



# **Ozone Season Summary**

# **2013**

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MWAQC-TAC

June 11, 2013



# Ozone Season Summary

## Peak 8-Hour Ozone Concentrations (ppb)

### April

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
	52	53	52	53	59	53
7	8	9	10	11	12	13
61	62	60	64	68	38	53
14	15	16	17	18	19	20
56	49	54	50	46	38	50
21	22	23	24	25	26	27
54	49	44	56	56	62	70
28	29	30				
71	52	49				

### May

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
			59	46	51	50
5	6	7	8	9	10	11
58	35	36	48	46	60	47
12	13	14	15	16	17	18
48	49	55	72	62	71	51
19	20	21	22	23	24	25
37	42	53	60	44	34	44
26	27	28	29	30	31	
50	51	57	61	74	60	

### June

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
						57
2	3	4	5	6	7	8
39	48	62	76			
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Since April 1, 2013, there have been:

1 Code Orange Day

17 Code Yellow Days

48 Code Green Days

•2013 data is current at of June 6, 2013. Data is subject to change.



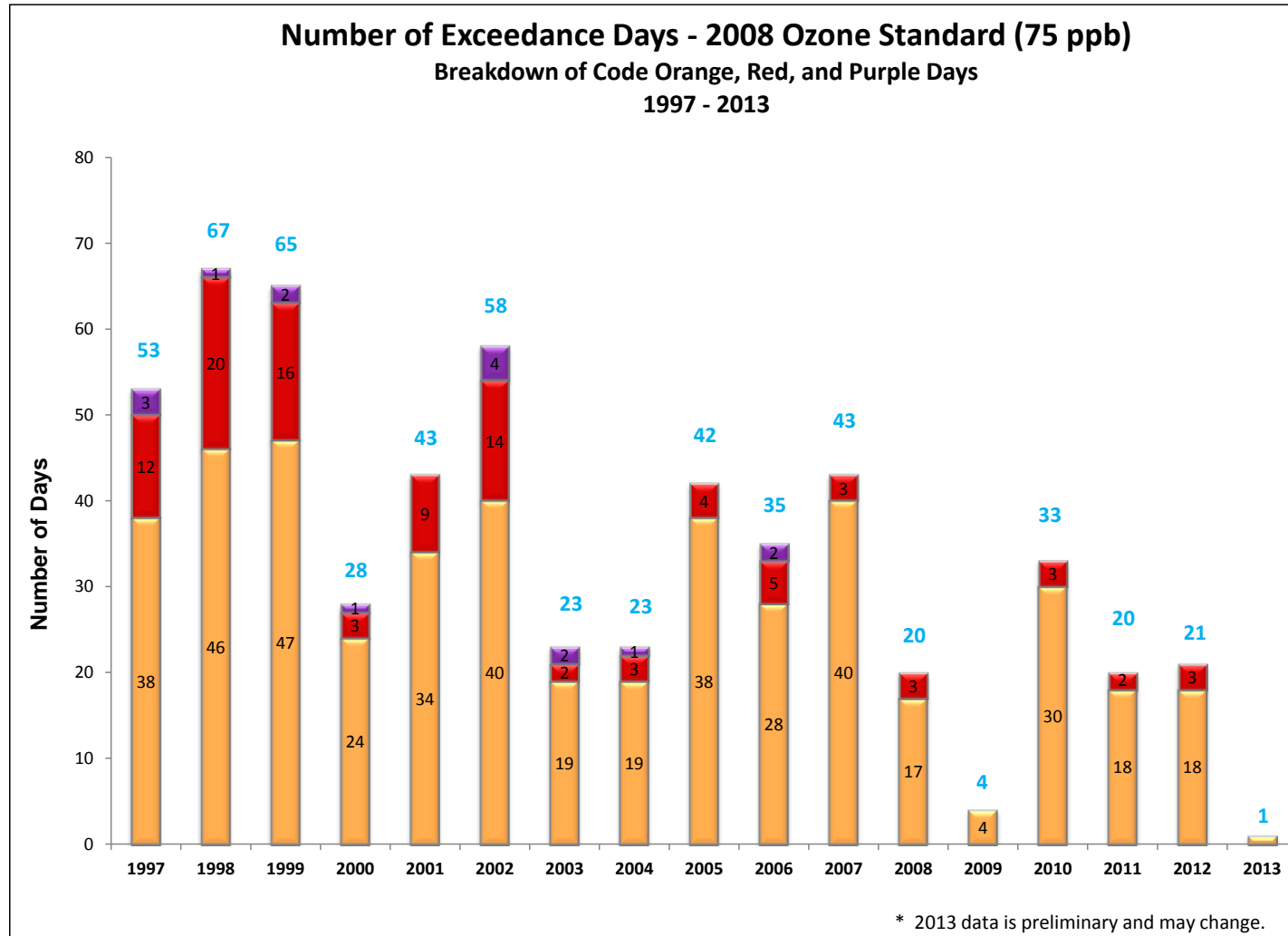
## 2013 Ozone Exceedances

Date	# of Monitors Exceeding	Highest Monitor	Highest Concentration (ppb)
6/5/2013	1	Frederick Co.	76

\* 2013 data is current as of June 6, 2013 and is subject to change.



# Ozone Exceedance Trend



\* 2013 analysis is based on draft data as of June 6, 2013 and is subject to change.



## Meteorology – June 5 (Code Orange Day)

- ❖ High pressure in Mid-Atlantic advected warm air into the region.
- ❖ Limited winds and cloud cover helped ozone production.
- ❖ Wind trajectories helped transport emissions from upwind areas with high ozone levels into Frederick.



# June 5<sup>th</sup> Code Orange

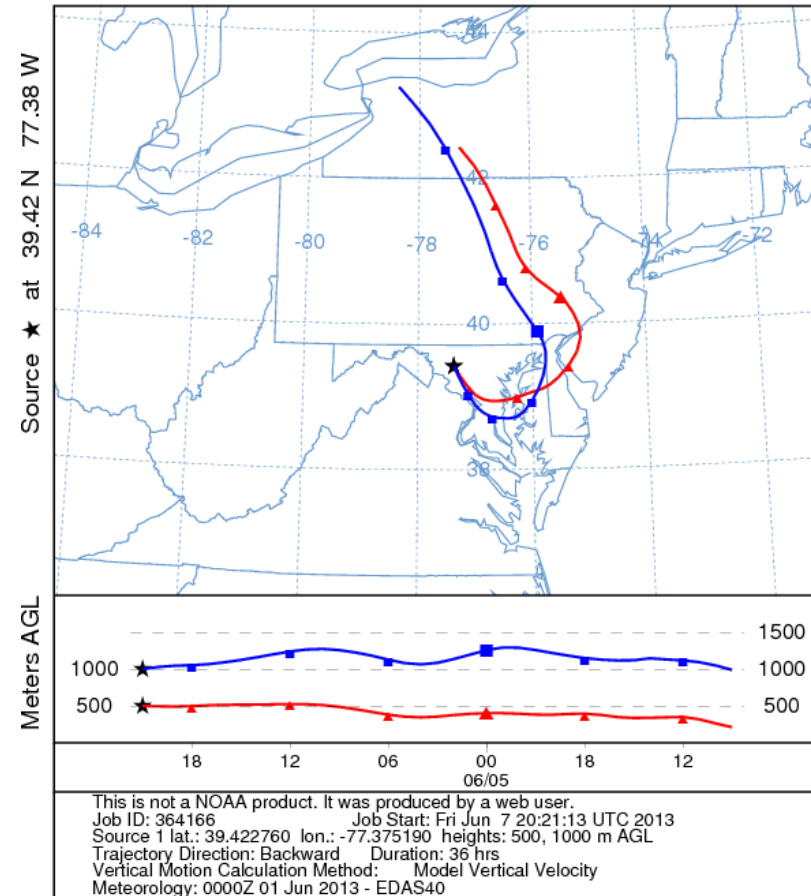
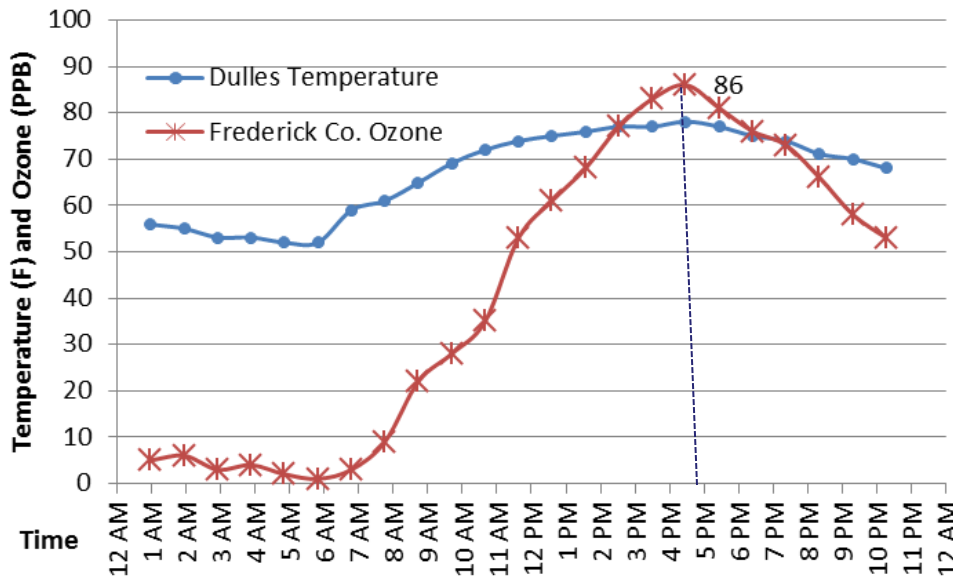
# of Monitors in Exceedance: 1  
 Maximum 8-Hour Ozone: 76 ppb (Frederick County)

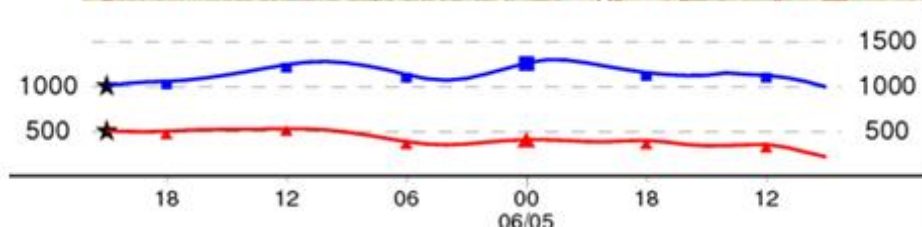
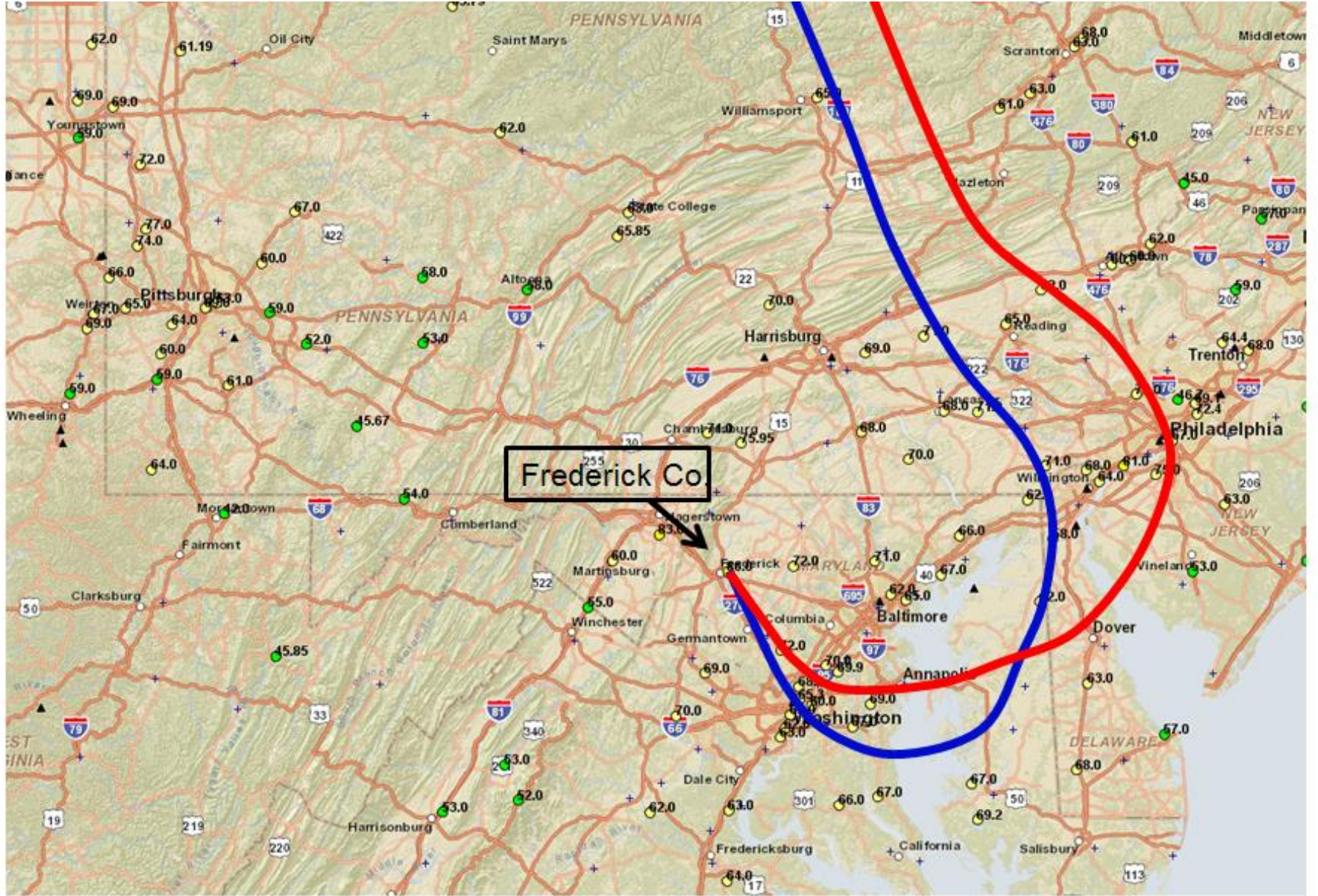
## Wind Trajectory at 5 PM (June 5th)

(500m & 1000m)

NOAA HYSPLIT MODEL  
 Backward trajectories ending at 2100 UTC 05 Jun 13  
 EDAS Meteorological Data

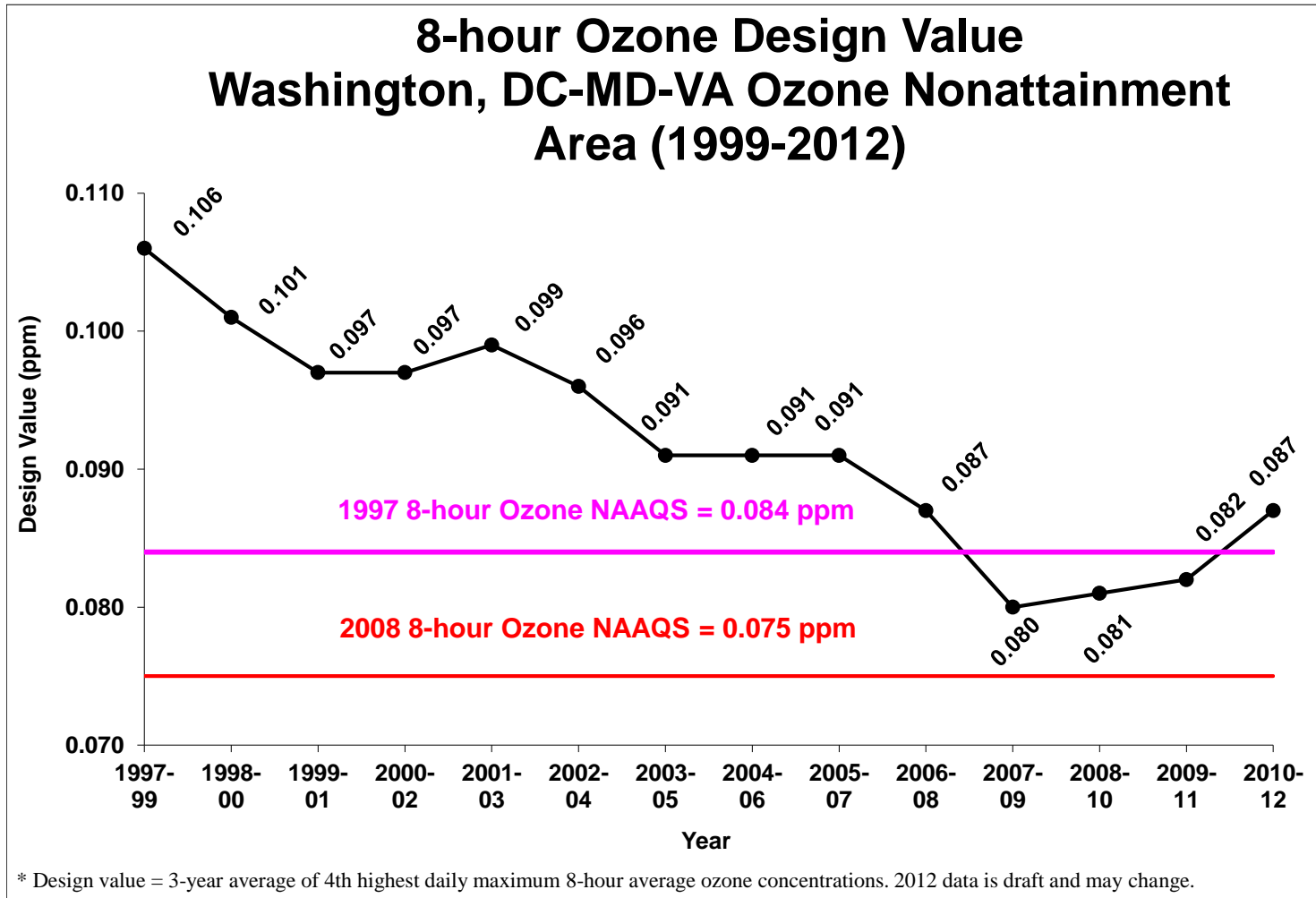
### June 5th Time Series of 1 Hour Ozone and Temperature







# Ozone Design Value Trend



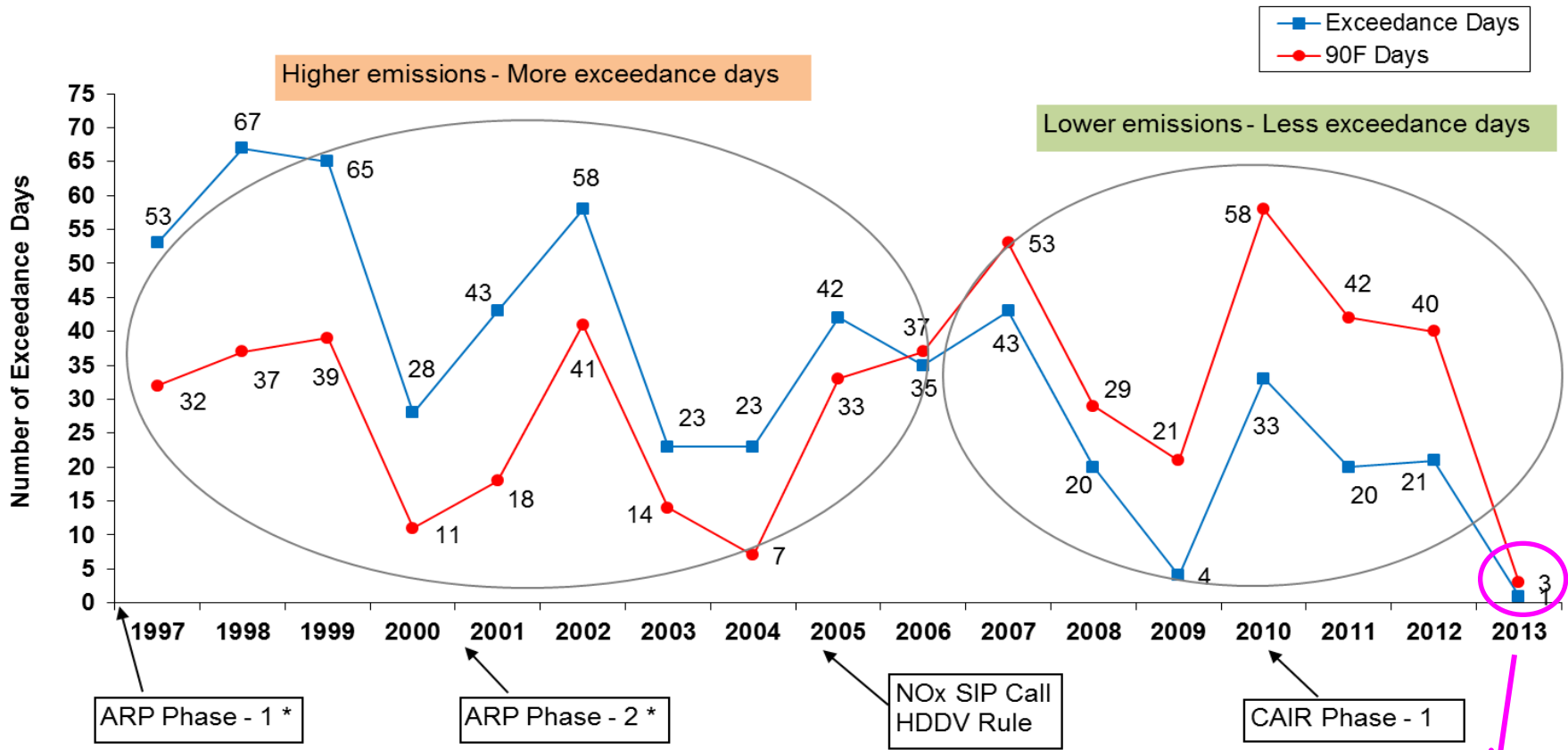
\* 2012 data is preliminary and is subject to change.





# Ozone & Temperature Trend

## Exceedance of 2008 Ozone Standard and 90°F Days



\* ARP = Acid Rain Program

- Phase 1 : 1996
- Phase 2 : 2000

\*Data period: April 1–June 6, subject to change.



# Fine Particle Summary

## 24-Hour PM2.5 Concentrations (ug/m3)

April

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
	15.1	7.3	9.4	7.9	14.0	8.8
7	8	9	10	11	12	13
10.1	14.8	14.0	19.1	14.9	13.4	11.9
14	15	16	17	18	19	20
11.6	12.4	12.1	14.8	14.8	9.0	7.3
21	22	23	24	25	26	27
7.9	6.7	13.0	13.6	9.0	11.6	14.3
28	29	30				
11.4	7.1	5.3				

May

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
			7.5	5.5	7.3	5.6
5	6	7	8	9	10	11
8.8	10.1	6.2	9.5	10.3	15.5	13.2
12	13	14	15	16	17	18
7.8	5.4	7.7	14.1	17.3	11.3	7.5
19	20	21	22	23	24	25
8.7	10.8	12.8	20.4	9.0	4.3	5.0
26	27	28	29	30	31	
5.7	6.8	16.1	17.6	16.9	14.8	

June

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
						11.7
2	3	4	5	6	7	8
8.6	9.0	6.9	9.7			
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Since April 1, 2013, there have been:

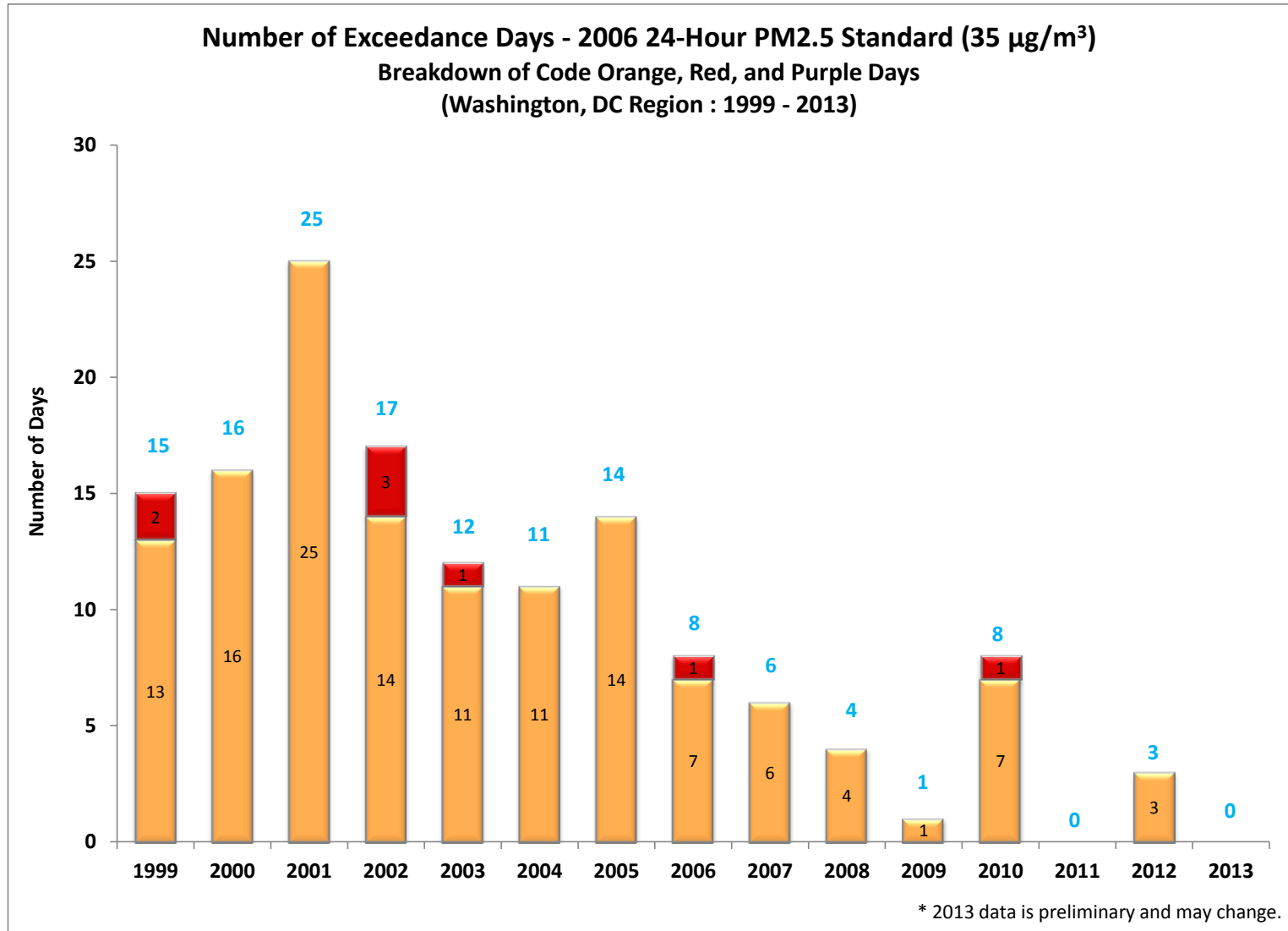
24 Code Yellow Days

42 Code Green Days

\* 2013 data is current as of June 6, 2013 and is subject to change.



# PM2.5 Exceedance Trend

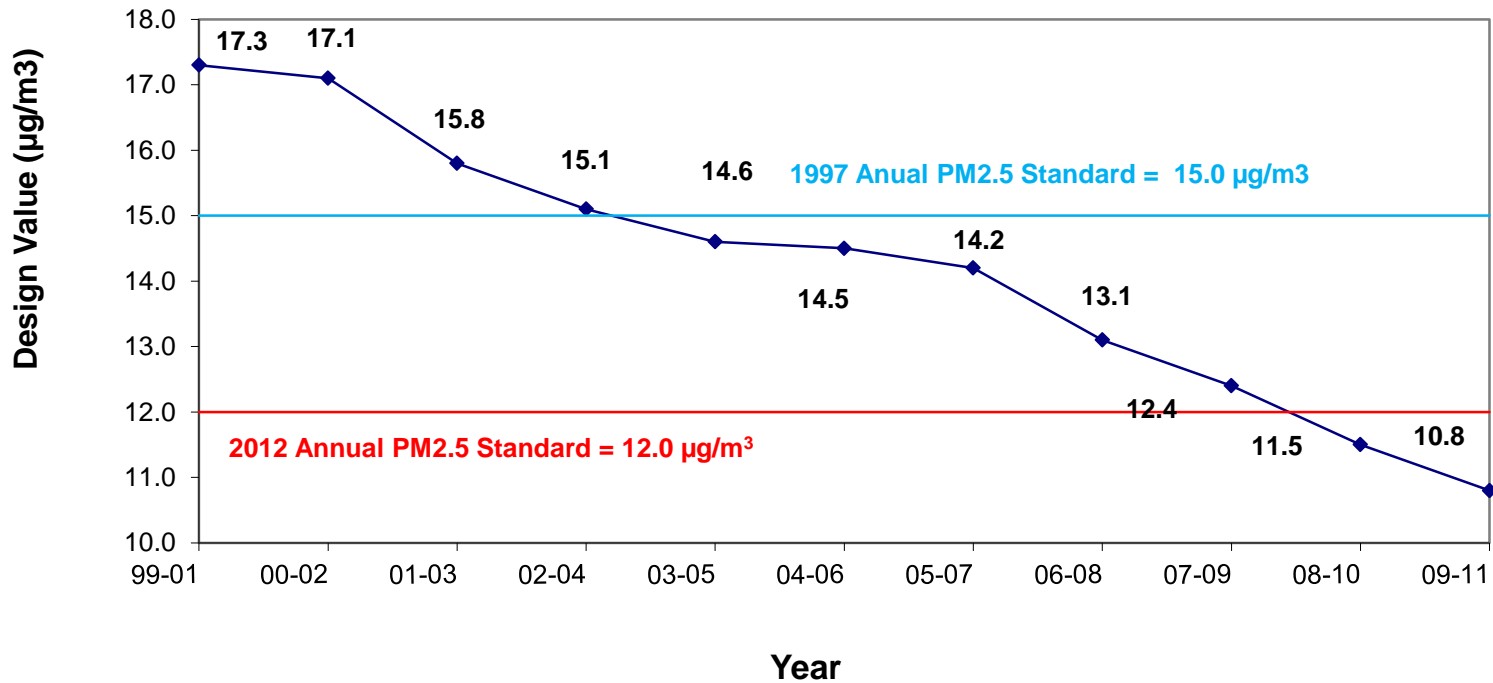


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# Annual PM<sub>2.5</sub> Design Value Trend

**Annual PM<sub>2.5</sub> Design Value  
Washington, DC-MD-VA Nonattainment Area (1999-2011)**



\* Design value = 3-year avg of annual mean PM<sub>2.5</sub> concentrations.