California Environmental Protection Agency
AIR RESOURCES BOARD

Status Report on New Federal NO_2 Monitoring Requirements

Presentation Topics

- Background
- Monitoring Requirements
- Implications of New Monitoring Requirements

New Federal NO_2 Standard

- New 1-hour standard of 100 ppb
- Retained existing annual standard of 53 ppb
- New health studies show impacts at lower levels
- Peer review by Clean Air Scientific Advisory Committee (CASAC)

Recent Health Evidence

- Previous reviews
  - Respiratory illness in children with long-term exposure
  - Limited data available on short-term exposure
- New evidence
  - Dozens of studies show associations between short-term exposure and respiratory symptoms
  - Additional evidence show impacts in children with short-term exposures

Health Basis for NO_2 Standards

- Long-term exposure
  - Respiratory illness in children
  - Decreased lung function growth in children
- Short-term exposure
  - Respiratory symptoms
  - Increased emergency room visits and hospitalizations
  - Increased airway response in asthmatics

Monitoring Requirements

New Monitoring Requirements

- Near-roadway monitors
  - Population > 500,000
  - Monitors within 165 feet of roadway
  - Located in highest traffic areas
- Community-wide monitors
  - Some still required
  - Existing monitors are sufficient

U.S. EPA's Rationale

- Community monitors do not capture peak concentrations
  - Near-roadway concentrations could be as much as two times higher
- Purpose of near-roadway monitors
  - Protect against peak concentrations
  - Further reduce community-wide concentrations

New Focus

- Historically based on community exposure studies
- Current monitoring network reflects community exposure
- New requirements focus on sources

CASAC Perspective

- Majority support near-roadway monitoring
- Continuing concerns:
  - Health studies based on community monitors
  - Using these studies to establish near-roadway standard
  - Variable relationship between near-roadway and community-wide concentrations

Implications of New Monitoring Requirements

Districts Requiring Near-Roadway Monitors

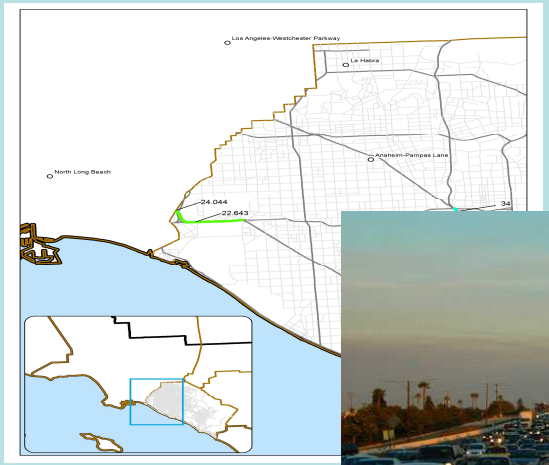
Area	Monitors Needed
South Coast	4
San Joaquin	4
Bay Area	3
Sacramento/Placer	2
San Diego	2
Ventura	1
Total	**16**

High Traffic Roadways

- Road segments with highest average daily traffic count
- Congestion, vehicle mix, and roadway design
- Will be California's most heavily traveled freeways and freeway interchanges

Examples of High Traffic Roadways

Air Basin	*County*	*Roadway*
South Coast	Orange	I-405 at I-605 & CA-22
San Joaquin	Fresno	CA-180 at Jct. 41 & 186S
San Diego	San Diego	I-15 Jct. 163 & Miramar Way



Monitor Siting Issues

- Cost of new network
- Logistical and safety issues
- Variable road conditions

Monitoring Costs

- Lease, power, equipment, personnel
- U.S. EPA estimates $150,000 set-up cost
- Could be higher, depending on location
- Expect U.S. EPA will provide partial funding

Logistical and Safety Issues

- Limited space
- Right-of-way/access issues
- Coordinating and permitting
- Potential for vandalism

Variable Roadway Conditions

- Vehicle mix
- Congestion patterns
- Roadway elevation
- Presence of soundwall
- Predominate wind direction

Early Implementation

- U.S. EPA will provide equipment funding
- Some California agencies may participate
- May also include monitoring for other pollutants

Designation Process

- Existing data show no violations statewide at community level
- EPA will designate all areas unclassified
- Near-roadway monitors may show nonattainment in some areas
- Designations revisited in 2016-2017

Future Board Item

- States may make designation recommendations by January 2011
- Staff will bring recommendations to Board later this year