



Ozone Season Summary

2011

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MWAQC-TAC Meeting, COG

June 13, 2011



Ozone Season Summary

[As of June 9, 2011]

Peak 8-Hour Ozone Concentrations (ppb)

Data based on the 8-hour standard set at 75 ppb. Since April 15, 2011, there have/has been:

- 1 Code Red Day
- 2 Code Orange Days
- 12 Code Yellow Days
- 39 Code Green Days

•Analysis is based on draft data until June 9, 2011. Data is subject to change.

Daily Peak 8-hour Ozone Concentration (PPB)

Washington Area-2011

April							May						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2	1	2	3	4	5	6	7
							39	55	52	40	53	58	55
3	4	5	6	7	8	9	8	9	10	11	12	13	14
							56	54	53	65	61	41	35
10	11	12	13	14	15	16	15	16	17	18	19	20	21
					57	46	48	53	50	45	42	49	60
17	18	19	20	21	22	23	22	23	24	25	26	27	28
53	59	52	60	53	44	36	59	55	51	75	73	58	49
24	25	26	27	28	29	30	29	30	31				
45	55	35	32	53	50	44	46	76	96				
June													
Sun	Mon	Tues	Wed	Thurs	Fri	Sat							
			1	2	3	4							
			74	72	60	73							
5	6	7	8	9	10	11							
69	75	76	95	93									



2011 Ozone Exceedances (so far)

Date	# of Monitors Exceeding	Highest Monitor	Highest Concentration (ppb)
5/30/2011	1	Calvert County	76
5/31/2011	7	Franconia	96
6/7/2011	1	Beltsville	76
6/8/2011	11	Prince George's Equestrian Center	95
6/9/2011	8	Calvert County	93

* Analysis is based on draft data until June 9, 2011. Data is subject to change.



May 30th to May 31st and June 7th to June 9th Poor Air Quality Events

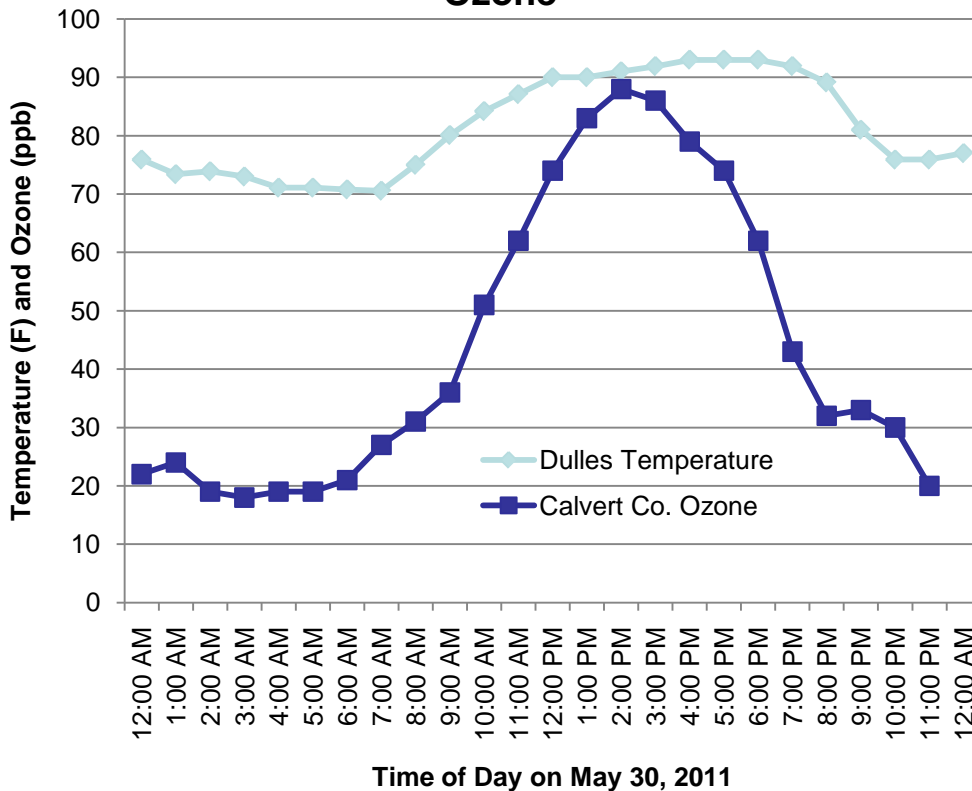
- ❖ Bermuda Highs southwest of the Mid-Atlantic advected hot and humid air into the Metropolitan Washington Area.
- ❖ The Bermuda Highs limited cloud coverage and allowed for record to near record high temperatures for each day.
- ❖ Wind trajectories helped transport emissions from the Ohio River Valley into the Metropolitan Washington Area.
- ❖ All three factors above led to conditions favorable for high ozone levels.



May 30th Code Orange

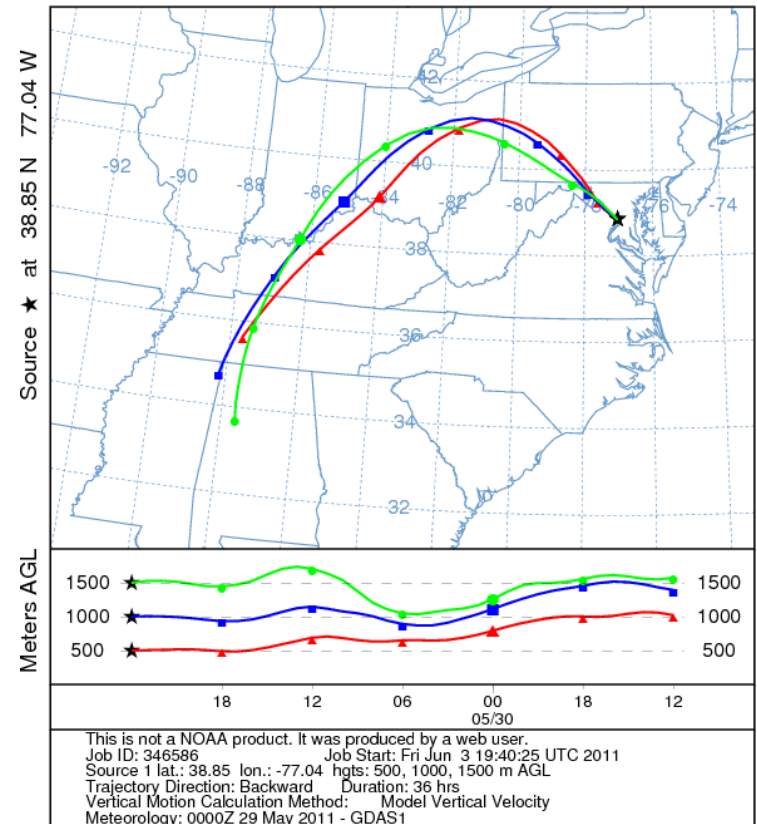
of Monitors in Exceedance: 1
 No Monitors in Code Red
 Maximum 8-Hour Ozone: 76 ppb (Calvert County)

May 30th Timeseries of Temperature and Ozone



Wind Trajectory at 8 PM (May 30th) (500m, 1000m, & 1500m)

NOAA HYSPLIT MODEL
 Backward trajectories ending at 0000 UTC 31 May 11
 GDAS Meteorological Data



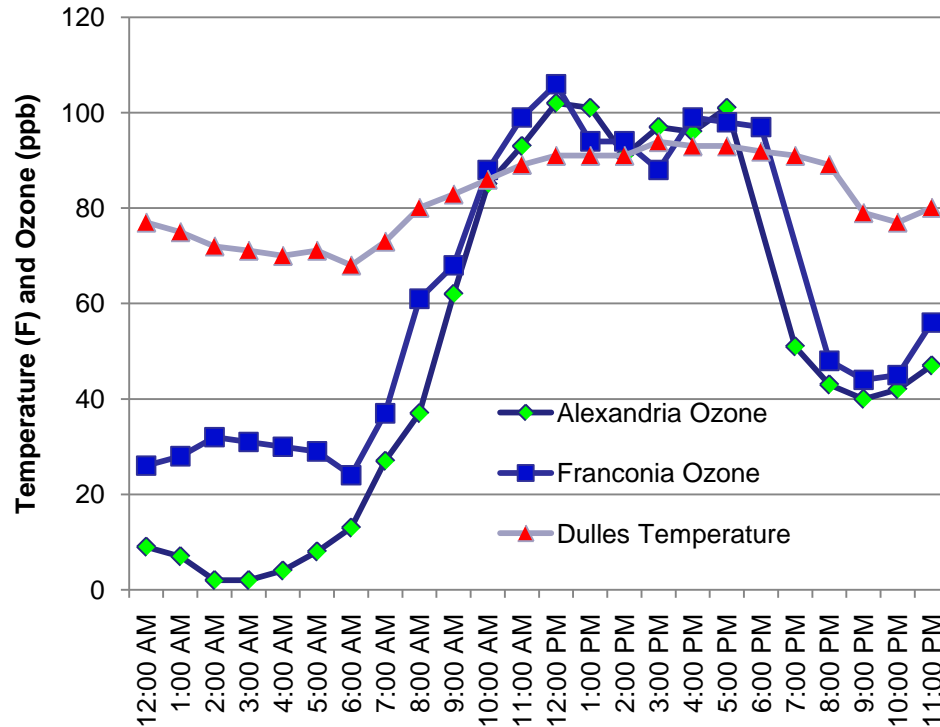


May 31st Code Red

of Monitors in Exceedance: 7
1 Monitor in Code Red (Franconia, VA)
Maximum 8-Hour Ozone: 96 ppb (Franconia, VA)

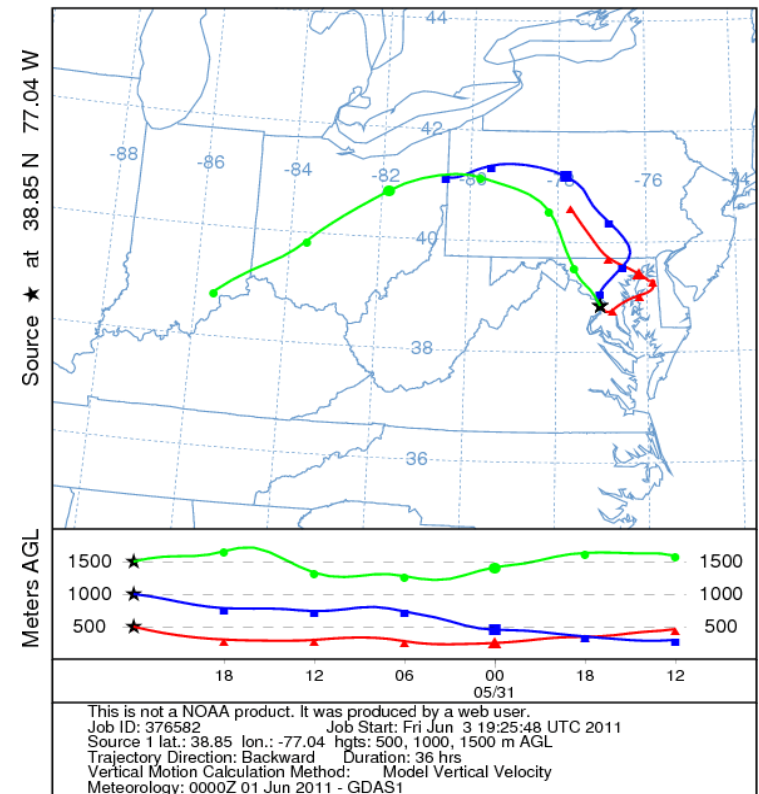
Wind Trajectory at 8 PM (May 31st) (500m, 1000m, & 1500m)

May 31st Timeseries of Temperature and Ozone



Time of Day on May 31, 2011

NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 01 Jun 11
GDAS Meteorological Data





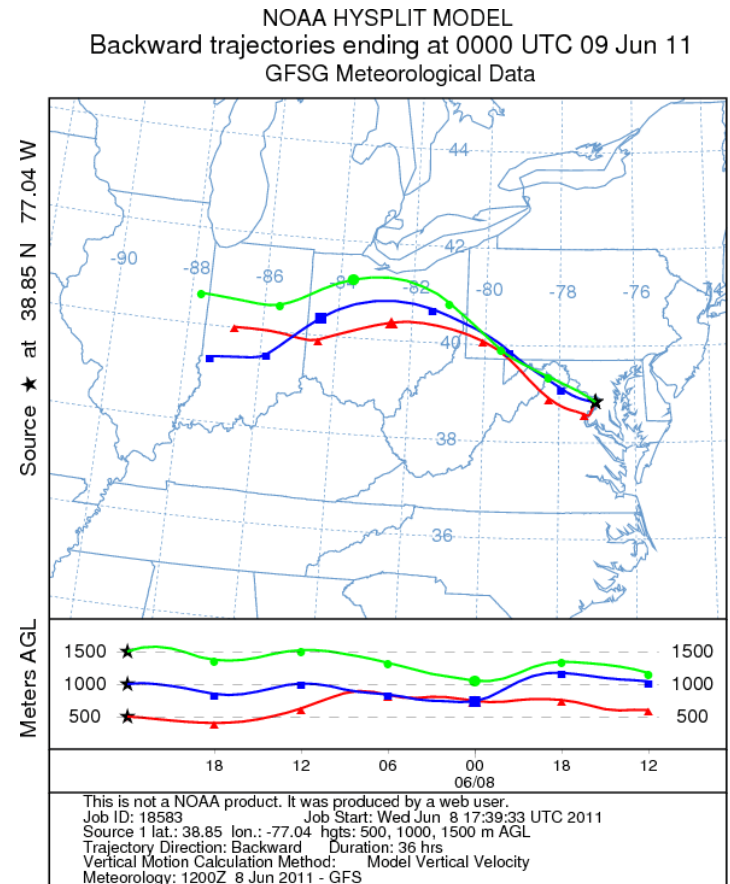
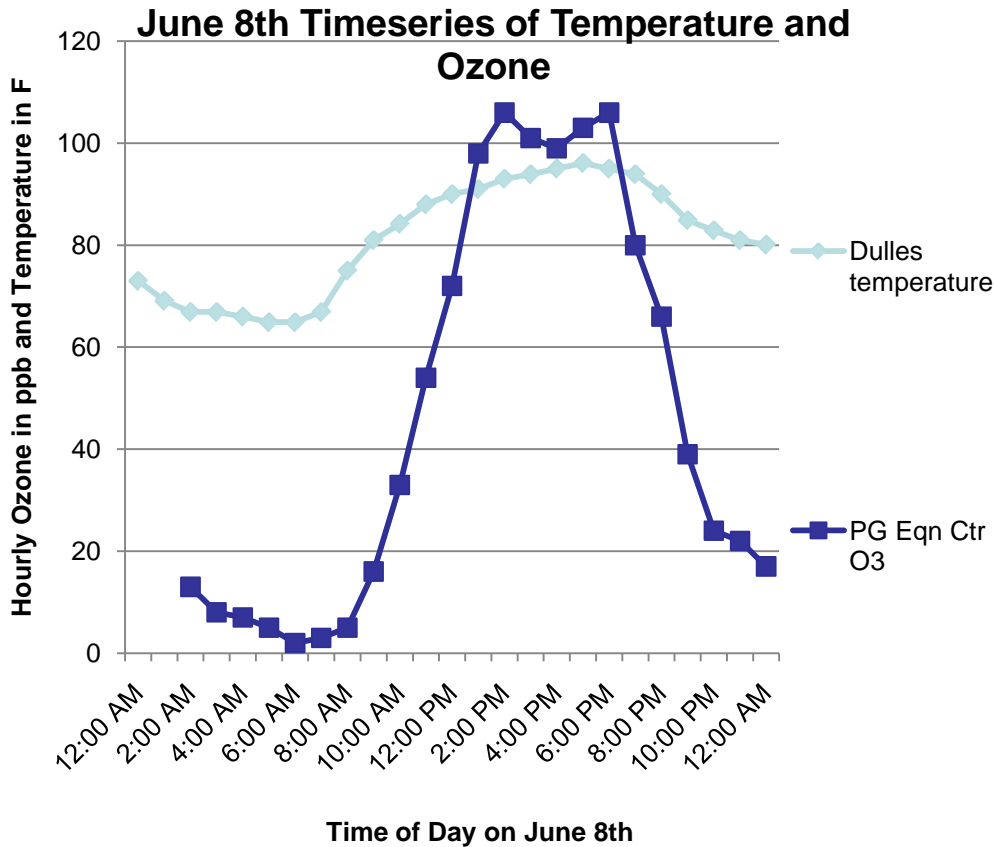
June 8th Code Orange

of Monitors in Exceedance: 11

No Monitor in Code Red

Maximum 8-Hour Ozone: 95 ppb (Prince George's Co. Equestrian Center, MD)

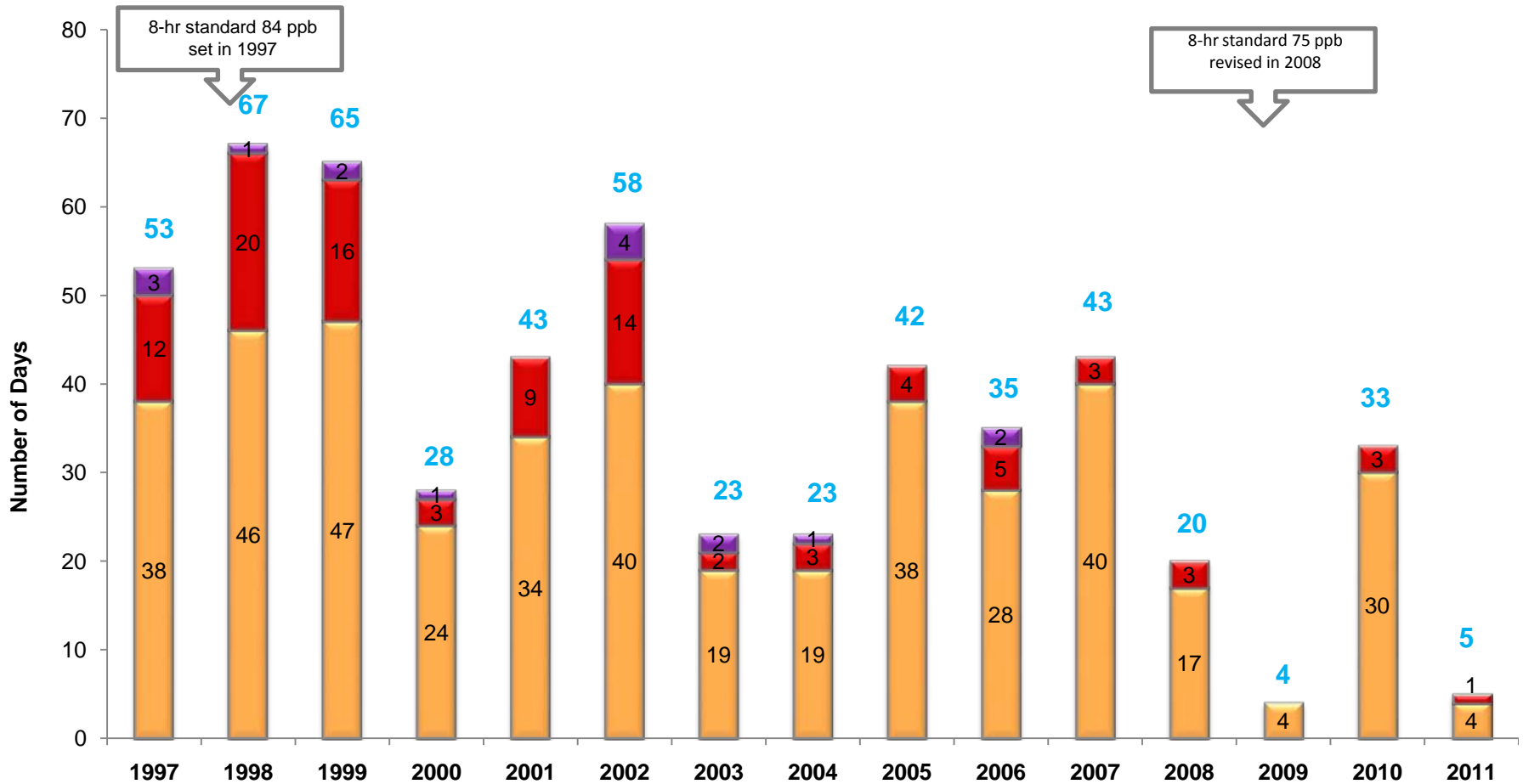
**Wind Trajectory at 8 PM
(June 8th)
(500m, 1000m, & 1500m)**





Ozone Exceedance Trend

Number of Exceedance Days - 2008 Ozone Standard (75 ppb) Breakdown of Code Orange, Red, and Purple Days 1997 - 2011



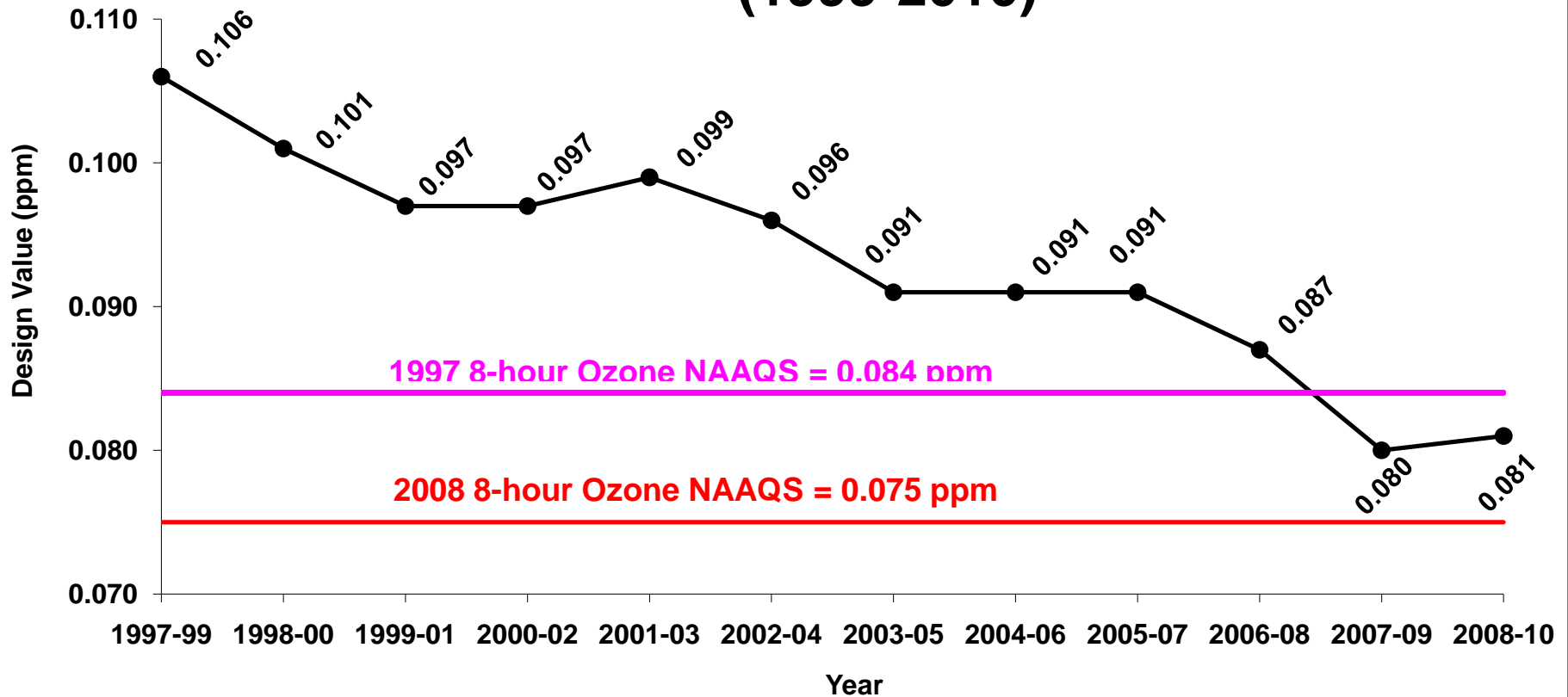
* 2011 data is preliminary and may

* 2011 analysis is based on draft data as of June 9, 2011 and is subject to change.



Ozone Design Value Trend

8-hour Ozone Design Value Washington, DC-MD-VA Nonattainment Area (1999-2010)



* Design value = 3-year average of 4th highest daily maximum 8-hour average ozone concentrations. 2008-10 data is draft and may change.



Fine Particle Summary

[As of June 9, 2011]

24-Hour PM_{2.5} Concentrations (ug/m³)

Data based on the 24-hour standard set at 35.5 ug/m³. Since April 15, 2011, there have/has been:

9 Code Yellow Days

43 Code Green Days

Daily Peak 24-hour PM_{2.5} Concentration (µg/m³) Washington Area-2011

April						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
					11.3	7.3
17	18	19	20	21	22	23
6.3	12.8	17.3	13.8	8.3	7.7	8.7
24	25	26	27	28	29	30
14.1	13.9	8.9	8.2	10.4	7.8	6.7

May						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
9.7	12.0	14.1	6.1	7.8	10.1	10.4
8	9	10	11	12	13	14
12.2	9.1	8.0	9.6	14.5	15.1	10.2
15	16	17	18	19	20	21
9.8	11.8	10.7	9.2	8.4	14.4	10.3
22	23	24	25	26	27	28
15.3	20.5	16.1	17.5	24.4	15.2	9.1
29	30	31				
14.2	23.8	31.8				

June						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
			33.3	9.5	6.5	12.2
5	6	7	8	9	10	11
18.1	19.0	21.8	28.8	31.5		

* Analysis is based on draft data until June 9, 2011. Data is subject to change.