Air Quality Sensors Study

Board of Directors
Santa Barbara County
Air Pollution Control District

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Overview

- Air District Monitoring Networks
- Portable Air Quality Sensors
- Santa Barbara County Context
- Study in New Cuyama
Air District Monitoring Networks

- Federal-equivalent method equipment
- Regional information
- Fixed siting determined by state and federal rules
- Quality-assured data:
  - Compare against health-based standards
  - Determine attainment of standards
Portable Air Quality Sensors

- Portable, inexpensive equipment, wide variability
- Localized information
  - Applications in a range of settings
    (for example wildfire smoke and ash)
- Data:
  - not quality assured
  - do not compare against standards
Application and Technology Fast Evolving

Example:
Aclima-EPA-Google
Agencies Evaluating

- EPA
- SCAQMD-AQ-SPEC
- Testing in lab and in the field (urban settings)
Santa Barbara County Context

• High wind events resulting in high levels of dust or particulate matter (PM)
  – Localized effects
  – Areas affected vary widely
  – Typically short-term events
New Cuyama Study

Goals

• Test 2 types of portable PM sensors in rural application;
• Evaluate against federal-equivalent method and higher-level PM equipment;
• Engage Cuyama Valley High School students in understanding and evaluating this new technology; and
• Establish strong technical foundation for future efforts with schools and to obtain funding for more activities.
Expertise

• Sonoma Technology, Inc.
  – Expert in air district monitoring
  – Expert in portable air sensors
  – Sensors school programs
  – Work with EPA on AirNow and Air Sensors Guidebook
New Cuyama Study Overview

- Overview
  - Procurement
  - Testing
  - Siting
  - Setup
  - Sampling
New Cuyama Study - Array

- Alphasense and Air Beam
  - 3 of each to test variability
- GRIMM particle sizer and BAM 1020
New Cuyama Study E-BAM

- EBAM Portable Sampler
- Similar to BAM 1020
- Non-FEM
- Used for Smoke and Ash
- Gain Knowledge with Dust
Next Steps

- Complete sampling (through June)
- Analyze data
- Report results
- Determine optimal applications
Questions