

OZONE SEASON SUMMARY 2022

Sunil Kumar
Principal Environmental Engineer

MWAQC-TAC
July 12, 2022

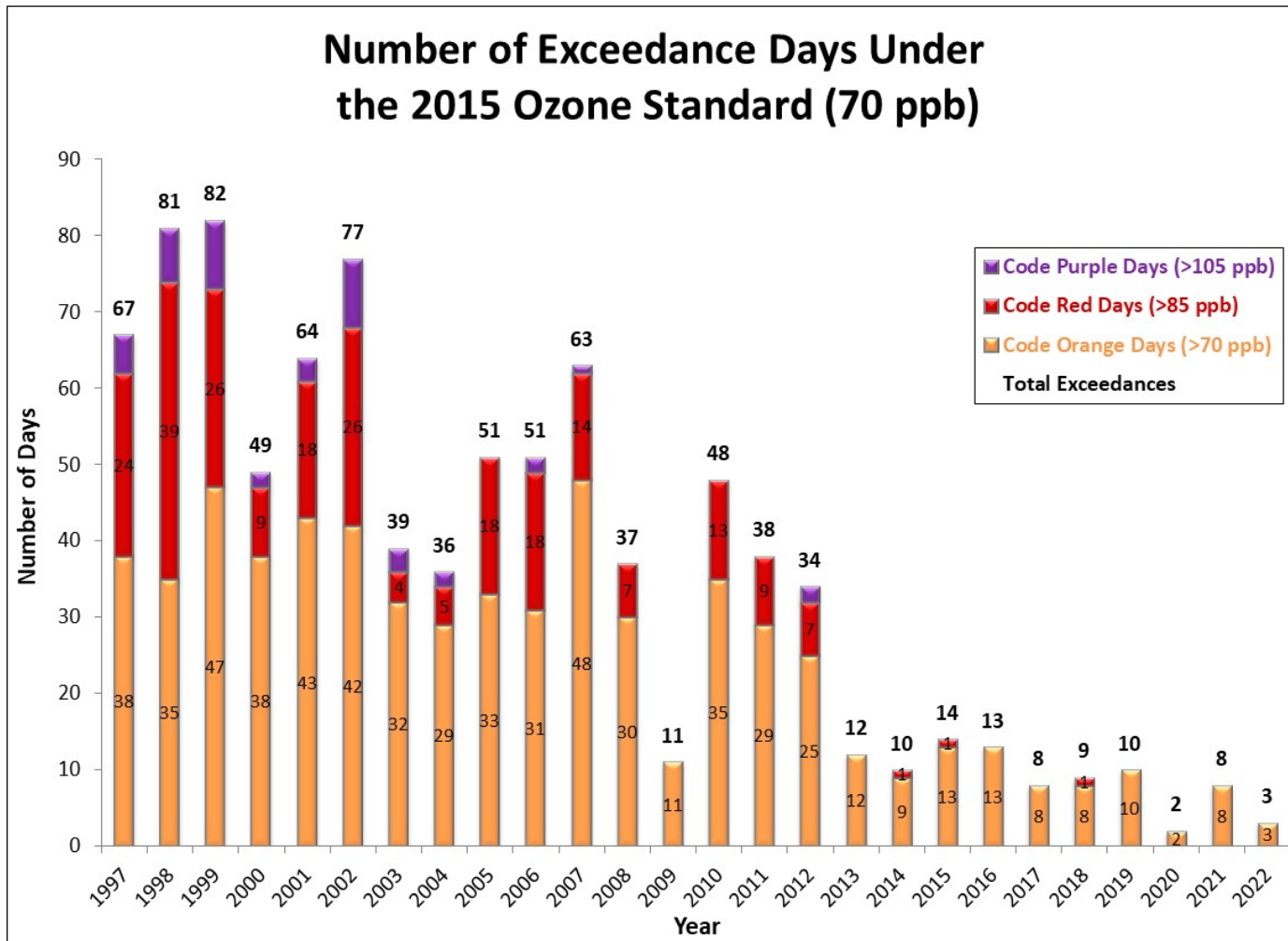
Peak 8-Hour Average Ozone Levels (ppb)

March 2022							April 2022							May 2022						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	01	02	03	04	05	27	28	29	30	31	01	02	01	02	03	04	05	06	07
		47	47	46	44	48						42	49							45
06	07	08	09	10	11	12	03	04	05	06	07	08	09	08	09	10	11	12	13	14
43	38	46	43	43	47	46	47	48	39	41	39	49	39	49	62	63	53	39	24	29
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
44	52	57	58	43	52	44	42	46	51	57	46	59	57	43	48	60	47	54	63	62
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
42	53	55	43	26	47	42	44	32	39	48	50	61	60	55	45	36	40	30	34	41
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				
39	44	46	51	46			64	47	39	47	46	57	56	55	56	66				
June 2022							July 2022													
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
29	30	31	01	02	03	04	26	27	28	29	30	01	02							
			59	54	51	66						55	50							
05	06	07	08	09	10	11	03	04	05	06	07	08	09							
58	60	48	63	55	53	37	54	60												
12	13	14	15	16	17	18	10	11	12	13	14	15	16							
47	65	47	77	54	61	41														
19	20	21	22	23	24	25	17	18	19	20	21	22	23							
45	59	65	72	45	66	54														
26	27	28	29	30			24	25	26	27	28	29	30							
49	47	56	60	76																

3 Code Orange days, 35 Code Yellow Days, rest all Code Green Days

Analysis is based on draft data as of July 5, 2022.

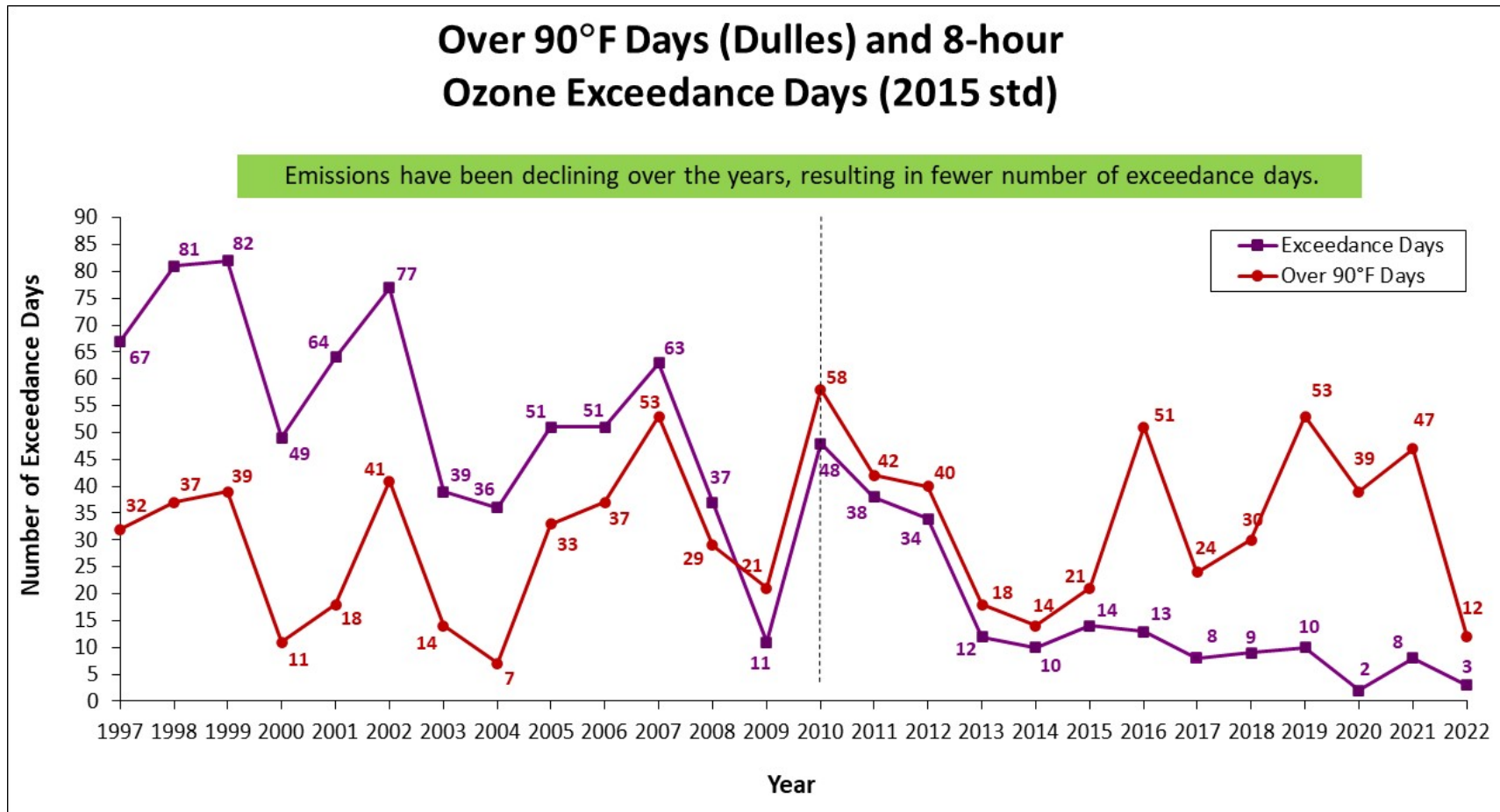
Ozone Exceedance Trend



2022 data is draft and incomplete as of July 5, 2022.

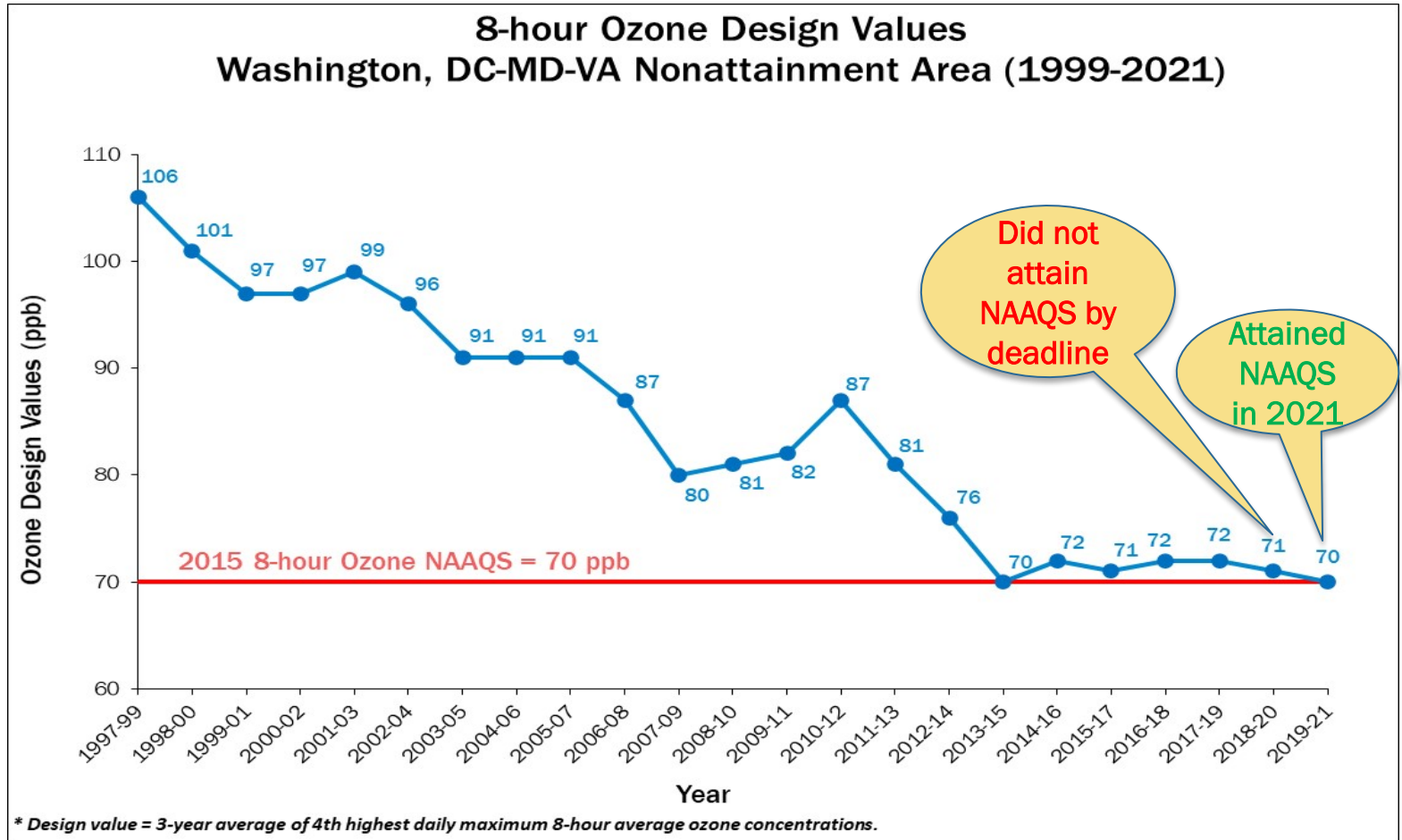


Ozone & Temperature Trend



2022 data is draft and incomplete as of July 5, 2022.

Ozone Design Value Trend



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



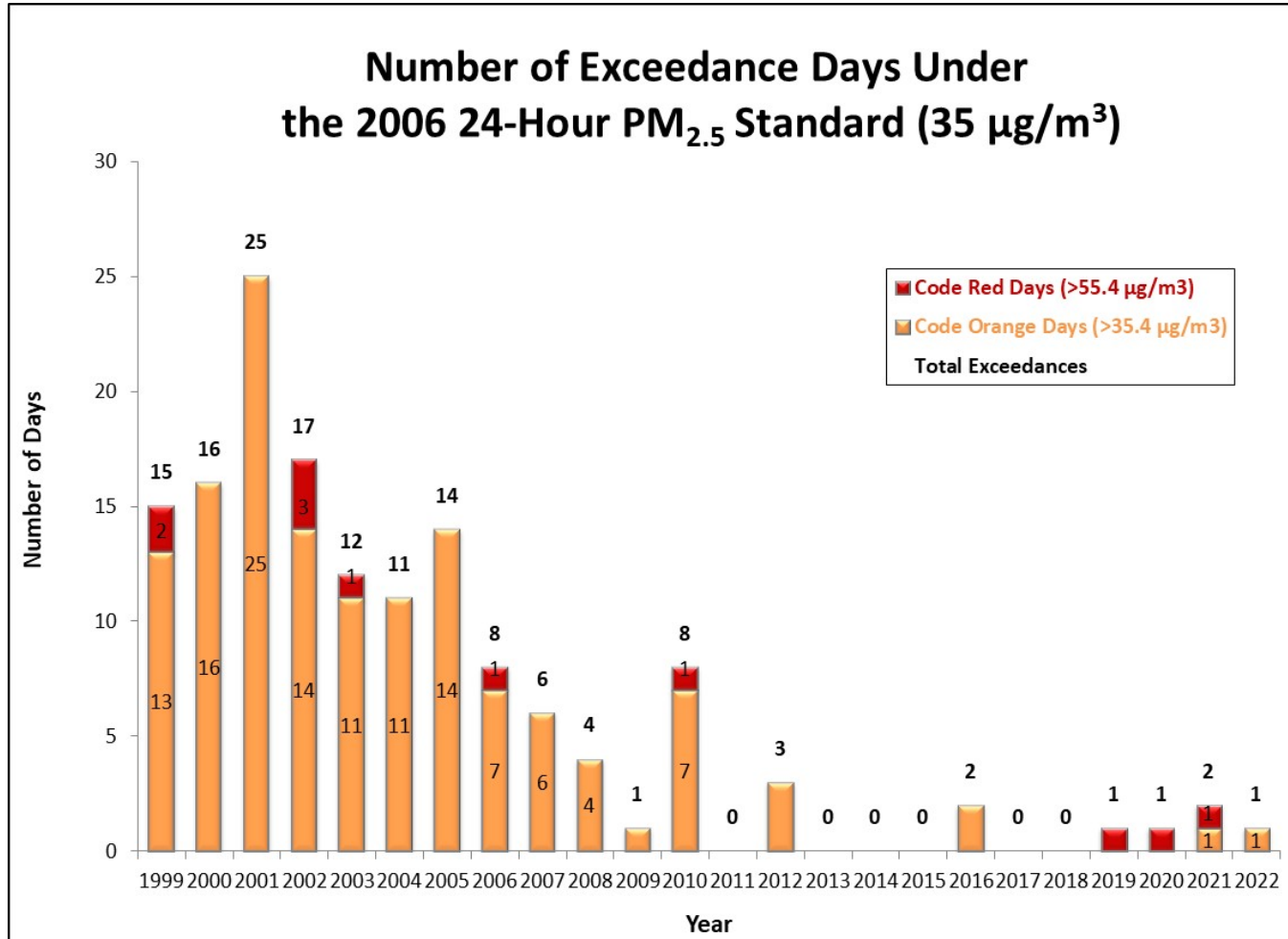
24-Hour Average PM2.5 Levels ($\mu\text{g}/\text{m}^3$)

March 2022							April 2022							May 2022						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	01	02	03	04	05	27	28	29	30	31	01	02	01	02	03	04	05	06	07
		11.2	10.6	6.3	9.9	10.0						6.4	7.1	12.5	12.4	14.2	10.3	7.5	6.6	4.0
06	07	08	09	10	11	12	03	04	05	06	07	08	09	08	09	10	11	12	13	14
16.2	9.3	7.5	6.6	12.3	12.3	9.1	8.1	11.8	11.4	4.9	5.4	6.9	4.6	7.3	8.3	8.1	10.5	8.2	6.7	5.8
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
9.2	9.0	10.1	13.1	17.5	13.3	9.2	5.4	8.1	6.5	12.8	9.4	6.2	8.0	6.8	8.2	7.7	7.2	9.5	18.2	15.2
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
4.0	7.5	11.5	7.6	11.7	9.3	5.2	6.7	5.7	6.2	6.2	7.8	9.5	10.4	12.4	6.2	6.8	5.9	7.5	8.5	5.3
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				
5.8	7.1	8.8	11.3	10.8			11.4	12.3	12.0	8.2	5.6	7.5	9.1	8.6	11.7	15.5				
June 2022							July 2022													
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday							
29	30	31	01	02	03	04	26	27	28	29	30	01	02							
			15.1	17.3	7.1	14.5						14.5	8.9							
05	06	07	08	09	10	11	03	04	05	06	07	08	09							
10.9	11.5	11.4	19.6	7.3	8.6	10.8	14.9	46.3												
12	13	14	15	16	17	18	10	11	12	13	14	15	16							
9.8	13.2	15.1	15.4	11.2	10.3	5.2														
19	20	21	22	23	24	25	17	18	19	20	21	22	23							
5.2	7.6	11.0	16.3	6.6	10.5	13.7														
26	27	28	29	30			24	25	26	27	28	29	30							
10.8	11.5	6.7	12.0	16.6																
							31													

27 Code Yellow Days, rest all Code Green Days

Analysis is based on draft data as of July 5, 2022.

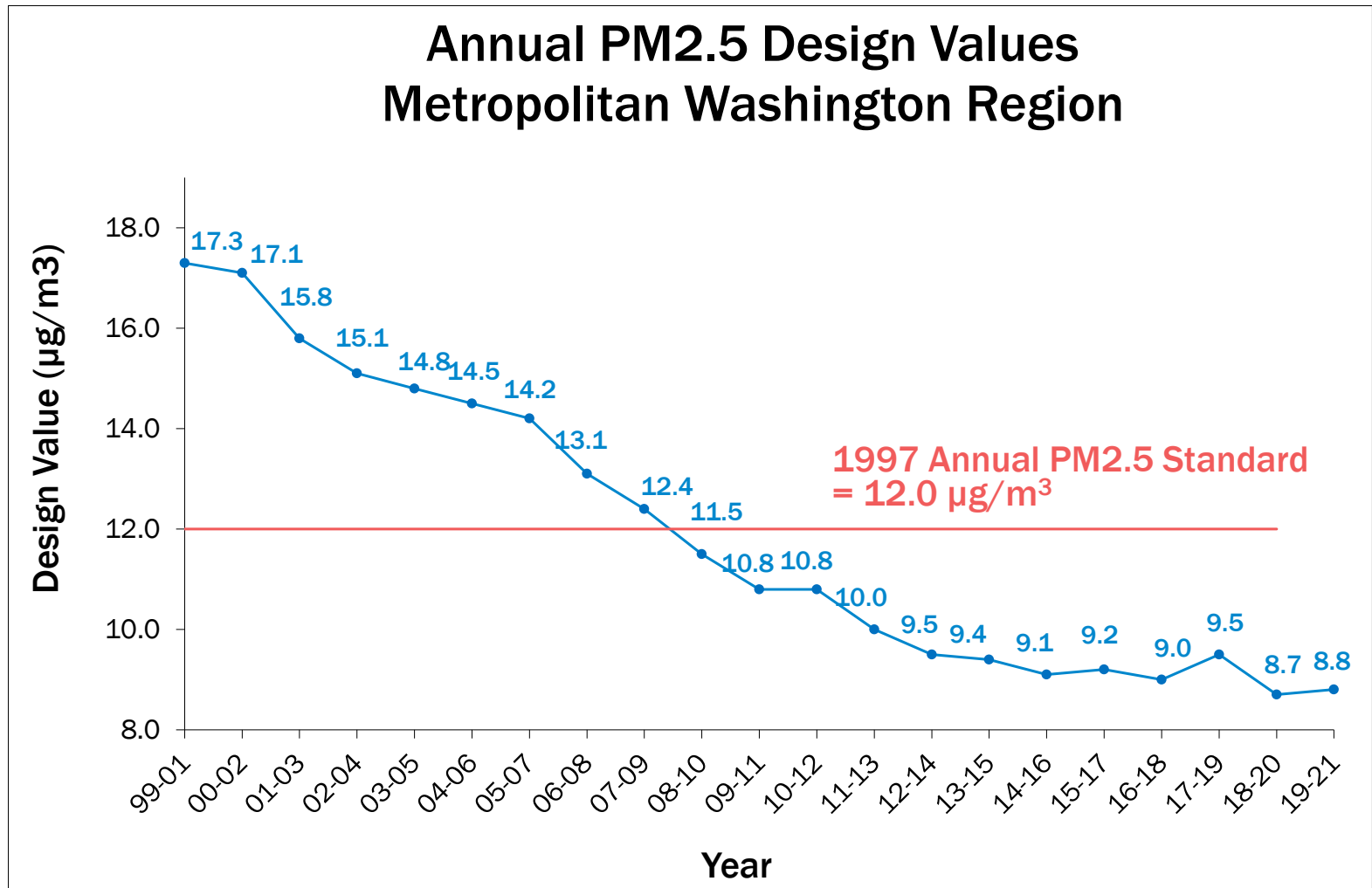
PM2.5 Exceedance Trend



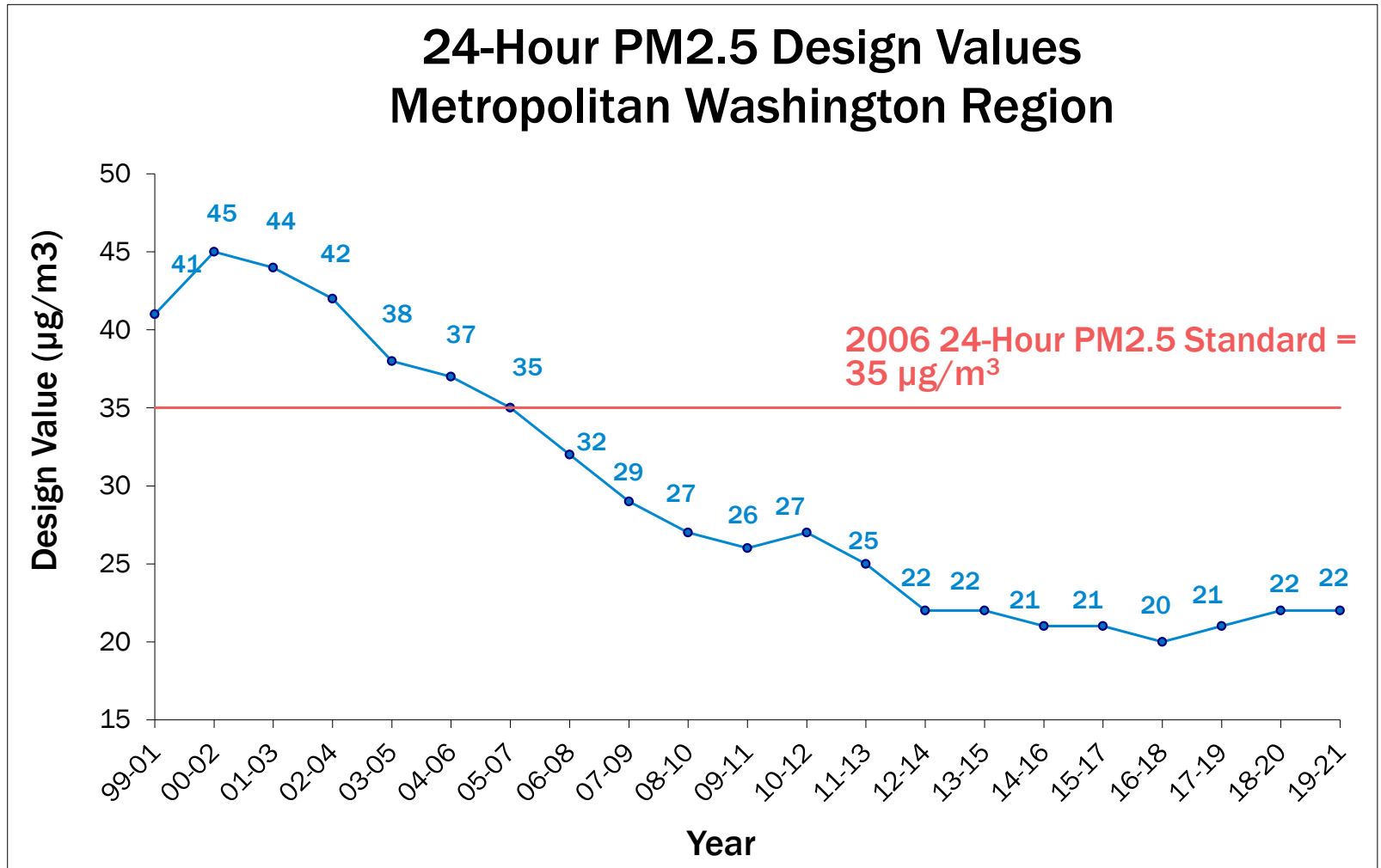
2022 data is draft and incomplete as of July 5, 2022.



Annual PM2.5 Design Value Trend

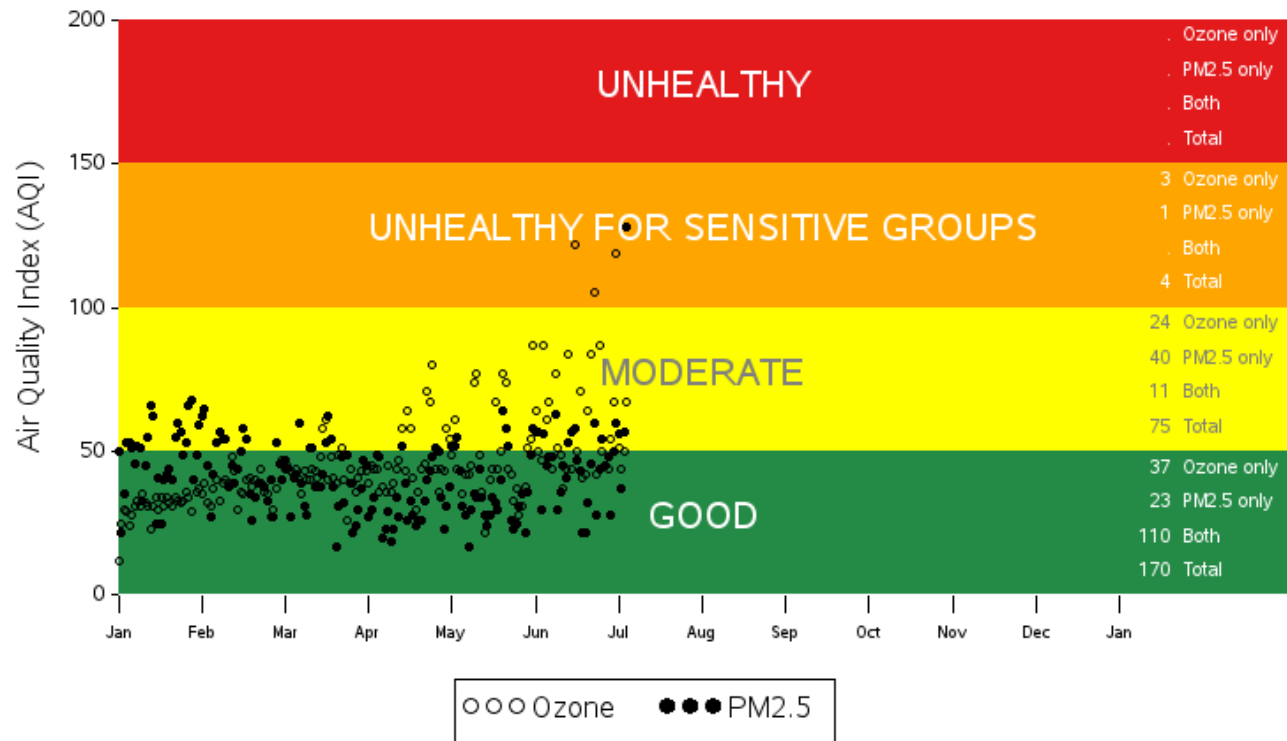


24-Hour PM2.5 Design Value Trend



AQI Values - 2022

Daily Ozone and PM2.5 AQI Values in 2022
Washington-Arlington-Alexandria, DC-VA-MD-WV



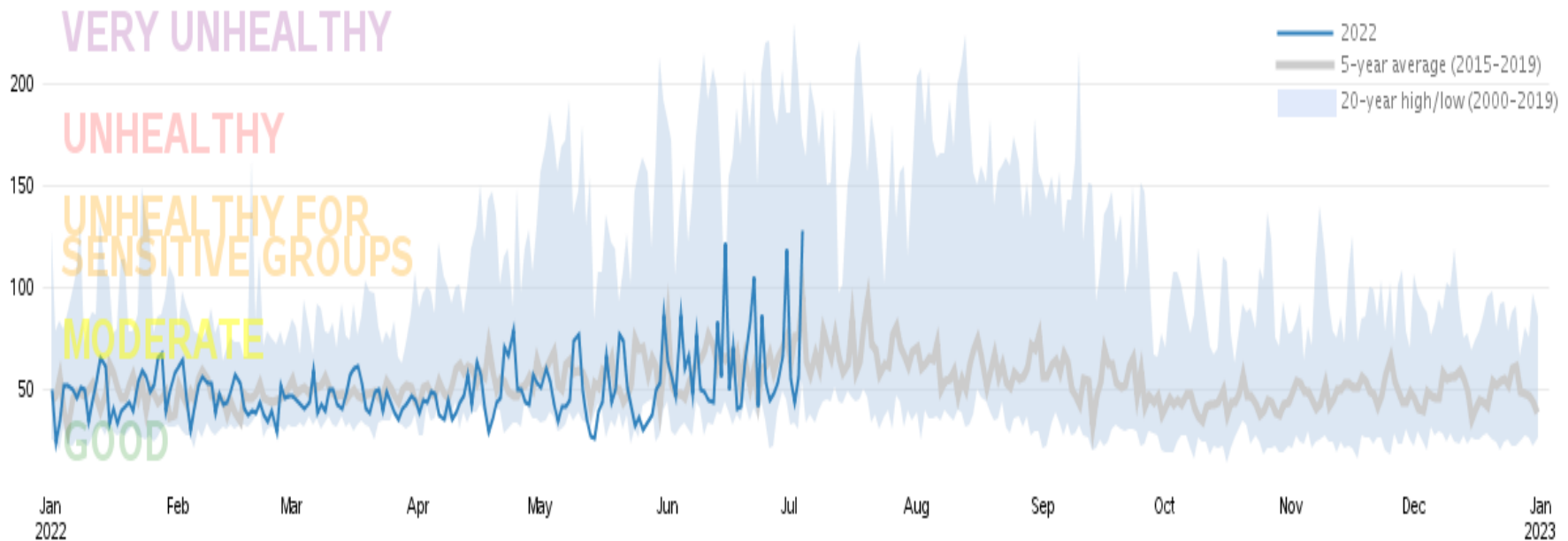
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>
Generated: July 5, 2022



AQI Value Trends

Combined Ozone and PM2.5 Daily AQI Values

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



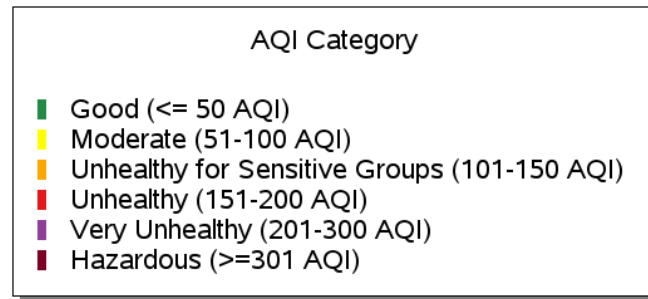
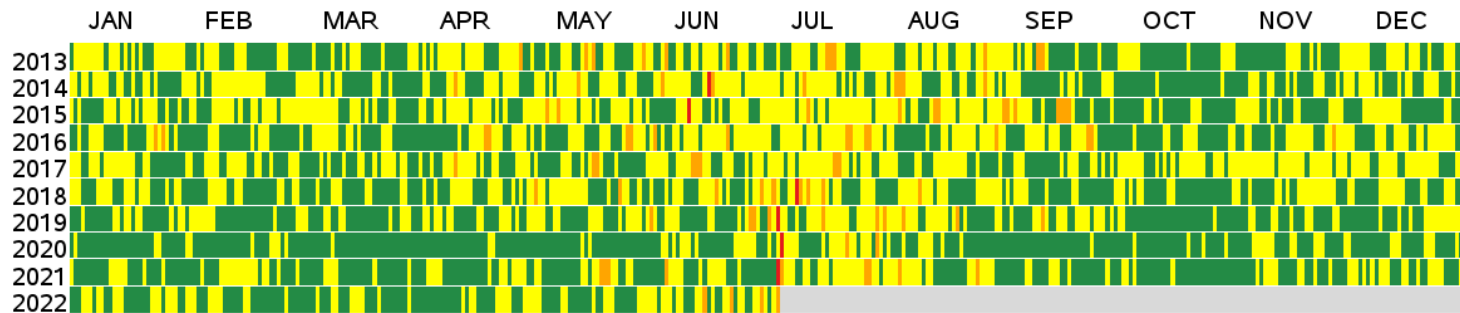
Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>

Generated: July 5, 2022

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

AQI Value Trends

Daily AQI Values, 2013 to 2022
Washington-Arlington-Alexandria, DC-VA-MD-WV



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

Generated: July 5, 2022

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

4th High Ozone Level Needed in 2022 To Violate 2015 Ozone NAAQS

Monitor	4 th High Ozone Needed (ppb)	Observed 4 th High Ozone (ppb)*	Draft Design Value (2020-22)	# of Exceedances
Beltsville (MD)	76	61	66	1
McMillan (DC)	77	66	67	3
Fredrick (MD)	83	61	63	1
Rockville (MD)	86	62	63	1
Loudoun (VA)	87	61	62	1

* Observed data as of July 5, 2022.

