



# NEAR ROAD MONITORS

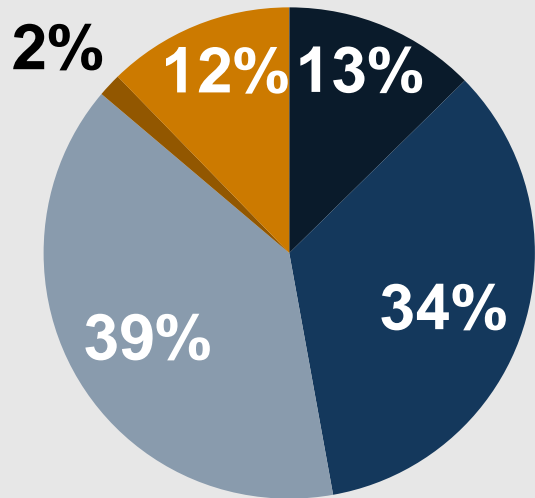
Transportation Issues

# Table of Contents

1	Emissions	3
2	Historical Activities	5
3	TxDOT Activities	6
4	AASHTO and National Activities	7
5	Policy Overview	8
6	Research and Future Needs	9
7	TRB Clips	11

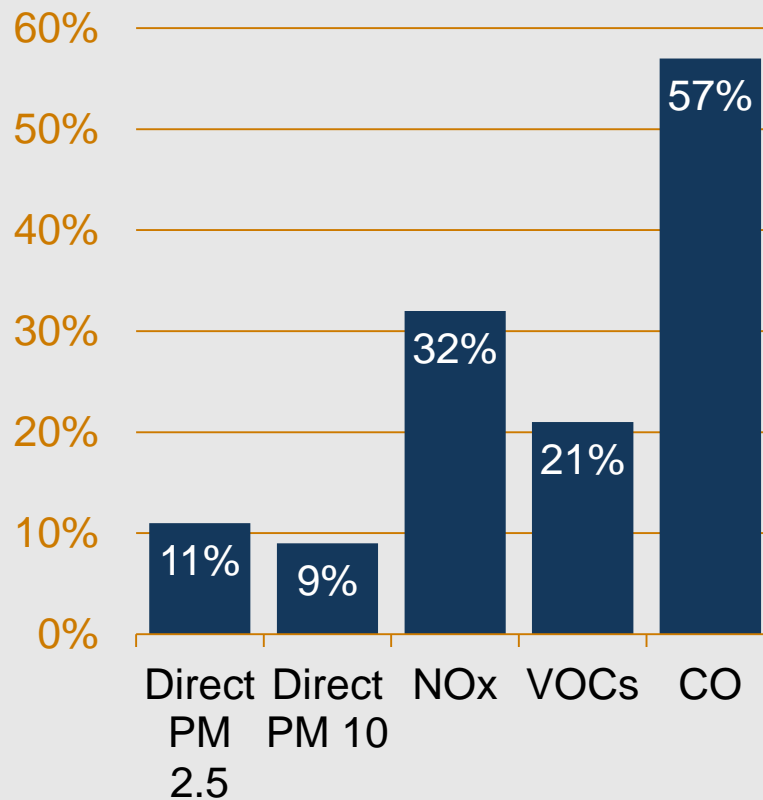
# Emissions – NO<sub>x</sub> Texas & U.S. Mobile Source Emissions

## NO<sub>x</sub> Emissions Apportionment in Texas



- Non-Road Mobile
- On-Road Mobile
- Industrial
- Others
- Biogenics - Vegetation and Soil

## U.S. Mobile Source Percentage of Total Emissions



TCEQ data for Texas, and EPA Source: U.S. Environmental Protection Agency Our Nation's Air: Status and Trends through 2008

**“BY THREE METHODS WE MAY LEARN WISDOM: FIRST, BY REFLECTION, WHICH IS NOBLEST; SECOND, BY IMITATION, WHICH IS EASIEST; AND THIRD BY EXPERIENCE, WHICH IS THE BITTEREST.”**

**CONFUCIUS**

**“THE MAP IS NOT THE TERRITORY, IT’S JUST WHAT WE CHOOSE TO PICK OUT OF IT.”**

**ALFRED KORZYBSKI**

# Historical Activity with EPA

- EPA ensured the Technical Advisory Document (TAD) was a truly collaborative process and considered input from a DOT and MPO perspective:
  - Safety (mutual high priority)
  - Roadway design and operation (AASHTO Design Manual)
  - Planned roadway improvements
  - What cross-section of the target roadway means
  - Right-of Way permitting requirements
  - Encourages environmental agency coordination with transportation agencies on data, monitor locations and logistics
  
- <http://www.epa.gov/ttn/amtic/nearroad.html>

- Monthly Summary of Monitor Data
- Provide input on near-road monitors to TCEQ, as requested (e.g. traffic data, construction plans)
- Work with Districts on cameras and traffic counters
- Steering Committee: FHWA Pooled Fund For Near-Road Air Quality Issues
- TxDOT contractor is available to assist TCEQ, TxDOT Districts, and MPOs on near road monitor issues

# AASHTO and National Activities

- AASHTO coordinates issues with AMPO, EPA and FHWA.
- Nealson Watkins (EPA) indicated:
  - EPA headquarters is considering data collaboration options
    - DOT/MPO/state environmental agency interests
    - Future Airdata release may have
      - Map of monitors
      - Near road monitor FAQ
  - Call for Papers: Biennial EPA Monitoring Workshop, scheduled for August 2014 in Atlanta Georgia

# Policy Overview

Safe movement of people and goods



Vehicle and fuel advances needed



Size of the nonattainment area



Pollutant transport and/or high background concentrations



SIP controls: transportation + multi-sources?



# Research and Future Needs

## State Level

- Active Coordination with TCEQ/MPO/TxDOT
- Automated Reports?
  - 98<sup>th</sup> percentile report
  - Compliance with NO<sub>2</sub> NAAQS (98<sup>th</sup> percentile averaged over 3 years)
  - PM<sub>2.5</sub> and CO needs
- Data of interest to MPOs?

## National Level

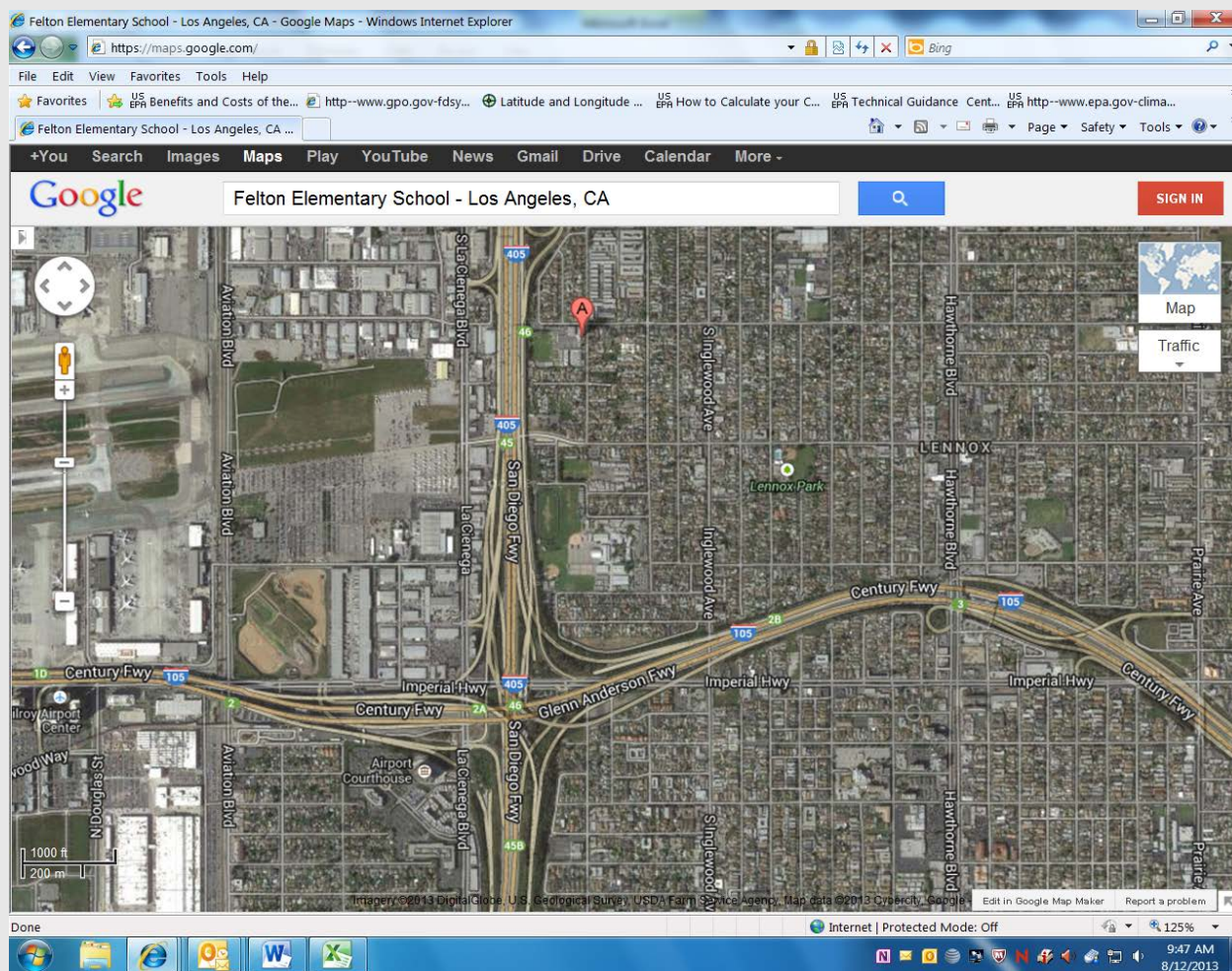
- Policy Discussion, if needed
- Pooled Fund – track national data:
  - Traffic and Metadata
  - Camera or traffic counter data availability
  - Population
  - Identify unique features (construction activity, grade, tunnels, transit, rail, industry, warehouse districts, etc.)
- Data of interest to MPOs?

## Research

- National FHWA studies in Los Vegas and Detroit  
[http://www.fhwa.dot.gov/environment/air\\_quality/air\\_toxics/research\\_and\\_analysis/near\\_road\\_study/](http://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/near_road_study/)
- EPA Assessing Outdoor Air Near Schools
  - 14 schools close to major roads <http://www.epa.gov/schoolair/>
- Research needs:
  - State?
  - National?

Discussion

# Research and Future Needs



Felton Elementary, Los Angeles, playground abuts IH 405 (1 HOV, 3 FR/6+6 ML/3FR + bus lane), and ~ 4000 ft from IH 105 (elevated 2-4 FR/3-5 + 3-5 ML/2-4 FR) and Imperial Hwy (3+3 ML lower)



- 900+  $\mu\text{g}/\text{m}^3$   $\text{PM}_{2.5}$  smog day, 2012 Image source: The Atlantic.  
[HTTP://www.theatlantic.com/infocus/2013/01/chi](http://www.theatlantic.com/infocus/2013/01/chi) “**Outdoor air pollution ranked 4th in mortality and health burden in East Asia (China and North Korea) where it contributed to 1.2 million deaths in 2010**” --*Health Effects Institute, Based on Global Burden of Disease Report nas-toxic-sky/100449*



- $30 + \mu\text{g}/\text{m}^3$   $\text{PM}_{2.5}$  good day, 2012

Image source: The Atlantic. [HTTP://www.theatlantic.com/infocus/2013/01/chinas-toxic-sky/100449](http://www.theatlantic.com/infocus/2013/01/chinas-toxic-sky/100449)