

Outdoor Air Quality

The Sustainable Washington Environmental Health Action Guide

Picture This

One hot summer day when Charise boarded the bus to go to work, the driver told her that the trip would be free. It was an “Ozone Action Day” meaning that there were dangerously high levels of air pollution. The city was trying to help reduce the pollution by getting people to use public transit.

As Charise rode to work she thought about how bad the air must be to make the government decide to offer free bus rides. She wondered if it was safe for her children to play outside in that same air all day with their friends. All of a sudden, she wanted to know more about air pollution and its causes. She called the Metropolitan Air Quality Hotline to find out about what causes an “Ozone Action Day” and the impacts that such days can have on health.

Find out how you can get information on air pollution levels in your city.

Do You Know?

Outdoor air pollution is still a serious problem in most urban areas as well as in many rural ones in the United States. In urban areas, the problem affects low income and minority communities disproportionately because these groups tend to live in the core of urban metropolitan areas where air pollution tends to be the worst. Every year, millions of pounds of dangerous chemicals, gases, and particles are released into the air by our vehicles, power plants, factories, and the consumer products we use in our homes. Air pollution can have long-term effects on our health and can contribute to the development of respiratory tract infections, asthma, and lung cancer. The American Lung Association reports that rates of lung diseases such as these have been growing rapidly over the past decade.

Key Outdoor Air Quality Facts

- ▶ **Nearly 46 million Americans live in areas with air that is unhealthy.**
- ▶ **Researchers have found that higher percentages of African-Americans and Hispanics than whites live in areas that do not comply with national air quality standards for particulate matter, carbon monoxide, ozone, sulfur dioxide and lead.**
- ▶ **Air pollution comes from many sources, but cars, trucks, buses, and construction equipment are the biggest sources of air pollution, producing over one-third of air pollutants.**
- ▶ **The District of Columbia’s biggest air pollution problem is ground-level ozone. Motor vehicles account for over 40% of ozone-causing pollutants in the Washington area.**

What Are Ozone Action Days?

Ozone Action Days are declared by the government when air quality is predicted to violate U.S. Environmental Protection Agency (U.S. EPA) health-based standards (code RED days). In the Washington area, many public and private sector businesses are participating as “ENDZONE” Partners in developing Ozone Action Day plans that raise awareness about our air quality problems and reduce pollution. To find out more call the Metropolitan Washington Council of Governments at 202/962-3356.

The Daily Air Quality Forecast for Washington, D.C. can be obtained by calling the Air Quality Hotline at 202/962-3299.

Air Pollution Laws and Enforcement

The Clean Air Act (CAA) is the nation’s major air pollution law. Under the law the U.S. EPA sets health-based air pollution standards for major air pollutants; State and local governments must make sure air pollution standards are met.

In Washington, D.C., the Environmental Health Administration’s Division of Air Quality is responsible for making sure air pollution standards are met. Its responsibilities include:

- ▶ measuring air pollution regularly
- ▶ enforcing air pollution laws
- ▶ issuing air pollution permits
- ▶ forcing polluters to take action to reduce their pollution emissions
- ▶ making air pollution information available to the public

They monitor two types of air pollutants:

Hazardous Air Pollutants (HAPS)

Millions of pounds of toxic chemicals suspected of causing cancer or other serious health problems are released into the air from businesses and factories each year. These are called hazardous air pollutants, or HAPS. The government regulates 189 HAPS. A list of HAPS is available on the U.S. EPA web site at www.epa.gov/ttn/atw/index.html.

(See the **Toxic Substances and Hazardous Waste** fact sheet for more information)

Criteria Air Pollutants

The six most common air pollutants are called Criteria Pollutants. The government sets health-based pollution standards for each criteria air pollutant, called National Ambient Air Quality Standards (NAAQS). If air pollution levels in an area exceed these standards, that area is a “nonattainment” area and is violating air pollution laws. These areas must take steps to reduce pollution levels below the health standard.

The six criteria pollutants are:

Ozone (O₃). Ground-level ozone—an invisible gas—is the main ingredient of smog. Ozone is the Washington area’s most serious air pollution problem and Washington is still designated an ozone “nonattainment” area by the U.S. EPA. Ozone is formed when different types of air polluting emissions from vehicles, power plants and factories react with sunlight. The main pollutants that contribute ground-level ozone are hydrocarbons (Volatile Organic Compounds or VOCs) and nitrogen oxides (NO_x). Heat and sunlight are also important contributing factors to our area’s ozone problem. That is why ozone and smog levels are the worst during the day, especially during the long, hot days of summer (actually, between April and October).

CODE (POLLUTION INDEX)	AIR QUALITY	WEATHER	ACTIONS
RED (151–200) Ozone Action Day!	Unhealthy	Temperatures in the 90s to 100s; hazy, humid, stagnant air.	Active children and adults, and people with respiratory problems such as asthma should avoid prolonged outdoor exercise and comply with pollution reduction measures (below).
Orange (101–150)	Approaching Unhealthy	Temperatures in the upper 80s to 90s and light wind.	Refuel cars only after dusk; limit driving; share rides, combine trips; avoid mowing lawns with gas-powered mowers; don’t idle engines.
Yellow (51–100)	Moderate	Mild Temperature in upper 70s to 80s; winds under 15 mph	Unusually sensitive people should limit outdoor exertion. Consolidate trips.
Green (0–50)	Good	Cool, windy, raining, clearing.	No health impacts are expected when air quality is good, but if possible try to minimize impact by keeping cars tuned and using mass transit when possible.



Carbon Monoxide (CO) is an odorless, poisonous gas. CO is produced by the incomplete burning of carbon in fuels. Major sources include automobile exhaust, woodstoves, incinerators, and other industrial sources.

Health Impact: Ozone damages lung tissue and causes breathing problems, including asthma, coughing, sneezing, and chest pain. Ozone can suppress the body's immune system, and can decrease lung capacity up to 20 percent in some adults. Over 27 million children under the age of 13 are exposed to unhealthy levels of ozone.

Ecological Impact: Plants and trees help clean our air; but ground-level ozone (or smog) damages their ability to do this. (While ozone is a dangerous air pollutant near the ground, ozone in the upper atmosphere is good, shielding the earth from harmful radiation from the sun.)

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Health Impact: CO reduces the body's ability to bring oxygen to the brain, heart, and other important organs. It is particularly dangerous to babies and people with heart disease.

Nitrogen Dioxide (NO²) is a brownish, acidic gas that also reacts with other gases to form ozone and smog. Fuel emissions from automobiles and power plants forms NO².

Health Impacts: NO² irritates the lungs, causing bronchitis and pneumonia. It also contributes to smog and acid rain.

Sulfur Dioxide (SO²) is formed by the burning of sulfur containing fuels such as coal and oil. Steel mills, refineries, and pulp and paper mills are also sources of SO² pollution.

Health Impacts: Breathing problems, lung damage, heart problems. It is especially harmful to those with

asthma, bronchitis, emphysema, and cardiovascular disease.

Ecological Impact: It also causes acid rain which damages plants, trees, crops, lakes, rivers, and historic buildings.

Particulates are tiny particles that are suspended in the air that, when inhaled, can cause lung damage. These tiny particles come from the burning of fuels (e.g. from trucks and buses) or dust from construction or mining. The particles can also include dirt, soot, smoke, and even liquid droplets emitted from factory smokestacks and other sources.

Health Impacts: While the body filters out larger particles, smaller particles are inhaled, causing lung damage, breathing problems, and triggering asthma. Eighty-nine million people in the U.S. live in areas with unhealthy levels of particulates.

Lead (Pb) pollution outdoors has been reduced significantly since leaded gasoline was banned several years ago. But outdoor lead pollution still exists, caused by the lead smelters, burning of lead batteries, and burning of lead-contaminated waste oil. It can be inhaled, eaten in food, ingested in water, soil, or dust. Infants and young children are especially sensitive to lead pollution. Lead pollution is most serious indoors, where people are exposed to it from old house paint and dust. See the Childhood Lead Pollution fact sheet for more information.

Health Impacts: Lead causes damage to the brain, blood, kidneys, and immune system. It also causes reproductive disorders in adults and developmental disorders in children.

Take Action!

Air Pollution from Vehicles

Vehicle emissions are single biggest source of air pollution, producing almost one-third of all air pollutants.

Walk and Bike More—Drive Less. Plan ahead to combine errands into one trip when possible and avoid driving during peak hours. Many errands take place within one mile of home. Walk or bike on these shorter trips to reduce pollution and get some exercise.

Take Public Transportation. METRO provides quality bus and light rail transportation.

Contact the METRO at 202/637-7000 (TDD: 202/638-3780) for current route and schedule information.

Carpooling. Avoid driving alone. Share driving costs and responsibilities with co-workers.

Don't Refuel or Idle on an Ozone Action Day. These activities release a significant amount of ozone-causing emissions that make air quality even worse. If you must refuel, do so after dusk.

Drive Carefully. Automobiles are most efficient at steady, medium speeds. Cars driving at 55 mph will get better gas mileage than those driving 65 mph, saving money and reducing pollution.

Keep Car Well Maintained. A properly maintained car will run more efficiently and produce little pollution. Good maintenance practices include:

- ▶ regular tune-ups
- ▶ keeping tires properly inflated
- ▶ keeping air filters and catalytic converters clean
- ▶ not removing or tampering with pollution controls, i.e. catalytic converters
- ▶ not overfilling or “topping-off” gas tank, which causes polluting gas fumes to escape

Buy Fuel Efficient Cars. When buying a new or used car, check its posted fuel efficiency and buy the most fuel efficient model. The U.S. EPA’s Fuel Economy Guide provides the latest fuel efficiency information for new model cars.

Support Clean Technology for Buses. Diesel fuel from buses is a real problem in the District. Ask your local government representatives to support cleaner public transportation options like buses that run on clean burning natural gas.

Air Pollution from Home and Work

Using consumer products such as paints, hairspray and cleaners in the home and at work contribute to air pollution problems. In the D.C. area, over 40 million pounds of ground-level ozone causing VOCs (volatile organic compounds) are released by residents every year. This is the same level of pollution produced by 3 million cars driving 10,000 miles a year!

Every day, and especially on Ozone Action Days:

Conserve Electricity and Save Money. Power plants are also a major source of air pollution.



Clean buses that run on electricity or natural gas reduce the amount of carbon monoxide released into the environment.

**Minimize
your contribution
to air pollution by
buying less, reusing more,
and recycling what you can.
Recycling will help keep trash
from being burned, will
reduce air pollution,
and will save
resources.**

- ▶ Turn lights and appliances off when not in use
- ▶ Use energy-efficient lighting—for lights that you leave on more than a few hours a day, replace regular incandescent light bulbs with energy efficient fluorescent light bulbs. If you have outdoor safety lighting, consider installing lights that are controlled by a motion detector.
- ▶ Buy the most energy efficient appliances you can find—look for the label that tells you how much energy an appliance will use. Using these appliances can also help you save money on your utility bill.
- ▶ Raise the temperature level of air conditioners a few degrees in summer and lower the temperature of heaters a few degrees in winter
- ▶ Ensure your home is properly insulated and weatherized—Call the D.C. Energy Office at 202/673-7797 for helpful tips and information.
- ▶ Run dishwashers, washing machines, and dryers only when full (but be careful to have ventilation!—See the **Indoor Air Quality** fact sheet for more information).

▶ Participate in energy conservation programs. Call your electric utility—Pepco—at 202/833-7500 or visit their web site at <http://www.pepco.com> to find out about their energy efficiency programs.

▶ Find out about your electricity on the Environmental Defense website: <http://www.environmentaldefense.org>

Seal Chemical Containers Tightly.

Make sure that containers of household chemical products are sealed tightly. Fumes from chemicals stored in open or loose containers will release into the air, causing air pollution.

On Ozone Action Days, refrain from using oil-based paint or solvents. Defer use of household consumer products that release fumes or evaporate easily.

Reduce, Reuse, Recycle. The more we consume, the more we pollute. Manufacturing all those products we buy can be very polluting. The stuff we throw away is sometimes burned in incinerators that produce air pollution. Minimize your contribution to air pollution by buying less, reusing more, and recycling what you can. Recycling will help keep trash from being burned, will reduce air pollution, and will save resources. See the Recycling fact sheet for more information.

Keep Woodstoves and Fireplaces Well Maintained. A well-maintained woodstove, fireplace, or chimney will release much less pollution. Use them only when necessary. Burn dry, well-seasoned wood.

Get Help. Contact the Environmental Health Administration’s Air Quality Division (Compliance and Enforcement Branch) at 202/535-2250 to make a complaint about air pollution or odors in your neighborhood.

Attend Public Hearings. All point-source polluters—businesses or industry that emit pollutants from



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operations—must be granted a permit by the EHA to do so. The meetings to approve permit applications are open to the public. Contact the Environmental Health Administration's Air Quality Division (www.environ.state.dc.us) at 202/535-2250 to find out when and where public hearings occur.

Contact Your Local Government Officials. Call or write to encourage them to support policies that prevent air pollution at the local and federal level. See the Government Officials fact sheet for contact details.

Resources

Local Contacts

District of Columbia Environmental Health Administration, Division of Air Quality has information on local air pollution problems, enforcement efforts, and

public meetings. Call 202/535-2250 or visit their web site at www.environ.state.dc.us.

American Lung Association of the District of Columbia (www.aladc.org) has information on the health effects of air pollution. Call 202/682-5864.

Regional Contacts

Metropolitan Washington Council of Governments (www.mwcog.org), Department of Environmental Programs has information about regional air pollution, pollution prevention programs, and public meetings of the Metropolitan Washington Air Quality Committee. Call 202/962-3200.

Washington, D.C. Air Quality Hotline has daily recordings about the Air Quality Index and Ozone Action Days in Washington, D.C. Call 202/962-3299.

U.S. EPA Region 3 Division of Air Protection Division (www.epa.gov/region03) has information on air pollution and health safety. Call 215/814-2100.

U.S. EPA's Region 3 Public Access Line can provide copies of the "National Air Quality and Emission Trends Report," an annual summary of air pollution levels across the U.S. Call 800/438-2474.

National

U.S. EPA's Office of Air and Radiation (<http://www.epa.gov/oar>) has extensive information on air pollution.

The **U.S. EPA National Center for Environmental Publications** can supply you with copy of "The Plain English Guide to the Clean Air Act," an easy to read guide to the nation's major air pollution law. Call 800/490-9198.

Full mailing addresses and phone numbers of organizations listed on this fact sheet are available in this Guide's Directory of Organizations.

The Sustainable Washington Environmental Health Action Guide is an environmental health and information tool for Washington, D.C. residents compiled and maintained by the Sustainable Washington Alliance.

The Guide was developed in partnership with the D.C. Department of Health, Environmental Health Administration and Environmental Defense. Together, the Sustainable Washington Alliance, the Environmental Health Administration, and Environmental Defense undertook this project to create a resource tool that expands D.C. residents' awareness of environmental issues that affect individual and community health and the quality of life in D.C. neighborhoods.

This fact sheet is also available on the Sustainable Washington Alliance website: <http://www.swampnet.org> and the Environmental Health Administration website: <http://www.environ.state.dc.us/>

For more information contact: Sustainable Washington Alliance c/o Concern, Inc. 1794 Columbia Rd. Washington, D.C. 20009 202.328.8160

Disclaimer: The information in this guide has been compiled from recognized sources and is accurate to the best of our knowledge. The information presented should not be considered as medical advice and is not a substitute for care by a licensed health professional. The Sustainable Washington Alliance is not responsible for any errors or inaccuracies presented.