

Draft PM-10 Emissions for MAG 2012 Five Percent Plan

Air Quality TAC Meeting

October 27, 2011





OVERVIEW

The MAG 2012 Five Percent Plan takes credit for the following measures in the MAG 2007 Five Percent Plan that have been implemented:

- ▀ Increased rule effectiveness for Maricopa County Rules 310, 310.01 and 316
- ▀ PM-10 certified street sweeping of freeways
 - ADOT contract dated 2/20/10
- ▀ PM-10 certified street sweepers purchased with CMAQ funds between 1/1/07 and 12/31/09
- ▀ Road, alley, and shoulder paving/stabilization projects completed in 2008-2011
- ▀ Speed limit reductions implemented in 2008-2011
- ▀ Rubberized asphalt overlays completed by ADOT

One exception: Dust Action General Permit and other provisions of HB 2208


 ENVIRONMENTAL
PROGRAMS

Draft PM-10 Emissions for MAG 2012 Five Percent Plan

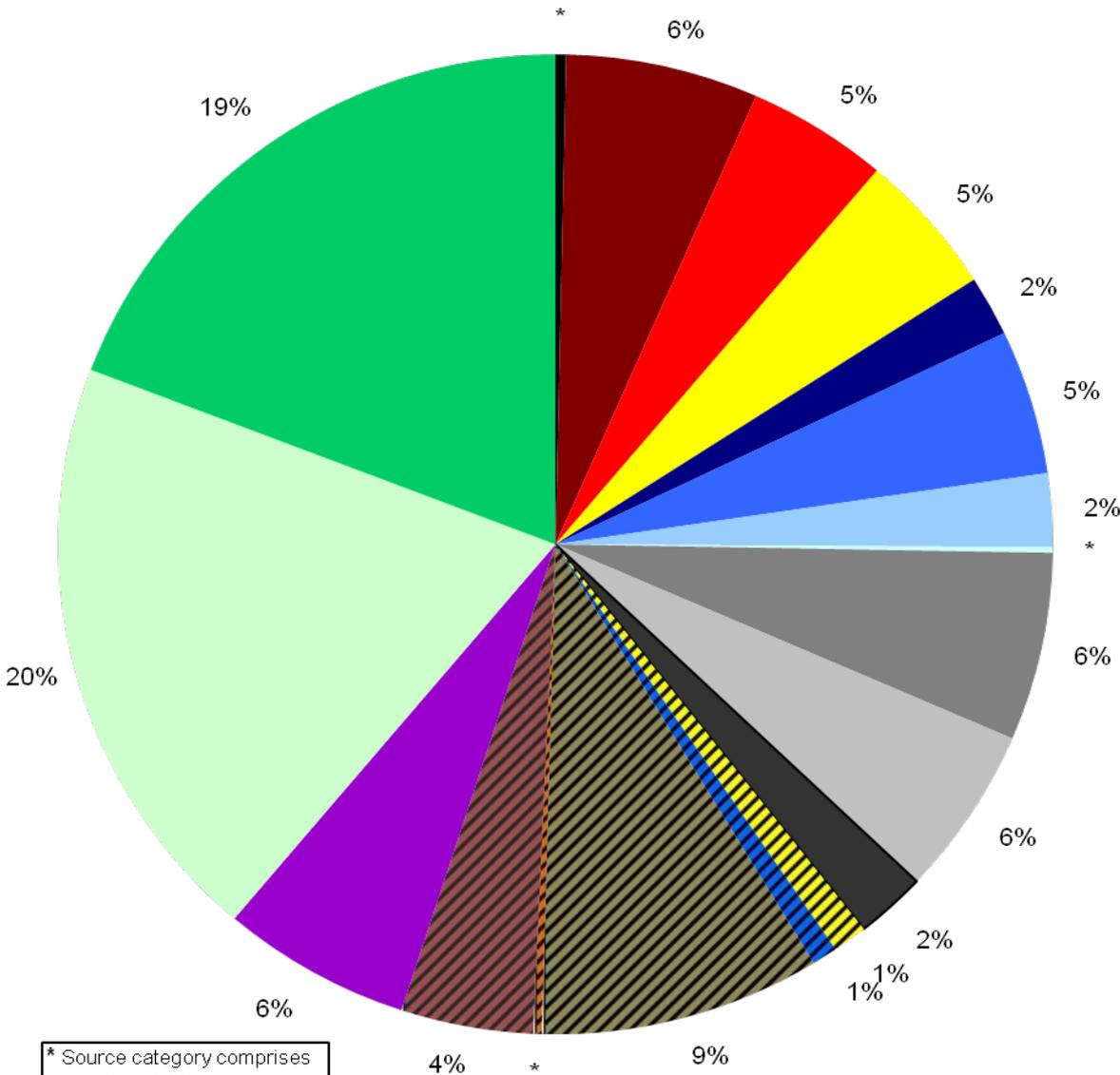
- n Based on the revised 2008 Periodic Emissions Inventory published by MCAQD in June 2011
 - New rule effectiveness calculations developed by MCAQD in consultation with EPA
 - New EPA AP-42 paved road emissions equation
- n Growth factors are based on projections for the Phoenix metro area released in August 2011 by Marshall Vest, Economic and Business Research Center, U of AZ

Employment

| | <u>Population</u> | <u>Construction</u> | <u>Manufacturing</u> |
|------------|-------------------|---------------------|----------------------|
| 2007->2008 | +1.9% | -17.7% | -5.5% |
| 2008->2009 | +0.5% | -31.1% | -11.4% |
| 2009->2010 | +0.3% | -14.6% | -4.2% |
| 2010->2011 | +0.4% | -3.3% | +0.4% |
| 2011->2012 | +0.9% | +1.6% | +5.4% |

Draft 2012 PM₁₀ Emissions with All Plan Measures

PM₁₀ NAA Total = 39,852 tons/year

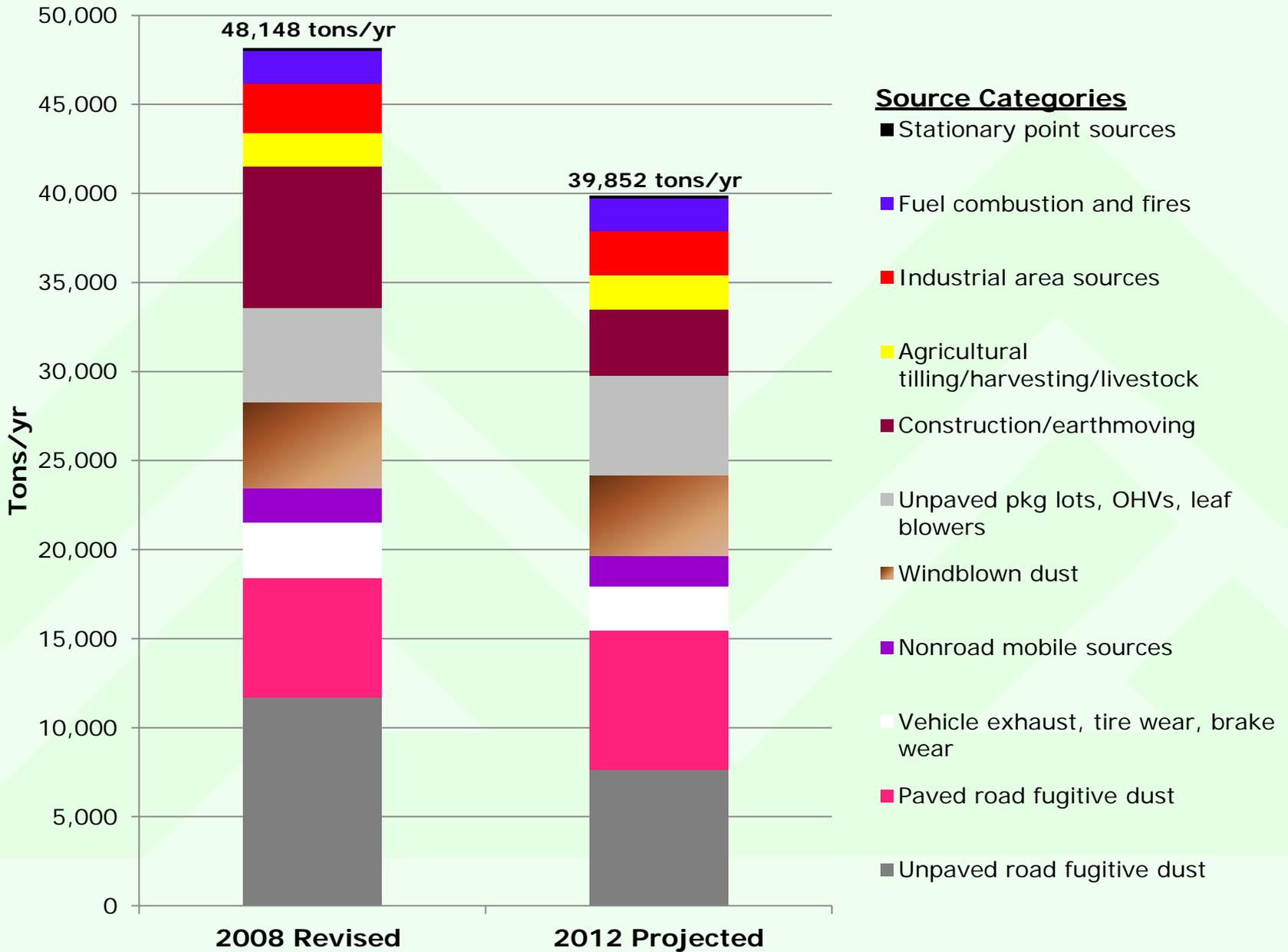


Source Categories

| Source Category | % |
|--|-------|
| Major stationary point sources | <0.5% |
| All other industrial processes | 6% |
| Fuel combustion and fires | 5% |
| Agricultural tilling/harvesting/livestock | 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: construction | 1% |
| Windblown: vacant, open, landfill | 9% |
| Windblown: S&G, mining | <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.

Comparison of Revised 2008 and Draft 2012 PM-10 Emissions



Draft PM-10 Emissions for MAG 2012 Five Percent Plan

- n **Plan includes benefits for increased rule effectiveness (RE) between 2007 and 2010**
 - l Rule 310 – RE increased from 76% to 94%
 - l Rule 310.01 – RE increased from 85% to 96%
 - l Rule 316 – RE increased from 40% to 73%
- n **RE rates were calculated by MCAQD using actual inspection data and a methodology developed in consultation with EPA**
- n **RE rates are increased by one percent in 2012 to account for the benefit of the Dust Action General Permit passed by the AZ Legislature in 2011 as part of HB 2208**
 - l Credit only applies to high wind days

Draft PM-10 Emissions for MAG 2012 Five Percent Plan

- n **Clean Air Act 189(d) requires 5% reductions per year until attainment (2007-2012)**
- n **Total PM-10 Emissions**
 - l 2007 (base year) – 59,385 tons
 - l 2012 (with increased rule effectiveness) – 43,115 tons
- n **Annual 5% reduction based on 2007 emissions**
 - l $5\% \times 59,385 = 2,969$ tons
 - l $2,969 \times 5$ years (2007-2012) = 14,845 tons
- n **Actual tons reduced in 2012**
 - l $59,385 - 43,115 = 16,270$ tons
- n **5% reduction requirement is met in 2012**
 - l Excess = 1,425 tons (10%)



Draft PM-10 Emissions for MAG 2012 Five Percent Plan

Paving/Stabilization/Speed Limit Reduction Projects Completed in 2008-2011

| Total PM-10 Emission Reductions | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|-------------|--------------|--------------|--------------|--------------|
| Pave or stabilize public dirt roads/alleys | 439 | 1,239 | 2,025 | 2,567 | 2,498 |
| Pave or stabilize unpaved shoulders | 173 | 219 | 213 | 245 | 102 |
| Lower speed limits on unpaved roads/alleys | 4 | 78 | 161 | 161 | 161 |
| ADOT rubberized asphalt overlays | 0 | 3 | 3 | 3 | 3 |
| Total PM-10 Emission Reductions (tons/year) | 616 | 1,539 | 2,401 | 2,976 | 2,764 |

| Mileage by Project Type | Total Miles | | | | |
|--|--------------------|-------------|-------------|-------------|------------------|
| | 2008 | 2009 | 2010 | 2011 | 2008-2011 |
| Miles of dirt roads paved | 39 | 17 | 8 | 14 | 78 |
| 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 | 97 | 66 | 98 | 93 | 355 |
| Total miles of roads/alleys paved & stabilized | 241 | 126 | 143 | 201 | 711 |
| Miles of dirt shoulders paved | 17 | 27 | 55 | 9 | 108 |
| Miles of dirt shoulders stabilized | 235 | 229 | 236 | 200 | 900 |
| Total miles of shoulders paved & stabilized | 251 | 256 | 291 | 209 | 1,008 |
| 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 |

The logo for Environmental Programs, featuring the words "ENVIRONMENTAL PROGRAMS" in white capital letters on a blue background with a light, wispy pattern.

Draft PM-10 Emissions for MAG 2012 Five Percent Plan

- n **Five Percent Plan Contingency Requirement**
 - Must identify emission reductions above and beyond the credit used to demonstrate the annual 5% reductions and model attainment
 - One year of reasonable further progress (RFP)
 - n (2007 emissions – 2012 emissions with increased RE) divided by 5 years = 3,254 tons
 - n Total 2012 PM-10 Emissions (with paving/stabilization/speed limit reduction projects, and PM-10 certified street sweeping) = 39,852 tons
- n **Contingency reductions in 2012**
 - $43,115 - 39,852 = 3,263$ tons
 - Contingency reduction may increase if additional data is received on projects completed in 2008-2011
- n **Contingency requirement is met in 2012**



Draft PM-10 Emissions for MAG 2012 Five Percent Plan

- **Conclusion – Draft 2012 Plan will**
 - Meet the annual 5% reduction requirement
 - Meet contingency requirements
 - Demonstrate attainment via rollback modeling
 - May 4, 2007 – West 43rd Avenue monitor
 - June 6, 2007 – 7 monitors throughout the PM-10 nonattainment area
- **Total PM-10 Emission Reductions in 2012**
 - 19,533 tons, a 32.9% reduction vs. 2007
 - With increased RE, paving/stabilization/speed limit reduction projects, and PM-10 certified sweepers

A blue rectangular box with a white border containing the text "ENVIRONMENTAL PROGRAMS" in white, uppercase, sans-serif font. The background of the box is a light blue sky with white clouds.

ENVIRONMENTAL
PROGRAMS

For more information

Contact:
Cathy Arthur
(602) 254-6300

carthur@azmag.gov

