

National Ambient Air Quality Standards (NAAQS):

National Ambient Air Quality Standards consist of primary and secondary standards. The primary standards define levels of air quality which EPA judges are necessary, with an adequate margin of safety, to protect the public health. The secondary standards define levels of air quality which EPA judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. For PM_{2.5} the levels of the primary and secondary standards are the same.

National Ambient Air Quality Standard for PM_{2.5} - Annual Standard:

The annual standard is designed to provide an appropriate level of protection from long-term exposure to PM_{2.5}. The standard is met when the annual design value is less than or equal to 12 µg/m³. The standard changed from 15 µg/m³ to 12 µg/m³ on March 18, 2013. The annual design value is calculated by averaging the annual means of 3 consecutive complete years of air quality data. The table below compares data collected from 2014 through year-to-date 2020 to the PM_{2.5} annual standard.

PM_{2.5} Annual Means and Annual Design Values

Site Name	Annual Means µg/m ³							Annual Design Values				
	2014	2015	2016	2017	2018	2019	2020	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020
Firearms Tr*	11.2	10.4	8.3	8.3	9.5	10.2	9.3	10.0	9.0	8.7	9.3	9.7
Durrett Lane	12.0	10.0	9.2	8.9	10.2	10.4	9.6	10.4	9.4	9.4	9.8	10.0
Cannons Lane	11.0	9.5	7.9	7.9	9.1	9.6	8.9	9.5	8.4	8.3	8.8	9.2
Watson Lane	12.2	10.4	8.4	8.1	10.5	10.0	9.6	10.3	9.0	9.0	9.6	10.1

Bold: Design value for Louisville

* Firearms Training replaced Southwick in 2018

National Ambient Air Quality Standard for PM_{2.5} - 24-Hour (Daily) Standard:

The 24-hour standard is designed to provide an appropriate level of protection from short-term exposure to PM_{2.5}. The standard is met when the 24-hour design value is less than or equal to 35 µg/m³. The design value is based on 3 consecutive complete years of air quality data and is calculated by taking the average of the 98th percentile value for each of the 3 years. The 98th percentile value is the 24-hour average out of a year of PM_{2.5} monitoring data below which 98 percent of all 24-hour averages fall. The table below compares data collected from 2014 through year-to-date 2020 to the 24-hour standard for PM_{2.5}.

PM_{2.5} Annual 98th Percentiles and 24-Hour Design Values

Site Name	Annual 98 th Percentile Value µg/m ³							24-Hour Design Values				
	2014	2015	2016	2017	2018	2019	2020	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020
Firearms Tr*	24.3	22.3	17.0	17.8	23.0	20.2	15.5	21.2	19.0	19.3	20.3	19.6
Durrett Lane	26.0	22.1	18.7	20.7	24.7	22.9	16.0	22.3	20.5	21.4	22.8	21.2
Cannons Lane	23.9	21.7	18.7	17.2	22.2	20.5	14.7	21.4	19.2	19.4	20.0	19.1
Watson Lane	26.2	22.8	16.2	17.7	24.3	21.4	17.7	21.7	18.9	19.4	21.1	21.1

Bold: Design value for Louisville

* Firearms Training replaced Southwick in 2018

Attainment of the SO₂ Standard:

Attainment of the new standard is achieved when the 3-year average of the 99th percentile annual distribution of the daily maxima is less than or equal to 75 ppb. Since this value can be calculated from historical data, the chart below indicates those values based on 2014-2020 data.

SO₂ Annual 99th Percentiles and Annual Design Values

Site Name	Annual 99 th Percentiles (ppb)							Annual Design Values				
	2014	2015	2016	2017	2018	2019	2020	2014-2016	2015-2017	2016-2018	2017-2019	2018-2020
Watson Lane	149	54	26	14	16	15	9	76	31	19	15	13
Fire Arms	42	25	16	11	12	6	5	28	17	13	10	8
Cannons Lane	29	19	8	7	8	9	5	19	11	8	8	7
New Albany	44	26	11	8	9	7	3	27	15	9	8	6

* Design Value calculations are approximations based on preliminary summary data and may differ from official design value calculations