OZONE SEASON STATUS & OZONE MAINTENANCE PLAN

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ACPAC
July 17, 2017

Agenda Item 2

Metropolitan Washington
Council of Governments

Redesignation Request & Maintenance Plan (2008 Ozone Standard)

- Washington region plans to submit a request to redesignate the region to “attainment” and a demonstration to maintain the compliance with standard by 2017 (Ozone Redesignation Request & Maintenance Plan)
- Benefits of the Ozone Redesignation Request and Maintenance Plan
  - Provides public awareness and official recognition that ozone levels are in compliance with the 2008 ozone standard in the metropolitan Washington area
  - Shows that control measures such as cleaner engines, controls on power plants, diesel retrofit measures are working
  - Reduces a significant obstacle for locating new industries (economic development)
  - Replaces current set of MVEBs, which were developed in 2007 using Mobile6.2 model, with MOVES2014a model.

Elements of Redesignation Request & Maintenance Plan

- Air Quality Data
  - Ozone data to show compliance with the 2008 ozone standard
- Emissions Inventories (Point, Area, Nonroad, and On-road Sources)
  - Redesignation Request:
    - SIP Base Year 2011 & Attainment Year 2014 demonstrating a decline in emissions between the two years
  - Maintenance Plan:
    - Attainment Year 2014, Intermediate Year 2025, Final Maintenance Year 2030
    - Demonstrate compliance ten years into future by showing lower emissions in 2025 and 2030 compared to 2014

Emissions Sources & Inventories

- Point Sources - Power plants, other big industries
- Area Sources – Dry cleaners, motor vehicle refinishing, paint
- Nonroad Sources - Construction equipment, lawnmower, locomotive, aircraft
  - MOVES2014a model
- On-Road Sources – Motor vehicles
  - MOVES2014a model

Elements of Redesignation Request & Maintenance Plan

- Motor Vehicle Emissions Budgets (MVEBs)
  - Mobile emissions ceilings for transportation conformity purposes
  - MVEBs have been developed using MOVES2014a model for 2014, 2025, and 2030

- Contingency Measures
  - In case region exceeds 2008 ozone standard in future, these measures would be implemented

Schedule

- Draft Emissions Inventories & Plan to MWAQC-TAC – June 2017
- Draft Emissions Inventories & Plan to MWAQC Approval for Public Hearing & Comments – July 2017
- States Post Notices for Public Hearing & Comments – August 2017
- Public Hearing & Comment Period – September to November 2017
- MWAQC Final Plan Approval with Response to Public Comments Included - December 2017

EPA's New Ozone NAAQS

- October 1, 2015 - EPA announced revisions to 2008 primary & secondary 8-hour ozone standards (75 ppb)
  - Primary standard: Public health
  - Sec. standard: Public welfare (Plants & trees)

- Revised Pr./Sec. 8-hour ozone standards = 70 ppb

- EPA extended ozone monitoring season by 1 month (now March-October)

- EPA updated the Air Quality Index (AQI) for ozone

Implementation Schedule - New Ozone NAAQS

Milestone	2015 Ozone Standard
Final Rule Announced	October 1, 2015
State Designation Recommendations to EPA	October 1, 2016
EPA Response to State Designation Recommendations	June 1, 2017
Final Designations	October 1, 2018 (Likely based on 2015-17 data)
Base Year Emissions Inventory	October 1, 2020 (for Marginal NAA) * Washington region is expected to be marginal nonattainment area, no attainment plan required
Attainment Dates	Marginal NAA – October 1, 2021

Peak 8-Hour Average Ozone Levels (ppb)

APRIL 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	01
						39
02	03	04	05	06	07	08
56	50	52	57	47	43	57
09	10	11	12	13	14	15
62	68	71	61	54	64	55
16	17	18	19	20	21	22
52	45	58	43	48	45	28
23	24	25	26	27	28	29
33	37	35	35	57	61	49
30	01	02	03	04	05	06
46						

MAY 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	01	02	03	04	05	06
	35	55	49	48	40	33
07	08	09	10	11	12	13
43	54	58	68	48	35	34
14	15	16	17	18	19	20
61	51	64	76	72	55	43
21	22	23	24	25	26	27
45	35	33	50	46	48	49
28	29	30	31	01	02	03
49	47	43	57			
04	05	06	07	08	09	10

JUNE 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	01	02	03
				61	66	63
04	05	06	07	08	09	10
62	50	53	41	59	62	70
11	12	13	14	15	16	17
61	74	72	73	64	58	43
18	19	20	21	22	23	24
45	36	57	61	60	29	52
25	26	27	28	29	30	01
51	55	53	56	65	63	
02	03	04	05	06	07	08

JULY 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	01
						43
02	03	04	05	06	07	08
59	64	64	56	36	57	58
09	10	11	12	13	14	15
51	56	56	58	56		
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	01	02	03	04	05

6 Code Orange Days, 45 Code Yellow Days, 53 Code Green Days

Analysis is based on draft data as of July 14th, 2017. Data is subject to change

2017 Ozone Exceedances

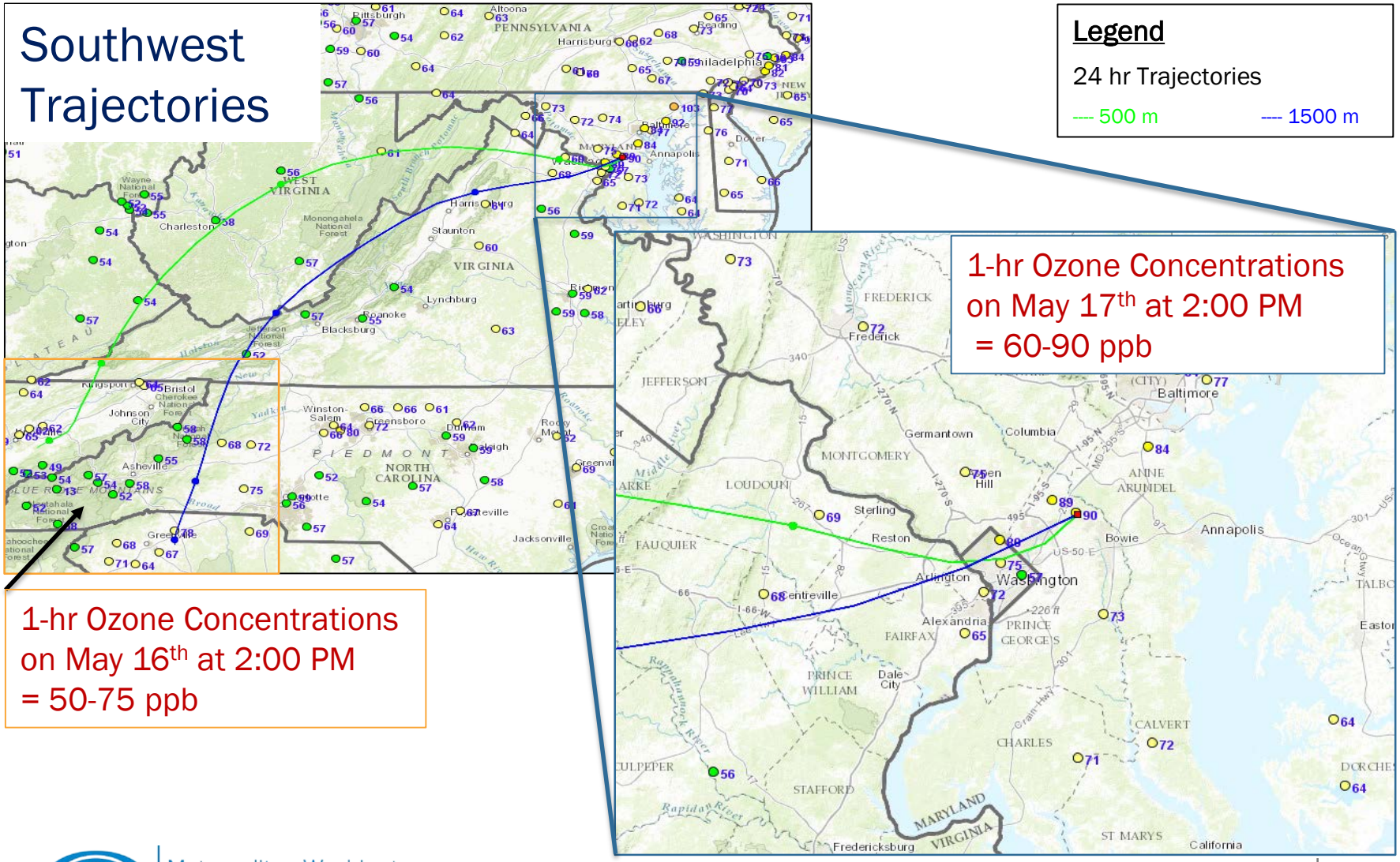
Date	Monitors Exceeding	Highest Monitor	8-Hr Max (ppb)
4/11	2	HU-Beltsville/Rockville	71
5/17	8	Beltsville	76
5/18	2	HU-Beltsville	72
6/12	1	PG Equestrian Center	74
6/13	1	PG Equestrian Center	72
6/14	4	McMillan NCORE	73

* Analysis is based on draft data as of July 14th, 2017. Data is subject to change.

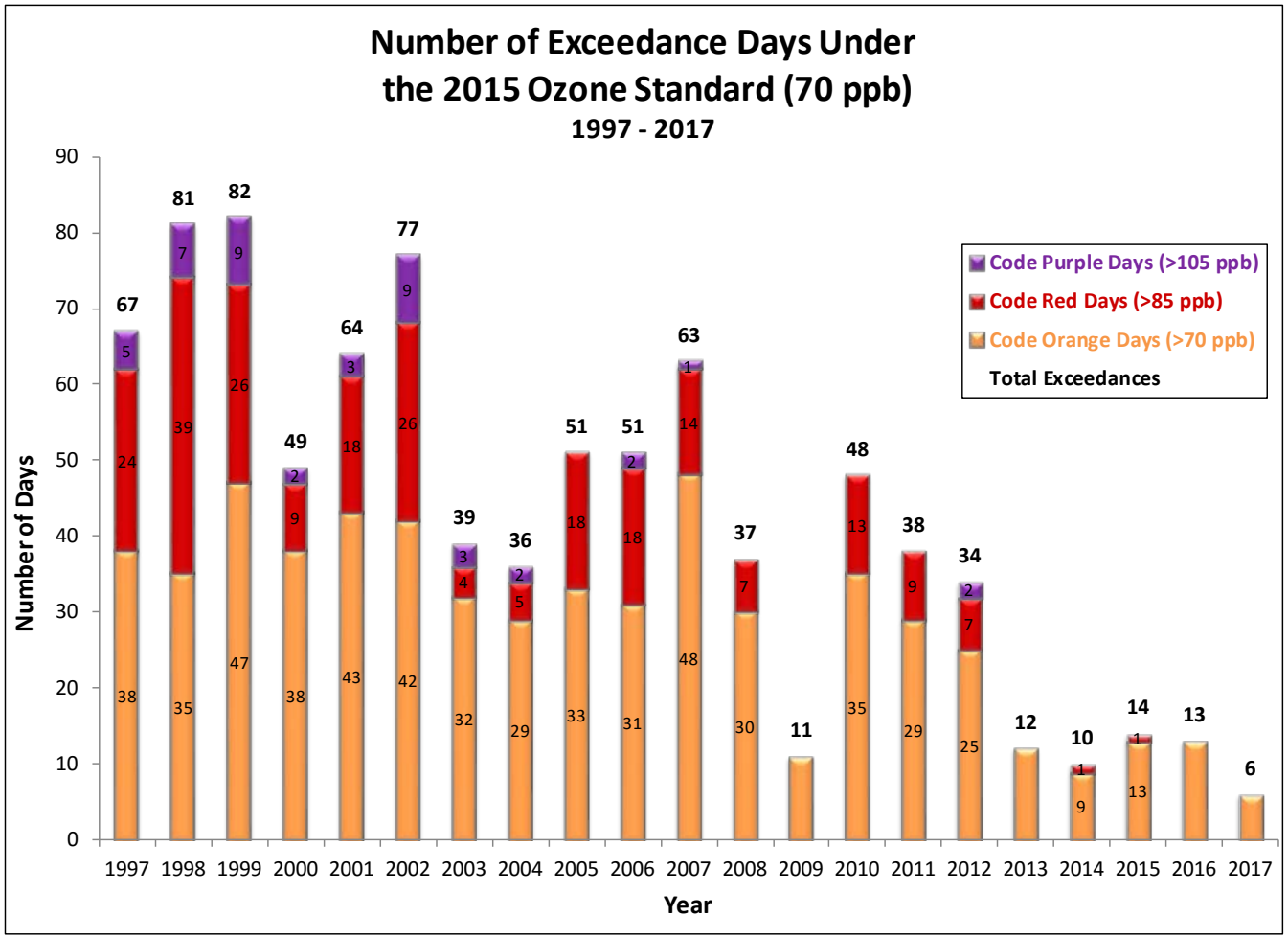
Meteorology on Exceedance Days

- High Temperature: 90°F
- Clear sky
- Light winds
- Ozone build up on previous days
- Influenced by both local and regional emissions

May 17th, 2017

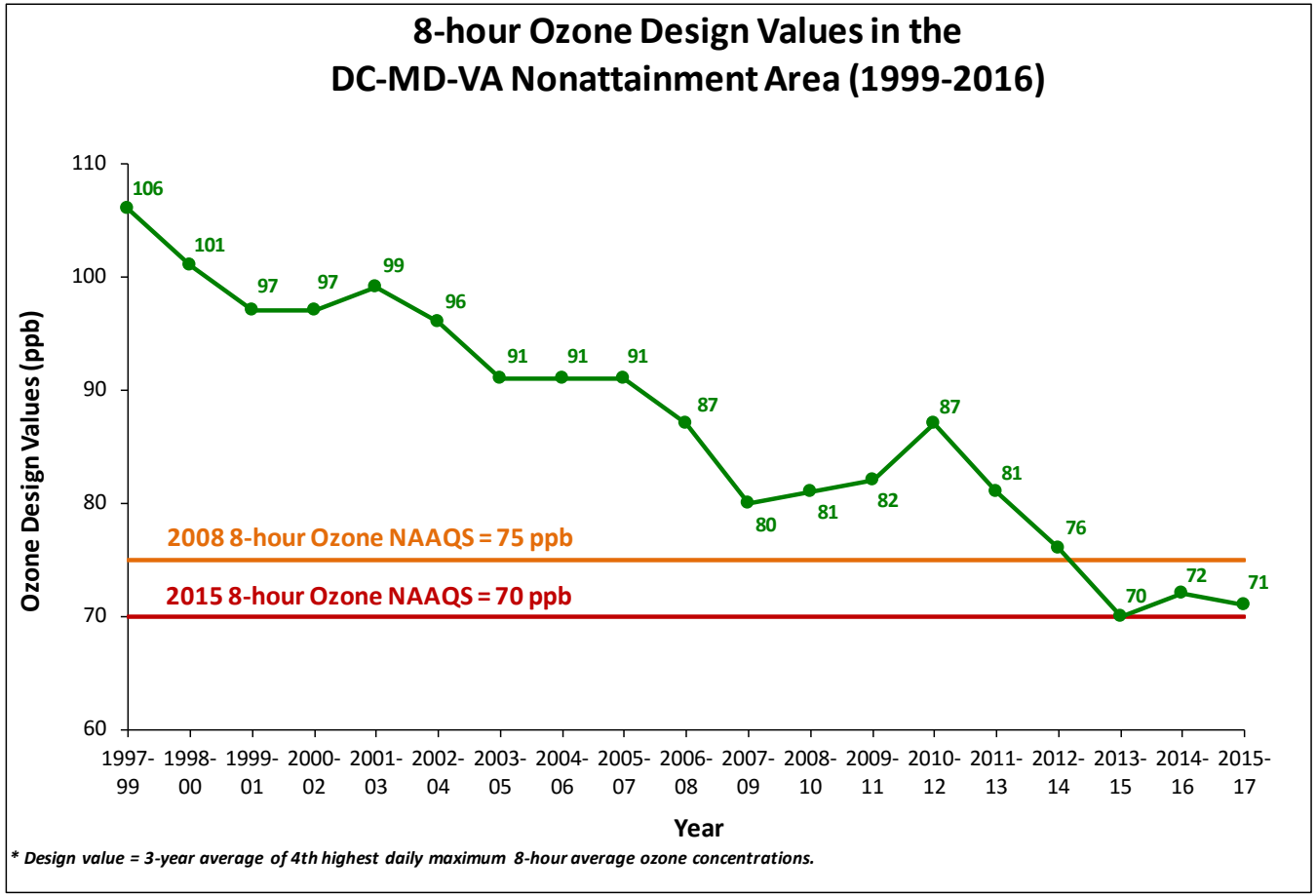


Ozone Exceedance Trend



* 2017 data is incomplete and preliminary as of July 14th, 2017.

Ozone Design Value Trend



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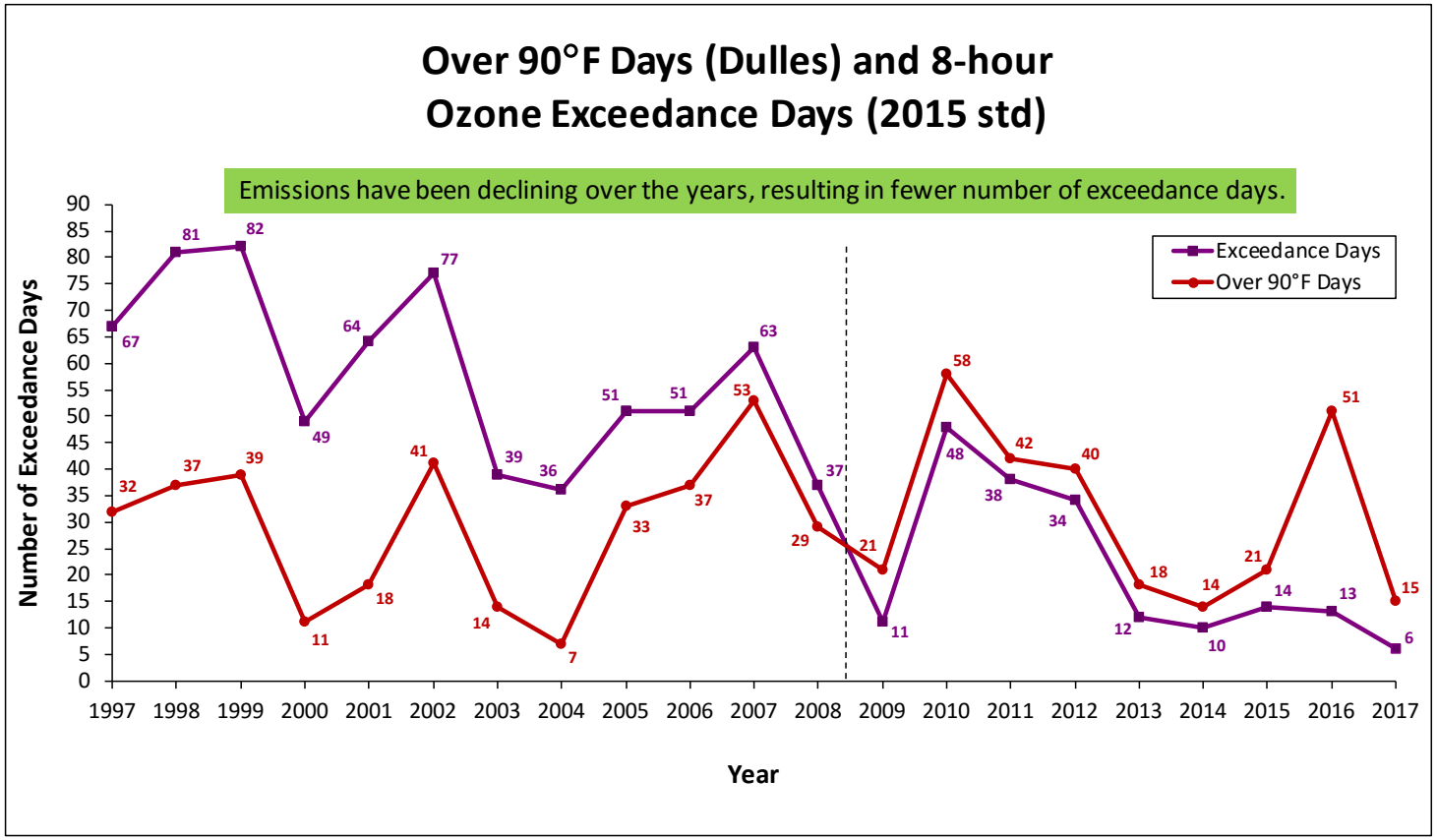
* 2017 data is incomplete and preliminary as of July 14th, 2017

Ozone & Temperature Trend



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Why Fewer Exceedance Days Now ?

Emission Control Programs		
Federal	**State**	**Local**
Acid Rain Program Phase 1/2 (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)	Ozone Transport Commission Rules	Low VOC Paint
Clean Air Interstate Rule/ CSAPR/CSAPR Update (2009/2015/2017)		Gas Can Replacement

24-Hour Average $PM_{2.5}$ Levels ($\mu g/m^3$)

APRIL 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	01
						6.7
02	03	04	05	06	07	08
6.8	7.1	5.2	6.1	6.4	2.6	4.7
09	10	11	12	13	14	15
8.5	11.0	14.0	8.7	6.7	9.7	8.6
16	17	18	19	20	21	22
10.3	7.2	4.2	6.1	8.2	13.6	14.0
23	24	25	26	27	28	29
5.0	6.0	3.4	5.0	15.3	16.1	17.2
30	01	02	03	04	05	06
16.3						

MAY 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	01	02	03	04	05	06
	9.8	4.7	5.1	5.6	5.2	3.1
07	08	09	10	11	12	13
3.7	4.8	5.6	8.4	8.6	5.2	3.2
14	15	16	17	18	19	20
6.7	3.6	6.8	13.8	12.8	12.6	7.4
21	22	23	24	25	26	27
6.1	6.3	10.6	7.7	3.1	5.5	8.6
28	29	30	31	01	02	03
9.2	8.1	8.3	9.9			
04	05	06	07	08	09	10

JUNE 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	01	02	03
				8.0	9.0	11.4
04	05	06	07	08	09	10
14.5	12.9	10.4	7.9	9.7	11.4	12.0
11	12	13	14	15	16	17
13.0	17.0	17.7	15.0	10.7	11.5	8.2
18	19	20	21	22	23	24
11.3	9.0	6.6	11.5	15.9	10.5	8.3
25	26	27	28	29	30	01
9.1	10.2	9.6	9.4	13.1	13.5	
02	03	04	05	06	07	08

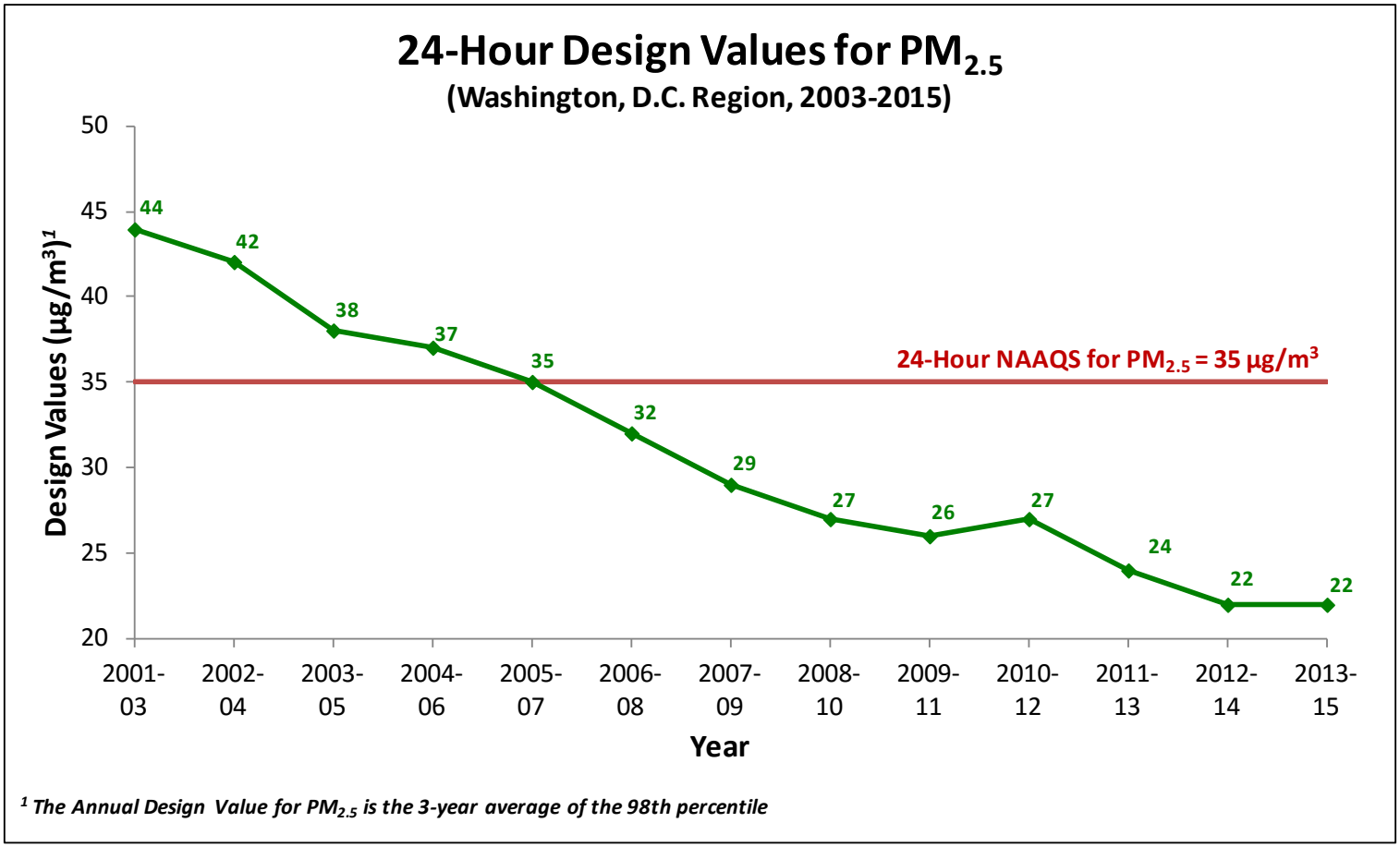
JULY 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27	28	29	30	01
						9.7
02	03	04	05	06	07	08
12.4	12.0	26.5	20.2	8.3	6.2	7.2
09	10	11	12	13	14	15
7.7	13.1	14.7	10.4	11.0		
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	01	02	03	04	05

24 Code Yellow Days, 80 Code Green Days

Analysis is based on draft data as of July 14th, 2017. Data is subject to change

24-Hour $PM_{2.5}$ Design Value Trend



[1] The Annual Design Value for $PM_{2.5}$ is the 3-year average of the 98th percentile

Air Quality Resources

- Air Quality Data & Forecasts
  - https://www.mwcog.org/environment/planning-areas/air-quality/air-quality-forecast/
  - https://www.mwcog.org/environment/planning-areas/air-quality/air-quality-data/
  - http://www.cleanairpartners.net/

- Download the Clean Air Partners air quality app and signup for EnviroFlash email notifications
  - http://www.cleanairpartners.net/