DRAFT – JANUARY 12, 2004

Improving Air Quality in the Washington Metropolitan Region

Fairfax County's Commitment to Air Quality Excellence –

"Findings Document"

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EXECUTIVE SUMMARY

The Air Quality Subcommittee (AQS) of the Fairfax County Environmental Coordinating Committee (ECC) was formed to recommend to the ECC potential County actions to improve air quality through the development of a Countywide Air Quality Management Plan. The objectives of the AQS in the development of this Plan include:

- The development of a Public Education Plan to include an Ozone Action Day Notification Process;
- A review of air quality-related codes and regulations, goals, objectives and policies to determine whether and what modifications might be appropriate; and
- A review of air quality-related strategies and practices to determine whether modifications would be appropriate.

The AQS set up four working groups that examined education and outreach activities, current practices and measures, codes and regulations, and planning documents related to air quality. The following document is intended as a comprehensive yet concise report of the findings of each work group. The document is organized in four principal parts or chapters, by work-group area, in addition to an introductory chapter. To the extent possible, each part presents what Fairfax County is currently doing, what is being done on a regional basis, and what other jurisdictions are doing with respect to air quality issues. With the exception of the section addressing planning documents, each part also distinguishes, to the extent possible, activities solely related to Ozone Action (Code Red) days from ongoing activities in effect on all days regardless of the air quality status. This document is intended to be a fact-based overview and *not* a guidance document; it does not include any opinions, options, or recommendations. Options and recommendations will be developed later in the process of developing the Air Quality Management Plan and will be included in a separate document.

Chapter 1 describes how ozone is formed, its effects on our health, and the standards by which it is measured. It then examines the air quality planning process in the Metropolitan Washington Region and provides a brief overview of the County's efforts to improve regional air quality.

The focus of Chapter 2 is public education about various issues related to ground-level ozone. It discusses what audiences are targeted, i.e., employees, businesses, residents, and the different types of marketing tools that are used in the process. While most localities emphasize notification when Ozone Action days are forecast, the degree of activity for general air-quality related education varies. Chapter 2 looks at how various jurisdictions handle their education efforts and the methods being used to convey the messages.

Chapter 3 provides an overview of air quality guidance in Fairfax County's Comprehensive Plan. A discussion of regional air quality policy guidance and air quality policy approaches that have been taken by a select number of other jurisdictions is also included.

Chapter 4 discusses codes and regulations applicable to air quality management. While air quality is primarily regulated at the federal and state levels, there is some leeway for local regulation. Chapter 4 looks at the scope of Fairfax County's Air Pollution Control Ordinance, and the procedures for amending the Ordinance, if appropriate. Chapter 4 also summarizes the extent of local regulation of air quality/pollution matters in various jurisdictions in the Washington Metropolitan area.

Chapter 5 reviews measures and practices in effect on Ozone Action days, and those air quality measures that are ongoing. It also looks at measures and practices in Montgomery County, Maryland; Arlington County, Virginia; and the South Coast Air Quality Management District of southern California.

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Appendices

PA County Executive Memorandum dated February 12, 2003; "Declaration on Air Quality Leadership"

PB County Executive Memorandum dated July 21, 2003; "Implementation of Available Ozone Action Day Best Practices"

2A Expanded Findings on Public Education Efforts in Other Jurisdictions

2B Fairfax County Air Quality Subcommittee Public Education and Outreach Survey

3A Air Quality Policy Guidance in Fairfax County's Comprehensive Plan

3B Regional Air Quality Policy Guidance and Air Quality Policy Guidance from a Select Number of Other Jurisdictions

4A Fairfax County Code Chapter 103, Air Pollution Control

4B Virginia Administrative Code, Title 9, Section 5-170-150, Local Ordinances

Acronym List

AQI	Air Quality Index
AQS	Air Quality Subcommittee
BMC	Baltimore Metropolitan Council
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
C.F.R.	Code of Federal Regulations
CLRP	Constrained Long Range Plan
CNG	Compressed natural gas
CO	Carbon monoxide
COG	Metropolitan Washington Council of Governments (also MWCOG) (regional)
DCRA	Department of Consumer and Regulatory Affairs (Washington, D.C.)
DOC	Diesel Oxidation Catalyst
DPF	Diesel Particulate Filter
ECC	Fairfax County Environmental Coordinating Committee
ECM	Engine Control Module
EPA	Environmental Protection Agency (federal)
EQAC	Fairfax County Environmental Quality Advisory Council
HC	Hydrocarbons
IPM	Integrated Pest Management
LEV	Low Emissions Vehicle

LPG	Liquified Petroleum Gas (propane)
MWAQC	Metropolitan Washington Air Quality Committee (regional)
MWCOG	Metropolitan Washington Council of Governments (also COG) (regional)
NAAQS	National Ambient Air Quality Standards
NCPCP	Noman M. Cole, Jr. Pollution Control Plant
NOx	Nitrogen oxides
OAD	Ozone Action Day
OPA	Fairfax County Office of Public Affairs
PM	Particulate matter
PSA	Public Service Announcement
RACM	Reasonably Available Control Measures
ROP	Rate of Progress
SAPCB	State Air Pollution Control Board
SCAQMD	South Coast Air Quality Management District (Southern California)
SIP	State Implementation Plan
TAC	Technical Advisory Committee of the Metropolitan Washington Air Quality Committee (regional)
TDM	Transportation Demand Management
TERM	Transportation Emission Reduction Measure
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TPB	Transportation Planning Board (regional)
TSM	Transportation System Management
ULSD	Ultra-low sulfur diesel
VAC	Virginia Administrative Code
VOC	Volatile Organic Compound

PREFACE

Fairfax County and the Washington metropolitan region face a difficult and complex problem regarding our air quality. Not only is the region currently in non-attainment for the federal one-hour ground-level ozone standard as stipulated in the 1990 Amendments of the Clean Air Act (CAA), but our current air quality threatens the health and well-being of everyone living and working in the region. In addition to the public health consequences, failure to address the air quality problem adequately will likely result in sanctions being imposed on our region. This could result in federal funds being withheld for certain transportation projects, and other sanctions as stipulated in the CAA and its 1990 Amendments.

On November 15, 2002, Deputy County Executive Robert A. Stalzer sent a letter to the Environmental Quality Advisory Council (EQAC), a Board appointed citizen advisory council, outlining a collaborative approach for reviewing the County's air quality efforts. The process included discussions between the County's Environmental Coordinating Committee (ECC) and EQAC on how best to identify the issues and provide recommendations to strengthen the County's efforts, if needed. The ECC is a collaborative interagency management committee chaired by Mr. Stalzer. Among other responsibilities, this Committee ensures an appropriate level of coordination and review of the County's environmental policies and initiatives.

In the letter, Mr. Stalzer recommended that this effort include a discussion with appropriate representatives of the Metropolitan Washington Air Quality Committee (MWAQC), its Technical Advisory Committee (TAC), and personnel from the Metropolitan Washington Council of Governments (MWCOG) who staff this effort. Fairfax County actively participates in the regional air quality planning efforts through membership in all of these bodies, and as a regional Clean Air Partner. Clean Air Partners (originally known as ENDZONE Partners) is a volunteer non-profit organization that was created and chartered in 1997 by the MWCOG and the Baltimore Metropolitan Council (BMC). The partnership represents a coalition of public and private sector groups including, businesses, environmental, civic and professional organizations, governments, and citizens committed to improving air quality in the Washington and Baltimore regions. The partnership's primary focus is the promotion of easy and effective voluntary actions that individuals, groups, businesses, and government can take to reduce air pollution). On December 10, 2002, the ECC consulted with a representative from the MWCOG regarding the current status of the region's air quality planning effort. Following deliberations on the issue, it was decided that the ECC would establish an Air Quality Subcommittee to conduct a thorough review of air quality issues facing Fairfax County and to prepare recommendations for consideration by the ECC.

On February 12, 2003, County Executive Anthony Griffin sent a "Declaration on Air Quality Leadership" statement to the County's Senior Management Team, the County Board of Supervisors, and EQAC. The Declaration encouraged the County government to take a leadership role in improving air quality and tasked each agency director with the

challenge of taking appropriate actions to improve air quality consistent with regional efforts. Examples of such actions would include: favoring lower-emissions vehicles in the County's vehicle fleet replacement; continuing to promote alternatives to the single occupant automobile (e.g., teleworking, transit, ridesharing, biking, and walking); and evaluating restrictions on certain types of activities where appropriate to ensure that the County will help the Washington region meet all applicable federal air quality standards. The Declaration promoted the implementation and promulgation of air quality best practices that would affect every part of the County government. On July 21, 2003, the County Executive sent another memorandum updating the Senior Management Team on air quality planning activities and encouraging them to pursue various activities to improve air quality. Copies of the memoranda are included in Appendices PA and PB.

On May 9, 2003, the ECC in collaboration with the EQAC formally chartered an Air Quality Subcommittee, tasking it to prepare recommendations on local and regional air quality issues, initiatives and program opportunity/requirements in support of the regional air quality planning efforts, and the County Executive's February 12, 2003 "Declaration on Air Quality Leadership" statement. On July 21, 2003, the Air Quality Subcommittee presented a work program outlining each task and indicating a timeline for completion.

The Subcommittee is reviewing air quality-related goals, objectives, and policies in the Comprehensive Plan, as well as air quality-related regulations, codes, strategies and practices to determine whether modifications would be appropriate. Furthermore, the Subcommittee is reviewing current education and notification practices to determine whether modifications would be appropriate. It is anticipated that the Subcommittee will be presenting its final recommendations to the ECC in March 2004.

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1. INTRODUCTION

FEDERAL CLEAN AIR STANDARDS

The Clean Air Act (CAA), first passed in 1970 and last amended in 1990 (Clean Air Act Amendments of 1990 – CAAA) established a framework for air quality planning throughout the United States. The CAA requires the United States Environmental Protection Agency (EPA) to set national air quality standards to limit exposure to pollutants that can harm public health and our environment. These national standards limit quantities of six pollutants that are often found in the air we breathe: carbon monoxide, lead, nitrogen dioxide, ground-level ozone, particulate matter and sulfur dioxide.

The air in the metropolitan Washington region meets the federal air quality standards for five of the six regulated pollutants. However, on some days in the summer, the concentration of ground-level ozone in our region's air exceeds the federal one-hour ozone standard (it is anticipated that the new federal eight-hour ozone standard will be established by April 2004) and our region is classified as an ozone nonattainment area. Figure 1 shows ground-level ozone exceedences of the federal one-hour standard in the Washington metropolitan region between ozone seasons (April – September) 1993 and 2003.

HOW OZONE IS FORMED

Ground-level ozone, commonly referred to as smog, is formed when two types of compounds, nitrogen oxides (NOx) and volatile organic compounds (VOCs), undergo chemical reactions in heat and sunlight. These precursors, the compounds that form ozone, are released in our region daily through hundreds of activities that are part of everyday life. Man-made sources producing ozone precursors fall into four categories:

1. Point sources – stationary, large-quantity sources such as power plants and factories.

2. On-Road sources – mobile sources, such as cars and trucks.

3. Non-Road mobile sources – off-road sources such as construction or farm equipment, lawn and garden equipment, and recreational vehicles and watercraft.

4. Area sources – small-quantity sources that do not emit ozone precursors through a stationary exhaust pipe, such as locomotives, aircraft, bakeries, dry cleaners, open air combustion and alcohol or petroleum-based consumer products.

In addition to being generated locally, ozone precursors can be transported into the Washington area. Winds from the south and west can carry NOx into our air from hundreds of miles away. In order to better understand the magnitude of the transport issue, the Maryland Department of the Environment in collaboration with meteorologists from the University of Maryland at College Park has studied NOx transport for over ten years. One conclusion of their study has shown that on any given day during the Summer Ozone Season as much as one-half (50%) of the Washington region's NOx is transported from outside the region. Additional information regarding ozone transport can be found at http://www.mwcog.org/environment/air/.

MONITORING AIR QUALITY

To measure the region's air quality, air monitors located throughout the Washington region continuously record pollutant concentrations. Local air quality has improved dramatically since the Washington region began monitoring air quality 40-50 years ago. Levels of all six regulated pollutants, including ozone, have dropped significantly. Through the mid-1990s, the region continued to make progress in reducing ozone levels. Though the region expects to benefit from new federal and state controls on power plant and vehicle emissions, additional effort is required to ensure that the Washington region will attain the one-hour ozone standard and eventually the eight-hour standard.

THE EFFECTS OF OZONE ON OUR HEALTH

The federal air quality standard for ground-level ozone is designed to protect the health of the public, including people such as asthmatics, children and the elderly, who are especially sensitive to air pollution. Though ozone high in the atmosphere benefits living organisms by protecting them from harmful ultraviolet radiation, ground-level ozone can damage lung tissue in people. Ground-level ozone can cause breathing problems in healthy people and animals, including chest pains, coughing, nausea, throat irritation and congestion. In people already experiencing health problems, ozone can worsen bronchitis, heart disease, emphysema and asthma and reduce lung capacity.

The ozone standard also protects public welfare and the environment by ensuring that pollution does not reduce visibility or damage wildlife. Ozone causes the same breathing problems and lung damage in animals as it causes in people. High levels of ozone prevent plants from making and storing food, making them more susceptible to damage from disease, insects and bad weather. This results in millions of dollars of damage to agricultural crops and national parks. Ozone also causes deterioration of buildings, monuments and other man-made structures. In addition, nitrogen from NOx contributes significantly to Chesapeake Bay pollution.

AIR QUALITY PLANNING IN THE METROPOLITAN WASHINGTON REGION

NOx and VOC are generated as part of everyday life. The emissions that cause ozone formation will probably never go away. In fact, without efforts to reduce them, emissions in the Washington region would continue to increase as the number of people in the region grows. To reduce emissions and improve air quality in metropolitan Washington, the governors of Maryland and Virginia and the Mayor of the District of Columbia certified MWAQC to develop a regional strategy to control ground-level ozone. MWAQC includes as its members elected officials from 20 cities and counties in the Washington nonattainment area, plus representatives from the three states' legislatures, air agencies and transportation agencies.

STATE IMPLEMENTATION PLAN (SIP)

Under the Clean Air Act, each state submits a State Implementation Plan (SIP) as the primary tool for determining how and when a region will attain an air quality standard. During the SIP process, a region identifies emission sources that contribute to nonattainment, then determines the amount of emissions that must be reduced to reach attainment and selects emission reduction measures/controls most appropriate for the area. Air quality nonattainment regions that are multi-jurisdictional must develop coordinated SIPs for submission by their respective states. In the Washington region, MWAQC is the entity certified by the governors of Maryland and Virginia and the Mayor of the District of Columbia to prepare a regionally coordinated SIP. Once MWAQC adopts a SIP, the states of Maryland and Virginia, and the District of Columbia submit it to the EPA for approval.

THE CURRENT STATUS OF THE METROPOLITAN WASHINGTON REGION'S SIP PROCESS

In 1992, the EPA classified the Metropolitan Washington region as "serious" for non-attainment of the federal one-hour ground-level ozone standard in accordance with the CAAA. The Act required the states of Maryland and Virginia and the District of Columbia to prepare a coordinated SIP for submission to the EPA explaining how the region would reduce emissions that contribute to the formation of ground-level ozone by 15 percent from 1990-1996 and by three percent per year thereafter until the region reached attainment of the federal standard (This demonstration is commonly referred to as a rate-of-progress (ROP)).

The Washington region did not meet the attainment deadline of November 1999, due to transported pollution from outside the region. The EPA then granted the region an extension of its attainment deadline to November 2005. However, on July 2, 2002, the U.S. Circuit Court of Appeals for the District of Columbia decided in a ruling in Sierra Club v. EPA that EPA had a non-discretionary duty under the Clean Air Act to reclassify

the region to "severe" non-attainment when it failed to attain the federal standard in November 1999. The EPA reclassified the Washington region in January 2003.

Under the new classification, the CAAA requires the region to develop a SIP that meets more stringent requirements and to attain the federal standard by November 2005. In addition, the region must adopt a contingency plan for the 1999 ROP demonstration, submit an updated attainment demonstration that reflects revised motor vehicle emissions budgets, demonstrate a three percent per year ROP from 1999-2002 and from 2002-2005, adopt contingency measures in case of failure to achieve ROP or attainment as required, and submit an analysis of Reasonably Available Control Measures (RACM). Individual measures considered in the RACM analysis for implementation must meet a number of criteria related to enforceability, technical feasibility, economic feasibility, and achieve a minimum emissions reduction. A RACM analysis ensures that the region is implementing all reasonable measures to achieve attainment of the federal standard on the earliest date possible. In addition, State and local governments, as applicable, must commit to the control and contingency measures before MWAQC can adopt the final SIP.

Beginning in the Fall of 2002, MWAQC identified both control and contingency measures to fulfill all planning requirements of the CAAA. MWAQC's schedule was developed to ensure that the region's federal transportation program authority does not lapse.

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) incorporated the CAAA requirements into transportation policy. As a result, the Transportation Planning Board (TPB), as the local Metropolitan Planning Organization, is required to perform an air quality analysis on the annual Transportation Improvement Program (TIP) (short range transportation plan) and the Constrained (fiscally speaking) Long Range (transportation) Plan (CLRP) to ensure that the region stays within the mobile sector budgets established in the region's SIP (this analysis is commonly referred to as air quality conformity). The U.S. Department of Transportation requires each region to submit a TIP and CLRP as a prerequisite to receiving federal transportation funds.

In May 2003, MWAQC released for public comment a draft Severe Area SIP for the Washington region. The draft SIP underwent public hearings in July 2003. During the public comment period, EPA stated that the contingency measures MWAQC had identified relied too heavily on Memorandums of Understanding (MOUs) from local governments and private industry, and were not sufficiently enforceable. EPA indicated that approvable contingency measures should take the form of regulations or legislation to ensure additional emissions reductions will occur if needed.

MWAQC adopted a revised SIP without contingency measures on August 13, 2003. (Submittal of contingency measures is not required for EPA to find the mobile emissions budget adequate, and transportation planning timelines require an approved mobile budget earlier than the CAAA requires the complete SIP.) On August 19, 2003, the state of Virginia submitted the revised SIP to the EPA. EPA received SIP submissions from

Maryland and the District in early September and began the 30-day public comment period on the SIP on September 10, 2003.

While MWAQC was developing a new SIP, the TPB, Virginia, Maryland, the District of Columbia and the other local jurisdictions, including Fairfax County, have been working to prepare a new TIP and CLRP. The TIP and CLRP will contain a list of proposed projects to be built between now and 2030. A draft list of projects was approved by the TPB for modeling purposes on May 21, 2003. This draft inventory of projects was used to determine the emissions that will be generated by the mobile sector in several survey years (including 2005, 2015, 2025). Based on this analysis, it appears that the transportation project inventory contained in the draft TIP and CLRP will generate a level of emissions below the mobile budget MWAQC set forward in the SIP.

EPA will have 90 days to determine whether or not the mobile sector emissions budgets included in the SIP are adequate for the region to achieve air quality conformity with the SIP. Assuming that EPA agrees that the mobile sector budgets are adequate, TPB can then submit the new TIP and CLRP to the Federal Highway Administration (FHWA). FHWA will need approximately 90 days to review and approve the TIP and CLRP.

If a new TIP and CLRP are not approved by the end of January 2004 or the region's air quality conformity lapses, most federal funding for transportation projects will stop until the FHWA approves the TIP and CLRP or the region finds a way to achieve air quality conformity. The ability to continue construction of non-federally funded projects will also be restricted. TPB, the state transportation agencies and the jurisdictions are also working on an interim TIP and CLRP. This document would allow conformity exempt projects and those projects that have already received federal approval to continue in their current phase, until FHWA approves the entire TIP and CLRP.

To fully comply with the requirements of the CAAA, MWAQC expects to submit a final Severe Area SIP, with contingency measures, by March 1, 2004. Though MWAQC anticipates that the Severe Area SIP will be deemed complete, and eventually approved, County staff who worked with MWAQC on the regional planning effort are concerned that the challenges of meeting the new eight-hour federal standard for particulate matter and ozone will require assistance from the federal government as its compliance represents possibly an order of magnitude of more difficulty as compared to that of the one-hour standard.

County Efforts to Improve Regional Air Quality

Fairfax County participates actively in the regional air quality planning efforts that are facilitated through MWCOG. These efforts include the work of MWAQC and the TPB. In addition, the County is committed to taking a leadership role in promulgating air quality best practices that affect every part of the County government to improve air quality consistent with regional efforts. Examples of such actions include: purchasing 27 lower-emissions vehicles in the County's vehicle fleet replacement; continuing to

promote commuting alternatives to the single occupant automobile (e.g., teleworking, transit, ridesharing, biking, and walking); and evaluating restrictions on certain types of activities, where appropriate, to ensure that the region will meet all applicable federal air quality standards. Specific examples of these actions are described in Chapter 5 of this report.

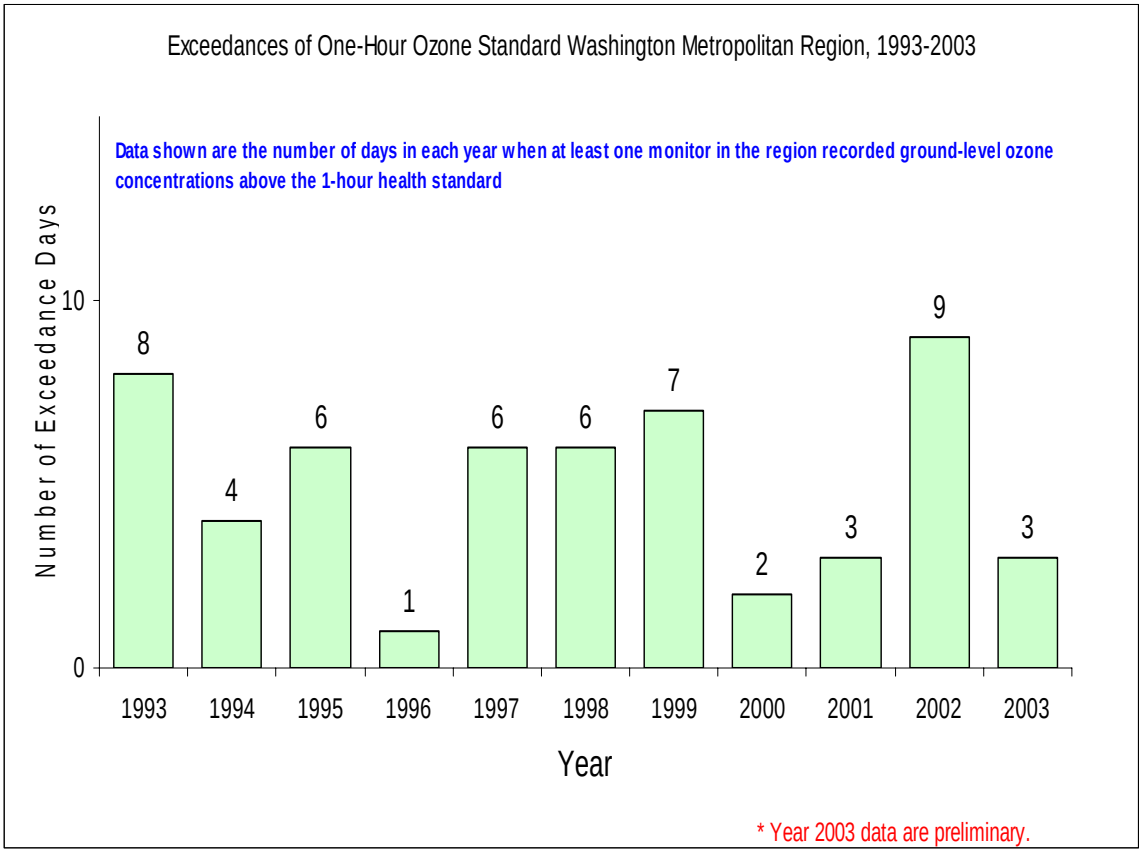

Figure 1. Exceedances of the federal one-hour ozone standard for the Washington metropolitan region.

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2. PUBLIC EDUCATION, OUTREACH, AND NOTIFICATION

The purpose of this section of the report is to summarize Fairfax County's marketing efforts as they relate to general education and outreach about air quality, as well as specific actions taken to notify the public when Ozone Action Days (OAD) are forecast. Secondly, this section compares the County's marketing approach to that in other local jurisdictions and environmental groups such as the Environmental Protection Agency (EPA) and the Virginia Department of Environmental Quality (VDEQ).

What Fairfax County is Doing:

Ozone Action Days Notifications

- When a Code Red alert is received in the afternoon for the following day, the Office of Public Affairs (OPA) has various procedures to notify staff and the public.

    1. OPA notifies cable Channel 16 staff of the alert (Channel 16 is Fairfax County's official government access cable channel). Channel 16 staff runs a crawl message on Channel 16 over the normal programming for the remainder of the day and removes it at the close of business unless notified otherwise by OPA.

    2. Sample text of the message is: *The Council of Governments has issued a Code Red Bad Air Alert for July 5, 2003. Residents are strongly urged to: Limit driving. Telework if possible. Use area bus, rail or carpool. The Fairfax Connector bus system is offering free rides all day. Avoid using gas-powered lawnmowers. Refuel your car after dark. Limit strenuous outdoor activities. Children and elderly should reduce outdoor activities. If breathing becomes difficult, move indoors.*

    3. Similar text is placed prominently on the home page of the County Web site.

    4. An urgent Air Quality Alert message is e-mailed to all County staff that afternoon alerting them of the forecast for the next day.

    5. The following morning, a notification about the poor air quality is included in NewsLink, the e-newsletter distributed to all staff.

- Currently, staff works in partnership with MWCOG and Clean Air Partners' marketing program to reach the media and public through advertisements and

public service announcements (PSAs), and through notifications of all area media the day prior to an Ozone Action Day.
- In Fairfax County variable message boards with the message "Ozone Action Day Tomorrow/Today" as appropriate are placed along the major commuter routes in the County.

General Education Initiatives

- The County's air quality Web page, which is maintained by the Health Department, has some basic information about good versus bad ozone, such as what it is, what causes it, the health effects it causes and who is most at risk from them. Information on the Air Quality Index (AQI) can be found on this site as well. Additional pages will be added to this site. This section can be viewed at http://www.fairfaxcounty.gov/service/hd/resourceair.htm. There is a page that includes links to various online air quality resources. This page is found at http://www.fairfaxcounty.gov/gov/DPWES/environmental/air.htm.
- The Health Department also distributes pamphlets to county citizens about ozone and air quality at the Health Department's Environmental Health tent at Celebrate Fairfax (the County's Fair). Additionally information has been distributed to all county homeowners associations annually through the County's *News To Use* Newsletter.
- The Department of Transportation's section on the Web has pages of information about various carpool and vanpool programs, initiatives to encourage employers to support commuting alternatives including a Ridesharing Match program, and information on sources of public transportation such as bus and rail to encourage County residents to use them. See the Web pages at http://fairfaxcounty.gov/living/transportation for more information about this.
- The County's Department of Transportation conducts extensive outreach and marketing efforts promoting public transportation and alternate commuting options. One of these programs is the Employer Services Program, which conducts extensive outreach to employers in the County promoting alternate commute strategies with the explicit goal of reducing air pollution in the County and the region. Staff conduct employee transportation fairs, staff mobile units, contact new employers and use other strategies to convince major employers to initiate and implement a comprehensive transportation demand management program for employees.

What Other Jurisdictions are Doing

The goal of this section is to investigate what efforts are being made by a significant number of other jurisdictions and key environmental groups with respect to air quality management. The focus of the investigation in this section is how these groups are currently striving to educate the public about the various issues related to ground level ozone, as well as how they notify the public of Ozone Action Days. It discusses how they

target various audiences: residents, businesses, and their own employees. It also looks at the different types of marketing tools that are used.

To gather this information, a survey was sent to other jurisdictions and environmental groups throughout the region to ascertain their marketing plans. It asked specific questions about their marketing methods, the type of media used and the frequency as well as any budget associated with these efforts. Two jurisdictions provided information requested in the survey. For the other jurisdictions information was collected from research on their Web sites and telephone conversations with their staff. A copy of the survey is included in Appendix 2-B.

The research showed that while most groups demonstrated a strong emphasis on notification of the public whenever an Ozone Action Day is forecast, the degree of activity with respect to general education varies greatly. Like Fairfax County, the majority of groups defer to umbrella organizations, such as Clean Air Partners, EPA or local commuter groups to handle the educational messages that are publicized throughout the ozone season and even beyond.

Various jurisdictions have taken on a variety of initiatives that are not currently practiced in Fairfax County. Descriptions of these initiatives are listed below with Ozone Action Day (OAD) initiatives separate from general education initiatives:

Ozone Action Day Initiatives:

- The OAD Flag is flown in some jurisdictions on Ozone Action Days.
- Signs are placed in the lobby area to notify the public about Ozone Action Days.
- One county has an Ozone Action Day Hotline on which messages are placed to notify County residents when COG forecasts an Ozone Action Day.

General Education Initiatives:

- Two offices have a speaker's bureau made up of their staff who are available to attend various functions and speak on air quality issues and representatives to attend community outreach events.
- Some jurisdictions have established partnerships with local businesses and provide mailings of information about the Council of Government's region wide OAD program, which employers may post in their office.
- Some jurisdictions distribute copies of educational materials (e.g., fact sheets and brochures) to their employees, and issue PSAs and news releases.
- Some jurisdictions have established informational displays in the lobbies of their government buildings, which provide printed educational materials and daily air quality updates.
- Clean Air Partners has developed a marketing campaign including placement of paid advertisements on television, radio and print media. The organization has also taken a leading role in the notification of area media when an Ozone Action Day is forecasted.

The Web is a vital tool used by all of these groups-- with one exception-- to convey general ozone information and notification about alerts. Most sites have a few pages, but two sites, Montgomery County and EPA, have extensive information on theirs.

- The U.S. EPA has developed the AIRNow Web site to provide the public with easy access to national air quality information. The Web site offers daily AQI forecasts as well as real-time AQI conditions for over 275 cities across the U.S., and provides links to more detailed state and local air quality Web sites.
- On Montgomery County's site, there are pages on many issues that are related to air quality, including: "Ozone/Smog Information"; "Examining Your Vehicle Fleet"; "Alternative Transportation"; "Methane"; "Open Burning Regulations" and many other topics. Additionally, information on special programs such as the Lawn and Garden Equipment Rebate and Exchange, otherwise known as "Cash for Clunkers," is included on the Web site.

Unfortunately, none of these participants measures the success of its initiatives, making it unclear which of these methods of outreach is most effective in reaching the intended audiences. Positively, the survey of these groups' efforts shows a great breadth in methods used to convey the messages and great concurrence on which elements, such as the Web, should be a staple of the public education plans.

3. POLICY GUIDANCE: FAIRFAX COUNTY'S COMPREHENSIVE PLAN

The purpose of this section of the report is to summarize Fairfax County's policy guidance as it relates to air quality and to compare the approach and content of this policy guidance to policy guidance provided in planning documents of other jurisdictions.

Fairfax County's policy guidance as it relates to air quality can be found in the County's Comprehensive Plan. This section of the report provides a brief overview of the nature and content of this guidance and summarizes policy approaches that are taken in planning documents from a select number of other jurisdictions. Detailed discussions and Plan citations are not provided in this section. Rather, Appendix 3A provides citations from the County's Comprehensive Plan, and Appendix 3B provides more detailed discussions and citations from planning documents from other jurisdictions.

FAIRFAX COUNTY'S COMPREHENSIVE PLAN

The Comprehensive Plan of Fairfax County is a dynamic document which is actively used by the Board of Supervisors (the "Board"), the Fairfax County Planning Commission, the Board of Zoning Appeals, County staff, and the public to guide decisions about the built and natural environment, as well as the conservation of cultural resources. The Comprehensive Plan consists of the Policy Plan (Countywide in nature), four Area Plans (relating to specific planning areas), a Plan map, and a Transportation Plan map. A Trails Plan map is also included by reference. The Policy Plan contains goals, objectives, and policies relating to ten functional elements: Land Use, Transportation, Housing, the Environment, Economic Development, Heritage Resources, Public Facilities, Human Services, Parks and Recreation, and Revitalization. The Policy Plan provides a concise statement of objectives, policies, and guidelines for implementing a set of broad Board-adopted "Goals for Fairfax County" that apply to the future development pattern of the built environment in the County, while protecting natural and cultural resources for present and future generations.

As noted in the Policy Plan, the goals provide general direction regarding the aspirations of the community. The goals that are most strongly related to air quality are the "Transportation" and "Environmental Protection" goals (see Appendix 3A for complete citations). The Transportation goal includes a statement recognizing the need ". . . to move people and goods efficiently while minimizing environmental impact and community disruption." The Plan stresses the development of a transportation system that is balanced with land use and that provides alternatives to "excessive reliance upon the automobile". The Environmental Protection goal recognizes the need to ". . . meet or exceed federal, state and local standards for water quality, ambient air quality and other

environmental standards." Other goals, such as those addressing land use, revitalization, and regional cooperation, also have a relationship to air quality.

Consistent with the broad geographic nature of air quality issues, most of the guidance in the Comprehensive Plan related to air quality can be found in the Policy Plan volume of the Plan. Direct references to Air Quality are generally limited to the Environment section of the Policy Plan, which contains a brief background discussion of key air quality concerns followed by an objective to "preserve and improve air quality." This objective is followed by four policy statements supporting:

- Land use patterns and transportation facilities that serve to reduce mobile source emissions;
- The implementation of transportation strategies to reduce mobile source emissions;
- The application of state of the art technology to reduce stationary source emissions; and
- The attainment of air quality standards.

A complete citation of this section is provided in Appendix 3A.

Additional explicit references to air quality in the Policy Plan are limited to a policy statement in the Transportation section of the Policy Plan (supporting strategies to reduce emissions from automobiles) and recommendations to locate and design child care facilities to protect children from excessive exposure to air pollutants. However, land use and transportation guidance is very strongly related to air quality, even though these linkages are not made explicitly in the Policy Plan. Furthermore, the Environment section contains objective and policy language supporting energy conservation. A central focus of the Comprehensive Plan is that population and economic growth should be concentrated in mixed use, transit-oriented growth centers, thereby protecting stable residential communities and reducing burdens to the County's transportation system. This focus is evident in the objectives from the Land Use and Transportation sections of the Policy Plan that are excerpted in Appendix 3A.

Numerous policy statements are provided subsequent to the objectives that are excerpted in Appendix 3A. While these statements are too numerous to reproduce in this document, they do provide support to measures that can serve to reduce air quality degradation such as the concentration of development in mixed use centers, provision of transit service, support for transportation demand management (TDM) efforts, carpooling/ride sharing, nonmotorized transportation, high occupancy vehicle lanes, and revitalization. Furthermore, the Residential Development Criteria (used in the evaluation of residential zoning requests) include a criterion supporting transit, transportation management, and facilities supporting nonmotorized transportation.

The Policy Plan has been, and continues to be, used to provide direction for evaluation of zoning proposals, public facilities proposals, and proposed amendments to the four Area Plan volumes of the Comprehensive Plan. While the Policy Plan provides goals, objectives, policies, and guidelines that are broadly applicable throughout the County, the Area Plans provide more detailed land use-related recommendations for specific Planning Districts and Community Planning Sectors. Direct references to air quality in the four Area Plans are not prevalent. Where present, these references are limited geographically and generally reiterate or augment the Policy Plan guidance noted above (examples are provided in Appendix 3A). However, the Area Plans, in conjunction with the Plan map, serve to implement a 1990 "Concept for Future Development and Land Classification System," which stresses the concentration of new employment in mixed use, pedestrian-oriented, high density core areas, transportation systems management programs to encourage the use of transit, carpools, and vanpools, and the protection and enhancement of stable residential neighborhoods. While this "Concept for Future Development" was not formally adopted by the Board of Supervisors, the Board authorized its use in the development of the Area Plans.

REGIONAL POLICY GUIDANCE AND OTHER JURISDICTIONS

Detailed discussions of regional air quality policy guidance and air quality policy guidance from a select number of other jurisdictions is provided in Appendix 3B. While efforts to bring the jurisdictions in the Washington, D.C. metropolitan region into compliance with federal air quality standards are focused at the regional level, there is not much in the way of general air quality policy guidance at this level.

With respect to other jurisdictions, the local Plans that are noted in Appendix 3B reflect a wide range of approaches. At least one local jurisdiction (Montgomery County, Maryland) has an approach that is quite similar to that of Fairfax County--the air quality section of Montgomery County's General Plan focuses on a small number of succinct, broadly-applicable policy statements that are generally oriented toward the land use process rather than broader programmatic efforts, and more detailed guidance supporting air quality-sensitive land use and transportation planning is prevalent but is not presented under the banner of air quality. Montgomery County differs from Fairfax County, however, in that it is developing a separate Air Quality Strategy document that provides direction regarding actions Montgomery County can take to reduce emissions from a variety of sources. Montgomery County has also recently adopted a "County Environmental Policy" that will guide the practices of County agencies as they relate to a broad range of environmental issues, including air quality.

Many other jurisdictions have much more visible and lengthy air quality discussions in their plans that incorporate programmatic as well as land use guidance, while others do not address air quality explicitly. Most of the plans that were reviewed by the Air Quality Subcommittee include guidance supporting the concentration of development in high density core areas. This is a common theme regardless of the focus or level of detail that has been incorporated into air quality-specific guidance. With respect to broad, land

use-oriented air quality policy guidance, with some notable exceptions as described below, there do not appear to be major areas of emphasis that are stressed in plans of other jurisdictions that are absent from Fairfax County's Comprehensive Plan; however, many local plans are structured in a manner that provides a clearer nexus between air quality and land use patterns and transportation facilities. In Fairfax County's Plan, policy guidance supporting air quality-sensitive development and transportation measures is provided but is linked to air quality in more general terms.

Particularly noteworthy plan policies that have been adopted, or that are being considered, by other localities referenced in Appendix 3B that are not addressed in Fairfax County's Comprehensive Plan include:

- San Bernardino County, California's policies regarding managed parking supply, growth management, and congestion fees; and

- The City of Elk Grove, California's proposed policy that would require development projects to reduce air pollutant emissions by 15% compared with emisions that would occur without the implementation of trip reduction, energy conservation, or other pollution reduction efforts.

DRAFT – JANUARY 12, 2004

4. CODES AND REGULATIONS

This section of the report provides a brief overview of the codes and regulations applicable to air quality management in Fairfax County. Relevant sections of applicable codes and regulations are included in Appendices 4A and 4B. Due to the volume and complexity of air-quality related codes and regulations, this section will focus on the Fairfax County's Air Pollution Control Ordinance (Chapter 103 of the Fairfax County Code) and the parameters and procedures under state law for amending that Ordinance that are relevant to the task of this Subcommittee to recommend appropriate changes to air-quality related codes and regulations.

OVERVIEW

The federal Clean Air Act, first passed in 1970 and amended by the Clean Air Act Amendments of 1990 "CAAA", 42 U.S.C.A. § § 7401 through 7671, requires the United States Environmental Protection Agency (EPA) to set national ambient air quality standards ("NAAQS") for pollutants considered harmful to public health and the environment. Regulations implementing various provisions of the CAAA are found in the Code of Federal Regulations. See, 40 C.F.R. Parts 50 through 97. The CAAA establishes two types of national air quality standards. Primary standards set limits to protect public health, including the health of sensitive populations, such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The EPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called criteria pollutants. 40 C.F.R. Part 50. These six pollutants are sulfur dioxide, particulate matter, nitrogen dioxide, carbon monoxide, ozone, and lead. The metropolitan Washington region meets the federal air quality standards for each of these pollutants, except ozone. The national primary and secondary ambient air quality standards for ozone are set out at 40 C.F.R. § 50.9 (one-hour standard-0.125 parts per million (ppm)) and § 50.10 (eight-hour standard-0.08 ppm).

Under the CAAA, the states have the primary responsibility for assuring air quality within the geographic region comprising the state by submitting an implementation plan for the state (commonly known as a "SIP") that specifies the manner in which the NAAQS will be achieved and maintained within each air quality region of the state. 42 U.S.C.A. § 7407. The SIPs are developed by the states and submitted to the EPA for approval. Once a SIP is approved by the EPA, it is enforceable by the federal government and the submitting state.

Virginia has established the State Air Pollution Control Board ("SAPCB") which has broad powers including the power to adopt regulations pertaining to air pollution and to enforce those regulations. Va. Code Ann. § § 10.1-1300 through 10.1-1322.4. Regulations adopted by the SAPCB are set forth in the Virginia Administrative Code. 9 VAC 5-10-10, et seq.

Local air pollution control ordinances are authorized by Va. Code Ann. § 10.1-1321. Except as discussed below, a local air pollution control ordinance supplements, but does not supersede, the state regulations. Section 10.1-1321 requires the governing body of any locality that proposes to adopt an ordinance relating to air pollution or amend an existing ordinance after June 30, 1972 to first obtain the approval of the SAPCB as to the provisions of the ordinance or the amendment.

The specific procedures for establishing and approving local ordinances are set forth in 9 VAC § 5-170-150. The full text of the regulation appears in Appendix 4B. As more fully outlined in the regulation, in approving an ordinance or an amendment to an existing ordinance, the SAPCB considers, among other criteria, whether adequate local resources will be committed to enforcing the proposed ordinance and whether the provisions of the local ordinance are as strict as state regulations. If local ordinances must be amended to conform to amendments in state regulations, the necessary local amendment must be made within six months or the board may rescind its approval of the ordinance. Local ordinances are a supplement to state regulations. Provisions of a local ordinance that are approved by the SAPCB and are more stringent than state regulations take precedence over State regulations within the respective locality.

Fairfax County adopted a local air pollution control ordinance in 1967. The current version of the Ordinance, Chapter 103 of the Fairfax County Code, was approved by the SAPCB.

Other provisions of the Fairfax County Code also relate to air quality. They include § 62-2-8, which amends the State Fire Code, § F-403.4 (outdoor burning), § 82-3-14 (requirements for vehicle inspections), and § 82-6-26 (requirement that exhaust systems be in good working order). Chapter 46 relates to health and safety menaces. Although nothing in that chapter specifically deals with air quality, § 46-1-1(a)(9) includes any other condition that may be injurious to public health or safety in the definition of public health and safety menace.

FAIRFAX COUNTY CODE CHAPTER 103

Fairfax County's Air Pollution Control Ordinance is found in Chapter 103 of the Fairfax County Code. A copy of the entire Ordinance is included in Appendix 4A. Since the SAPCB approved the current version of the Ordinance, those provisions of the County's Ordinance that remain at least as stringent as state laws and regulations are still operative. Many provisions of the Ordinance are outdated, and the AQS will make recommendations for appropriate modifications.

Chapter 103 is organized into seven articles. Article 2 authorizes the creation of a Division of Air Pollution Control in the County Health Department, a division that was merged into the Environmental Health Division in the early 1990's. In 1997, the Air Pollution Control Enforcement Section was eliminated due to budget cuts. Similarly, the

local Air Pollution Control Board established under Article 4 to handle appeals of enforcement actions and grant variances from certain provisions of the Chapter no longer exists and operates. The Air Pollution Control Monitoring Section of the Health Department's Environmental Health Division continues to operate air quality monitoring sites throughout Fairfax County. Article 6 deals with air quality standards for pollutants and Article 7 contains standards for new stationary sources and hazardous pollutants. Articles 6 and 7 refer to applicable, albeit outdated, provisions of federal and state law. Ozone is not specifically referenced in Fairfax County's Ordinance; instead Chapter 103 references oxidants or photochemical oxidants, which is how ozone was originally defined.

Article 3 of Chapter 103 contains regulations for various emissions. Those sections currently operative in Fairfax County, because they are as, or more, stringent than applicable provisions of state law, include § 103-3-9 (Motor vehicle emissions), § 103-3-10 (Mobile sources), and § 103-3-11 (Open burning).

Section 103-3-12 provides for an air pollution episode system with standards and procedures to be followed whenever air pollution has the potential of reaching an emergency condition if allowed to go unchecked. That section, which is consistent with State Air Pollution Episode Prevention Regulations, 9 VAC § 5-70-70, et seq., contains criteria for five levels, or stages, of pollution considered injurious to human health, designated as Forecast, Health Advisory, Alert, Warning, and Emergency. Each stage has various action items associated with it. For example, in the Emergency Stage, the Health Department Director shall recommend to the proper authorities the closing of all schools, nonessential public buildings and places of public assembly; shall advise the public to limit the use of motor vehicles to essential and emergency travel; and may order a ban on the use of all incinerators, except municipal, if in his professional judgment he has reason to believe that it is necessary to protect public health. These provisions will be reviewed and evaluated as recommendations are developed by the Air Quality Subcommittee. The Air Pollution Episode numbers for oxidants in Chapter 103 are the same as Virginia's Air Pollution Episode numbers and stages for ozone.

OTHER JURISDICTIONS

The City of Alexandria has an Air Pollution Control Code, Chapter 11, which is administered and enforced by the Director of the Department of Transportation and Environmental Services. It adopts and incorporates by reference SAPCB Regulations for the Control and Abatement of Air Pollution, effective January 1, 1985, which prescribe air pollution standards.

Arlington County, Prince William County, and Loudoun County do not have separate air pollution or air quality codes.

Montgomery County, Maryland, has an Air Quality Control Ordinance, Chapter 3, which is administered by the Director of its Department of Environmental Protection. Chapter 3

authorizes the County Executive to adopt regulations to implement the chapter so long as they do not conflict with, waive any provisions of, or are less restrictive than any requirement of state or federal law. To date, Montgomery County has not enacted any implementing regulations.

The District of Columbia has adopted a complex set of air quality regulations found in Title 20 of the District of Columbia Municipal Regulations, Chapters 1 through 10. Because the District of Columbia is responsible for submitting its own SIP, its regulations compare with state regulations in terms of their coverage and complexity.

DRAFT – JANUARY 12, 2004

5. MEASURES AND PRACTICES

Introduction

The following measures and practices outline the County-wide and individual agencies' strategies to improve the air quality within Fairfax County. Each agency describes its current plan of action in the event of an Ozone Action (Code Red) day as well as outlining current, ongoing air quality measures. In addition, some measures and practices from other jurisdictions are also mentioned.

Ozone Action Day Measures:

The following general County actions are taken on Ozone Action Days:

- When an Ozone Action day is anticipated, the Metropolitan Washington Council of Governments (MWCOG) notifies participating jurisdictions the day prior via fax and e-mail, typically between 2:30 p.m. and 4:30 p.m. The Fairfax County Office of Public Affairs undertakes notification activities on Ozone Action days for the County (see Chapter 2 for more detail).

- Episodic ban on the use of gasoline powered lawn and garden equipment: Beginning April 2005, All County and contractor mowing and trimming operations will be deferred on Ozone Action days, except on specialized turf areas at the golf courses and athletic field complexes. The County will continue a replacement policy to purchase low-emissions lawn and garden equipment that reduce ozone precursor emissions.

- Episodic ban on the use of VOC-containing paints: Beginning April 2004, the County will defer the use of VOC-containing paints and coatings on Ozone Action days. By deferring the use of VOC-containing paints, the County will be reducing the emission of a ground-level ozone precursor on Ozone Action days.

- Episodic ban on the refueling of non-essential gasoline powered cars and equipment: Beginning April 2004, a report of any refueling that did occur on a Code Red Day will be given to Agency Directors the next day which would enable follow-up action without restricting vital functions that require refueling. The Department of Vehicle Services is tasked with monitoring the implementation of the County's "Episodic Ban on the Refueling of Gasoline Powered Vehicles" policy mentioned above. As noted above, this policy will go into effect beginning April 2004. The steps included in the monitoring process are as follows:

(1) DVS notifies Department Directors and vehicle coordinators the day before and the morning of a Code Red day, with reminder to either defer refueling or refuel after dusk;

(2) DVS sends a list to each Department Director within a day or two after a Code Red day of vehicles in that department that refueled on the Code Red day.

(3) Department Director decides what action, if any, is appropriate (e.g., none because vehicle should be refueled even on the Code Red day due to mission; or, driver should be reminded, counseled, or disciplined).

- Episodic ban on the use of VOC-containing pesticides: Both the active and inert ingredients of many pesticides are reactive in the formation of ozone. Beginning April 2004, County and contractor applications of pesticides would be deferred on Code Red Ozone Action days.

- Teleworking on Code Red days: The Board of Supervisors and the County Executive promote teleworking on Code Red Days by encouraging approved teleworking employees to telework even if they were not scheduled for that day. This measure was implemented April 2003.

- Staff is encouraged to limit use of vehicles i.e., essential travel only or carpooling when possible.

- Fairfax County operates and maintains 61 wastewater pumping stations. Almost all of these facilities are equipped with backup diesel engine driven generator sets. The generators are “exercised” twice a month. On Ozone Action days, staff does not exercise the generators. This maintenance work is usually rescheduled to another day.

- Fairfax County provides free rides on the Connector Bus System.

- The Bus Information Call Center and Connector stores are notified so that customer service representatives can respond to citizen inquiries.

Ongoing Air Quality Measures:

Fairfax County Government undertakes the following actions for all agencies to improve the air quality of the region as it applies to County work practices.

- The County fully supports telework, carpool/vanpool, and flexible schedules for those positions that lend themselves to these types of programs. Currently, more than 530 county employees telework two to four days per month. An expansion plan is underway to raise that number to 1,000 by 2005. Telework expansion reflects the Fairfax County Board of Supervisors' support of the regional goal set by the Metropolitan Washington Council of Governments -- to reach a level of 20 percent of the eligible workforce teleworking one day per week or more by 2005. On Thursday, October 23, 2003, the County sponsored a Telework Expo in the Government Center Atrium and Forum. The Expo was a way to inform more employees about the benefits and possibilities of telework. In addition, the Expo contained a compilation of information and activities about the County's telework effort.

- Fairfax County government has been a member of Clean Air Partners (formerly known as ENDZONE) since 1998, and has been proactive in efforts to inform county employees and residents about air quality programs and ways to reduce air pollution. The county has included information about air quality issues on its Web site. The county has a notification program that involves the posting of Ozone Action Day forecasts on Fairfax County Government Cable Television Channel 16, and the county Web site, as well as sending e-mail notifications to all county employees. These messages include appropriate actions to take to reduce contributions to ozone formation. On Tuesday, Nov. 4, at the University Conference Center and Inn at the University of Maryland's College Park campus, Fairfax County was given an honorable mention by Clean Air Partners in the category of "Outstanding Ozone Action Days Program." The county was recognized for its efforts in establishing voluntary actions to reduce ground-level ozone through an Ozone Action Days plan, its efforts to encourage and facilitate public awareness of air quality issues, and its efforts to encourage employees to take personal voluntary actions.

- Beginning April 2004, Fairfax County government will be implementing a gas can replacement program. Portable gas cans account for a significant amount of emissions escaping into the air every day. By using newer gas cans with features such as shut off valves, harmful gasoline fumes can be reduced by 75 percent. Fairfax County currently owns an estimated 300 gas cans that can be replaced.

- Beginning April 2004, Fairfax County government will purchase and use low Volatile Organic Compound (VOC) paints (150 g/L or less). Besides reducing emissions of ozone-forming compounds, low-VOC paints improve indoor air quality by reducing eye or respiratory irritation caused by exposure to paint fumes.

- The County Web site has many opportunities for residents to conduct business (e-business) with the County over the Web, thereby reducing trips to the County government facilities.

- Fairfax County will begin its diesel retrofit program in 2004. The Board of Supervisors has already approved reprogramming of the electronic controls on certain school buses and installation of diesel oxidation catalysts on school buses and other diesel powered county equipment. The Board approved $2 million as part of the FY 2005 Carryover Budget to begin the diesel retrofit program. In addition, funds in the amount of $1.5 million have been made available in fund 100, County Transit Systems for the retrofit of the CONNECTOR buses with the catalyzed diesel particulate filters. Some of the details of this program include: 1) reprogramming of the engine control modules (ECMs) on all eligible school buses to reduce NOx emissions (an ozone precursor) by 25%. (approximately 436 eligible school buses); 2) retrofit of all other school buses that will stay in service at least three more years, with a Diesel Oxidation Catalyst (DOC) (EPA has verified that this technology will reduce emissions of particulate matter (PM) by 20%, carbon monoxide (CO) by 40%, and hydrocarbons (HC, which are mostly VOC, another ozone precursor) by 50%. (approximately 565 eligible school buses – 188 other school buses were recently delivered with DOC already installed); 3) purchase of 46 new school buses with Low Emissions Vehicle (LEV) options. (Same benefit as ECM reprogramming); 4) retrofit of 148 Fairfax Connector transit buses with Diesel Particulate Filters (DPF) (EPA has verified that this technology will reduce emissions of PM, CO, and HC by 60% each); and 5) after completion of school buses, retrofit of all other County diesel vehicles with at least three years remaining service life (on- and off-road) with DOCs.

- Early phase-in of the exclusive use of Ultra-Low Sulfur Diesel (ULSD) fuel for both on- and off-highway applications in the County and Fairfax County Public School (FCPS) fleets.

- The County favors purchasing lower-emissions vehicles, primarily hybrid-electric drive cars, as scheduled replacements for County and Public Schools vehicles. In the last year, **27** vehicles have been replaced with hybrids. On November 17, 2003, the Board committed to the purchase of an additional **30** hybrid-electric drive cars by May 2005 (approximately 6.6% of the County's eligible replacement fleet). Over the next five years, approximately 150 additional vehicles will be candidates for replacement by hybrids. Today's production hybrids can reduce emissions by 76 percent to 97 percent below current federal emissions standards.

- As diesel vehicles reach replacement criteria, specify their replacements to incorporate the most advanced emission control technologies in production. In model years 2007 and 2008, a total of 391 vehicles could be delivered with early achievement of phased-in EPA emissions standards.

- The Park Authority has established "meadow" areas within parks and certain golf courses that require an annual mowing normally in the fall of the year rather than normal mowing frequencies.

- The Park Authority has purchased electric mowers at two golf sites.

- The County will continue a replacement policy to purchase low-emissions lawn and garden equipment that reduce ozone precursor emissions.

- Staff in the building trades researches and uses synthetic building materials where appropriate. For example, pre-finished metal roofing and fiberglass support columns, which require no painting and minimal maintenance, are used.

- Many antiquated heating oil systems within the Park Authority's infrastructure have been converted to higher efficiency propane or natural gas units.

- The Park Authority has implemented an integrated pest management (IPM) program at the golf facilities and athletic field complexes. The Park Authority's approach to select pesticide applications is one of prevention rather than curative. This approach greatly reduces the amount of product (VOC emissions) required to keep turf healthy and allows the IPM program to be more effective.

- The Noman Cole Pollution Control Plant is adding an odor control system that will reduce the amount of VOCs produced by the plant.

- Landfill gas from the I-95 facility is used at the NCPCP to partially fuel the incinerators and afterburners of its sludge incineration process. In 2002, approximately 13,000 pounds of NOx was saved by supplementing natural gas use with landfill gas.

- A second scale at the I-66 Transfer Station has been added, which will reduce idling time of vehicles

- Reduced the weight of the transfer vehicles, which will allow larger payload and fewer vehicle trips.

- The County encourages bundling of inspections, which cuts down on the number of trips an inspector has to make to a job site.

OTHER JURISDICTIONS

Montgomery County, Maryland

Montgomery County, Maryland is also in the process of developing an air quality program. The draft program contains information about the state of Montgomery County's air quality, the County's air quality strategy and basic definitions of air quality terms and concepts. It includes separate chapters describing area, point, and mobile emissions and outlines the County's prioritized efforts to reduce these emissions. Some of the highest priority items include outreach to industry and power plant operators, reducing school bus and transit bus emissions, conducting public outreach programs and updating its plan for "Ozone Action Days." Other strategies include the purchase of alternative fuel passenger vehicles, increasing transit service and amenities, and implementing an "energywise office" program.

The County's Department of Environmental Protection also maintains an extensive website (www.askdep.com) which explains issues behind various environmental topics including air quality and provides information about activities to reduce emissions. The county has had a gas can and lawnmower replacement program for some time, in addition, the site provides information about lower emissions vehicles, alternative transportation and open burning restrictions.

As part of the recent development of a State Implementation Plan for the Washington metropolitan region, Montgomery County has committed to purchasing five percent of its electricity from wind power. In addition, the County is preparing to commit to specific levels of alternative fuel vehicle purchases, gas can replacement, episodic reductions in lawn and garden equipment use and an episodic reduction in paint striping.

Arlington County, Virginia

Arlington County's Ozone Management program involves several different activities, including:

- In 1999, Arlington County introduced ART bus service, which supplements Metrobus with smaller, neighborhood-friendly vehicles providing access to Metrorail.
- The County encourages employees to use public or alternative transportation in order to reduce pollution, improve air quality, save energy, and ease traffic congestion.
- The County increased the employee metro subsidy from 60% to 75% (Metrorail, Metrobus and other local transit), created an incentive to walk or bike to work, and a created a program to provide direct financial assistance to employees to purchase a home in Arlington.
- Its light vehicle fleet of approximately 582 vehicles has 21 vehicles that run on compressed natural gas (CNG), 25 vehicles that are hybrid gasoline/electric

vehicles, 16 vehicles that operate on liquified petroleum gas (LPG, or propane), and 25 that run on "E-85" ethanol.

- The entire diesel fleet, including medium and heavy trucks and school buses, uses bio-diesel (B-20) fuel. Bio-diesel is composed of 20% soybean oil and 80% number 2 diesel. The use of this fuel will save approximately 100,000 gallons of diesel fuel and reduce exhaust emissions by 20%.
- The County's operational divisions, which use most of the heavy construction equipment and large trucks, modify their activities to respond to ozone action days.

South Coast Air Quality Management District

The South Coast Air Quality Management District (AQMD or District) was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the AQMD is responsible for controlling non-vehicular sources of pollution, and for adopting and implementing plans to bring air quality in the areas under its jurisdiction into attainment with federal and state air quality standards. The AQMD, unlike the MWAQC, has regulatory and enforcement authority, and so has no parallel in the governing structure of our area.

Rules of the South Coast Air Quality Management District

The "Rulebook" is an extensive volume of rules, divided into (currently) 23 "regulations" and carrying the force of law. Many of the regulations address implementation procedures for permitting, fees, rulemaking, etc. Three regulations (4, 11, and 14) prescribe source-specific emissions limits or mandate procedures for certain commercial operations that generate air pollutants.

Rule 701 outlines actions in air quality emergency events, when pollution levels present an immediate danger to some or all of the population. Rule 2202 mandates a reduction each year in commuter or other business related vehicle emissions as a responsibility of each employer with 250 or more employees at a work site.

The rules provide opportunities for regulated entities to pay a fee in lieu of compliance with a particular rule. The fee is set by SCAQMD such that it can fund some other action that would accomplish at least the same pollution reduction intended by compliance with the original rule.

Air Quality Management Plan of the SCAQMD

The District composes and publishes the AQMP, in collaboration with the Southern California Association of Governments (responsible for growth projections and

development of transportation control measures) and the California Air Resources Board (CARB) (responsible for mobile source and consumer product control measures). The AQMP presents the District's strategies for attaining air quality standards in a series of control measures. CARB incorporates the components of the Plan into the State Implementation Plan (SIP). The District implements its measures through development, publication, and execution of rules with the force of law (the "Rulebook," above).

The AQMP was last revised in August 2003. The 2003 AQMP includes 21 short-term stationary and 3 mobile source control measures estimated to achieve significant reductions in VOC, NOx, and other pollutants by 2010. Thirteen of the measures are updates from previous versions of the AQMP, and eleven are new measures.

Measures that address ozone precursors, the main air quality problem in the Washington area, and that might be adaptable to this area include:

1) NOx reductions from RECLAIM (Regional Clean Air Incentives Market. RECLAIM allocates permissible levels of NOx and SOx emissions from facilities that emit 4 tons or more per year) (CMB-10) (NOx);
2) promotion of lighter color roofing and road materials programs and tree planting (MSC-01) (NOx, VOC);
3) promotion of catalyst-surface coating technology programs (MSC-03) (ozone)
4) truck stop electrification (MSC-05) (NOx, VOC);
5) natural gas fuel specifications (MSC-07) (NOx);
6) composting (WST-02) (VOC);
7) $5,000/ton VOC fee for stationary sources emitting over 10 tons per year of VOC (authorized by CAA for extreme ozone non-attainment areas) (FSS-04) (VOC);
8) Economic incentive programs (all pollutants) (FLX-01);
9) Mitigation fees for federal sources (all pollutants) (FSS-05);
10) Emissions reductions from in-use off-road equipment (FSS-06) (NOx, VOC).