

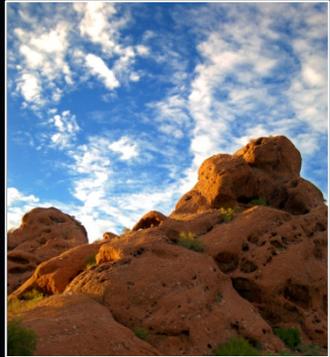
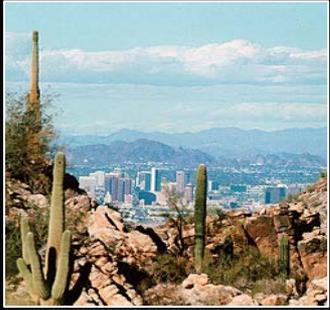
PM-2.5 Concentration Data, Exceptional Events, and Remand of Implementation Rules for the 1997 PM-2.5 Standard



MAG Air Quality Technical Advisory Committee
February 28, 2013

2012 PM-2.5 Standards

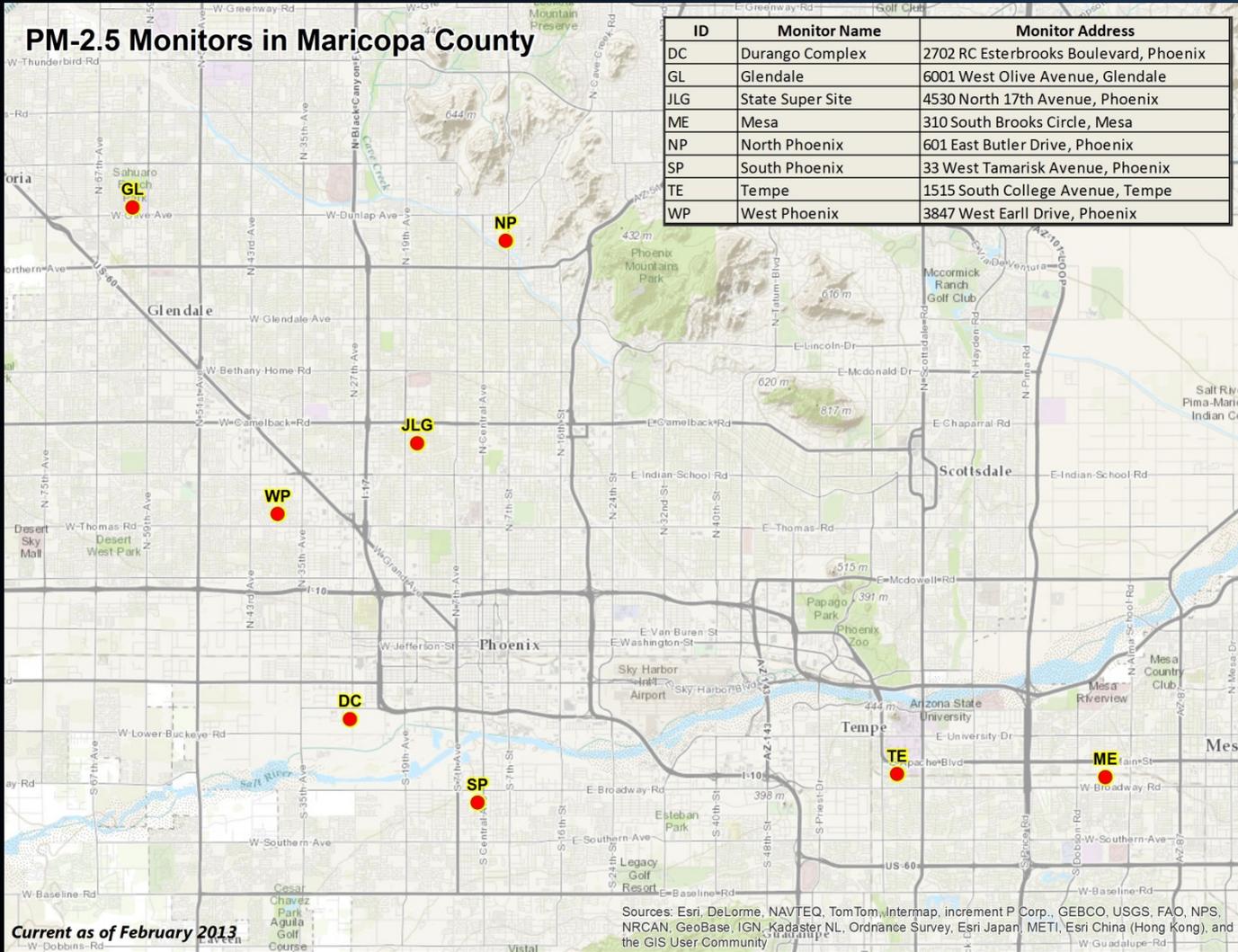
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- The primary annual PM-2.5 standard is met when the annual mean concentration, averaged over three years, is $12.0 \mu\text{g}/\text{m}^3$ or less
- The primary 24-hour PM-2.5 standard is met when the annual 98th percentile concentration, averaged over three years, is $35 \mu\text{g}/\text{m}^3$ or less

PM-2.5 Monitors in Maricopa County

ID	Monitor Name	Monitor Address
DC	Durango Complex	2702 RC Esterbrooks Boulevard, Phoenix
GL	Glendale	6001 West Olive Avenue, Glendale
JLG	State Super Site	4530 North 17th Avenue, Phoenix
ME	Mesa	310 South Brooks Circle, Mesa
NP	North Phoenix	601 East Butler Drive, Phoenix
SP	South Phoenix	33 West Tamarisk Avenue, Phoenix
TE	Tempe	1515 South College Avenue, Tempe
WP	West Phoenix	3847 West Earll Drive, Phoenix



Current as of February 2013

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

PM-2.5 Concentration Data

- Without excluding PM-2.5 exceptional events, the Durango Complex (DC) and West Phoenix (WP) monitors recorded annual means near or above the annual standard in 2011 and 2012*



DC Annual PM-2.5; Exceptional Events <u>NOT</u> Excluded	2011 ($\mu\text{g}/\text{m}^3$)	2012 ($\mu\text{g}/\text{m}^3$)
1 st Quarter (Jan-Mar)	14.0	12.7
2 nd Quarter (Apr-Jun)	11.6	10.9
3 rd Quarter (Jul-Sep)	11.5	8.7
4 th Quarter (Oct-Dec)	12.3	13.9
PM-2.5 ANNUAL MEAN	12.4	11.6

WP Annual PM-2.5; Exceptional Events <u>NOT</u> Excluded	2011 ($\mu\text{g}/\text{m}^3$)	2012 ($\mu\text{g}/\text{m}^3$)
1 st Quarter (Jan-Mar)	13.3	10.5
2 nd Quarter (Apr-Jun)	8.8	10.9
3 rd Quarter (Jul-Sep)	10.9	10.5
4 th Quarter (Oct-Dec)	13.2	19.8
PM-2.5 ANNUAL MEAN	11.6	12.9

*January 2011 - November 2012 values from U.S. EPA AirData. December 2012 preliminary data provided by Maricopa County Air Quality Department. Annual mean calculated per 40 CFR Part 50 Appendix N.

PM-2.5 Concentration Data

- The following table shows the number of days the daily PM-2.5 concentration was above 12.0 $\mu\text{g}/\text{m}^3$ (exceptional event days not excluded) at the Durango Complex and West Phoenix monitors

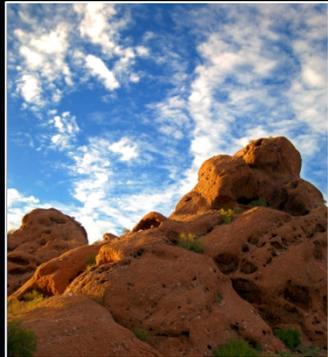
Number of Days Above 12.0 $\mu\text{g}/\text{m}^3$ *	2011 DC	2012 DC	2011 WP	2012 WP
1 st Quarter (Jan-Mar)	58 (64%)	42 (46%)	41 (46%)	25 (27%)
2 nd Quarter (Apr-Jun)	32 (35%)	28 (31%)	10 (11%)	29 (32%)
3 rd Quarter (Jul-Sep)	20 (22%)	10 (11%)	23 (25%)	29 (32%)
4 th Quarter (Oct-Dec)	37 (40%)	58 (63%)	35 (38%)	76 (83%)
ANNUAL	147 (40%)	138 (38%)	109 (30%)	159 (43%)

*January 2011 - November 2012 values from U.S. EPA AirData. December 2012 preliminary data provided by Maricopa County Air Quality Department.

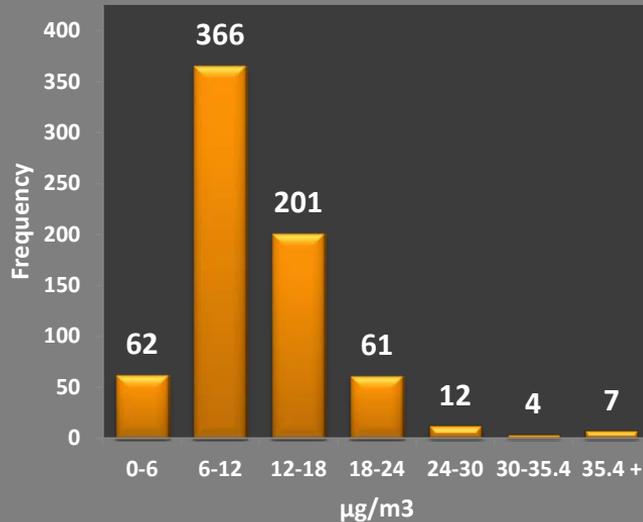


PM-2.5 Concentration Data

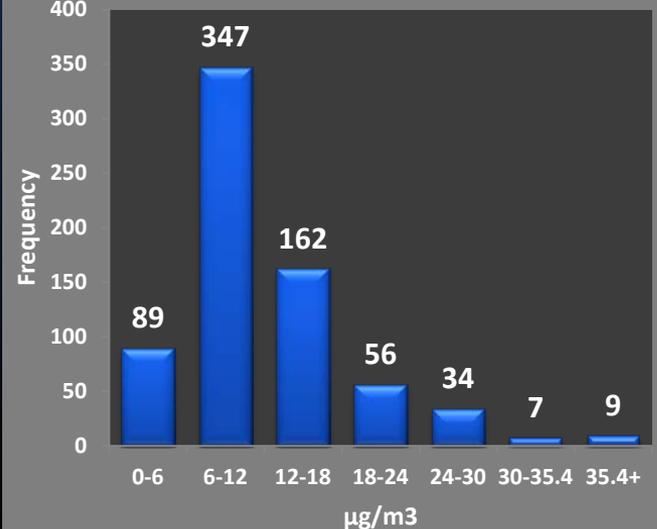
- Frequency of 2011-2012 daily PM-2.5 concentrations (exceptional events not excluded)



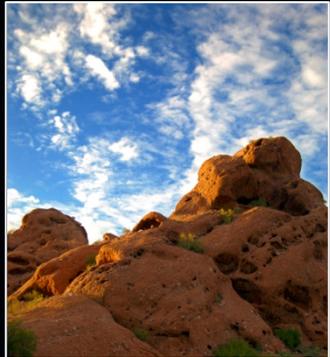
2011-2012 Frequency of Daily PM-2.5 Concentrations at Durango Complex Monitor



2011-2012 Frequency of Daily PM-2.5 Concentrations at West Phoenix Monitor



*January 2011 - November 2012 values from U.S. EPA AirData. December 2012 preliminary data provided by Maricopa County Air Quality Department.

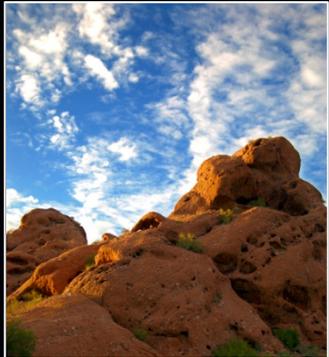


PM-2.5 Exceptional Events

- Daily PM-2.5 concentrations above the level of the annual PM-2.5 standard ($12.0 \mu\text{g}/\text{m}^3$) can be considered “exceedances” under the exceptional events rule and are eligible for exclusion when compared to the annual PM-2.5 standard (72 FR 13570)
- PM-10 exceptional event days in 2011 and 2012 were assessed as a starting point for the exclusion of PM-2.5 exceptional events at the Durango Complex and West Phoenix monitors
 - Many PM-10 exceptional event days are obvious PM-2.5 exceptional events, others require additional analysis
 - Some PM-10 exceptional event days do not qualify as PM-2.5 exceptional events as daily PM-2.5 concentrations were not above the annual standard

PM-2.5 Exceptional Events

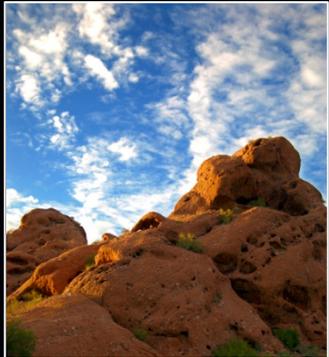
- It is likely that there are other eligible PM-2.5 exceptional events in 2011 and 2012 besides those associated with PM-10 exceptional event days
 - Days when dust storms produced daily PM-2.5 concentrations above the annual PM-2.5 standard but did not cause a PM-10 exceedance
 - Days when wildfires produced daily PM-2.5 concentrations above the annual PM-2.5 standard
 - Further evaluation is needed to determine the number of these PM-2.5 exceptional event days in 2011 and 2012
 - PM-2.5 exceedances caused by residential wood burning are not eligible for exclusion under the exceptional events rule



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PM-2.5 Exceptional Events

- With the issuance of the 2012 primary annual PM-2.5 standard, the National Ambient Air Quality Standards for Particulate Matter final rule (78 FR 3277) contains a special schedule for PM-2.5 exceptional event flagging and documentation submission
 - 2011 and 2012 PM-2.5 daily concentrations need to be flagged by July 1, 2013 and exceptional event documentation needs to be submitted by December 12, 2013



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PM-2.5 Annual Mean Concentrations With and Without Exceptional Events

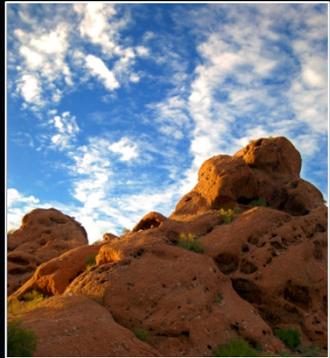


Durango Complex Monitor	2011 ($\mu\text{g}/\text{m}^3$)	2012 ($\mu\text{g}/\text{m}^3$)	2013 value needed to meet standard ($\mu\text{g}/\text{m}^3$)
PM-2.5 Annual Mean*, Exceptional Events <u>NOT</u> Excluded	12.4	11.6	≤ 12.0
PM-2.5 Annual Mean*, Preliminarily Identified Exceptional Events Excluded	11.8	11.4	≤ 12.8

West Phoenix Monitor	2011 ($\mu\text{g}/\text{m}^3$)	2012 ($\mu\text{g}/\text{m}^3$)	2013 value needed to meet standard ($\mu\text{g}/\text{m}^3$)
PM-2.5 Annual Mean*, Exceptional Events <u>NOT</u> Excluded	11.6	12.9	≤ 11.5
PM-2.5 Annual Mean*, Preliminarily Identified Exceptional Events Excluded	11.2	12.8	≤ 12.0

**January 2011 - November 2012 values from U.S. EPA AirData. December 2012 preliminary data provided by Maricopa County Air Quality Department. Annual mean calculated per 40 CFR Part 50 Appendix N.*

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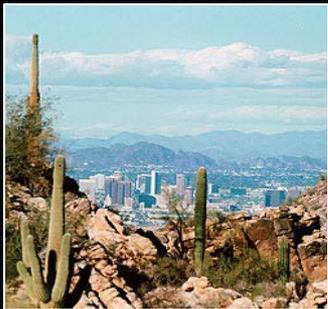
Remand of Implementation Rules for the 1997 PM-2.5 Standard

- On January 4, 2013, the U.S. Court of Appeals for the D.C. Circuit vacated and remanded two implementation rules for the 1997 PM-2.5 standard
- The court remanded the rules to EPA for reconsideration but did not set a deadline for EPA action
- The court's opinion will require the EPA to repromulgate the rules under the more stringent provisions for PM-10 nonattainment areas contained in Subpart 4, as opposed to the general provisions in Subpart 1 of Part D of the Clean Air Act

Remand of Implementation Rules for the 1997 PM-2.5 Standard

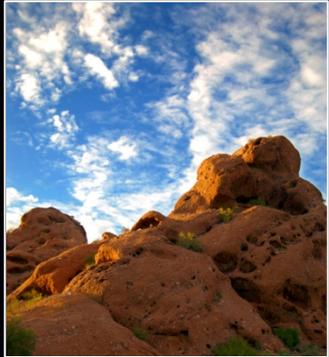
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- **Implications of the remand:**
 - Subpart 4 requires a nonattainment area to be classified as “moderate” and upon failure to attain reclassified as “serious”. Under Subpart 1, EPA “may” but is not required to classify a nonattainment area
 - Subpart 4 allows one extension of a “serious” area attainment date for a maximum of five years only if “most stringent measures” are included in a SIP, while Subpart 1 allows attainment date extensions up to 10 years with no “most stringent measures” requirement
 - Subpart 4 requires a five percent plan for “serious” areas that fail to attain by the attainment date; Subpart 1 contains no such requirement



Remand of Implementation Rules for the 1997 PM-2.5 Standard

- **Implications of the remand (continued):**
 - Subpart 4 requires implementation of “reasonable available control measures” within four years of designation; Subpart 1 requires such measures be implemented “as expeditiously as possible”
 - Subpart 4 requires that “best available control measures” be implemented no later than four years after a nonattainment area is designated as “serious”; Subpart 1 has no “best available control measures” requirement
- **While the remand was specific to the implementation rules for the 1997 PM-2.5 standard, it is reasonable to assume that EPA implementation rules for the 2012 PM-2.5 standard will need to follow the court’s opinion**





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