

Chairman's Seminar

March 27, 2019



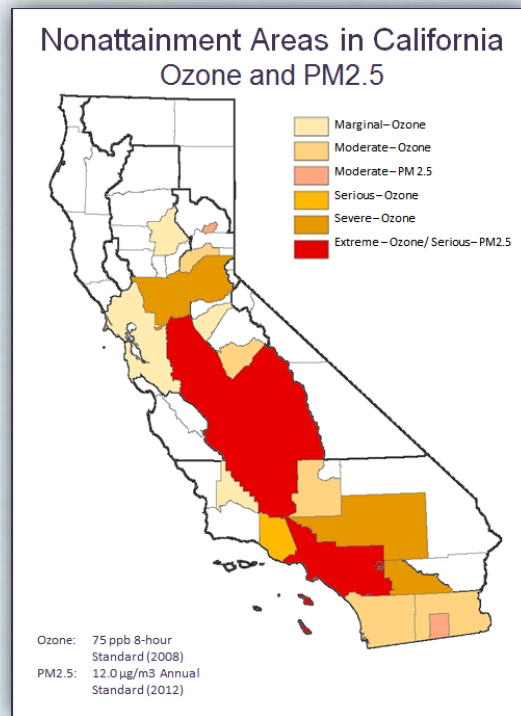
Heavy-Duty On-Road Vehicle Inspection and Maintenance Program

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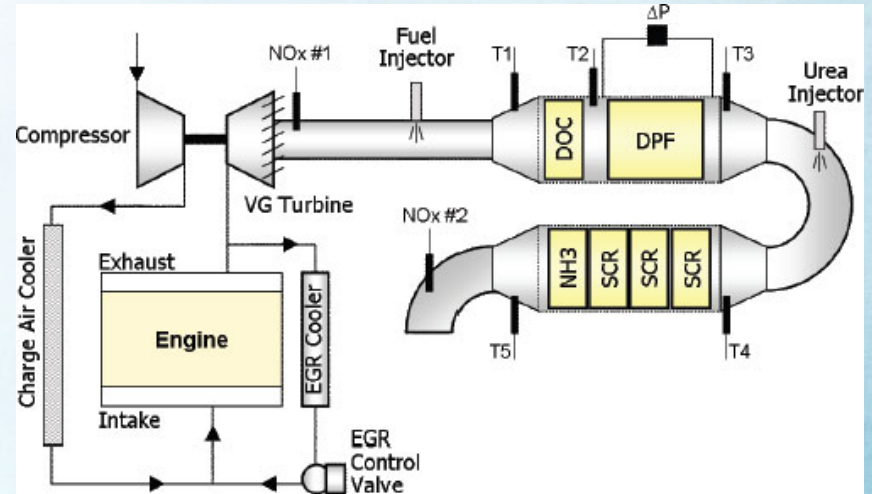
NOx reduction for air quality needs

- Additional NOx reduction is needed to meet the 75 ppb O₃ standard in south coast
- Heavy-duty vehicles (HDVs) contributed ~35% of the NOx inventory



Current HD I/M programs in CA

- Diesel engine aftertreatment
 - Diesel particulate filters (DPFs) to cut PM
 - Selective catalytic reduction (SCR) to cut NO_x
- Heavy-Duty Vehicle Inspection Program (HDVIP) & Periodic Smoke Inspection Program (PSIP)
 - Focus on DPF and PM emission
 - No I/M programs for NO_x



Research needs for comprehensive HD I/M

- Only a handful of countries/U.S. states have some form of HD I/M program
 - All test for smoke opacity based on older diesel technology
 - Only Australia also tests for NO_x, PM
- How to utilize different technologies in HD I/M?
 - On-Board Diagnostics (OBD)
 - Remote sensing devices (RSD)
 - Portable Emissions AcQuisition System (PEAQS)
- What are the emission benefits by fixing SCR related malfunctions?

This study

- Objective
 - Identify and evaluate various approaches and technologies for a more comprehensive HD I/M program in California
- Methods
 - Perform a literature review of HD I/M programs and technologies
 - Measure pre- and post-repair emissions at repair facilities with a suite of instruments
 - Evaluate potential emissions benefits and effectiveness of different options

Additional Information

- Vehicle Emissions Research Program at CARB
 - <https://ww2.arb.ca.gov/our-work/programs/vehicle-emissions-research-program>
- Seminar and Project Links
 - <https://ww3.arb.ca.gov/research/seminars/durbin4/durbin4.htm>
 - https://ww3.arb.ca.gov/research/single-project.php?row_id=65265