

# Portable Emissions Acquisitions System (PEAQS) Update

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CODY HOWARD

CALIFORNIA AIR RESOURCES BOARD

# Outline

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Background

PEAQs Overview

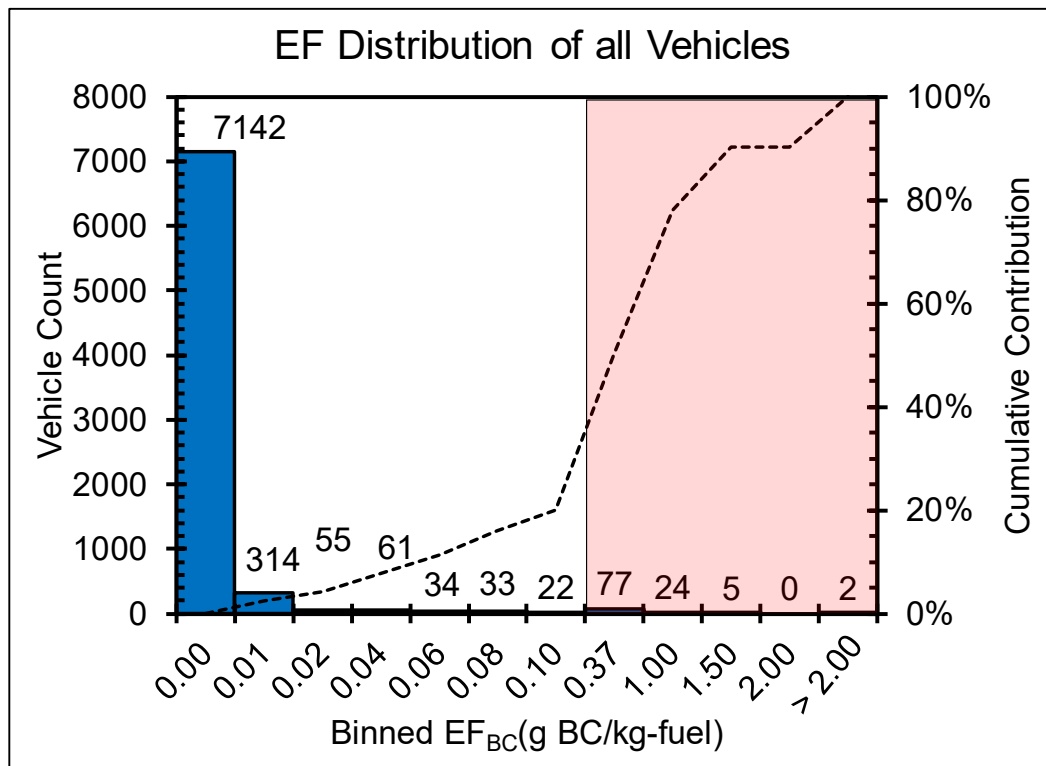
PEAQs Deployment

HD I/M Program

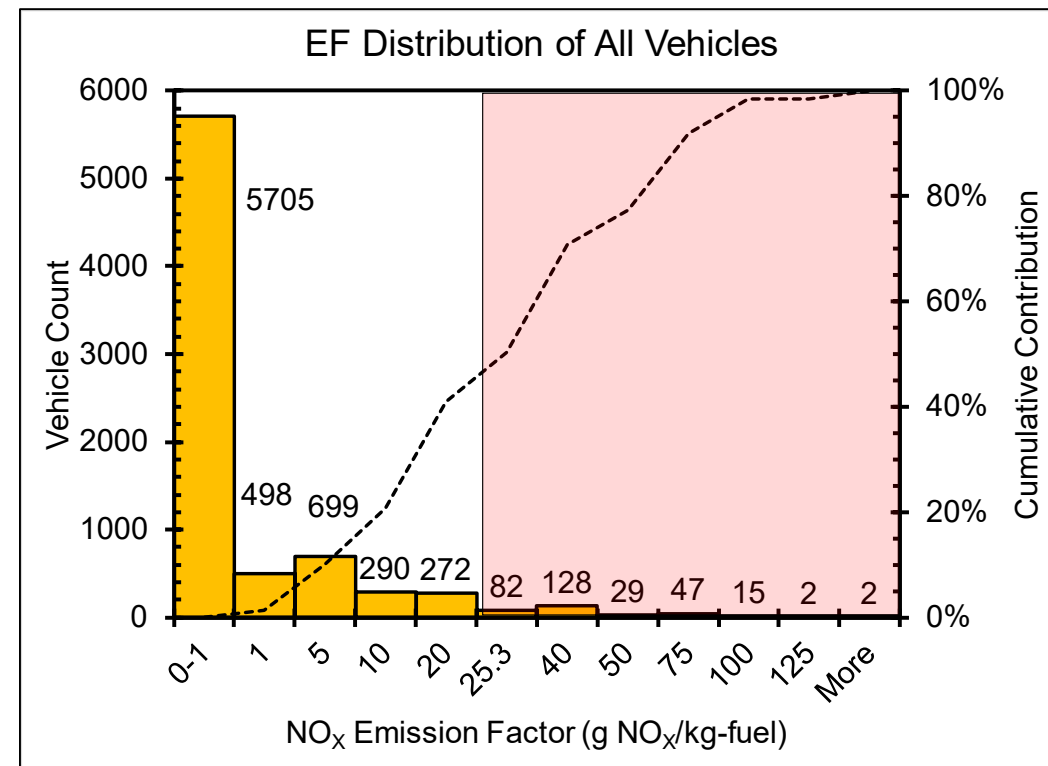
RSD Program



# High Emitter Problem

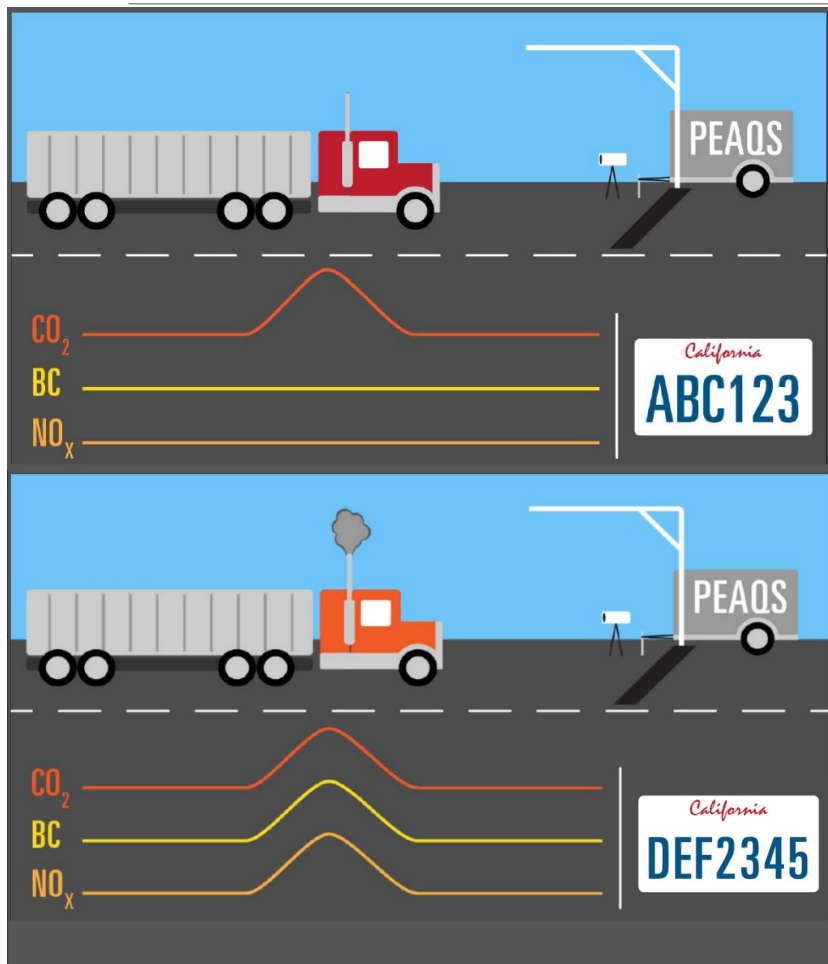


1.4% of Trucks Emit  
50% of all BC

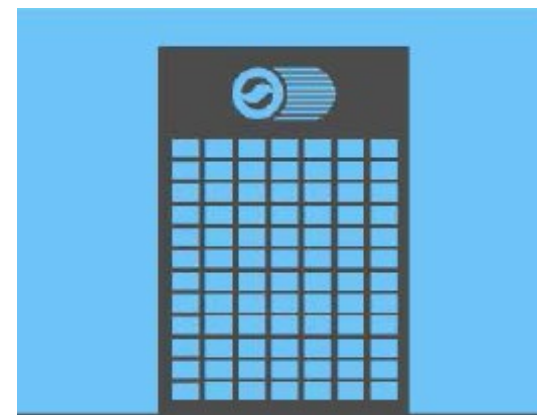
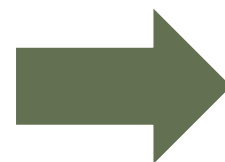


3.9% of Trucks Emit  
50% of all NO<sub>x</sub>

# PEAQS Components



Species	Instrument
CO <sub>2</sub>	Licor-840
BC	Magee AE-33 AethLabs AE-51
NO <sub>x</sub>	CAI CLD-64 EcoPhysics CLD-60
Other	Geovision Camera Doppler Radar, Lidar



Additional Inspection

# PEAQs in the Field



↑ Truckee, CA: California Department of Food & Agriculture (CDFA) Truckee

→ Oakland, CA: Howard & High St.

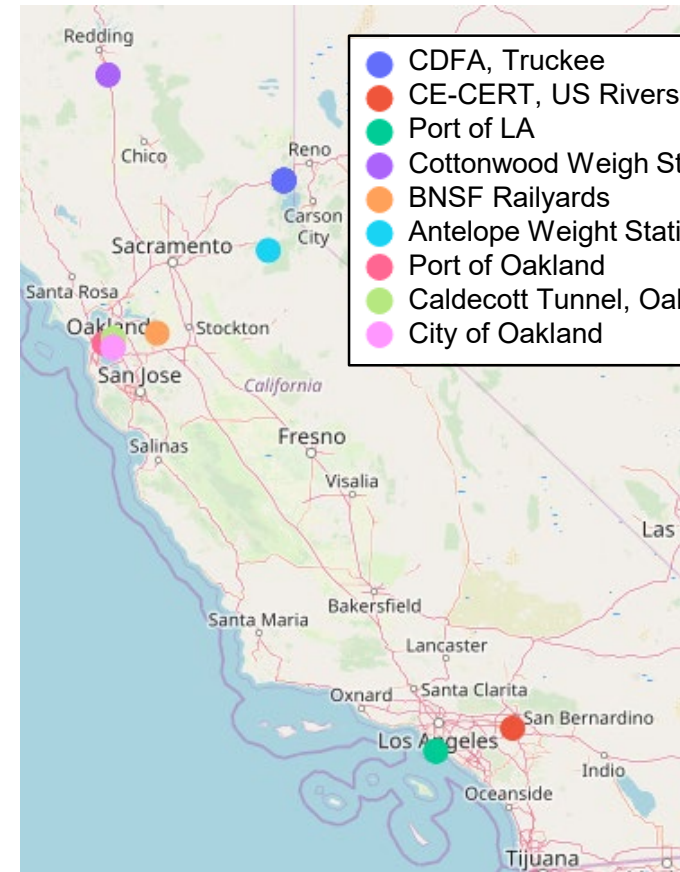


← Port of Oakland, CA

# PEAQs Field Deployments (2016-2019)

Location	Year	2016	2017	2018	2019
CDFA, Truckee		792	269	303	162
Port of LA		950	3183		
Cottonwood			2495		
Stockton			150		
P. Oakland				994	3405
Caldecott				7241	
Oakland				750	
<b>Total</b>		<b>1742</b>	<b>6197</b>	<b>9288</b>	<b>3561</b>

# of Vehicle Counts



- PEAQS deployed at 7 locations across California
- > 20,000 valid vehicular plumes measured

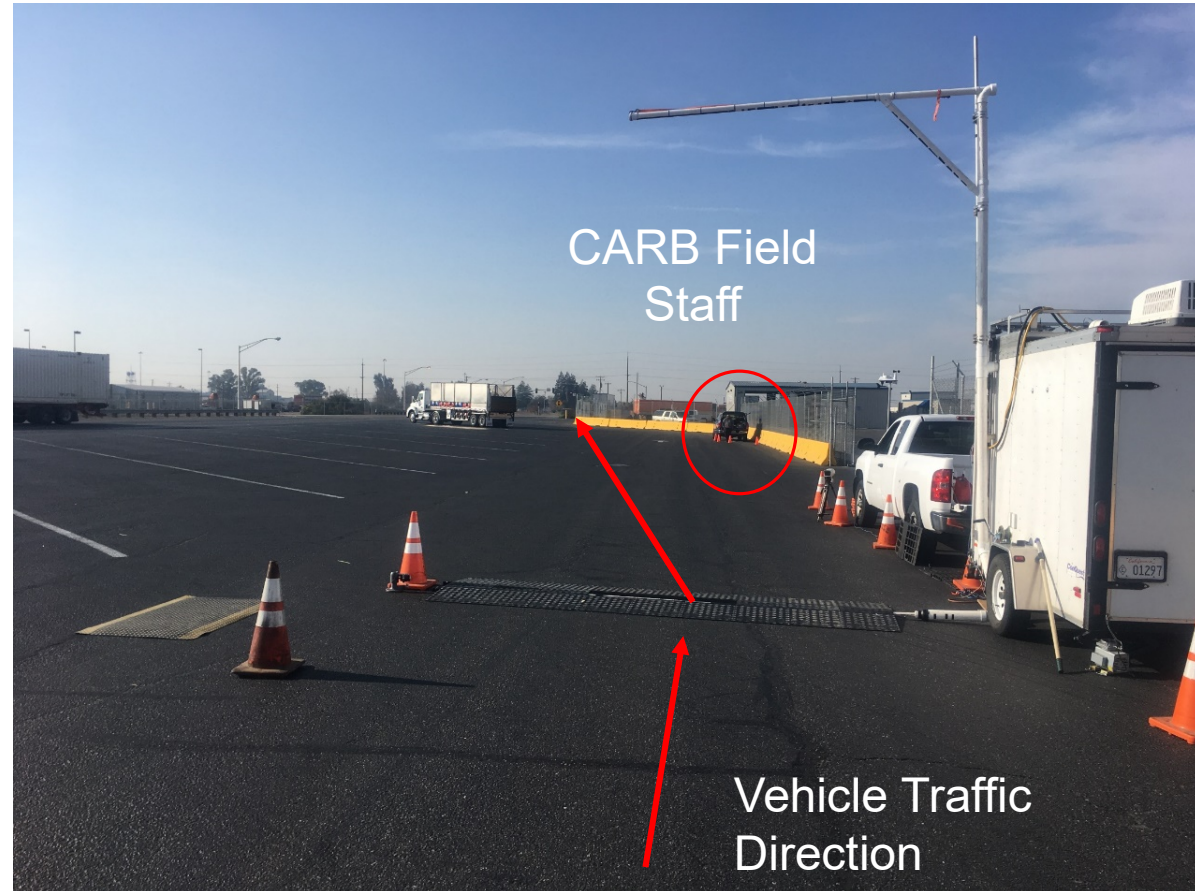
# PEAQs Applications: Targeted Vehicle Enforcement

CARB Enforcement Division

Emission ‘Threshold Values’  
to aid roadside enforcement

- Goal: Identify top few percent of BC emissions
- Vehicles ‘Screened’ for further inspection
  - Via roadside or follow up

Pilot deployments currently  
in place



# HD I/M: Enhancing CARB's Existing HDV Inspection Programs

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SB 210 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
- Require all vehicles operating in California to comply
- Allow on-board diagnostics (OBD) system checks to identify malfunctioning emissions-related components in applicable engines

Program objectives:

- Maintain low emissions throughout a vehicle's life
- Ensure emissions control systems are functioning properly
- Ensure proper maintenance practices are followed
- Ensure quick and adequate repair of malfunctioning parts
- Minimize downtime for vehicle owners



# SB 210: Enforcement Authority

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- Gives CARB and/or CHP authority
  - Require emissions testing of vehicles to register or operate in the state
  - Develop and implement enforcement methods to ensure compliance
  - Ensure the following:
    - Vehicles operating as intended
      - No malfunction indicator light (MIL) on and no visible smoke
    - Vehicles are operating with an up-to-date certificate
  - Inspect vehicles subject to this program
  - Assess penalties
  - Request vehicles to be removed from service following notice and opportunity for an administrative hearing
- DMV must confirm compliance prior to issuing vehicle registration

# Real-Time On-Road Emissions Monitoring Systems

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Establish a statewide infrastructure of remote sensing (RSD) and plume capture devices to monitor vehicle emissions

- Emissions snapshot in real-time

Potential uses in HD I/M

- Identify potential high emitters when coupled with Automatic License Plate Recognition (ALPR)
- Program validation – monitor real-world emissions; gauge program success
- Additional enforcement tool

Seeking stakeholder input on best potential locations to establish monitoring equipment

# Potential High Emitter Follow-Up Testing Requirements

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Vehicles flagged as high emitters would be subject to emissions testing to verify emissions compliance

Vehicles required to submit passing emissions test following flagging as a potential high emitter

- Vehicles to submit compliance verification via one of the periodic submission methods discussed previously
- Frequent violators subject to referee testing
  - Could include visual inspection for tampering and basic maintenance



Thank you for your time

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