



# Maricopa County

Air Quality Department

Planning & Analysis Division

## Ozone and Particulate Challenges in Maricopa County

Jo Crumbaker



# Particulates from Human Activities



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# Stagnation



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# PM-10 Exceedances 2004-2006

Site	Operator	Address	# of Days
Bethune School	ADEQ	1310 S. 15 <sup>th</sup> Ave	1
Buckeye	MCAQD	MC85 & Hwy 85	7*
Central Phoenix	MCAQD	16 St & Roosevelt	2*
Durango	MCAQD	27 Ave & Durango	25*
Greenwood	MCAQD	27 Ave & I-10	4*
Higley	MCAQD	Higley Rd & Chandler Blvd	7*
West 43 <sup>rd</sup>	MCAQD	40 Ave & Broadway	35*
West Phoenix	MCAQD	39 Ave & Earll Dr	2*

\*Includes days excluded as natural/exceptional events

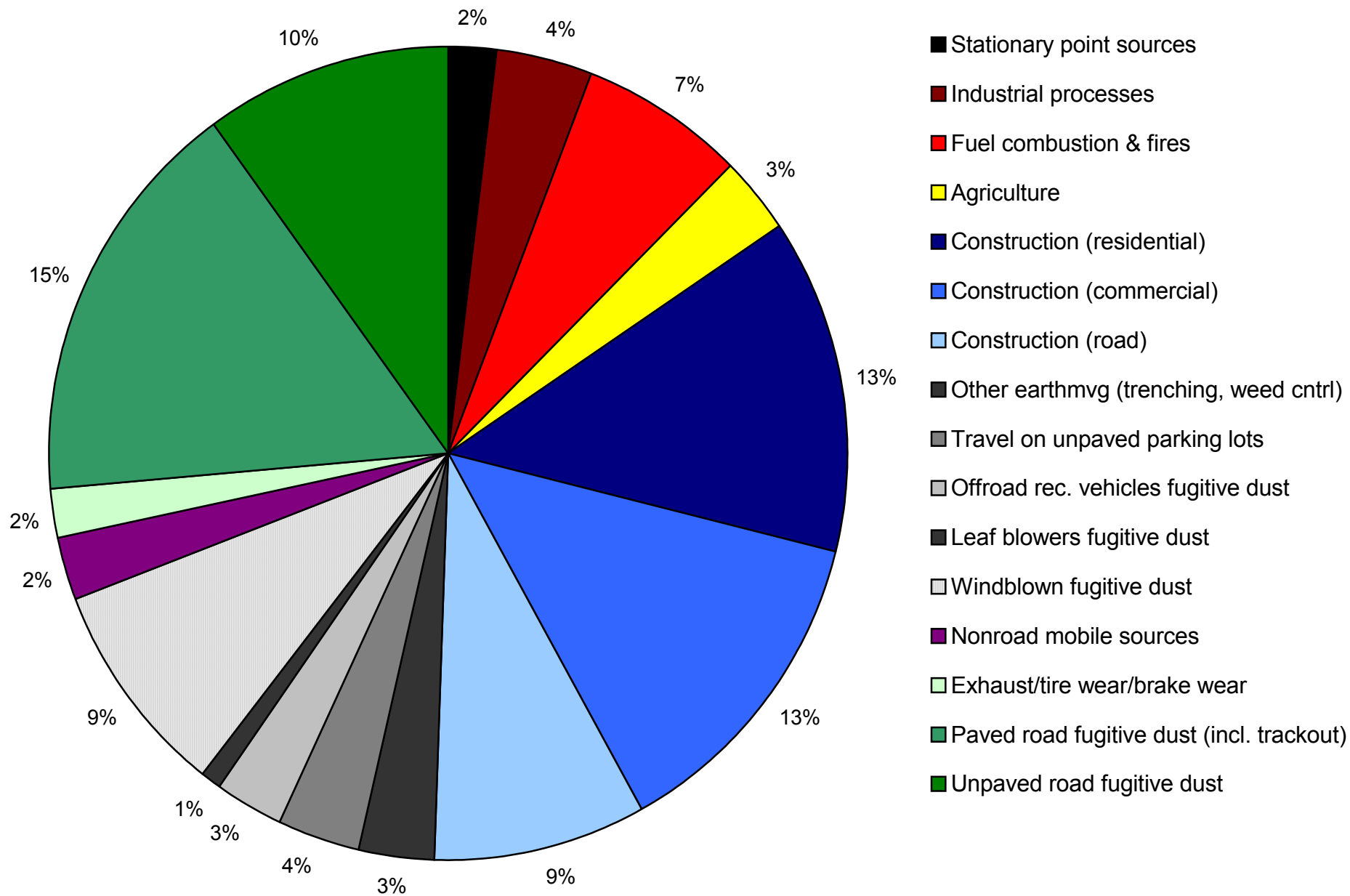
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# Federal Requirements

- Failed to attain PM-10 standard by 12/31/2006
- SIP revision submitted 12/2007 that included:
  - Five Percent Plan
  - Attainment demonstration at monitors

# 2005 PM<sub>10</sub> Emissions Inventory

(Revised May 2007 – PM<sub>10</sub> Nonattainment Area Total = 84,753 tons/yr)



# What Did the Plan Accomplish?

- Reductions in tons/yr to meet 5% Plan criteria
- Committed controls necessary to attain at the monitors
- Applied those controls to similar sources in other, unmonitored areas

# What Does the Plan Demonstrate?

- Reductions in tons/yr from committed measures to model attainment and meet 5% requirement
  - 6,605 tons vs. 5% target of 4,872 tons - 2008
  - 15,423 tons vs. 5% target of 9,744 tons - 2009
  - 19,840 tons vs. 5% target of 14,616 tons - 2010
- Reductions in tons/yr from committed measures that meet the contingency requirement
  - 5,223 tons vs. contingency target of 4,869 tons – 2008
  - 7,213 tons vs. contingency target of 4,868 tons – 2009
  - 9,159 tons vs. contingency target of 4,868 tons - 2010

# Status of Commitments

- Legislature passed SB 1552 in June 2007. Measures include:
  - Paving unpaved roads > 100 ADT
  - Dust proof parking, driveways
  - Codes to restrict parking on vacant lots
  - City codes to prohibit OHV use off-road
  - Dust control training & coordinators
- Commitments from ADEQ, ADOT, all cities and towns and Maricopa County

# What's In the Plan?

- Outreach / public education
- Training
  - Basic and comprehensive dust control
- Rule revisions 300, 310, 310.01, 314, 316
- Farmers to implement one additional BMP from each category

# What's In the Plan?

- Subcontractor registration program
- Mobile air monitoring
- Cumulative modeling
- Paving roads and shoulders
- Post speed limit signs on certain dirt roads

# Commitments to Pave and Stabilize Unpaved Roads and Shoulders

- Roads and alleys
  - 114 miles paved by 2010
  - 162 miles stabilized in 2010
- Shoulders
  - 91 miles paved by 2010
  - 198 miles stabilized in 2010

# Rule Development Activities

- Rule 200 – Permit Requirements
- Rule 300 – Visible Emissions
- Rule 310 – Fugitive Dust
- Rule 310.01 – Fugitive Dust from Unpermitted Sources
- Rule 316 – Nonmetallic Mineral Mining
- Rule 314 - Open Burning

# Ordinance Development Activities

- OHV
- Leaf blowers
- Vehicle use on vacant lots
- Residential woodburning ordinance revisions

# County Resources

- Increased staffing
  - 51 inspectors
  - 24/7 response
- Revised Fee rule to increase fees

# Enhanced Monitoring Site Surveillance (Since March 2005)

- Inspectors fan out from the monitors during high PM events
- On days when high PM is forecasted
- On days when notified by Air Monitoring Division of high PM
- Provides e-mail notification of high PM forecasts

# PM<sub>2.5</sub> Timeline

- Nov/Dec 07 State recommends attainment designation
- Nov/Dec 09 EPA makes designations
- April 2010 Designations effective
- April 2013 SIPs due
- April 2015 Attainment date

# Eight Hour Ozone Standard

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# Eight Hour Ozone NAAQS Three Year Average of the 4th High

Site	2005 (ppm)	2006 (ppm)	2007 (ppm)	3 Yr. Avg.
Fountain Hills	.088	.084	.074	.082
Humboldt Mt.	.087	.079	.078	.081
North Phoenix	.084	.085	.078	.082
Rio Verde	.087	.083	.079	.083

# Eight Hour Ozone Modeling

Three high-ozone episodes modeled:

- August 5-11, 2001 (local and transport)
- June 3-7, 2002 (predominantly transport)
- July 8-14, 2002 (predominantly local)

# VOC Emissions

<b>Category</b>	<b>% of June 15, 2002</b>	<b>% June 08</b>
Total VOC	696 mt/day	700 mt/day
Point	2	2
Area	13	15
Mobile	13	10
Non-Road	7	8
Biogenics	65	51

# NO<sub>x</sub> Emissions

<b>Category</b>	<b>% on June 15, 2002</b>	<b>% in June 2008</b>
Total NOx	292 mt/day	287 mt/day
Point	4	11
Area	3	5
Mobile	63	51
Non-Road	27	30
Biogenics	3	3

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# Plan Measures

- Summer reformulated fuel
- Phased-in emission test cutpoints
- Traffic signal coordination
- MCAQD rule for polystyrene foam operations

# Next Steps for Eight Hour Ozone

## Maintenance Plan:

- Complete a maintenance plan for the current 8-hour ozone standard
- MAG's current timeline targets submittal to EPA in February 2009
- The plan will model the same three episodes used in the attainment demonstration

# Next Steps (con't.)

- The baseline year for the emission inventory will be 2005.
- New Control Measures (SB1552)
  - Ban open burning during Ozone Season
  - Liquid Leaker Test – Vehicle Inspection

# Next Steps – New Standard

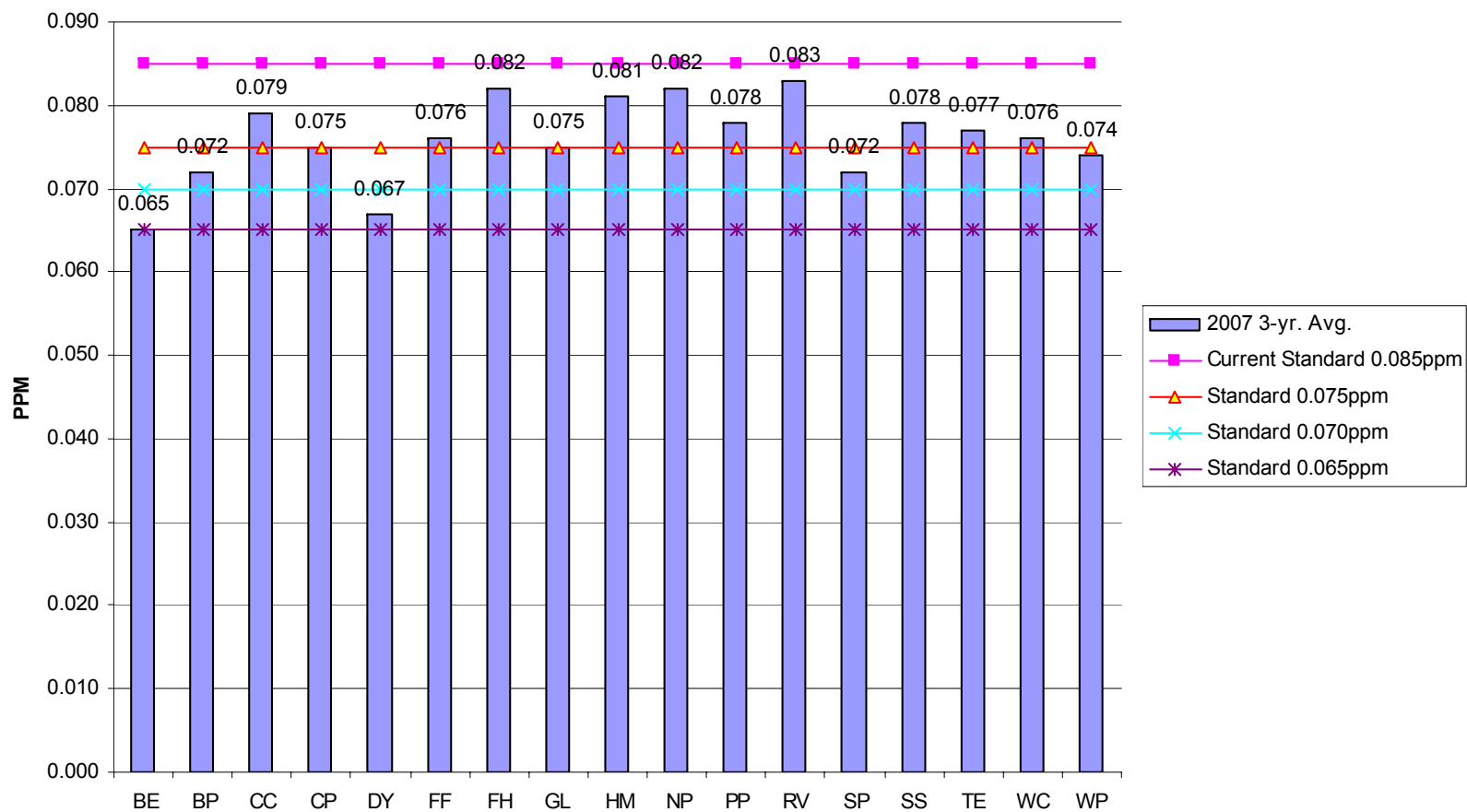
- Mar 2009                      State recommendations
- Mar 2010                      EPA final designations
- 2013                              Attainment SIPs due
- MCAQD is preparing an update to the CAA 110(a)(1) and (2) infrastructure SIP for the new standard

# Next Steps – New Standard (con't.)

- Prepare base year emissions inventory for nonattainment area/modeling domain
- MCAQD will review and revise rules to update the RACT analysis for new plan due 2013
- RACT is required for all sources subject to a CTG and for non-CTG major sources

# New Ozone Standard

## 2007 Violation of the Existing and Proposed Eight Hour Ozone Standard





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