



### **Air Quality Analysis for Fine Particulate Matter (PM<sub>2.5</sub>)**

The following information comes from the ambient air monitors operated by the state. Data from these monitors is uploaded to the 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<sub>2.5</sub> is airborne particulate matter with an aerodynamic diameter smaller than 2.5 micrometers. It results from both direct emissions from air pollution sources (primary PM<sub>2.5</sub>) and from atmospheric reactions between gaseous species that form particulate matter (secondary PM<sub>2.5</sub>). Airborne particulate matter can have adverse effects on the respiratory system and also on the heart.

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

In August 2018, EPA designated the Missouri portion of the St. Louis area as an attainment area for the previous annual PM<sub>2.5</sub> standard of 15 µg/m<sup>3</sup>. The entire state is classified as unclassifiable/attainment based on the 24-hour PM<sub>2.5</sub> 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<sub>2.5</sub> standard of 12 µg/m<sup>3</sup>. The state of Missouri recommended to EPA a designation of attainment of the 2012 standard for the St. Louis area. EPA designated the area unclassifiable.

For more information about PM<sub>2.5</sub>, 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<sub>2.5</sub> Design Values<sup>a</sup>

Annual summary through February 10, 2019

Site	County	98 <sup>th</sup> Percentile Values					Critical Values	Exceedances	Design Values		
		Micrograms per cubic meter (µg/m <sup>3</sup> )							CV - 35	2019 <sup>c</sup>	Year-to-date
St. Louis		2015	2016	2017	2018 <sup>b</sup>	2019 <sup>cd</sup>					15-17
Arnold West	Jefferson	24.3	18.8	17.8	18.9	13.2	69.8	0	20	19	17
Blair Street (Comb.) <sup>^</sup>	St. Louis City	23.3	19.6	17.5	20.8	21.6	68.2	0	20	19	20
Branch Street <sup>~</sup>	St. Louis City	22.9	21.1	18.3	20.3	16.5	67.9	0	21	20	18
Forest Park, I-64	St. Louis City	20.7	20.2	17.5	20.5	21.2	68.5	0	19	19	20
Ladue (Comb.) <sup>^</sup>	St. Louis	23.5	19.3	18.9	21.2	18.0	66.4	0	21	20	19
South Broadway	St. Louis City	25.7	20.2	18.3	19.5	17.6	68.7	0	21	19	18
<b>Kansas City</b>											
Liberty	Clay	17.6	14.6	14.5	15.6	13.3	76.4	0	16	15	14
Richard Gebaur South	Cass	20.7	14.0	15.7	15.2	12.5	75.6	0	17	15	14
Troost	Jackson	17.6	19.9	21.8	18.7	13.5	66.0	0	20	20	18
Blue Ridge, I-70	Jackson	17.0	13.9	17.4	16.9	14.5	72.2	0	16	16	16
<b>Springfield</b>											
MSU <sup>†</sup>	Greene	18.0	†	†	†	†	†	†	***	†	†
Hillcrest High School*	Greene	18.1	15.2	15.9	17.4	12.0	73.2	0	16	16	15
<b>Outstate</b>											
El Dorado Springs	Cedar	18.3	15.5	14.7	19.8	13.3	72.0	0	16	17	16
St. Joseph Pump Station	Buchanan	21.0	17.1	18.6	18.2	18.0	69.7	0	19	18	18
0											

<sup>a</sup>Quality assured data through Dec. 31, 2017.

<sup>b</sup>Preliminary data through Dec. 31, 2018. Do not quote, do not cite.

<sup>c</sup>Year-to-date preliminary data. Do not quote, do not cite.

<sup>d</sup>98<sup>th</sup> Percentile concentration measured year-to-date. 98<sup>th</sup> Percentile concentrations may change as more data is collected over the year.

<sup>^</sup>The Blair Street, Ladue, and Troost Site's PM<sub>2.5</sub> 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).

<sup>~</sup>The Branch Street monitor is classified as a unique middle scale monitoring site and not comparable to the annual PM<sub>2.5</sub> NAAQS.

\*Monitor relocated from MSU and began monitoring on April 16, 2015.

<sup>†</sup>Monitoring discontinued on April 15, 2015.

\*\*\*Three-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<sub>2.5</sub> NAAQS is the current year's 98<sup>th</sup> percentile which, if monitored, could yield a violation of the 2006 24-Hour PM<sub>2.5</sub> NAAQS for the most current three year period. (CV = 106.5 µg/m<sup>3</sup> – last year's 98<sup>th</sup> percentile – previous year's 98<sup>th</sup> 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<sub>2.5</sub> concentrations and related health messages go to <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<sub>2.5</sub> Design Values<sup>a</sup>

Annual summary through February 10, 2019

Site	County	Annual Average Values					Critical Values	Exceedances	Design Values		
		Micrograms per cubic meter (µg/m <sup>3</sup> )							Year-to-date		
		2015	2016	2017	2018 <sup>b</sup>	2019 <sup>cd</sup>	CV - 12	>12 µg/m <sup>3</sup> (2012 Standard)	15-17	16-18 <sup>b</sup>	17-19 <sup>c</sup>
<b>St. Louis</b>											
Arnold West	Jefferson	11.6	8.3	8.2	7.5	6.6	20.5	3	9.3	8.0	7.4
Blair Street (Comb.) <sup>^</sup>	St. Louis City	10.4	8.5	7.9	8.7	10.4	19.6	12	8.9	8.4	9.0
Branch Street <sup>~</sup>	St. Louis City	10.4	9.7	9.1	9.2	9.4	17.9	10	9.7	9.3	9.2
Forest Park, I-64	St. Louis City	9.2	8.7	8.3	8.5	9.8	19.4	11	8.7	8.5	8.9
Ladue (Comb.) <sup>^</sup>	St. Louis	10.3	8.7	9.4	9.4	9.4	17.4	12	9.5	9.2	9.4
South Broadway	St. Louis City	11.1	8.1	7.8	9.1	9.7	19.3	11	9.0	8.3	8.9
<b>Kansas City</b>											
Liberty	Clay	8.1	6.4	6.7	6.1	7.1	23.4	4	7.1	6.4	6.6
Richard Gebaur South	Cass	8.6	6.3	6.9	6.5	6.2	22.8	3	7.3	6.6	6.5
Troost	Jackson	8.2	8.9	9.9	7.6	7.5	18.7	5	9.0	8.8	8.3
Blue Ridge, I-70	Jackson	7.3	6.2	7.8	8.0	7.8	20.4	6	7.1	7.3	7.9
<b>Springfield</b>											
MSU <sup>†</sup>	Greene	8.8	†	†	†	†	†	†	***	†	†
Hillcrest High School*	Greene	7.3	7.1	7.4	7.6	5.4	21.2	1	7.3	7.4	6.8
<b>Outstate</b>											
El Dorado Springs	Cedar	7.1	6.6	6.8	7.6	6.4	21.8	3	6.8	7.0	6.9
St. Joseph Pump Station	Buchanan	9.7	8.1	8.6	8.9	9.3	18.7	9	8.8	8.5	8.9
							<b>90</b>				

<sup>a</sup>Quality assured data through Dec. 31, 2017.

<sup>b</sup>Preliminary data through Dec. 31, 2018. Do not quote, do not cite.

<sup>c</sup>Year-to-date preliminary data. Do not quote, do not cite.

<sup>d</sup>Annual Average concentration measured year-to-date. Annual averages may increase or decrease as more data is collected over the year.

<sup>^</sup>The Blair Street, Ladue, and Troost Site's PM<sub>2.5</sub> 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/FEM sample on that day will be substituted consistent with 40 CFR Part 50, Appendix N, 3.0 (d)(2).

<sup>~</sup>The Branch Street monitor is classified as a unique middle scale monitoring site and not comparable to the annual PM<sub>2.5</sub> NAAQS. The concentrations reported are for informational purposes, only.

\*Monitor relocated from MSU and began monitoring on April 16, 2015.

†Monitoring discontinued on April 15, 2015.

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

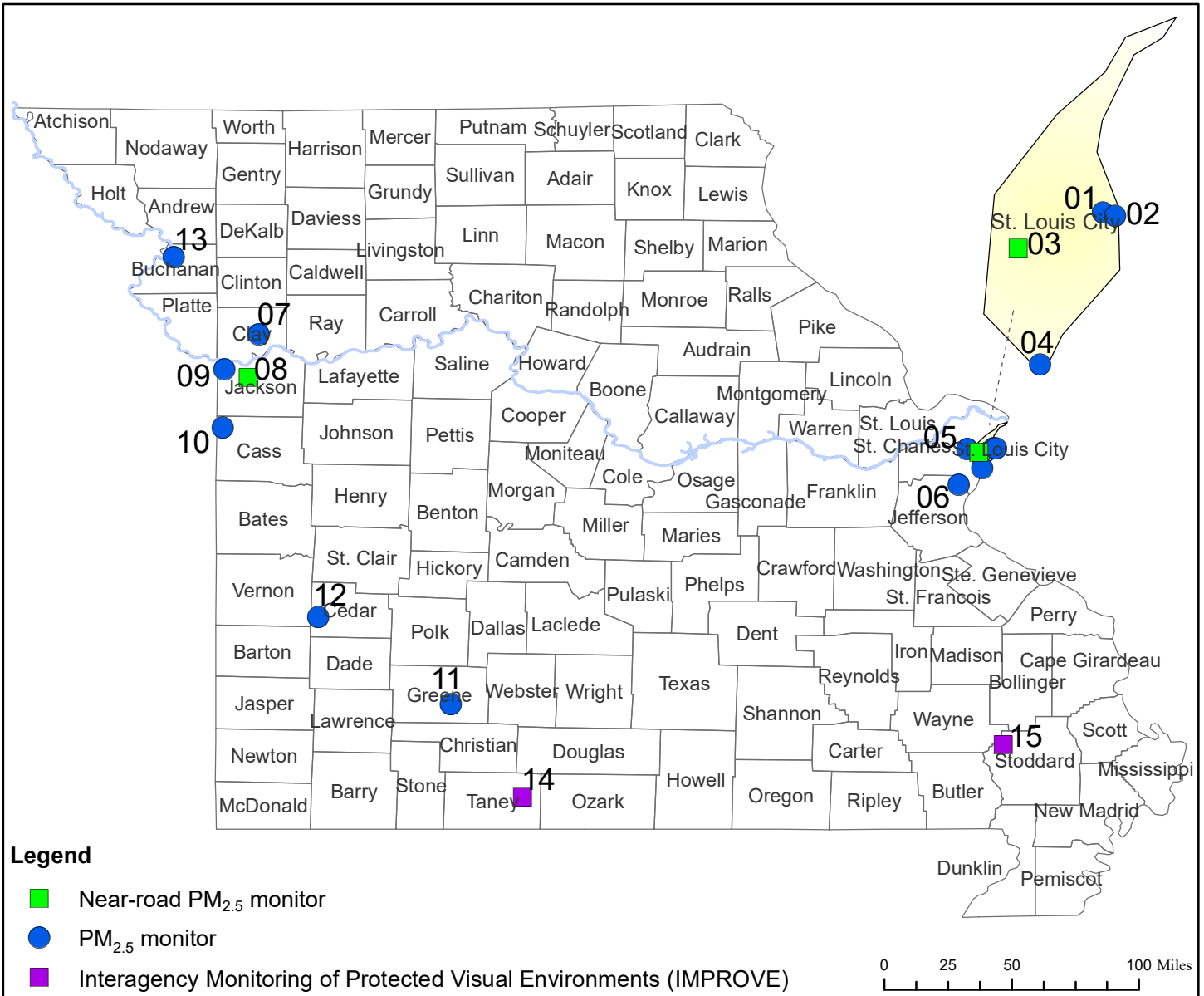
**CV - 12:** The critical value (CV) for the Annual PM<sub>2.5</sub> NAAQS is the current year's annual average which, if monitored, could yield a violation of the 2012 annual PM<sub>2.5</sub> NAAQS for the most current three year period. (CV = 36.15 µg/m<sup>3</sup> – last year's annual average – previous 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).

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# Missouri's PM<sub>2.5</sub> Monitoring Network, 2019



**Site # Site Name**

**St. Louis Area**

- 01 Blair Street
- 02 Branch Street\*\*
- 03 Forest Park
- 04 South Broadway
- 05 Ladue
- 06 Arnold West

**Kansas City Area**

- 07 Liberty
- 08 Blue Ridge, I-70
- 09 Troost
- 10 Richard Gebaur-South

**Site # Site Name**

**Springfield Area**

- 11 Hillcrest High School^^

**Outstate Area**

- 12 El Dorado Springs
- 13 St. Joseph Pump Station
- 14 Hercules Glades
- 15 Mingo

\*\*Middle Scale (100 meters to 0.5 kilometers);  
 Not to be compared to the annual standard  
 ^^Began monitoring in 2015

