

Analysis of Real World, In-Use data for Emissions Inventory

**South Coast Air Quality Management
District In-Use Diesel Emissions
Symposium
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**Tom Darlington – Air Improvement Resource, Inc.
→ Representing Engine Manufacturers Association (EMA)**

Presentation Outline

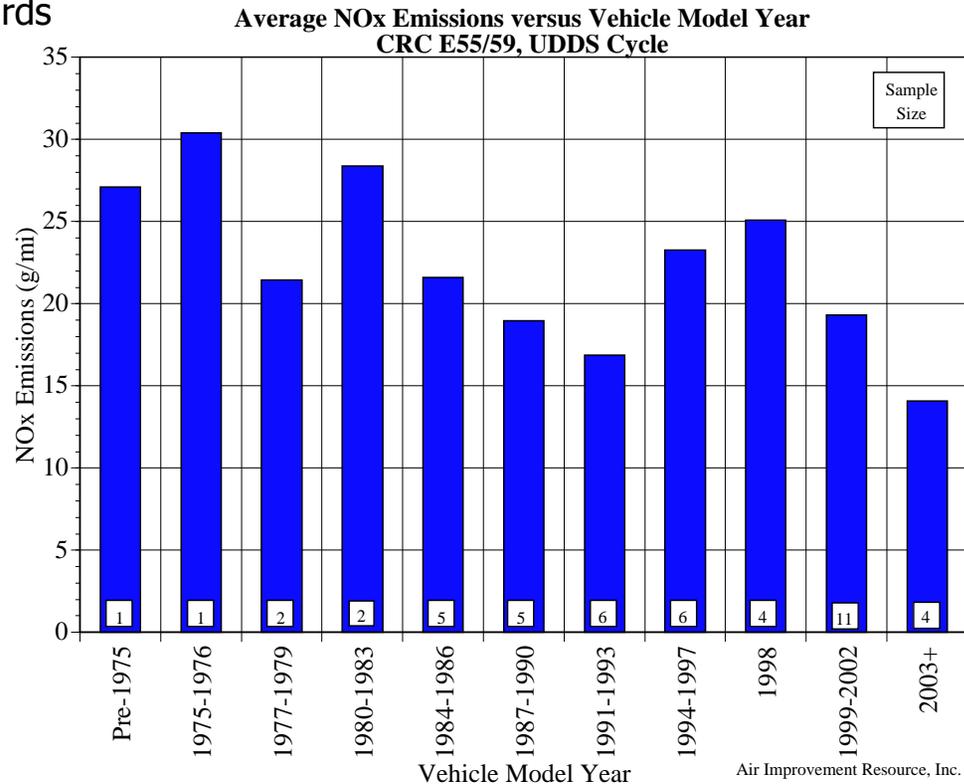
- 1. Review of Data and Analysis relevant to emissions inventory through 2006**
 - » **E-55 chassis dyno data**
 - » **Additional over the road, real world, in-use data set**

- 2. Review of Deterioration Factors used by EMFAC Model**

- 3. Summary**

Background

- E-55 Chassis Dyno Data has been proposed for use in Emissions Inventory modeling
- Some analyses (not ours) has claimed “little change” in NOx since 1980’s, and not consistent with emissions standards



- Analysis will focus on 1994+ year vehicles and will show that:
 - **Engines have indeed achieved emission reductions (not flat or “little” change)**
 - **Reductions have been consistent with corresponding emission standards**

Statistical Analysis

- Data presented by E-55 program seems to be accurate
- However, the sample size used for the various groups is very small, and its use for emissions inventory modeling is questionable

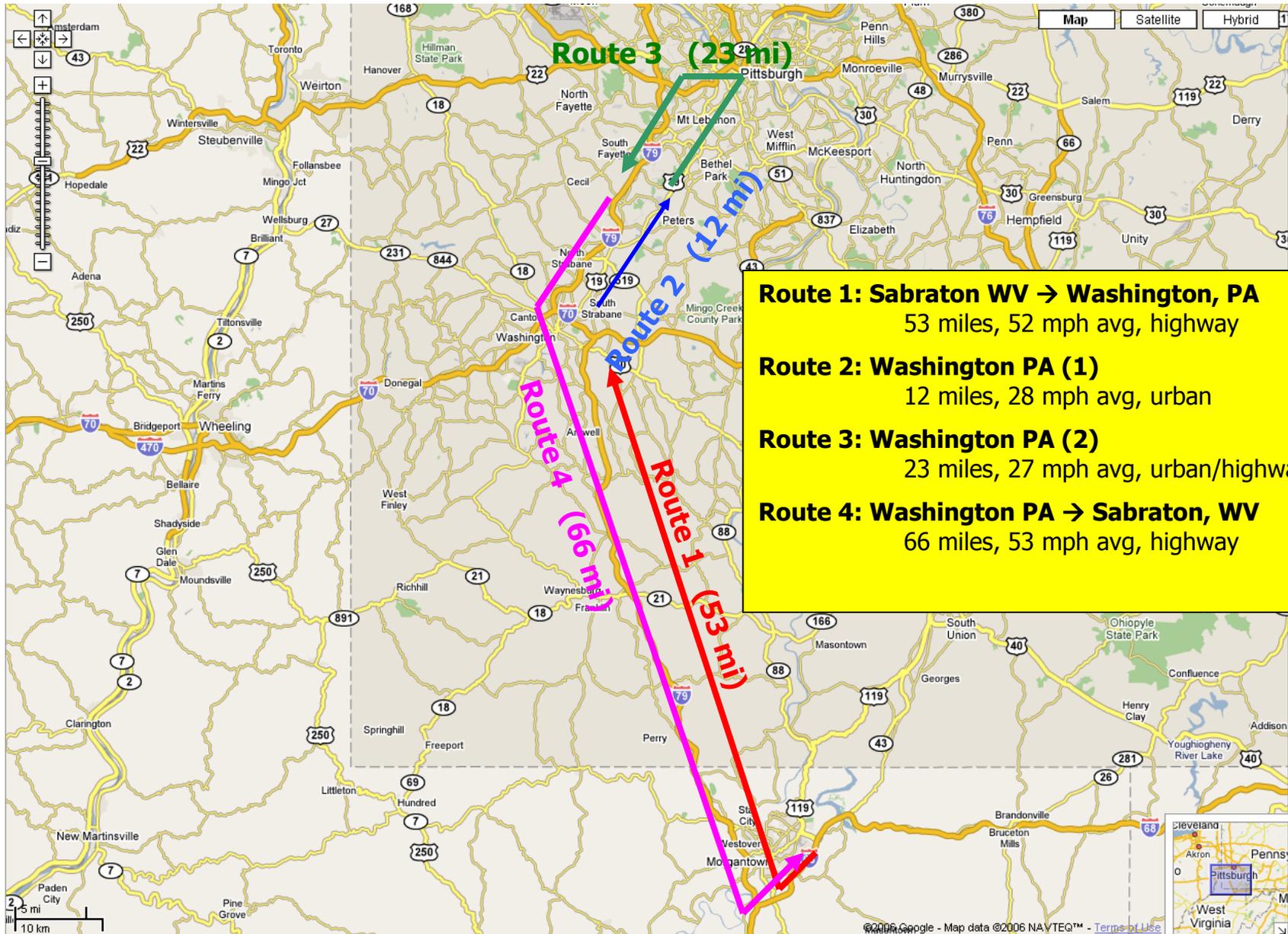
	sample size	COV%	% change emiss. std	probability to detect change (1 sided)
Engine MY 1994-97 group:	6	25%		
Engine MY 1998 only group:	4	42%	-20%	23%
Engine MY 1998-02 group:	15	38%	-20%	40%

(goal > 80%)

- Statistical power analysis performed by Dr. Robert Mason, SwRI

- Need for additional data is clear
- Engine Manufacturers, EPA, and ARB have been engaged in Over-the-Road, In-Use Emissions testing for several years.
- It seemed appropriate to mine in-use data set

In-Use Emissions Testing at WVU



In-Use Emissions Testing at WVU- Urban Driving (Routes 2 and 3)

**A few of the 1994-1998s could have been reflashed prior
to entering test program**