METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

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TO: COG Board of Directors

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THROUGH: Stuart Freudberg, Director, COG/DEP ***SAF***

SUBJECT: New Federal Ozone Standard and its Implications for the Washington Region

This memo discusses EPA's new ozone standards, includes an analysis for the Washington region of the potential implications on the number of days that exceed the standard and the number of code Orange, Red and Purple Days, and the process for implementing the new standards and the approximate timetable. The Clean Air Act requires EPA to set two standards for each of six criteria pollutants (lead, sulfur dioxide, nitrogen dioxide, particulate matter, carbon monoxide, and ground-level ozone). The primary standard sets limits to protect public health; the secondary standard sets limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The Metropolitan Washington region's air quality has been improving, so that the region met the one-hour ozone standard in 2005, by the required deadline, and the region plans to meet the 1997 ozone standard by the end of the 2009 ozone season.

Background

On March 12, 2008 EPA announced a final rule revising the National Ambient Air Quality Standard (NAAQS) for ozone. The new standard replaces the ozone standard revision made in 1997, when EPA revoked the one-hour ozone standard in favor of the 8-hour ozone standard. The purpose of EPA's latest revision of the ozone standard is to strengthen the standard to make it more protective of public health and welfare. Scientific research reviewed by EPA gives evidence that ozone causes bronchitis, aggravates asthma, hospital and emergency room visits, nonfatal heart attacks and premature death, among others. In addition, new scientific evidence shows that repeated exposure to ozone damages sensitive vegetation and trees leading to increased susceptibility to disease, pests and damaged foliage.

The new standard tightens the primary and secondary standards to 0.075 parts per million (ppm). The Air Quality Index (AQI)[1] was updated to reflect the change in the

health standard as a part of the ozone NAAQS revision. It is noted that while EPA implemented a tightening of the federal ozone standards, it is likely that this action will be challenged legally as EPA decided to promulgate a less stringent standard than was recommended by its Clean Air Scientific Advisory Committee (CASAC). CASAC had recommended tightening the ozone standard to 0.060 to 0.070 parts per million to be more protective of public health. Both industry and environmental groups have threatened lawsuits against EPA for the 0.075 ppm level. The 13-state northeastern Ozone Transport Commission plans to sue EPA in support of the more stringent level recommended by CASAC.

Implementation of the New Standard

EPA's process for implementing the new standard will be a three step process. State air agencies will recommend areas within their state for nonattainment designation status by March 12, 2009. EPA will announce designations the following year, by March 12, 2010, and the designated nonattainment areas must submit State Implementation Plans for meeting the new ozone standard by March 12, 2013.

The new Air Quality Index will take effect immediately with the 2008 ozone season. As a result of the new AQI, staff expects that there will be more Code Orange and Code Red days this season which runs from May to September.

Effect of New Standard on Washington Region

Staff reviewed air quality data for the past three ozone seasons, 2005-2007, to determine the impact the new standard may have on the region. Table 1 and 2 provide comparisons of the number of 8-hour ozone exceedance days and Code Orange/Red/Purple days respectively for the new and the old NAAQS in the Washington, DC-MD-VA nonattainment area. Graph 1 shows the data in the Table 2 in a graphic format. Table 3 shows a comparison of forecasted Code Orange/Red/Purple days for the two ozone standards, 1997 and 2008.

Based on the historical data for the past three years (Table 1), it appears that on an average the total number of 8-hour ozone exceedance days in a year will increase by 95% due to the new NAAQS implementation. Also, Code Orange days are expected to increase by 83% and Code Red days by 17% (See Table 2) per year. Accordingly, the number of forecasted Code Orange and Code Red days is also expected to increase by 100% and 13% respectively (See Table 3).

[1] The Air Quality Index (AQI) is EPA's tool for communicating air quality to the public and includes 5 color codes: Code Green (good), Code Yellow (moderate), Code Orange (unhealthy for sensitive groups), Code Red (unhealthy), and Code Purple (very unhealthy).

Table 1: 8-Hour Ozone Exceedance Days during Ozone Season (May-September) (2005 – 2007)

Year	Days (>84 ppb) (1997 NAAQS)	Days (>75 ppb) (2008 NAAQS)	Increase in Exceedance Days	Percent Increase in Exceedance Days (%)
2005	20	36	16	80
2006	21	37	16	76
2007*	16	39	23	144
Average	**19**	**37**	**18**	**95**

Data Source:
1997 NAAQS Exceedance Days: State Air Agencies, MD, VA and DC
2008 NAAQS Exceedance Days: AirNowTech.org (As of March 28, 2008)
* 2007 data is preliminary.

Table 2: Comparison of Code Orange/Red/Purple Days (New Vs. Old NAAQS) (2005 – 2007)

	Observed Code Orange (85-104ppb)	Observed Code Orange (76-95ppb)	Increase in # of Code Orange Days	Observed Code Red (105-124ppb)	Observed Code Red (96-115ppb)	Increase in # of Code Red Days	Observed Code Purple (125-374ppb)	Observed Code Purple (116-374ppb)	Increase in # of Code Purple Days
2005	20	32	12	0	4	4	0	0	0
2006	19	30	11	1	5	4	1	2	1
2007	15	37	22	1	2	1	0	0	0
Average	**18**	**33**	**15**	**1**	**4**	**3**	**0**	**1**	**0**

Data Source:
2005/2006 Data: State Air Agencies, MD, VA and DC
* 2007 Preliminary Data: AirNowTech.org (As of March 28, 2008)

Table 3: Comparison of Forecasted Code Orange/Red/Purple Days (New Vs. Old NAAQS) (2005 – 2007)

	Forecasted Code Orange (85-104ppb)	Forecasted Code Orange (76-95ppb)	Increase in # of Code Orange Days	Forecasted Code Red (105-124ppb)	Forecasted Code Red (96-115ppb)	Increase in # of Code Red Days	Forecasted Code Purple (125-374ppb)	Forecasted Code Purple (116-374ppb)	Increase in # of Code Purple Days
2005	18	28	10	1	2	1	0	0	0
2006	13	30	17	2	4	2	0	0	0
2007	17	37	20	0	3	3	0	0	0
Average	**16**	**32**	**16**	**1**	**3**	**2**	**0**	**0**	**0**

Data Source:
Forecast Data: COG Forecast Records

Graph 1: Comparison of the Number of Observed Code Orange/Red/Purple Days (New Vs. Old NAAQS)