



2013 Ozone Season Summary & Historical Trends

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MWAQC

September 25, 2013



2013 Ozone Season

Peak 8-Hour Ozone Concentrations (ppb)

April

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
	52	53	52	53	60	53
7	8	9	10	11	12	13
61	62	61	64	68	36	54
14	15	16	17	18	19	20
56	50	54	50	46	38	50
21	22	23	24	25	26	27
54	49	44	56	56	63	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	36	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	53	57	67	74	61	

June

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
						57
2	3	4	5	6	7	8
40	48	62	76	49	30	58
9	10	11	12	13	14	15
56	32	52	69	50	50	58
16	17	18	19	20	21	22
53	64	40	47	57	75	53
23	24	25	26	27	28	29
40	64	67	70	44	48	62
30						
42						

July

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
	36	30	31	22	30	37
7	8	9	10	11	12	13
33	55	47	48	59	35	47
14	15	16	17	18	19	20
28	58	69	76	77	77	54
21	22	23	24	25	26	27
62	54	53	53	51	61	48
28	29	30	31			
45	56	62	52			

August

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
				37	59	44
4	5	6	7	8	9	10
39	48	37	47	42	44	53
11	12	13	14	15	16	17
55	63	50	36	55	66	69
18	19	20	21	22	23	24
47	37	63	54	58	32	51
25	26	27	28	29	30	31
59	61	72	35	65	67	57

September

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
59	56	56	63	62	50	60
8	9	10	11	12	13	14
66	45	72	72	58	40	32
15	16	17	18	19	20	21
47	42					
22	23	24	25	26	27	28
29	30					

Since April 1, 2013, there have been:

4 Code Orange Day, 43 Code Yellow Days, 122 Code Green Days

•2013 data is current as of September 16, 2013. Data is subject to change.



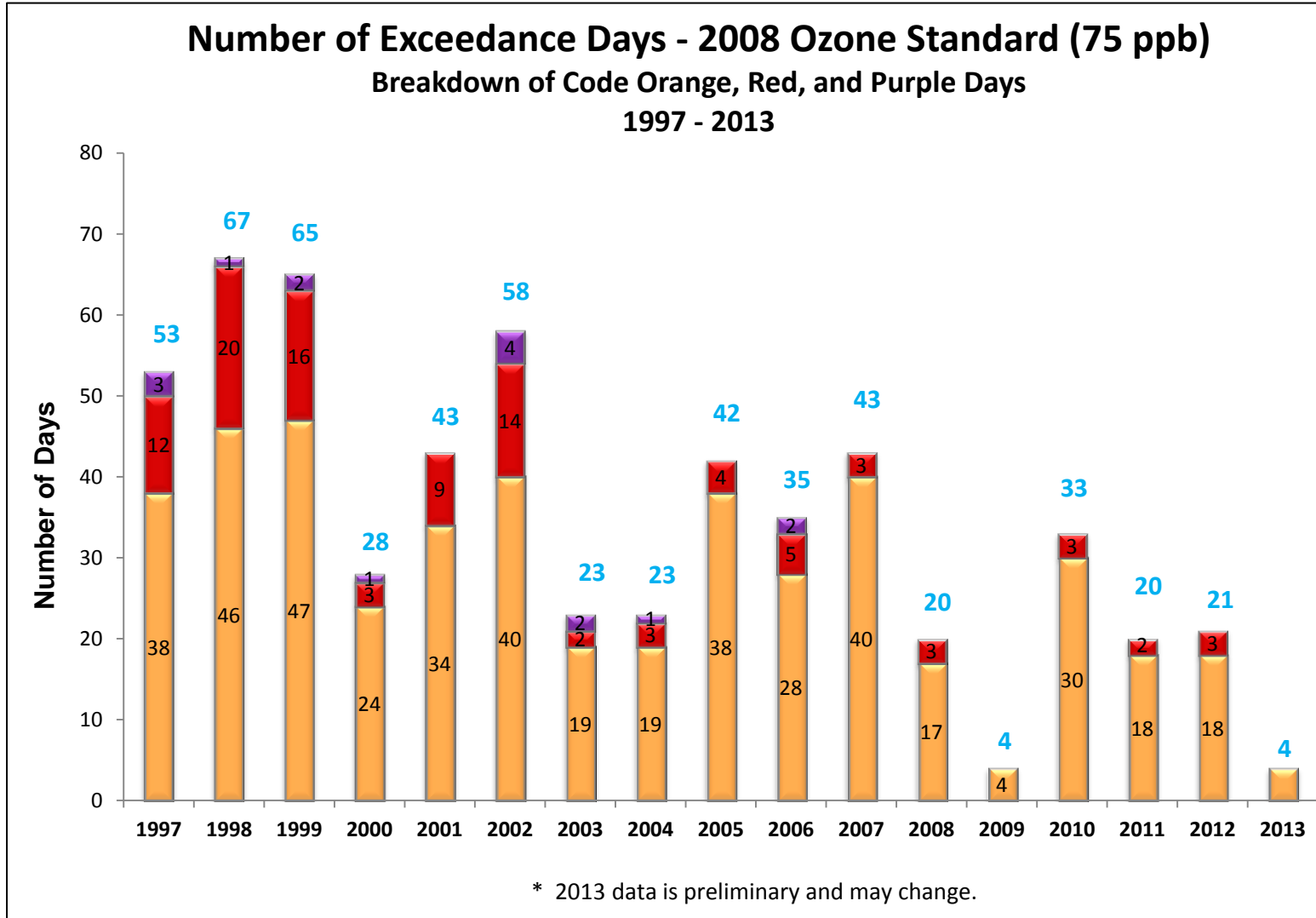
2013 Ozone Exceedances

Date	# of Monitors Exceeding	Highest Monitor	Highest Concentration (ppb)
6/5/2013	1	Frederick	76
07/17/2013	1	Franconia	76
07/18/2013	1	Beltsville	77
07/19/2013	1	Beltsville	77

* 2013 data is current as of Sep 16, 2013 and is subject to change.



Ozone Exceedance Trend



* 2013 analysis is based on draft data as of September 16, 2013 and is subject to change.



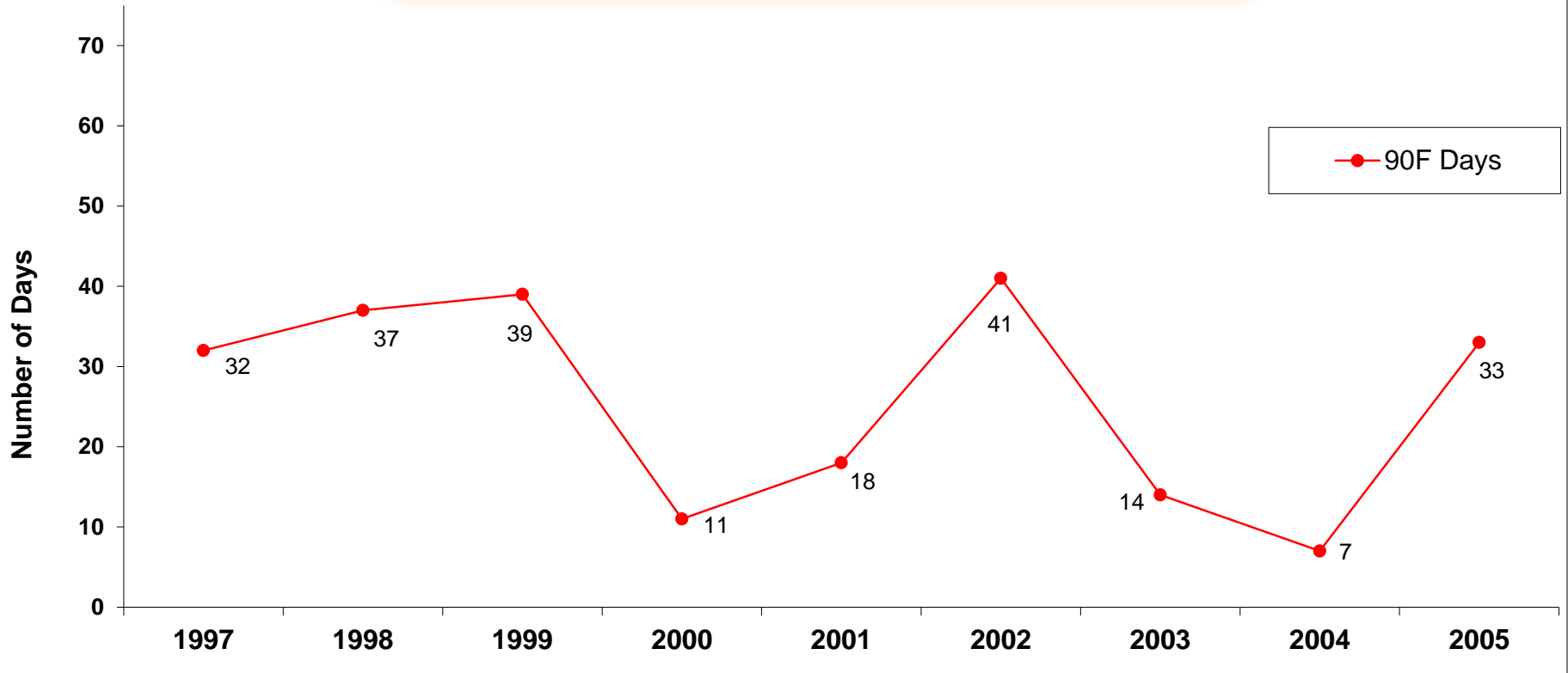
Ozone Exceedances – 1997-2013

- ❖ **Two distinct periods in Ozone exceedance trend**
 - ❖ **1997-2005**
 - ❖ **2006-2013**
- ❖ **After 2005 significant control measures led to decline in air pollutant emissions and ozone exceedances**



90° Days Vs Ozone Exceedance Days

1997-2005

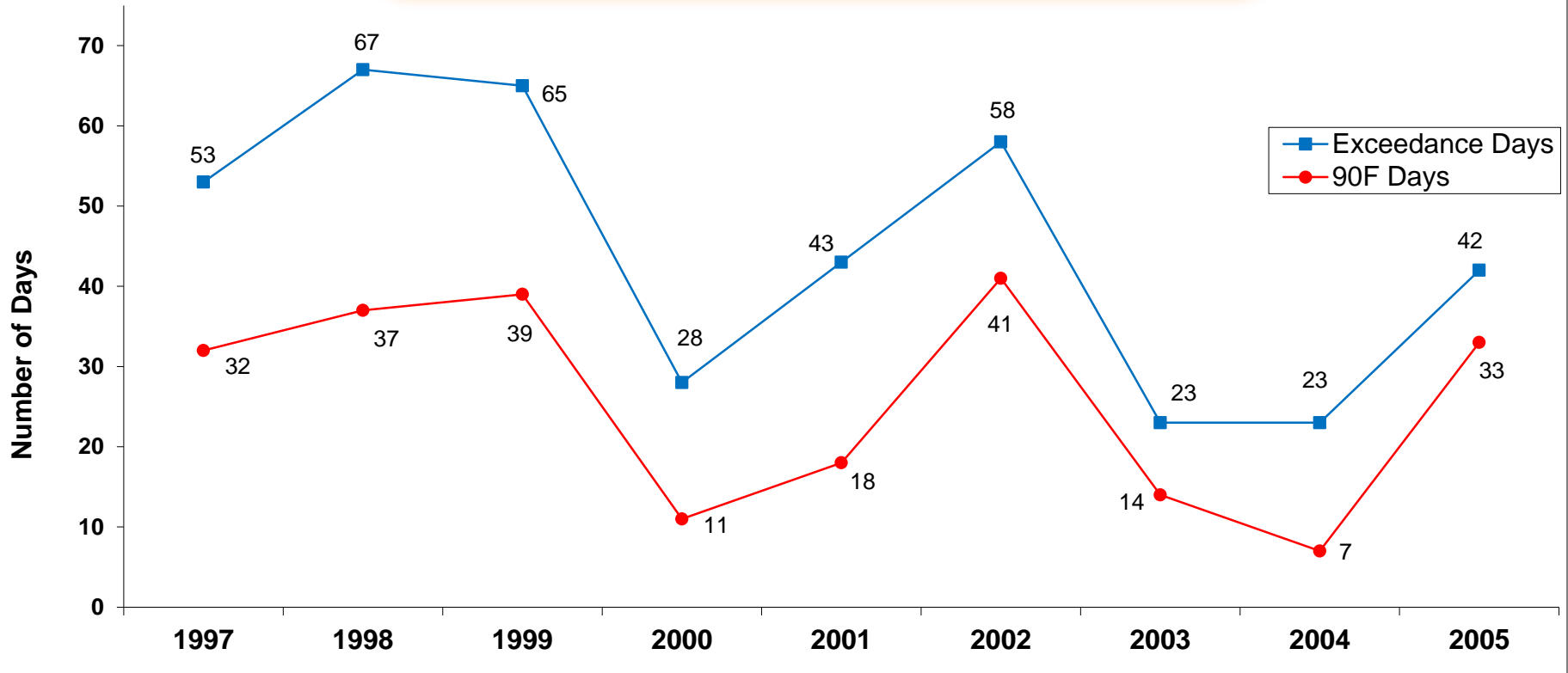




90° Days Vs Ozone Exceedance Days

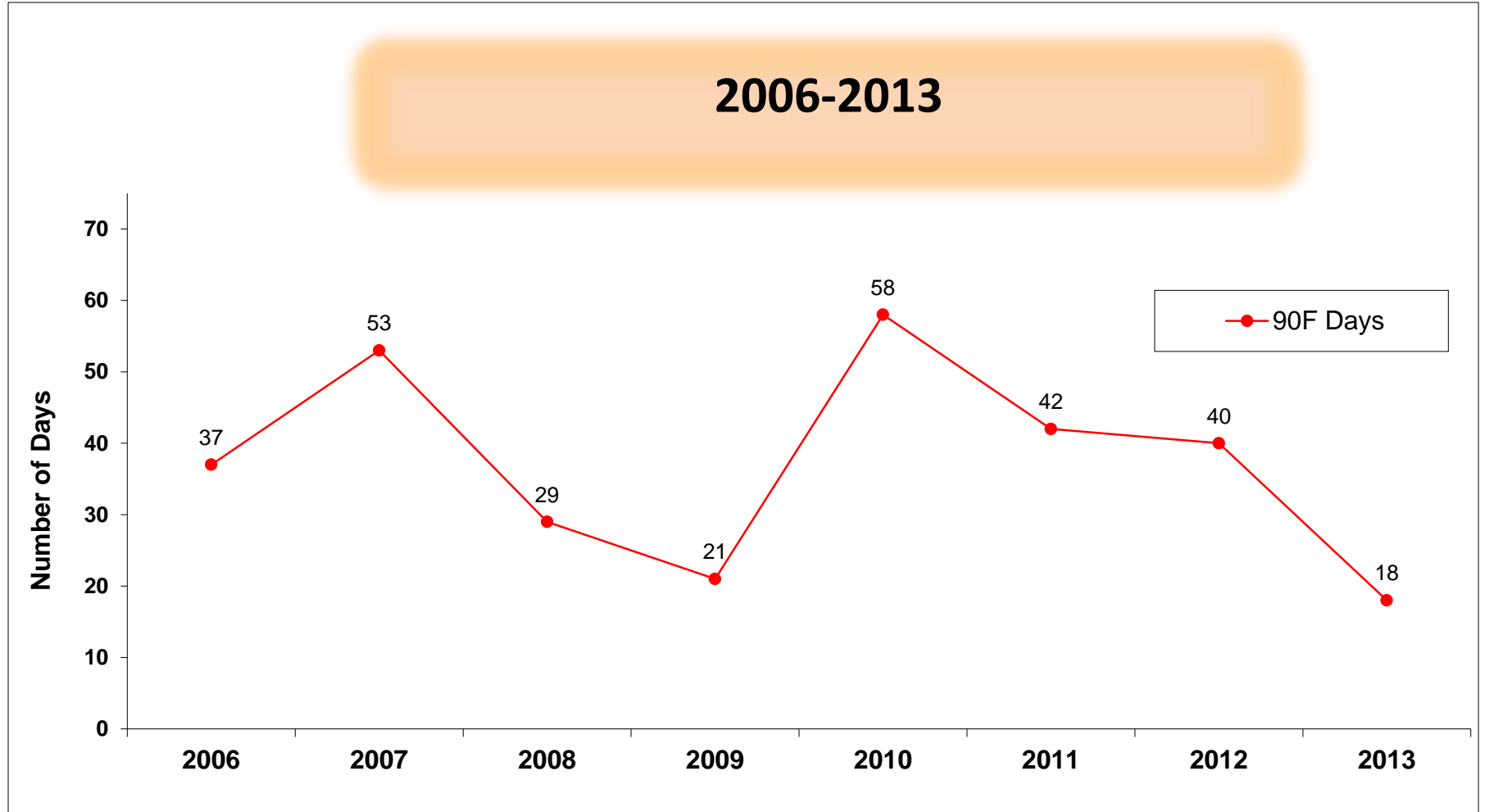
1997-2005

90 degree temp = Ozone exceedance guaranteed





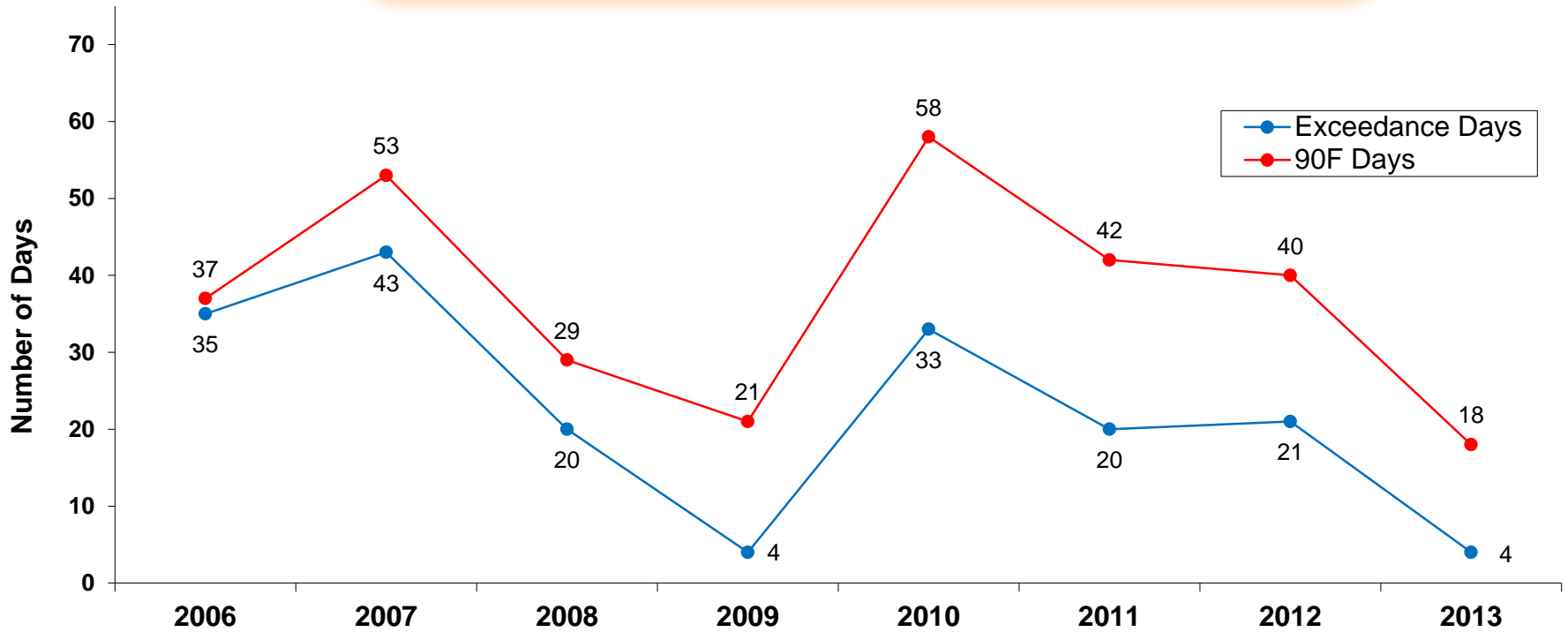
90° Days Vs Ozone Exceedance Days





90° Days Vs Ozone Exceedance Days

2006-2013
90 degree temp = Ozone exceedance not guaranteed





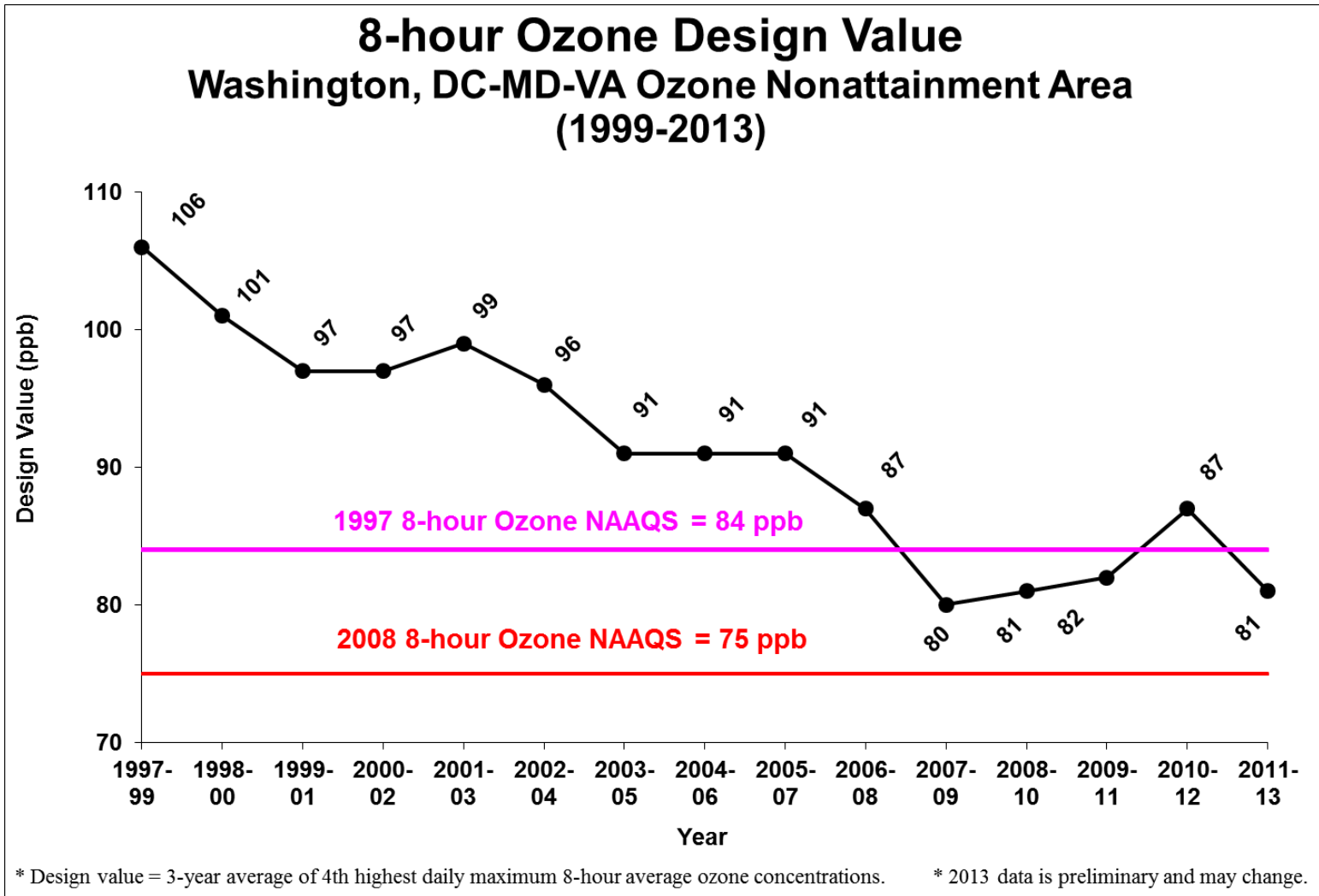
Why fewer exceedance days now ?

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)	VA CAIR Rule	VRE Idling Reduction
NOx SIP Call (2004)	DC CAIR Rule	Low VOC Paint
Clean Air Interstate Rule (2009)	Ozone Transport Commission Rules	Gas Can Replacement



Ozone Design Value Trend





2013 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	8.3	13.9	8.7
7	8	9	10	11	12	13
10.1	14.7	14.0	19.0	14.9	13.3	11.8
14	15	16	17	18	19	20
11.6	12.3	12.1	14.7	14.7	9.0	7.3
21	22	23	24	25	26	27
7.9	6.6	13.0	13.6	8.9	9.0	14.2
28	29	30				
11.3	7.0	5.2				

May

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
			7.5	5.5	7.4	6.8
5	6	7	8	9	10	11
9.8	10.0	6.2	9.5	13.0	15.5	13.2
12	13	14	15	16	17	18
7.7	6.5	8.8	15.5	17.2	12.4	7.5
19	20	21	22	23	24	25
11.1	12.4	14.9	20.0	19.3	6.5	7.1
26	27	28	29	30	31	
6.5	8.3	17.1	20.0	16.9	14.7	

June

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
						11.7
2	3	4	5	6	7	8
8.5	9.6	6.8	11.0	7.3	5.9	12.9
9	10	11	12	13	14	15
13.7	4.8	8.8	16.8	10.8	5.2	13.2
16	17	18	19	20	21	22
14.3	13.4	14.9	8.6	8.7	9.0	6.6
23	24	25	26	27	28	29
7.4	9.6	10.7	9.1	9.7	7.4	7.8
30						
12.5						

July

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
	4.2	4.3	6.1	7.0	6.5	5.7
7	8	9	10	11	12	13
4.3	5.5	13.7	9.7	8.2	9.7	6.5
14	15	16	17	18	19	20
6.2	11.9	14.5	19.6	21.2	22.3	13.7
21	22	23	24	25	26	27
10.2	8.0	7.1	8.0	7.1	9.4	12.0
28	29	30	31			
10.5	8.6	13.1	14.8			

August

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
				9.5	10.3	11.6
4	5	6	7	8	9	10
5.8	5.6	8.2	9.9	8.8	10.2	9.8
11	12	13	14	15	16	17
12.3	16.9	12.5	4.4	5.7	6.5	7.9
18	19	20	21	22	23	24
6.8	7.4	10.3	11.1	7.8	10.7	7.7
25	26	27	28	29	30	31
5.1	7.1	20.6	15.1	16.4	14.0	12.0

September

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
9.0	8.8	9.2	6.8	10.3	5.3	10.1
8	9	10	11	12	13	14
14.1	5.7	19.8	21.2	15.3	6.6	6.5
15	16	17	18	19	20	21
7.9	9.3					
22	23	24	25	26	27	28
29	30					

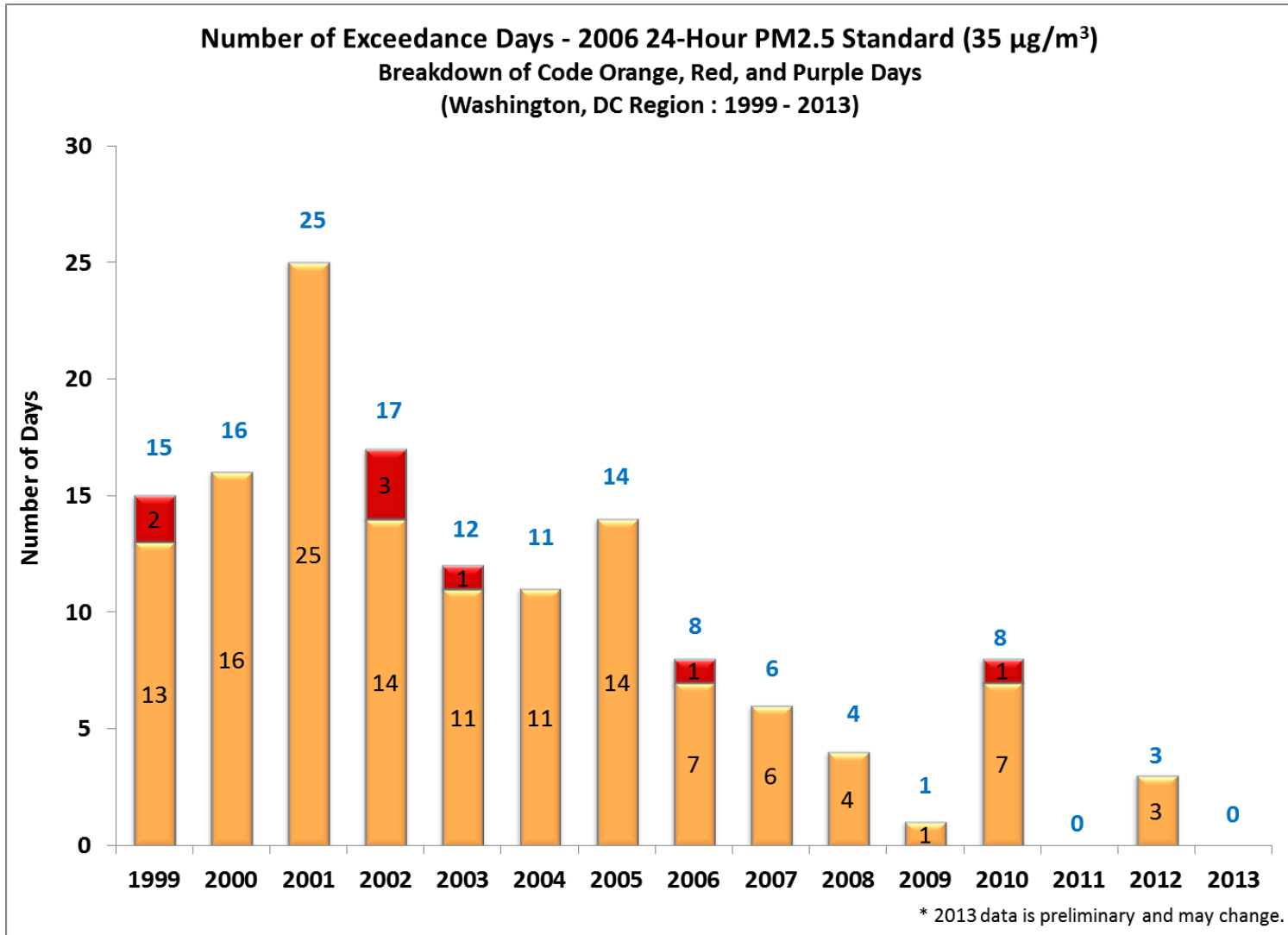
Since April 1, 2013, there have been:

55 Code Yellow Days and 114 Code Green Days

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PM2.5 Exceedance Trend

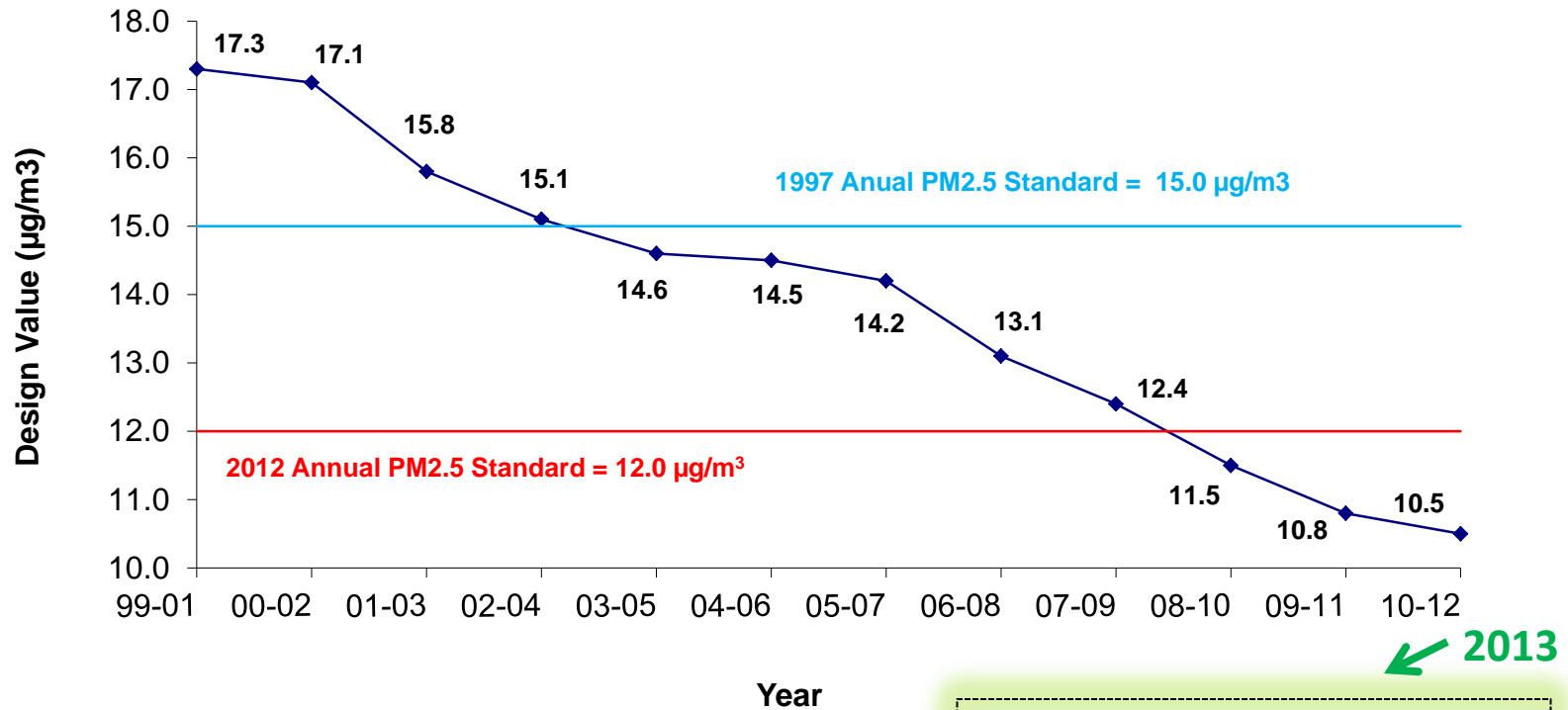


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Annual PM_{2.5} Design Value Trend

Annual PM_{2.5} Design Value Washington, DC-MD-VA Nonattainment Area (1999-2012)



* Design value = 3-year avg of annual mean PM_{2.5} concentrations.

PM_{2.5} Maintenance Plan



Air Quality Information

- ❖ **Current Air Quality Data & Forecasts**
 - ❖ <http://www.mwcog.org/environment/air/forecast/>
 - ❖ <http://www.cleanairpartners.net/>

- ❖ **Historical Air Quality Data**
 - ❖ <http://mwcog.sonomatechdata.com/>
 - ❖ <http://www.cleanairpartners.net/>

- ❖ **Sign Up for Air Alerts** (Air quality forecasts & current data)
 - ❖ <http://www.cleanairpartners.net/airalert.cfm>