

# OZONE SEASON SUMMARY 2016

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Sunil Kumar  
Principal Environmental Engineer

MWAQC-Technical Advisory Committee  
June 14, 2016

# Peak 8-Hour Average Ozone Levels (ppb)

APRIL 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
				1	2	3
				48	46	45
4	5	6	7	8	9	10
51	45	52	42	46	41	47
11	12	13	14	15	16	17
55	49	48	57	57	65	64
18	19	20	21	22	23	24
73	75	55	61	51	46	54
25	26	27	28	29	30	
59	62	35	38	36	36	

MAY 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						1
						37
2	3	4	5	6	7	8
38	40	29	27	34	39	48
9	10	11	12	13	14	15
39	43	29	40	52	48	48
16	17	18	19	20	21	22
50	43	47	56	60	48	45
23	24	25	26	27	28	29
46	62	76	75	69	65	56
30	31					
49	68					

JUNE 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1	2	3	4	5
		77	44	46	44	37
6	7	8	9	10	11	12
55	68	47	59	63	66	63
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

5 Code Orange Days, 23 Code Yellow Days, 46 Code Green Days

Analysis is based on draft data as of June 13, 2016. Data is subject to change

# 2016 Ozone Exceedances

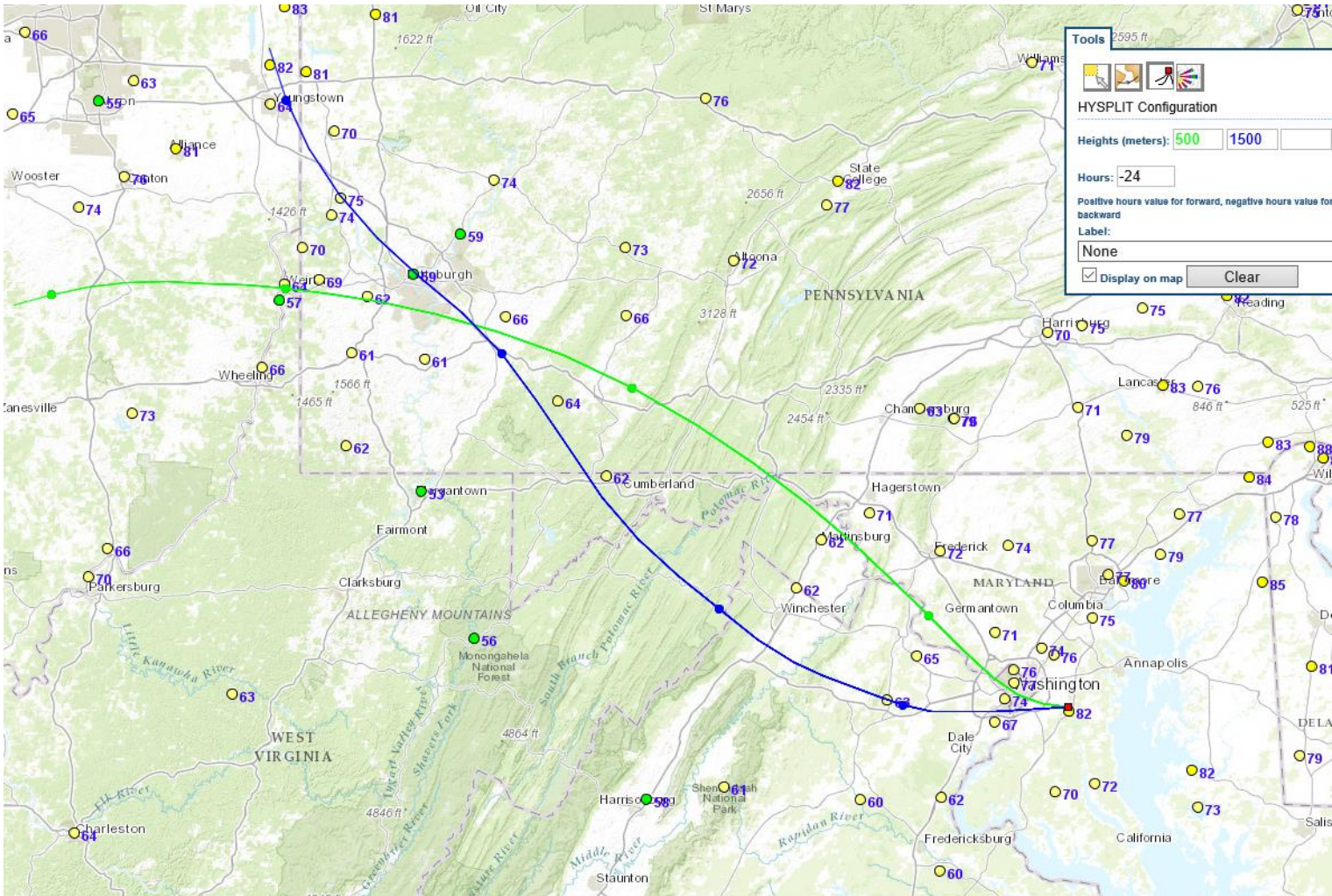
Date	Monitors Exceeding	Highest Monitor	8-Hr Max (ppb)
4/18	1	Southern Maryland	73
4/19	6	Southern Maryland	75
5/25	2	McMillan/ Takoma	72
5/26	6	Calvert	75
6/1	3	Frederick Airport	77

# Meteorology on Exceedance Days

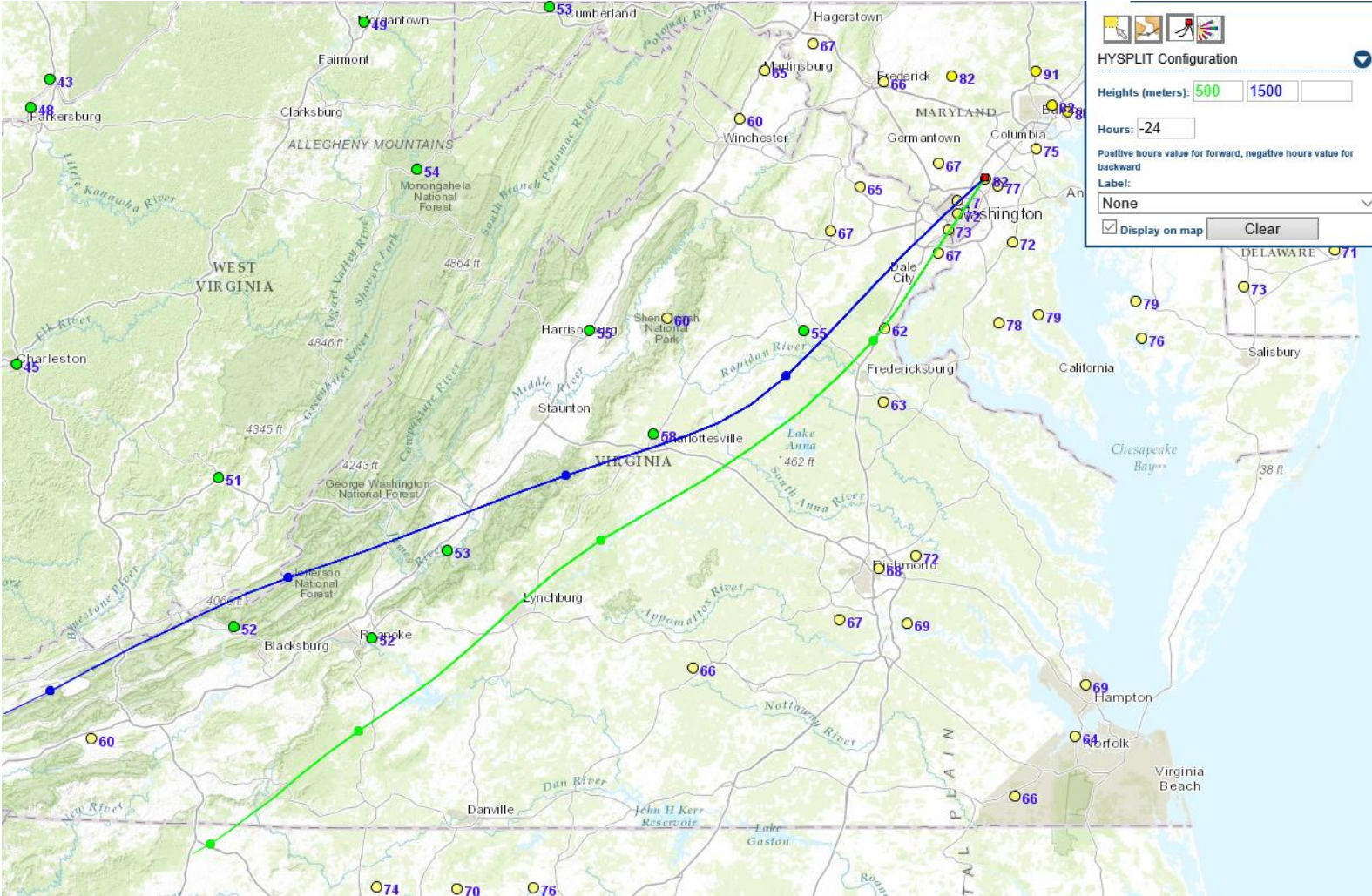
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- May 25/26 (Local & Transported Emissions)
  - High Temperatures: 86° F/ 89° F, Clear skies
  - Light westerly winds brought ozone from Ohio River Valley (May 25)
  - Ozone build up on previous days
- June 1 (Local & Transported Emissions)
  - High Temperature: 87° F, Clear skies
  - Ozone was transported from the Philadelphia area and recirculated locally
  - Ozone build up on previous days

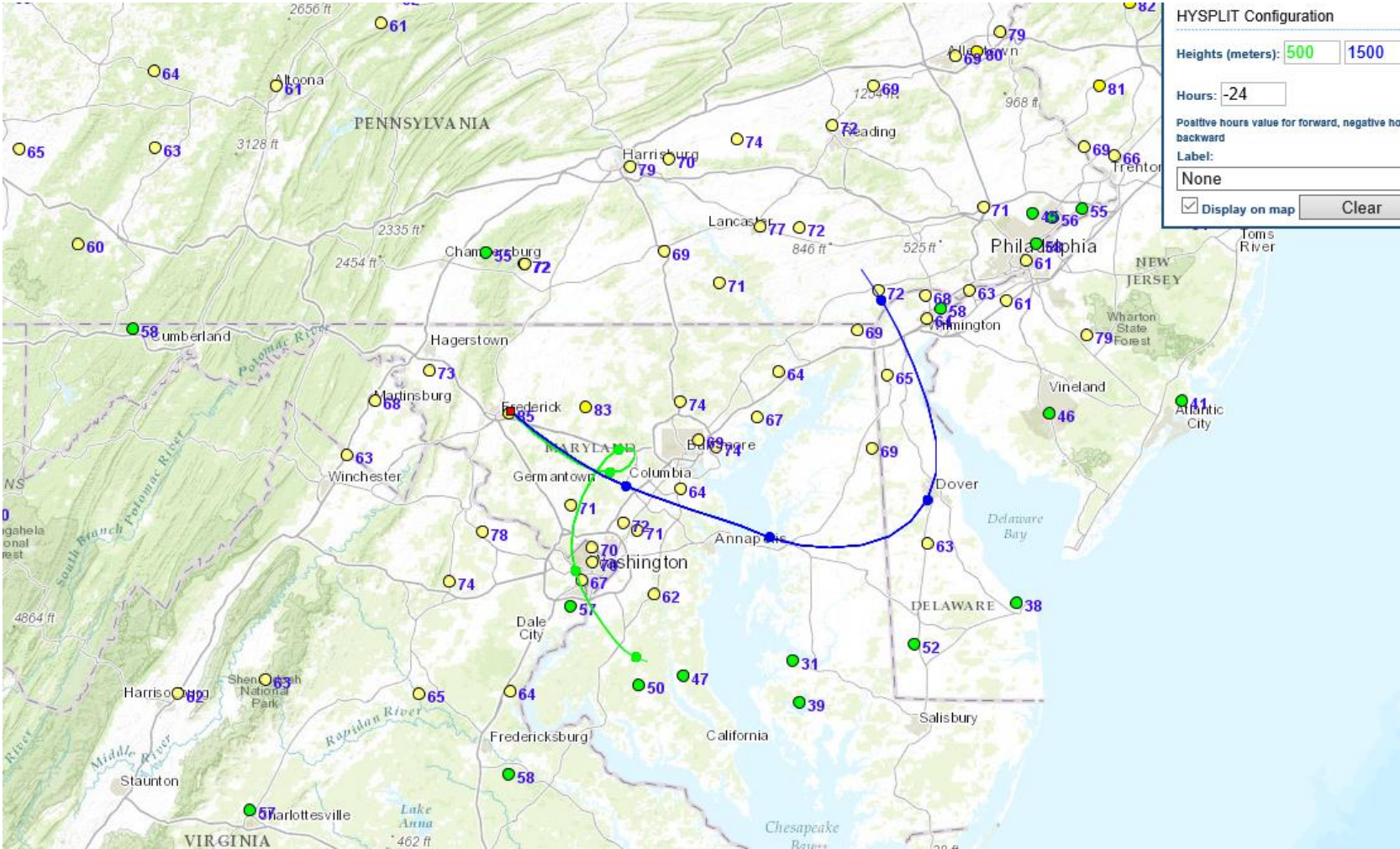
# Wind Trajectories (May 25)



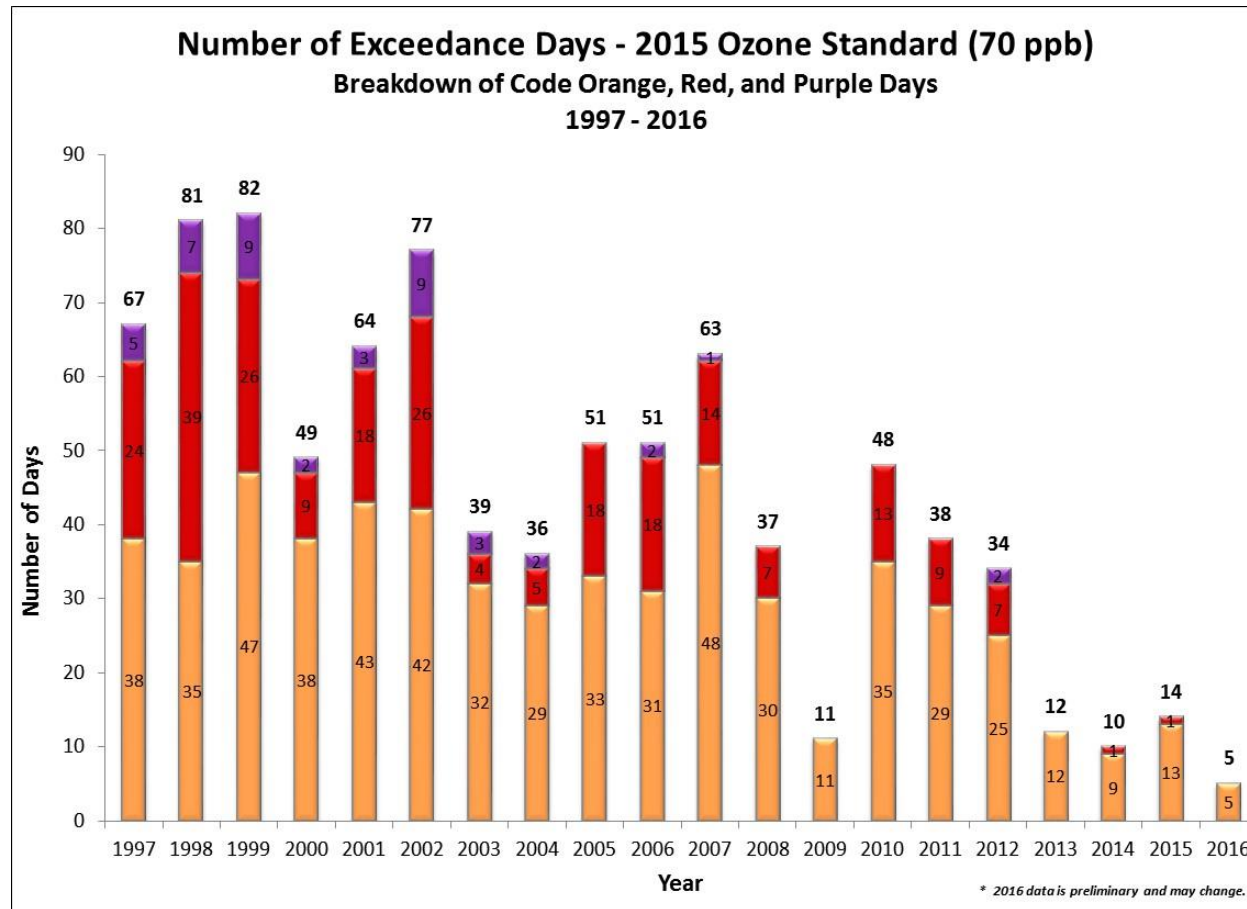
# Wind Trajectories (May 26)



# Wind Trajectories (June 1)



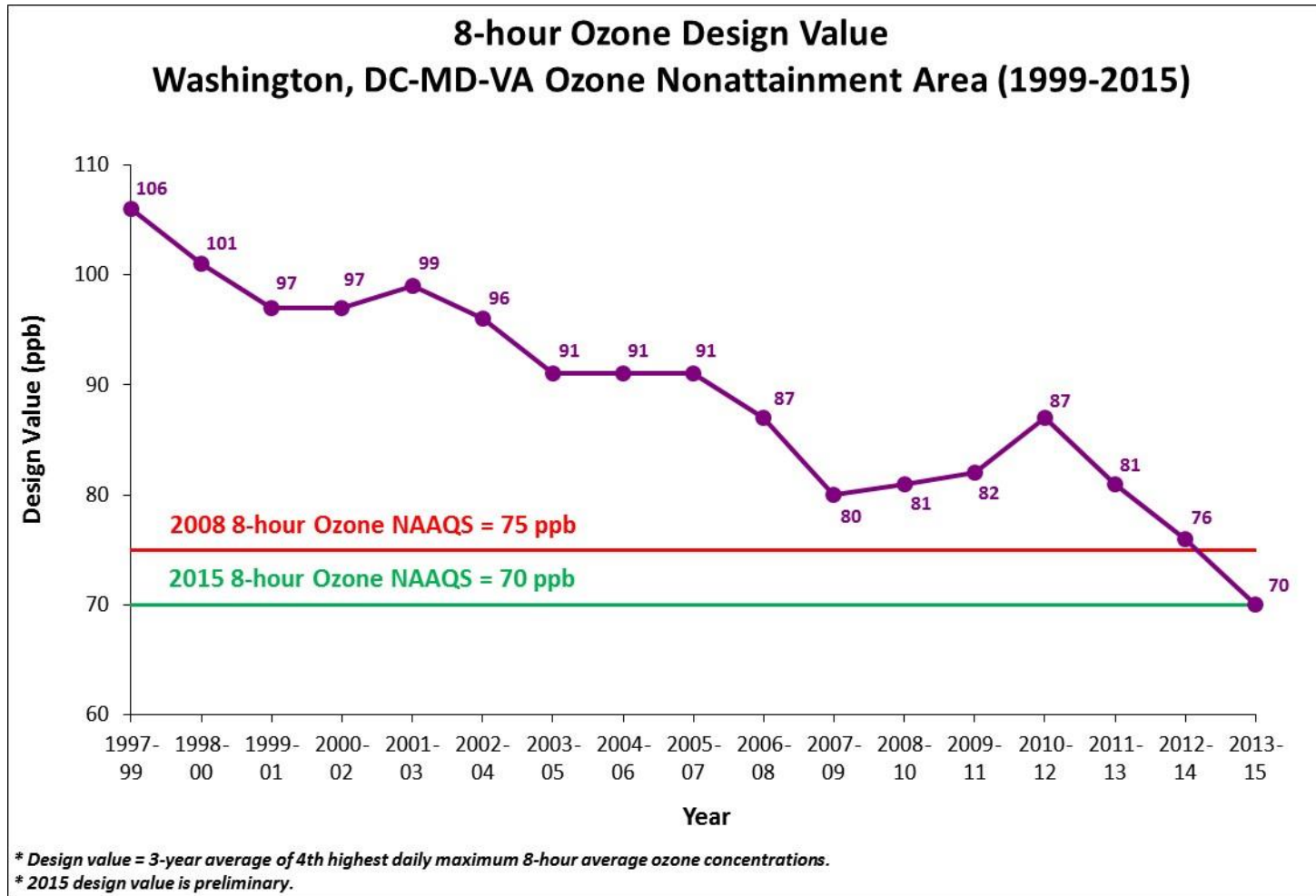
# Ozone Exceedance Trend



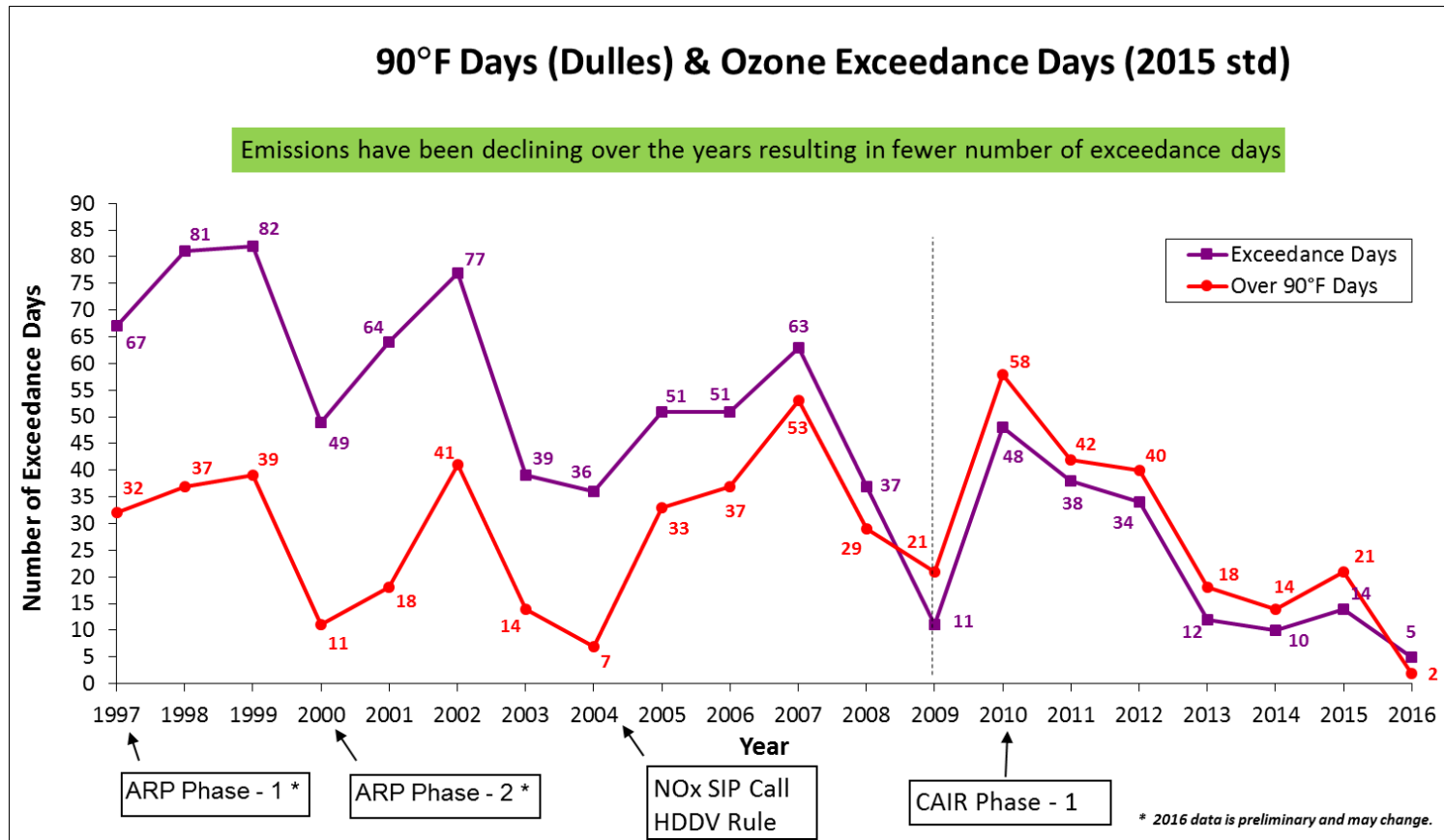
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# Ozone Design Value Trend



# Ozone & Temperature Trend



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# Why Fewer Exceedance Days Now ?

## Emission Control Programs

Federal	State	Local
Acid Rain Program (1996/2000)	Vehicle Inspection and Maintenance Programs	Renewable Energy Programs Regional Wind Power Purchase Program Clean Energy Rewards Program Renewable Portfolio Standards
Tier 2 (LD Vehicle) Rule (2004)	MD Healthy Air Act (2009/2012)	Energy Efficiency Programs LED Traffic Signal Retrofit Program Building Energy Efficiency Programs
HD Diesel Vehicle Rule (2004/2007)	VA CSAPR Rule	VRE Idling Reduction
NOx SIP Call (2004)		Low VOC Paint
Clean Air Interstate Rule/CSAPR (2009/2015)	Ozone Transport Commission Rules	Gas Can Replacement



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

APRIL 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
				1	2	3
				7.9	7.0	4.7
4	5	6	7	8	9	10
5.9	7.7	10.6	6.9	4.7	6.0	7.1
11	12	13	14	15	16	17
7.6	9.3	8.0	13.7	9.1	13.6	9.7
18	19	20	21	22	23	24
10.1	11.4	5.4	12.5	13.0	9.0	4.3
25	26	27	28	29	30	
10.3	10.2	12.7	13.6	11.2	13.3	

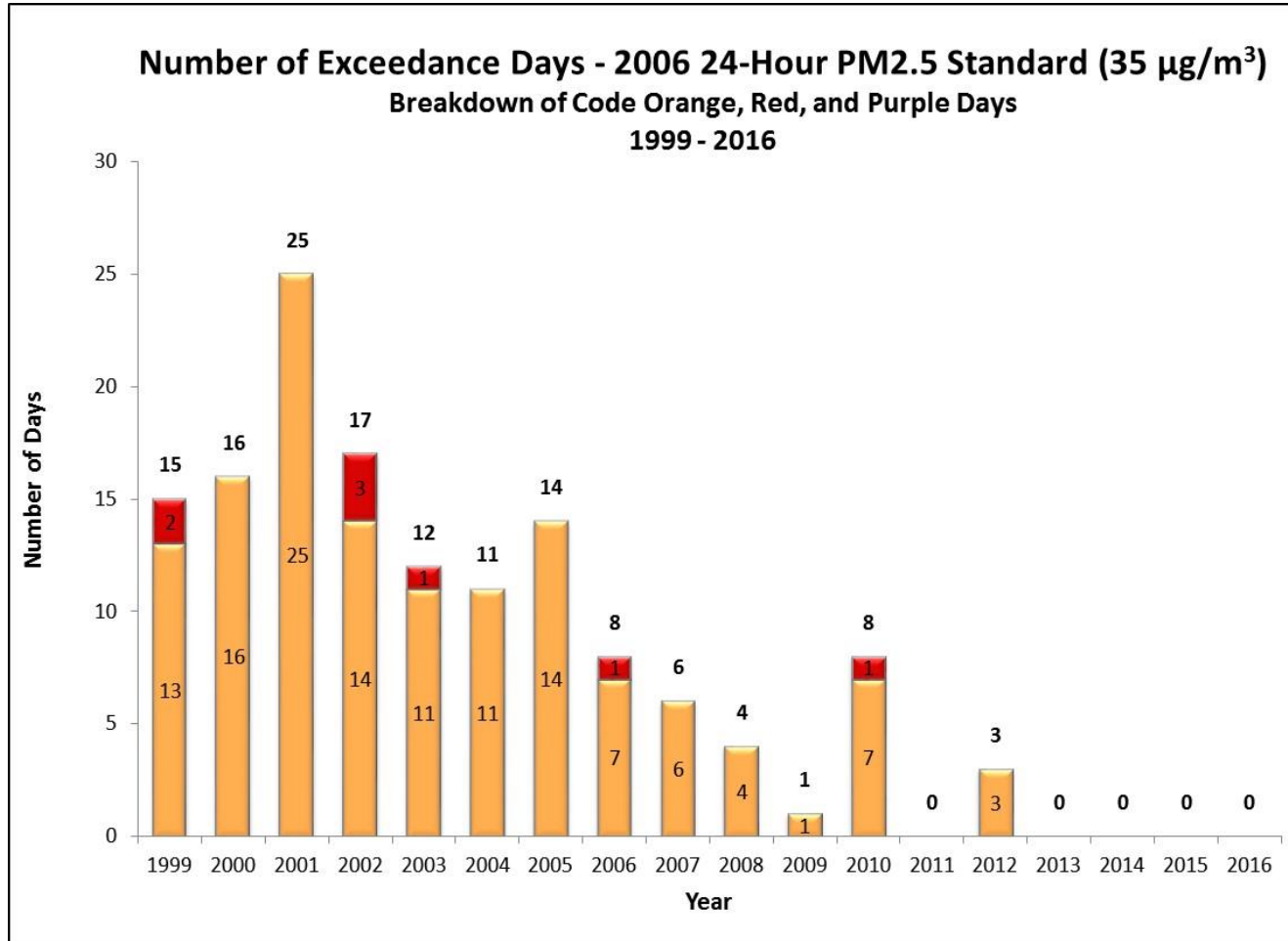
MAY 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						1
						5.1
2	3	4	5	6	7	8
6.8	12.8	10.7	7.9	3.9	5.3	5.5
9	10	11	12	13	14	15
9.6	11.6	13.6	14.6	14.4	9.0	5.2
16	17	18	19	20	21	22
5.6	8.1	12.5	13.0	11.6	7.1	6.5
23	24	25	26	27	28	29
10.9	10.4	15.7	19.1	20.0	15.7	9.8
30	31					
16.1	11.3					

JUNE 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1	2	3	4	5
		13.5	6.9	8.0	9.7	7.5
6	7	8	9	10	11	12
7.4	10.5	8.5	5.7	7.7	11.5	7.6
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

19 Code Yellow Days, 54 Code Green Days

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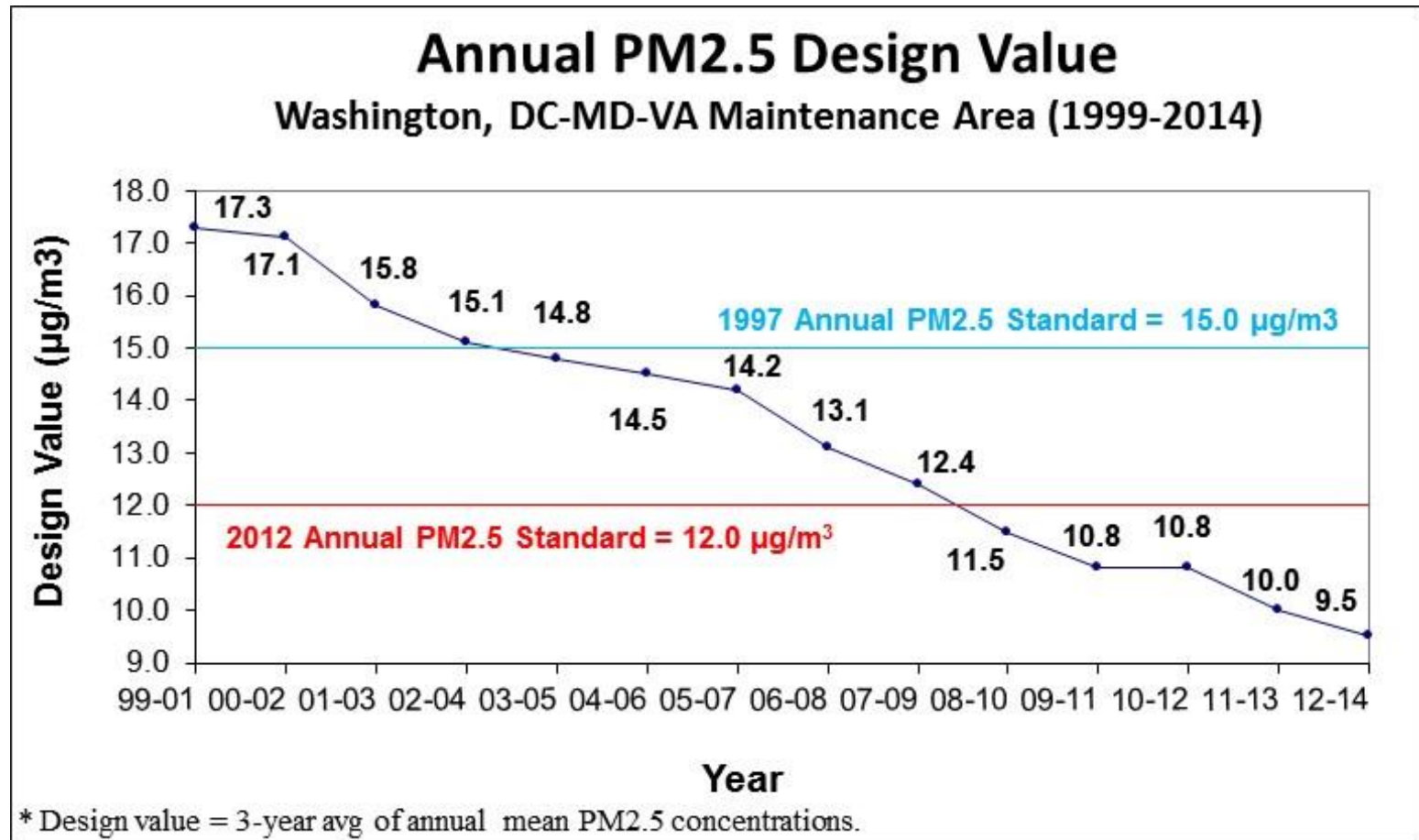
# PM2.5 Exceedance Trend



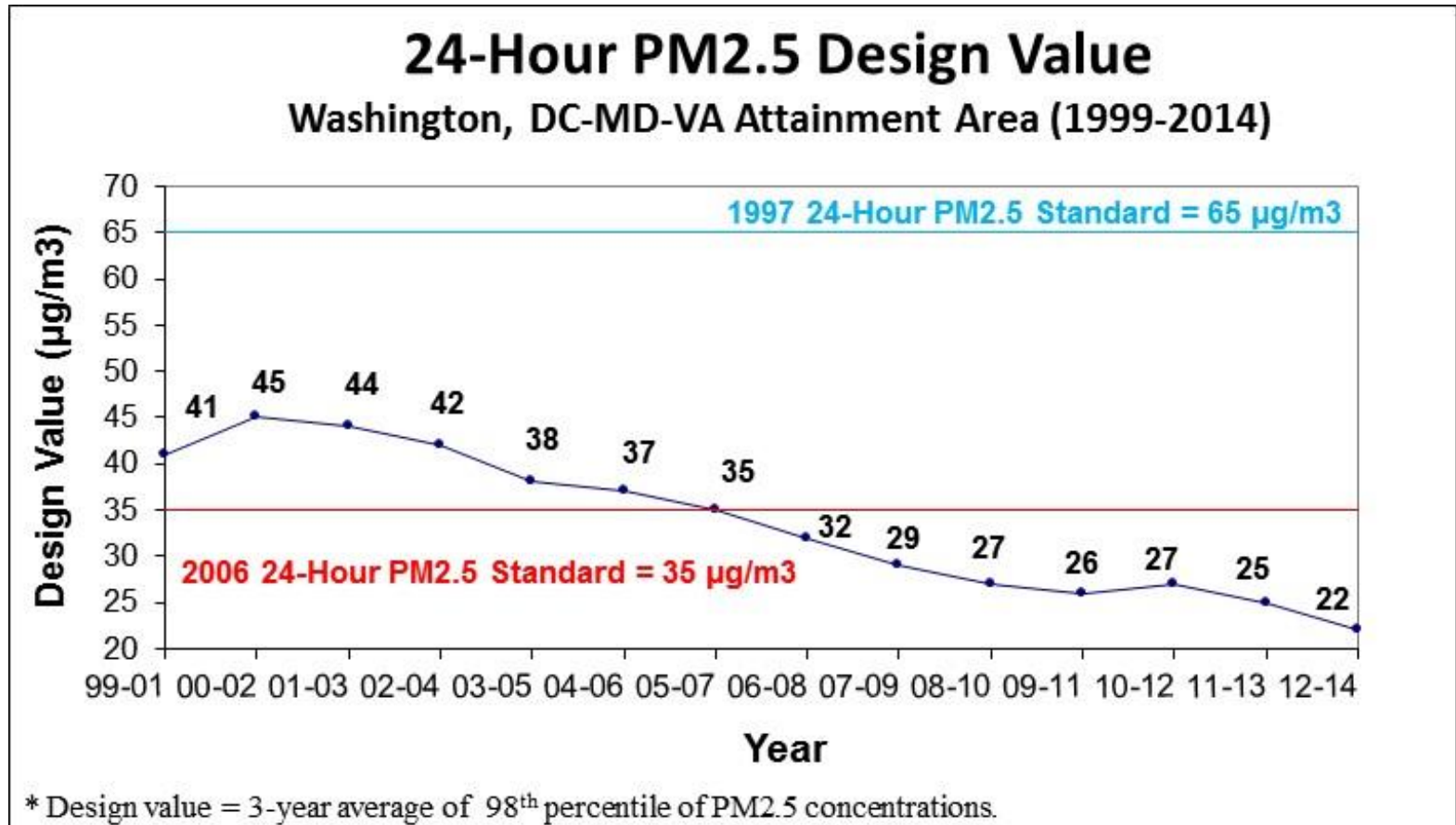
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# Annual PM2.5 Design Value Trend



# 24-Hour PM2.5 Design Value Trend



# What Would It Take to Be Designated as Nonattainment for 2015 Ozone NAAQS

Monitor	4 <sup>th</sup> Highest Allowed 8-hour Max Ozone Concentration in 2016 (ppm)	Current 4 <sup>th</sup> Highest 8-hour Max Ozone Concentration in 2016 (ppm)
Arlington	0.069	0.068
Takoma	0.072	0.067
McMillan Ncore	0.073	0.068
PG Equestrian	0.075	0.068
Calvert	0.076	0.069
HU- Beltsville	0.076	0.069
Franconia	0.076	0.066
Rockville	0.077	0.068
Beltsville	0.077	0.067
Southern Maryland	0.078	0.069
Ashburn	0.079	0.064
Frederick	0.080	0.066
Long Park	0.084	0.065

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