

OZONE SEASON SUMMARY 2023

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Principal Environmental Engineer

MWAQC
May 24, 2023

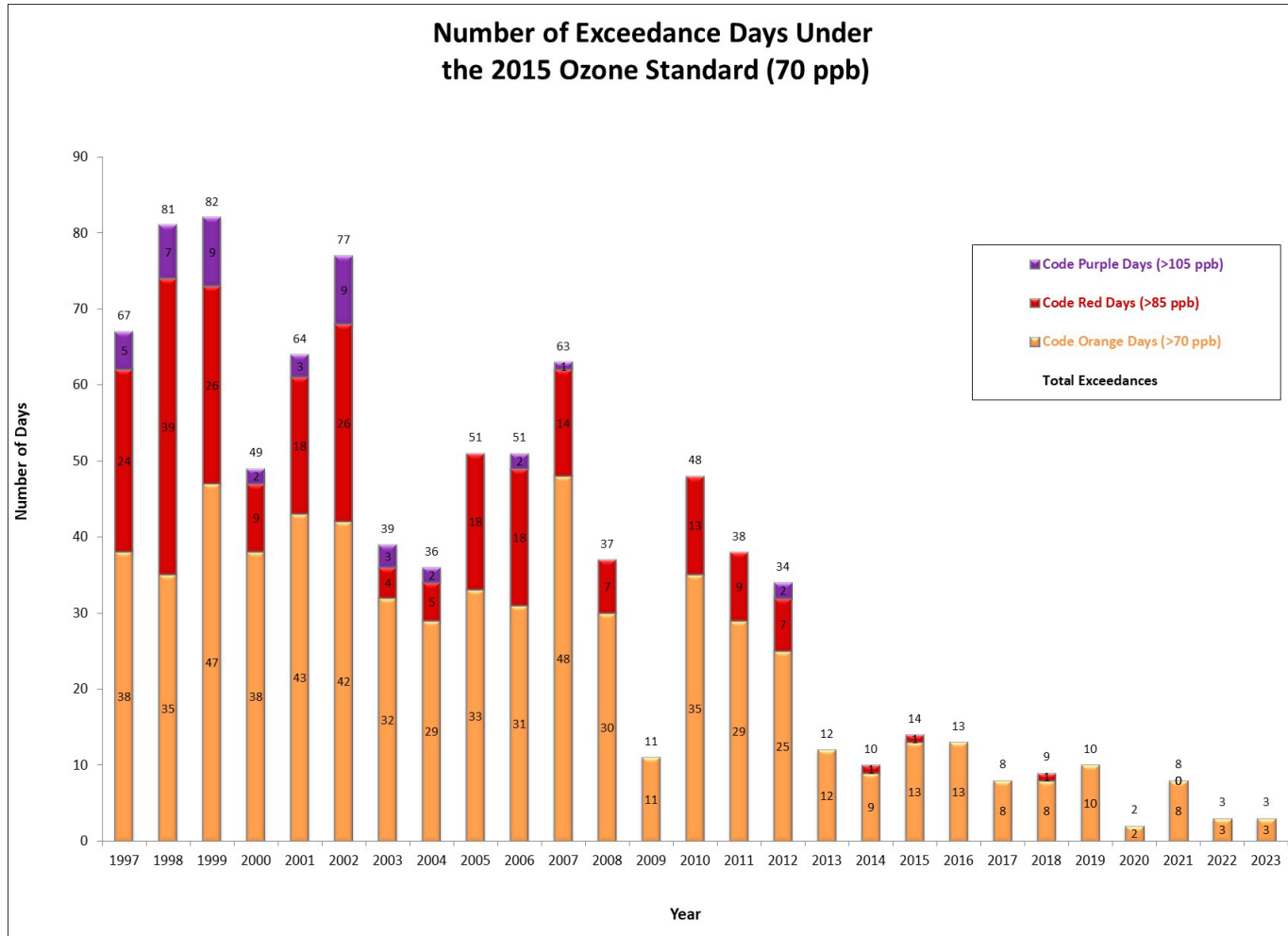
Peak 8-Hour Average Ozone Levels (ppb)

March 2023							April 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	01	02	03	04	26	27	28	29	30	31	01
			41	47	41	47							51
05	06	07	08	09	10	11	02	03	04	05	06	07	08
49	49	48	47	46	37	43	53	53	58	45	52	47	52
12	13	14	15	16	17	18	09	10	11	12	13	14	15
37	40	42	52	52	50	50	57	58	62	68	75	61	50
19	20	21	22	23	24	25	16	17	18	19	20	21	22
47	49	51	57	46	40	41	54	54	63	65	67	73	54
26	27	28	29	30	31		23	24	25	26	27	28	29
56	44	58	55	55	56		49	49	52	55	56	49	44
							30						
							42						
May 2023													
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
30	01	02	03	04	05	06							
	41	40	35	38	46	55							
07	08	09	10	11	12	13							
48	59	44	52	65	76	55							
14	15	16	17	18	19	20							
55	55												
21	22	23	24	25	26	27							
28	29	30	31										

3 Code Orange Days, 23 Code Yellow Days, rest all Code Green Days

Analysis is based on draft data as of May 16, 2023.

Ozone Exceedance Trend

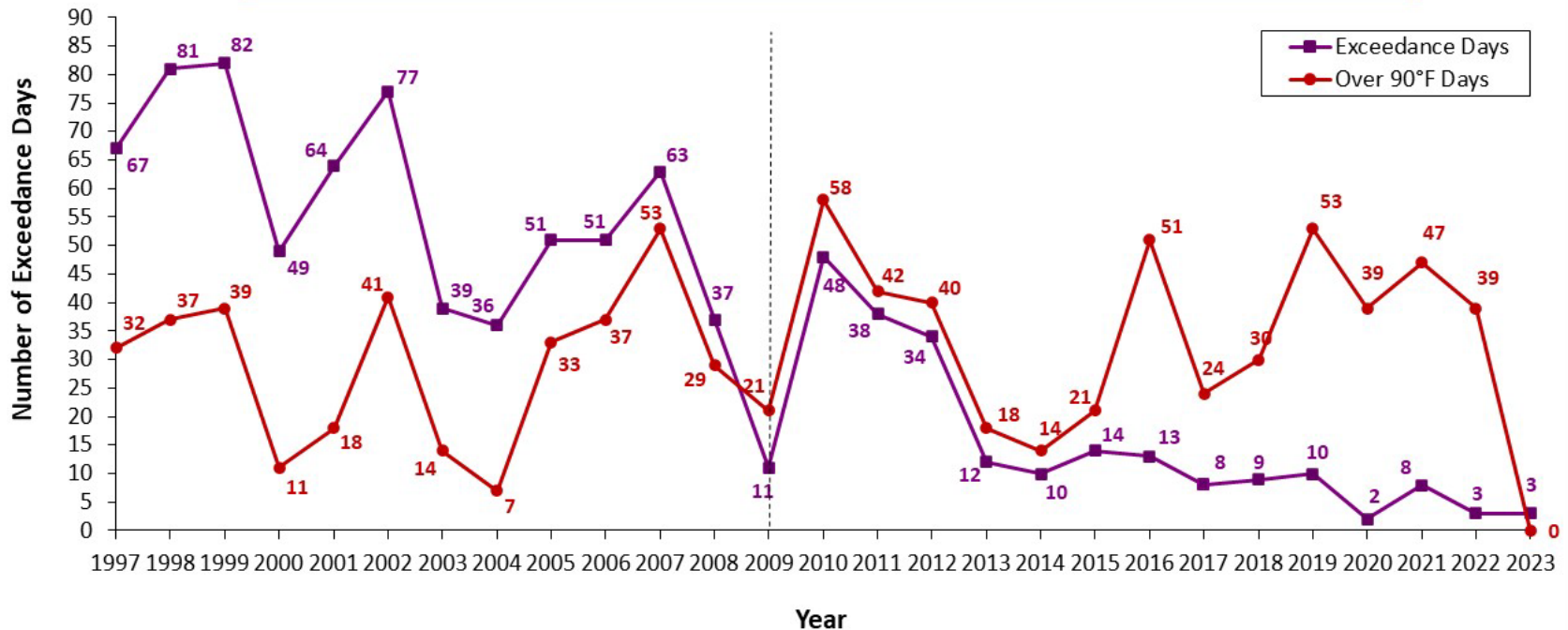


* 2023 data is draft and incomplete as of May 16, 2023.

Ozone & Temperature Trend

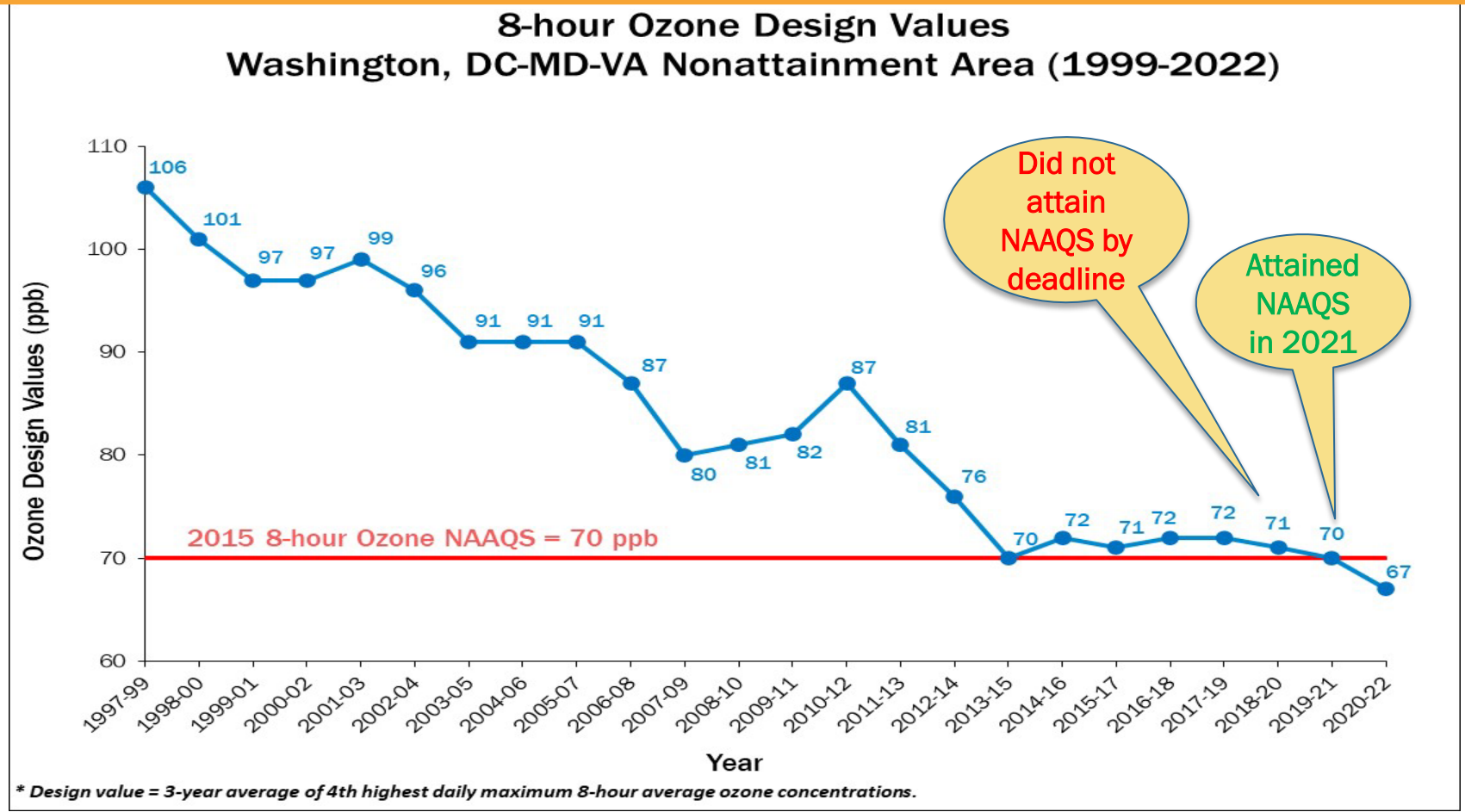
Over 90°F Days (Dulles) and 8-hour Ozone Exceedance Days (2015 std)

Emissions have been declining over the years, resulting in fewer number of exceedance days.



* 2023 data is draft and incomplete as of May 16, 2023.

Ozone Design Value Trend



* 2022 data is draft as of May 16, 2023.

4th High Ozone Level Needed in 2023 To Maintain Compliance With 2015 Ozone NAAQS

Monitor	4 th High Ozone Needed (ppb)	Observed 4 th High Ozone (ppb)*
McMilan (DC)	73	65
Beltsville (MD)	74	62

* Observed data as of May 16, 2023.

Why Fewer Exceedance Days Now ?

Emission Control Programs

Federal	State	Local
Acid Rain Program (1996/2000)	Vehicle Inspection & Maintenance Programs	Renewable Energy Programs Regional Wind Power Purchase Program Clean Energy Rewards Program Renewable Portfolio Standards
Tier 2 (LD Vehicle) Rule (2004)	Maryland Healthy Air Act (2009/2012)	Energy Efficiency Programs LED Traffic Signal Retrofit program Building Energy Efficiency Programs
HD Diesel vehicle Rule (2004/2007)	Virginia CSAPR Rule	VRE Idling Reduction
NOX SIP Call (2004)	Ozone Transport Commission Rules	LOW VOC Paint
CAIR/CSAPR/CSAPR Update/Revised CSAPR Update (2009/2015/2017/2021)		Gas Can Replacement

24-Hour Average PM2.5 Levels ($\mu\text{g}/\text{m}^3$)

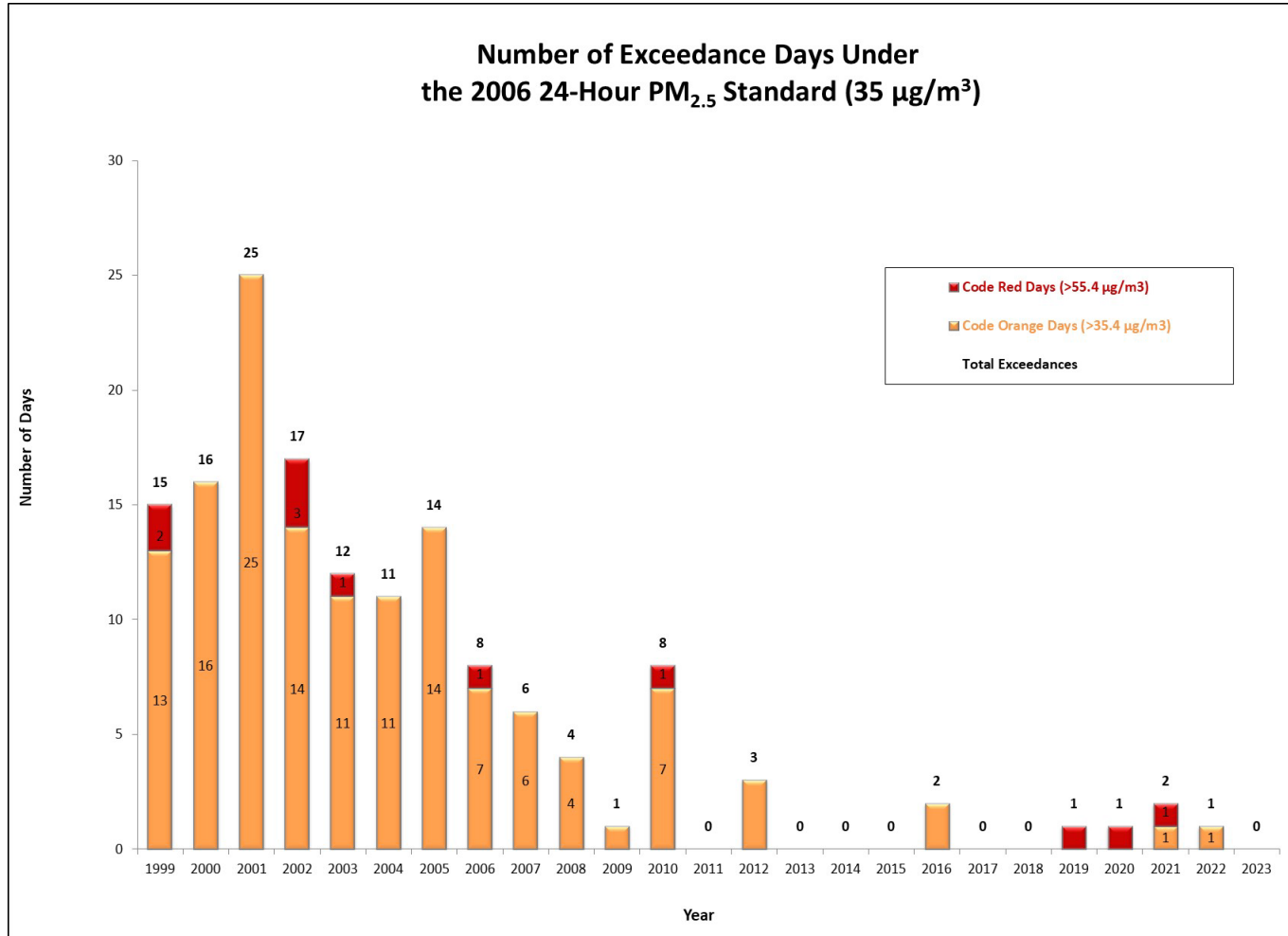
March 2023							April 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	01	02	03	04	26	27	28	29	30	31	01
			10.9	11.6	8.6	2.9							6.9
05	06	07	08	09	10	11	02	03	04	05	06	07	08
6.8	9.2	5.3	3.6	5.1	8.7	4.1	4.4	8.2	8.4	13.6	8.3	5.3	6.4
12	13	14	15	16	17	18	09	10	11	12	13	14	15
8.3	10.4	4.5	4.0	6.1	21.5	5.5	8.3	6.5	7.4	10.0	11.5	11.8	8.9
19	20	21	22	23	24	25	16	17	18	19	20	21	22
4.7	10.7	10.7	9.8	17.9	8.6	10.1	9.2	4.5	5.4	9.3	14.0	18.8	16.5
26	27	28	29	30	31		23	24	25	26	27	28	29
6.8	15.3	6.1	6.5	7.0	8.8		6.3	5.6	7.5	9.8	11.4	7.2	4.8
							30						
							5.0						

May 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	01	02	03	04	05	06
5.0	5.0	3.3	2.5	2.5	5.0	8.5
07	08	09	10	11	12	13
10.0	11.3	8.2	9.0	13.0	16.2	14.6
14	15	16	17	18	19	20
10.6	6.9					
21	22	23	24	25	26	27
28	29	30	31			

10 Code Yellow Days, rest all Code Green Days

Analysis is based on draft data as of May 16, 2023.

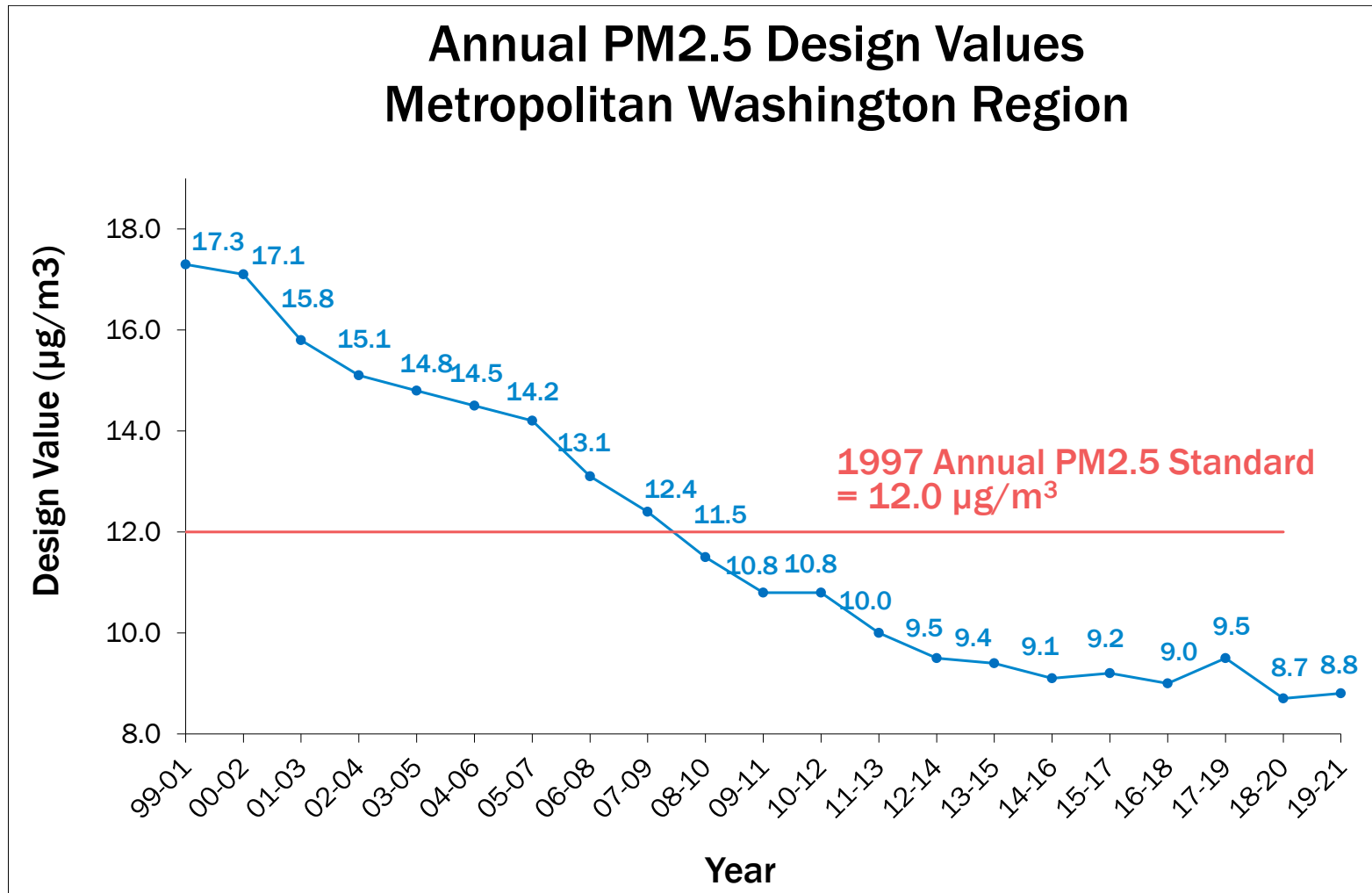
PM2.5 Exceedance Trend



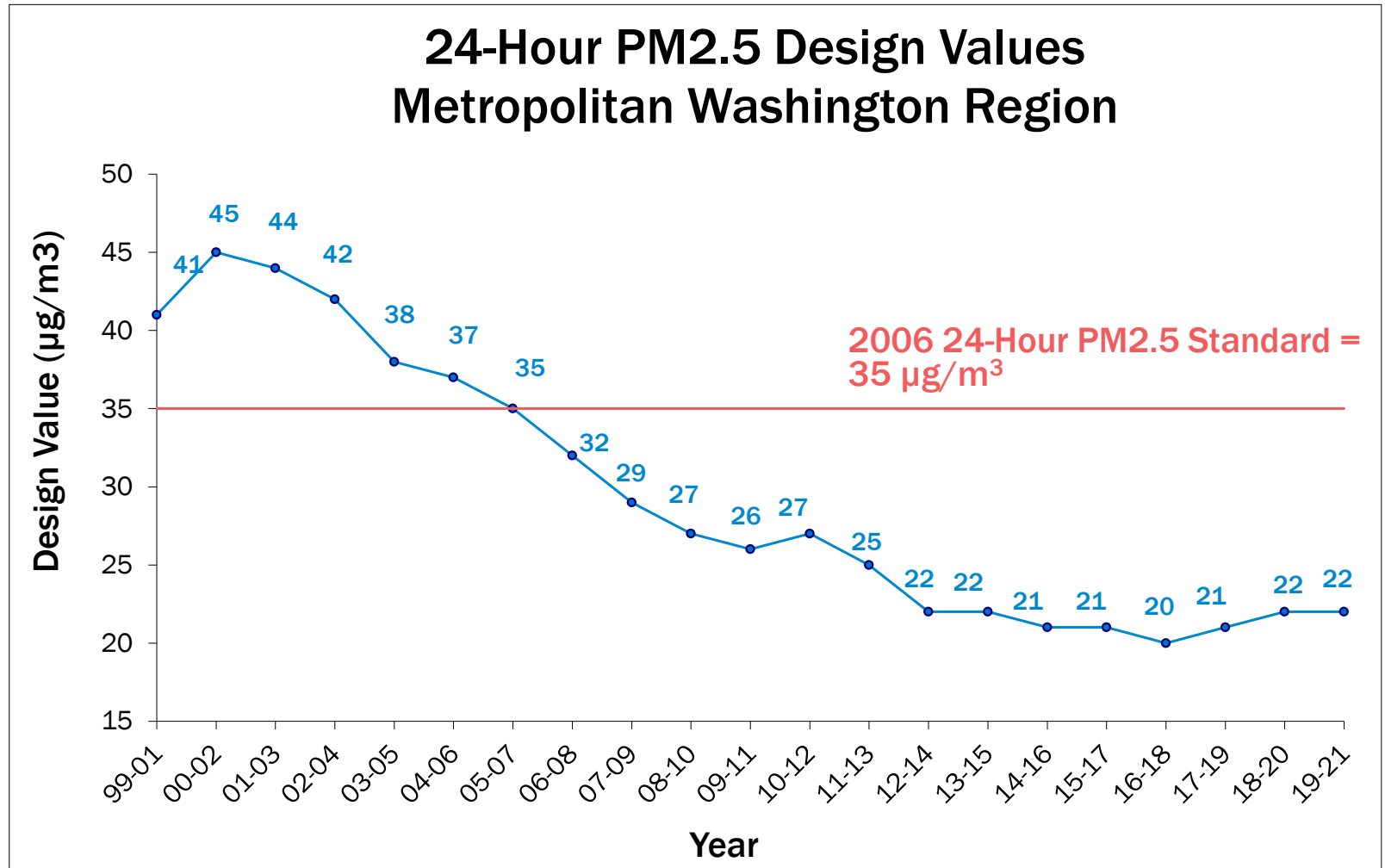
* 2023 data is draft and incomplete as of May 16, 2023.



Annual PM2.5 Design Value Trend

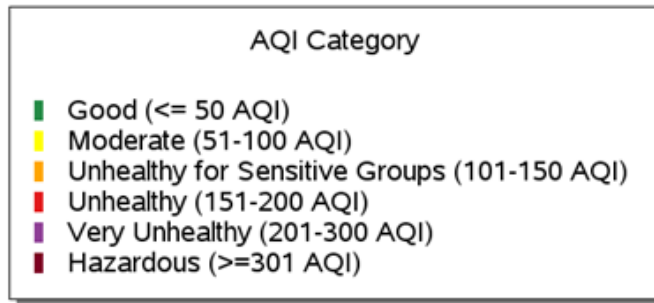
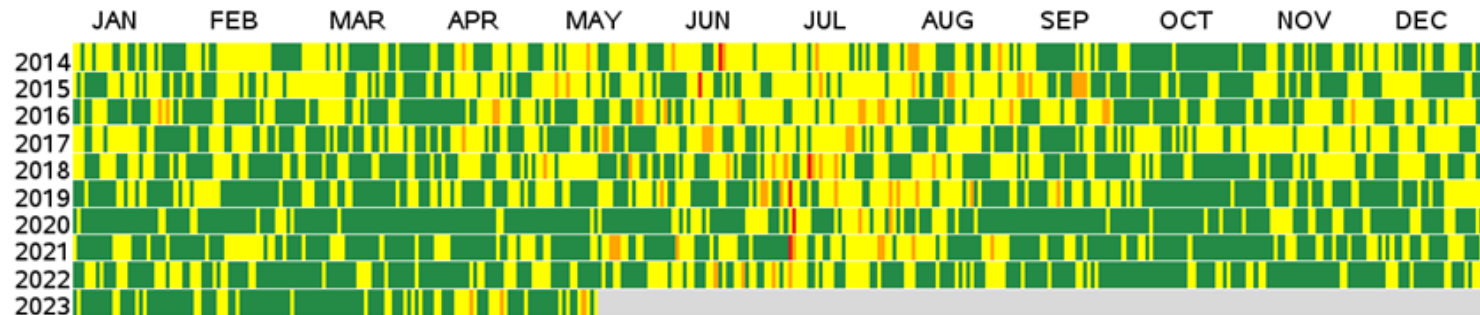


24-Hour PM2.5 Design Value Trend



AQI Value Trends

Daily AQI Values, 2014 to 2023
Washington-Arlington-Alexandria, DC-VA-MD-WV

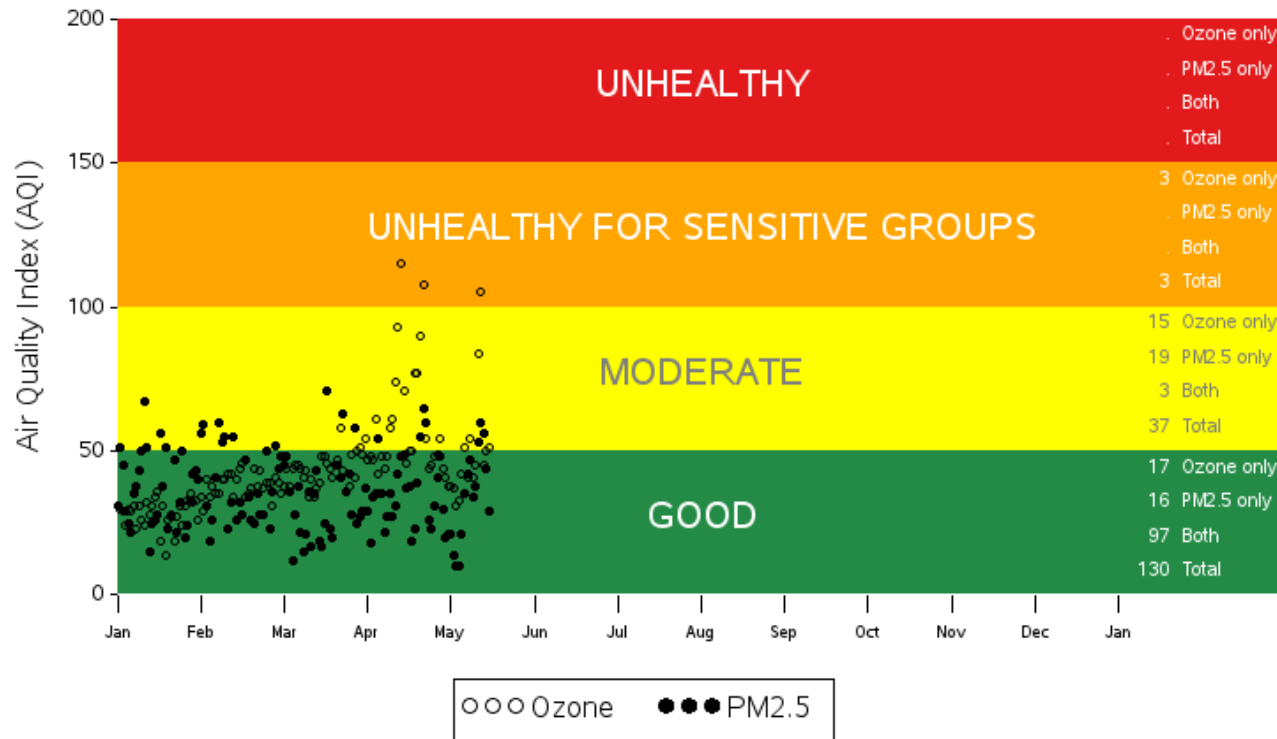


Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: May 16, 2023

Note: Data shown above is for combined AQI values for ozone, PM2.5, PM10, CO, NO2, and SO2 for the Washington-Arlington-Alexandria CBSA.

AQI Values - 2023

Daily Ozone and PM2.5 AQI Values in 2023
Washington-Arlington-Alexandria, DC-VA-MD-WV



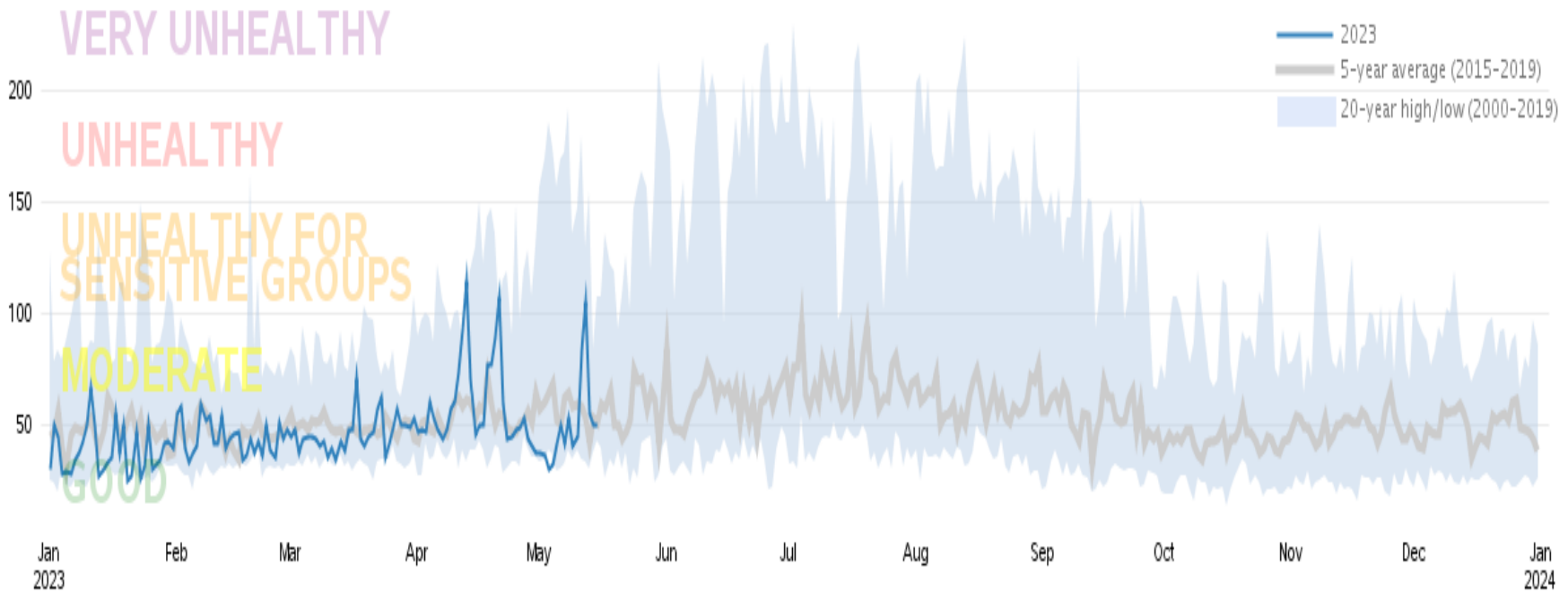
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: May 16, 2023



AQI Value Trends

Combined Ozone and PM2.5 Daily AQI Values

Washington-Arlington-Alexandria, DC-VA-MD-WV



Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>

Generated: May 16, 2023

Note: Data shown above is for the Washington-Arlington-Alexandria CBSA.