

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 2015 through year-to-date 2021 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				
	2015	2016	2017	2018	2019	2020	2021	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021
Algonquin*	10.4	8.3	8.3	9.5	10.2	9.3	10.9	9.0	8.7	9.3	9.6	10.1
Durrett Lane	10.0	9.2	8.9	10.2	10.4	9.7	12.2	9.4	9.4	9.8	10.1	10.8
Cannons Lane	9.5	7.9	7.9	9.1	9.6	9.2	11.1	8.4	8.3	8.8	9.3	10.0
Watson Lane	10.4	8.4	8.1	10.5	10.0	9.6	11.4	9.0	9.0	9.6	10.1	10.4

Bold: Design value for Louisville

* Site name changed from Firearms Training to Algonquin Parkway

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 2015 through year-to-date 2021 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				
	2015	2016	2017	2018	2019	2020	2021	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021
Algonquin*	22.3	17.0	17.8	23.0	20.2	18.9	28.1	19.0	19.3	20.3	20.7	22.4
Durrett Lane	22.1	18.7	20.7	24.7	22.9	22.4	29.6	20.5	21.4	22.8	23.3	25.0
Cannons Lane	21.7	18.7	17.2	22.2	20.5	20.6	27.8	19.2	19.4	20.0	21.1	23.0
Watson Lane	22.8	16.2	17.7	24.3	21.4	21.3	27.9	18.9	19.4	21.1	22.3	23.5

Bold: Design value for Louisville

* Site name changed from Firearms Training to Algonquin Parkway

8-Hour Ozone Exceedances:

The National Ambient Air Quality Standard for ozone is measured as an 8-hour average. An ozone exceedance occurs when the highest 8-hour average for each day is greater than the NAAQS. The NAAQS was lowered from 80 ppb to 75 ppb in 2007 and from 75 ppb to 70 ppb in 2016. The data below lists the number of exceedances based on the NAAQS at the time the data was collected.

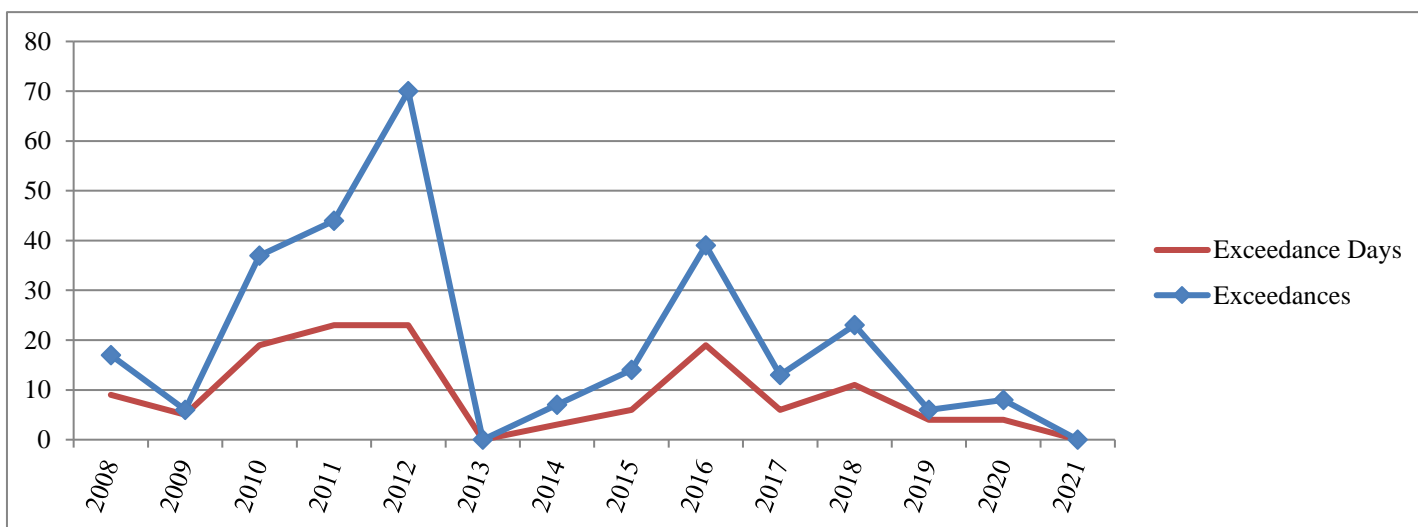
2008-2021 8-Hour Ozone Exceedance Summary through April 14th

Year	Charles-town	New Albany	Bates & Carri-thers	Watson	WLKY& Cannons Lane	Buckner	Shepherds-ville	Louisville MSA Total		Jefferson County Total	
								Exceedances	Days	Exceedances	Days
2008	3	3	2	2	1	4	2	17	9	5	5
2009	0	0	2	4	0	0	0	6	5	6	5
2010	4	2	3	3	15	8	2	37	19	21	15
2011	6	5	6	5	8	13	1	44	23	19	14
2012	8	13	7	11	13	14	4	70	23	31	17
2013	0	0	0	0	0	0	0	0	0	0	0
2014	1	2	0	2	2	0	0	7	3	4	3
2015	3	0	4	1	4	2	0	14	6	9	5
2016	7	6	5	3	14	3	1	39	19	22	16
2017	1	5	1	1	4	1	0	13	6	6	4
2018	4	5	3	2	6	1	2	23	11	11	8
2019	1	0	2	0	2	1	0	6	4	4	2
2020	0	1	1	1	4	0	1	8	4	6	4
2021	0	0	0	0	0	0	0	0	0	0	0

* Cannons Lane replaced WLKY in 2010. Data through 2009 are from WLKY.

* Carrithers replaced Bates in 2018. Data through 2017 are from Bates.

Historical Graph of 8-Hour Ozone Exceedances



National Ambient Air Quality Standard for Ozone - 8-Hour Standard:

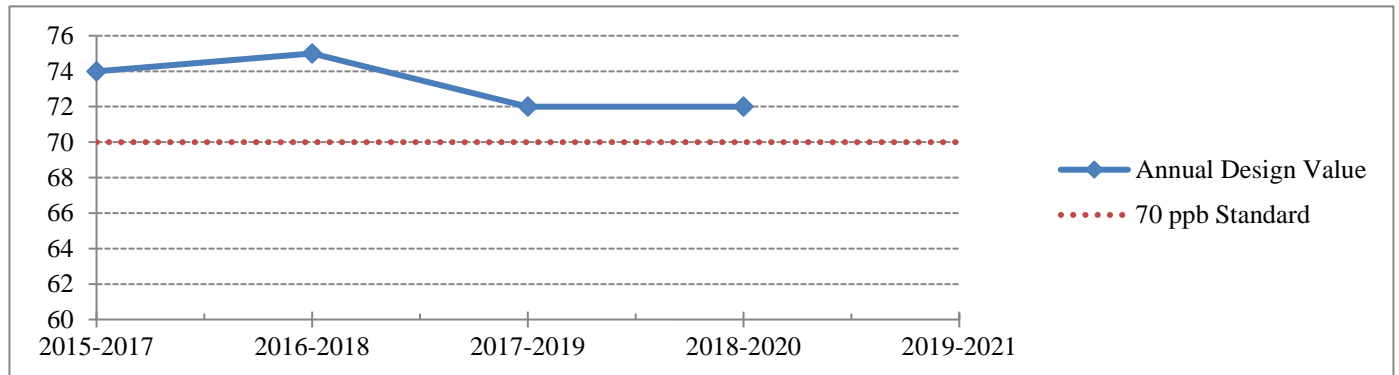
Attainment of the 8-hour standard for ozone at an individual monitor is achieved when the three-year average of the annual fourth-highest daily maximum (4th maximum) 8-hour average ozone concentration is less than 71 ppb. This three-year average is the design value for that monitor. The Louisville MSA row represents the largest 4th maximum and design value* for all monitors within the MSA.

8-Hour Ozone 4th Maximums and Design Values through April 14th

Site Name	4 th Maximums							8-Hour Design Values				
	2015	2016	2017	2018	2019	2020	2021	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021
Charlestown	74	73	68	71	64	63		71	70	67	66	
New Albany	67	73	74	73	63	66		71	73	70	67	
Bates/Carrithers	71	73	65	70	64	68		69	69	66	67	
Watson Lane	69	70	66	69	65	63		68	68	66	65	
Cannons Lane	76	76	72	77	68	71		74	75	72	72	
Buckner	73	69	64	69	65	61		68	67	66	65	
Shepherdsville	67	67	63	68	60	65		65	66	63	64	
Louisville MSA	76	76	74	77	68	71	#N/A	74	75	72	72	#N/A

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

8-Hour Ozone Design Value Trend Chart



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 table below indicates those values based on 2015-2021 data.

SO₂ Annual 99th Percentiles and Annual Design Values

Site Name	Annual 99 th Percentiles (ppb)							Annual Design Values				
	2015	2016	2017	2018	2019	2020	2021	2015-2017	2016-2018	2017-2019	2018-2020	2019-2021
Watson Lane	54	26	14	16	15	15	5	31	19	15	15	12
Algonquin	25	16	11	12	6	5	9	17	13	10	8	6
Cannons Lane	19	8	7	8	9	8	6	11	8	8	8	8
New Albany	26	11	8	9	7	4	10	15	9	8	7	7

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