

OZONE SEASON SUMMARY 2019

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MWAQC-Technical Advisory Committee
June 11, 2019

Peak 8-Hour Average Ozone Levels (ppb)

March 2019							April 2019							May 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
24	25	26	27	28	01	02	31	01	02	03	04	05	06	28	29	30	01	02	03	04
					35	38		48	48	57	58	45	54				39	48	44	39
03	04	05	06	07	08	09	07	08	09	10	11	12	13	05	06	07	08	09	10	11
42	48	44	43	47	44	43	56	47	55	56	45	47	49	31	50	59	43	44	42	38
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
40	50	55	56	54	46	52	42	45	51	54	58	37	47	39	34	41	51	58	55	66
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
49	47	51	53	45	48	48	43	45	58	56	55	48	56	56	54	44	50	52	56	53
24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	
54	55	47	49	55	55	63	46	45	62					52	51	45	56	51	59	
31																				
47																				
June 2019																				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday														
26	27	28	29	30	31	01														
						71														
02	03	04	05	06	07	08														
58	47																			
09	10	11	12	13	14	15														
16	17	18	19	20	21	22														
23	24	25	26	27	28	29														
30																				

1 Code Orange Day, 26 Code Yellow Days, 68 Code Green Days

Analysis is based on draft and incomplete data as of June 4, 2019.

2019 Ozone Exceedances

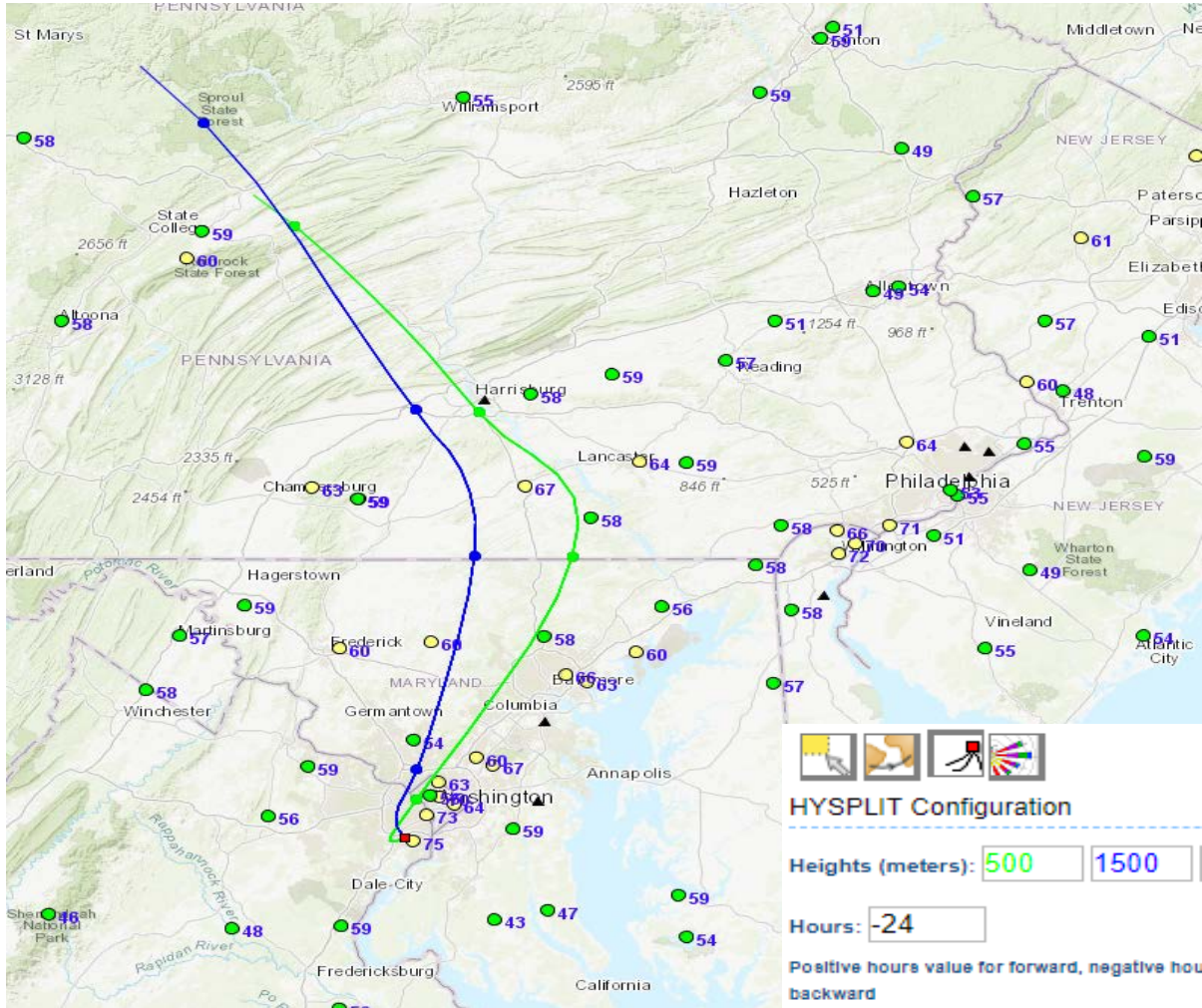
Date	Monitors Exceeding	Highest Monitor	8-Hr Max (ppb)
6/1	1	Franconia	71

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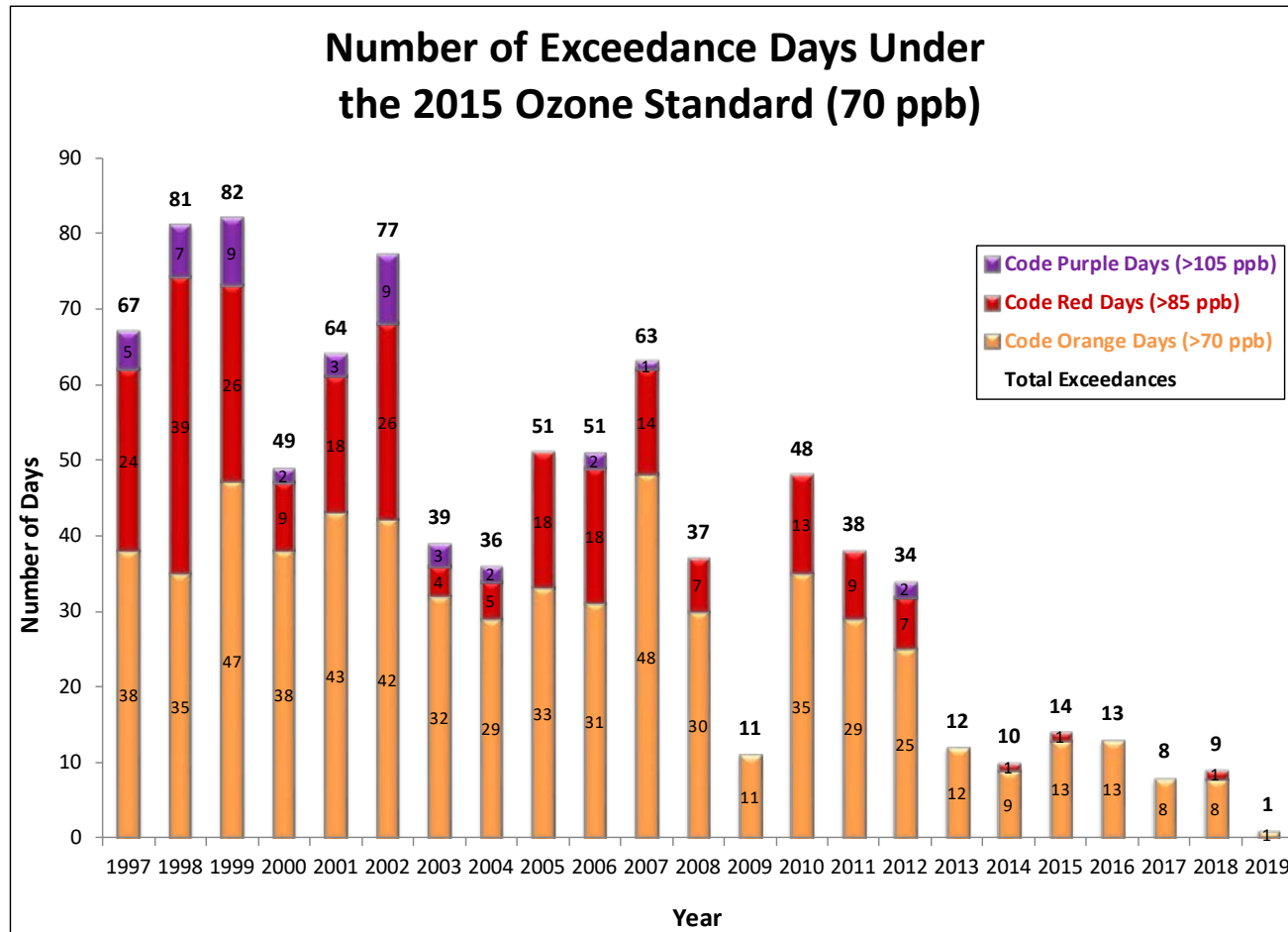
Meteorology on Exceedance Days

- June 1 (Seems influenced by both transported & local emissions)
 - High Temperature: 86° F, Clear sky
 - Light northerly winds brought ozone and precursors from upstream areas
 - Ozone build up on previous day

Wind Trajectories (June 1)



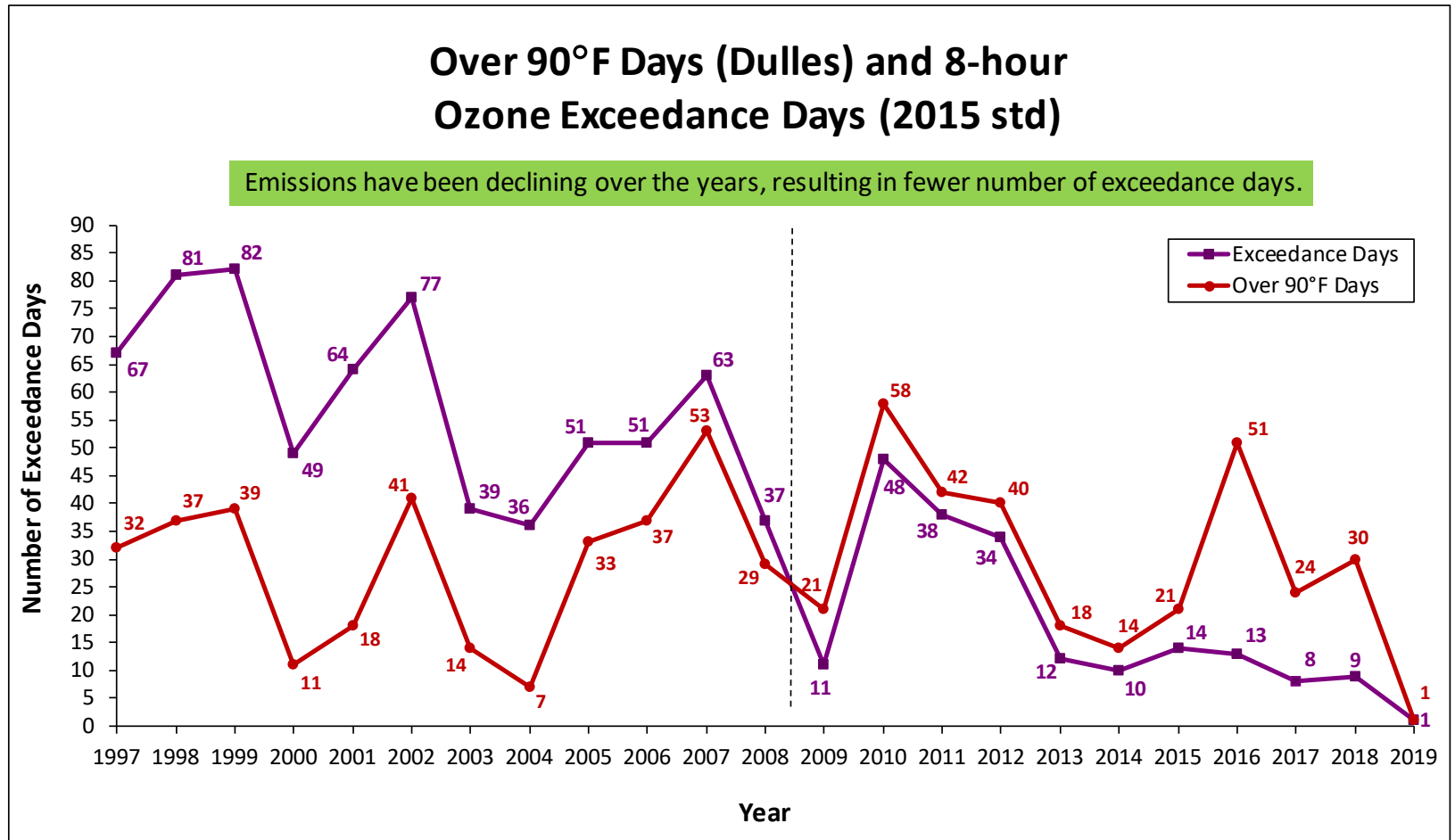
Ozone Exceedance Trend



Analysis is based on draft and incomplete data as of June 4, 2019.

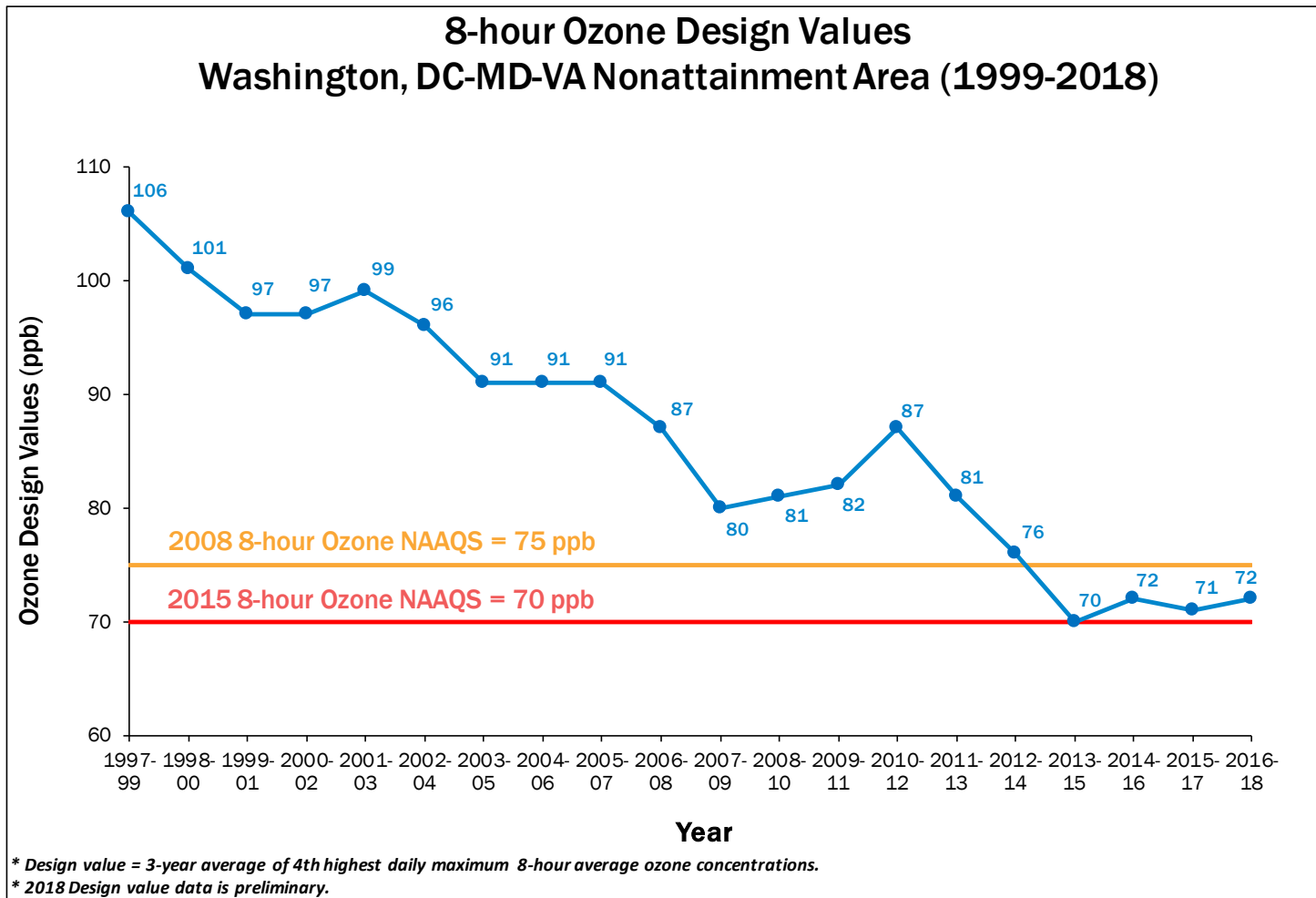


Ozone & Temperature Trend



Analysis is based on draft and incomplete data as of June 4, 2019.

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 (2009/2015/2017)		Gas Can Replacement



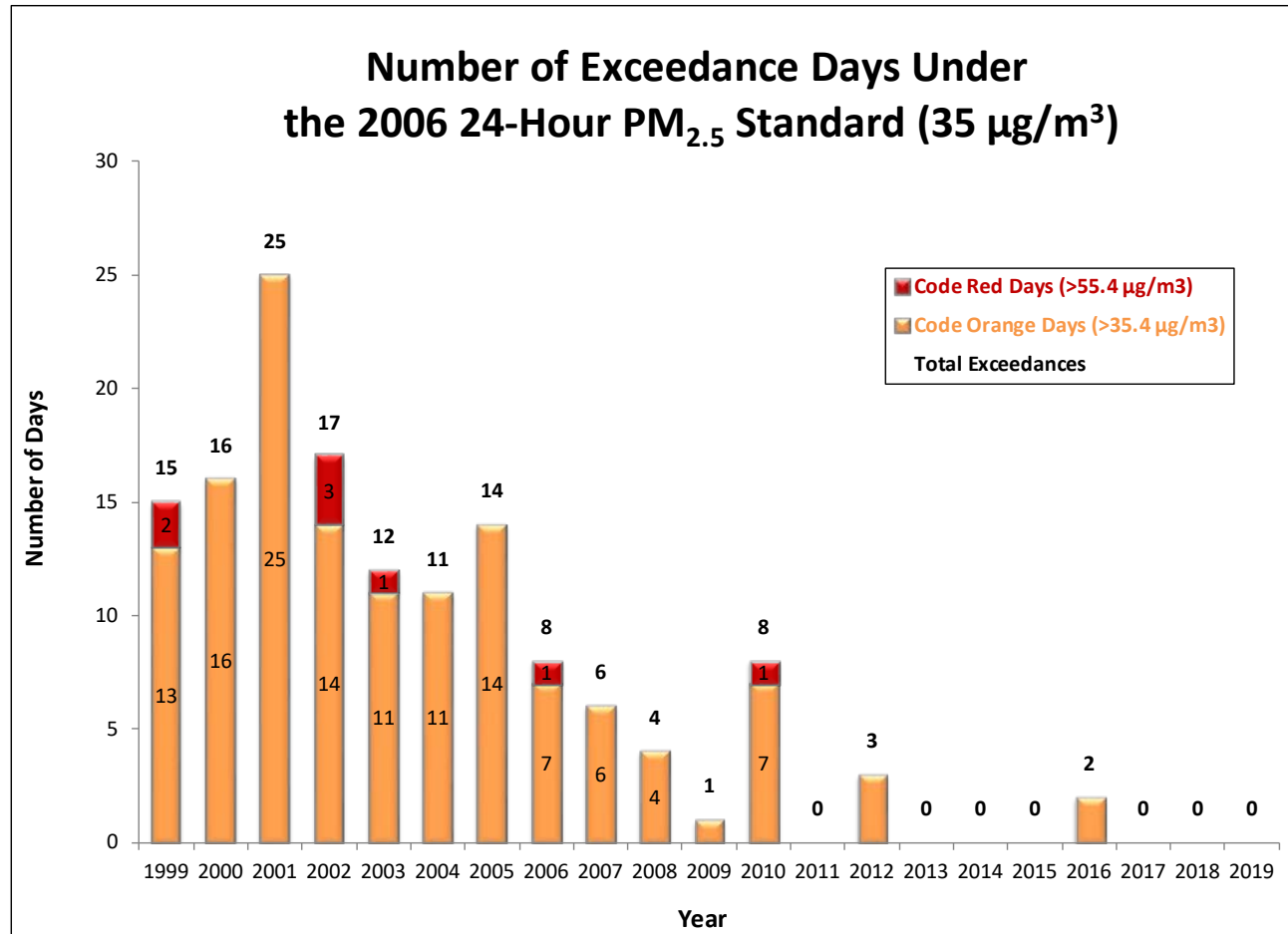
24-Hour Average PM2.5 Levels ($\mu\text{g}/\text{m}^3$)

March 2019							April 2019							May 2019						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					11.3	12.2														
							5.7	8.9	8.8	12.1	9.4	12.8								
12.9	9.5	7.4	9.4	10.2	15.6	16.1								10.6	14.2	13.7	23.0			
							11.5	9.4	7.0	7.9	5.0	8.1	7.3	8.7	3.8	7.6	10.5	6.7	6.6	7.0
9.9	4.3	8.0	12.4	9.0	8.9	4.4														
							7.1	3.5	4.8	6.2	10.0	9.5	4.6	2.4	3.0	3.8	6.9	16.1	13.0	15.8
5.2	9.0	9.0	12.6	4.7	5.0	4.6														
							3.7	5.4	9.2	7.0	10.3	8.4	4.8	15.1	10.8	4.9	6.5	12.0	19.1	9.5
6.0	11.0	4.2	6.3	9.0	10.9	15.0														
							5.7	5.2	13.0					15.8	13.0	13.3	13.5	8.1	7.6	
10.2																				
June 2019																				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday														
						12.0														
15.1	5.8																			

23 Code Yellow Days, 72 Code Green Days

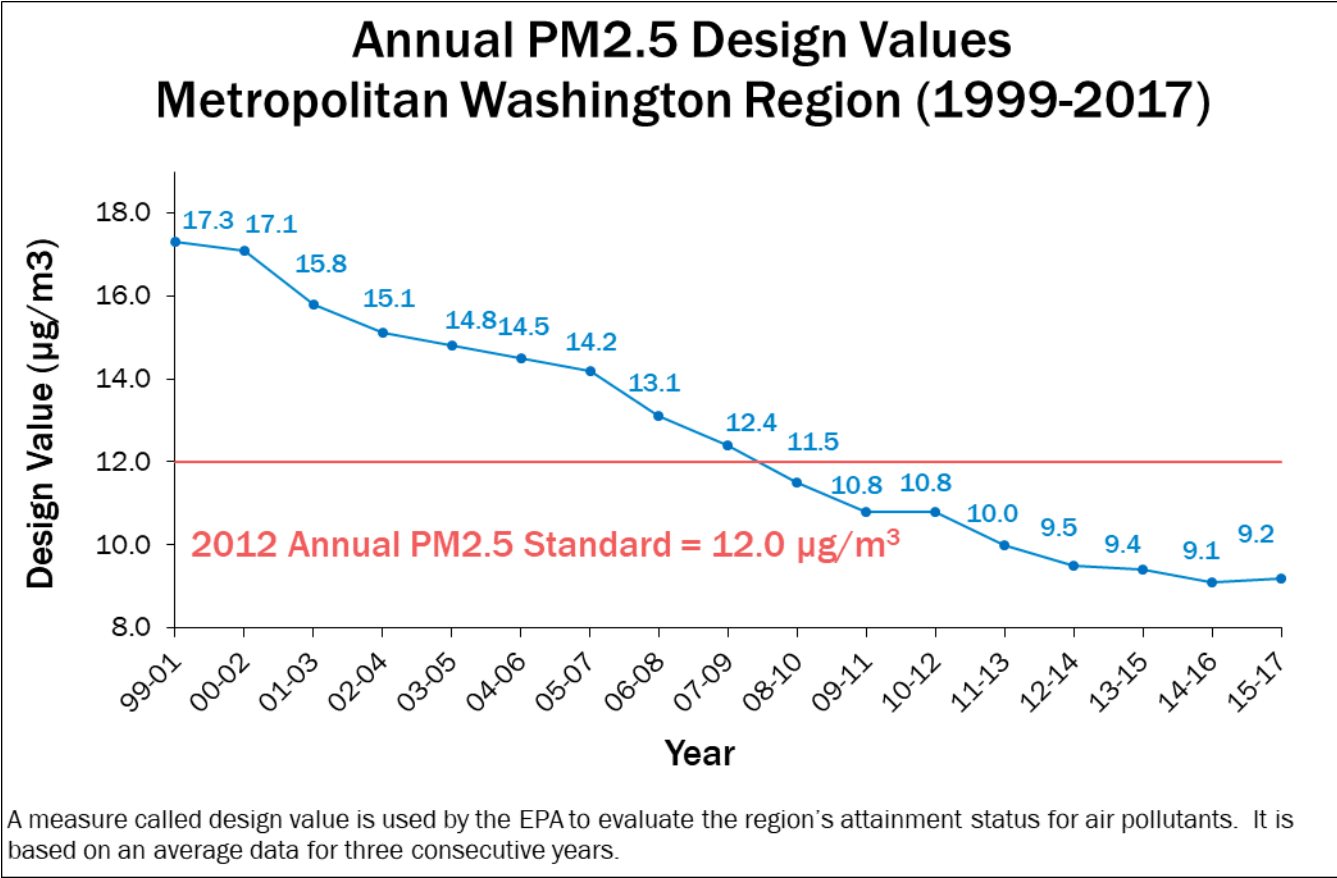
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PM2.5 Exceedance Trend



Analysis is based on draft and incomplete data as of June 4, 2019.

Annual PM2.5 Design Value Trend



24-Hour PM2.5 Design Value Trend

