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

<table>
<thead>
<tr>
<th>Area</th>
<th>Monitors Needed</th>
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<tbody>
<tr>
<td>South Coast</td>
<td>4</td>
</tr>
<tr>
<td>San Joaquin</td>
<td>4</td>
</tr>
<tr>
<td>Bay Area</td>
<td>3</td>
</tr>
<tr>
<td>Sacramento/Placer</td>
<td>2</td>
</tr>
<tr>
<td>San Diego</td>
<td>2</td>
</tr>
<tr>
<td>Ventura</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Air Basin</th>
<th>County</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Coast</td>
<td>Orange</td>
<td>I-405 at I-605 &amp; CA-22</td>
</tr>
<tr>
<td>San Joaquin</td>
<td>Fresno</td>
<td>CA-180 at Jct. 41 &amp; 186S</td>
</tr>
<tr>
<td>San Diego</td>
<td>San Diego</td>
<td>I-15 Jct. 163 &amp; Miramar Way</td>
</tr>
</tbody>
</table>
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