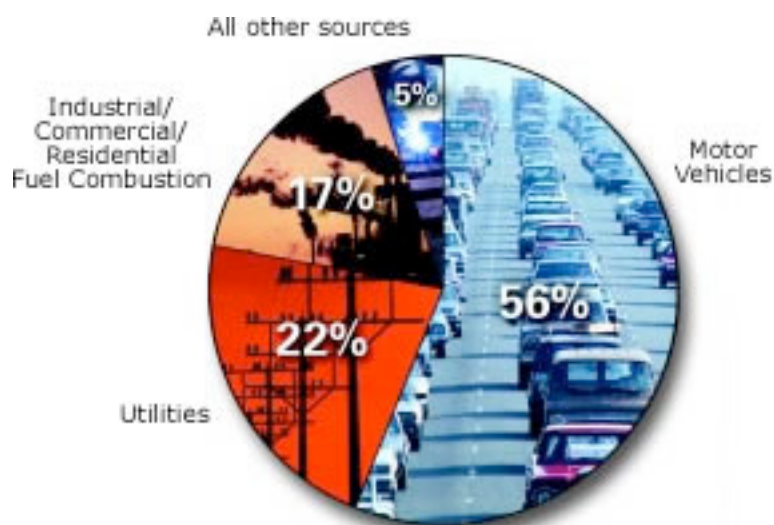


# Bad Nearby

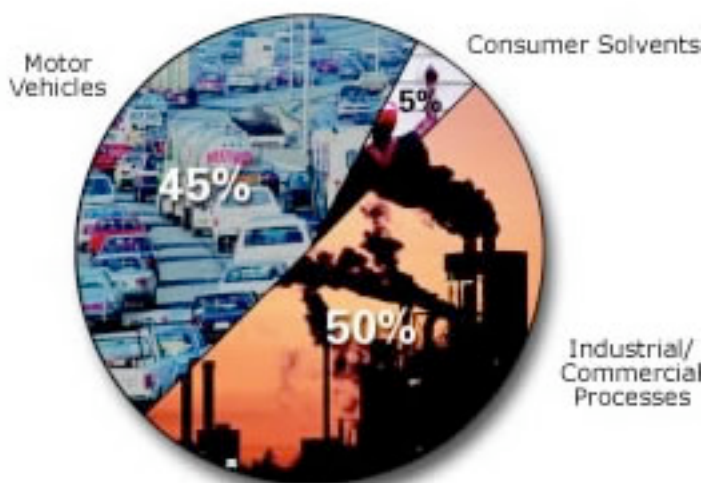
<http://www.epa.gov/air/oaqps/gooduphigh/bad.html#6>

## What Causes "Bad" Ozone?

Ground-level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO<sub>x</sub> and VOC.



### Sources of NO<sub>x</sub>



### Sources of VOC

At ground level, ozone is a harmful pollutant. Ozone pollution is a concern during the summer months because strong sunlight and hot weather result in harmful ozone concentrations in the air we breathe. Many urban and suburban areas throughout the United States have high levels of "bad" ozone. But many rural areas of the country are also subject to high ozone levels as winds carry emissions hundreds of miles away from their original sources.

### **How Does "Bad" Ozone Affect Human Health and the Environment?**

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. "Bad" ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue.

Healthy people also experience difficulty breathing when exposed to ozone pollution. Because ozone forms in hot weather, anyone who spends time outdoors in the summer may be affected, particularly children, outdoor workers and people exercising. Millions of Americans live in areas where the national ozone health standards are exceeded.

Ground-level or "bad" ozone also damages vegetation and ecosystems. It leads to reduced agricultural crop and commercial forest yields, reduced growth and survivability of tree seedlings, and increased susceptibility to diseases, pests and other stresses such as harsh weather. In the United States alone, ground-level ozone is responsible for an estimated \$500 million in reduced crop production each year. Ground-level ozone also damages the foliage of trees and other plants, affecting the landscape of cities, national parks and forests, and recreation areas.

### **What Is Being Done About "Bad" Ozone?**

Under the Clean Air Act, EPA has set protective health-based standards for ozone in the air we breathe. EPA, state, and cities have instituted a variety of multi-faceted programs to meet these health-based standards. Throughout the country, additional programs are being put into place to cut NO<sub>x</sub> and VOC emissions from vehicles, industrial facilities, and electric utilities. Programs are also aimed at reducing pollution by reformulating fuels and consumer/commercial products, such as paints and chemical solvents, that contain VOC. Voluntary programs also encourage communities to adopt practices, such as carpooling, to reduce harmful emissions.

***We live with ozone every day. It can protect life on earth or harm it, but we have the power to influence ozone's impact by the way we live.***

# Actions You Can Take

## High-Altitude "Good" Ozone

- Protect yourself against sunburn. When the UV Index is "high" or "very high": Limit outdoor activities between 10 am and 4 pm, when the sun is most intense. Twenty minutes before going outside, liberally apply a broad-spectrum sunscreen with a Sun Protection Factor (SPF) of at least 15. Reapply every two hours or after swimming or sweating. For UV Index forecasts, check local media reports or visit: [www.epa.gov/sunwise/uvindex.html](http://www.epa.gov/sunwise/uvindex.html)
- Use approved refrigerants in air conditioning and refrigeration equipment. Make sure technicians that work on your car or home air conditioners or refrigerator are certified to recover the refrigerant. Repair leaky air conditioning units before refilling them.

## Ground-Level "Bad" Ozone

- Check the air quality forecast in your area. At times when the Air Quality Index (AQI) is forecast to be unhealthy, limit physical exertion outdoors. In many places, ozone peaks in mid-afternoon to early evening. Change the time of day of strenuous outdoor activity to avoid these hours, or reduce the intensity of the activity. For AQI forecasts, check your local media reports or visit: [www.airnow.gov](http://www.airnow.gov)
- Help your local electric utilities reduce ozone air pollution by conserving energy at home and the office. Consider setting your thermostat a little higher in the summer. Participate in your local utilities' load-sharing and energy conservation programs.
- Reduce air pollution from cars, trucks, gas-powered lawn and garden equipment, boats and other engines by keeping equipment properly tuned and maintained. During the summer, fill your gas tank during the cooler evening hours and be careful not to spill gasoline. Reduce driving, carpool, use public transportation, walk, or bicycle to reduce ozone pollution, especially on hot summer days.
  - Use household and garden chemicals wisely. Use low VOC paints and solvents. And be sure to read labels for proper use and disposal.

## Clean Air

### Things You Can Do For Cleaner Air

#### Drive Less -- Drive Smart



About half of the air pollution comes from cars and trucks. Two important ways to reduce air pollution are to drive less -- even a little less -- and to drive smart. Taking fewer trips in your car or truck helps cut air pollution. And adopting smart driving habits reduces your car's emissions.

Driving less doesn't mean you have to stay home. Try combining driving with alternative modes of transportation:

- 1 Carpool.
- 2 Walk or ride a bicycle.
- 3 Shop by phone or mail.
- 4 Ride public transit.
- 5 Telecommute.

Driving smart keeps pollution at a minimum. \*

- 6 Accelerate gradually.
- 7 Use cruise control on the highway.
- 8 Obey the speed limit.
- 9 Combine your errands into one trip.
- 10 Keep your car tuned and support the smog check program.
- 11 Don't top off at the gas pumps.
- 12 Replace your car's air filter.
- 13 Keep your tires properly inflated.
- 14 What about smoking vehicles?

Contact the EPA's Office of Air Quality Planning & Standards.

\* What you do when you are stuck in traffic and not "driving" can be very important as well. Consider turning your engine off if you will be idling for long periods of time.

That's not all. When shopping for your next car...

- 15 Look for the most efficient, lowest polluting model--or even use either a non-polluting car or zero emission vehicle. Visit these web sites for information that will help you identify clean and fuel efficient vehicles in any part of the country:

- [The DOE/EPA Fuel Economy Guide](http://www.fueleconomy.gov/)

<http://www.fueleconomy.gov/>

If you must drive on days with unhealthy air, drive your newest car. Newer cars generally pollute less than older models.

## Choose Air-Friendly Products

Many products you use in your home, in the yard, or at the office are made with smog-forming chemicals that escape into the air. Here are a few ways to put a lid on products that pollute:

- 16 Select products that are water-based or have low amounts of volatile organic compounds (VOCs).
- 17 Use water-based paints. Look for paints labeled "zero-VOC."
- 18 Paint with a brush, not a sprayer.
- 19 Store solvents in air-tight containers.
- 20 Use a push or electric lawn mower.
- 21 Start your barbecue briquettes with an electric probe, or use a propane or natural gas barbecue.

## Save Energy



Saving energy helps reduce air pollution. Whenever you burn fossil fuel, you pollute the air. Use less gasoline, natural gas, and electricity (power plants burn fossil fuels to generate electricity):

- 22 Turn off the lights when you leave a room.
- 23 Replace energy hungry incandescent lights with fluorescent lighting.
- 24 Check with your utility company for energy conservation tips, like purchasing energy saving appliances.
- 25 Use a thermostat that automatically turns off the air conditioner or heater when you don't need them.
- 26 Add insulation to your home.
- 27 Use a fan instead of air conditioning.
- 28 Use an EPA-approved wood burning stove or fireplace insert.
- 29 Heat small meals in a microwave oven.
- 30 Insulate your water heater.
- 31 Install low flow showerheads.
- 32 Dry your clothes on a clothesline.

## Waste Not



It takes energy to make and sell the products we use. Here are ways to cut energy use, reduce air pollution, and save money.

- 33 Choose recycled products.
- 34 Choose products with recyclable packaging.
- 35 Reuse paper bags.
- 36 Recycle paper, plastics, and metals.
- 37 Print and photocopy on both sides of the paper.

## Watch out for the small stuff



When you breathe, very small particles -- such as dust, soot, and acid droplets -- can slip past your lung's natural defense system. These particles get stuck deep in your lungs and may cause problems -- more asthma attacks, bronchitis and other lung diseases, decreased resistance to infections, and even premature death for the elderly or sick. Here are a few things you can do to reduce particulate matter pollution and protect yourself:

- 38 Don't use your wood stove or fireplace on days with unhealthy air.
- 39 Avoid using leaf blowers and other types of equipment that raise a lot of dust. Use a rake or broom instead.
- 40 Drive slowly on unpaved roads.
- 41 Drive less, particularly on days with unhealthy air.
- 42 Avoid vigorous physical activity on days with unhealthy air.

## Know The Inside Story



Air pollution is a problem indoors and out. Most people spend at least 80 percent of their lives indoors. Here are some ways you can reduce pollution in your home, office or school:

- 43 Don't smoke. Send smokers outside.
- 44 Products such as cleaning agents, paints, and glues often contain harmful chemicals. Use them outdoors or with plenty of ventilation indoors.
- 45 Use safer products, such as baking soda instead of harsher chemical cleaners.
- 46 Don't heat your home with a gas cooking stove.
- 47 Have your gas appliances and heater regularly inspected and maintained.
- 48 Clean frequently to remove dust and molds.

Visit [EPA's Indoor Air Quality Home Page](#) for more information.

## Speak Up For Clean Air

Do what you can to reduce air pollution. It will make a difference. Use your civic influence to improve regional and national air pollution standards:

- 49 Write to your local newspaper. Support action for healthy air.
- 50 Let your elected representative know you support action for clean air.