventive maintenance and repair practices. Potential concepts specifically mentioned included incorporating HD I/M inspections into the BIT process and evaluating how/if radio-frequency identification bypass programs (RFID; e.g., PrePass, Drivewyze) could be used at CHP weigh stations to efficiently and quickly check HDVs for HD I/M compliance. Participants noted that there may be logistical constraints and safety considerations that need to be evaluated if inspections were to occur at CHP weigh stations.

Some participants inquired about exempting newer model year vehicles from HD I/M program requirements. Staff commented that before exemptions would be considered, it would be important to collect and analyze program data. Staff specifically mentioned that some new HD vehicles have shown high rates of illuminated MILs and it would be premature to implement exemptions without further data. Staff also pointed out that this is the same approach taken during the light duty smog check program development.

REAL (Real Emissions Assessment Logging)

Questions arose regarding REAL provisions added to CARB's [OBD regulation](#) through program amendments in late 2018 and their applicability to the HD I/M program. REAL requires engine manufacturers to track engines' NOx and CO₂ emissions (it does not track PM emissions). There are currently no requirements for manufacturers to report

this data to CARB. It was noted that REAL data could be a good supplement to OBD data collected from the vehicle in an I/M program, but should not be viewed as a replacement for such data collection.

Natural gas heavy-duty vehicles

The question arose as to whether heavy-duty natural gas vehicles will be included in the HD I/M program. Staff mentioned that all vehicles above 14,000 lbs. gross vehicle weight rating are being considered for program inclusion, and reiterated that before exemptions are considered, it would be important to collect and analyze program data. Staff also mentioned that this is the same approach that was taken when the light duty smog check program was developed.

As OBD systems are required on all 2018 and newer MY alternative-fuel heavy-duty engines, this is thought to potentially be the proposed inspection methods for such vehicles. For pre-2018 MY heavy-duty alternative fuel engines (primarily natural gas), staff mentioned they are interested in feedback from stakeholders regarding a cost-effective and feasible inspection method that could be used in the HD I/M program.

Other states' HD I/M programs

The topic of other states' efforts on HD I/M was mentioned, particularly for natural gas heavy-duty vehicles. Participants agreed it would be a good idea to prepare a brief summary of heavy-duty diesel vehicle I/M efforts in other states for handout at a future HD I/M workgroup meeting. Staff mentioned that some states are collecting OBD data for future considerations in their respective heavy-duty programs, but no other state is currently implementing and enforcing a HD I/M program relying mainly on OBD data. Following up on the previous discussion on natural gas vehicles, a question was specifically asked related to natural gas vehicle inspections in other states. Staff mentioned that most heavy-duty natural gas vehicles are located in California and no other state is implementing a HD I/M program for them at this time.

Opportunities to Partner with CARB on HD I/M Data Collection Study

Phuong Ho, CARB staff, discussed an opportunity for fleets, heavy-duty repair shops/dealers, telematics providers, and on-board diagnostic (OBD) device vendors to participate in a HD I/M data collection study. The upcoming study looks to demonstrate potential testing tools that could potentially be used in a HD I/M program such as remote sensing/plume capture systems and various OBD collection and submission tools. The study aims to gather participant feedback on various testing tools used in the study. Additionally, the study aims to work with repair shops to record and collect repair data and cost information for repairs related to specific OBD emissions-related fault codes.

A detailed description of the study is available [here](#). Fleets, repair facilities, and vendors interested in participating may contact Phuong Ho at 916-322-4687 or at Phuong.Ho@arb.ca.gov.

Comments and Corrections – May 14th Draft Meeting Minutes

CARB staff distributed a summary of the discussion from the May 14, 2019, HD I/M workgroup meeting, available [here](#), and requested comments and corrections by July 24, 2019. No comments or corrections were received.

Updated HD I/M Workgroup Discussion Paper

The updated draft [HD I/M workgroup discussion paper](#) (dated July 16, 2019) was discussed. Updates to the document included:

- Clarity on HD I/M vehicle applicability (i.e., which vehicles would be subject to HD I/M);
- Potential issuance of a Certificate of Compliance, which could be required to operate legally in California and only be given to vehicle owners demonstrating HD I/M compliance. Such a provision could be used as an enforcement tool to ensure a level playing field between in-state and out-state vehicles; and
- Added detail describing the potential use of RSD/PEAQS and automated license plate recognition (ALPR) cameras for use in flagging potential high emitters for further testing. Additionally, such systems could be used to identify vehicles that have not yet submitted data to demonstrate HD I/M compliance (particularly for out-of-state vehicles).

Staff specifically asked participants for feedback on cost-effective and feasible test methods for measuring NOx emissions from non-OBD vehicles.

Future Meetings

Staff stated that it expects to schedule the next HD I/M workgroup meeting for late September/October and requested topics for future agenda items.

If you have suggestions for future HD I/M workgroup agenda topics, please send them to Krista Fregoso at Krista.Fregoso@arb.ca.gov and James Goldstene at James.Goldstene@arb.ca.gov.