

# Pinal County Ozone and PM10 issues



Air Quality Trends in the Southwest Forum

June 4, 2008

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# Pinal County

- Kale Walch
  - Ozone issues
  - PM10 issues
  - PM10 Stakeholder Process
- Scott DiBiase
  - SB1552 implementation
  - Fugitive dust rules limited disapproval/sanctions clock ticking....
- Michael Sundblom
  - RARE Grant Study
  - Feedlot BMP Study
  - PM Size Apportionment



# Pinal County Air Quality Control District Ambient Air Quality Monitoring Network Active Monitors

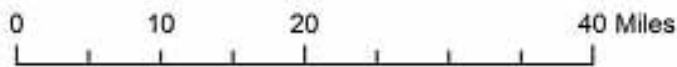
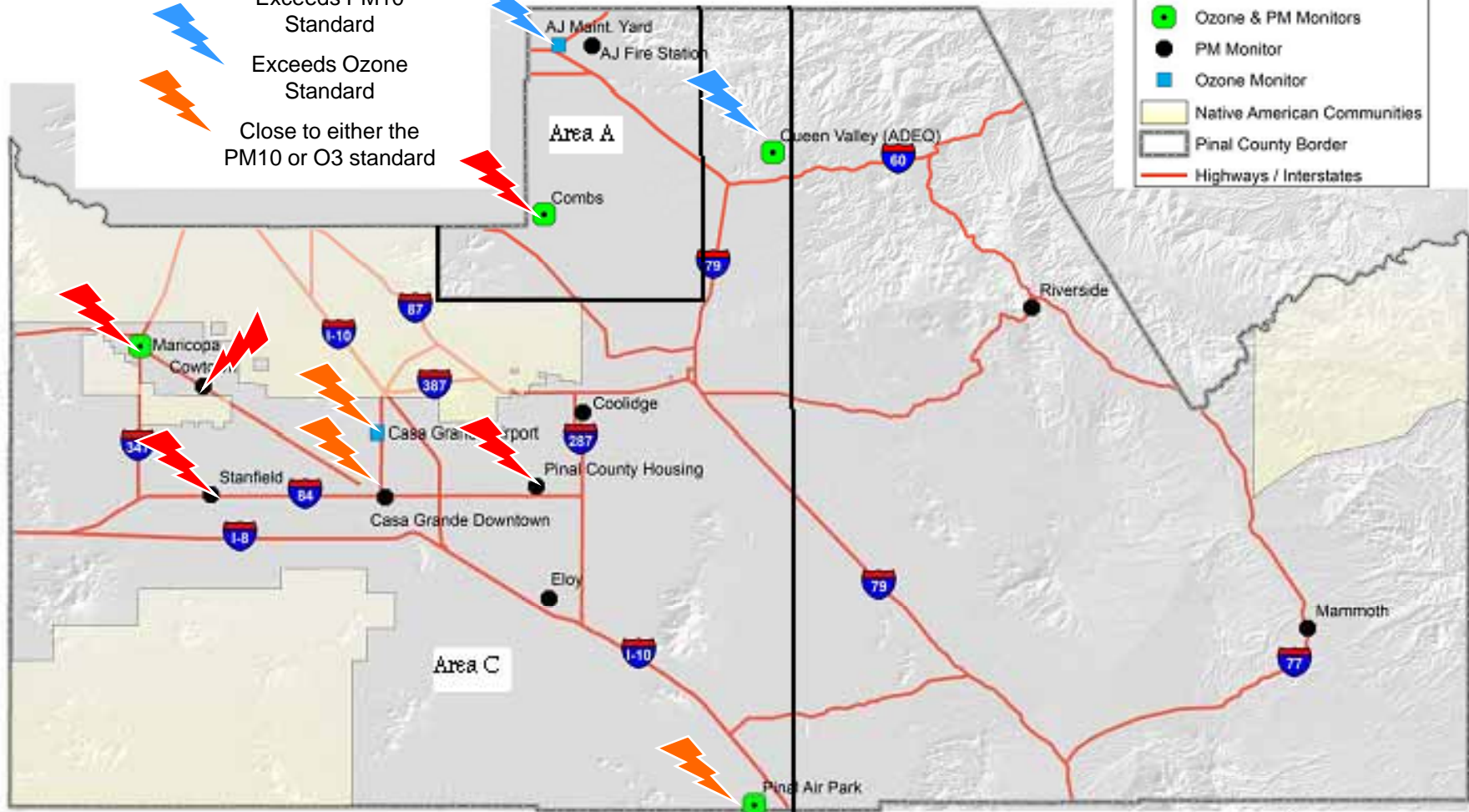
**Legend**

- Ozone & PM Monitors
- PM Monitor
- Ozone Monitor
- Native American Communities
- Pinal County Border
- Highways / Interstates

Exceeds PM10 Standard

Exceeds Ozone Standard

Close to either the PM10 or O3 standard



# Ozone Issues in Pinal County

- Sites over the 3 yr avg of the 4<sup>th</sup> high 0.075 standard (based on 2005-2007)
  - Apache Junction = 0.076
  - Queen Valley = 0.080
- Sites near the 0.075 standard
  - Casa Grande = 0.071
  - Pinal Air Park = 0.071

# PM<sub>10</sub> Issues in Pinal County

- 2007 Exceedances of the PM<sub>10</sub> 24-Hour Standard (values over 155 µg/m<sup>3</sup>)
  - Combs – 9 exceedances, 22 exceptional events (31)
  - Pinal County Housing - 3 exceedances, 16 exceptional events (19)
  - Stanfield – 6 exceedances, 19 exceptional events (25)
  - Maricopa – 3 exceedances, 17 exceptional events (20)
  - Cowtown – 189 exceedances
  - Casa Grande – 0 exceedances, 7 exceptional events (7)

# PM<sub>10</sub> Stakeholder Process

- Step 1 - Science
  - Review the monitoring data
- Step 2 – Art
  - How the Emissions Inventory was developed
- Step 3 – Policy Questions
  - Who should reduce emissions
- Step 4 – Air Quality Summit
  - Commitments

# Stakeholder List

- Invited representatives from government and business
- Participants included (but not limited to):
  - Arizona Cattle Feeders' Association
  - Arizona Cotton Growers Association
  - Associated General Contractors
  - Arizona Home Builders Association
  - Arizona Rock Products Association
  - Arizona Department of Environmental Quality
  - Several local municipalities
  - Individual companies
  - Concerned citizens

# Site Specific Discussions

- Reviewed data from
  - Pinal County Housing
  - Stanfield
  - Maricopa
- Monitoring site-specific packages
  - Broad aerial photo
  - Focused aerial photo
  - Site-specific speciation data
  - 24-hour concentration plots
    - Wind
    - Stagnation



# Pinal County Housing Stagnation Event

Category	Percentage
Desert Land	0%
Paved Public Roads	5%
Dirt Public Roads	45%
Ag – Fields and Field Activity	15%
Ag – Dairies and Feedlots	10%
Construction	10%
Burning – All Types	0%
Background – Transport from out of County	15%
Other – In County Emissions	0%
TOTAL	100% 10

# Pinal County Housing Wind Event

Category	Percentage
Desert Land	10%
Paved Public Roads	5%
Dirt Public Roads	25%
Ag – Fields and Field Activity	30%
Ag – Dairies and Feedlots	0%
Construction	5%
Burning – All Types	0%
Background – Transport from out of County	25%
Other – In County Emissions	0%
<b>TOTAL</b>	<b>100%</b>

<b>Stagnation Reductions</b>	<b>AVG %</b>	<b>Conc. (µg/m<sup>3</sup>)</b>	<b>%</b>	<b>Projected Net</b>	<b>Projected Net</b>
	<b>Contribution</b>	<b>200</b>	<b>Reduction</b>	<b>Conc.</b>	<b>% Contribution</b>
<b>Desert Land</b>	0%	0	0%	0	0%
<b>Paved Public Roads</b>	10%	20	30%	14	9%
<b>Dirt Public Roads</b>	42%	83	30%	58	39%
<b>Agriculture - Fields and Field Activity</b>	13%	27	30%	19	13%
<b>Agriculture - Dairies and Feedlots</b>	10%	20	30%	14	9%
<b>Construction</b>	7%	13	30%	9	6%
<b>Burning - All Types</b>	3%	7	30%	5	3%
<b>Background - Transport from out of County</b>	15%	30	0%	30	20%
<b>Other - In County Emissions</b>	0%	0	0%	0	0%
<b>Totals</b>	100%	200		149	100%
				99% of Standard	

<b>Wind Reductions</b>	<b>AVG %</b>	<b>Conc. (µg/m³)</b>	<b>%</b>	<b>Projected Net</b>	<b>Projected Net</b>
	<b>Contribution</b>	<b>300</b>	<b>Reduction</b>	<b>Conc.</b>	<b>% Contribution</b>
<b>Desert Land</b>	13%	40	0%	40	13%
<b>Paved Public Roads</b>	7%	20	0%	20	7%
<b>Dirt Public Roads</b>	27%	80	0%	80	27%
<b>Agriculture - Fields and Field Activity</b>	23%	70	0%	70	23%
<b>Agriculture - Dairies and Feedlots</b>	2%	5	0%	5	2%
<b>Construction</b>	3%	10	0%	10	3%
<b>Burning - All Types</b>	0%	0	0%	0	0%
<b>Background - Transport from out of County</b>	25%	75	0%	75	25%
<b>Other - In County Emissions</b>	0%	0	0%	0	0%
<b>Totals</b>	100%	300		300	100%

200% of Standard<sup>13</sup>

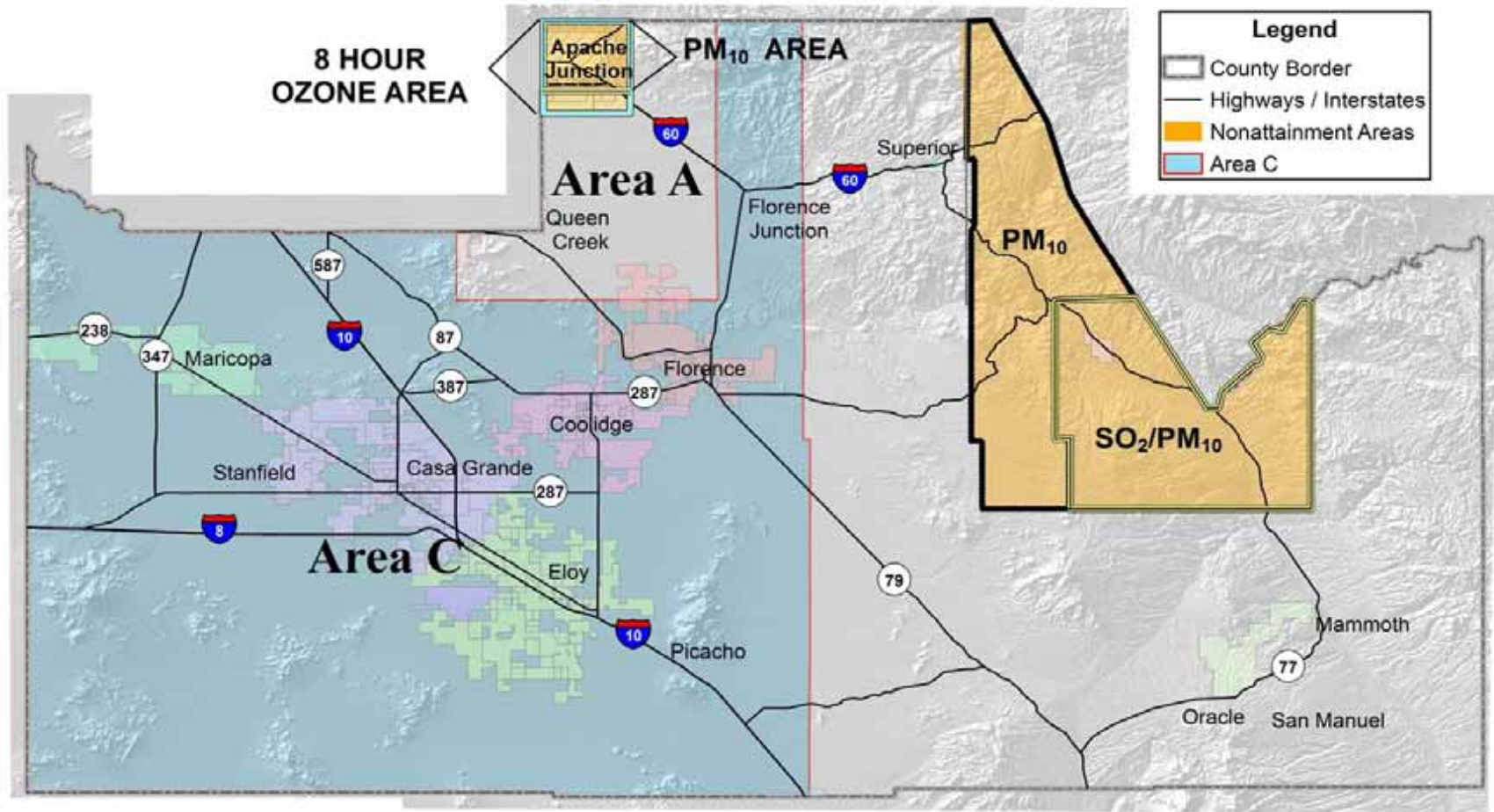
# Pinal County Emission Inventory

- Back of the truck inventory
- Identifies major contributors
- Combines art and science
  - Science = monitoring data
  - Art = developing percentages
- Utilized local knowledge

# PM<sub>10</sub> Stakeholder Process

- Process stalled in August 2007
  - Several stakeholder groups were willing to commit to reductions
    - Agriculture
    - Construction
    - Mining/rock products
  - Those representing roads balked
    - Governments were thinly represented
    - Participants lacked authority to commit
- Next Steps
  - Air Quality Summit
    - November 7, 2008
    - Focus on elected officials from the Cities and the County
    - Commitments to the process



# Pinal County Nonattainment Areas, Areas A & C



0 12.5 25 50 Miles



# SB1552 Implementation

- No burn Area A ordinance 
- Leaf blower Area A ordinance 
- Right of entry – Going to BOS 6/18/08
- Dustproof/stabilization/parking and use/commercial & residential requirements on unstabilized areas – Action continued to 9/10/08 by BOS on 5/14/08. Will bring back to BOS on 9/10/08 to address EPA comments and BOS concerns.
- Training requirements – will accept MCAQD program and certification.

# Pinal County Fugitive Dust Rules limited disapproval

- PCAQCD submitted in '95 & '98
- EPA acted with final rule on 8/1/07
- Limited disapproval included
  - Exemption of ag activities from fugitive dust rules.
    - This has already been addressed in more recent rules updates.
  - Highly general terms (i.e. reasonable precaution)
    - Need to have BACM for significant sources (i.e. construction) in the AJ portion of Phoenix PM10 NAA
    - May need to have BACM for the Hayden PM10 NAA (still working on determination)
  - Absence of recordkeeping provisions
    - Will be addressed in the BACM and rulemaking process
  - Plan to have proposed rules (look pretty similar to MCAQD rule 310) to BOS by this fall.
  - Need to have EPA approval by Feb. '09.

# EPA RARE Grant Study

- PM<sub>10</sub> and PM<sub>2.5</sub> monitoring in a Rural Environment
  - Cowtown
  - Pinal County Housing
  - Casa Grande
- Speciation and Source Apportionment
- Partially Funded
  - Reworking monitoring plan and start date

# Feedlot BMP Study

- As part of the PM10 Stakeholder process the feedlots agreed to conduct a best management practice study
  - Varies the timing and amount of water application
  - Monitoring at two locations
    - An additional monitor within the facility
    - The existing Cowtown monitor
  - Will look for the watering schedule and amount that gets the most reduction
  - On hold until after the Air Quality Summit

# Particle Spectrometer

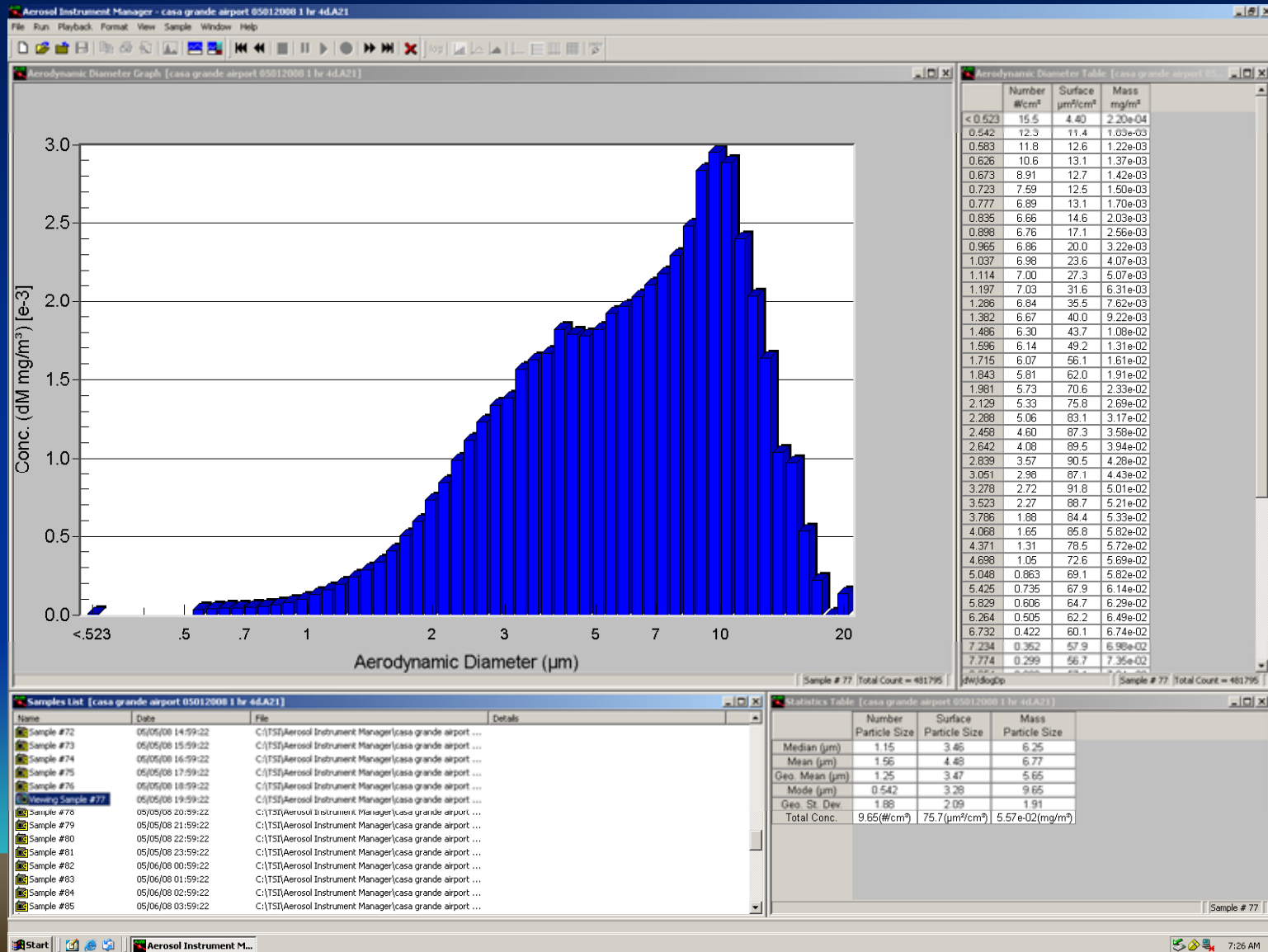


Figure 1-1  
Model 3321 Aerodynamic Particle Sizer

- TSI Model 3321 Aerodynamic Particle Sizer® (APS) spectrometer
- Provides count size distributions for particles with aerodynamic diameters from 0.5 to 20 $\mu$ m
- Detects light-scattering intensity for particles from 0.3 to 20  $\mu$ m

# Preliminary Data

Particle mass concentration Casa Grande May 1, 2008 8:00pm



# Contact Information



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