

# MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area

MAG Regional Council

May 23, 2012



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## MAG 2012 Five Percent Plan

- **New 2012 Plan includes a wide variety of existing control measures and projects that have already been implemented**
  - While the prior 2007 Five Percent Plan was withdrawn, the control measures continue to be implemented and are being resubmitted
- **New measure to reduce PM-10 during high risk conditions, including high winds**
- **Focus is on high winds**
- **There have been no violations of the PM-10 standard during stagnant conditions since the prior plan was submitted in December 2007**



**Trackout**



**Open Burning**



**Unpaved  
Shoulders**



**Unpaved Roads**



**Vacant Lots**



**Earthmoving**



**All Terrain Vehicle**



**Weed Abatement**



**Leaf Blower**



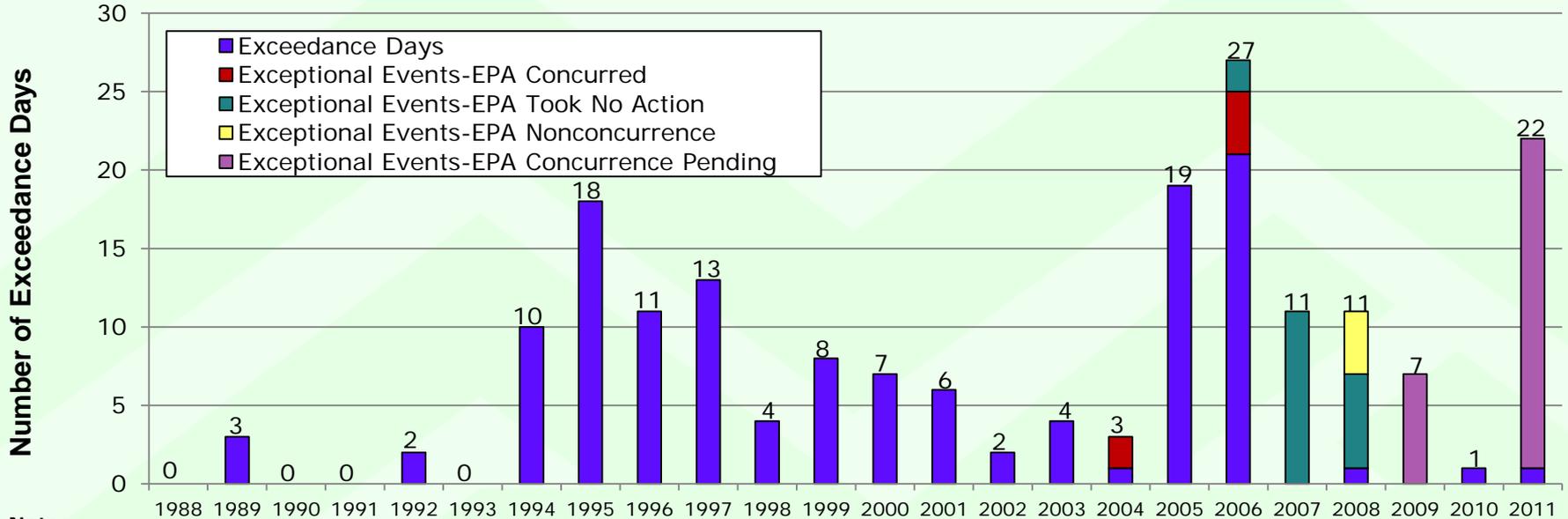
**Street Sweeper**



**Nonmetallic  
Mineral Processing**

# PM-10 Monitoring Data

## Number of 24-Hour PM-10 Exceedance Days in Maricopa County and the PM-10 Nonattainment Area

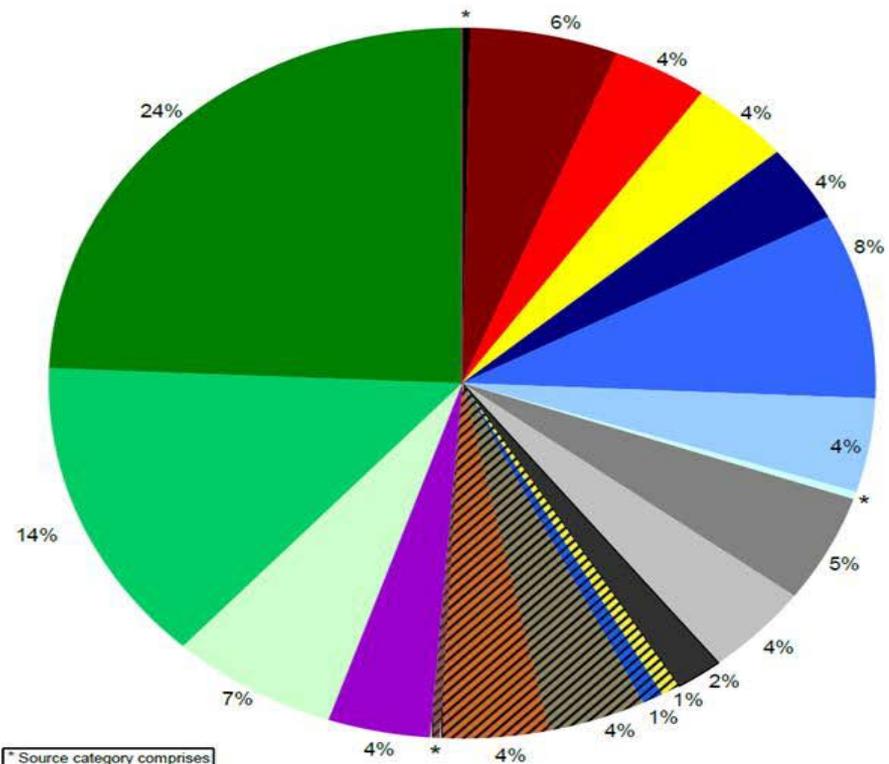


**Notes:**

- To attain the 24-hour PM-10 standard, there can be no more than 3 exceedances of 154 micrograms per cubic meter over a 3 year period per monitor.
- Data for 2011 is preliminary.
- The Arizona Department of Environmental Quality began flagging exceptional events in 2004.
- On July 19, 2007, the exceedance at the Buckeye monitor was not associated with the exceptional event that also occurred on that day.
- Sources: 1988-1997: Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area, February 2000; 1998-2010: EPA Air Quality System; 2011: Arizona Department of Environmental Quality and Maricopa County Air Quality Department.

### 2008 PM<sub>10</sub> Emissions Inventory (March 2011)

PM<sub>10</sub> NAA Total = 48,148 tons/yr



Source Categories	%
Major stationary point sources	(<0.5%)
All other industrial processes	(6%)
Fuel combustion and fires	(4%)
Agricultural tilling/harvesting	(4%)
Construction, residential	(4%)
Construction, commercial	(8%)
Construction, road	(4%)
Other earthmvg: trenching, weed control	(<0.5%)
Travel on unpaved parking lots	(5%)
Offroad recreational vehicles fugitive dust	(4%)
Leaf blowers fugitive dust	(2%)
Windblown: agricultural land	(1%)
Windblown: developing land	(1%)
Windblown: vacant land	(4%)
Windblown: open areas	(4%)
Windblown: S&G, landfills, test tracks	(<0.5%)
Nonroad mobile sources	(4%)
Vehicle exhaust, tire wear, brake wear	(7%)
Paved road fugitive dust, including trackout	(14%)
Unpaved road fugitive dust	(24%)

\* Source category comprises less than 0.5% of total.

Emissions Inventory Unit, MCAQD

March 2011

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## MAG 2012 Five Percent Plan

- **The 2012 Five Percent Plan takes credit for measures in the MAG 2007 Five Percent Plan that have already been implemented**
  - Increased rule effectiveness for Maricopa County Rules 310, 310.01 and 316
  - PM-10 certified street sweeping of freeways
    - ADOT contract dated February 20, 2010
  - PM-10 certified street sweepers purchased with federal Congestion Mitigation and Air Quality Improvement (CMAQ) funds in 2007-2009
  - Road, alley, and shoulder paving and stabilization projects completed in 2008-2011
  - Speed limit reductions implemented in 2008-2011
  - Rubberized asphalt overlays completed by ADOT
- **The 2012 Plan includes one new measure:  
Dust Action General Permit**


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# MAG 2012 Five Percent Plan

## Contingency Projects Completed in 2008-2011: Paving/Stabilization/Speed Limit Reductions



Miles by Project Type	Total Miles				
	2008	2009	2010	2011	2008-2011
Miles of dirt roads paved	41	18	8	16	83
Miles of dirt roads stabilized	39	39	36	31	145
Miles of dirt alleys paved	66	4	0	63	134
Miles of dirt alleys stabilized	164	106	124	106	501
<b>Total miles of roads/alleys paved &amp; stabilized</b>	<b>310</b>	<b>168</b>	<b>168</b>	<b>216</b>	<b>862</b>
Miles of dirt shoulders paved	70	107	49	6	233
Miles of curb and gutter paved	19	0	0	0	19
Miles of dirt shoulders stabilized	235	236	236	200	906
<b>Total miles of shoulders paved &amp; stabilized</b>	<b>324</b>	<b>343</b>	<b>285</b>	<b>207</b>	<b>1,158</b>
Miles of roads/alleys with lower speed limits	7	11	3	0	20
Miles of highway overlaid w/rubberized asphalt	13	0	0	0	13
PM-10 Emission Reductions	2008	2009	2010	2011	2012
Pave or stabilize public dirt roads/alleys	461	1,352	2,124	2,662	2,625
Pave or stabilize unpaved shoulders	173	242	265	293	150
Lower speed limits on unpaved roads/alleys	4	78	161	161	161
ADOT rubberized asphalt overlays	0	3	3	3	3
<b>Total PM-10 Emission Reductions (tons/year)</b>	<b>638</b>	<b>1,675</b>	<b>2,553</b>	<b>3,119</b>	<b>2,939</b>


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# MAG 2012 Five Percent Plan

## Contingency Credit for PM-10 Certified Street Sweeping



	2008	2009	2010	2011	2012
ADOT contracted sweeping of freeways, ramps and frontage roads (effective 2/20/10)	0	0	294	342	344
25 sweepers purchased in 2007-2009	59	116	153	154	155
<b>Total PM-10 Emission Reductions (tons/year)</b>	<b>59</b>	<b>116</b>	<b>447</b>	<b>495</b>	<b>499</b>

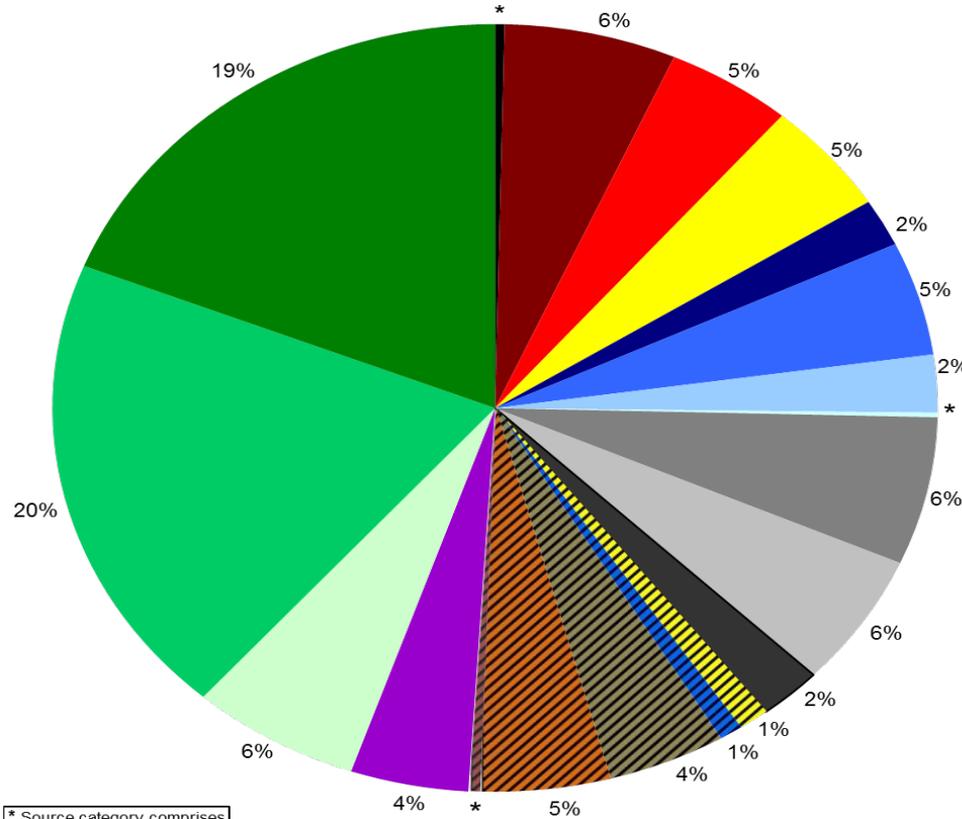
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# MAG 2012 Five Percent Plan

## Emissions Reductions for Quantified Measures

- **Measures to meet the Five Percent Requirement**
  - 9,987 tons vs 2,961 target in 2008
  - 13,618 tons vs 5,922 target in 2009
  - 15,157 tons vs 8,883 target in 2010
  - 15,781 tons vs 11,844 target in 2011
  - 16,089 tons vs 14,805 target in 2012
- **Measures to meet the Contingency Requirement**
  - 3,439 tons vs 3,218 target in 2012

2012 PM-10 Emissions Inventory with Five Percent Plan Measures and Contingency Projects  
 PM-10 Nonattainment Area Total = 39,691 tons/yr



Source Categories	%
Major stationary point sources	<0.5%
All other industrial processes	(6%)
Fuel combustion and fires	(5%)
Agricultural tilling/harvesting	(5%)
Construction, residential	(2%)
Construction, commercial	(5%)
Construction, road	(2%)
Other earthmvg: trenching, weed control	<0.5%
Travel on unpaved parking lots	(6%)
Offroad recreational vehicles fugitive dust	(6%)
Leaf blowers fugitive dust	(2%)
Windblown: agricultural land	(1%)
Windblown: developing land	(1%)
Windblown: vacant land	(4%)
Windblown: open areas	(5%)
Windblown: S&G, landfills, test tracks	<0.5%
Nonroad mobile sources	(4%)
Vehicle exhaust, tire wear, brake wear	(6%)
Paved road fugitive dust, including trackout	(20%)
Unpaved road fugitive dust	(19%)

\* Source category comprises less than 0.5% of total.

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## Conclusion

- **MAG 2012 Five Percent Plan**
  - Meets the annual 5% reduction requirement
  - Meets the contingency requirement
  - Demonstrates attainment in 2012 via rollback modeling on two high wind days
    - May 4, 2007 – one monitor exceeded the PM-10 standard (West 43<sup>rd</sup> Avenue)
    - June 6, 2007 – two monitors exceeded the PM-10 standard (Higley and West 43<sup>rd</sup> Avenue)
  - Requests an extension of the attainment date from June 6 to December 31, 2012
- **Total PM-10 Emission Reductions in 2012 = 19,527 tons, a 33% reduction vs. 2007 emissions**
  - Due to increased rule effectiveness, PM-10 certified street sweeping, and 2008-2011 paving/stabilization/speed limit reduction projects
- **3 Years of Clean Data at Monitors Needed for Attainment (2010, 2011, 2012)**

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## Schedule for MAG 2012 Five Percent Plan

- March 12, 2012–Draft plan available for public review
- April 12, 2012–Public hearing
- April 26, 2012–MAG Air Quality Technical Advisory Committee recommendation
- May 9, 2012–MAG Management Committee recommendation
- May 23, 2012-MAG Regional Council adoption of the plan
- May 25, 2012–MAG submission of the plan to ADEQ/EPA
- August 14, 2012–EPA completeness determination on the plan will stop the eighteen month and twenty-four month sanctions clocks
- February 14, 2013 - EPA approval of the plan will stop the imposition of a federal implementation plan

For more information

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