CHAPTER III

AIR QUALITY

III. AIR QUALITY

A. OVERVIEW OF AIR QUALITY IN FAIRFAX COUNTY

1. Introduction

Through a federal-state-regional-local partnership, the quality of our air is monitored for specific contaminants and actions are taken against those who cause the contamination level to exceed allowed limits. Fairfax County's major responsibility involves participation and coordination with regional organizations on plans intended to reduce air pollution and improve air quality. More recently, the county has also taken a leadership role beyond the limits of its traditional air quality partnership; it has helped formulate and has subsequently adopted a program to reduce gases that may be the cause of global climate change. With regard to traditional air quality matters, Fairfax County has demonstrated a continuing commitment to being an active partner in improving the region's air quality.

a. Budget Impacts

Due to the overall budget constraints in the county over the past several years, the Board of Supervisors made significant reductions in the budget for the Health Department, which ended the county's Air Quality Monitoring Program. The air quality planning functions will continue to be done on a limited basis by staff from the Health Department's Division of Environmental Health. On July 1, 2010, the Virginia Department of Environmental Quality assumed full responsibility for air quality monitoring in Fairfax County.

During 2010, EQAC, along with several other parties, had many discussions with DEQ on the ramifications of shutting down air quality monitoring stations for which Fairfax County could no longer provide funding. EQAC examined a report provided by the State Advisory Board on Air Pollution, called "Evaluation of Virginia's Air Monitoring Network; November 30, 2009." The Metropolitan Washington area, which includes Fairfax County as well as other parts of northern Virginia, such as Arlington County and Alexandria, portions of Maryland and the District of Columbia, has a total of 13 air monitoring sites, which exceeds the U.S. Environmental Protection Agency's minimum requirement for the region.

In April 2010, EQAC submitted a recommendation to the Board of Supervisors that the board provide comments to DEQ regarding its annual air monitoring network review. Specifically, EQAC recommended that the board request that DEQ include one or more of the four existing Fairfax

County monitors in its future monitoring plans. Given the historically higher level of ozone concentrations at the Mount Vernon station, as compared to other county-run stations, EQAC recommended that the board request that DEQ include the Mount Vernon station in the regional monitoring plans. At that time, similar requests were made by Representative Gerry Connolly (to EPA) and the Air and Climate Public Advisory Committee (to DEQ). The board referred this issue to its Legislative Committee, which discussed the matter in September 2010; EQAC's recommendation was not provided to DEQ.

b. Update on Air Quality Regulatory Changes

i. Cross State Air Pollution Rule

On May 12, 2005, EPA promulgated the Clean Air Interstate Rule, which required reductions in emissions of oxides of nitrogen and sulfur dioxide from large fossil fuel fired electrical generating units. The U.S. Court of Appeals for the D.C. Circuit ruled on petitions for review of CAIR and CAIR Federal Implementation Plans, including their provisions establishing the CAIR NO_X annual and ozone season and SO_2 trading programs. On July 11, 2008, the court issued an opinion vacating and remanding these rules. However, parties to the litigation requested rehearing of aspects of the court's decision, including the vacatur of the rules. On December 23, 2008, the court remanded the rules to EPA without vacating them. The December 23, 2008 ruling left CAIR in place until EPA issues a new rule to replace CAIR in accordance with the July 11, 2008 decision.

On July 6, 2011, EPA finalized the Cross State Air Pollution Rule. This rule replaces CAIR beginning in 2012 and requires 27 states in the eastern half of the United States to reduce power plant emissions. EPA also issued a supplemental proposal for six states to make summertime NO_X reductions. This supplemental proposal, when finalized, would bring the total number of states participating in the program to 28. CSAPR is estimated to reduce 2005 emissions from electrical generating units by 6,500,000 tons of SO_2 annually and 1,400,000 tons of NO_X annually in covered states. These estimates represent a 71 percent reduction in SO_2 and a 52 percent reduction in NO_X from 2005 levels.

On December 30, 2011, the U.S. Court of Appeals for the D.C. Circuit issued a ruling to stay the CSAPR pending judicial review. The court heard oral arguments on April 13, 2012, and is expected to reach a decision by 2013.

ii. Industrial/Commercial/Institutional Boiler Maximum Achievable Control Technology:

On February 21, 2011, the EPA Administrator signed emissions standards for large and small boilers and incinerators. The standards for major sources are estimated to apply to approximately 13,840 units nationwide and will reduce emissions by 1.4 tons per year of mercury, 47,000 tpy of particulate matter, 440,000 tpy of SO_2 and 7,000 tpy of volatile organic compounds. The area source standards cover more than 200,000 boilers and incinerators and will reduce emissions by 330 tpy of total air toxics and 2,500 tpy of PM. However, on March 21, 2011, EPA published a notice of reconsideration for certain aspects of these rules and on May 18, 2011 issued a stay for the major source boiler rule and the incinerator rule. EPA sought additional public feedback and more information on the final standards to ensure that any final standard will be informed by input from key stakeholders. The final rulemaking was expected to be made by June 19, 2012.

iii. Mercury and Air Toxics Rule:

On December 16, 2011, EPA finalized national CAA standards to reduce mercury and other toxic air pollution from coal and oil-fired power plants. The final rule established power plant emission standards for mercury, acid gases and non-mercury metallic toxic pollutants that will: prevent 90 percent of the mercury in coal burned in power plants from being emitted to the air; reduce by 88 percent the acid gas emissions from power plants; and cut power plant SO_2 emissions by 41 percent beyond the reductions expected from CSAPR. These reductions are expected in the 2016 time frame.

iv. Sewage Sludge Incineration

EPA established emissions guidelines for the control of designated pollutants from sewage sludge incinerators on March 21, 2011 (76 FR 15372). In order to implement these federal requirements in Virginia, the State Air Pollution Control Board adopted the guidelines in a new Rule 4-55 on June 8, 2012. These new requirements affect two facilities in northern Virginia: the Noman M Cole Jr Pollution Control Plant located in Lorton, and the H L Mooney Water Reclamation Facility located in Woodbridge.

v. Air Permitting Fees

This year, as part of the biennial budget, the Virginia General Assembly directed the State Air Pollution Control Board to adopt regulations to increase air pollutant emission fees up to 30%, to establish new air

permit application fees and to establish new permit maintenance fees. The purpose of these increased fees is to support the Title V permit program entirely through user fees as required by the federal Clean Air Act. The new regulations will be effective July 1, 2012 and will affect bills sent out by the Department of Environmental Quality in August of 2012.

vi. Improving Air Quality - Greenhouse Gas Pollution

EPA issued the final "Deferral for CO_2 Emissions from Biogenic Sources under PSD and Title V" on July 20, 2011. This allows states to defer counting CO_2 emissions from biogenic sources for permit applicability for three years while EPA further studies the life cycle of biogenic CO_2. Virginia adopted the deferral into its regulations in September 2011.

c. Update on National Ambient Air Quality Standards for Major Criteria Pollutants

i. Atmospheric Ozone

In March 2008, EPA tightened the eight-hour ozone NAAQS from 0.08 ppm to 0.075 ppm for both primary and secondary ozone standards, but the standard was challenged by a coalition of environmental and health advocacy groups. On January 6, 2010, EPA made a proposal to strengthen the eight-hour "primary" ozone standard, designed to protect public health, to a level within the range of 0.060-0.070 ppm. EPA also proposed to strengthen the seasonal "secondary" standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas, to a level within the range of 7-15 ppm-hours (cumulative peak-weighted index). On September 2, 2011, EPA announced the withdrawal of the proposed rule due to presidential mandate.

On April 28, 2008, EPA announced that the Metropolitan Washington area (including the District of Columbia and portions of Virginia and Maryland) met the 1991 one-hour ozone NAAQS by the required attainment date of November 15, 2005. Since then, EPA has revoked the one-hour ozone standard, although some areas still have continuing obligations under that standard ("anti-backsliding").

On May 21, 2012, EPA published final designations for areas under the 2008 Ozone NAAQS. The Metropolitan Washington, D.C. area was designated nonattainment for this standard, with a classification of marginal. The area must comply with the 2008 Ozone NAAQS by December 31, 2015.

ii. Fine Particulate Matter--$PM_{2.5}$

Effective December 14, 2009, EPA announced that the Metropolitan Washington non-attainment area for the 1997 $PM_{2.5}$ NAAQS had attained the 1997 $PM_{2.5}$ NAAQS. This determination was based on 2004 - 2006 data; the region has continued to meet the attainment standard to date and to show improvement.

The Technical Advisory Committee of the Metropolitan Washington Air Quality Committee is currently developing a redesignation request and maintenance plan for this standard, which may include new interim and out-year mobile source budgets.

On September 21, 2006, EPA promulgated a more stringent $PM_{2.5}$ standard, a daily standard of 35 ug/m^3 and an annual standard of 15 ug/m^3. On October 8, 2009, EPA designated all of Virginia, including Northern Virginia, as attaining this standard.

iii. Nitrogen Dioxide--NO_2

On January 22, 2010, EPA strengthened the health-based NAAQS for NO_2 to a new one-hour NO_2 standard of 0.10 ppm. The standard also requires monitoring that occurs near roads, community-wide NO_2 concentrations and low income or minority at-risk communities. This level will protect people against adverse health effects associated with short-term exposure to NO_2, including respiratory effects. It became effective on April 12, 2010. EPA also retained the annual average NO_2 standard of 0.053 ppm.

iv. Sulfur dioxide--SO_2

On June 2, 2010, EPA strengthened the primary NAAQS for SO_2 by establishing a new one-hour standard of 0.075 ppm. The new standard is the three-year average of the 99th percentile of the annual distribution of daily maximum one-hour average concentrations. EPA is revoking the two existing primary standards of 0.14 ppm evaluated over 24-hours and 0.03 ppm evaluated over an entire year because these standards will not add an additional public health benefit. All monitoring data for the Commonwealth of Virginia show compliant measurements. EPA is not revising the existing secondary SO_2 NAAQS of 0.50 ppm over a three-hour average that is set to protect public welfare, including effects on soil, water, visibility, wildlife, crops, vegetation, national monuments and buildings. EPA is assessing the need for changes to the secondary standard under a separate review. Under the new standard, facilities with significant emissions of SO_2, many of which are electrical

generating units, will be required to demonstrate compliance with the standard no later than 2017.

v. Lead

On November 12, 2008, EPA issued a final rule that revised the primary and secondary NAAQS for lead and associated monitoring requirements. The effective date of this standard was January 12, 2009. The primary standard is set at 0.15 $\mu g/m^3$ in a rolling three-month average to protect health. A secondary standard is set at the same level to protect the public welfare, including the environment. The revised standards are 10 times more stringent than the previous standards and will improve health protection for at-risk groups, especially children. This decision marked the first time the lead standards have changed in 30 years. By October 2011, EPA was to have designated areas that have to take additional steps to reduce lead air emissions. States will have five years to meet the new standards after designations take effect.

2. Air Quality Status in Northern Virginia

a. Air Compliance Program

Air pollutants are emitted by stationary sources, such as power plants, gasoline service stations and dry cleaners, as well as by mobile and area sources, such as automobiles, trucks and other highway activities. EPA tracks the emission of air pollutants from stationary sources, including sources in Fairfax County. Some of these emissions are discharged through smoke stacks and some emerge from the source without treatment. All are regulated under law. Virginia DEQ's air compliance program conducts inspections of facilities within Fairfax County and records information on violations in the state's database (Comprehensive Environmental Data System).

b. Update on County and Regional Air Quality Data

i. Ozone State Implementation Plan

EPA designated the metropolitan Washington region as moderate nonattainment for the eight-hour ozone standard of 0.08 ppm in April 2004. The Clean Air Act requires states to develop and implement ozone reduction strategies in the form of a State Implementation Plan. The SIP is the state's "master plan" for attaining and maintaining the NAAQS. The region had a deadline of June 15, 2010, to meet the eight-hour ozone standard. Air quality data from 2008-2010 demonstrate compliance with the 0.08 ppm eight-hour ozone standard in the Northern Virginia area. EPA published a determination that the area attained the

1997 eight-hour standard on February 28, 2012. However, the area will remain designated as a nonattainment area until a redesignation request and maintenance plan for the 1997 eight-hour standard is submitted to EPA and EPA approves the request for redesignation.

Ground-level ozone is a precursor to smog and can cause breathing problems for those sensitive to smog, especially those with asthma (some use the term smog as a colloquial name for ground level ozone). Figures III-1 through III-3 and Table III-1 present regional air quality trends as they relate to the eight-hour ozone standard. Monitors in the metropolitan region recorded data on 21 days during the 2011 ozone season when ozone values were above 0.075 ppm standard. Various studies have shown that, during certain meteorological episodes, pollution from outside the area can cause ozone exceedances in the Washington metropolitan area.

As noted above, the metropolitan Washington, D.C. area was designated nonattainment for the 2008 ozone standard, with a classification of marginal.

EPA is expected to publish an update to the 2008 ozone standard in 2014.

ii. Fine Particulate Matter State Implementation Plan

Virginia submitted its $PM_{2.5}$ SIP in April 2008, as required by the Clean Air Act. In October 2008, EPA proposed a "clean data determination" for the metropolitan Washington region in regards to the 1997 $PM_{2.5}$ NAAQS. This determination alleviated certain requirements of the Clean Air Act on the region, such as the implementation of certain inventory requirements. However, the Metropolitan Washington Council of Governments determined that submittal of the full attainment plan, including the requirements alleviated by the "clean data determination," was a prudent measure given the legal and regulatory uncertainty. Fine particulate air monitoring data has continued to show good improvements over the past several years, and more improvements are expected due to the installation of upwind control devices. Figures III-4 and III-5 present regional air quality trends (annual and 24-hour, respectively) as they relate to the $PM_{2.5}$ standard.

Subsequently, Virginia requested the withdrawal of the 1997 $PM_{2.5}$ NAAQS attainment SIP on January 23, 2012 to ensure that transportation conformity requirements could proceed smoothly.

The area will remain a nonattainment area for the 1997 $PM_{2.5}$ NAAQS until the area develops a redesignation request and maintenance plan, as

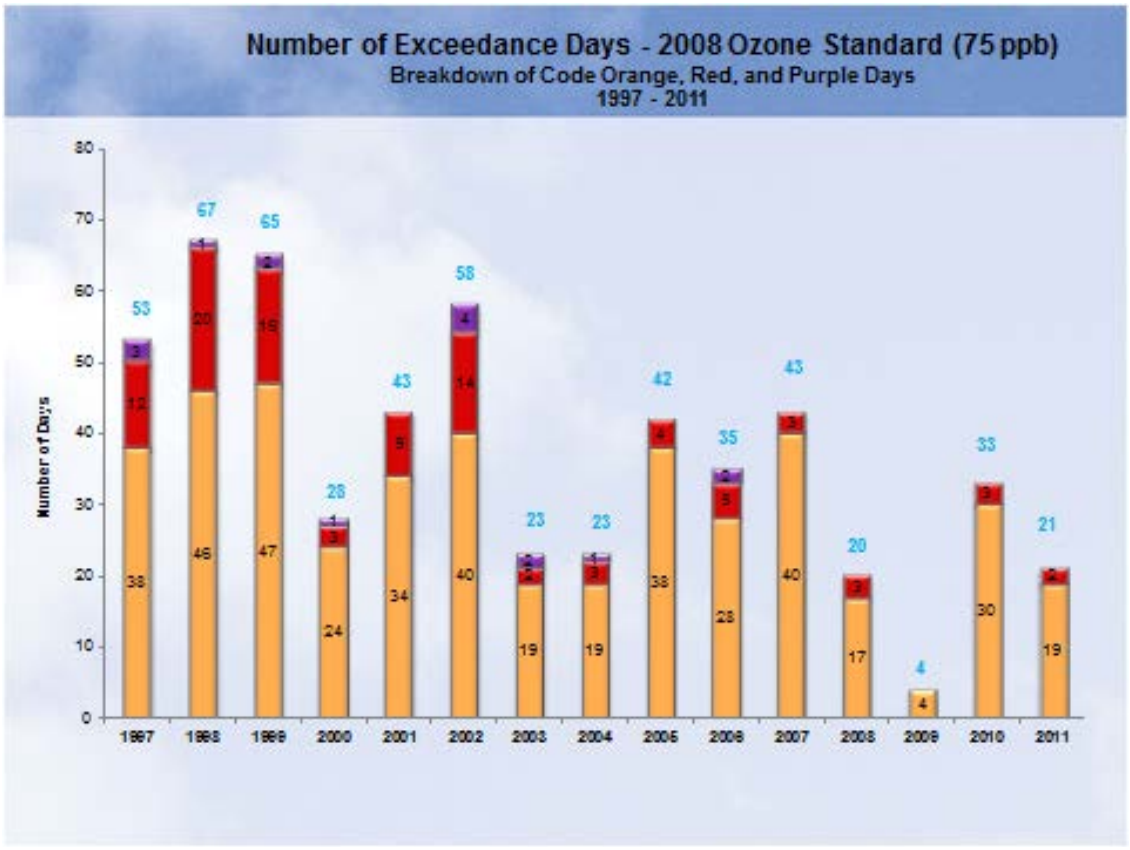
required by the Clean Air Act. The "clean data determination" does not allow an area to become redesignated to a maintenance area until both a redesignation request and maintenance plan are developed, submitted to EPA and approved at the federal level. The redesignation request and maintenance plan are needed to ensure that the progress the region has made in meeting and far exceeding the NAAQS is recognized with an attainment/maintenance designation. MWAQC TAC is currently in the preliminary stages of developing these documents.

iii. Additional Monitors for NO_2 and Other Pollutants

Virginia DEQ provided an update on the status and plans for conducting monitoring for NO_2 in Fairfax County, noting that the agency is working to install a new NO_2 monitor, to be used to assess compliance with the roadside monitoring aspect of the revised NAAQS for NO_2. There are plans to install three new NO_2 monitors in Virginia, based on information about the average annual daily traffic count. For northern Virginia, DEQ is considering placement of the monitor on property of the Virginia Department of Transportation in the area near the Springfield I-95/I-395/I-495 interchange. Current plans call for the monitor to become operational by January 2013.

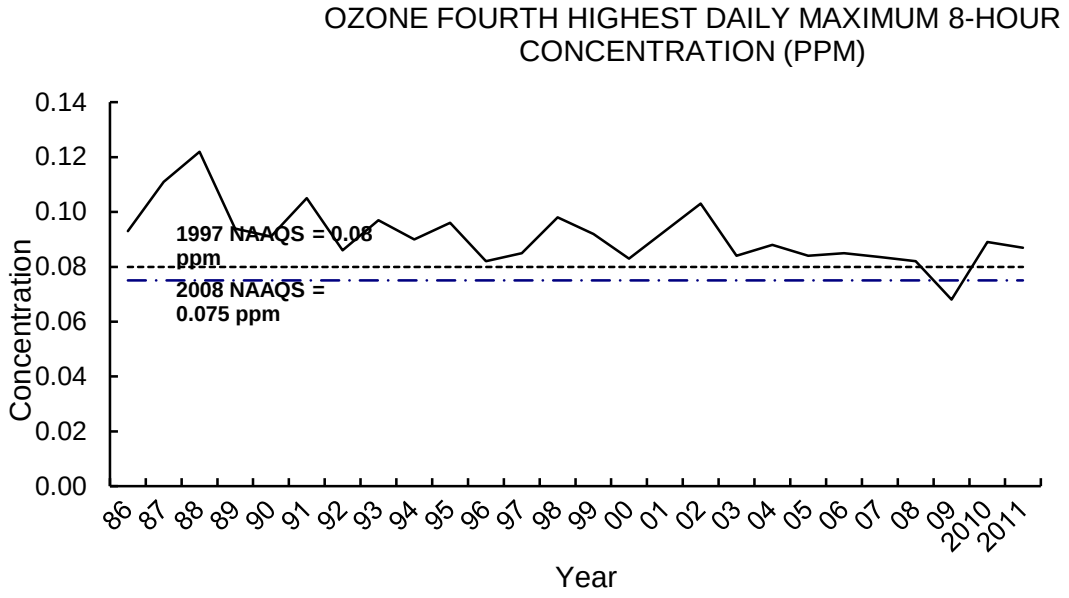
DEQ may also install additional roadside monitors for carbon monoxide and $PM_{2.5}$, depending on what is included in EPA's revised NAAQS for those pollutants. These projected changes to the air monitoring network in northern Virginia will be included in the Annual Monitoring Network Plan, which is sent by DEQ to EPA by July 1 of each year. This report contains information on the air monitoring network, including projected changes for that calendar year. This report is posted on DEQ's air quality Web page each year to receive public comment on all aspects of the network plan. DEQ also posts an Annual Monitoring Data Report on the Web page, which contains the monitored results for the previous calendar year.

Figure III-1. Air Quality Trends in Relation to the Eight-Hour Ozone Standard (relative to 0.075 ppm 2008 NAAQS Standard)
OZONE EXCEEDANCE DAYS



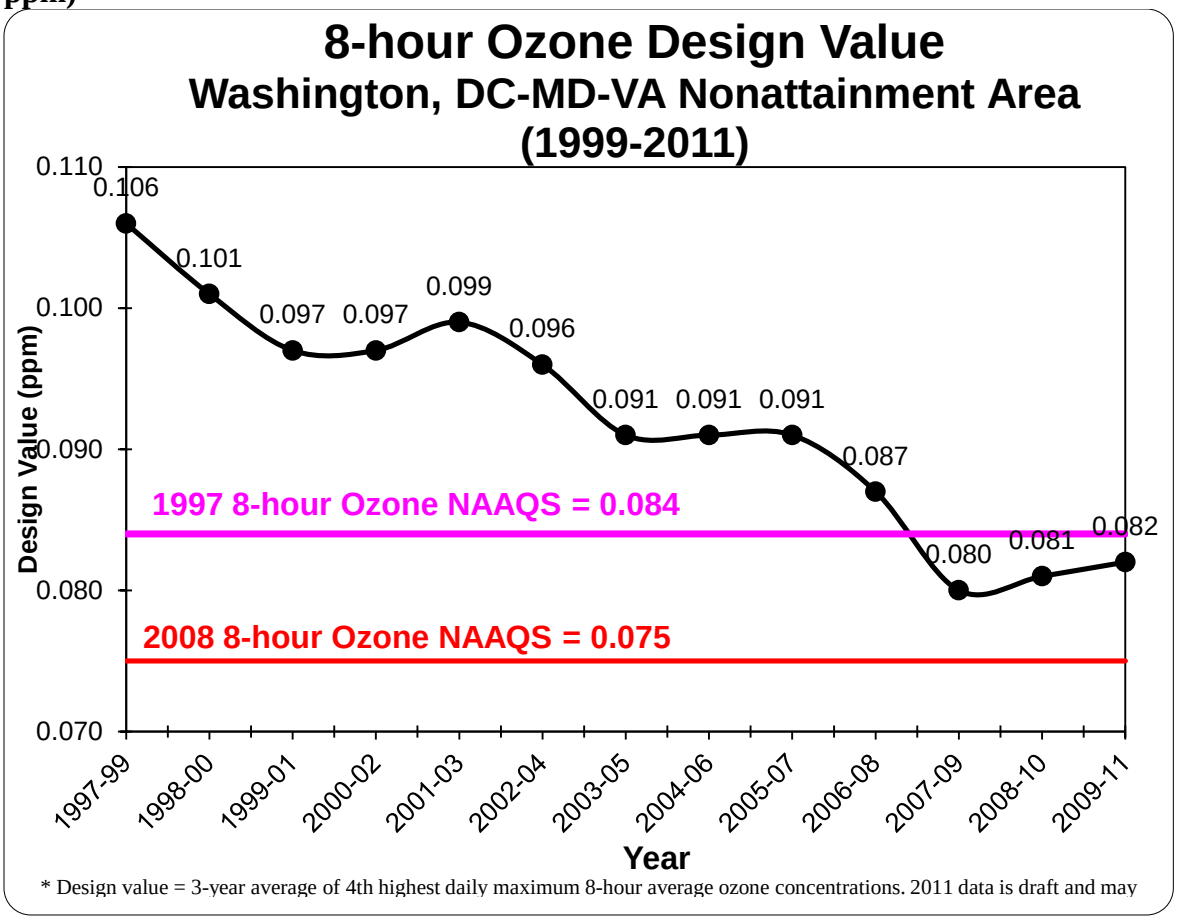
SOURCE: Metropolitan Washington Council of Governments. 2011 data are preliminary and are subject to change.

Figure III-2. Air Quality Trends in Relation to the Eight-Hour Ozone Standard, Fairfax County
(Fourth Highest Daily Maximum Compared to Both 1997 and 2008 NAAQS, ppm)



SOURCE: Fairfax County Health Department.

Figure III-3. Air Quality Trends in Relation to the Eight-Hour Ozone Standard (3-Year Mean of Ozone Fourth Highest Daily Maximum Eight-Hour Concentration, ppm)



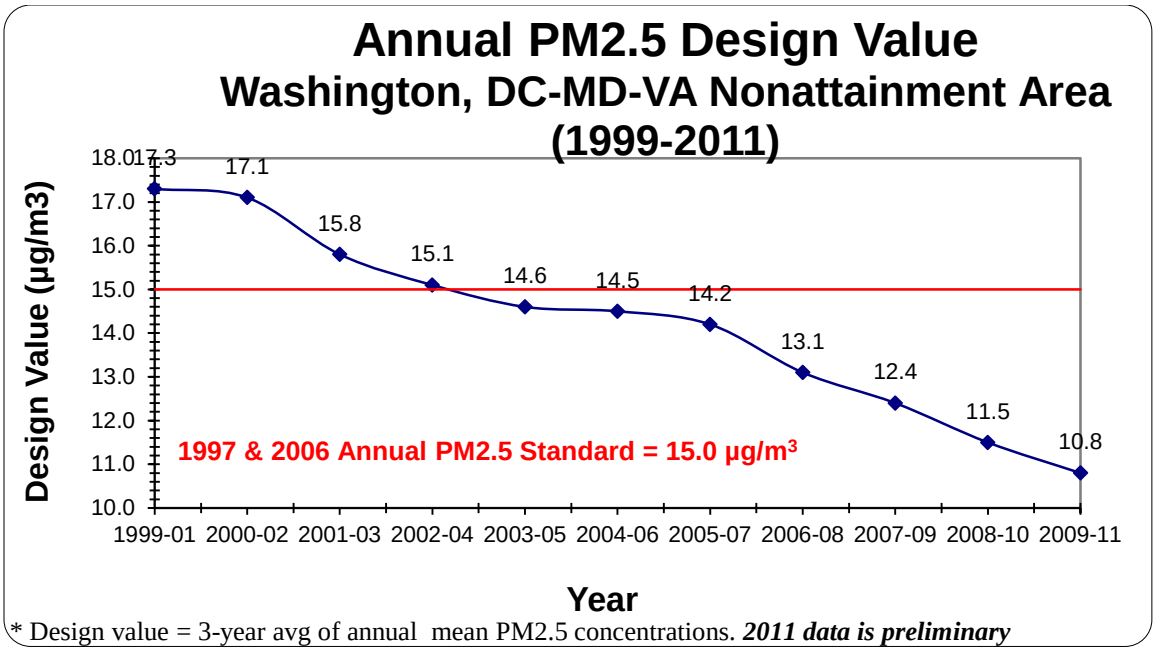
Source: Metropolitan Washington Council of Governments. 2011 data are preliminary and are subject to change.

Table III-1. Regional Eight Hour Ozone Exceedances – 2011 (Relative to 0.075 ppm 2008 NAAQS Standard)

Date	Number of Stations that Exceeded the Standard	Maximum Values in the Metropolitan Statistical Area; Maximum Eight-Hour Ozone (ppm)
5/30/2011	1	0.076
5/31/2011	10	0.096
6/7/2011	1	0.076
6/8/2011	12	0.095
6/9/2011	9	0.093
6/10/2011	10	0.100
6/18/2011	1	0.076
6/28/2011	1	0.076
7/1/2011	3	0.080
7/2/2011	14	0.090
7/5/2011	4	0.085
7/7/2011	10	0.094
7/18/2011	2	0.080
7/20/2011	5	0.086
7/22/2011	7	0.090
7/23/2011	2	0.085
7/28/2011	2	0.081
7/29/2011	1	0.077
8/1/2011	5	0.087
8/12/2011	1	0.076

Source: Metropolitan Washington Council of Governments. 2011 data are preliminary and are subject to change.

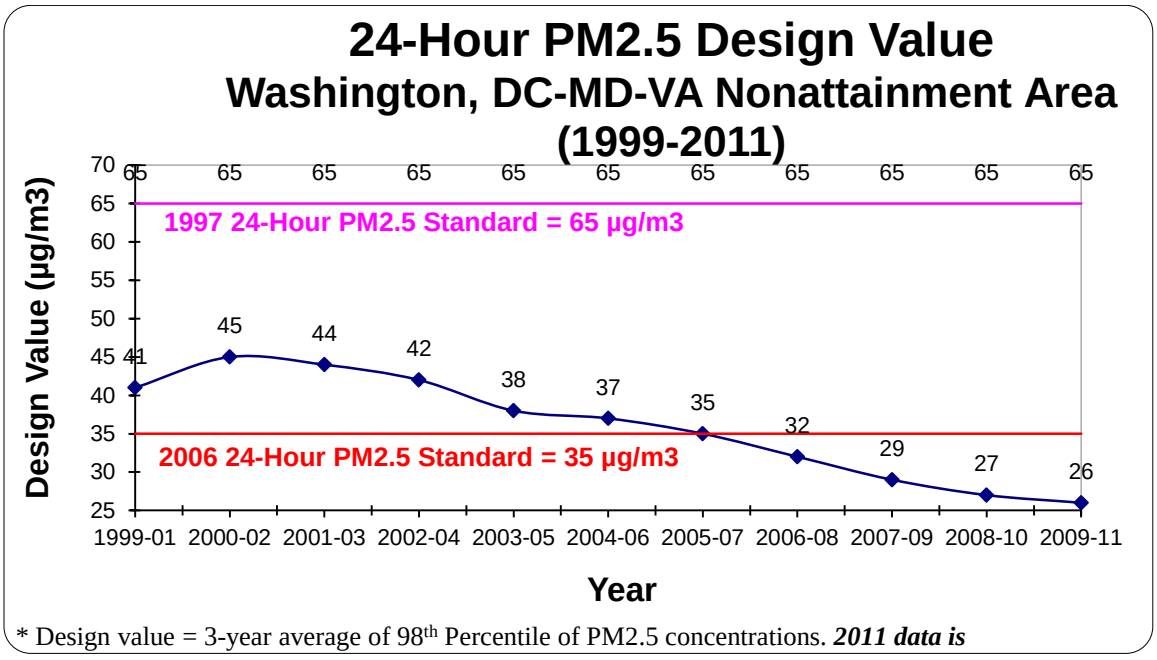
Figure III-4. Regional Air Quality Trends in Relation to the Annual $PM_{2.5}$ Standard (1999-2011)



* Design value = 3-year avg of annual mean PM2.5 concentrations. ***2011 data is preliminary***

Source: Metropolitan Washington Council of Governments. 2011 data are preliminary and are subject to change.

Figure III-5. Regional Air Quality Trends in Relation to the 24-Hour $PM_{2.5}$ Standard (1999-2011)



* Design value = 3-year average of 98th Percentile of PM2.5 concentrations. ***2011 data is***

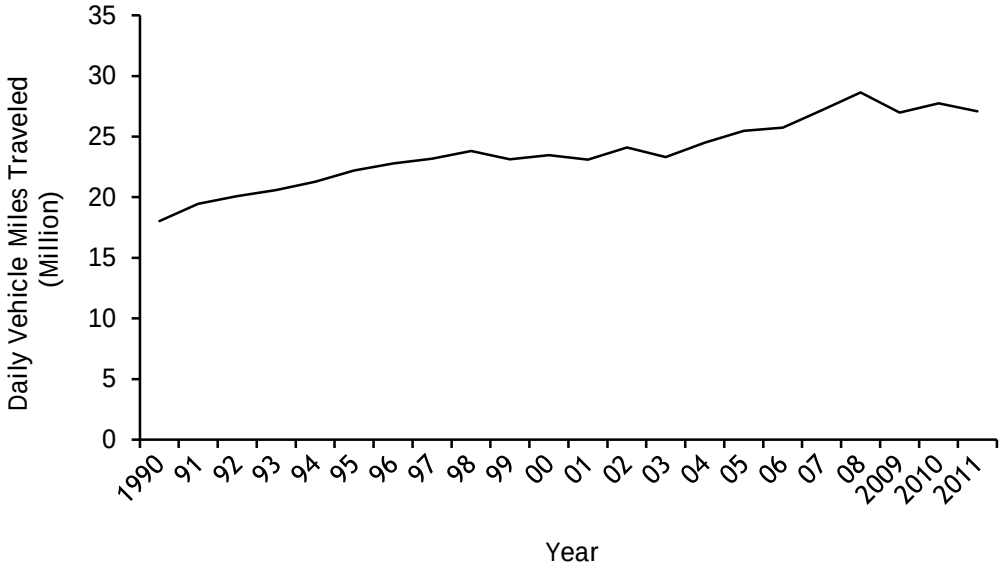
Source: Metropolitan Washington Council of Governments. 2011 data are preliminary and are subject to change.

iv. Emissions from Motor Vehicles

One of the key issues related to ozone nonattainment and other air quality concerns is the use of motorized vehicles and their emissions. There is extensive use of motor vehicles in Fairfax County, including a significant number that do not pass the required emissions testing. Figure III-6 shows the daily vehicle miles traveled in Fairfax County, illustrating that more than 27 million vehicle miles were traveled daily in 2011, a slight decrease from the number for 2010.

There are several proposed changes to the inspection and maintenance program in northern Virginia that will occur in 2013 and later. The major change will be an expansion of the "Clean Screen" program whereby the cleanest vehicles, as determined by remote sensing observations, will have the option of purchasing a Clean Screen pass or getting a regular test at an emissions inspection station. It is anticipated that there will be no negative impact on the overall effectiveness of the emissions inspection program as a result of this change. Other anticipated changes to the program involve testing equipment, which should improve customer convenience. There has been no adverse impact on the IM program due to state budget cuts since the program is funded through registration fees.

Figure III-6. Daily Vehicle Miles Traveled in Fairfax County (Millions)



Source: Virginia Department of Transportation

v. Alternatives to Use of Motor Vehicles

VDOT is actively seeking to address transportation modes that can be used as alternatives to motorized vehicles, such as addressing increased use of bicycling and public transit. Efforts to make these alternative modes safer and more attractive are critically important to addressing the air quality issues in the Washington metropolitan area and should be commended. For example, these types of initiatives can serve to reduce the county's status as being in nonattainment for ozone.

VDOT funds and participates in Clean Air Partners Program to communicate the health effects of ground-level ozone and particle pollution and related calls-to-action to the public, meteorologists and school children. The program also encourages student participation through the poster and slogan contests and science fairs, working with Departments of Education to incorporate air quality education into the standards of learning.

VDOT dedicates two percent of its road paving funds to bicycle and pedestrian facility additions and improvements. In collaboration with county staff and partnering organizations, several initiatives have been implemented affecting bicyclists and pedestrians:

- Bike lanes on a 0.9-mile segment of Sully Park Drive in Centreville.

- New bicycle detectors in the Soapstone bike lanes at the South Lakes Drive intersection, complete with associated signs and pavement markings.

- Shared lane markings (sharrows) on a segment of Westmoreland Street in McLean (in a gap between otherwise bikeable segments).

- Installation of BIKES MAY USE FULL LANE signs in two locations in Fairfax County.

- Installation of leading pedestrian intervals at several traffic signals in Fairfax County to allow pedestrians to get a head start and make them more visible to competing vehicular traffic.

- Upgrading of pedestrian facilities at rebuilt traffic signals, including countdown-style operation to provide a better indication to pedestrians of safe crossing times.

- Installation of audible pedestrian signal indications at signalized crosswalks to aid visually impaired pedestrians.

- Completion of the Gallows Road bike lane project to extend the 1.8 miles of bike lanes on Gallows Road to the Tysons Corner area.

- Construction of new sidewalks and/or bike lanes at nine locations across I-495/Capital Beltway to provide connectivity between existing bike and pedestrian facilities.

- Construction of the Pedestrian/Bicycle Bridge over the Dulles Airport Access and Toll Road at the Trap Road crossover.

VDOT continues providing support and funding to the county's Department of Transportation for upgrading existing or constructing new bus shelters at various locations in the county. VDOT staff participated in the development of Fairfax County's Bicycle Master Plan. VDOT completed the 2011 State Bicycle Policy Plan identifying the agency's vision and goals for the future of bicycling in the commonwealth. The plan ensures that bicyclists remain an integral component of Virginia's multimodal transportation system.

VDOT has also published a Community Trail Development Guide to aid the process of grassroots trail planning, based on the knowledge of experienced planners, research of best practices in the state and

around the nation. At the metropolitan regional level, VDOT continues to promote bicycle and pedestrian safety through the Street Smart Program--a program that provides safety awareness. In partnership with the Northern Virginia Regional Commission, VDOT is updating the Share the Road in Virginia handbook available at http://www.novaregion.org. Technical support and funding to promote alternative transportation options is provided through the Commuter Connections program and other ongoing program initiatives such as Bike to Work Day and Car Free/Light Day.

At its June 2012 meeting, the Commonwealth Transportation Board awarded $1,107,000 of federal transportation enhancement funds for pedestrian and streetscaping improvements in Fairfax County:

- $102,000 to the Lorton Arts Foundation, Inc. for construction of a multi-use trail from Occoquan Regional Park to the Laurel Hill Greenway.

- $120,000 to the McLean Revitalization Corporation for construction of gateway signage and a landscape median along Old Dominion Drive at the entrance to the McLean downtown area.

- $220,000 to the Northern Virginia Regional Commission for translation of a statewide pocket safety guide for bicycle/pedestrian/motorist safety into an additional language, for creation of an electronic version and for funding of local safety classes.

- $160,000 to the Town of Vienna for construction of a safer trail crossing and sidewalks providing access to the Vienna Metrorail station.

- $301,000 to the Town of Clifton for reconstruction and extension of sidewalks and for streetscape renovation in the historic district.

- $204,000 to the Town of Herndon for construction of sidewalks, crosswalks, landscaping and streetlights along Elden Street.

B. MAJOR PUBLIC AGENCY RESPONSIBILITIES

1. Introduction

Although compliance with National Ambient Air Quality Standards and resulting air quality management responsibilities is a function of federal law, in Fairfax County and in other major metropolitan areas in Virginia these

responsibilities have been split between the Commonwealth of Virginia and the regional metropolitan planning organization. Fairfax County holds a seat on, and the county staff is required to support, the Metropolitan Planning Organization for the metropolitan Washington area. MPOs are set up under the Clean Air Act in metropolitan areas with populations in excess of 50,000. In more difficult situations, MPOs are multi-jurisdictional, as is the case in the Washington MPO. Members of MPOs are appointed by the governors and mayors of affected jurisdictions to represent areas included in the MPO. The MPO works with state departments of transportation and transit providers in identifying transportation needs and priorities. It makes transportation investment decisions for the metropolitan area and, by default, for the individual regions encompassed within the MPO.

2. Commonwealth of Virginia

a. Virginia State Air Pollution Control Board

This board is authorized to propose policies and procedures for air quality regulatory programs, including emissions standards for landfills and vehicles.

b. Department of Environmental Quality

This department is responsible for establishing or adopting standards for air quality, as well as for performing air quality monitoring, stationary source inspection, new and existing source permitting and vehicular inspection and maintenance programs. Air quality enforcement is handled by DEQ.

c. Virginia Department of Transportation

This department is responsible for planning, developing, delivering and maintaining transportation for the traveling public.

3. Region – The Metropolitan Washington Council of Governments, the Metropolitan Washington Air Quality Committee and the National Capital Region Transportation Planning Board

COG is the Metropolitan Washington regional planning group that works toward solutions to regional problems related to air and water quality, transportation, and housing. COG also manages other programs such as those responsible for forecasting demographic changes. The MWAQC, which is a part of COG, partners with the air agencies to assist in the development of air quality plans as noted in Section 174 of the Clean Air Act. The authority of MWAQC is derived from the certifications made by the governors of Virginia and Maryland and the mayor of the District of Columbia. In Virginia, the roles

of organizations like MWAQC, which function as local planning organizations under Section 174 of the Clean Air Act, are described in *The State Air Pollution Control Board's Regulations for the Control and Abatement of Air Pollution*, specifically at 9 VAC 5-151-70 et seq.

MWAQC was established to work cooperatively with state air agencies to conduct interstate air quality attainment and maintenance planning for the Metropolitan Washington region. Members are appointed and Fairfax County currently has three members of the Board of Supervisors on the committee. The Transportation Planning Board serves as the designated MPO for the Washington region and is responsible for regional transportation planning and conformity. The TPB is staffed by the Department of Transportation Planning, which is part of COG. Members of the TPB are appointed, and Fairfax County currently has four members of the Board of Supervisors sitting on the TPB. TPB and MWAQC work together on air quality and transportation issues. COG is also responsible for issuing air quality indices on a weekly basis. County staff from the Health Department attends MWAQC meetings to support the Fairfax County members.

a. MWAQC Technical Advisory Committee

This committee was established to advise and assist MWAQC in planning for and maintaining the region's air quality. Fairfax County is represented on the TAC by staff from the Health Department's Division of Environmental Health along with a member from the Fairfax County Federation of Citizens Associations. Members research, review and discuss technical issues and documents at monthly meetings to develop information and recommendations that are submitted to MWAQC members for their review and approval.

b. Interstate Air Quality Council

On May 31, 2005, Virginia Governor Mark Warner, Maryland Governor Robert Ehrlich, Jr., and D.C. Mayor Anthony Williams signed a Memorandum of Understanding creating the Interstate Air Quality Council. The council consists of six members: the secretaries of the environment and transportation from each of the three governments. The IAQC provides overall guidance and streamlined planning to ensure the states and the District meet their shared goals of improved air quality, including compliance with new federal standards for ozone and fine particulates, and efficient transportation. The IAQC works in concert with the air quality and transportation committees of COG to achieve its goals.

c. Forecasting Subcommittee

This subcommittee considers how to monitor and report the new eight-hour ozone standard and how to devise guidelines for issuing health alerts during the ozone season.

d. Attainment Subcommittee

This subcommittee considers evidence for the case that the Washington nonattainment area can attain the eight-hour ozone standard with the control measures already adopted.

e. Conformity Subcommittee

This subcommittee reviews Air Quality Conformity Determinations prepared by the TPB to ensure that regional transportation plans are consistent with plans to improve air quality. This includes verifying that estimated emissions from mobile sources, such as cars, trucks and buses, do not exceed the mobile budget, a cap on regional mobile emissions contained in the region's air quality plan.

f. Air Quality Public Advisory Committee

This committee was established to provide a way to brief residents on actions pending before MWAQC. This committee functions as an important source of feedback from the public on air quality concerns in the metropolitan area. The Air Quality Public Advisory Committee recently changed its name to the Air and Climate Public Advisory Committee to reflect the committee's mission that includes climate and energy policy as well as air quality issues.

g. Control Measures Workgroup

This workgroup was established to research control measures and develop a plan of emission reducing control measures for the region to implement in an effort to reach attainment for ozone.

4. MWAQC - Summary of Regional Air Quality Planning Efforts in 2010 and Anticipated Activities of MWAQC in 2011

a. Overview

- $PM_{2.5}$ Redesignation Request & Maintenance Plan: MWAQC started working on developing the $PM_{2.5}$ redesignation request and maintenance plan document after states agreed to developing the plan in March 2011. The states agreed to seek redesignation for $PM_{2.5}$. They also agreed on

the choice of base year (2007), attainment year (2007), interim year (2017) and outyear (2025) for the above plan. MWAQC also talked with EPA Region III staff about the choice of interim and outyears for the $PM_{2.5}$ Maintenance Plan. MWAQC staff worked on developing emissions inventories for point, area and nonroad sources for the above plan by coordinating with the Mid-Atlantic Regional Air Management Association while developing inventories for nonroad sources for 2025 and the onroad sources for all milestone years (2002, 2007, 2017 and 2025).

- MOVES Task Force, which comprised of MWAQC and Transportation Planning Board staff, finalized the inputs for the MOVES model in 2011. These inputs were used in developing motor vehicles emissions for the base and attainment years for the $PM_{2.5}$ redesignation request and maintenance plan and will be used in all MOVES model based onroad emission development efforts for the future SIPs and conformity analyses.

- Attainment Modeling: MWAQC staff also participated in the emissions inventory conference calls organized by the Mid-Atlantic Regional Air Management Association on a regular basis to keep track of the inventories currently being developed at MARAMA for the regional photochemical modeling. Staff also provided data inputs to MARAMA for developing the emissions inventories. Staff also kept track of various emissions control measures and rules being developed by the Ozone Transport Commission as part of the 2008 ozone standard (75 ppb) implementation plan.

- Transportation Conformity/Mobile Emissions Analysis: MWAQC commented on the transportation conformity analysis (2011 Constrained Long-Range Transportation Plan and 2012-2017 Transportation Improvement Program), which was developed in association with MWAQC. Conformity was tested against the approved eight-hour reasonable further progress mobile budgets in the region's ozone SIP and the base year 2002 interim emissions test ("build no greater than 2002" test) based on the base year 2002 emissions in the region's $PM_{2.5}$ SIP. The above conformity analysis showed current and future mobile emissions lower than the ozone budgets and lower than the 2002 $PM_{2.5}$ emissions, which is the required test. MWAQC cautioned TPB that a more stringent federal standard for ozone is expected soon and urged state and local governments to maintain their commitments to emission reduction measures. As in past analyses, emissions decline significantly over time, but between 2030 and 2040, emissions begin to increase slightly as the fleet continues to grow. This suggests the need for new control programs to give benefits into the future.

- Local Measures: MWAQC staff worked with local governments to collect information on progress in meeting the voluntary commitments in the ozone and fine particle SIPs. Staff worked to identify reductions that may be available to make up potential emission credit shortfalls. COG did a competitive procurement and awarded a contract to FVB Energy to assist with a District Energy/Combined Heat and Power project. This project was approved in December as use for FY 2010 carryover funds. The project had two tasks: 1) a compilation of local programs and policies affecting advanced energy solutions, to identify gaps, and to recommend any changes based on review of domestic and international best practices; and 2) provision of information on the technologies, costs and air quality impacts of district energy/combined heat and power. FVB Energy presented its final report and recommendations on district energy as part of a workshop following a Climate, Energy and Environment Policy Committee meeting in November 2011.

- Air and Climate Public Advisory Committee: ACPAC sent a comment letter to the Department of Energy supporting the development of the Home Energy Score tool and provided a number of comments related to the tool. ACPAC received briefings on: Electric Vehicle issues; the solar cooperative movement in the region; the Regional Climate Adaptation Guidebook; air quality forecasting methodology; the Alexandria Potomac River Green Project; a concept for reuse of the Potomac River Power Plant site; and a regional tree canopy planning initiative at COG. The Air Quality Public Advisory Committee expanded its membership and actively engaged in advising about air quality forecasting methodology, locations of air quality monitors and distribution of air quality information. The committee gave input on transportation performance measures and sustainability checklist issues.

- MWAQC commented on EPA's Cross State Air Pollution Control Rule: EPA proposed the Cross-State Air Pollution Control Rule to address air pollution transported across state borders. MWAQC supported the rule, saying it "finally ends decades of failure to control air pollution at its source. For too long, highly polluting facilities located upwind have been allowed to pollute major metropolitan areas with impunity." The rule would require significant reductions in sulfur dioxide and nitrogen oxide emissions that cross state lines by 2014.

- Climate Change and Air Quality Technical Support: MWAQC staff provided technical support to the Climate Energy Environment Policy Committee, created in 2009 to implement recommendations in COG's Climate Change Report. Staff worked with area utilities on a format for reporting progress on regional climate and energy initiatives. Staff received data from utilities in 2011 for 2010. The data are used to

measure progress on reducing greenhouse gas emissions from the 2005 baseline. In 2011, a Tree Canopy Work Group was formed to develop a Tree Canopy Management Strategy.

- Local Government Initiatives: Staff surveyed the local governments regarding their progress on implementing commitments to local non-regulatory programs as part of a bundle of voluntary programs in the regional State Implementation Plan. The Local Government Initiatives Subcommittee was created in early 2006. MWAQC staff worked with the subcommittee to develop local air quality measures to be included in the SIP.

b. MWAQC Committees

MWAQC met five times during the fiscal year. Continued operation of the MWAQC regional process was possible throughout the year due to the operation of the Executive Committee and the Technical Advisory Committee. The Executive Committee discussed issues and guided staff between full MWAQC meetings.

c. Citizen Support

MWAQC maintains an Air and Climate Public Advisory Committee in order to provide a conduit through which citizens can be briefed and comment on the actions before MWAQC. The ACPAC continued to provide comments on how regional air quality information could be made more accessible to the public audience.

d. MWAQC FY 2013 Work Program

MWAQC and the states will continue to lay the groundwork for the ozone SIP due in 2015, developing a multipollutant strategy for the Washington, DC-MD-VA region. Control measures will be evaluated on their ability to reduce ozone, NOx, VOC, SO_2, fine particles and greenhouse gases. The core work program will also provide technical support for local government air quality initiatives. Coordinating air quality planning with state and local Clean Energy programs will continue to be a focus.

In FY2013, MWAQC Core Program tasks include:

- Plan for ozone control measures, SIP for 2008 Ozone NAAQS.
- Develop ozone inventories for new SIP.
- Track attainment modeling for ozone SIP.
- Support multi-pollutant, multi-sector control strategy for ozone SIP.
- Use MOVES model in transportation conformity.
- Develop MOVES mobile inventories for ozone SIP.

- Track local government Supplemental Measures (formerly Voluntary Bundle) in the Annual $PM_{2.5}$ and Ozone SIPs.
- Develop tracking metrics for regional greenhouse gas emissions inventory.
- Coordinate air quality planning with state and local Clean Energy Programs.
- Review transportation conformity analyses for ozone, fine particles and carbon monoxide.

C. STEWARDSHIP OPPORTUNITIES

Residents of Fairfax County have many opportunities to contribute to improvements in air quality. While some of the Metropolitan Washington area ozone problem originates outside of the area and is beyond the control of Virginia, Maryland and the District of Columbia, there are many aspects of our daily lives that can affect the quality of our air. A significant contributor to air quality issues is vehicle miles traveled. As discussed above, Virginians drive many millions of miles each year. Reducing the amount of driving, as well as the use of other combustion devices, especially during times where ground-level ozone is of concern (e.g., on hot days with lots of sun and little or no wind), can help to improve air quality. Examples of actions that can be taken include: carpooling; taking mass transit; reducing or postponing lawn-mowing; paving and outdoor painting; limiting vehicle idling; bringing a lunch to work; avoiding drive-thru windows; and refueling after dark.

The following are tips provided on the Clean Air Partners website (www.cleanairpartners.net):

Small Changes Make A Big Difference

Begin the day right. Check today's air quality forecast and modify your plans if unhealthy air quality is predicted. Protect yourself and others in your care, by taking the appropriate actions. Making small changes in your lifestyle at home, at work, and on the road can make a big difference.

At Home:

- *Postpone mowing and trimming or use electric garden equipment.*
- *Postpone painting or use water-based paint instead of oil-based paint.*
- *Replace your charcoal grill with a propane gas grill.*
- *Choose ENERGY STAR™ appliances and lighting.*
- *Cut back on heating and air conditioning when you can and turn off lights and appliances when not in use.*
- *Clean heating filters each month.*

At Work:

Employers have a unique opportunity to make a difference. They can promote programs that help employees make positive lifestyle changes. For example, employers can encourage staff to use public transportation or carpool. Employers also can give employees the option of working from home. Encourage employees to sign up for AirAlerts, a free service that delivers air quality information straight to their inbox http://www.cleanairpartners.net/airalert.cfm.

On the Road:

- *Keep driving to a minimum.*
- *Fill up your gas tank during evening hours. Avoid spilling gas and "topping off" the tank. Replace gas tank cap tightly.*
- *Have your car tuned regularly by replacing the oil and air filter, and keep tires properly inflated and aligned.*
- *Carpool or use public transportation when possible.*
- *Combine your errands into one trip.*
- *Avoid revving or idling your engine.*
- *Avoid long drive-through lines; instead, park your car and go in.*
- *Looking for a new vehicle? Consider purchasing a fuel-efficient model or a hybrid that runs on an electric motor and gasoline engine.*

D. COMMENTS

1. EQAC performed extensive follow up with DEQ and others about Fairfax County's plans to cease the operation of the four ozone air quality monitors and has expressed concerns about the elimination of those ozone monitors. In April 2010, EQAC provided a recommendation that the Fairfax County Board of Supervisors provide comments to DEQ regarding its Annual Air Monitoring Network review. Specifically, EQAC recommended that the Board of Supervisors request that DEQ include one or more of the existing Fairfax County ozone monitors in its future monitoring plans. Given the historically higher level of ozone concentrations at the Mount Vernon station, as compared to the other county-run stations, EQAC recommended that the Board of Supervisors request that DEQ include the Mount Vernon station in the regional monitoring plans. The board referred this issue to its Legislative Committee, which discussed the matter in September 2010; EQAC's recommendation was not provided to DEQ. EQAC plans to continue to follow this issue over the course of the next several years as additional data become available.

2. EQAC appreciates that Health Department staff from the Division of Environmental Health will continue to perform limited air quality planning duties. This includes participation in and attendance at Metropolitan Washington Council of Governments'

Air Quality Committee meetings and meetings of the Technical Advisory Committee and subcommittees. In addition, Health Department staff will: collaborate with other local, regional and national air quality organizations, such as Clean Air Partners; provide support to address board matters related to air quality and the environment; coordinate with other county agencies on efforts to reduce air pollution and perform annual county survey to assess progress toward SIP commitments; serve on county groups and committees such as Environmental Coordinating Committee and Environmental Improvement Program Action Group; perform legislative reviews; and participate in outreach events and encourages county residents and others to take voluntary actions to improve air quality.

3. EQAC supports the efforts of VDOT and the Commonwealth Transportation Board to provide funding to programs that further the availability and use of non-motorized transportation alternatives for Fairfax County. This includes the efforts of VDOT to dedicate two percent of its road paving funds to bicycle and pedestrian facility additions and improvements and to collaborate with county staff and partnering organizations to implement initiatives that support bicyclists and pedestrians. For example, this funding supported additional bike lanes on a segment of Sully Park Drive in Centreville; new bicycle detector markings in the Soapstone bike lanes at the South Lakes Drive intersection; shared lane markings (sharrows) on a segment of Westmoreland Street in McLean; and installation of BIKES MAY USE FULL LANE signs.

E. RECOMMENDATION

None.

F. REFERENCES

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