



Air Quality Analysis for Fine Particulate Matter (PM_{2.5})

The following information comes from the ambient air monitors operated by the state. Data from these monitors is reported to the U.S. Environmental Protection Agency's (EPA's) Air Quality System database, which constitutes the official record of air quality data. The monitoring information provided in the charts below highlights air pollutant levels (if any) that are in violation of the National Ambient Air Quality Standards.

PM_{2.5} is airborne particulate matter with aerodynamic diameter smaller than 2.5 micrometers. It results from both direct emissions from air pollution sources (primary PM_{2.5}) and from atmospheric reactions between gaseous species that form particulate matter (secondary PM_{2.5}). Airborne particulate matter can have adverse health effects on the respiratory system and also on the heart.

In December 2012, EPA made the annual primary PM_{2.5} standard more stringent, reducing it from 15 to 12 micrograms per cubic meter, based on the 3-year average of annual means. The 24-hour primary PM_{2.5} standard was retained at 35 micrograms per cubic meter, based on the 98th percentile of 24-hour measurements, averaged over three years.

The St. Louis area is officially classified as a nonattainment area for the previous annual PM_{2.5} standard of 15 µg/m³, though area monitors are currently showing compliance with this standard and the department is working with EPA to redesignate the area to attainment. The entire state is classified as unclassifiable/attainment based on the 24-hour PM_{2.5} standard.

No monitors in Missouri that represent the appropriate area spatial scale of representativeness for comparison to the annual standard have recorded violations of the annual PM_{2.5} standard of 12 µg/m³. However, monitors in the greater St. Louis area in Illinois are violating the new annual standard. The state of Missouri must submit a recommendation for designation of attainment or nonattainment areas for the new annual standard to the EPA by December 2013. EPA then has one year to finalize area designations (by December 2014).

For more information about PM_{2.5}, see the following EPA website, which includes links to additional information on health effects, standards, implementation, and other information:

<http://www.epa.gov/airquality/particlepollution>



24-Hour PM_{2.5} Design Values^a

Date 1/30/2017

Site	County	98 th Percentile					CV - 35	# of Exceedances > 35 µg/m ³ (2006 Std)	Design Value		
		2013	2014	2015	2016 ^b	2017 ^{cd}			2017 ^c	13-15	14-16 ^b
St. Louis											
Arnold West	Jefferson	23.5	25.2	24.3	18.6	17.1	63.6	0	24	23	20
Blair Street (Comb.) [^]	St. Louis City	23.3	27.8	23.3	19.4	17.3	63.8	0	25	24	20
Branch Street~	St. Louis City	23.8	27.0	22.9	21.0	18.1	62.6	0	25	24	21
Forest Park, I-64*	St. Louis City	20.6	29.0	20.7	19.9	16.7	65.9	0	23	23	19
Ladue (Comb.) [^]	St. Louis	22.5	24.5	23.5	21.0	23.4	62.0	0	24	23	23
South Broadway	St. Louis City	22.3	25.2	25.7	20.2	19.2	60.6	0	24	24	22
Kansas City											
Liberty	Clay	19.1	22.0	17.6	14.9	16.8	74.0	0	20	18	16
Richard Gebaur South	Cass	19.2	24.1	20.7	14.6	16.4	71.2	0	21	20	17
Troost	Jackson	21.5	21.2	17.6	19.6	18.8	69.3	0	20	19	19
Blue Ridge, I-70**	Jackson	18.3	18.3	17.0	14.1	16.9	75.4	0	18	16	16
Springfield											
MSU†	Greene	18.5	25.0	18.0	†	†	NA	NA	21	†	†
Hillcrest High School***	Greene	-	-	18.1	15.2	15.3	73.2	0	***	***	***
Outstate											
Eldorado Springs	Cedar	19.1	18.7	18.3	15.4	13.1	72.8	0	19	17	16
St. Joseph Pump Station	Buchanan	23.4	22.5	21.0	17.5	17.9	68.0	0	22	20	19
								0			

^aQuality assured data through December 31, 2015.

^bPreliminary data through December 31, 2016. Do not quote, do not cite.

^cYear-to-date preliminary data. Do not quote, do not cite.

^d98th Percentile concentration measured year-to-date. 98th Percentile concentrations may change as more data is collected over the year.

[^]The Blair Street and Ladue Site's PM_{2.5} design value is based on a combined site level statistic. That is, if a FEM sample is missing on a given day, a valid collocated FRM sample on that day will be substituted consistent with 40 CFR Part 50, Appendix N, 3.0 (d)(2).

[~]The Branch Street monitor is classified as a unique middle scale monitoring site and not comparable to the annual PM_{2.5} NAAQS.

*Near-Roadway site monitoring began on 1/1/2013.

**Near-Roadway site monitoring began on 7/1/2013.

***Monitor relocated from MSU and began monitoring on 4/16/2015.

†Monitoring discontinued on 4/15/2015.

***3-year design value can not be calculated. Design value in red and bold is a violation of the NAAQS.

CV - 35: The Critical Value (CV) for the 24-hour PM_{2.5} NAAQS is the current year's 98th percentile which, if monitored, could yield a violation of the 2006 24-Hour PM_{2.5} NAAQS for the most current three year period. (CV = 106.5 µg/m³ – Last year's 98th percentile – previous year's 98th percentile).

The highlighted field indicates that the data set does not meet the completeness criteria of 40 CFR Part 50 Appendix N, Section 4 for the given site. Use of incomplete data for designation purposes is subject to EPA approval consistent with 40 CFR Part 50 Appendix N, 4.(d).

For more information about the implications of the daily Air Quality Index (AQI) for PM_{2.5} concentrations and related health messages.

<http://www.airnow.gov/>.

Disclaimer: Data presented on this page is not the Official EPA Air Quality System (AQS) data record and does not constitute the official data record used for regulatory purposes. However, efforts are made to present historical data that closely resembles the results queried from AQS, but rounding or calculation differences can occur.



Annual PM_{2.5} Design Values^a

Date 01/30/17

Site	County	Annual Average (µg/m ³)					CV - 12	# of days over > 12 µg/m ³	Design Value		
		2013	2014	2015	2016 ^b	2017 ^{cd}			2017 ^c	13-15	14-16 ^b
St. Louis											
Arnold West	Jefferson	9.7	10.5	11.6	8.5	8.9	16.1	0	10.6	10.2	9.7
Blair Street (Comb.) [^]	St. Louis City	11.0	11.4	10.4	8.6	8.5	17.2	0	10.9	10.1	9.2
Branch Street~	St. Louis City	12.2	11.3	12.2	10.3	9.2	13.7	0	11.9	11.3	10.6
Forest Park, I-64*	St. Louis City	9.6	10.9	9.2	8.7	9.2	18.3	6	9.9	9.6	9.0
Ladue (Comb.) [^]	St. Louis	11.3	10.5	10.3	8.9	12.7	17.0	9	10.7	9.9	10.6
South Broadway	St. Louis City	10.7	10.1	11.1	8.3	8.9	16.8	7	10.6	9.8	9.4
Kansas City											
Liberty	Clay	8.8	8.8	8.1	6.5	7.2	21.6	0	8.6	7.8	7.3
Richard Gebaur South	Cass	9.2	10.5	8.6	6.3	7.2	21.3	0	9.4	8.5	7.4
Troost	Jackson	9.9	9.2	8.2	8.9	10.7	19.1	0	9.1	8.8	9.3
Blue Ridge, I-70**	Jackson	7.6	7.6	7.3	6.2	9.3	22.7	6	7.5	7.0	7.6
Springfield											
MSU†	Greene	8.3	9.4	8.8	†	†	NA	0	8.8	†	†
Hillcrest High School***	Greene	-	-	7.3	7.2	6.2	21.7	0	***	***	***
Outstate											
Eldorado Springs	Cedar	8.5	8.0	7.1	6.6	6.2	22.5	0	7.9	7.2	6.6
St. Joseph Pump Station	Buchanan	11.1	10.6	9.7	8.2	9.0	18.3	5	10.5	9.5	9.0
								33			

^aQuality assured data through December 31, 2015.

^bPreliminary data through December 31, 2016. Do not quote, do not cite.

^cYear-to-date preliminary data. Do not quote, do not cite.

^dAnnual Average concentration measured year-to-date. Annual averages may increase or decrease as more data is collected over the year.

[^]The Blair Street and Ladue Site's PM_{2.5} design value is based on a combined site level statistic. That is, if a FEM sample is missing on a given day, a valid collocated FRM sample on that day will be substituted consistent with 40 CFR Part 50, Appendix N, 3.0 (d)(2).

~ The Branch Street monitor is classified as a unique middle scale monitoring site and not comparable to the annual PM_{2.5} NAAQS. The concentrations reported are for informational purposes, only.

*Near-Roadway site monitoring began on 1/1/2013.

**Near-Roadway site monitoring began on 7/1/2013.

***Monitor relocated from MSU and began monitoring on 4/16/2015.

†Monitoring discontinued on 4/15/2015.

***3-year design value can not be calculated. Design value in red and bold is a violation of the NAAQS.

CV - 12: The Critical Value (CV) for the Annual PM_{2.5} NAAQS is the current year's annual average which, if monitored, could yield a violation of the 2012 annual PM_{2.5} NAAQS for the most current three year period. (CV = 36.15 µg/m³ – Last year's annual average – previous year's annual average).

The highlighted field indicates that the data set does not meet the completeness criteria of 40 CFR Part 50 Appendix N, Section 4 for the given site. Use of incomplete data for designation purposes is subject to EPA approval consistent with 40 CFR Part 50 Appendix N, 4.(d).

For more information about the implications of the daily Air Quality Index (AQI) for PM_{2.5} concentrations and related health messages.

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