

2008 Road Dust Management Practices and Future Needs Conference

What to do if you Have PM_{10} Issues

CLARK COUNTY DEPARTMENT OF AIR QUALITY AND
ENVIRONMENTAL MANAGEMENT

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Do You Have PM₁₀ Issues?



Typical PM₁₀ Problem Scenarios

- PM₁₀ National Ambient Air Quality Standards Violations (NAAQS)
 - Recorded by NAAMS/SLAAMS Air Samplers
 - Typically sited in urban areas with populations over 100,000
- NAAQS violations typically trigger State Implementation Plan development deadlines
- Class I area visibility issues
- Local dust created health and safety issues

Elements of State Implementation Plan (SIP) Development

- Inventory of all PM₁₀ emissions sources (CAA)
- Control measures (CAA)
- Modeled attainment demonstration (CAA)
- Typically includes other support documentation not specified in the Clean Air Act
 - Description of airshed and environmental setting
 - Public process documentation

Control Measures

- Regulatory Programs
 - Construction Activities BMP
 - Road shoulder specifications
 - Street sweeping equipment requirements
 - Road sanding cleanup requirements
- SIP Commitment Programs
 - Unsealed road paving using CMAQ funds
 - Commitment to rapidly cleanup road silt

Noteworthy Elements of the Clark County PM₁₀ Program

- Developed award winning best management practices for construction activities
- Formed a dust suppressant working group in February 2000
 - Air quality professionals
 - Water quality professionals
 - Academic Scientist
 - Industry representatives
- Conducted four road dust field studies with vehicle mounted mobile sampling systems

Dust Suppressant Working Group

- Evaluated applicable laws and regulations
- Developed recommendations
- Prevailed on participating agencies to fund limited laboratory testing
- Completed Interim Policy on Dust Palliative Use in Clark County in January 2001
- Continued coordination of research work through September of 2003

Interim Dust Palliative Guidelines

- Guidelines not a regulation, only enforceable under provisions of a dust control permit
- Requirements split into traffic and non-traffic applications
- Requirements and application rates set by product types (see D. Jones et. al. paper)

Interim Dust Palliative Guidelines (Cont.)

- Contained applicable regulatory requirements
 - Applicable regulations
 - Prohibited materials
- General use requirements
 - Water bodies, washes, and flood channels
 - Pesticide application
 - Tank cleaning

Vehicle Mounted Mobile Sampling Systems

- Clark County evaluated mobile sampling system data validity and accuracy
- Utilized DRI “TRAKER” and UCR “SCAMPER” vehicle mounted systems
- Technology suitable for emissions inventory development
- Technology suitable for control measure effectiveness evaluation (D. Fitz presentation)

Vehicle Mounted Mobile Sampling Systems (cont.)

- Technological approach provides an important tool for more realistic transportation conformity analysis
- Technical support document due to EPA by December 15, 2008
- Methods standardization document due to EPA by January 15, 2008
- Clark County will utilize in PM₁₀ Maintenance Plan

Current Unmet Needs

- Interagency working group to facilitate collaborative approaches to meeting unmet needs
- Categorization of previous research
 - By objective (e.g. effectiveness, water quality impact, etc.)
 - By environmental setting (e.g. soil type, hydrology, climate, biome)
 - Need keyword cross referencing, and standardized descriptions
- Development of national on-line repository for research

Current Unmet Needs (cont.)

- Develop recommendations for new research
 - Best management practices for dust control
 - Assessment of environmental impacts of dust suppressant products
 - Evaluation and recommendations for new technological approaches to meeting regulatory requirements
- Recommendations should be “marketed” to federal and state agencies

The EPA National Role

- Development of test protocols for chemical suppressant products
- Development of prohibited hazardous materials list for dust suppressant products
 - Include maximum concentrations
 - Include adjustments for environmental factors
- Expedite approval of new improved technological approaches for regulatory compliance

Transportation Agencies Role

- Participate in interagency working groups
- Collaborate with air regulatory agencies in developing road dust management practices
 - State Implementation Plan control measures
 - Transportation conformity
- When developing BMPs, borrow from everyone, but focus on local conditions
- One set of BMPs do not fit all situations

Some Examples of Local Conditions

- Unsealed roads in Mojave Desert and northern California forest
 - Soil base materials and organic mater very different
 - Hydrology and ecosystems very different
 - Different stabilizing methods and materials likely required
- Road sanding for ice
 - It may or may not be an issue in your airshed
 - Actual BMPs employed depends on local materials and other factors

Some Examples of Local Conditions (cont.)

- Arizona National Guard tracked fighting vehicle access road
 - Adjacent to major freeway
 - Dust a road safety hazard
 - Paving would not work
 - Dust suppressants were not working
 - Used large aggregate and dust palliative combination to effectively control dust and maintain durable surface

Discussion & Questions

