

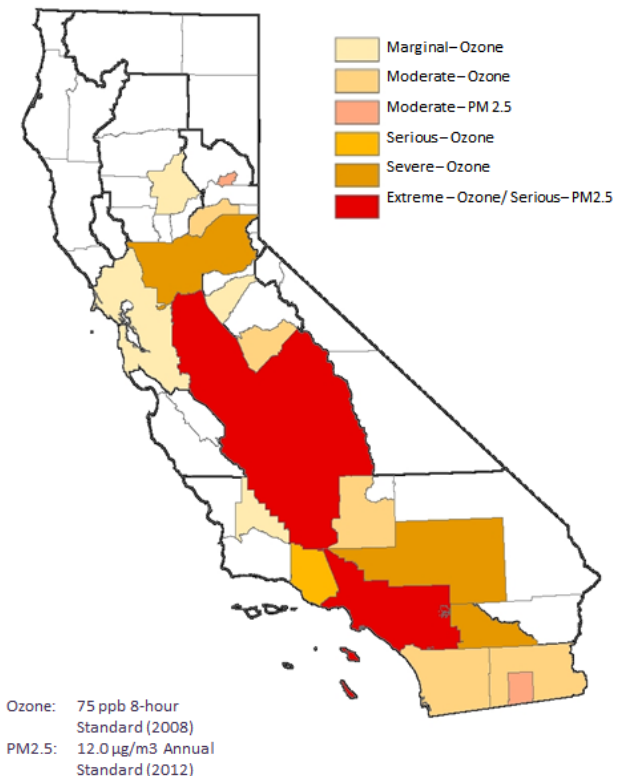


Measuring Real-World Emissions from the On Road Heavy-Duty Truck Fleet

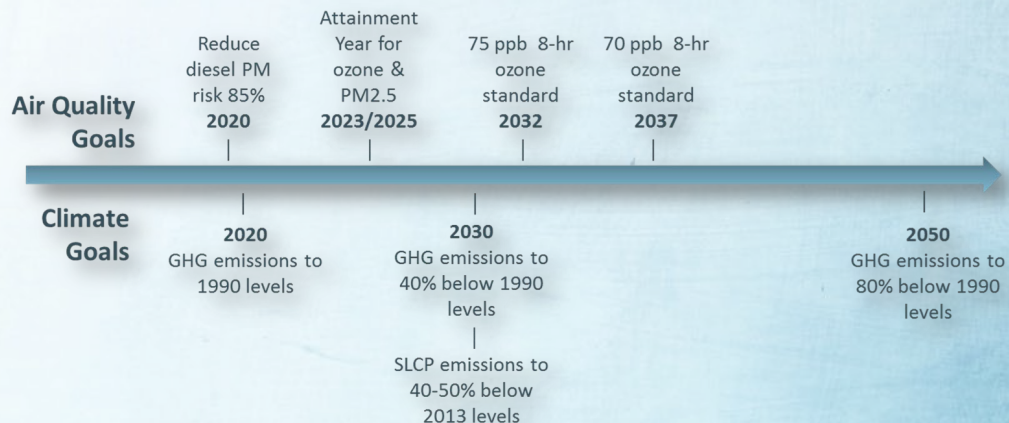
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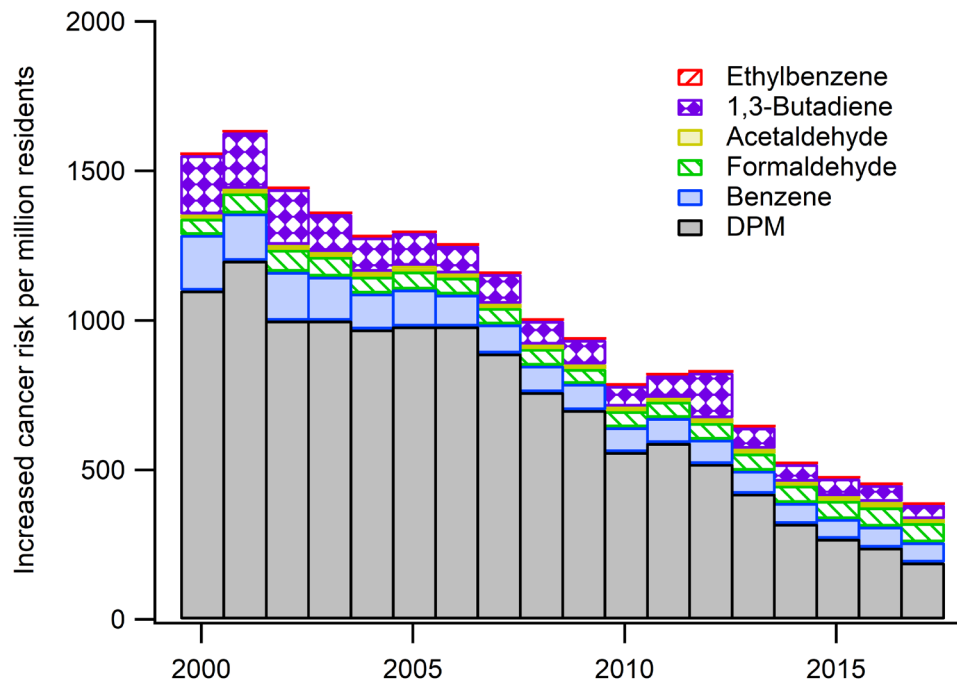
Nonattainment Areas in California Ozone and PM2.5



Reductions in NO_x Emissions needed for SIPs



Reductions in Diesel PM Emissions Improve Public Health

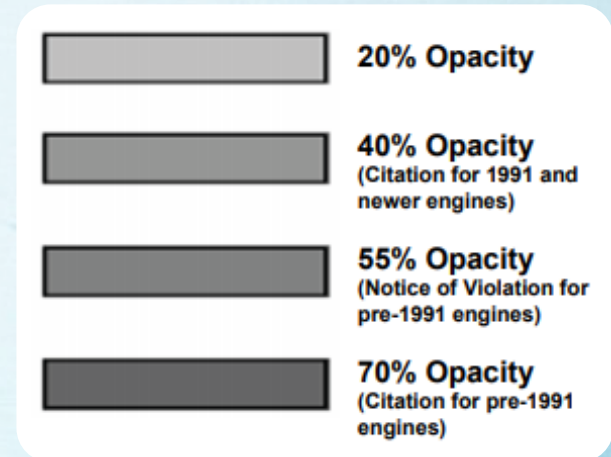


<https://arb.ca.gov/adam/toxics/statesubstance.html>

- Total cancer risk was still ~400 per million in 2017
- Roadway proximity still correlated to poor health

Improvements to on-road HDDVs

- California Diesel Risk Reduction Plan (DRRP, 2000)
 - Goal: 85% reduction in DPM emissions by 2020
 - Requires reduction in emissions from existing heavy-duty diesel vehicles (HDDVs) as well as new HDDVs
- Drayage Truck Regulation – all HDDVs in CA ports required to meet 2007 standards by end of 2012
- Truck and Bus Rule – same for all HDDVs (not just those at ports) by 2015
- 2010 standards met (i.e., SCR required) for all trucks by 2023
- Field opacity testing (Enforcement)



Other CARB-sponsored work by this Research Team

- A series of similar field campaigns at the Port of Oakland
 - CARB contract 9-340
 - CARB contract 14-358
 - Other sponsors
- Several publications:
 - Dallmann, Harley & Kirchstetter (2011)
 - Preble, Dallmann, Kreisberg, Hering, Harley, & Kirchstetter (2015)
 - Preble, Cados, Harley, & Kirchstetter (2018)



Preble et al. (2015)

For More Information:

- Research Division Vehicle Emissions Program

<https://ww2.arb.ca.gov/our-work/programs/vehicle-emissions-research-program>

- Seminar and Project Links

<https://ww3.arb.ca.gov/research/seminars/kirchstetter/kirchstetter.htm>

https://ww3.arb.ca.gov/research/single-project.php?row_id=65148

- Heavy-Duty Vehicle Rulemaking Portal

Truck & Bus Regulation:

<https://ww2.arb.ca.gov/our-work/topics/truck-bus>

On-road HD Program:

<https://www.arb.ca.gov/msprog/onroadhd/onroadhd.htm>

HD Low NO_x:

<https://www.arb.ca.gov/msprog/hdlownox/hdlownox.htm>

Diesel Risk Reduction:

<https://www.arb.ca.gov/diesel/dieselrrp.htm>

Smoke Inspection:

<https://www.arb.ca.gov/msprog/hdim/hdim.htm>