AMERICAN LUNG ASSOCIATION®

State of the Air: 2004

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The American Lung Association assumes sole responsibility for the content of the ***American Lung Association State of the Air: 2004***.

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Contents

55%

Over half of the U.S. population lives in counties which have unhealthy levels of either ozone or particle pollution.

Executive Summary

Millions of Americans were subjected to dangerous levels of air pollution during the years 2000 to 2002. The ***American Lung Association State of the Air: 2004*** presents information on air pollution on a state-by-state, county-by-county basis, using the most up-to-date quality assured data available for nationwide comparisons.

For the first time, in addition to its traditional focus on ozone pollution, the ***American Lung Association State of the Air: 2004*** expands to include a county-level report card on particle pollution, a pollutant that represents risks to the lives of far too many Americans. In addition, this year's report shows that ozone remains a persistent threat across large parts of the United States.

Some of the facts from this report card on air pollution are below, taking a look at the nation as a whole:

Nearly half the U.S. population — 47% — lives in areas with unhealthful levels of ozone.
Counties that were graded F for ozone levels have a combined population of 136 million. Almost half of America is living in counties where the air quality places them at risk for decreased lung function, respiratory infection, lung inflammation and aggravation of respiratory illness.

Over one quarter — 28% — of the U.S. population lives in areas with unhealthful short-term levels of particle pollution.
Over 81 million Americans live in areas where they are exposed to unhealthful short-term levels of particle pollution. Short-term, or acute, exposure to particle pollution has been shown to increase heart attacks, strokes, and emergency-room visits for respiratory ailments and cardiovascular disease, and most importantly, increase the risk of death.

Nearly one quarter — 23% — of the U.S. population lives in areas with unhealthful year-round levels of particle pollution.
Sixty-six million Americans suffer from chronic exposure to particle pollution. Even when levels are fairly low, over time exposure to particles can increase risk of hospitalization for asthma, damage to the lungs and significantly increase the risk of premature death.

Over half — 55% — of the U.S. population lives in counties which have unhealthy levels of either ozone or particle pollution.
Approximately 159 million Americans live in 441 counties where they are exposed

to unhealthy levels of air pollution in the form of either ozone or short-term or year-round levels of particles.

About 46 million Americans — nearly 16% — live in 48 counties with unhealthy levels of all three: ozone and short-term and year-round particle pollution.

With the risks from airborne pollution so great, the American Lung Association seeks to inform people who may be in danger. Many groups are at greater risk because of their age or the presence of a chronic lung or cardiovascular disease. Those groups include:

Adult and Pediatric Asthma — Nearly 7.5 million adults and nearly 3 million children with asthma live in parts of the United States with very high levels of ozone. Nearly 4.5 million adults and 1.8 million children with asthma live in areas with high levels of short-term particle pollution. Three and a half million adults and nearly one and a half million children with asthma live in counties with unhealthful levels of year-round particle pollution.

Older and Younger — Over 15 million adults 65 and over and 29 million children age 14 and under live in counties with unhealthful ozone levels. Over 9.3 million seniors and over 17.8 million children live in counties, that have unhealthful short-term levels of particle pollution. Close to 7.6 million seniors and over 14 million children live in counties with unhealthful levels of year-round particle pollution.

Chronic Bronchitis and Emphysema — Over 4.4 million people with chronic bronchitis and 1.5 million with emphysema live in counties with unhealthful ozone levels. Some 2.6 million people with chronic bronchitis and 888,000 with emphysema live in counties with unhealthful levels of short-term particle pollution. Over 2 million people with chronic bronchitis and nearly three quarters of a million (720,000) with emphysema live in counties with unhealthful year-round levels of particle pollution.

Cardiovascular Disease — Over 16.7 million Americans with cardiovascular diseases live in areas with unhealthful levels of short-term particle pollution; 13.6 million live in counties with unhealthful levels of year-round particle pollution. Cardiovascular diseases include heart disease, heart attacks and strokes.

In addition to providing specific grades for each county with ozone and particle pollution monitor, the ***American Lung Association State of the Air: 2004*** also discusses key steps needed to improve the air we all breathe. Those steps include:

Protect the Clean Air Act. The American Lung Association is greatly concerned about threats to one of the most effective public health laws ever passed, the Clean Air Act. Threats come from two areas: legislative and regulatory proposals to roll back key provisions of the law, and continued delays in putting into place what the science tells us is needed to clean up air pollution. The American Lung Association has taken legal action to protect this valuable clean air tool, and encourages everyone to tell his or her members of Congress to protect the Clean Air Act.

Clean Up Dirty Power Plants. Old coal-fired power plants have become some of the biggest industrial contributors to our unhealthy air, especially to the level of particle pollution in the eastern United States. The toll of death, disease and environmental destruction caused by coal-fired power plant pollution continues to mount. The Environmental Protection Agency (EPA) issued proposed rules in 2003 that would give states the tools to clean up these plants. The rules need to be stronger and, most of all, made final so work can begin.

Clean Up Dirty Diesel. While new rules to regulate emissions of diesel truck and buses will make a great deal of difference in the quality of our air, these rules alone will not be enough. EPA also must take steps to control heavy equipment and other nonroad diesel engines and fuel to the same degree as diesel buses and trucks. In fact, heavy equipment diesel engines (such as bulldozers, excavators, tractors, electric generators and forklifts) are a larger source of emissions than diesel trucks and buses.

Individuals can do a great deal to help reduce air pollution outdoors as well. Here are some simple, but effective ways:

Reduce driving. Combine trips, walk, bike, carpool or vanpool and use buses, subways or other alternatives to driving. Vehicle emissions are a major source of air pollution. Support community plans that provide ways to get around that don't require a car, such as more sidewalks, bike trails and transit systems.

Fill up cars after dark. Gasoline emissions evaporating while you fill up your gas tank contribute to forming ozone. Filling up after dark helps prevents the sun from turning those gases into ozone.

Don't burn wood or trash. Burning firewood and trash are some of the largest sources of particles in many parts of the country. Convert your woodstoves into natural gas, which has far fewer emissions. Dispose of trash properly.

Get involved in your community's review of the air pollution plans and support state and local efforts to clean up air pollution.

Send an e-mail or fax to tell your member of Congress to protect the Clean Air Act. Log on at **www.lungusa.org** to see how easy that can be.

Particle Pollution

has emerged as

a widespread problem...

Ozone

continues to be

the most pervasive air pollutant...

Introduction

Each year, the American Lung Association assesses the toll that air pollution places on our nation's ability to breathe. This year's look at county-level air quality expands by more than two times the information provided in previous reports. The ***American Lung Association State of the Air: 2004*** for the first time examines an additional pollutant, $PM_{2.5}$ or particle pollution[1], in two new measures: the short-term exposure, which are occasional spikes in particle pollution from relatively infrequent events (although these spikes may last hours to days); and the year-round or chronic exposure from particles produced routinely in the environment. In addition, the report examines the latest qualityassured data on ozone for each county that has an ozone monitor, as it has for five years.

Particle Pollution

Particle pollution has emerged as a widespread problem, especially in large parts of the eastern United States and California. This report looks first at the presence of particle pollution by U.S. Environmental Protection Agency (EPA) region in the next chapter, *Regional Analyses*. This report also includes tables with each state's short-term and year-round particle grades for each county with a particle monitor. These data come from a network of monitors in over 700 counties established in 1998 and 1999 following EPA's adoption of a new health standard to address particle pollution in 1997. This is the first such analysis of the three years of complete data from those monitors.

Ozone Pollution

Ozone continues to be the most pervasive air pollutant, and remains a present danger despite decreases in levels of this pollutant across the nation since 1980. During the 1990s, ozone concentrations remained remarkably and uncomfortably unchanged.[2] EPA's own records show this stagnation. However, EPA's data are now showing a slight trend toward lower ozone readings, a trend also reflected by the analysis in this report. This slight decline also comes in the face of a particularly hot summer in 2002 when many cities reported "Code Red" days, when air pollution levels reached unhealthful levels for all populations. EPA speculates that these declines may be coming from controls put in place to clean up coal-fired power plants in the eastern United States.[3] If so, this trend will likely persist in future reports, as work is expected to continue in this period as additional control measures are installed on plants through May 2004.

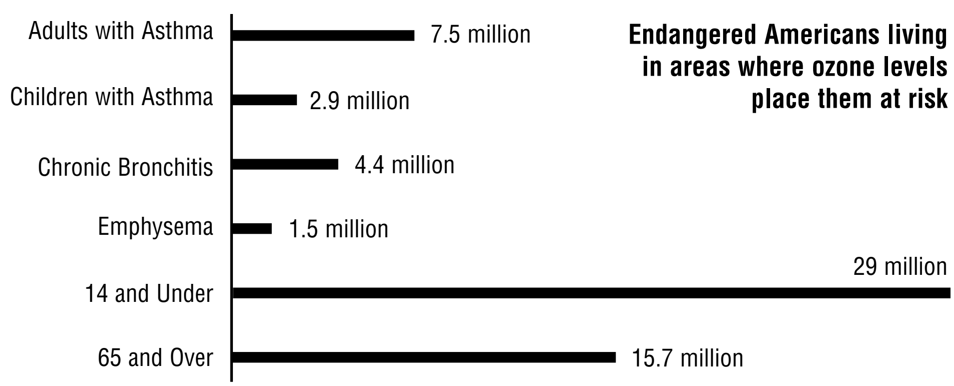
Millions Are At Risk

For the first time, the data allow a tally of the number of people who live in counties where monitors show they have unhealthy levels of air pollution, in the form of either ozone or short-term or year-round levels of particle pollution.

- 159 million Americans — 55% of the U.S. population — live in 441 counties where they are exposed to unhealthy levels of air pollution in the form of either ozone or short-term levels or year-round levels of particle pollution.
- 46 million Americans — nearly 16% of the population — live in 48 counties with unhealthy levels of all three: ozone and particle pollution in both short-term and year-round levels.

Ozone

Even with the slight downturn in ozone levels, this report finds that nearly half of the people in the United States — 47% — live in counties with unhealthful levels of ozone pollution. Included are nearly 136 million Americans, an estimate that understates the problem considerably since it only includes counties where ozone monitors exist and have accumulated three years of data. Of those 136 million, many of those are especially at risk:



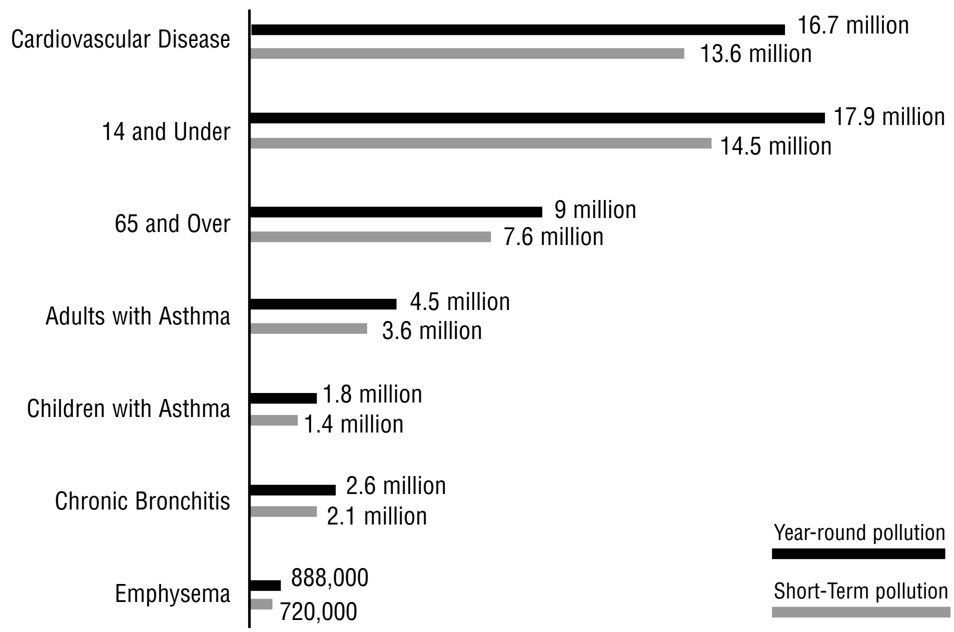
Particle pollution

All too many who live in areas with unhealthful ozone levels also face a second, even more dangerous threat: particle pollution. This report estimates that millions live in areas with unhealthful either short-term or year-round levels of particle pollution:

- 81 million live in counties with unhealthful short-term levels of particle pollution and
- 66 million live in counties with chronically unhealthful particle levels.

Those who are particularly vulnerable to ozone are also at greater risk from particles. Unfortunately, particle pollution also threatens another large group: people

Endangered Americans living in areas where particle pollution levels place them at risk



with cardiovascular diseases. All totaled, millions of especially endangered Americans are living in areas where particle pollution levels place them at risk.

The Basis for the American Lung Association State of the Air *Report*

Because millions are exposed and millions are at risk, the American Lung Association produces the ***American Lung Association State of the Air*** each year to alert individuals, families, industry and government leaders to the dangers inherent in the air we breathe.

In 2000, the American Lung Association initiated its ***State of the Air*** annual assessment to provide citizens with easy-to-understand air pollution summaries of the quality of the air in their communities that are based on concrete data and sound science. Counties are assigned grades ranging from "A" through "F" based on how often their air quality crosses into the "unhealthful" categories of EPA's Air Quality Index for ground-level ozone (smog) pollution, and now, for short-term particle pollution.

The Air Quality Index is, in turn, based on the national air quality standards. The air quality standard for ozone used as the basis for this report, 0.08 parts per million averaged over an eight-hour period, was adopted by the EPA in 1997 based on the most recent health effects information. For particle pollution, the Air Quality Index is based on, but is more conservative than the $PM_{2.5}$ 24-hour national standard. Also adopted in 1997, the national standard for $PM_{2.5}$ 24-hour levels is 65 $\mu g/m^3$. However, EPA set the Air Quality Index for particles to acknowledge that levels below 65 $\mu g/m^3$ are harmful to public health.[4]

To evaluate the year-round levels of particle pollution for any monitored county, the ***American Lung Association State of the Air: 2004*** uses the decision of EPA in its determination whether the county met or failed to meet the national air quality standards. More detailed discussion of the methodology is contained in Appendix A.

The grades in this report are assigned based on the quality of the air in areas, and do not reflect an assessment of efforts to implement controls that improve air quality. The grades should not be interpreted as an evaluation of the work of any state or local air pollution control programs.

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[1] The size of the particle pollution under discussion here is $PM_{2.5}$, also called fine particles or fine particulates. These particles are classified and monitored by size, being 2.5 microns and smaller in diameter. More explanation of these particles, their origins and health effects can be found in the chapter *Health Effects of Ozone and Particle Pollution*.

[2] EPA. *National Air Quality and Emissions Trends Report, 2003* Special Studies Edition. Washington, DC.: U.S. Government Printing Office, 2003. EPA Publication No. 454/R-03-005. http://www.epa.gov/oar/aqtrnd03/.

[3] EPA. Section 126 Rule: Revised Deadlines. 2002. 40 CFR 97 63:21522-30.

[4] See Appendix A for a complete discussion of the methodology for assessing these levels.

Field technician Fred Currie maintains the $PM_{2.5}$ monitors atop the Lincoln Street School in Augusta, Maine.

Photo taken by Richard Marriner. Used with permission of the Maine Department of Environmental Protection, Bureau of Air Quality.

Inside view of a $PM_{2.5}$ monitor in Houston, Texas.

Thanks to the Texas Commision on Environmental Quality and the Houston Department of Health & Human Services, Bureau of Air Policy.

An air quality monitoring station in Woodland, California, that monitors for ozone and fine particulates.

Photo courtesy of Larry Greene, Yolo-Solano Air Quality Management District, Davis, California.

Monitoring systems in trailer in Vermont.

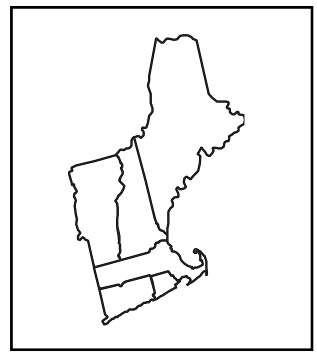
Courtesy of Vermont Department of Environmental Conservation.

Regional Analyses

The discussion below looks at the state grades by region, as EPA groups them. Air pollution varies significantly by region and by state. Appendix B contains a discussion of the sources of these pollutants by EPA region.

Region 1. The states in Region 1 apparently suffered from the especially hot summer of 2002, which gave many of these states more unhealthful ozone days than in the years covered by the 2003 report. Three of the six states — Connecticut, Massachusetts and Rhode Island — scored Fs for ozone levels within every county that was monitored. Over 80 percent of the population residing in those states was exposed to very high levels of ozone. Fairfield County, CT, ranked as the 21st most ozone-polluted county in the country, its first time on the "25 worst counties" list. In Maine, slightly better, four out of seven reporting counties received an F grade.

Conversely, particle pollution levels were low in five out of the six states. Connecticut was the exception with approximately 50 percent of its population living in counties with unacceptable levels of particles (Fairfield and New Haven counties earned those F grades for the short-term particle pollution measurement). Approximately 25 percent of Connecticut's population was living in areas that failed the pass/fail rating for year-round levels of particles.



Region 1
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Region 2. Thirteen counties in New Jersey were monitored for ozone last year and each one received an F. Those counties amounted to 71 percent of the state's total population. Three counties (Camden, Ocean and Gloucester) are among the nation's 25 most ozone-polluted counties. While the monitoring of particle pollution was not as thorough, the results were slightly better. Four out of six New Jersey counties passed the pass/fail rating for year-round levels of particle pollution. Union County earned an F for its short-term levels of particles.

Seventeen out of 25 counties in New York received an F rating for ozone levels. That translates to 80 percent of the people living in those 25 counties breathing unacceptable amounts of ozone. One notable change was the loss of the last ozone monitor in New York County (covering most of Manhattan) with the loss of the World Trade Center (the monitor was located on the Center). No new ozone monitor has been placed in that county.

Most counties in New York State had healthy levels of year-round particle pollution levels and received passing grades for short-term levels. The counties of New York and the Bronx, however, failed both. New York County ranked 22

Region 2
New Jersey, New York, Puerto Rico

in the list of counties most polluted by year-round levels of particle pollution. Queens also received an F for short-term levels of particle pollution but the year-round-level data was incomplete.

The metropolitan area of New York-Newark-Bridgeport, NY-NJ-CT-PA, continues to rank among the 25 most ozone-polluted cities in the nation, tying for 12th worst. The same metroplex ranks 18th worst among cities most polluted by year-round particle pollution, a new list this year. Parts of this large metropolitan area are also included in Regions 1 and 3.

Puerto Rico's levels of ozone and particle pollution are not included in this report. Historically, Puerto Rico's air quality is very good.

Region 3. The states in this Mid-Atlantic Region have continuing, serious problems with air pollution. Some of this problem blows in from other parts of the nation, but significant amounts are produced within the region. Charts in Appendix B describe the home-grown sources of pollution in the Mid-Atlantic.

Region 3
Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia

All the region's cities appearing on the list of most-ozone-polluted cities have been on these lists in years past. The metropolitan area of Philadelphia-Camden-Vineland, PA-NJ-DE-MD, ranked as the 11th most ozone-polluted city in the nation. Right behind it came Washington-Baltimore-Northern Virginia, DC-MD-VA-WV, tied for 12th worst with New York-Newark-Bridgeport, NY-NJ-CT-PA, which also includes counties in this region. Two other Pennsylvania cities ranked on this infamous list: Pittsburgh-New Castle, PA, ranked 17th and Lancaster, PA, tied for 23rd. The Mid-Atlantic placed all or parts of 5 cities on the list of the 25 worst cities for ozone.

For the first ranking for worst cities in concentrations of particle pollution, this region appeared multiple times on both of the notorious lists. Pittsburgh-New Castle, PA, debuted at 4th worst on the short-term particle pollution list and 5th worst on the year-round list. Weirton-Steubenville, WV-OH, also appeared on both lists, ranking 13th worst on the year-round particle pollution list and 21st for the short-term. Washington-Baltimore-Northern Virginia, DC-MD-VA-WV, was the third metropolitan area to make both lists, coming in as the 18th worst for short-term particle pollution levels and 21st for year-round levels. Other cities with serious year-round particle pollution problems in this region are Huntington-Ashland, WV-KY-OH (number 22), and York-Hanover-Gettysburg, PA, and Lancaster, PA, tied for 24th worst. On the list of cities with the worst short-term particle levels was also Harrisburg-Carlisle-Lebanon, PA, ranked 23rd worst.

Delaware's entire population is living in areas graded F for ozone levels. Looking at the level of particle pollution only slightly improves things. New Castle County, which represents 63 percent of the population, failed both tests for particle pollution.

The District of Columbia, Maryland and Pennsylvania didn't fare much better with ozone levels. All areas reported scored Fs (except Lawrence County, PA, scoring a D). Those results show little change from the previous year. Lycoming County, PA, was notable for dropping two grades to an F from last year's C. In addition to the poor ozone score, Washington, DC had unhealthful grades for both short and year-round particle pollution, ranking 25th worst "county" in the nation for short-term particle pollution levels.

Maryland had three counties in the list of the most ozone-polluted counties in the nation: Anne Arundel and Harford Counties tied for 16th worst, and Cecil County ranked at 24th worst. Baltimore City ranked 23rd worst among counties with poor short-term particle levels.

Pennsylvania's Allegheny County, home to Pittsburgh, ranked 5th worst in the country for short-term particle levels and 7th worst for year-round levels.

Twenty counties were monitored in Virginia. Of the people residing in those counties, 95 percent of them live in areas scoring an F for ozone levels. Fairfax County represents one-third of the population in that group and reports the highest ozone levels in Virginia.

West Virginia's ozone pollution levels remained relatively the same compared to the previous year. However, with the new particle pollution rankings, several counties emerge among the worst counties for year-round particle pollution in the nation: Kanawha, at 19th worst, and Hancock, at 24th worst, both of which also received an F for ozone pollution.

Region 4. Ozone levels generally improved in the Southeast, but ozone remains a serious problem. Most states had multiple counties showing improvements in ozone. Some counties increased two grades such as Pinellas County, FL; Lee County, MS; and Davidson County, TN; and four counties in Kentucky. Trigg County, KY improved from an F to a B.

Region 4
Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Region 4 still has improvements to make, however. Based on monitored counties, 90 percent of North Carolina's population is living in areas with an F rating for ozone. Georgia has 84 percent of its population in areas with an F. For Florida, that number drops to a mere 4 percent.

The Southeast remains too well represented on the list of cities with the most ozone pollution: Knoxville-Sevierville-La Follette, TN, ranks as the 9th most ozone-polluted city in the nation. Charlotte-Gastonia-Salisbury, NC-SC, and Greensboro-Winston-Salem-High Point, NC, ranked numbers 14 and 16 in the list. Atlanta's ozone levels improved enough to drop it to the 21st spot on the list, as Atlanta-Sandy Springs-Gainesville, GA. Morristown-Newport, TN, (formerly part of the Knoxville, TN, metropolitan area) emerged the first time on this list at 22nd worst. The last Southeast city on the list of most ozone-polluted cities is Raleigh-Durham-Cary, NC. The Southeast scored 6 of the worst 25 spots.

Serious problems in the Southeast with both year-round and short-term particle pollution also show in the rankings. For year-round particle pollution, Atlanta-Sandy Springs-Gainesville, GA, begins as the 7th most polluted followed by Birmingham-Hoover-Cullman, AL, at 9th worst, Knoxville-Sevierville-La Follette, TN, at 12th worst; and Louisville-Elizabethtown-Scottsburg, KY-IN, tied for 22nd with the Huntington-Ashland, WV-KY-OH, metro area. Among the cities with the worst short-term particle problems, Birmingham-Hoover-Cullman, AL emerges in a tie for the 6th most polluted city. Also on both lists is Louisville-Elizabethtown-Scottsburg, KY-IN, ranked 20th on the short-term list.

Most Alabama counties showed some improvement in grades for ozone compared with the 2003 report. However, Jefferson County, home to Birmingham, ranked as the 9th worst county for short-term particle pollution, and 12th worst for year-round levels.

Florida, Mississippi and South Carolina aced the particle pollution year-round and short-term-level test with almost every county earning a passing grade. As mentioned earlier, most of the counties with ozone monitors in Florida show few unhealthful days. Mississippi also had similar readings during this period. Twelve of South Carolina's counties received F grades for ozone.

Every county with complete data from their particle pollution monitors in Georgia failed the year-round test, showing chronically unhealthful levels of particle pollution. Georgia fared better on the short-term measure, with only two counties earning F grades. However, the best news for Georgia is that for the first time in these reports, Fulton County is not listed among the 25 most ozone-polluted counties in the nation, although it still earned an F grade. Unfortunately, Fulton County also ranked 10th worst in the country on the year-round particle pollution list.

Tennessee's ozone grades improved, as evidenced by Davidson County's rise to a C from an F. Sevier County ranks as the 11th most ozone-polluted county in the nation. For the first time in these reports, Nashville and Memphis dropped off the list of the most ozone-polluted cities. However, Knox County appeared as 15th worst among counties with year-round particle pollution.

Kentucky's Jefferson County tied for 25th worst in the nation on the short-term particle pollution list.

Region 5. This is another region with serious air pollution problems, especially with high levels of particle pollution. Portions or all of 10 cities in the Midwest rank in the list of the 25 worst cities for year-round particle pollution, while 6 also rank in the 25 worst for short-term particle levels. Detroit-Warren-Flint, MI, ranks 6th worst on the year-round list and 12th on the short-term list. Cleveland-Akron-Elyria, OH, ranks 8th on the year-round list and 10th on the short-term list. Cincinnati-Middletown-Wilmington, OH-KY-IN, ranks 11th on the year-round and 17th on the short-term list. Weirton-Steubenville, WV-OH, ranks 13th on the year-round and 21st on the short-term. Chicago-Naperville-Michigan City, IL-IN-WI, ranks 14th on the list of worst cities for year-round particle pollution, while tied at 12th for short-term particle levels. The final Region 5 city on both lists is Louisville-Elizabethtown-Scottsburg, KY-IN, ranked 22nd for year-round levels and 20th for short-term. In addition, these four other cities ranked among the worst for year-round levels: Canton-Massillon, OH, at 15th, St.Louis-St.Charles-Farmington, MO-IL, at 20th, Huntington-Ashland, WV-KY-OH, tied at 22nd, and Columbus-Marion-Chillicothe, OH, tied for 24th.

Two Midwest cities show up on the list of worst ozone cities. Cleveland-Akron-Elyria, OH, placed 15th on that list, while Sheboygan, WI, ranked 25. This marks the first time midwestern cities have made this list.

Region 5
Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Illinois monitored 20 counties for ozone and seven scored Fs. One of them, unfortunately, was Cook County, home to Chicago. Because of Cook County's large size, it meant that 70 percent of the Illinois population (in those monitored areas) was living with unhealthful ozone conditions. Two Illinois counties show up on the list of those most polluted by year-round particle pollution: Cook County at number 17, and Madison County tied for the 24th spot. Cook County also ranks 19th among the worst for short-term particle pollution.

All but one of the counties reporting ozone records in Indiana received Fs, but that one exception was Greene County, with an A. The most drastic change to Indiana's report was that Elkhart County, which brought up its ozone score from an F to an A over the last few years, had dropped back to an F, slipping four grades. Only three of the counties monitoring particle pollution showed unhealthful short-term levels, but 10 of the 14 counties with complete monitoring failed the year-round test. Lake County tied at 16th among the worst for short-term particle pollution, and at 20th among the worst for long-term particle pollution.

Michigan had only two counties to have year-round levels of particle pollution that were unhealthful, while three counties received Fs for short-term levels. Wayne County, MI tied at 16th among the worst for short-term particle pollution, and ranked 9th among the worst for long-term particle pollution.

Ohio and Michigan scored very poor marks for ozone. Ohio did not report a single county being above the grade of F. Nevertheless, no Region 5 county ranked among the 25 worst ozone-polluted. Within Region 5, Ohio had the worst particle pollution with 12 out of 19 counties scoring an F for the short-term levels. Only two counties, Lake and Lucas, passed the year-round-level rating. Among the 25 counties with the worst long-term exposure to particle pollution were four from Ohio: Cuyahoga at 11th, Hamilton at 14th, Jefferson at 16th, and Scioto at 24th. Cuyahoga County was 13th worst and Hamilton County tied at 21st worst among those with the worst short-term particle pollution.

Wisconsin showed very promising scores for particle pollution with Milwaukee as the only F for the short-term rating. Wisconsin showed a mixed set of changes for ozone, with the most significant being more unhealthful days in Sheboygan, giving it the ranking among most ozone-polluted cities.

Region 6. Ozone remains a serious problem for select areas in Region 6, while particle pollution presents a relatively rare problem. Region 6 had two cities on the list of the most ozone-polluted: Houston-Baytown-Huntsville, TX, ranked at 5th worst; and Dallas-Fort Worth, TX, ranked as 10th worst.

In Arkansas, 95 percent of the population in monitored counties is living in areas that scored F for ozone levels. Particle pollution is minimal.

Louisiana parishes generally improved in ozone, with four improving one letter grade and three moving up two grades. Five parishes that had failed the ozone grading in the 2003 report now received passing grades. However, ten parishes still received an F for ozone. All Louisiana parishes received passing grades for short-term and year-round particle pollution.

Region 6
Arkansas, Louisiana, New Mexico, Oklahoma, Texas

New Mexico did not have any counties graded F for ozone or particle pollution. However, Doña Ana County reported more days with unhealthful ozone levels than in the 2003 report, so its grade dropped from a C to a D. One county, Sandoval, improved from a B to an A. New Mexico also reported no problems with particle pollution.

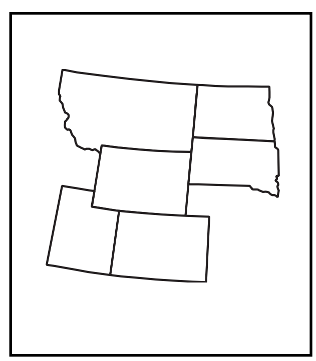
Unhealthful levels of ozone showed up in only two Oklahoma counties, with three counties moving to a passing grade compared to the 2003 report. Oklahoma has no areas with unhealthful particle pollution.

Harris County, TX, home of Houston, at 7th worst, holds the distinction of being the only county included in the top-ten most ozone-polluted counties that is not in California. In fact, unhealthful ozone levels in Texas place at risk almost 90 percent of the population in the monitored counties. Tarrant County ranked 14th worst. Texas is also the only state in the region with unhealthful levels of particle pollution, but it is only in one county (El Paso) and only for short-term levels.

Region 7
Iowa, Kansas, Missouri, Nebraska

Region 7. The most serious air pollution problem in Region 4 is with year-round particle pollution in the metropolitan area of St. Louis-St. Charles-Farmington, MO-IL, which ranked as the 20th worst city for that in the nation. In Region 7, only Missouri shows ozone levels that are of major concern. With scores similar to the previous year, eight out of 11 Missouri counties were graded F, representing 86% of the population of those counties. St. Charles County remained the worst in the state and actually did worse than it did in 2002. Two counties improved while one other (in addition to St. Charles) worsened.

Elsewhere in Region 7, things have not changed much. In Iowa, Scott remains the worst ozone-polluted county. Three counties in Iowa improved their grades; one dropped a grade. In Kansas, two counties — Sedgwick and Wyandotte — tied for the worst ozone pollution. Trego County, KS, got its first grade: a B. One county in Nebraska, Douglas, improved from a B to an A. All four states in Region 7 scored well for particle pollution. The only area failing both tests for particles was St. Louis City, MO. No other county, in all four states, earned a failing grade for particle pollution.



Region 8
Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

Region 8. Ozone is not much of a problem in Region 8, with the exception of Jefferson County, CO, and Salt Lake County, UT, both of which got an F. Jefferson County, in the Denver metropolitan area, dropped from a C in last year's report to an F. Four Region 8 states — Montana, North Dakota, South Dakota and Wyoming — had no ozone problems during this period.

Particle pollution, however, is another matter. Two Utah cities ranked among the 25 most polluted by short-term particles: Salt Lake City-Ogden-Clearfield, UT, stands at 6th worst, while Provo-Orem, UT, ties for 18th place. Two counties ranked on the list of worst counties for short-term particle pollution: Salt Lake County at number 9 and Utah County at number 23.

Five of Utah's seven reporting counties scored F for short-term measurements of particles. No counties in Utah failed the year-round-level tests. In Montana, three counties were graded F for the short-term measurements. One of those counties, Lincoln, also failed the year-round-level test for particle pollution.

North Dakota and South Dakota had no evidence of problems with particle pollution. Colorado and Wyoming had a few days in unhealthy ranges, but no consistent problems.

Region 9. This region has the highest levels of air pollution in the nation because of the extreme problem in California. California cities and counties dominate much of the lists of most-polluted cities and counties in the nation.

Region 9
Arizona, California, Hawaii, Nevada

As it has since the beginning of these series of reports, Los-Angeles-Long-Beach-Riverside, CA, remains the most ozone-polluted city in the nation. This year it now also tops the list of the most polluted cities for short-term and year-round particle pollution. Other California metropolitan areas on all three lists are: Fresno-Madera; Bakersfield; Visalia-Porterville; Merced; Hanford-Corcoran; and Modesto. Other California cities ranked on two lists: San Diego-Carlsbad-San Marcos, CA and Sacramento-Arden-Arcade-Truckee, CA-NV ranked on both the worst ozone and worst short-term particle pollution lists. Finally, the San Jose-San Francisco-Oakland, CA, metro area landed on the list of worst cities for short-term particle pollution.[1]

The same dominance continues in the list of worst counties, where California has 10 to 13 of the most polluted counties on each list, usually ranking among the worst ten counties in the nation for each pollutant. San Bernardino County remains the most ozone-polluted, but Riverside County tops the lists for both short and year-round particle pollution. Riverside, San Bernardino, Los Angeles Kern, Fresno, Kings and Tulare counties are on all three lists, while Merced, Orange, Stanislaus and Sacramento counties are on two of the worst lists each. El Dorado, Nevada, Santa Clara, San Diego Placer and Ventura counties made one list each.

California has historically led the nation in the battle against air pollution. At the same time, California has some of the most heavily polluted air in the nation. Aggressive strategies long at work in the state have resulted in significant improvements in the last three decades. In fact, California has more protective standards for year-round particle exposure than the national standards.[2]

There were fewer days with unhealthful ozone levels in several counties over the 2000-2003 time period than in previous reports. Four California counties moved to a passing grade, three for their first passing grade ever. One of those, Shasta County, improved from an F to a B. Four counties improved into the A category, registering no unhealthful ozone days; most notably, Solano County received its first A, having just improved from an F to a D in the 2003 report. Still, almost 70 percent of Californians live in counties that scored F for ozone.

The other states in Region 9 maintain good scores for ozone except for Arizona, where Maricopa County, home to Phoenix, scored an F.

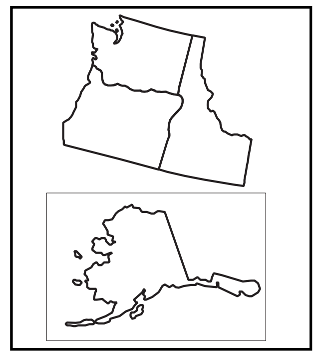
Particle pollution is clearly a serious health risk in California, with many more counties affected than just those listed above. Twenty-three counties have unhealthful short-term levels of particle pollution, while 13 fail the test for year-round levels. If these counties were measured against the more protective California fine particle standard, four additional counties would have failed the year-round test.

Maricopa County, Arizona, received an F for short-term levels of particle pollution, although its year-round levels are below the national standards. The rest of the monitoring data for Arizona reports no problems with short-term or year-round levels. Particle pollution is also at relatively safe levels for Hawaii and Nevada.

Region 10. There is very little ozone pollution in the states of Region 10. All counties earned grades of A or B.

Particle pollution is a serious problem in several areas. Three metropolitan areas made the list of the worst cities for short-term particle pollution: Eugene-Springfield, OR, ranked at 5th place; Seattle-Tacoma-Olympia, WA, ranked 22nd; and Medford, OR, tied for 23rd. Two Oregon counties ranked among the most polluted by short-term particles: Lane County, ranked at number 7 and Klamath County, ranked at number 14.

Fairbanks Northstar County, AK, rated an F for the short-term test. Three counties in Idaho, five counties in Oregon and three counties in Washington also scored Fs, showing unhealthful short-term levels of particle pollution. All counties in Region 10 passed the test for year-round-levels of particle pollution.



Region 10
Alaska, Idaho, Oregon, Washington

[1] Because of changes to the boundaries of Metropolitan Statistical Areas in 2003, some counties which were included in one metropolitan area in the 2003 report are now included in another metropolitan area. For that reason, comparisons between rankings from the 2003 report and these lists may be difficult.

[2] California has a more protective standard for year-round particle pollution, (annual $PM_{2.5}$,) than does the rest of the nation. California's standard is set at 12 µg/m^3, lower than the US standard of 15 µg/m^3. The grading reported in the text for year-round exposure to particles is based on the more lenient US standard.

AMERICAN LUNG ASSOCIATIONS CLEAN UP THE AIR ACROSS THE NATION

Chicago. After several years spent highlighting the dangers of exhaust from conventional diesel transit buses in dense Chicago neighborhoods, the American Lung Association of Metropolitan Chicago finally achieved a measure of progress. In March 2003, the Chicago Transit Authority converted over 2000 buses and diesel support vehicles to ultra-low-sulfur diesel fuel. Two years of Lung Association reports documenting the lack of progress in adopting clean technologies and fuels sparked the public outcry that was crucial in the authority's decision to convert the fleet. This action alone reduced particle emissions from this fleet by approximately 10-20 percent.

New York City. Support by the American Lung Association of New York City helped lead to the adoption of the first city ordinance in the nation to clean up emissions of construction equipment diesel engines. Passed in December 2003, this law will require all diesel-powered heavy equipment vehicles owned by the City to use ultra-low-sulfur fuels, and will be fully implemented within two years.

Hawaii. Proud of its clean air, Hawaii also wants to protect the health of its citizens for whom even a little pollution is a problem. The American Lung Association of Hawaii created the Safe Haven program to provide a place for those who are vulnerable to particle pollution on the one day of the year when it is a problem: New Year's Day. Although a much loved tradition, bursts of fireworks from the annual celebrations can create unhealthy levels of particle pollution.

North Carolina. Concerned about unhealthy levels of pollution from power plants, the American Lung Association of North Carolina led the charge in the North Carolina state house to pass the Clean Smokestacks Act in 2002. The act was one of the first state efforts to restrict emissions from coal-fired electric utilities.

New York State. Using the carrot approach sometimes works to change behavior, so the American Lung Association of New York State has worked hard to ensure that early buyers of clean vehicles get a tax credit against their state taxes for helping lead the way.

California. In 2003, the American Lung Association of California ran a successful campaign in the state legislature, passing a bill to require the state and local air districts to identify and adopt new particulate pollution control measures to make progress toward the state's more stringent health-based particulate matter standards.

Reducing diesel pollution has been a key focus of the Lung Association's work in California, working in support of the California Air Resources Board's goal of reducing diesel emissions by 75% by 2010 and 85% by 2020. The American Lung Association of California has advocated for new statewide regulatory controls and financial incentive programs to reduce diesel emissions from school and transit buses, trucks, ships and other diesel-powered vehicles and equipment. The Lung Association recently worked with an advertising agency that donated an award-winning Spanish and English print media campaign to educate the public about the health dangers of diesel exhaust. To view and/or download the ads, visit: http://californialung.org/spotlight/clean air01_ads.html.

Partnering with local lung associations throughout the state, the Association of California has been working to gain commitments from local governments to purchase hybrid-electric, natural gas, battery-electric and other cleaner vehicles now available to improve air quality.

Dallas. School buses are the safest way for children to get to school, but the buses contribute to pollution that affects children and everyone else. The American Lung Association of Texas partners with EPA and others in Dallas-Fort Worth and Houston metropolitan areas to help provide grants to school districts to purchase "clean fuel technology" buses. The "Adopt-a-School-Bus" program, as it is called, is in 4 counties around Dallas-Fort Worth and 8 around Houston.

Minnesota. Each year, the American Lung Association of Minnesota tests the state's top-selling gasolines. In partnering with university fuel scientists, ALAMN samples gasolines at the pump, tests fuel composition and, most importantly, evaluates the polluting potential of each fuel brand. The purpose of this work is to help educate consumers on making a "Clean Air Choice" when buying fuel.

Tables

Table 1: *Estimated Populations at Risk from Short-term Particle Pollution (24-Hour $PM_{2.5}$) in 2004*

	Chronic Diseases				
	Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema	CV Disease
Grade A (0.0)	1,098,109	427,013	677,090	238,588	4,417,584
Grade B (0.3-0.9)	2,091,803	777,232	1,234,260	429,795	7,998,682
Grade C (1.0-2.0)	2,494,275	941,891	1,500,267	514,544	9,635,256
Grade D (2.1-3.2)	1,341,788	496,552	783,391	263,649	4,966,969
Grade F (3.3+)	4,468,378	1,766,912	2,649,823	888,281	16,729,853
National Population in Counties with $PM_{2.5}$ Monitors	11,731,287	4,497,507	6,985,770	2,383,863	44,661,067

	Age Groups				High Ozone Days			
	14 and Under	65 and Over	Total Population	Number of Counties	Orange	Red	Purple	Maroon
Grade A (0.0)	4,250,663	2,602,983	20,387,885	177	0	0	0	0
Grade B (0.3-0.9)	7,781,850	4,618,540	37,207,266	185	224	28	0	0
Grade C (1.0-2.0)	9,479,905	5,426,388	45,286,047	136	503	40	0	0
Grade D (2.1-3.2)	5,001,004	2,718,105	23,768,590	51	337	34	1	0
Grade F (3.3+)	17,868,242	9,356,704	81,757,891	106	2,724	446	7	0

(1) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (2) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (3) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (5) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (6) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (7) **Total Population** represents the at-risk populations in counties/cities with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire states' sensitive populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

Table 1a: *Estimated Populations at Risk from Long-term Particle Pollution (Annual $PM_{2.5}$) in 2004*

	Pass	Fail	National Population in Counties with $PM_{2.5}$ Monitors
Chronic Diseases			
Adult Asthma	6,221,496	3,564,838	9,786,334
Pediatric Asthma	2,374,312	1,430,102	3,804,414
Chronic Bronchitis	3,719,521	2,147,177	5,866,698
Emphysema	1,268,996	720,826	1,989,822
Heart Disease	23,779,701	13,569,611	37,349,312
Age Groups			
Under 14	23,853,846	14,459,208	38,313,054
Over 65	13,359,480	7,597,861	20,957,341
Total Population	112,896,625	66,207,360	179,103,985
Number of Counties	396	120	516

(1) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (2) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (3) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (5) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (6) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (7) **Total Population** represents the at-risk populations in counties/cities with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire states' sensitive populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

Table 1b: *Estimated Populations at Risk from Ozone in 2000, 2001, 2002, 2003, and 2004*

	Report Years	Chronic Diseases			
		Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema
Grade A (0.0)	2000	(1)	(1)	(1)	(1)
	2001	(2)	(3)	284,546	93,808
	2002	465,195	(3)	280,766	88,531
	2003	693,062	(3)	434,085	142,547
	2004	791,444	295,702	479,335	163,687
Grade B (0.3-0.9)	2000	(1)	(1)	(1)	(1)
	2001	(2)	(3)	312,045	102,872
	2002	425,752	(3)	254,036	79,264
	2003	538,537	(3)	358,593	123,680
	2004	835,492	312,162	509,065	181,520
Grade C (1.0-2.0)	2000	(1)	(1)	(1)	(1)
	2001	(2)	(3)	351,792	115,972
	2002	600,264	(3)	393,101	135,050
	2003	913,401	(3)	632,374	218,858
	2004	777,159	294,538	482,637	172,954
Grade D (2.1-3.2)	2000	(1)	(1)	(1)	(1)
	2001	(2)	(3)	333,759	110,029
	2002	600,649	(3)	353,148	114,780
	2003	615,032	(3)	381,372	121,165
	2004	849,726	352,390	528,588	177,904
Grade F (3.3+)	2000	(1)	(1)	(1)	(1)
	2001	(2)	(3)	4,785,438	1,577,613
	2002	7,661,492	(3)	4,684,114	1,474,141
	2003	7,435,688	(3)	4,683,692	1,545,546
	2004	7,497,712	2,917,201	4,444,370	1,502,981
National Population	2000	(1)	(1)	(1)	(1)
	2001	((2)	(3)	6,337,115	2,089,149
	2002	10,213,597	(3)	6,272,713	1,992,034
	2003	10,647,981	(3)	6,792,054	2,256,715
	2004	11,275,592	4,343,905	6,744,494	2,305,126

(1) **Chronic Disease** estimates for 2000 and 2001 CANNOT BE COMPARED TO EACH OTHER. Between the release dates of these two publications, the National Health Interview Survey completely redesigned their questionnaire and obliterated all trends. Therefore, estimates prior to 1997 cannot be compared with later estimates. The 2000 estimates were obtained from the 1996 NHIS survey while the 2001 estimates were obtained from the revised 1998 NHIS survey. (2) **Adult Asthma** disease estimates for 2001 and 2002 CANNOT BE COMPARED TO EACH OTHER. The 2001 estimate utilizes the National Health Interview Survey questionnaire while the 2002 estimate utilizes the Behavioral Risk Factor Surveillance System Survey. (3) **Pediatric Asthma** estimates for 2004 CANNOT BE COMPARED to 2000-2003 data. The 2004 estimate represents current asthma prevalence while the past three years of data measured asthma attack prevalence. (4) Several states changed the length of their monitored ozone seasons. The 2004 report uses the revised season lengths to calculate grades. However no grades were affected by the change.

	Age Groups				High Ozone Days		
	14 and Under	65 and Over	Total Population	Number of Counties	Orange	Red	Purple
Grade A (0.0)	2,296,548	1,251,960	10,477,773	62	0	0	0
	1,824,279	1,015,492	8,453,938	55	0	0	0
	1,823,326	1,027,969	8,542,407	56	0	0	0
	2,629,652	1,466,426	12,575,124	68	0	0	0
	2,961,668	1,719,616	14,417,418	77	0	0	0
Grade B (0.3-0.9)	1,865,757	1,179,695	8,582,029	48	68	0	0
	2,059,705	1,096,632	9,343,164	41	57	1	0
	1,745,726	907,336	7,856,880	39	51	0	0
	2,243,840	1,351,997	10,437,026	53	78	0	0
	3,124,428	2,021,935	15,211,187	56	77	0	0
Grade C (1.0-2.0)	2,692,794	1,824,144	12,856,894	59	256	3	0
	2,112,737	1,514,827	10,269,797	58	254	4	0
	2,347,471	1,683,397	11,588,825	61	266	5	0
	3,710,667	2,401,032	18,019,904	79	352	4	0
	2,946,399	1,918,297	14,373,424	77	324	3	0
Grade D (2.1-3.2)	2,206,390	1,453,631	10,459,616	54	414	12	0
	2,067,946	1,334,036	9,821,670	41	314	12	0
	2,192,859	1,376,837	10,578,028	48	357	10	0
	2,535,980	1,207,485	11,358,912	33	250	10	0
	3,562,808	1,861,308	16,275,763	53	420	10	0
Grade F (3.3+)	29,045,221	15,944,372	132,494,679	333	9,519	1,335	219
	30,680,052	17,120,347	141,793,488	382	12,180	1,488	209
	30,742,058	17,191,083	142,668,846	391	11,952	1,373	182
	29,841,544	16,144,931	137,206,767	384	10,123	1,088	107
	29,374,499	15,701,385	136,081,799	373	9,991	1,220	95
National Population	40,343,997	22,992,964	185,164,054	678	10,257	1,350	219
	40,423,987	23,103,750	187,627,908	660	12,805	1,505	209
	40,779,165	23,362,199	190,463,367	678	12,626	1,388	182
	42,771,423	23,705,025	198,216,448	692	10,803	1,102	107
	43,693,478	24,393,223	205,205,712	707	10,812	1,233	95

Table 2: *People at Risk in 25 U.S. Cities Most Polluted by Short-term Particle Pollution (24-hour $PM_{2.5}$)*

2004 Rank	Metropolitan Statistical Areas	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	CV Disease
1	Los Angeles-Long Beach-Riverside, CA	17,044,188	4,031,052	1,693,372	396,539	786,894	530,322	168,259	3,221,911
2	Fresno-Madera, CA	964,897	247,368	95,623	24,644	42,903	28,868	9,250	175,820
3	Bakersfield, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455	123,768
4	Pittsburgh-New Castle, PA	2,512,302	449,380	440,495	45,567	153,638	89,830	35,953	642,553
5	Eugene-Springfield, OR	326,666	59,317	43,380	6,025	22,001	11,386	4,061	75,100
6	Salt Lake City-Ogden-Clearfield, UT	1,502,000	380,882	124,760	37,800	83,649	44,695	13,326	259,747
6	Birmingham-Hoover-Cullman, AL	1,146,150	232,905	147,196	23,294	62,407	38,587	13,649	253,247
8	Sacramento—Arden-Arcade-Truckee, CA-NV	2,068,427	449,022	238,278	45,028	98,969	67,238	22,788	427,644
9	Visalia-Porterville, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550	67,417
10	Cleveland-Akron-Elyria, OH	2,950,615	615,849	418,967	61,546	163,259	99,456	36,890	674,129
11	Modesto, CA	482,440	120,635	48,748	12,080	21,658	14,609	4,722	89,649
12	Hanford-Corcoran, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103	22,150
12	Detroit-Warren-Flint, MI	5,409,167	1,177,540	629,634	116,955	350,359	177,432	60,865	1,141,290
12	Chicago-Naperville-Michigan City, IL-IN-WI	9,501,248	2,131,070	1,024,336	210,507	500,401	305,351	100,894	1,911,517
15	San Jose-San Francisco-Oakland, CA	7,182,483	1,436,618	807,023	141,852	352,922	241,027	80,250	1,519,927
16	San Diego-Carlsbad-San Marcos, CA	2,906,660	633,833	322,952	62,386	138,713	93,516	30,586	579,144
17	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,081,836	447,709	242,590	44,816	119,760	68,095	23,208	435,110
18	Washington-Baltimore-N. Virginia, DC-MD-VA-WV	7,826,485	1,649,602	787,521	163,401	468,356	257,271	83,120	1,591,124
18	Provo-Orem, UT	396,386	112,576	25,645	10,921	21,402	10,794	2,770	56,057
20	Louisville-Elizabethtown-Scottsburg, KY-IN	1,315,262	260,252	158,777	26,033	91,339	44,524	15,353	287,521
21	Weirton-Steubenville, WV-OH	129,663	22,078	23,988	2,241	8,375	4,750	1,952	34,635
22	Seattle-Tacoma-Olympia, WA	3,705,706	745,688	383,896	74,713	247,851	123,321	40,091	765,220
23	Merced, CA	225,398	62,179	20,480	6,219	9,639	6,462	2,019	38,633
23	Medford, OR	186,430	35,695	29,619	3,654	12,443	6,531	2,554	45,955
23	Harrisburg-Carlisle-Lebanon, PA	635,751	119,971	93,629	12,121	38,702	22,119	8,260	150,729

(1) **Total Population** represents the at-risk populations for all counties within the respective CSA or MSA. (2) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

Table 2a: *People at Risk in 25 U.S. Cities Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)*

2004 Rank	Metropolitan Statistical Areas	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	CV Disease
1	Los Angeles-Long Beach-Riverside, CA	17,044,188	4,031,052	1,693,372	396,539	786,894	530,322	168,259	3,221,911
2	Visalia-Porterville, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550	67,417
3	Bakersfield, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455	123,768
4	Fresno-Madera, CA	964,897	247,368	95,623	24,644	42,903	28,868	9,250	175,820
5	Pittsburgh-New Castle, PA	2,512,302	449,380	440,495	45,567	153,638	89,830	35,953	642,553
6	Detroit-Warren-Flint, MI	5,409,167	1,177,540	629,634	116,955	350,359	177,432	60,865	1,141,290
7	Atlanta-Sandy Springs-Gainesville, GA	4,844,726	1,094,511	381,562	107,579	262,356	152,399	44,714	883,672
8	Cleveland-Akron-Elyria, OH	2,950,615	615,849	418,967	61,546	163,259	99,456	36,890	674,129
9	Hanford-Corcoran, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103	22,150
9	Birmingham-Hoover-Cullman, AL	1,146,150	232,905	147,196	23,294	62,407	38,587	13,649	253,247
11	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,081,836	447,709	242,590	44,816	119,760	68,095	23,208	435,110
12	Knoxville-Sevierville-La Follette, TN	796,760	147,418	110,200	14,771	50,847	27,793	10,074	185,580
13	Weirton-Steubenville, WV-OH	129,663	22,078	23,988	2,241	8,375	4,750	1,952	34,635
14	Chicago-Naperville-Michigan City, IL-IN-WI	9,501,248	2,131,070	1,024,336	210,507	500,401	305,351	100,894	1,911,517
15	Canton-Massillon, OH	407,106	82,984	60,947	8,368	22,696	13,918	5,305	96,196
16	Charleston, WV	306,187	55,438	46,679	5,596	21,778	10,911	4,163	75,731
17	Modesto, CA	482,440	120,635	48,748	12,080	21,658	14,609	4,722	89,649
18	New York-Newark-Bridgeport, NY-NJ-CT-PA	21,705,461	4,482,431	2,744,027	442,683	1,285,383	726,088	253,820	4,728,131
18	Merced, CA	225,398	62,179	20,480	6,219	9,639	6,462	2,019	38,633
20	St. Louis-St. Charles-Farmington, MO-IL	2,808,993	584,238	361,964	58,974	171,882	93,527	33,213	614,805
21	Washington-Baltimore-No. Virginia, DC-MD-VA-WV	7,826,485	1,649,602	787,521	163,401	468,356	257,271	83,120	1,591,124
22	Louisville-Elizabethtown-Scottsburg, KY-IN	1,315,262	260,252	158,777	26,033	91,339	44,524	15,353	287,521
22	Huntington-Ashland, WV-KY-OH	286,184	50,089	44,112	5,060	19,941	10,198	3,851	70,065
24	York-Hanover-Gettysburg, PA	483,646	94,553	65,903	9,580	29,199	16,558	6,020	110,911
24	Lancaster, PA	478,561	104,063	67,587	10,400	28,038	15,849	5,869	107,151
24	Columbus-Marion-Chillicothe, OH	1,884,603	403,340	195,422	39,955	102,873	61,192	19,740	376,864

(1) **Total Population** represents the at-risk populations for all counties within the respective CSA or MSA. (2) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

Table 2b: *People at Risk in 25 Most Ozone-Polluted Cities*

2004 Rank	Metropolitan Statistical Areas	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema
1	Los Angeles-Long Beach-Riverside, CA	17,044,188	4,031,052	1,693,372	396,539	786,894	530,322	168,259
2	Fresno-Madera, CA	964,897	247,368	95,623	24,644	42,903	28,868	9,250
3	Bakersfield, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455
4	Visalia-Porterville, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550
5	Houston-Baytown-Huntsville, TX	5,086,741	1,215,782	400,778	120,476	215,679	157,138	46,939
6	Merced, CA	225,398	62,179	20,480	6,219	9,639	6,462	2,019
7	Sacramento-Arden-Arcade-Truckee, CA-NV	2,068,427	449,022	238,278	45,028	98,969	67,238	22,788
8	Hanford-Corcoran, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103
9	Knoxville-Sevierville-La Follette, TN	796,760	147,418	110,200	14,771	50,847	27,793	10,074
10	Dallas-Fort Worth, TX	5,676,171	1,336,538	459,917	131,835	244,105	175,795	52,290
11	Washington-Baltimore-N. Virginia, DC-MD-VA-WV	7,826,485	1,649,602	787,521	163,401	468,356	257,271	83,120
12	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	5,899,571	1,213,486	778,725	121,745	347,974	197,641	70,629
13	New York-Newark-Bridgeport, NY-NJ-CT-PA	21,705,461	4,482,431	2,744,027	442,683	1,285,383	726,088	253,820
14	Charlotte-Gastonia-Salisbury, NC-SC	1,993,372	433,042	210,918	42,645	94,701	64,823	21,206
15	Cleveland-Akron-Elyria, OH	2,950,615	615,849	418,967	61,546	163,259	99,456	36,890
16	Greensboro-Winston-Salem-High Point, NC	1,315,361	270,780	167,422	26,717	64,630	44,240	15,579
17	Pittsburgh-New Castle, PA	2,512,302	449,380	440,495	45,567	153,638	89,830	35,953
18	San Diego-Carlsbad-San Marcos, CA	2,906,660	633,833	322,952	62,386	138,713	93,516	30,586
18	Phoenix-Mesa-Scottsdale, AZ	3,500,151	815,346	405,982	79,857	229,436	110,832	37,339
20	Modesto, CA	482,440	120,635	48,748	12,080	21,658	14,609	4,722
21	Atlanta-Sandy Springs-Gainesville, GA	4,844,726	1,094,511	381,562	107,579	262,356	152,399	44,714
22	Morristown-Newport, TN	159,648	30,101	21,536	3,013	10,145	5,546	2,001
23	Raleigh-Durham-Cary, NC	1,401,331	296,458	121,774	29,055	67,869	45,103	13,461
23	Lancaster, PA	478,561	104,063	67,587	10,400	28,038	15,849	5,869
25	Sheboygan, WI	112,480	21,664	15,497	2,235	7,312	3,827	1,388

(1) **Total Population** represents the at-risk populations for all counties within the respective CSA or MSA. (2) Those **14 and Under** and **65 and Over** are vulnerable to ozone and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of children who currently have asthma based on 2002 national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represents the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census).
(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis. (8) Two states (KY & TN) expanded the length of their ozone monitoring season and 7 states (AL, CT, FL, MA, ME, VT & WA) shortened the length of their season. Data from the 2004 report reflects the current ozone season by state. No grades were affected by the changed season lengths, although it may be inaccurate to compare weighted averages from this report with previous reports in those states.

Table 3: *People at Risk in 25 Counties Most Polluted by Short-term Particle Pollution (24-hour $PM_{2.5}$)*

2004 Rank	County, State	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	CV Disease	Weighted Average	Grade
1	Riverside, CA	1,699,112	415,229	207,443	41,296	77,831	52,404	18,057	335,352	81.5	**F**
2	Fresno, CA	834,632	216,237	81,318	21,537	36,916	24,820	7,905	150,517	63.2	**F**
3	Kern, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455	123,768	61.8	**F**
4	Los Angeles, CA	9,806,577	2,289,795	955,209	224,657	454,855	306,069	95,938	1,844,930	52.8	**F**
5	Allegheny, PA	1,269,904	226,336	222,128	22,847	78,013	45,349	18,050	322,858	39.8	**F**
6	Orange, CA	2,938,507	667,769	297,476	65,242	138,191	93,523	29,927	572,914	27.3	**F**
7	Lane, OR	326,666	59,317	43,380	6,025	22,001	11,386	4,061	75,100	25.2	**F**
8	San Bernardino, CA	1,816,072	475,657	152,281	47,206	79,606	53,474	16,157	313,642	24.3	**F**
9	Jefferson, AL	661,153	133,950	89,230	13,402	35,995	22,300	8,021	147,852	23.7	**F**
9	Salt Lake, UT	919,308	227,405	74,737	22,461	51,909	27,642	8,134	159,473	23.7	**F**
11	Sacramento, CA	1,305,082	298,024	141,870	29,619	61,088	41,381	13,646	258,342	22.3	**F**
12	Tulare, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550	67,417	21.5	**F**
13	Cuyahoga, OH	1,379,049	288,755	212,428	28,717	76,361	46,642	17,837	322,741	19.0	**F**
14	Klamath, OR	64,363	13,475	9,694	1,362	4,201	2,200	853	15,386	16.2	**F**
15	Stanislaus, CA	482,440	120,635	48,748	12,080	21,658	14,609	4,722	89,649	15.2	**F**
16	Klings, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103	22,150	14.5	**F**
16	Lake, IN	487,016	108,326	63,185	10,801	26,755	16,005	5,778	106,560	14.5	**F**
16	Wayne, MI	2,045,540	482,691	242,639	47,497	129,004	65,269	22,655	422,856	14.5	**F**
19	Cook, IL	5,377,507	1,180,077	621,768	116,172	283,825	174,391	58,679	1,104,646	14.3	**F**
20	Santa Clara, CA	1,683,505	356,258	166,746	34,826	81,023	54,929	17,356	334,080	13.8	**F**
21	San Diego, CA	2,906,660	633,833	322,952	62,386	138,713	93,516	30,586	579,144	13.0	**F**
21	Hamilton, OH	833,721	177,490	112,108	17,820	45,615	27,590	9,951	183,126	13.0	**F**
23	Baltimore City, MD	638,614	133,463	82,202	13,238	39,171	21,133	7,386	136,933	12.0	**F**
23	Utah, UT	387,817	109,981	24,832	10,666	20,966	10,556	2,693	54,600	12.0	**F**
25	Washington, DC	570,898	96,459	68,534	9,318	41,910	19,937	6,534	124,416	11.8	**F**
25	Jefferson, KY	698,080	133,608	93,613	13,242	51,083	24,065	8,598	159,168	11.8	**F**

(1) **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors. (2) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis. (9) The weighted average was derived by adding the three years of individual level data (2000-2002), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, 2.5=maroon and calculating the average.(10) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Table 3a: *People at Risk in 25 Counties Most Polluted by Long-term Particle Pollution (Annual $PM_{2.5}$)*

2004 Rank	County, State	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	CV Disease	Design Value	Pass/Fail
1	Riverside, CA	1,699,112	415,229	207,443	41,296	77,831	52,404	18,057	335,352	28.9	**Fail**
2	San Bernardino, CA	1,816,072	475,657	152,281	47,206	79,606	53,474	16,157	313,642	25.9	**Fail**
3	Los Angeles, CA	9,806,577	2,289,795	955,209	224,657	454,855	306,069	95,938	1,844,930	24.4	**Fail**
4	Tulare, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550	67,417	23.2	**Fail**
5	Kern, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455	123,768	22.8	**Fail**
6	Fresno, CA	834,632	216,237	81,318	21,537	36,916	24,820	7,905	150,517	21.9	**Fail**
7	Allegheny, PA	1,269,904	226,336	222,128	22,847	78,013	45,349	18,050	322,858	21.4	**Fail**
8	Orange, CA	2,938,507	667,769	297,476	65,242	138,191	93,523	29,927	572,914	20.3	**Fail**
9	Wayne, MI	2,045,540	482,691	242,639	47,497	129,004	65,269	22,655	422,856	19.9	**Fail**
10	Fulton, GA	825,431	174,376	68,770	16,977	45,874	26,679	7,893	155,289	19.3	**Fail**
11	Cuyahoga, OH	1,379,049	288,755	212,428	28,717	76,361	46,642	17,837	322,741	19.1	**Fail**
12	Kings, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103	22,150	19.0	**Fail**
12	Jefferson, AL	661,153	133,950	89,230	13,402	35,995	22,300	8,021	147,852	19.0	**Fail**
14	Hamilton, OH	833,721	177,490	112,108	17,820	45,615	27,590	9,951	183,126	18.6	**Fail**
15	Knox, TN	389,327	72,198	49,350	7,181	24,781	13,413	4,641	86,507	18.4	**Fail**
16	Jefferson, OH	72,402	12,611	13,374	1,280	4,240	2,636	1,085	19,232	18.2	**Fail**
17	Cook, IL	5,377,507	1,180,077	621,768	116,172	283,825	174,391	58,679	1,104,646	18.1	**Fail**
18	Stark, OH	377,940	77,303	56,791	7,784	21,053	12,910	4,926	89,285	17.9	**Fail**
19	Kanawha, WV	195,790	34,220	32,727	3,438	14,033	7,096	2,800	50,399	17.8	**Fail**
20	Stanislaus, CA	482,440	120,635	48,748	12,080	21,658	14,609	4,722	89,649	17.7	**Fail**
20	Lake, IN	487,016	108,326	63,185	10,801	26,755	16,005	5,778	106,560	17.7	**Fail**
22	New York, NY	1,546,856	230,660	190,475	22,456	100,033	55,390	18,102	344,894	17.6	**Fail**
22	Merced, CA	225,398	62,179	20,480	6,219	9,639	6,462	2,019	38,633	17.6	**Fail**
24	Hancock, WV	32,082	5,366	5,995	541	2,313	1,185	489	8,682	17.5	**Fail**
24	Madison, IL	261,409	51,989	36,908	5,265	14,198	8,866	3,248	59,515	17.5	**Fail**
24	Scioto, OH	78,041	15,313	11,711	1,562	4,370	2,658	996	18,115	17.5	**Fail**

(1) **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors. (2) Those **14 and Under** and **65 and Over** are vulnerable to $PM_{2.5}$ and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) **CV Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations. (8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
(9) The Design Value is the calculated concentration of a pollutant based on the form of the national ambient air quality standard, and is used by EPA to determine whether or not the air quality in a county meets the standard. The source for the Design Values is EPA, at http://www.epa.gov/airtrends/pm25_design_values_2000-2002.pdf. (10) Grades are based on EPA's determination of attainment or nonattainment of the NAAQS for annual $PM_{2.5}$ levels as of Sept. 2003. Counties in attainment received grades of "Pass"; counties not inattainment received grades of "Fail."

Table 3b: *People at Risk in 25 Most Ozone-Polluted Counties*

2004 Rank	County, State	Total Population	14 and Under	65 and Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Number of High Ozone Days in Unhealthy Ranges, 2000-2003: Orange	Red	Purple	Weighted Average	Grade
1	San Bernardino, CA	1,816,072	475,657	152,281	47,206	79,606	53,474	16,157	168	67	21	103.5	**F**
2	Fresno, CA	834,632	216,237	81,318	21,537	36,916	24,820	7,905	197	66	4	101.3	**F**
3	Kern, CA	694,059	179,227	64,271	17,838	30,692	20,640	6,455	212	46	0	93.7	**F**
4	Riverside, CA	1,699,112	415,229	207,443	41,296	77,831	52,404	18,057	161	62	5	88.0	**F**
5	Tulare, CA	381,772	103,850	36,565	10,359	16,501	11,103	3,550	221	19	0	83.2	**F**
6	Los Angeles, CA	9,806,577	2,289,795	955,209	224,657	454,855	306,069	95,938	109	38	8	60.7	**F**
7	Harris, TX	3,557,055	866,290	266,495	85,194	150,508	108,735	31,767	70	31	6	42.8	**F**
8	Merced, CA	225,398	62,179	20,480	6,219	9,639	6,462	2,019	114	7	1	42.2	**F**
9	El Dorado, CA	165,744	32,969	20,063	3,406	8,109	5,668	2,024	92	15	1	38.8	**F**
10	Kings, CA	135,043	32,192	9,862	3,182	6,115	4,034	1,103	89	7	0	33.2	**F**
11	Sevier, TN	74,456	13,841	9,859	1,394	4,752	2,603	938	78	3	0	27.5	**F**
12	Nevada, CA	95,047	16,282	16,083	1,717	4,923	3,483	1,412	71	7	0	27.2	**F**
12	Sacramento, CA	1,305,082	298,024	141,870	29,619	61,088	41,381	13,646	68	9	0	27.2	**F**
14	Tarrant, TX	1,527,366	362,367	126,051	35,739	65,418	47,306	14,223	63	8	2	26.3	**F**
15	Harford, MD	227,713	51,045	23,961	5,117	13,583	7,373	2,470	43	17	2	24.2	**F**
16	Camden, NJ	511,957	111,768	63,220	11,260	28,731	16,777	5,912	48	18	0	25.0	**F**
17	Ventura, CA	783,920	182,602	80,963	18,138	36,410	24,851	8,180	62	7	0	24.2	**F**
17	Anne Arundel, MD	503,388	104,791	50,857	10,460	30,881	16,651	5,423	47	17	0	24.2	**F**
17	Ocean, NJ	537,065	103,445	115,589	10,278	31,463	19,042	8,337	43	13	5	24.2	**F**
20	Rowan, NC	133,359	27,705	18,299	2,761	6,494	4,470	1,621	59	8	0	23.7	**F**
21	Fairfield, CT	896,202	201,247	118,393	19,686	56,065	29,643	10,792	47	12	2	23.0	**F**
22	Mecklenburg, NC	737,950	163,594	61,870	15,926	35,261	23,406	6,933	49	9	1	21.5	**F**
23	Placer, CA	278,509	57,046	36,787	5,779	13,600	9,363	3,373	55	5	0	20.8	**F**
24	Cecil, MD	90,335	19,950	9,574	2,000	5,419	2,929	976	43	8	2	19.7	**F**
25	Gloucester, NJ	262,049	54,173	30,652	5,511	14,944	8,692	2,984	32	14	2	19.0	**F**

(1) **Total Population** represents the at-risk populations in counties with ozone monitors. (2) Those **14 and Under** and **65 and Over** are vulnerable to ozone and are therefore included. They should not be used as population denominators for disease estimates. (3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who currently have asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census). (4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census). (5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census). (6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census). (7) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis. (8) **Orange**: Unhealthy For Sensitive Groups (0.085-0.104 ppm ozone), **Red**: Unhealthy (0.105-0.124 ppm ozone), and **Purple**: Very Unhealthy (0.125-0.374 ppm ozone). (9) The weighted average was derived by adding the three years of individual level data (2000-2002), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average. (10) Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+. (11) Two states (KY & TN) expanded the length of their ozone monitoring season and 7 states (AL, CT, FL, MA, ME, VT & WA) shortened the length of their season. Data from the 2004 report reflects the current ozone season by state. No grades were affected by the changed season lengths, although it may be inaccurate to compare weighted averages from this report with previous reports in those states.

Table 4: *Counties with the Worst Particle Pollution ($PM_{2.5}$ 24-Hour and Annual Averages) in Each State*

County	State	Metropolitan Statistical Area	24-Hour Weighted Average	24-Hour Grade	Annual Value	Annual Pass/Fail
Jefferson	AL	Birmingham-Hoover-Cullman, AL	23.7	F	19.0	FAIL
Fairbanks North Star	AK	Fairbanks, AK	5.8	F	13.6	PASS
Maricopa	AZ	Phoenix-Mesa-Scottsdale, AZ	4.7	F	10.0	PASS
Pulaski	AK	Little Rock-North Little Rock-Pine Bluff, AR	1.3	C	14.6	PASS
Riverside	CA	Los Angeles-Long Beach-Riverside, CA	81.5	F	28.9	FAIL
Denver	CO	Denver-Aurora-Boulder, CO	3.0	D	10.9	PASS
New Haven	CT	New York-Newark-Bridgeport, NY-NJ-CT-PA	6.8	F	16.5	FAIL
New Castle	DE	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	9.7	F	16.5	FAIL
Washington	DC	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	11.8	F	16.4	FAIL
Broward	FL	Miami-Fort Lauderdale-Miami Beach, FL	1.8	C	8.7	PASS
Leon	FL	Tallahassee, FL	0.0	A	13.0	PASS
DeKalb	GA	Atlanta-Sandy Springs-Gainesville, GA	8.7	F	17.3	FAIL
Fulton	GA	Atlanta-Sandy Springs-Gainesville, GA	7.2	F	19.3	FAIL
Honolulu	HI	Honolulu, HI	2.7	D	4.9	PASS
Bannock	ID	Pocatello, ID	4.7	F	9.7	PASS
Shoshone	ID		1.7	C	12.9	PASS
Cook	IL	Chicago-Naperville-Michigan City, IL-IN-WI	14.3	F	18.1	FAIL
Lake	IN	Chicago-Naperville-Michigan City, IL-IN-WI	14.5	F	17.7	FAIL
Scott	IA	Davenport-Moline-Rock Island, IA-IL	1.7	C	12.7	PASS
Wyandotte	KS	Kansas City-Overland Park-Kansas City, MO-KS	1.0	C	13.5	PASS
Jefferson	KY	Louisville-Elizabethtown-Scottsburg, KY-IN	11.8	F	17.3	FAIL
East Baton Rouge	LA	Baton Rouge-Pierre Part, LA	2.0	C	13.6	PASS
Prince George's	MD	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	3.0	D	17.4	FAIL
Baltimore City	MD	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	12.0	F	17.0	FAIL
Hampden	MA	Springfield, MA	5.0	F	13.8	PASS
Wayne	MI	Detroit-Warren-Flint, MI	14.5	F	19.9	FAIL
Ramsey	MN	Minneapolis-St. Paul-St. Cloud, MN-WI	3.0	D	12.6	PASS
Jones	MS		1.0	C	15.0	PASS
Lowndes	MS		1.3	C	–	INC
St. Louis City	MO	St. Louis-St. Charles-Farmington, MO-IL	5.0	F	15.7	FAIL
Lincoln	MT		5.3	F	16.4	FAIL
Douglas	NE	Omaha-Council Bluffs-Fremont, NE-IA	1.3	C	11.0	PASS
Clark	NV	Las Vegas-Paradise-Pahrump, NV	1.3	C	10.9	PASS
Union	NJ	New York-Newark-Bridgeport, NY-NJ-CT-PA	8.0	F	15.9	FAIL
Dona Ana	NM	Las Cruces, NM	1.0	C	11.2	PASS
Bronx	NY	New York-Newark-Bridgeport, NY-NJ-CT-PA	9.5	F	16.1	FAIL
New York	NY	New York-Newark-Bridgeport, NY-NJ-CT-PA	8.3	F	17.6	FAIL
Guilford	NC	Greensboro-Winston-Salem-High Point, NC	3.7	F	–	INC
Davidson	NC	Greensboro-Winston-Salem-High Point, NC	1.0	C	16.7	FAIL
Cuyahoga	OH	Cleveland-Akron-Elyria, OH	19.0	F	19.1	FAIL
Lane	OR	Eugene-Springfield, OR	25.2	F	13.7	PASS
Allegheny	PA	Pittsburgh-New Castle, PA	39.8	F	21.4	FAIL
Providence	RI	Providence-New Bedford-Fall River, RI-MA	1.8	C	11.3	PASS
Greenville	SC	Greenville-Anderson-Seneca, SC	2.0	C	15.3	FAIL
Knox	TN	Knoxville-Sevierville-La Follette, TN	9.7	F	18.4	FAIL
Bowie	TX	Texarkana, TX-Texarkana, AR	0.0	A	14.3	PASS
El Paso	TX	El Paso, TX	6.3	F	10.1	PASS
Salt Lake	UT	Salt Lake City-Ogden-Clearfield, UT	23.7	F	14.6	PASS
Richmond City	VA	Richmond, VA	3.3	F	–	INC
Bristol City	VA	Johnson City-Kingsport-Bristol, TN-VA	1.7	C	15.3	FAIL
Salem City	VA	Roanoke, VA	1.0	C	15.3	FAIL
Pierce	WA	Seattle-Tacoma-Olympia, WA	10.8	F	11.7	PASS
King	WA	Seattle-Tacoma-Olympia, WA	4.7	F	11.8	PASS
Hancock	WV	Weirton-Steubenville, WV-OH	4.3	F	17.5	FAIL
Kanawha	WV	Charleston, WV	3.0	D	17.8	FAIL
Milwaukee	WI	Milwaukee-Racine-Waukesha, WI	4.5	F	13.7	PASS
Sheridan	WY		1.3	C	11.1	PASS

(1) The weighted average was derived by adding the three years of individual level data (2000-2002), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, 2.5=maroon and calculating the average. (2) Grades for the 24-hour $PM_{2.5}$ levels are based on the weighted average and are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+. (3) Design Values for the Annual $PM_{2.5}$ were obtained from the EPA, at http://www.epa.gov/airtrends/pm25_design_values_2000-2002.pdf. (4) Annual Grades are based on EPA's determination of attainment or nonattainment of the NAAQS for annual $PM_{2.5}$ levels as of Sept. 2003. Counties in attainment received grades of "Pass;" counties not inattainment received grades of "Fail." Counties with insufficient data to evaluate received incomplete or "INC." (5) Some states may have different counties that monitored the highest annual and 24-hour $PM_{2.5}$ values. These states, counties and values are in bold. (6) States were not included if respective counties got a grade of B or better for the 24-hour standard and a Passing grade for the annual standard.

Table 4a: *Counties with the Worst Ozone Air Pollution in Each State*

State	County	Metropolitan Statistical Area	Number of High Ozone Days in Unhealthy Ranges, 2000-2003 Orange	Red	Purple	Weighted Average	Grade
AL	Shelby	Birmingham-Hoover-Cullman, AL	32	3	0	12.2	**F**
AZ	Maricopa	Phoenix-Mesa-Scottsdale, AZ	46	1	0	15.8	**F**
AR	Pulaski	Little Rock-North Little Rock-Pine Bluff, AR	28	1	0	9.8	**F**
CA	San Bernardino	Los Angeles-Long Beach-Riverside, CA	168	67	21	103.5	**F**
CO	Jefferson	Denver-Aurora-Boulder, CO	10	0	0	3.3	**F**
CT	Fairfield	New York-Newark-Bridgeport, NY-NJ-CT-PA	47	12	2	23.0	**F**
DE	New Castle	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	39	5	0	15.5	**F**
DC	Washington	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	29	8	1	14.3	**F**
FL	Escambia	Pensacola-Ferry Pass-Brent, FL	19	1	0	6.8	**F**
GA	Fulton	Atlanta-Sandy Springs-Gainesville, GA	32	7	1	14.8	**F**
IL	Cook	Chicago-Naperville-Michigan City, IL-IN-WI	25	5	0	10.8	**F**
IN	Lake	Chicago-Naperville-Michigan City, IL-IN-WI	33	1	0	11.5	**F**
IA	Scott	Davenport-Moline-Rock Island, IA-IL	3	0	0	1.0	**C**
KS	Sedgwick	Wichita-Winfield, KS	6	0	0	2.0	**C**
KS	Wyanotte	Kansas City-Overland Park-Kansas City, MO-KS	6	0	0	2.0	**C**
KY	Campbell	Cincinnati-Middletown-Wilmington, OH-KY-IN	33	3	0	12.5	**F**
LA	East Baton Rouge	Baton Rouge-Pierre Part, LA	30	5	0	12.5	**F**
ME	York	Portland-Lewiston-South Portland, ME	21	5	0	9.5	**F**
MD	Harford	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	50	15	2	25.5	**F**
MA	Barnstable	Barnstable Town, MA	17	7	1	9.8	**F**
MI	Cass	South Bend-Mishawaka, IN-MI	32	2	0	11.7	**F**
MN	Washington	Minneapolis-St. Paul-St. Cloud, MN-WI	3	0	0	1.0	**C**
MS	Desoto	Memphis, TN-MS-AR	13	0	0	4.3	**F**
MO	St. Charles	St. Louis-St. Charles-Farmington, MO-IL	37	2	0	13.3	**F**
NV	Clark	Las Vegas-Paradise-Pahrump, NV	8	0	0	2.7	**D**
NH	Rockingham	Boston-Worcester-Manchester, MA-NH	18	2	0	7.0	**F**
NJ	Camden	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	48	18	0	25.0	**F**
NM	Doña Ana	Las Cruces, NM	7	0	0	2.3	**D**
NY	Richmond	New York-Newark-Bridgeport, NY-NJ-CT-PA	35	5	0	14.2	**F**
NC	Rowan	Charlotte-Gastonia-Salisbury, NC-SC	59	8	0	23.7	**F**
OH	Geauga	Cleveland-Akron-Elyria, OH	43	9	0	18.8	**F**
OK	Tulsa	Tulsa-Bartlesville, OK	19	1	0	6.8	**F**
PA	Bucks	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	34	12	1	18.0	**F**
RI	Kent	Providence-New Bedford-Fall River, RI-MA	23	7	0	11.2	**F**
SC	Spartanburg	Spartanburg-Gaffney-Union, SC	35	1	0	12.2	**F**
TN	Sevier	Knoxville-Sevierville-La Follette, TN	78	3	0	27.5	**F**
TX	Harris	Houston-Baytown-Huntsville, TX	70	31	6	42.8	**F**
UT	Salt Lake	Salt Lake City-Ogden-Clearfield, UT	12	1	0	4.5	**F**
VT	Bennington		7	0	0	2.3	**D**
VA	Fairfax	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	37	8	2	17.7	**F**
WV	Cabell	Huntington-Ashland, WV-KY-OH	25	1	0	8.8	**F**
WI	Sheboygan	Sheboygan, WI	29	8	0	13.7	**F**

(1) The weighted average was derived by adding the three years of individual level data (2000-2002), multiplying the sums of each level by the assigned standard weights, i.e. 1=orange, 1.5=red, 2.0=purple, and calculating the average. (2) States were not included if respective counties got a grade of B or higher. (3) Two states (KY & TN) expanded the length of their ozone monitoring season and 7 states (AL, CT, FL, MA, ME, VT & WA) shortened the length of their season. Data from the 2004 report reflects the current ozone season by state. No grades were affected by the changed season lengths, although it may be inaccurate to compare weighted averages from this report with previous reports in those states.

Table 5: *Cleanest U.S. Cities for Short-term Particle Pollution (24-hour $PM_{2.5}$)* [1]

Metropolitan Area	Population	Metropolitan Area	Population
Alexandria, LA	145,613	Jacksonville, NC	149,003
Amarillo, TX	231,642	Jonesboro, AR	109,475
Ames-Boone, IA	106,816	Kennewick-Richland-Pasco, WA	203,111
Anchorage, AK	334,124	Kokomo-Peru, IN	137,571
Bellingham, WA	174,362	Lafayette-Acadiana, LA	517,636
Billings, MT	141,297	Lawton, OK	113,414
Bismarck, ND	96,349	Lewiston, ID-WA	57,559
Bloomington-Normal, IL	154,453	Lincoln, NE	274,178
Brownsville-Harlingen-Raymondville, TX	373,551	Lubbock-Levelland, TX	277,277
Brunswick, GA	95,246	Lumberton-Laurinburg, NC	161,460
Cape Coral-Fort Myers, FL	475,639	McAllen-Edinburg-Pharr, TX	614,474
Champaign-Urbana, IL	213,646	Mount Vernon-Anacortes, WA	106,906
Cheyenne, WY	82,894	Myrtle Beach-Conway-Georgetown, SC	264,302
Clarksville, TN-KY	234,893	Ocala, FL	272,553
Coeur d'Alene, ID	113,954	Odessa, TX	122,312
Colorado Springs, CO	565,404	Palm Bay-Melbourne-Titusville, FL	495,576
Corpus Christi-Kingsville, TX	436,680	Port St. Lucie-Fort Pierce, FL	337,638
Deltona-Daytona Beach-Palm Coast, FL	516,812	Pueblo, CO	146,880
Des Moines-Newton, IA	534,628	Rapid City, SD	115,328
Duluth, MN-WI	276,298	Rochester, MN	169,415
Fargo-Wahpeton, ND-MN	201,602	Rocky Mount, NC	144,293
Farmington, NM	120,367	Salinas, CA	413,408
Fayetteville-Springdale-Rogers, AR-MO	368,043	Santa Fe-Espanola, NM	175,574
Flagstaff, AZ	120,295	Sioux City-Vermillion, IA-NE-SD	142,802
Fort Collins-Loveland, CO	264,605	Sioux Falls, SD	194,654
Fort Smith, AR-OK	278,345	Tallahassee, FL	327,869
Grand Junction, CO	121,419	Topeka, KS	225,796
Great Falls, MT	79,389	Tucson, AZ	881,221
Hot Springs, AR	90,059	Wilmington, NC	287,013
Houma-Bayou Cane-Thibodaux, LA	196,860		
Idaho Falls-Blackfoot, ID	147,419		

(1) This list represents cities with the lowest levels of short term $PM_{2.5}$ air pollution.

Table 5a: *Top 25 Cleanest U.S. Cities for Long-term Particle Pollution (Annual $PM_{2.5}$)* [1]

Rank	Design Value	Metropolitan Statistical Area	Population
1	4.9	Santa Fe-Espanola, NM	175,574
1	4.9	Honolulu, HI	896,019
3	5.1	Cheyenne, WY	82,894
4	6.0	Great Falls, MT	79,389
5	6.4	Farmington, NM	120,367
5	6.4	Anchorage, AK	334,124
5	6.4	Albuquerque, NM	753,988
8	6.6	Bismarck, ND	96,349
9	7.2	Kennewick-Richland-Pasco, WA	203,111
10	7.5	Lubbock-Levelland, TX	254,439
10	7.5	Billings, MT	141,297
12	7.6	Idaho Falls-Blackfoot, ID	147,419
13	7.7	Grand Junction, CO	121,419
13	7.7	Colorado Springs, CO	565,404
15	7.8	Bellingham, WA	174,362
16	7.9	Rapid City, SD	115,328
16	7.9	Fargo-Wahpeton, ND-MN	177,064
18	8.0	Pueblo, CO	146,880
19	8.2	Fort Collins-Loveland, CO	264,605
20	8.4	Salem, OR	357,812
21	8.5	Duluth, MN-WI	276,298
21	8.5	Albany-Corvallis-Lebanon, OR	183,559
23	8.6	Salinas, CA	413,408
24	8.9	Cape Coral-Fort Myers, FL	475,639
25	9.0	Port St. Lucie-Fort Pierce, FL	337,638

(1) This list represents cities with the lowest levels of annual $PM_{2.5}$ air pollution.

Table 5b: *Cleanest U.S. Cities for Ozone Air Pollution* [1]

Metropolitan Area	Population
Ames-Boone, IA	106,816
Bellingham, WA	174,362
Brownsville-Harlingen-Raymondville, TX	373,551
Colorado Springs, CO	565,404
Duluth, MN-WI	276,298
Eugene-Springfield, OR	326,666
Fargo-Wahpeton, ND-MN	201,602
Flagstaff, AZ	120,295
Greeley, CO	205,014
Honolulu, HI	896,019
Laredo, TX	207,611
Lincoln, NE	274,178
Logan, UT-ID	105,394
Medford, OR	186,430
Mount Vernon-Anacortes, WA	106,906
Reno-Sparks, NV	365,748
Salem, OR	357,812
Salinas, CA	413,408
San Luis Obispo-Paso Robles, CA	253,408
Sioux Falls, SD	194,654
Spokane, WA	427,506
Tallahassee, FL	327,869

(1) This list represents cities with the lowest monitored levels of ozone air pollution.

Table 6: *Cleanest Counties for Short-term Particle Pollution (24-Hour $PM_{2.5}$)* [1]

County, State	Metropolitan Statistical Area
Baldwin, AL	Mobile-Daphne-Fairhope, AL Combined Statistical Area
Anchorage, AK	Anchorage, AK Metropolitan Statistical Area
Juneau, AK	Juneau, AK Micropolitan Statistical Area
Matanuska-Susitna, AK	Anchorage, AK Metropolitan Statistical Area
Coconino, AZ	Flagstaff, AZ Metropolitan Statistical Area
Gila, AZ	Payson, AZ Micropolitan Statistical Area
Pima, AZ	Tucson, AZ Metropolitan Statistical Area
Santa Cruz, AZ	Nogales, AZ Micropolitan Statistical Area
Arkansas, AR	
Craighead, AR	Jonesboro, AR Metropolitan Statistical Area
Crittenden, AR	Memphis, TN-MS-AR Metropolitan Statistical Area
Faulkner, AR	Little Rock-North Little Rock-Pine Bluff, AR Combined Statistical
Garland, AR	Hot Springs, AR Metropolitan Statistical Area
Jefferson, AR	Little Rock-North Little Rock-Pine Bluff, AR Combined Statistical
Marion, AR	
Mississippi, AR	Blytheville, AR Micropolitan Statistical Area
Phillips, AR	West Helena, AR Micropolitan Statistical Area
Polk, AR	
Pope, AR	Russellville, AR Micropolitan Statistical Area
Sebastian, AR	Fort Smith, AR-OK Metropolitan Statistical Area
Washington, AR	Fayetteville-Springdale-Rogers, AR-MO Metropolitan Statistical Area
White, AR	Little Rock-North Little Rock-Pine Bluff, AR Combined Statistical
El Dorado, CA	Sacramento--Arden-Arcade--Truckee, CA-NV Combined Statistical Area
Humboldt, CA	Eureka-Arcata-Fortuna, CA Micropolitan Statistical Area
Mendocino, CA	Ukiah, CA Micropolitan Statistical Area
Modoc, CA	
Monterey, CA	Salinas, CA Metropolitan Statistical Area
Santa Cruz, CA	San Jose-San Francisco-Oakland, CA Combined Statistical Area
Arapahoe, CO	Denver-Aurora-Boulder, CO Combined Statistical Area
Archuleta, CO	

County, State	Metropolitan Statistical Area
Delta, CO	
El Paso, CO	Colorado Springs, CO Metropolitan Statistical Area
Elbert, CO	Denver-Aurora-Boulder, CO Combined Statistical Area
Gunnision, CO	
La Plata, CO	Durango, CO Micropolitan Statistical Area
Larimer, CO	Fort Collins-Loveland, CO Metropolitan Statistical Area
Mesa, CO	Grand Junction, CO Metropolitan Statistical Area
Pueblo, CO	Pueblo, CO Metropolitan Statistical Area
Routt, CO	
Brevard, FL	Palm Bay-Melbourne-Titusville, FL Metropolitan Statistical Area
Citrus, FL	Homosassa Springs, FL Micropolitan Statistical Area
Lee, FL	Cape Coral-Fort Myers, FL Metropolitan Statistical Area
Leon, FL	Tallahassee, FL Metropolitan Statistical Area
Marion, FL	Ocala, FL Metropolitan Statistical Area
St. Lucie, FL	Port St. Lucie-Fort Pierce, FL Metropolitan Statistical Area
Seminole, FL	Orlando-The Villages, FL Combined Statistical Area
Volusia, FL	Deltona-Daytona Beach-Palm Coast, FL Combined Statistical Area
Glynn, GA	Brunswick, GA Metropolitan Statistical Area
Maui, HI	Kahului-Wailuku, HI Micropolitan Statistical Area
Bonneville, ID	Idaho Falls-Blackfoot, ID Combined Statistical Area
Kootenai, ID	Coeur d'Alene, ID Metropolitan Statistical Area
Nez Perce, ID	Lewiston, ID-WA Metropolitan Statistical Area
Twin Falls, ID	Twin Falls, ID Micropolitan Statistical Area
Champaign, IL	Champaign-Urbana, IL Metropolitan Statistical Area
McLean, IL	Bloomington-Normal, IL Metropolitan Statistical Area
Randolph, IL	
Rock Island, IL	Davenport-Moline-Rock Island, IA-IL Metropolitan Statistical Area
Howard, IN	Kokomo-Peru, IN Combined Statistical Area
Cerro Gordo, IA	Mason City, IA Micropolitan Statistical Area
Emmet, IA	

(1) This list represents counties with no monitored short term $PM_{2.5}$ air pollution in unhealthy ranges.

Table 6 (continued): *Cleanest Counties for Short-term Particle Pollution (24-Hour $PM_{2.5}$)*

County, State	Metropolitan Statistical Area
Polk, IA	Des Moines-Newton, IA Combined Statistical Area
Pottawattamie, IA	Omaha-Council Bluffs-Fremont, NE-IA Combined Statistical Area
Story, IA	Ames-Boone, IA Combined Statistical Area
Van Buren, IA	
Woodbury, IA	Sioux City-Vermillion, IA-NE-SD Combined Statistical Area
Linn, KS	Kansas City-Overland Park-Kansas City, MO-KS Combined Statistical
Shawnee, KS	Topeka, KS Metropolitan Statistical Area
Christian, KY	Clarksville, TN-KY Metropolitan Statistical Area
Concordia, LA	Natchez, MS-LA Micropolitan Statistical Area
Lafayette, LA	Lafayette-Acadiana, LA Combined Statistical Area
Rapides, LA	Alexandria, LA Metropolitan Statistical Area
St. Bernard, LA	New Orleans-Metairie-Bogalusa, LA Combined Statistical Area
Terrebonne, LA	Houma-Bayou Cane-Thibodaux, LA Metropolitan Statistical Area
Knox, ME	Rockland, ME Micropolitan Statistical Area
Oxford, ME	
York, ME	Portland-Lewiston-South Portland, ME Combined Statistical Area
Hampshire, MA	Springfield, MA Metropolitan Statistical Area
Alpena, MI	Alpena, MI Micropolitan Statistical Area
Grand Traverse, MI	Traverse City, MI Micropolitan Statistical Area
Mille Lacs, MN	
Olmsted, MN	Rochester, MN Metropolitan Statistical Area
Saint Louis, MN	Duluth, MN-WI Metropolitan Statistical Area
Scott, MN	Minneapolis-St. Paul-St. Cloud, MN-WI Combined Statistical Area
Stearns, MN	Minneapolis-St. Paul-St. Cloud, MN-WI Combined Statistical Area
DeSoto, MS	Memphis, TN-MS-AR Metropolitan Statistical Area
Hancock, MS	Gulfport-Biloxi-Pascagoula, MS Combined Statistical Area
Jackson, MS	Gulfport-Biloxi-Pascagoula, MS Combined Statistical Area
Cass, MO	Kansas City-Overland Park-Kansas City, MO-KS Combined Statistical
Cedar, MO	
Monroe, MO	

County, State	Metropolitan Statistical Area
Cascade, MT	Great Falls, MT Metropolitan Statistical Area
Flathead, MT	Kalispell, MT Micropolitan Statistical Area
Rosebud, MT	
Yellowstone, MT	Billings, MT Metropolitan Statistical Area
Cass, NE	Omaha-Council Bluffs-Fremont, NE-IA Combined Statistical Area
Cedar, NE	
Cherry, NE	
Deuel, NE	
Hall, NE	Grand Island, NE Micropolitan Statistical Area
Lancaster, NE	Lincoln, NE Metropolitan Statistical Area
Lincoln, NE	North Platte, NE Micropolitan Statistical Area
Sarpy, NE	Omaha-Council Bluffs-Fremont, NE-IA Combined Statistical Area
Scotts Bluff, NE	Scottsbluff, NE Micropolitan Statistical Area
Washington, NE	Omaha-Council Bluffs-Fremont, NE-IA Combined Statistical Area
Bernalillo, NM	Albuquerque, NM Metropolitan Statistical Area
Chaves, NM	Roswell, NM Micropolitan Statistical Area
Grant, NM	Silver City, NM Micropolitan Statistical Area
Lea, NM	Hobbs, NM Micropolitan Statistical Area
San Juan, NM	Farmington, NM Metropolitan Statistical Area
Santa Fe, NM	Santa Fe-Espanola, NM Combined Statistical Area
Chatham, NC	Raleigh-Durham-Cary, NC Combined Statistical Area
Edgecombe, NC	Rocky Mount, NC Metropolitan Statistical Area
Lenoir, NC	Kinston, NC Micropolitan Statistical Area
Montgomery, NC	
New Hanover, NC	Wilmington, NC Metropolitan Statistical Area
Onslow, NC	Jacksonville, NC Metropolitan Statistical Area
Orange, NC	Raleigh-Durham-Cary, NC Combined Statistical Area
Robeson, NC	Lumberton-Laurinburg, NC Combined Statistical Area
Billings, ND	Dickinson, ND Micropolitan Statistical Area
Burke, ND	

Table 6 (continued): *Cleanest Counties for Short-term Particle Pollution (24-Hour $PM_{2.5}$)*

County, State	Metropolitan Statistical Area
Burleigh, ND	Bismarck, ND Metropolitan Statistical Area
Cass, ND	Fargo-Wahpeton, ND-MN Combined Statistical Area
Mercer, ND	
Caddo, OK	
Canadian, OK	Oklahoma City-Shawnee, OK Combined Statistical Area
Carter, OK	Ardmore, OK Micropolitan Statistical Area
Cherokee, OK	Tahlequah, OK Micropolitan Statistical Area
Comanche, OK	Lawton, OK Metropolitan Statistical Area
Custer, OK	
Kay, OK	Ponca City, OK Micropolitan Statistical Area
Lincoln, OK	Oklahoma City-Shawnee, OK Combined Statistical Area
Mayes, OK	
Muskogee, OK	Muskogee, OK Micropolitan Statistical Area
Ottawa, OK	Miami, OK Micropolitan Statistical Area
Pawnee, OK	Tulsa-Bartlesville, OK Combined Statistical Area
Payne, OK	Stillwater, OK Micropolitan Statistical Area
Seminole, OK	
Benton, OR	Albany-Corvallis-Lebanon, OR Combined Statistical Area
Columbia, OR	Portland-Vancouver-Beaverton, OR-WA Metropolitan Statistical Area
Harney, OR	
Washington, RI	Providence-New Bedford-Fall River, RI-MA Metropolitan Statistical Area
Beaufort, SC	Hilton Head Island-Beaufort, SC Micropolitan Statistical Area
Edgefield, SC	Augusta-Richmond County, GA-SC Metropolitan Statistical Area
Georgetown, SC	Myrtle Beach-Conway-Georgetown, SC Combined Statistical Area
Greenwood, SC	Greenwood, SC Micropolitan Statistical Area
Horry, SC	Myrtle Beach-Conway-Georgetown, SC Combined Statistical Area
Brookings, SD	Brookings, SD Micropolitan Statistical Area
Brown, SD	Aberdeen, SD Micropolitan Statistical Area
Jackson, SD	
Minnehaha, SD	Sioux Falls, SD Metropolitan Statistical Area
Pennington, SD	Rapid City, SD Metropolitan Statistical Area
Dyer, TN	Dyersburg, TN Micropolitan Statistical Area
Maury, TN	Nashville-Davidson-Murfreesboro-Columbia, TN Combined Statistical
Montgomery, TN	Clarksville, TN-KY Metropolitan Statistical Area
Sumner, TN	Nashville-Davidson-Murfreesboro-Columbia, TN Combined Statistical
Bowie, TX	Texarkana, TX-Texarkana, AR Metropolitan Statistical Area
Cameron, TX	Brownsville-Harlingen-Raymondville, TX Combined Statistical Area
Ector, TX	Odessa, TX Metropolitan Statistical Area
Hidalgo, TX	McAllen-Edinburg-Pharr, TX Metropolitan Statistical Area
Lubbock, TX	Lubbock-Levelland, TX Combined Statistical Area
Montgomery, TX	Houston-Baytown-Huntsville, TX Combined Statistical Area
Nueces, TX	Corpus Christi-Kingsville, TX Combined Statistical Area
Potter, TX	Amarillo, TX Metropolitan Statistical Area
Adams, WA	
Benton, WA	Kennewick-Richland-Pasco, WA Metropolitan Statistical Area
Lewis, WA	Centralia, WA Micropolitan Statistical Area
Skagit, WA	Mount Vernon-Anacortes, WA Metropolitan Statistical Area
Whatcom, WA	Bellingham, WA Metropolitan Statistical Area
Whitman, WA	Pullman, WA Micropolitan Statistical Area
Door, WI	
Douglas, WI	Duluth, MN-WI Metropolitan Statistical Area
Manitowoc, WI	Manitowoc, WI Micropolitan Statistical Area
Ozaukee, WI	Milwaukee-Racine-Waukesha, WI Combined Statistical Area
Vilas, WI	
Winnebago, WI	Appleton-Oshkosh-Neenah, WI Combined Statistical Area
Wood, WI	Wisconsin Rapids-Marshfield, WI Micropolitan Statistical Area
Laramie, WY	Cheyenne, WY Metropolitan Statistical Area

Table 6a: *Top 25 Cleanest Counties for Long-term Particle Pollution (Annual $PM_{2.5}$)* [1]

Rank	County, State	Design Value
1	Elbert, CO	4.3
2	Maui, HI	4.8
3	Santa Fe, NM	4.9
3	Honolulu, HI	4.9
3	Sandoval, NM	4.9
6	Laramie, WY	5.1
7	La Plata, CO	5.3
8	Burke, ND	5.6
9	Vilas, WI	5.8
10	Grant, NM	6
10	Cascade, MT	6
10	Matanuska-Susitna, AK	6
10	Mercer, ND	6
14	Scotts Bluff, NE	6.1
14	Juneau, AK	6.1
14	Hancock, ME	6.1
17	Campbell, WY	6.3
18	San Juan, NM	6.4
18	Anchorage, AK	6.4
18	Bernalillo, NM	6.4
18	Essex, NY	6.4
22	Columbia, OR	6.5
22	Gunnison, CO	6.5
22	Sanders, MT	6.5
25	Burleigh, ND	6.6

(1) This list represents counties with the lowest levels of monitored long term $PM_{2.5}$ air pollution.

Table 6b: *Cleanest Counties for Ozone Air Pollution*

County, State	Metropolitan Statistical Area
Yukon-Koyukuk, AK	
Cochise, AZ	
Coconino, AZ	Flagstaff, AZ
Montgomery, AR	
Glenn, CA	
Lake, CA	
Marin, CA	San Jose-San Francisco-Oakland, CA
Mendocino, CA	
Monterey, CA	Salinas, CA
Napa, CA	San Jose-San Francisco-Oakland, CA
Plumas, CA	
San Francisco, CA	San Jose-San Francisco-Oakland, CA
San Luis Obispo, CA	San Luis Obispo-Paso Robles, CA
San Mateo, CA	San Jose-San Francisco-Oakland, CA
Santa Cruz, CA	San Jose-San Francisco-Oakland, CA
Siskiyou, CA	
Solano, CA	San Jose-San Francisco-Oakland, CA
Sonoma, CA	San Jose-San Francisco-Oakland, CA
Adams, CO	Denver-Aurora-Boulder, CO
Denver, CO	Denver-Aurora-Boulder, CO
El Paso, CO	Colorado Springs, CO
La Plata, CO	
Montezuma, CO	
Weld, CO	Greeley, CO
Lake, FL	Orlando-The Villages, FL
Leon, FL	Tallahassee, FL
Hawaii, HI	
Honolulu, HI	Honolulu, HI
Butte, ID	
Rock Island, IL	Davenport-Moline-Rock Island, IA-IL
Gibson, IN	Evansville, IN-KY
Palo Alto, IA	
Polk, IA	Des Moines-Newton, IA
Story, IA	Ames-Boone, IA
Orleans, LA	New Orleans-Metairie-Bogalusa, LA
Lake, MN	
Mille Lacs, MN	
St. Louis, MN	Duluth, MN-WI
Flathead, MT	

County, State	Metropolitan Statistical Area
Douglas, NE	Omaha-Council Bluffs-Fremont, NE-IA
Lancaster, NE	Lincoln, NE
Douglas, NV	Sacramento--Arden-Arcade--Truckee,
Washoe, NV	CA-NV
White Pine, NV	Reno-Sparks, NV
Eddy, NM	
Sandoval, NM	
Valencia, NM	Albuquerque, NM
Swain, NC	Albuquerque, NM
Billings, ND	
Cass, ND	
Dunn, ND	Fargo-Wahpeton, ND-MN
Mercer, ND	
Oliver, ND	
Columbia, OR	
Jackson, OR	Portland-Vancouver-Beaverton, OR-WA
Lane, OR	Medford, OR
Marion, OR	Eugene-Springfield, OR
Minnehaha, SD	Salem, OR
Brewster, TX	Sioux Falls, SD
Cameron, TX	
Kaufman, TX	Brownsville-Harlingen-Raymondville, TX
Webb, TX	Dallas-Fort Worth, TX
Cache, UT	Laredo, TX
San Juan, UT	Logan, UT-ID
Clallam, WA	
Clark, WA	
Klickitat, WA	Portland-Vancouver-Beaverton, OR-WA
Pierce, WA	
Skagit, WA	Seattle-Tacoma-Olympia, WA
Spokane, WA	Mount Vernon-Anacortes, WA
Thurston, WA	Spokane, WA
Whatcom, WA	Seattle-Tacoma-Olympia, WA
Oneida, WI	Bellingham, WA
Sauk, WI	
Vernon, WI	Madison-Baraboo, WI
Vilas, WI	
Teton, WY	

Particle Pollution

air pollution in the form of tiny, invisible particles is still quietly, but effectively killing tens of thousands of Americans every year.

Health Effects of Ozone and Particle Pollution

Particle Pollution: Deadly Then and Now

December 5-9, 1952. A massive layer of smoke and fog descended on the city of London, England, born of the smelters, factories, and coal furnaces that powered the industry and heated the homes of the region. In its wake, it left perhaps 12,000 people dead, taking its slow toll for months to come after the haze had lifted.[1]

The Lethal London Smog of 1952, as it known now, 50 years later, was hardly the first time the air itself turned deadly. Twenty-two years earlier, in 1930, in the Meuse Valley in Belgium, 60 people had also died in December. And, in 1948, a weather inversion had trapped the exhausts of factories, coke ovens and refineries in tiny Donora, Pennsylvania. Although it only killed 20 people, 17 died on one day in October. As would happen four years later in London, undertakers in Donora ran out of caskets. [2]

Each of these three cases sounded a warning to the world about the deadly threat of airborne pollution and helped usher in the modern environmental movement.[3] Then, in the mid 1990s, new scientific studies demonstrated that the threat remained: air pollution in the form of tiny, invisible particles, was still quietly, but effectively killing tens of thousands of Americans every year.

What Is Particle Pollution?

Particle pollution refers to a combination of fine solids and aerosols that are suspended in the air we breathe. The particles are especially small, some so small they can only be seen with an electron microscope. Particle pollution is all around us — sometimes in high concentrations. However, particle pollution can trigger reactions ranging from coughing and wheezing to heart attacks and death. Because of their size, you can't see the individual particles. You can only see the haze that forms when millions of particles blur the spread of sunlight in an area. You can't tell when you're breathing particle pollution. And yet it is so dangerous it can take years off your life.[4]

This is the first time the American Lung Association has included assessments of particle pollution in the ***American Lung Association State of the Air***. This report provides the first specific county-level information on the presence of particle pollution now available to us through a new monitoring network first set up in the late 1990s. The years covered by this report, 2000 to 2002, mark the first time three complete years of monitoring data were available nationwide from this network.

What You Can't See Can Hurt You

Particle pollution ranges in size from the tiny to the microscopic. Our built-in respiratory protection system is designed to filter and get rid of the larger particles, those that are larger than 10 microns in diameter. For comparison, a human hair is about 75 microns in diameter. However, the smaller particles get trapped in the lungs, while the smallest are so tiny they pass through the lungs into the blood stream, along with the essential oxygen molecules. Researchers categorize particles according to size, grouping them as coarse particles and fine particles. Coarse particles fall between 2.5 microns and 10 microns in diameter and are called $PM_{10\text{-}2.5}$. Fine particles are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Both coarse and fine particles are harmful to your health.

Data in the ***American Lung Association State of the Air: 2004*** come from monitors measuring the concentration of fine particles only. EPA reports particle pollution in terms of two forms, as a 24-hour average and as an annual average.[5] For the purposes of this report, the American Lung Association will refer to the data reported as the 24-hour average as "short-term" particle pollution and the data reported as the annual average as "year-round" particle pollution. A data collection network for $PM_{10\text{-}2.5}$ does not yet exist, though estimates of this size are made by extrapolating data from the older network of PM_{10} monitors, which monitor all particles 10 microns or smaller.

Where Does Particle Pollution Come From?

Coarse particles are formed primarily during mechanical processes — the breaking down of bigger bits into smaller bits. Construction and demolition, mining operations, agriculture, and coal and oil combustion are some of the activities that produce coarse particles. They are emitted directly.[6]

By contrast, chemical processes in the atmosphere create most fine particles. Gases emitted from combustion sources form particles in two ways: the gases can simply vaporize and then condense to become a particle of the same chemical compound; or they can react with other gases in the atmosphere to form a particle of a different chemical compound. Particles formed by this latter process chiefly come from the reaction of sulfur dioxide (SO_2), nitrogen oxides (NO_x) and volatile organic compounds with ammonium and other compounds in the atmosphere. Burning fossil fuels in factories, power plants, steel mills, smelters, diesel- and gasoline-powered motor vehicles generate a large part of the raw materials for fine particles, but so does burning wood in residential fireplaces and wood stoves and agricultural burning.[7]

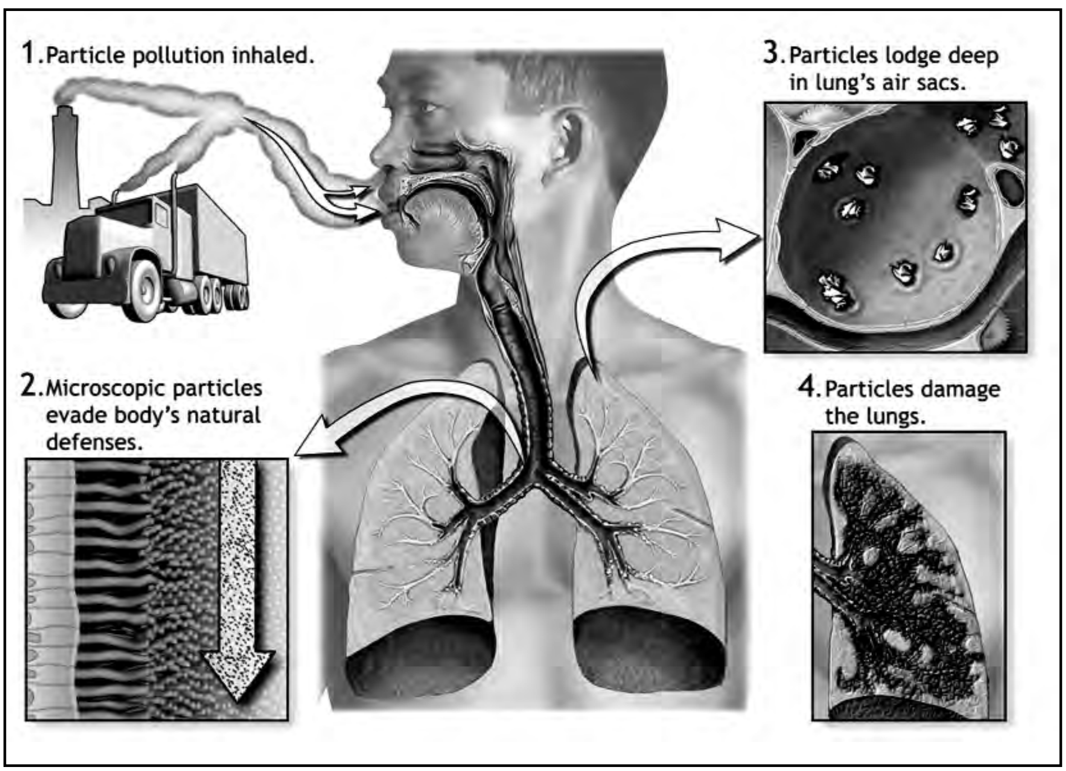
How Particle Pollution Affects Your Health

In the early 1990s, dozens of short-term community health studies from cities throughout the United States and around the world indicated that short-term increases in particle pollution were associated with adverse health effects ranging from increased respiratory symptoms to increased hospitalization and emergency room visits, to increased mortality from respiratory and cardiovascular disease.

In 1993, a landmark study appeared in the *New England Journal of Medicine*, which documented the significant risk to human life from long-term exposure to particle pollution. Called the Harvard Six City study, it looked at six small towns in the eastern U.S. and found clear evidence of the increased risk of premature death from the particle pollution in the most polluted city studied, compared to the cleanest.[8] Two years later, another group of researchers using the large nationwide database of personal histories from the American Cancer Society, came to similar conclusions.[9] Additional thorough reviews[10] have left no room for doubt: particles are shortening human life at the levels seen in the United States today.

Particle pollution causes a broad range of health problems. Exposure worsens asthma and causes wheezing, coughing, and respiratory irritation in anyone with sensitive airways. It also triggers heart attacks, cardiac arrhythmias (irregular heartbeat) and premature death.

Because of its very small size, particle pollution gets right through the nasal passage, past the trachea and deep into the lungs. The smallest of the particles can even enter the bloodstream via the lungs.[11]



For example, in a study published in 2003, researchers evaluated a series of autopsied lungs from Mexico City, a city with high particle levels, and compared them to lungs from Vancouver, where there is very little air pollution. The small airways in the Mexico City lungs showed markedly higher levels of fibrous tissue and muscle, and microscopic evidence of particle accumulation in the respiratory bronchioles. The study demonstrates that particle pollution penetrates into and is retained in the walls of small airways. The resulting damage to the lungs was similar to that found in the lungs of cigarette smokers.[12]

Study upon Study upon Study . . .

Studies showing the dangers of particle pollution are pouring in by the thousands. More than 2,000 peer-reviewed studies have been published since 1996, when the EPA last reviewed the standards for particle pollution. The new studies validate the research done before 1996 — showing the strong relationship between particle pollution, illness, hospitalization and premature death.

Most research distinguishes exposure to particle pollution by whether the elevated levels last for a “short-term” or a “long-term.” Short-term exposure is when particle pollution levels are particularly high over a period of a few hours to a few days. Studies of year-round or long-term exposure measure air pollution and health effects over a number of years. Both types of exposure are harmful to your health. Findings from the research are below.

Short-Term Exposure Can Be Deadly

First and foremost, short-term exposure to particle pollution can cause premature death. Those deaths can occur on the very day that particle levels are high, or within one to two months afterwards. Unfortunately, particle pollution does not just make people die a few days earlier than they might otherwise: these are deaths that would not have occurred without the pollution.[13] Particle pollution also diminishes lung function, causes greater use of asthma medications, and increased rates of school absenteeism, emergency room visits and hospital admissions. Other adverse effects can be coughing, wheezing, cardiac arrhythmias and heart attacks. Take a look at some of the findings from some of the latest studies:

Short-term increases in particle pollution have been linked to:

- Death from respiratory and cardiovascular causes, including strokes[14,15,16]
- Increased numbers of heart attacks, especially among the elderly and in people with heart conditions[17]
- Inflammation of lung tissue in young, healthy adults[18]
- Increased hospitalization for cardiovascular disease[19]
- Increased emergency room visits for patients suffering from acute respiratory ailments[20]
- Increased hospitalization for asthma among children[21,22,23]
- Increased severity of asthma attacks in children[24]

Year-round Exposure

Chronic exposure to particle pollution can shorten your life by one to three years.[25] Other symptoms range from premature births to serious respiratory disorders — even when the particle levels are very low.

Year-round exposure to particle pollution has also been linked to:

- Increased asthma hospitalization for children living within 200 meters of roads with heavy truck or trailer traffic[26]
- Slowed lung function growth in children and teenagers[27, 28]
- Significant damage to the small airways of the lungs[29]
- Increased risk of dying from lung cancer[30]
- Increased risk of death from cardiovascular disease[31]

Who is Affected?

Anyone living in an area with a high level of particle pollution is affected (you can take a look at levels in your state in this report.). People who are at the greatest risk from particle pollution exposure are: those with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema; people with sensitive airways, where exposure to particle pollution can cause wheezing, coughing, and respiratory irritation; the elderly; people with heart disease; and children.

Ozone Pollution: the Most Pervasive Pollutant

In 1996, the City of Atlanta hosted its first Olympic games. In the news that summer were the stories of the success of the athletes, as well as of the tragic bombing. However, something that wasn't publicized — until much later — was the unexpected impact the Olympics had on the health of Atlanta residents. And that story tells us much about the possibilities of a city with much less air pollution.

To make it easier for people to get to the games, Atlanta increased available public transportation, limited downtown motor vehicle use (especially in the mornings), and encouraged telecommuting and alternate work hours for businesses. Peak ozone concentrations decreased dramatically — by more than 25 percent — during the Olympics compared to the 4-week periods before and after. Some reductions were also seen in other pollutants like carbon monoxide and particles.[32] The effect that the decreased ozone concentrations and lower levels of particle pollution had on the health of the residents of Atlanta was astonishing and at the same time makes perfect sense — especially when you know more about ozone and particles.

What is Ozone?

Ozone (O_3) is an extremely reactive gas composed of three oxygen atoms. It is the primary ingredient of smog air pollution and very harmful to breathe. Ozone essentially attacks lung tissue by reacting chemically with it. It also damages crops, trees and other matter — even breaking down rubber compounds.

News about ozone can be confusing. Some days you hear that ozone levels are too high and other days that we need to prevent ozone depletion. Basically, the ozone layer up in the upper atmosphere (the stratosphere) is beneficial because it shields us from much of the sun's ultraviolet radiation. However, ozone air pollution at ground level where we can breathe it (in the troposphere) is anything but beneficial. It causes serious health problems.

Where Does Ozone Come From?

Ozone isn't emitted directly. The raw ingredients for ozone, nitrogen oxides (NO_x) and hydrocarbons, or volatile organic compounds (VOCs), are produced primarily when fossil fuels are burned or when fossil fuel-based chemicals evaporate. These molecules combine and form ozone when they come in contact with both heat and sunlight. NO_x is emitted from motor vehicles, power plants and other sources of high-heat combustion. VOCs are emitted from motor vehicles, chemical plants, refineries, factories, gas stations, paint, and other sources.

Ozone = NO_X + VOC + Heat + Sunlight

You may have wondered why "ozone action day" warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or filling your gas tank during daylight hours. It's because lawn mower exhaust and lost gasoline vapors turn into ozone in the heat and sun. And of course, automobile exhaust does the same thing. So it would follow that just before the summer of 1996, the residents of Atlanta were about to drastically reduce the amount of ozone in their air by reducing output of NO_x and VOCs.

How Ozone Pollution Affects Your Health

The effects of ozone on lung health have been studied at length using laboratory animals, clinical subjects, and human populations. The results are clear: ozone causes serious respiratory harm at levels currently experienced in the U.S.

Five groups of people are especially vulnerable to the effects of breathing ozone. They are: children, senior citizens, people who work or exercise outdoors, people with pre-existing respiratory disease (i.e., asthma or COPD), and "responders" who are otherwise healthy but have an enhanced reaction to ozone.

The effect that ozone has on an individual's health can vary depending on whether they fall into a susceptible population group, what the ozone concentration level is, and how long they are exposed to it.

Many areas in the U.S. produce enough ground-level ozone during the summer months to cause health problems that can be felt right away. These immediate problems are:

- shortness of breath,
- chest pain when inhaling deeply,
- wheezing and coughing.
- increased susceptibility to respiratory infections.

Exposure to ozone greatly increases:

- pulmonary inflammation
- the risk of asthma attacks, and
- the need for medical treatment and for hospitalization of persons with asthma.[33]

Short-term exposure to ozone has also been linked to aggravation of chronic obstructive pulmonary disease (COPD).[34] Over time, the repeated inflammation due to exposure to ozone over a period of years can lead to a chronic "stiffening" of the lungs.

The Atlanta Story

Atlanta, Georgia, is a prime example of an urban area with a history of serious ozone problems. So what happened in 1996 that later made such news in the health community? Turns out, the determined efforts of the city to reduce traffic during the Olympics succeeded in not just reducing congestion, but in improving the health of children with asthma. Revamping the way the city moved people during the Summer Olympic Games created a prolonged period of low ozone pollution that resulted in significantly lower rates of childhood asthma events for children aged 1–16. The number of asthma acute care events (e.g. treatment and hospitalization) decreased 42 percent in the Georgia Medicaid claims files. Pediatric emergency departments also saw significant reductions, as did the Georgia Hospital Discharge Database and a health maintenance organization database. It is important to note researchers determined that weather was not the determining factor in the reduced ozone levels. The health benefits the residents of Atlanta realized were truly due to their own efforts.[35]

Increasing the Evidence of Harm

Just last year, researchers from Yale University published in the *Journal of the American Medical Association* a study of children with asthma, whose mothers had tracked their symptoms on a daily basis. The study found that children with asthma were particularly vulnerable to ozone even at levels below EPA's current 8-hour ozone standard.[36] An accompanying editorial warned, "Air pollution is one of the most under-appreciated contributors to asthma exacerbation."[37]

While confirmatory research is needed, a couple of recent studies suggest that year-round exposure to ozone may be associated both with an increased risk of the development of asthma. Researchers tracking 3,500 students in Southern California found an increased onset of asthma in children who were taking part in three or more outdoor activities in communities with high levels of ozone.[38] An earlier study conducted on 3,000 adults in a Seventh Day Adventist community found that high levels of ozone, over time, were associated with adult onset asthma in nonsmoking males.[39]

Other recent studies have documented that high levels of ozone are linked to increased school absences for children from respiratory illnesses. Researchers looking at Reno, Nevada, and at a large group of children from Southern California linked high levels of ozone to increased absences for elementary school children.[40]

Ozone is harmful even when levels are low, especially for the elderly. Researchers in Montreal, Quebec, kept track of daily emergency room visits for respiratory illnesses in 25 hospitals. They found that patients over the age of 64 routinely showed respiratory problems immediately following days with higher ozone levels — even though ozone levels never rose above the 1-hour ozone standard of 120 parts per billion.[41]

Community health studies are pointing to less obvious, but serious effects from year-round exposure to ozone, especially for children. Yale University scientists followed five hundred students and determined that living just four years in a region with high levels of ozone and related co-pollutants was associated with diminished lung function and frequent reports of respiratory symptoms.[42] A much larger study of 3,300 school children in Southern California found reduced lung function in girls with asthma and boys who spent more time outdoors in areas with high levels of ozone.[43]

How to Protect Yourself from Ozone and Particle Pollution

To minimize your exposure to ozone and particle pollution:

- Pay attention to forecasts for high air pollution days to know when to take precautions
- Avoid exercising near high-traffic areas
- Avoid exercising outdoors when pollution levels are high, or substitute an activity that requires less exertion
- Eliminate indoor smoking
- Reduce the use of fireplaces and wood-burning stoves

Basically, avoid doing anything that causes you to breathe very deeply on days when pollution levels are high. The more deeply you breathe, the deeper into your lungs the particles will go. Listen to local news reports about air quality and reduce your exposure. Support national, state and local efforts to clean up the sources of pollution, as discussed in this report.

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Protecting the Nation From Air Pollution

Since the passage of the Clean Air Act in 1970, Americans have been slowly but surely moving toward cleaner air. Human exposure to many dangerous pollutants has declined significantly due to federal, state, and local enforcement of the Act. In the intervening years, thousands of studies have confirmed that air pollution is more harmful at lower levels than we appreciated in 1970, and that more people are vulnerable to its impact.

Unfortunately, as we demonstrate in the ***American Lung Association State of the Air: 2004***, our air is still too polluted in too many places, putting too many of the nation's people at risk. Despite what we know and what we've been able to accomplish, we still have too many places with unhealthful air.

The American Lung Association is greatly concerned about roadblocks to continued progress toward cleaner air. Threats come from two areas: proposals to roll back key provisions of the Clean Air Act and continued delays in carrying out the existing provisions.

The Clean Air Act requires the states and the federal government

> *"to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population."* [1]

This act has led to a significant reduction of almost all major air pollutants since 1970.[2] The Clean Air Act has clearly been one of America's most successful environmental laws.[3]

THE CLEAN AIR ACT: UNDER FIRE

The Clean Air Act is seriously at risk. Here's how:

- Last year, EPA reversed a provision in the Clean Air Act that would have required 17,000 of the nation's oldest, dirtiest power plants, oil refineries and other industrial facilities to meet the same emission standards as newly built ones when they are rehabilitated or modernized.
- EPA is running seriously behind in carrying out key steps to protect public health, as required by the Act.

- The Administration and members of Congress are proposing new laws that would roll back existing requirements of the Act, and allow more pollution, lasting over a longer period of time, than the Act would permit.

To learn about what this means to you, read on.

Easing up on Polluters: Changes to New Source Review

In 2003, EPA took two major steps that cut the legs out from under a provision of the Clean Air Act called New Source Review. New Source Review (NSR) is a process designed to ensure that communities with unhealthful levels of air pollution don't get more polluted when a new source of pollution comes to the community — like a new industrial facility or an existing facility that is renovated in ways that enable it to put out more pollution.

Back in 1999, EPA charged that many electricity-generating utilities had failed to comply with the requirements of NSR, because they increased emissions of hazardous pollutants at their coal-fired plants without taking the required steps to clean them up. EPA took dozens of them to court and initiated administrative action against others. A few of the cases have already been settled.

Then in 2002 and 2003, the rules changed. In two sweeping new regulations, EPA rewrote the NSR provisions, providing huge loopholes to industry that would allow polluters to significantly increase pollution in existing plants without having to clean up the pollution. These are the changes EPA made:

EPA will allow plants to cherry-pick two years of the last 10 to serve as their baseline for deciding if they need to clean up. Plants that will increase more than one pollutant now can avoid having to reduce the rest their pollutants if they clean up just one of them.

If the plant had been required to install new equipment to reduce emissions within the last decade, EPA's loopholes exempt the plant from having to install any new equipment to reduce pollution for up to 10 years, even if the processing equipment is completely replaced. As technology advances, new methods that could result in even fewer emissions wouldn't even be considered during that decade.

EPA severely limited the actions states and local governments can take to stop transported pollution. This would prohibit states from attacking the problem of ozone blown into their area from upwind sources, as the New England and Mid-Atlantic states did in the mid-1990s, which set the stage for the first strong rules to clean up power plants during the Clinton Administration.

Under possibly the most damaging set of changes, EPA greatly expanded the list of activities defined as "routine maintenance," which were already exempted from requiring clean-up. EPA redefined "routine maintenance" to mean any project that costs less than 20 percent of the replacement cost of the entire plant, no matter how much additional pollution it creates. So now, no matter what changes are made, they will just be "routine maintenance" even though the entire plant may cost billions of dollars to replace. By basing this definition on the cost of the plant rather than on how much pollution is created, this new definition effectively exempts plants from having to install or upgrade their emissions reduction equipment at all.

So if you live in an area with terrible air quality, and are downwind from an old coal-fired power plant, the changes to NSR mean that plant can continue to pollute the air you and your family breathe for decades. With EPA's changes, they are allowed to keep polluting your air at the same rate for 10 years past the time they made their last upgrade, and they could increase their pollution — all under the watchful eye of EPA.

In response to EPA's crippling changes to NSR, the American Lung Association and six environmental groups sued EPA on February 23, 2003 and October 27, 2003. In addition, the attorneys general of 14 states and the District of Columbia also sued to return the teeth to the NSR protections.

On December 24, 2003, the DC Circuit Court issued a stay to prevent EPA from taking the final steps, agreeing with the Lung Association and its allies that allowing EPA to move forward before a court review would likely irreparably harm public health. Critically, the Court also agreed that the Lung Association and its allies were likely to prevail on the merits of the case, which meant that strong evidence had been presented to show that EPA would lose the case.

DELAYS THAT HARM

Delays in deciding how much cleaner the air needs to be.

EPA is required to examine current scientific studies and evaluate the health effects of air pollution every five years. Based on that review, they are required to set standards for concentrations of ozone and particles and four other pollutants to protect public health with an "adequate margin of safety."[4] This frequent assessment is critical to help ensure that the standards set by EPA reflect the current understanding of the effects of these pollutants.

To force EPA to carry out this one duty, the American Lung Association has sued the agency three times in the last 11 years. The Lung Association's constant pressure resulted in the latest standards adopted on July 18, 1997. However, five years later, in 2002, EPA had not completed its review of the $PM_{2.5}$ standard, nor even begun work reviewing the ozone science, despite the clear requirements to do so.

On December 24, 2002, the American Lung Association and eight environmental groups took legal action against EPA for its failure to review the science and the standards for ozone and particle pollution. On May 27, 2003, EPA committed to a schedule under a court order, promising to complete the particle standards review by December 2004 and have the ozone standard reviewed by December 2005. However, EPA has had continual difficulty meeting interim steps in that schedule.

Delays in deciding where to clean up.

If a county is not meeting the most current air quality standards or contributes to another county's pollution problems, the Clean Air Act requires EPA to designate it a "nonattainment area." Once this happens, several automatic controls are to be put into place, and the state or local air pollution office is to begin work on a plan to reduce the air pollution by a specified date.

When it announced the 1997 standards, EPA cited many benefits to public health that would result if all areas of the United States were to come into compliance (or become "in attainment") with the new measures. Quoted below are some of the benefits that EPA identified as likely in their press announcement of the standards:

- "About 15,000 lives each year will be saved, especially among the elderly and those with existing heart and lung diseases."
- "Reduced risk of hospital admissions by thousands each year, and fewer emergency room visits, especially in the elderly and those with existing heart and lung diseases."
- "Reduced risk of significant decreases (15% to over 20%) in children's lung functions (such as difficulty in breathing or shortness of breath), approximately 1 million fewer incidences each year, which can limit a healthy child's activities or result in increased medication use, or medical treatment, for children with asthma."
- "Reduced risk of hospital admissions and emergency room visits for respiratory causes, thousands fewer admissions and visits for individuals with asthma." [5]

However, none of these benefits of the 1997 standards had begun nearly six years later because of delays in putting the next steps in place. In 2002, six years after EPA adopted the standards, not one area had been designated for failing to meet them. Air-quality monitoring data had fully documented where these areas were. But until the states knew officially which areas were designated as "nonattainment," they were not required to put together a plan to improve their air.

On May 30, 2002, the American Lung Association and eight environmental groups began the legal process that ended with an agreement with EPA on November 13, 2002. Finally work can begin. On April 15, 2004, EPA designated its first nonattainment areas for ozone. This step was a direct result of the legal action that the American Lung Association took. EPA has also announced plans to finally designate nonattainment areas for particle pollution by December 2004.

Setting standards is not easy. It requires thoughtful and knowledgeable review of the science. However, the most important part is to enforce those standards. Cleaning up ozone and particle pollution is a long process, since many things must change to make it work. As it stands, the states will not have to submit their plans for cleaning up the air until 2007, ten years after the standards were established. Until then, we remain stuck under a cloud of weaker standards that EPA has been using since 1979.

HOW YOU CAN HELP CLEAN UP THE AIR

The American Lung Association urges Americans to contact members of Congress to oppose any bills that would weaken the Clean Air Act and to oppose the Administration's power plant bill, S. 485/HR 999. Log on to www.lungusa.org to tell your members of Congress to vote "no" on S. 485/HR 999.

THE PROBLEM WITH POWER PLANTS

Old coal-fired power plants have become the some of the biggest industrial contributors to our unhealthful air, especially to the level of particle pollution in the eastern United States. The toll of death, disease and environmental destruction caused by coal-fired power plant pollution continues to mount. A study by Abt Associates released in 2000 attributed 30,000 premature deaths annually to power plant pollution.[6]

Since 1970, the Clean Air Act has not required the oldest, dirtiest coal-burning power plants to comply with new emissions standards. This loophole in the Clean Air Act allows power companies to keep using these older facilities with outdated pollution controls.

When "Clear Skies" Doesn't Bring Clear Skies.

An Administration proposal, introduced as the Clear Skies Initiative (S. 485/HR 999), purports to cut pollution from power plants but will be less protective than the Clean Air Act, delaying and reducing cuts in sulfur dioxide, nitrogen oxides, and mercury pollution. Introduced by Sen. Jim Inhofe (R-OK) and Rep. Joe Barton (R-TX), the Administration plan would roll back existing requirements, while permitting more pollution to continue for decades longer. Specific evidence that the Administration proposal sanctions more pollution than current requirements of the Clean Air Act are found in comparing the two, using EPA's own internal assessments: [7]

- The Administration plan allows *more than one and a half times as much* NO_x for nearly a decade longer (2010-2018), and *one third more* nitrogen oxides (NO_x) even after 2018.
- The Administration plan allows *more than twice as much* sulfur dioxide (SO_2) for nearly a decade longer (2010-2018), compared with faithful enforcement of the current Clean Air Act. After 2018, SO_2 emissions will still be *one and a half times* higher than if current law is enforced.
- The Administration plan lets power plants emit *more than five times as much* mercury for a decade longer (2010-2018) and *three times as much* after 2018.
- The full pollution reductions are likely to be further delayed, to as late as 2025, because of emissions "banking" provisions.

The Administration plan also repeals key provisions of the Clean Air Act:

- No longer would local governments be able to require state-of-the-art pollution controls in new plants *of any type* or in any older plants that were increasing their pollution when they rebuild or expand their facilities.
- No longer could states located downwind of other states and suffering from the pollution created by power plants in those states take legal action to protect their citizens. Under the Clean Air Act, states can take legal action

to effectively require those plants to reduce pollution. Revoking that provision would remove the chief tool the Northeast states used effectively to tackle pollution from Midwest and southern power plants.

- Even the national parks and wilderness areas would be threatened by more pollution under the Administration proposal. It would repeal clean up requirements for existing sources, while weakening Clean Air Act safeguards built in for these protected lands.

Another Weak Congressional Effort

Still another bill that would weaken the local pollution safeguards in the current Clean Air Act is the Clean Air Planning Act of 2003 (S.843). Sen. Tom Carper (D-DE) introduced this bill to the Senate on April 8, 2003.

For example, this bill would exempt any power plant from clean up that would be required under New Source Review as long as its hourly pollution rate does not increase. Often plants are modified making them more efficient to operate, allowing them to run for more hours total. A plant that increases its total pollution because it operates for more hours would no longer have to install modern pollution controls. However, the air we breathe and the health of the public is affected by how much pollution the plant produces, not by whether the plant is more efficient at producing pollution.

Additionally, the bill does not require reductions in emissions of nitrogen oxides, particle and mercury pollutants as much as is necessary to protect public health.

Real Steps To Clean Up Power Plants

If it is enforced, the existing Clean Air Act will require major reductions from power plants. If Congress considers legislation to require further reductions, the American Lung Association supports an approach that curbs emissions of all the major power plant pollutants. The Clean Power Act (S. 366 introduced by Sens. James Jeffords, I-VT, Susan Collins, R-ME, and Joseph Lieberman, D-CT) uses just such an approach. The bill preserves key provisions in the Clean Air Act, but targets levels of power plant pollutants that must be reduced. It provides a coordinated approach for all four major power plant pollutants—sulfur dioxide, nitrogen oxides, mercury and carbon dioxide —within the next six years. These components would ensure that power plants become cleaner and local air quality is protected.

In the interim, the Clean Air Act gives EPA authority to force the plants to clean up. On January 30, 2004, EPA issued a proposed "Interstate Air Quality Rule," which will result in states developing plans to force these plants to clean up. Similar to a method used in 1998, EPA will establish statewide caps for levels of nitrogen oxides and sulfur dioxide, two key pollutants that contribute to ozone and particle development. This rule would trigger planning in 29 states and the District of Columbia to reduce power plants emissions by 2015.[8] Although the time given under the proposed rule is much too long (the 1998 rule required clean-up by 2004), and the cuts are not deep enough, this approach can reduce pollution significantly under the existing the Clean Air Act.

HOW YOU CAN HELP CLEAN UP THE AIR

To fight back and help really clean up dirty power plants, we can use the tools we already have in place in the Clean Air Act. The American Lung Association urges Americans to contact members of Congress to let them know that you oppose any power plant legislation that does not maintain the protections in the Clean Air Act. Be clear; tell them you want power plants cleaned up now, and the Administration's Clear Skies Initiative is too little, too late.

DEEP-CLEANING THE DIRTIEST DIESEL

Diesel exhaust is a noxious brew of waste that adds millions of tons of particles and ozone-causing chemicals into the air each year. Recognizing that, EPA issued regulations in 2000, which were reaffirmed in January 2001, that would tackle the most visible diesels: trucks and buses, and their fuels. The regulations significantly limit tailpipe emissions from heavy-duty diesel vehicles by requiring cleaner engines and much cleaner diesel fuel by 2007.

The new rule will cap sulfur levels in diesel fuel at 15 parts per million and impose tough new emissions standards on all trucks and buses. This will result in a more than 90 percent reduction in emissions of harmful pollutants like particle pollution and nitrogen oxides.

The health risk from diesel exposure is greatest for children, the elderly, people who have respiratory problems or who smoke, people who do regular strenuous exercise in diesel-polluted areas, and people who work or live near diesel exhaust sources. A study released in February 2001 by the Natural Resources Defense Council and the Coalition for Clean Air shows that children who ride a diesel school bus may be exposed to up to four times more toxic diesel exhaust than someone traveling in a car directly in front of it. The study found that excess exhaust levels on school buses were 23 to 46 times higher than levels considered to be a significant cancer risk, according to EPA and federal guidelines.[9]

In April 2003, EPA announced its "Clean School Bus USA program" to clean up diesel school buses and, in January 2004, announced plans to expand the project. EPA funds school systems to replace or clean up existing dirty diesel buses.[10] Several American Lung Associations across the nation are involved in this and similar programs to help local school systems reduce this threat to children's health and to reduce the overall pollution school buses can create.

Heavy Equipment Engines: The Dirtiest Diesels

While new rules to regulate emissions of diesel truck and buses will make a great deal of difference in the quality of our air, these rules alone will not be enough. In April 2003, EPA announced a proposal to take steps to clean up heavy equipment and other diesel engines and fuel to the same degree as trucks and buses. EPA must take the final steps to clean up these engines.

What are heavy equipment diesel engines? These are engines that power large, familiar equipment: such as bulldozers and excavators used in construction, electric generators and forklifts used by industry, and tractors and irrigation pumps used in agriculture. Surprisingly, together they produce more diesel emissions than do all those trucks and buses on the highways. Particle pollution (measured as $PM_{2.5}$) emissions from heavy equipment vehicles and engines accounted for 64 percent of transportation source emissions. They account for 19 percent of all emissions of nitrogen oxides, a key ingredient in forming ozone.[11]

Heavy equipment diesel can benefit from the technological advances that will occur in order to meet the 2007 standards required of buses and trucks — but only if low-sulfur diesel fuel, which is necessary for these technologies to operate, is available for these engines, as well. EPA's proposed changes would require manufacturers to provide cleaner new engines beginning in 2008 and completed by 2014. Fuel for these engines would have 99 percent less sulfur, phased in between 2007 and 2010.

EPA projected a long list of benefits to human health expected each year from cleaning up heavy equipment diesel and fuel. These included:

- 9,600 fewer premature deaths;
- 16,000 fewer nonfatal heart attacks;
- 5,700 fewer cases of chronic bronchitis; and
- 8,300 fewer hospital admissions.[12]

As this report goes to print, EPA is expected to announce measures to make their 2003 proposals final.

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[1] 42 U.S.C. §7401 (b) (1).
[2] EPA data show declines nationally since the 1980s for all major pollutants. However, during the 1990s, EPA data showed no change in ozone nationwide. EPA. National Air Quality and Emissions Trends Report, 2003 Special Studies Edition. Washington, DC.: U.S. Government Printing Office; 2003. EPA Publication No. 454/R-03-005. http://www.epa.gov/oar/aqtrnd03/.
[3] EPA. National Air Quality and Emissions Trends Report, 2003.
[4] These six pollutants are ozone, particulates (particle pollution), nitrogen oxides, sulfur dioxide, carbon monoxide and lead. 42 U.S.C. § 7409(b) (1) and (d)(1).
[5] EPA. NTC Fact Sheets On The New Ozone (Smog) And Particulate (Soot) Air Quality Standards To Be Signed Today By EPA Administrator Carol M. Browner. July 16, 1997.
[6] Abt Associates. The Particle Related Benefits of Reducing Power-Plant Emissions. Prepared for the Clean Air Task Force. October 2000. Available at www.cleartheair.org.
[7] EPA. "Discussion of Multi-Pollutant Strategy," Meeting with the Edison Electric Institute, September 18, 2001, "Comparison of Requirements Under Business-as-usual and the Straw Proposal," page 10. http://www.cleartheair.org/currentstatus.pdf. EPA. December 4, 2001, Supplemental presentation to Edison Electric Institute on mercury. http://www.cleartheair/epamercury.pdf.
[8] EPA. Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Interstate Air Quality Rule); Proposed Rule. Federal Register 69: 4566-4650. January 30, 2004.
[9] Solomon, Gina et al. No Breathing in the Aisles: Diesel Exhaust Inside School Buses. Natural Resources Defense Council and the Coalition for Clean Air. January 2001.
[10] EPA. Press Release: Bush Administration Proposes Major New Funding to Reduce School Bus Emissions. January 30, 2004.
[11] American Lung Association and Environmental Defense. Closing the Diesel Divide: Protecting Public Health from Diesel Air Pollution. 2003.
[12] EPA. Regulatory Announcement: Public Health and Environmental Benefits of EPA's Proposed Program for Low-Emission Nonroad Diesel Engines and Fuel. April 2003.

Conclusion

In its 34-year history, the Clean Air Act has proven its worth many times over. Thanks to the protections written into that law, we have reduced the burden of air pollution on those most at risk. The air is cleaner than it was in 1970. However, cleaner is not clean enough. Documented in the ***American Lung Association State of the Air: 2004*** report is strong evidence that dangerously unhealthy air is still an unfortunate reality for much of the nation. We must do more to reach the day when the air is consistently safe for all Americans to breathe.

The American Lung Association encourages everyone to take steps to clean up the air and to support national, state and local efforts to clean up air pollution. Reduce your driving by combining trips, walking, biking or carpooling. Turn off your lights and use power-saving appliances to keep electric power production down. Don't burn wood or trash. These simple things can make a difference as we pool our efforts to curb air pollution.

But your actions alone aren't enough. Let the political leaders in your city, county and state know you support steps to clean up the air. Many communities will begin planning in 2004 to reach national standards for ozone and particle pollution. Let your local and state officials know you support strong measures to clean up the sources of pollution.

Finally, the Clean Air Act itself needs your help. Let your members of Congress know that the Clean Air Act works and they should not pass bills that would weaken its protections. Tell them to oppose the Administration's power plant bill, S. 485/HR 999, which would allow the oldest, dirtiest plants to pollute more and longer than the existing law would. Log on to www.lungusa.org to send them that message.

Over 159 million people live in areas of the United States where the air quality puts their health at risk. These are our children, our parents, our friends and our families. Too many people are at risk and there is too much we can do to protect them to turn back the clean air clock now. The American Lung Association pledges to continue fighting for clean air for everyone.

State Tables

Notes for all state data tables

(1) **Total Population** represents the at-risk populations in counties/cities with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire states' sensitive populations.
(2) Those **14 and Under** and **65 and Over** are vulnerable to ozone and particle pollution and are therefore included. They should not be used as population denominators for disease estimates.
(3) **Pediatric Asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2002 based on national rates (NHIS) applied to county population estimates (US Census).
(4) **Adult Asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2002 based on state rates (BRFSS) applied to county population estimates (US Census).
(5) **Chronic Bronchitis** estimates are for adults 18 and over who had been diagnosed with this disease within 2002 based on national rates (NHIS) applied to county population estimates (US Census).
(6) **Emphysema** estimates are for adults 18 and over who have been diagnosed with this disease within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
(7) **Cardiovascular Disease** estimates are based on American Heart Association estimates of cardiovascular disease applied to county populations.
(8) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

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AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BALDWIN	147,932	28,462	23,269	2,892	8,187	5,141	1,982	35,824
CLAY	14,163	2,695	2,319	272	788	496	194	3,488
COLBERT	54,850	10,411	8,685	1,051	3,059	1,923	744	13,450
DEKALB	65,605	13,237	9,027	1,312	3,589	2,227	807	14,860
ELMORE	68,771	14,213	7,348	1,425	3,706	2,262	740	14,075
ESCAMBIA	38,347	7,545	5,112	755	2,109	1,306	467	8,627
ETOWAH	103,105	19,901	16,490	2,008	5,712	3,589	1,392	25,123
HOUSTON	89,966	18,900	12,261	1,896	4,848	3,015	1,101	20,226
JEFFERSON	661,153	133,950	89,230	13,402	35,995	22,300	8,021	147,852
LAWRENCE	34,655	7,004	4,283	706	1,889	1,168	409	7,621
MADISON	285,900	59,591	32,603	5,946	15,413	9,452	3,185	59,877
MOBILE	400,163	89,596	48,188	8,973	21,036	12,972	4,522	84,139
MONTGOMERY	223,346	47,881	26,611	4,752	11,904	7,294	2,479	46,337
MORGAN	111,725	22,946	14,027	2,294	6,079	3,764	1,331	24,751
RUSSELL	49,415	10,593	6,619	1,059	2,638	1,634	589	10,849
SHELBY	153,832	33,167	13,524	3,284	8,232	4,999	1,552	30,157
SUMTER	14,376	3,324	2,016	337	739	459	169	3,081
TALLADEGA	80,638	16,243	10,702	1,639	4,402	2,734	986	18,177
TUSCALOOSA	166,512	32,005	18,722	3,181	9,159	5,570	1,811	34,234
WALKER	70,655	13,515	10,642	1,357	3,934	2,464	933	16,981
TOTALS	**2,835,109**	**585,179**	**361,678**	**58,542**	**153,420**	**94,768**	**33,416**	**619,729**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Alabama
3125 Independence Drive, Suite 325
Birmingham, AL 35209
(205) 933-8821 www.lungusa.org/alabama

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BALDWIN	5.3	F
CLAY	2.0	C
COLBERT	*	*
ELMORE	2.0	C
ETOWAH	*	*
JEFFERSON	11.8	F
LAWRENCE	1.0	C
MADISON	2.7	D
MOBILE	4.7	F
MONTGOMERY	3.3	F
MORGAN	4.3	F
SHELBY	12.2	F
SUMTER	0.7	B
TUSCALOOSA	*	*
WALKER	*	*

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BALDWIN	0.0	A	11.8	PASS
CLAY	1.0	C	14.1	PASS
COLBERT	0.7	B	*	INC
DEKALB	1.7	C	15.4	FAIL
ESCAMBIA	0.7	B	13.7	PASS
ETOWAH	1.7	C	16.5	FAIL
HOUSTON	0.3	B	*	INC
JEFFERSON	23.7	F	19.0	FAIL
MADISON	1.0	C	14.9	PASS
MOBILE	1.0	C	13.2	PASS
MONTGOMERY	1.3	C	15.2	FAIL
MORGAN	0.7	B	*	INC
RUSSELL	2.0	C	16.4	FAIL
SHELBY	0.7	B	15.0	PASS
SUMTER	0.7	B	13.1	PASS
TALLADEGA	1.7	C	15.7	FAIL
TUSCALOOSA	0.7	B	*	INC
WALKER	*	*	*	INC

Changes from SOTA 2003 to SOTA 2004 in Alabama for ozone

- This analysis uses the shorter ozone season Alabama adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Baldwin County and Morgan County had sufficient monitoring data to receive a grade for ozone. Both received an F.
- Clay County, Lawrence County, and Madison County improved their grades for ozone from an F to a C.
- Ozone monitoring data are now being collected in Colbert County, Etowah County, DeKalb County, and Walker County

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

ALASKA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ANCHORAGE	268,983	65,212	15,938	6,524	14,280	8,308	2,378	47,542
FAIRBANKS NORTH STAR	85,051	21,208	4,133	2,127	4,418	2,548	680	13,882
JUNEAU	30,751	6,604	1,992	683	1,715	1,008	306	6,012
KETCHIKAN GATEWAY	13,668	3,117	1,136	314	755	447	146	2,795
MATANUSKA-SUSITNA	65,141	15,737	3,993	1,652	3,424	2,005	597	11,737
YUKON-KOYUKUK	6,375	1,682	507	178	322	190	62	1,173
TOTALS	**469,969**	**113,560**	**27,699**	**11,478**	**24,913**	**14,505**	**4,168**	**83,141**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Alaska
500 West International Airport Road
Suite A
Anchorage, AK 99518-1105
(907) 276-5864 www.aklung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
YUKON-KOYUKUK	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Alaska for ozone

- No changes in Alaska's ozone grade or monitors.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ANCHORAGE	0.0	A	6.4	PASS
FAIRBANKS NORTH STAR	5.8	F	13.6	PASS
JUNEAU	0.0	A	6.1	PASS
KETCHIKAN GATEWAY	*	*	*	INC
MATANUSKA-SUSITNA	0.0	A	6.0	PASS
YUKON-KOYUKUK	0.3	B	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

A R I Z O N A

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
COCHISE	120,439	26,629	18,250	2,683	7,698	4,022	1,561	28,039
COCONINO	120,295	28,495	8,561	2,869	7,913	3,684	1,063	21,022
GILA	51,565	10,531	10,410	1,072	3,260	1,828	808	14,045
MARICOPA	3,303,876	774,314	374,333	75,751	216,543	104,218	34,774	655,508
NAVAJO	102,202	28,993	10,340	2,936	6,009	2,956	1,004	18,732
PIMA	881,221	184,249	124,925	18,303	58,660	29,494	10,812	197,626
PINAL	196,275	41,032	31,649	4,106	12,893	6,615	2,565	46,113
SANTA CRUZ	40,035	11,099	4,376	1,109	2,379	1,193	419	7,762
YAVAPAI	179,057	30,548	39,073	3,123	11,921	6,682	2,978	51,624
YUMA	167,407	41,136	28,799	4,083	10,329	5,318	2,154	38,029
TOTALS	**5,162,372**	**1,177,026**	**650,716**	**116,036**	**337,605**	**166,009**	**58,138**	**1,078,499**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Arizona/New Mexico
102 West McDowell Road
Phoenix, AZ 85003-1299
(602) 258-7505 www.lungusa.org/arizonanewmexico

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
COCHISE	0.0	A
COCONINO	0.0	A
GILA	*	*
MARICOPA	15.8	F
NAVAJO	*	*
PIMA	0.3	B
PINAL	*	*
YAVAPAI	1.7	C
YUMA	*	*

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
COCHISE	0.3	B	*	INC
COCONINO	0.0	A	*	INC
GILA	0.0	A	*	INC
MARICOPA	4.7	F	10.0	PASS
PIMA	0.0	A	*	INC
PINAL	0.3	B	*	INC
SANTA CRUZ	0.0	A	12.0	PASS

Changes from SOTA 2003 to SOTA 2004 in Arizona for ozone

- Ozone monitoring data are now being collected in Navajo County
- Sufficient ozone data are no longer available to grade Yuma County

ARIZONA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

ARKANSAS

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ARKANSAS	20,355	4,017	3,290	403	1,176	710	280	5,024
ASHLEY	23,875	5,152	3,269	515	1,337	800	296	5,415
CRAIGHEAD	84,074	17,061	9,944	1,687	4,780	2,792	937	17,611
CRITTENDEN	51,291	13,294	4,952	1,315	2,661	1,555	506	9,623
FAULKNER	89,590	18,569	8,528	1,859	5,010	2,876	876	16,872
GARLAND	90,059	15,707	18,775	1,589	5,396	3,295	1,423	24,863
JEFFERSON	83,374	17,794	10,620	1,783	4,662	2,757	977	18,032
MARION	16,259	2,766	3,260	288	978	605	262	4,596
MILLER	41,133	9,022	5,252	896	2,283	1,347	477	8,834
MISSISSIPPI	50,380	12,327	6,300	1,225	2,683	1,587	567	10,457
MONTGOMERY	9,243	1,742	1,777	176	542	332	141	2,478
NEWTON	8,506	1,557	1,321	163	498	303	119	2,136
PHILLIPS	25,001	6,511	3,519	654	1,296	777	299	5,375
POLK	20,200	4,171	3,377	420	1,149	695	279	4,975
POPE	55,223	11,202	7,273	1,130	3,130	1,844	652	12,012
PULASKI	364,381	77,963	41,782	7,697	20,435	12,031	4,090	76,936
SEBASTIAN	117,220	25,630	14,861	2,551	6,515	3,854	1,367	25,341
UNION	45,279	9,335	7,137	946	2,564	1,538	597	10,745
WASHINGTON	166,511	35,014	16,186	3,462	9,308	5,346	1,640	31,619
WHITE	69,354	13,693	9,487	1,380	3,965	2,336	834	15,295
TOTALS	**1,431,308**	**302,527**	**180,910**	**30,140**	**80,367**	**47,379**	**16,619**	**308,238**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Arkansas
211 Natural Resources Drive
Little Rock, AR 72205-1539
(501) 224-5864 www.lungusa.org/arkansas

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CRITTENDEN	8.7	F
MONTGOMERY	0.0	A
NEWTON	1.0	C
PULASKI	9.8	F

Changes from SOTA 2003 to SOTA 2004 in Arkansas for ozone

- Ozone monitoring data are now being collected in Clark County
- Pulaski became the most ozone-polluted county, replacing Crittenden County.
- Newton County's grade for ozone dropped from a B to a C.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ARKANSAS	0.0	A	*	INC
ASHLEY	0.3	B	*	INC
CRAIGHEAD	0.0	A	12.8	PASS
CRITTENDEN	0.0	A	*	INC
FAULKNER	0.0	A	*	INC
GARLAND	0.0	A	12.0	PASS
JEFFERSON	0.0	A	*	INC
MARION	0.0	A	9.4	PASS
MILLER	0.3	B	13.6	PASS
MISSISSIPPI	0.0	A	*	INC
PHILLIPS	0.0	A	12.9	PASS
POLK	0.0	A	11.7	PASS
POPE	0.0	A	12.9	PASS
PULASKI	1.3	C	14.6	PASS
SEBASTIAN	0.0	A	13.0	PASS
UNION	0.3	B	*	INC
WASHINGTON	0.0	A	11.6	PASS
WHITE	0.0	A	*	INC

ARKANSAS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALAMEDA	1,472,310	309,218	150,455	30,296	71,095	48,311	15,489	296,970
AMADOR	36,657	5,332	6,574	587	1,956	1,364	549	9,769
BUTTE	209,203	39,218	32,008	4,023	10,511	7,161	2,665	48,321
CALAVERAS	42,978	7,246	7,396	774	2,231	1,583	648	11,553
COLUSA	19,312	4,747	2,086	483	871	592	199	3,716
CONTRA COSTA	992,358	218,175	111,207	21,730	47,253	32,560	11,136	209,184
EL DORADO	165,744	32,969	20,063	3,406	8,109	5,668	2,024	37,580
FRESNO	834,632	216,237	81,318	21,537	36,916	24,820	7,905	150,517
GLENN	26,623	6,406	3,328	656	1,217	832	297	5,462
HUMBOLDT	127,159	23,006	15,811	2,374	6,387	4,394	1,527	28,446
IMPERIAL	146,248	36,191	14,988	3,650	6,571	4,407	1,416	26,817
INYO	18,214	3,364	3,339	349	932	656	275	4,843
KERN	694,059	179,227	64,271	17,838	30,692	20,640	6,455	123,768
KINGS	135,043	32,192	9,862	3,182	6,115	4,034	1,103	22,150
LAKE	61,970	11,866	10,786	1,222	3,132	2,193	897	15,941
LOS ANGELES	9,806,577	2,289,795	955,209	224,657	454,855	306,069	95,938	1,844,930
MADERA	130,265	31,131	14,305	3,107	5,986	4,048	1,345	25,302
MARIN	247,581	42,479	34,173	4,227	12,856	9,068	3,374	62,154

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of California
424 Pendleton Way
Oakland, CA 94621-2189
(510) 638-5864 www.californialung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALAMEDA	3.7	F
AMADOR	7.7	F
BUTTE	8.3	F
CALAVERAS	11.7	F
COLUSA	1.0	C
CONTRA COSTA	2.3	D
EL DORADO	38.8	F
FRESNO	101.3	F
GLENN	0.0	A
IMPERIAL	12.7	F
INYO	1.3	C
KERN	93.7	F
KINGS	33.2	F
LAKE	0.0	A
LOS ANGELES	60.7	F
MADERA	13.5	F
MARIN	0.0	A

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALAMEDA	5.2	F	12.3	PASS
BUTTE	5.2	F	14.6	PASS
CALAVERAS	0.3	B	9.0	PASS
COLUSA	0.7	B	9.7	PASS
CONTRA COSTA	9.0	F	11.3	PASS
EL DORADO	0.0	A	7.8	PASS
FRESNO	63.2	F	21.9	FAIL
HUMBOLDT	0.0	A	8.8	PASS
IMPERIAL	5.5	F	15.6	FAIL
INYO	4.3	F	*	INC
KERN	61.8	F	22.8	FAIL
KINGS	14.5	F	19.0	FAIL
LAKE	0.8	B	*	INC
LOS ANGELES	52.8	F	24.4	FAIL
MENDOCINO	0.0	A	*	INC
MERCED	10.5	F	17.6	FAIL
MODOC	0.0	A	*	INC

Changes from SOTA 2003 to SOTA 2004 in California for ozone

- San Joaquin County and Yolo County improved their ozone grades from an F to a D.
- Shasta County improved its ozone grade from an F to a B.
- Solano County improved its ozone grade from a D to an A.
- Glen County, Napa County and Sonoma County improved their ozone grades from a B to an A.
- San Benito County's ozone grade dropped from a C to a D.
- Santa Barbara County's ozone grade dropped from a D to an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
MARIPOSA	17,195	2,763	2,927	293	904	636	255	4,560
MENDOCINO	87,240	17,238	11,676	1,787	4,294	3,006	1,115	20,425
MERCED	225,398	62,179	20,480	6,219	9,639	6,462	2,019	38,633
MODOC	9,289	1,700	1,656	182	472	332	138	2,445
MONO	13,117	2,443	1,054	249	646	445	135	2,651
MONTEREY	413,408	97,810	41,069	9,655	19,051	12,811	4,049	77,468
NAPA	130,268	24,967	19,476	2,530	6,534	4,503	1,691	30,759
NEVADA	95,047	16,282	16,083	1,717	4,923	3,483	1,412	25,221
ORANGE	2,938,507	667,769	297,476	65,242	138,191	93,523	29,927	572,914
PLACER	278,509	57,046	36,787	5,779	13,600	9,363	3,373	62,233
PLUMAS	20,890	3,466	3,710	369	1,093	778	323	5,734
RIVERSIDE	1,699,112	415,229	207,443	41,296	77,831	52,404	18,057	335,352
SACRAMENTO	1,305,082	298,024	141,870	29,619	61,088	41,381	13,646	258,342
SAN BENITO	55,938	14,796	4,419	1,460	2,445	1,651	496	9,670
SAN BERNARDINO	1,816,072	475,657	152,281	47,206	79,606	53,474	16,157	313,642
SAN DIEGO	2,906,660	633,833	322,952	62,386	138,713	93,516	30,586	579,144
SAN FRANCISCO	764,049	94,838	107,174	9,322	42,128	28,442	9,661	182,073
SAN JOAQUIN	614,302	153,358	61,646	15,373	27,577	18,606	6,001	113,908

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of California
424 Pendleton Way
Oakland, CA 94621-2189
(510) 638-5864 www.californialung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MARIPOSA	16.0	F
MENDOCINO	0.0	A
MERCED	42.2	F
MONO	*	*
MONTEREY	0.0	A
NAPA	0.0	A
NEVADA	27.2	F
ORANGE	3.2	D
PLACER	20.8	F
PLUMAS	0.0	A
RIVERSIDE	88.0	F
SACRAMENTO	27.2	F
SAN BENITO	2.3	D
SAN BERNARDINO	103.5	F
SAN DIEGO	15.8	F
SAN FRANCISCO	0.0	A
SAN JOAQUIN	2.7	D
SAN LUIS OBISPO	0.0	A

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MONO	*	*	*	INC
MONTEREY	0.0	A	8.6	PASS
NEVADA	0.5	B	8.6	PASS
ORANGE	27.3	F	20.3	FAIL
PLACER	2.0	C	12.4	PASS
PLUMAS	3.7	F	*	INC
RIVERSIDE	81.5	F	28.9	FAIL
SACRAMENTO	22.3	F	12.7	PASS
SAN BERNARDINO	24.3	F	25.9	FAIL
SAN DIEGO	13.0	F	16.4	FAIL
SAN FRANCISCO	10.7	F	12.0	PASS
SAN JOAQUIN	10.0	F	15.3	FAIL
SAN LUIS OBISPO	1.3	C	9.9	PASS
SAN MATEO	2.8	D	11.2	PASS
SANTA BARBARA	0.3	B	9.9	PASS
SANTA CLARA	13.8	F	11.8	PASS
SANTA CRUZ	0.0	A	8.5	PASS
SHASTA	0.7	B	9.6	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
SAN LUIS OBISPO	253,408	42,671	36,686	4,387	13,065	8,932	3,230	59,167
SAN MATEO	703,202	137,748	88,749	13,524	35,047	24,094	8,437	157,479
SANTA BARBARA	403,084	83,484	51,302	8,276	19,640	13,262	4,555	84,660
SANTA CLARA	1,683,505	356,258	166,746	34,826	81,023	54,929	17,356	334,080
SANTA CRUZ	253,814	49,411	25,273	4,973	12,453	8,546	2,754	52,565
SHASTA	171,799	34,318	25,616	3,558	8,462	5,874	2,244	40,614
SISKIYOU	44,103	7,859	8,026	827	2,272	1,607	673	11,877
SOLANO	411,072	96,188	40,227	9,603	18,978	12,933	4,172	79,641
SONOMA	468,386	92,540	59,124	9,362	23,110	15,990	5,683	105,352
STANISLAUS	482,440	120,635	48,748	12,080	21,658	14,609	4,722	89,649
SUTTER	82,580	18,976	10,294	1,915	3,864	2,634	927	17,159
TEHAMA	57,472	12,277	8,886	1,259	2,781	1,917	742	13,339
TULARE	381,772	103,850	36,565	10,359	16,501	11,103	3,550	67,417
TUOLUMNE	55,850	8,680	10,008	910	2,970	2,074	837	14,936
VENTURA	783,920	182,602	80,963	18,138	36,410	24,851	8,180	155,073
YOLO	180,856	36,818	16,593	3,676	8,697	5,785	1,709	33,075
TOTALS	**34,974,279**	**7,912,512**	**3,701,164**	**782,455**	**1,643,352**	**1,112,359**	**362,055**	**6,878,681**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of California
424 Pendleton Way
Oakland, CA 94621-2189
(510) 638-5864 www.californialung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
SAN MATEO	0.0	A
SANTA BARBARA	3.5	F
SANTA CLARA	2.7	D
SANTA CRUZ	0.0	A
SHASTA	0.3	B
SISKIYOU	0.0	A
SOLANO	0.0	A
SONOMA	0.0	A
STANISLAUS	15.7	F
SUTTER	6.3	F
TEHAMA	3.7	F
TULARE	83.2	F
TUOLUMNE	18.7	F
VENTURA	24.2	F
YOLO	3.0	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
SOLANO	4.2	F	12.6	PASS
SONOMA	2.5	D	10.5	PASS
STANISLAUS	15.2	F	17.7	FAIL
SUTTER	1.7	C	11.8	PASS
TULARE	21.5	F	23.2	FAIL
VENTURA	3.7	F	14.8	PASS
YOLO	1.2	C	10.5	PASS

CALIFORNIA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

COLORADO

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADAMS	374,099	87,135	29,728	8,547	20,828	11,519	3,328	65,997
ARAPAHOE	510,136	112,734	45,176	11,336	28,636	16,429	5,174	100,061
ARCHULETA	11,012	2,012	1,327	216	639	388	141	2,608
BOULDER	279,197	52,338	22,021	5,235	16,637	9,303	2,706	53,431
DELTA	28,916	5,371	5,653	556	1,649	1,039	445	7,804
DENVER	560,415	111,857	61,074	10,751	32,846	18,615	5,946	114,054
DOUGLAS	211,091	56,045	8,731	5,431	11,328	6,213	1,601	33,430
ELBERT	21,959	4,972	1,342	515	1,219	697	206	4,084
EL PASO	543,818	127,161	47,391	12,635	30,011	17,034	5,267	101,991
GUNNISON	14,148	2,109	1,025	214	893	489	133	2,663
JEFFERSON	531,723	107,772	53,878	10,966	30,534	17,809	5,891	112,148
LA PLATA	45,668	7,852	4,400	814	2,747	1,586	506	9,673
LARIMER	264,605	51,387	25,457	5,189	15,467	8,789	2,746	52,849
MESA	121,419	24,088	18,508	2,461	6,898	4,162	1,589	28,738
MONTEZUMA	24,157	5,302	3,455	538	1,331	814	313	5,671
PUEBLO	146,880	30,584	21,765	3,093	8,245	4,924	1,849	33,584
ROUTT	20,405	3,645	1,072	372	1,237	695	191	3,902
SAN MIGUEL	7,165	1,027	260	103	462	252	62	1,332
WELD	205,014	48,208	17,277	4,791	11,296	6,329	1,900	36,946
TOTALS	**3,921,827**	**841,599**	**369,540**	**83,764**	**222,904**	**127,085**	**39,995**	**770,966**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Colorado
1600 Race Street
Denver, CO 80206-1198
(303)388-4327 www.alacolo.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADAMS	0.0	A
ARAPAHOE	1.3	C
BOULDER	0.3	B
DENVER	0.0	A
DOUGLAS	1.0	C
EL PASO	0.0	A
JEFFERSON	3.3	F
LA PLATA	0.0	A
LARIMER	2.7	D
MONTEZUMA	0.0	A
WELD	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Colorado for ozone

- Ozone grades in Arapahoe County and Douglas County dropped from a B to a C.
- Larrimer County's ozone grade dropped from a C to a D.
- Jefferson County's ozone grade dropped from a C to an F.
- LaPlata County's ozone monitors reported sufficient data to receive its first grade for ozone: an A.
- Gunnison County now has ozone data, though not sufficient data to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADAMS	1.0	C	*	INC
ARAPAHOE	0.0	A	8.9	PASS
ARCHULETA	0.0	A	*	INC
BOULDER	0.3	B	9.5	PASS
DELTA	0.0	A	*	INC
DENVER	3.0	D	10.9	PASS
DOUGLAS	*	*	*	INC
ELBERT	0.0	A	4.3	PASS
EL PASO	0.0	A	7.7	PASS
GUNNISON	0.0	A	6.5	PASS
LA PLATA	0.0	A	5.3	PASS
LARIMER	0.0	A	8.2	PASS
MESA	0.0	A	7.7	PASS
PUEBLO	0.0	A	8.0	PASS
ROUTT	0.0	A	*	INC
SAN MIGUEL	0.3	B	*	INC
WELD	1.0	C	9.6	PASS

COLORADO

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

CONNECTICUT

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
FAIRFIELD	896,202	201,247	118,393	19,686	56,065	29,643	10,792	198,876
HARTFORD	867,332	180,859	125,355	18,068	55,122	29,277	10,934	199,530
LITCHFIELD	186,515	37,901	26,190	3,832	11,843	6,409	2,407	44,058
MIDDLESEX	159,679	31,462	21,532	3,133	10,368	5,494	1,994	36,785
NEW HAVEN	835,657	174,177	118,702	17,389	53,315	28,034	10,324	188,869
NEW LONDON	262,689	53,971	34,063	5,391	16,912	8,810	3,126	57,889
TOLLAND	141,089	26,904	14,606	2,714	9,382	4,752	1,532	29,038
TOTALS	**3,349,163**	**706,521**	**458,841**	**70,213**	**213,006**	**112,417**	**41,109**	**755,045**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Connecticut
45 Ash Street
East Hartford, CT 06108-3272
(860) 289-5401 www.alact.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
FAIRFIELD	23.0	F
HARTFORD	7.5	F
LITCHFIELD	7.0	F
MIDDLESEX	12.7	F
NEW HAVEN	17.0	F
NEW LONDON	6.5	F
TOLLAND	9.3	F

Changes from SOTA 2003 to SOTA 2004 in Connecticut for ozone

- This analysis uses the shorter ozone season Connecticut adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Windham County now has ozone data, though not sufficient data to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
FAIRFIELD	3.5	F	13.7	PASS
HARTFORD	2.2	D	12.7	PASS
LITCHFIELD	*	*	*	INC
NEW HAVEN	6.8	F	16.5	FAIL
NEW LONDON	0.8	B	11.8	PASS

CONNECTICUT

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

DELAWARE

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
KENT	131,069	27,916	15,454	2,809	7,356	4,275	1,452	27,204
NEW CASTLE	512,370	101,676	59,050	10,097	29,574	17,156	5,728	108,061
SUSSEX	163,946	28,097	30,984	2,858	9,691	5,966	2,460	43,670
TOTALS	**807,385**	**157,689**	**105,488**	**15,764**	**46,621**	**27,397**	**9,641**	**178,935**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Delaware
1021 Gilpin Avenue, Suite 202
Wilmington, DE 19806-3280
(302) 655-7528 www.alade.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
KENT	8.3	F
NEW CASTLE	15.5	F
SUSSEX	11.2	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
KENT	2.5	D	13.4	PASS
NEW CASTLE	9.7	F	16.5	FAIL
SUSSEX	2.8	D	14.2	PASS

Changes from SOTA 2003 to SOTA 2004 in Delaware for ozone

- No changes in Delaware's ozone grades or monitors.

DELAWARE

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

DISTRICT OF COLUMBIA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
WASHINGTON	570,898	96,459	68,534	9,318	41,910	19,937	6,534	124,416
TOTALS	**570,898**	**96,459**	**68,534**	**9,318**	**41,910**	**19,937**	**6,534**	**124,416**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of the District of Columbia
475 H Street, NW
Washington, DC 20001-2617
(202) 682-5864 www.aladc.org

HIGH OZONE DAYS 2000-2002[1]

District of Columbia	Wgt. Avg.	Grade
WASHINGTON	14.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
District of Columbia	Wgt. Avg.	Grade	Design Value	Pass/ Fail
WASHINGTON	11.8	F	16.4	FAIL

Changes from SOTA 2003 to SOTA 2004 in DC for ozone

- No changes in DC ozone grades or monitors.

DISTRICT OF COLUMBIA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALACHUA	222,254	37,262	21,539	3,757	11,592	7,496	2,215	43,069
BAKER	22,793	5,070	2,126	520	1,084	727	232	4,453
BAY	151,901	30,745	20,584	3,089	7,473	5,156	1,876	34,523
BREVARD	495,576	89,272	98,776	9,091	24,899	17,893	7,611	133,592
BROWARD	1,709,118	349,228	255,310	34,590	83,949	57,939	21,670	395,073
CITRUS	123,685	17,182	38,765	1,788	6,480	4,976	2,579	42,970
COLLIER	276,691	47,476	66,187	4,713	14,090	10,294	4,706	80,904
COLUMBIA	58,028	11,970	8,249	1,222	2,819	1,961	734	13,370
DUVAL	806,120	182,457	83,278	18,045	38,529	25,802	8,427	160,319
ESCAMBIA	297,272	59,413	40,325	5,932	14,702	10,024	3,581	65,595
HIGHLANDS	89,952	14,425	28,815	1,459	4,573	3,480	1,828	30,234
HILLSBOROUGH	1,053,864	228,931	123,013	22,649	51,004	34,466	11,738	220,213
HOLMES	18,628	3,406	2,900	354	933	647	246	4,456
LAKE	233,835	40,203	60,105	4,016	11,841	8,719	4,123	70,205
LEE	475,639	81,175	115,005	8,101	24,219	17,794	8,207	140,912

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Florida
5526 Arlington Road
Jacksonville, FL 32211-5216
(904) 743-2933 www.lungfl.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALACHUA	0.7	B
BAKER	0.3	B
BAY	4.5	F
BREVARD	1.0	C
BROWARD	1.3	C
COLLIER	*	*
COLUMBIA	*	*
DUVAL	0.3	B
ESCAMBIA	6.8	F
HIGHLANDS	*	*
HILLSBOROUGH	3.2	D
HOLMES	0.7	B
LAKE	0.0	A
LEE	0.3	B
LEON	0.0	A
MANATEE	2.3	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALACHUA	0.3	B	10.7	PASS
BAY	*	*	*	INC
BREVARD	0.0	A	*	INC
BROWARD	1.8	C	8.7	PASS
CITRUS	0.0	A	9.6	PASS
DUVAL	1.3	C	10.8	PASS
ESCAMBIA	0.3	B	12.1	PASS
HILLSBOROUGH	1.3	C	12.0	PASS
LEE	0.0	A	8.9	PASS
LEON	0.0	A	13.0	PASS
MANATEE	0.3	B	*	INC
MARION	0.0	A	10.4	PASS

Changes from SOTA 2003 to SOTA 2004 in Florida for ozone

- This analysis uses the shorter ozone season Florida adopted for all years reviewed. No grades were affected by the difference in season's length, but comparisons of weighted averages with previous reports may be affected.
- Bay County and Santa Rosa County each received their first grade for ozone. Both received a grade of F.
- Lake County received its first grade for ozone: an A.
- DuVal County, Lee County, Marion County, Miami-Dade County, and Seminole County each improved their ozone grade from a C to a B.
- Hillsborough County, Manatee County, and Sarasota County improved their ozone grades from an F to a D.
- Pinellas County improved its ozone grade from an F to a C.
- Leon County improved its ozone grade from a B to an A.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
LEON	243,995	43,301	20,471	4,327	12,598	8,140	2,330	45,831
MANATEE	280,511	51,395	65,596	5,085	14,052	10,259	4,677	80,495
MARION	272,553	48,167	66,283	4,891	13,672	10,044	4,665	79,801
MIAMI-DADE	2,332,599	479,155	312,843	47,895	114,333	78,117	27,968	516,103
ORANGE	946,484	207,656	92,929	20,505	45,794	30,218	9,473	182,583
OSCEOLA	190,187	42,469	20,836	4,263	9,074	6,091	2,027	38,292
PALM BEACH	1,190,390	216,908	265,128	21,627	59,685	43,056	19,080	330,523
PASCO	371,245	64,906	90,814	6,497	18,745	13,732	6,360	108,948
PINELLAS	926,716	153,646	199,697	15,377	47,738	34,585	15,089	263,418
POLK	498,721	103,976	88,722	10,392	24,139	17,069	6,963	123,442
SAINT LUCIE	205,420	39,006	45,043	3,922	10,156	7,353	3,268	56,569
SANTA ROSA	127,212	26,883	14,371	2,761	6,144	4,193	1,440	27,010
SARASOTA	339,625	46,608	102,943	4,727	17,964	13,640	6,905	115,748
SEMINOLE	381,686	79,869	40,413	8,050	18,648	12,656	4,229	80,158
VOLUSIA	459,435	76,949	98,689	7,832	23,494	16,956	7,379	128,483
WAKULLA	24,900	4,931	2,428	512	1,229	829	268	5,140
TOTALS	**14,827,035**	**2,884,040**	**2,492,183**	**287,987**	**735,654**	**514,312**	**201,894**	**3,622,435**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Florida
5526 Arlington Road
Jacksonville, FL 32211-5216
(904) 743-2933 www.lungfl.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MARION	0.3	B
MIAMI-DADE	0.3	B
ORANGE	1.3	C
OSCEOLA	0.7	B
PALM BEACH	0.3	B
PASCO	1.0	C
PINELLAS	2.0	C
POLK	1.3	C
SANTA ROSA	5.0	F
SARASOTA	3.2	D
SEMINOLE	0.7	B
SAINT LUCIE	0.7	B
VOLUSIA	0.3	B
WAKULLA	*	*

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MIAMI-DADE	1.0	C	10.1	PASS
ORANGE	1.0	C	10.9	PASS
PALM BEACH	0.5	B	8.0	PASS
PINELLAS	1.2	C	11.3	PASS
POLK	0.8	B	11.1	PASS
SAINT LUCIE	0.0	A	9.0	PASS
SANTA ROSA	*	*	*	INC
SARASOTA	0.3	B	9.9	PASS
SEMINOLE	0.0	A	9.8	PASS
VOLUSIA	0.0	A	9.7	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

FLORIDA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BIBB	154,824	35,084	19,559	3,459	8,293	5,025	1,777	32,866
CHATHAM	233,702	49,686	29,691	4,899	12,798	7,721	2,698	50,112
CHEROKEE	159,295	37,973	10,444	3,712	8,499	4,905	1,377	27,731
CLARKE	103,881	15,567	8,409	1,520	6,270	3,471	885	17,909
CLAYTON	252,733	64,974	14,435	6,374	13,030	7,387	1,946	39,913
COBB	651,485	144,361	45,389	14,241	35,593	20,612	5,870	117,608
COFFEE	38,298	9,143	3,743	901	2,019	1,191	379	7,247
COWETA	97,771	23,472	8,107	2,307	5,172	3,028	918	17,951
DAWSON	17,538	3,692	1,643	363	974	578	183	3,546
DEKALB	676,996	143,295	54,039	13,968	37,572	21,698	6,266	124,470
DOUGHERTY	95,875	22,102	11,363	2,193	5,094	3,064	1,055	19,612
DOUGLAS	98,650	22,692	7,504	2,262	5,289	3,088	913	18,022
FAYETTE	96,611	20,920	8,999	2,199	5,220	3,187	1,073	20,328
FLOYD	92,606	19,259	12,689	1,908	5,090	3,092	1,113	20,451
FULTON	825,431	174,376	68,770	16,977	45,874	26,679	7,893	155,289
GLYNN	69,036	14,411	9,738	1,456	3,775	2,332	870	15,880

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Georgia
2452 Spring Road
Smyrna, GA 30080-3862
(770) 434-5864 www.lungusa.org/georgia

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BIBB	11.2	F
CHATHAM	0.7	B
CHEROKEE	3.2	D
CLARKE	*	*
COBB	12.5	F
COWETA	8.3	F
DAWSON	3.0	D
DEKALB	14.7	F
DOUGLAS	13.7	F
FAYETTE	6.8	F
FULTON	14.8	F
GLYNN	0.3	B

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BIBB	1.7	C	16.4	FAIL
CHATHAM	1.8	C	*	INC
CLARKE	1.5	C	17.0	FAIL
CLAYTON	2.2	D	17.3	FAIL
COBB	2.3	D	17.1	FAIL
COFFEE	*	*	*	INC
DEKALB	7.3	F	17.3	FAIL
DOUGHERTY	1.3	C	*	INC
FLOYD	1.3	C	16.2	FAIL
FULTON	6.0	F	19.3	FAIL
GLYNN	0.0	A	*	INC

Changes from SOTA 2003 to SOTA 2004 in Georgia for ozone

- DeKalb County became most ozone-polluted county, replacing Fulton County.
- Chatham County's ozone grade improved from a C to a B.
- Dawson County, Muscogee County, and Sumter County improved their ozone grades from an F to a D.
- Cherokee County's ozone grade dropped from a C to a D.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
GWINNETT	650,771	154,483	36,462	15,195	34,722	19,785	5,243	107,719
HALL	152,235	35,373	13,833	3,449	8,149	4,753	1,450	28,193
HENRY	139,699	33,510	10,147	3,311	7,378	4,253	1,213	24,203
HOUSTON	116,768	26,906	11,049	2,709	6,204	3,669	1,164	22,313
LOWNDES	93,658	20,484	8,582	2,033	5,083	2,941	880	17,127
MURRAY	38,544	9,118	3,123	892	2,053	1,194	355	6,981
MUSCOGEE	185,948	42,676	21,941	4,224	9,905	5,946	2,037	37,908
PAULDING	94,184	24,636	5,401	2,382	4,840	2,721	702	14,527
RICHMOND	197,842	44,522	21,715	4,436	10,609	6,324	2,100	39,526
ROCKDALE	73,558	16,296	6,972	1,664	3,957	2,363	764	14,605
SUMTER	33,247	7,838	4,109	769	1,756	1,057	369	6,830
WALKER	61,949	12,493	8,615	1,253	3,433	2,106	772	14,176
WASHINGTON	20,803	4,426	2,637	449	1,128	681	239	4,434
WILKINSON	10,357	2,236	1,400	226	559	342	125	2,285
TOTALS	**5,534,295**	**1,236,004**	**470,508**	**121,733**	**300,338**	**175,193**	**52,629**	**1,029,762**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Georgia
2452 Spring Road
Smyrna, GA 30080-3862
(770) 434-5864 www.lungusa.org/georgia

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
GWINNETT	7.7	F
HENRY	14.0	F
MURRAY	8.0	F
MUSCOGEE	3.2	D
PAULDING	7.3	F
RICHMOND	5.0	F
ROCKDALE	10.7	F
SUMTER	3.0	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
GWINNETT	1.0	C	16.7	FAIL
HALL	0.3	B	16.1	FAIL
HOUSTON	0.7	B	*	INC
LOWNDES	0.8	B	*	INC
MUSCOGEE	4.3	F	16.3	FAIL
PAULDING	1.5	C	15.2	FAIL
RICHMOND	1.7	C	16.0	FAIL
WALKER	1.0	C	16.4	FAIL
WASHINGTON	0.5	B	*	INC
WILKINSON	1.0	C	16.1	FAIL

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

HAWAII

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
HAWAII	154,794	32,974	20,875	3,344	7,860	5,219	1,942	35,410
HONOLULU	896,019	174,209	122,463	17,195	47,264	30,601	10,924	201,610
MAUI	134,007	27,533	15,257	2,760	6,967	4,510	1,550	29,060
TOTALS	**1,184,820**	**234,716**	**158,595**	**23,299**	**62,091**	**40,330**	**14,415**	**266,080**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Hawaii
245 North Kukui Street, Suite 100
Honolulu, HI 96817
(808) 537-5966 www.ala-hawaii.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
HAWAII	0.0	A
HONOLULU	0.0	A

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
HONOLULU	2.7	D	4.9	PASS
MAUI	0.0	A	4.8	PASS

Changes from SOTA 2003 to SOTA 2004 in Hawaii for ozone

- Hawaii County had sufficient monitoring data to have its first grade for ozone: an A.

HAWAII

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

IDAHO

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADA	319,687	71,590	28,969	7,115	18,089	10,150	3,143	60,877
BANNOCK	75,804	17,635	7,781	1,753	4,229	2,383	773	14,668
BOISE	7,067	1,415	756	149	400	244	87	1,619
BONNER	38,205	7,290	5,062	764	2,205	1,347	506	9,268
BONNEVILLE	85,180	21,539	8,829	2,180	4,539	2,608	879	16,471
BOUNDARY	10,085	2,197	1,377	230	558	338	129	2,339
BUTTE	2,890	660	430	67	159	97	38	685
CANYON	144,983	37,129	15,067	3,653	7,827	4,381	1,431	27,029
CARIBOU	7,319	1,751	1,008	181	394	234	89	1,602
ELMORE	29,481	7,048	2,162	691	1,656	872	233	4,715
KOOTENAI	113,954	24,615	14,349	2,485	6,451	3,780	1,355	25,060
LATAH	35,218	5,768	3,385	575	2,203	1,195	350	6,722
NEZ PERCE	37,106	6,927	6,256	703	2,200	1,303	514	9,209
POWER	7,379	1,898	783	196	385	225	79	1,459
SHOSHONE	13,090	2,410	2,328	247	770	475	197	3,500
TWIN FALLS	65,472	14,309	9,329	1,458	3,691	2,150	801	14,553
VALLEY	7,526	1,217	1,141	136	445	280	111	2,006
TOTALS	**1,000,446**	**225,398**	**109,012**	**22,583**	**56,204**	**32,063**	**10,715**	**201,784**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Idaho/Nevada
6275 Neil Road, Suite 300
Reno, NV 89511
(775) 829-5864 www.lungusa.org/idaho_nevada

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADA	*	*
BUTTE	0.0	A
CANYON	*	*
ELMORE	*	*

Changes from SOTA 2003 to SOTA 2004 in Idaho for ozone

- No changes in Idaho's ozone grades or monitors.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADA	4.0	F	9.7	PASS
BANNOCK	4.7	F	9.7	PASS
BOISE	*	*	*	INC
BONNER	0.3	B	8.7	PASS
BONNEVILLE	0.0	A	7.6	PASS
BOUNDARY	*	*	*	INC
CANYON	3.3	F	10.2	PASS
CARIBOU	*	*	*	INC
KOOTENAI	0.0	A	9.6	PASS
LATAH	*	*	*	INC
NEZ PERCE	0.0	A	9.4	PASS
POWER	1.5	C	*	INC
SHOSHONE	1.7	C	12.9	PASS
TWIN FALLS	0.0	A	7.2	PASS
VALLEY	*	*	*	INC

IDAHO

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

ILLINOIS

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADAMS	67,631	13,378	11,864	1,359	3,692	2,333	939	16,691
CHAMPAIGN	183,159	32,108	18,090	3,192	10,232	6,096	1,797	34,575
CLARK	16,942	3,345	2,954	336	930	589	237	4,227
COOK	5,377,507	1,180,077	621,768	116,172	283,825	174,391	58,679	1,104,646
DU PAGE	924,589	203,947	91,810	20,246	48,617	30,044	9,792	187,014
EFFINGHAM	34,275	7,563	4,745	774	1,790	1,118	412	7,530
HAMILTON	8,422	1,574	1,632	161	469	300	127	2,226
JERSEY	21,858	4,160	3,126	435	1,192	744	274	4,988
KANE	443,041	110,341	35,706	10,886	22,155	13,435	4,026	78,855
LAKE	674,850	164,425	57,556	16,175	34,188	20,933	6,486	125,378
LA SALLE	111,975	22,504	18,002	2,283	6,074	3,821	1,482	26,687
MCHENRY	277,710	67,529	22,861	6,685	14,035	8,578	2,625	51,181
MCLEAN	154,453	30,141	14,764	2,987	8,396	5,044	1,514	29,146
MACON	112,013	22,716	17,220	2,272	6,094	3,856	1,485	26,811
MACOUPIN	48,636	9,094	8,396	940	2,688	1,700	678	12,089
MADISON	261,409	51,989	36,908	5,265	14,198	8,866	3,248	59,515
PEORIA	182,362	38,607	25,469	3,834	9,770	6,112	2,248	41,085
RANDOLPH	33,641	5,880	5,153	602	1,891	1,178	436	7,961
ROCK ISLAND	148,171	28,765	22,208	2,889	8,146	5,122	1,929	35,040
SAINT CLAIR	257,904	57,642	33,264	5,810	13,452	8,351	2,978	54,979
SANGAMON	190,630	38,880	25,515	3,907	10,303	6,455	2,341	43,171
WILL	559,861	136,626	44,846	13,488	28,231	17,131	5,122	100,476
WINNEBAGO	282,627	61,949	35,752	6,164	14,928	9,300	3,303	61,241
TOTALS	**10,373,666**	**2,293,240**	**1,159,609**	**226,861**	**545,295**	**335,497**	**112,161**	**2,115,510**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Metropolitan Chicago
1440 West Washington Blvd.
Chicago, IL 60607-1878
(312) 243-2000 www.lungchicago.org

American Lung Association of Illinois-Iowa, Inc.
3000 Kelly Lane
Springfield, IL 62707
(217) 787-5864 www.lungilia.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADAMS	1.0	C
CHAMPAIGN	0.3	B
CLARK	*	*
COOK	10.8	F
DU PAGE	1.0	C
EFFINGHAM	0.7	B
HAMILTON	3.3	F
JERSEY	4.8	F
KANE	1.3	C
LAKE	5.2	F
MACON	1.3	C
MACOUPIN	2.7	D
MADISON	9.5	F
MCHENRY	3.0	D
MCLEAN	*	*
PEORIA	1.0	C
RANDOLPH	2.0	C
ROCK ISLAND	0.0	A
SANGAMON	0.7	B
SAINT CLAIR	4.0	F
WILL	4.0	F
WINNEBAGO	0.7	B

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADAMS	0.3	B	13.0	PASS
CHAMPAIGN	0.0	A	13.2	PASS
COOK	14.3	F	18.1	FAIL
DU PAGE	0.3	B	15.2	FAIL
KANE	0.7	B	*	INC
LAKE	0.3	B	13.1	PASS
LA SALLE	0.3	B	*	INC
MCHENRY	0.3	B	13.6	PASS
MCLEAN	0.0	A	14.2	PASS
MACON	0.3	B	14.5	PASS
MADISON	4.0	F	17.5	FAIL
PEORIA	0.7	B	14.2	PASS
RANDOLPH	0.0	A	12.9	PASS
ROCK ISLAND	0.0	A	*	INC
SAINT CLAIR	2.5	D	17.0	FAIL
SANGAMON	0.3	B	13.4	PASS
WILL	0.7	B	15.5	FAIL
WINNEBAGO	1.0	C	*	INC

Changes from SOTA 2003 to SOTA 2004 in Illinois for ozone

- Champaign County, Effingham County, Sangamon County improved their ozone grades from a C to a B.
- Adams County and Kane County dropped their ozone grades from a B to a C.
- DuPage County's ozone grade dropped from an A to a C.
- Hamilton County and St. Clair County dropped their ozone grades from a C to an F.
- Will County's ozone grade dropped from a D to an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

				Lung Diseases				
County	Total Population	14& Under	65& Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
ALLEN	337,512	79,348	38,025	7,847	18,260	10,745	3,663	68,811
BOONE	48,277	10,908	5,505	1,101	2,630	1,564	542	10,149
CARROLL	20,226	4,236	2,779	429	1,127	680	251	4,602
CLARK	98,198	20,161	12,050	1,999	5,564	3,305	1,154	21,570
DELAWARE	118,197	21,656	16,043	2,173	6,907	4,049	1,418	26,090
DUBOIS	40,015	8,857	5,197	894	2,193	1,307	470	8,682
ELKHART	186,465	45,925	20,202	4,538	9,911	5,798	1,950	36,742
FLOYD	71,633	15,038	8,844	1,517	4,004	2,390	844	15,717
GIBSON	32,590	6,474	5,038	653	1,849	1,117	426	7,718
GREENE	33,155	6,710	5,057	673	1,873	1,136	434	7,868
HAMILTON	205,610	52,305	14,826	5,120	10,879	6,207	1,816	36,047
HANCOCK	58,343	12,473	6,657	1,252	3,249	1,938	670	12,573
HENDRICKS	114,301	25,434	11,108	2,563	6,284	3,655	1,173	22,505
HENRY	47,983	9,503	7,539	955	2,725	1,664	645	11,665
HOWARD	84,838	18,062	11,652	1,813	4,717	2,854	1,058	19,408
HUNTINGTON	38,243	8,122	5,390	820	2,124	1,269	467	8,534

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Indiana
9445 Delegates Row
Indianapolis, IN 46240-1470
(317) 573-3900 www.lungin.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALLEN	7.0	F
BOONE	6.3	F
CARROLL	*	*
CLARK	8.3	F
DELAWARE	*	*
ELKHART	6.2	F
FLOYD	4.5	F
GIBSON	0.0	A
GREENE	7.7	F
HAMILTON	8.7	F
HANCOCK	10.3	F
HENDRICKS	5.5	F
HUNTINGTON	5.0	F
JACKSON	5.0	F
JOHNSON	5.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALLEN	0.7	B	14.8	PASS
CLARK	3.3	F	17.2	FAIL
DELAWARE	0.7	B	15.1	FAIL
DUBOIS	1.7	C	16.7	FAIL
ELKHART	0.3	B	15.5	FAIL
FLOYD	1.3	C	15.5	FAIL
HENRY	0.7	B	*	INC
HOWARD	0.0	A	15.1	FAIL
KNOX	0.3	B	*	INC
LAKE	14.5	F	17.7	FAIL
LA PORTE	0.3	B	13.6	PASS

Changes from SOTA 2003 to SOTA 2004 in Indiana for ozone

- Lake County became the most ozone-polluted county, emerging from its tie in the 2003 report with Hancock County
- Elkhart County's ozone grade dropped from an A to an F.
- Boone County, Greene County, Hendricks County, Huntington County, Jackson County and Shelby County each now have sufficient ozone monitoring data to receive a grade. Each received an F.
- Vigo County's ozone grade dropped from a C to an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
JACKSON	41,557	8,882	5,555	882	2,319	1,379	496	9,162
JOHNSON	121,604	27,056	13,409	2,707	6,693	3,920	1,314	24,804
KNOX	38,531	6,954	5,817	719	2,236	1,336	496	8,968
LAKE	487,016	108,326	63,185	10,801	26,755	16,005	5,778	106,560
LA PORTE	110,384	22,582	14,872	2,258	6,234	3,731	1,352	24,929
MADISON	132,068	26,212	20,004	2,620	7,516	4,545	1,723	31,285
MARION	863,429	195,195	93,952	19,113	47,652	27,610	9,072	172,311
MORGAN	67,791	14,863	7,329	1,502	3,735	2,215	751	14,172
PERRY	18,827	3,411	2,781	350	1,094	656	243	4,436
PORTER	150,403	30,524	16,625	3,117	8,482	5,038	1,712	32,190
POSEY	26,990	5,688	3,396	588	1,493	898	323	5,971
SAINT JOSEPH	267,120	58,527	35,704	5,810	14,782	8,741	3,132	57,435
SHELBY	43,674	9,521	5,251	965	2,406	1,428	499	9,313
SPENCER	20,353	4,303	2,705	438	1,129	682	250	4,593
TIPPECANOE	152,001	26,713	13,656	2,637	9,096	5,009	1,407	27,494
VANDERBURGH	171,744	33,375	25,748	3,340	9,845	5,879	2,185	39,757
VIGO	105,078	20,169	14,754	2,013	6,060	3,576	1,281	23,461
WARRICK	53,624	11,479	5,903	1,164	2,975	1,781	613	11,523
TOTALS	**4,407,780**	**958,992**	**526,558**	**95,372**	**244,796**	**144,109**	**49,608**	**927,041**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Indiana
9445 Delegates Row
Indianapolis, IN 46240-1470
(317) 573-3900 www.lungin.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
LA PORTE	11.3	F
LAKE	11.5	F
MADISON	7.3	F
MARION	9.8	F
MORGAN	6.7	F
PERRY	*	*
PORTER	9.5	F
POSEY	6.2	F
SHELBY	8.8	F
SAINT JOSEPH	11.2	F
VANDERBURGH	5.8	F
VIGO	4.0	F
WARRICK	6.8	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MADISON	1.0	C	*	INC
MARION	6.3	F	17	FAIL
PORTER	0.3	B	14.3	PASS
SAINT JOSEPH	0.7	B	14.1	PASS
SPENCER	0.3	B	*	INC
TIPPECANOE	0.7	B	*	INC
VANDERBURGH	1.7	C	15.7	FAIL
VIGO	2.0	C	15.2	FAIL

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

IOWA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
BLACK HAWK	127,394	23,075	17,728	2,329	6,436	4,406	1,572	28,883
BREMER	23,276	4,147	3,731	430	1,165	822	317	5,676
CERRO GORDO	45,339	8,241	8,007	842	2,262	1,610	647	11,533
CLINTON	49,650	9,749	7,763	996	2,425	1,711	660	11,917
EMMET	10,728	1,883	2,038	201	533	381	158	2,776
HARRISON	15,585	3,024	2,725	313	759	540	219	3,889
JOHNSON	114,300	18,522	8,587	1,834	6,069	3,828	1,014	20,386
LINN	194,970	40,270	24,104	3,977	9,536	6,513	2,257	42,154
MONTGOMERY	11,434	2,185	2,311	224	559	407	176	3,080
MUSCATINE	42,040	8,957	5,261	894	2,023	1,401	497	9,232
PALO ALTO	9,886	1,696	2,167	181	493	356	156	2,703
POLK	385,691	81,333	42,712	8,033	18,781	12,677	4,201	79,675
POTTAWATTAMIE	88,157	17,666	12,083	1,801	4,298	2,976	1,081	19,891
SCOTT	159,445	33,345	18,709	3,363	7,707	5,292	1,823	34,151
STORY	80,649	11,929	7,979	1,205	4,345	2,758	790	15,283
VAN BUREN	7,800	1,471	1,480	151	383	278	117	2,058
WARREN	41,523	8,492	4,962	866	2,013	1,386	481	8,960
WOODBURY	103,331	22,788	13,520	2,266	4,926	3,375	1,204	22,233
TOTALS	**1,511,198**	**298,773**	**185,867**	**29,907**	**74,714**	**50,718**	**17,371**	**324,478**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Illinois-Iowa, Inc.
3000 Kelly Lane
Springfield, IL 62707
(217) 787-5864 www.lungilia.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BREMER	0.3	B
CLINTON	0.7	B
HARRISON	0.3	B
LINN	0.3	B
MONTGOMERY	*	*
PALO ALTO	0.0	A
POLK	0.0	A
SCOTT	1.0	C
STORY	0.0	A
VAN BUREN	0.3	B
WARREN	0.3	B

Changes from SOTA 2003 to SOTA 2004 in Iowa for ozone

- Bremer County now has sufficient ozone data to be graded. It received: a B.
- Clinton County and Linn County improved their ozone grades from a C to a B.
- Harrison County's ozone grade dropped from an A to a B.
- Ozone monitoring has begun in Montgomery County.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BLACK HAWK	0.3	B	11.4	PASS
CERRO GORDO	0.0	A	10.4	PASS
CLINTON	0.3	B	12.1	PASS
EMMET	0.0	A	8.7	PASS
JOHNSON	0.3	B	11.3	PASS
LINN	1.0	C	11.2	PASS
MONTGOMERY	*	*	*	INC
MUSCATINE	0.7	B	*	INC
POLK	0.0	A	10.6	PASS
POTTAWATTAMIE	0.0	A	10.3	PASS
SCOTT	1.7	C	12.7	PASS
STORY	0.0	A	10	PASS
VAN BUREN	0.0	A	10.3	PASS
WOODBURY	0.0	A	9.9	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

KANSAS

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
JEFFERSON	18,664	3,824	2,384	396	1,049	629	228	4,196
JOHNSON	476,536	103,847	47,327	10,365	26,991	15,455	5,000	95,696
LINN	9,674	1,853	1,684	192	547	341	139	2,473
SEDGWICK	461,937	107,311	52,263	10,636	25,529	14,692	4,975	93,499
SHAWNEE	170,748	34,957	23,587	3,521	9,689	5,785	2,128	39,020
SUMNER	25,533	5,555	3,999	575	1,391	851	336	6,007
TREGO	3,140	534	761	58	177	116	54	924
WYANDOTTE	158,331	37,553	17,882	3,703	8,712	4,981	1,677	31,534
TOTALS	**1,324,563**	**295,434**	**149,887**	**29,445**	**74,085**	**42,850**	**14,536**	**273,350**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Kansas
4300 SW Drury Lane
Topeka, KS 66604-2419
(785) 272-9290 www.kslung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
JEFFERSON	*	*
LINN	1.0	C
SEDGWICK	2.0	C
SUMNER	1.3	C
TREGO	0.3	B
WYANDOTTE	2.0	C

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
JOHNSON	0.3	B	11.9	PASS
LINN	0.0	A	10.7	PASS
SEDGWICK	0.3	B	11.3	PASS
SHAWNEE	0.0	A	10.9	PASS
SUMNER	0.3	B	10.4	PASS
WYANDOTTE	1.0	C	13.5	PASS

Changes from SOTA 2003 to SOTA 2004 in Kansas for ozone

- Trego County had sufficient ozone data to be graded for the first time. It received a B.
- Ozone monitoring has begun in Jefferson County.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

KENTUCKY

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BELL	30,114	5,455	4,134	561	2,217	1,050	380	7,014
BOONE	93,290	20,443	7,552	2,033	6,553	2,974	888	17,462
BOYD	49,603	7,921	7,759	811	3,778	1,810	685	12,478
BULLITT	63,800	12,854	5,225	1,293	4,607	2,110	641	12,566
CAMPBELL	88,604	17,432	11,139	1,753	6,397	2,986	1,035	19,293
CARTER	27,055	5,055	3,453	507	1,989	933	326	6,063
CHRISTIAN	71,267	17,214	7,130	1,621	4,876	2,181	663	12,793
DAVIESS	91,694	17,865	12,693	1,815	6,623	3,139	1,146	21,026
EDMONSON	11,841	2,030	1,705	208	886	422	155	2,848
FAYETTE	263,618	44,953	26,728	4,416	19,959	9,055	2,785	53,908
FRANKLIN	48,201	8,357	5,897	841	3,623	1,700	586	10,967
GRAVES	37,225	7,071	5,827	714	2,711	1,300	499	9,032
GREENUP	36,761	6,398	5,485	656	2,743	1,318	498	9,085
HANCOCK	8,573	1,800	976	179	611	288	99	1,866
HARDIN	95,724	19,884	9,553	2,029	6,770	3,103	987	18,866

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Kentucky
4100 Churchman Avenue
Louisville, KY 40215
(502) 363-2652 www.kylung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BELL	5.7	F
BOONE	6.3	F
BOYD	9.7	F
BULLITT	4.7	F
CAMPBELL	12.5	F
CARTER	1.3	C
CHRISTIAN	3.7	F
DAVIESS	1.7	C
EDMONSON	3.3	F
FAYETTE	1.0	C
GRAVES	2.7	D
GREENUP	3.0	D
HANCOCK	2.7	D
HARDIN	2.3	D
HENDERSON	3.3	F
JEFFERSON	9.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BELL	1.0	C	16.2	FAIL
BOYD	1.3	C	15.7	FAIL
BULLITT	1.0	C	15.8	FAIL
CAMPBELL	1.7	C	15.3	FAIL
CARTER	0.7	B	13.1	PASS
CHRISTIAN	0.0	A	14.1	PASS
DAVIESS	1.8	C	*	INC
FAYETTE	2.2	D	16.5	FAIL
FRANKLIN	1.7	C	14.4	PASS
HARDIN	0.8	B	15.1	FAIL
HENDERSON	1.0	C	14.8	PASS

Changes from SOTA 2003 to SOTA 2004 in Kentucky for ozone

- This analysis uses the longer ozone season Kentucky adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Campbell County became the most ozone-polluted county, replacing Oldham County.
- Trigg County's ozone grade improved from an F to a B.
- Carter County, Davies County, Fayette County and Pulaski County had ozone grades improve from an F to a C.
- Graves County, Greenup County, Hancock County, Harden County and McCracken County had ozone grades improve from an F to a D.
- Bell County's ozone grade dropped from a D to an F.
- Perry County's ozone grade dropped from a B to a C.
- Warren County had sufficient ozone data to be graded for the first time. It received an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
HENDERSON	44,995	8,297	5,891	844	3,309	1,562	556	10,303
JEFFERSON	698,080	133,608	93,613	13,242	51,083	24,065	8,598	159,168
JESSAMINE	40,740	8,231	3,909	821	2,933	1,341	419	8,071
KENTON	152,164	31,649	16,694	3,144	10,858	5,029	1,668	31,635
LAUREL	54,313	10,493	6,340	1,053	3,957	1,845	626	11,791
LIVINGSTON	9,846	1,595	1,500	162	750	361	136	2,488
MCCRACKEN	64,534	11,638	10,139	1,168	4,787	2,306	887	16,077
MCLEAN	10,047	1,880	1,432	188	739	353	131	2,398
MADISON	73,334	12,601	7,247	1,248	5,522	2,488	750	14,476
MUHLENBERG	31,702	5,318	4,914	546	2,382	1,140	432	7,850
OLDHAM	49,310	9,699	3,564	998	3,577	1,645	494	9,737
PERRY	29,371	5,299	3,278	543	2,176	1,017	342	6,467
PIKE	67,803	11,805	8,447	1,195	5,085	2,396	837	15,617
PULASKI	57,160	9,893	8,856	1,012	4,263	2,041	774	14,080
SCOTT	35,320	7,351	2,961	722	2,530	1,141	337	6,596
SIMPSON	16,666	3,456	2,119	340	1,193	561	198	3,681
TRIGG	12,681	2,174	2,090	220	952	461	181	3,259
WARREN	94,730	16,797	9,930	1,677	7,068	3,222	1,013	19,328
TOTALS	**2,560,166**	**486,516**	**308,180**	**48,561**	**187,508**	**87,342**	**29,754**	**558,285**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Kentucky
4100 Churchman Avenue
Louisville, KY 40215
(502) 363-2652 www.kylung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
JESSAMINE	1.7	C
KENTON	8.7	F
LIVINGSTON	5.7	F
MCCRACKEN	3.2	D
MCLEAN	4.7	F
MUHLENBERG	*	*
OLDHAM	6.8	F
PERRY	1.0	C
PIKE	0.7	B
PULASKI	2.0	C
SCOTT	0.3	B
SIMPSON	3.3	F
TRIGG	0.3	B
WARREN	4.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
JEFFERSON	11.8	F	17.3	FAIL
KENTON	1.3	C	15.7	FAIL
LAUREL	*	*	*	INC
MCCRACKEN	0.7	B	*	INC
MADISON	1.0	C	14.4	PASS
PERRY	2.3	D	*	INC
PIKE	1.2	C	14.6	PASS
WARREN	0.3	B	14.5	PASS

KENTUCKY

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

LOUISIANA

AT-RISK GROUPS[1]

Parish	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ASCENSION	81,792	19,583	6,236	1,961	3,555	2,502	736	14,499
BEAUREGARD	33,328	7,337	4,012	735	1,474	1,091	382	7,104
BOSSIER	100,736	22,610	10,843	2,270	4,441	3,216	1,063	20,101
CADDO	251,145	53,803	34,484	5,435	11,126	8,309	3,038	55,605
CALCASIEU	183,344	40,238	22,164	4,048	8,107	5,970	2,076	38,600
CONCORDIA	20,019	4,368	3,020	445	874	666	257	4,633
E. BATON ROUGE	412,008	87,381	41,413	8,773	18,592	13,322	4,243	80,888
GRANT	18,732	4,264	2,360	429	815	611	220	4,065
IBERVILLE	33,095	6,857	3,555	692	1,500	1,085	356	6,743
JEFFERSON	452,789	92,714	54,987	9,310	20,531	15,201	5,300	98,867
LAFAYETTE	192,896	42,090	18,794	4,236	8,617	6,157	1,944	37,278
LAFOURCHE	91,222	19,616	10,426	1,986	4,064	2,962	1,000	18,748
LIVINGSTON	99,066	22,713	8,435	2,300	4,349	3,094	946	18,385
ORLEANS	473,681	102,652	54,511	10,289	21,117	15,405	5,216	97,740
OUACHITA	147,342	32,977	17,639	3,332	6,460	4,716	1,620	30,162
POINTE COUPEE	22,569	4,815	3,108	493	996	751	279	5,078
RAPIDES	126,881	27,600	16,531	2,788	5,602	4,167	1,497	27,538
SAINT BERNARD	66,219	13,166	9,022	1,339	3,005	2,245	814	14,978
SAINT CHARLES	49,250	11,491	4,522	1,181	2,128	1,537	490	9,385
SAINT JAMES	21,349	4,911	2,432	504	921	678	233	4,352
ST. JOHN THE BAPTIST	44,521	11,137	3,422	1,115	1,898	1,354	410	7,986
SAINT MARY	52,425	12,255	6,029	1,242	2,259	1,668	579	10,776
TANGIPAHOA	102,593	22,660	10,923	2,282	4,547	3,289	1,082	20,426
TERREBONNE	105,638	24,249	10,615	2,456	4,610	3,333	1,085	20,609
W. BATON ROUGE	21,625	4,714	2,130	478	963	695	224	4,274
TOTALS	**3,204,265**	**696,201**	**361,613**	**70,122**	**142,549**	**104,024**	**35,089**	**658,820**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Louisiana
2325 Severn Avenue, Suite 8
Metairie, LA 70001-6918
(504) 828-5864 www.louisianalung.org

HIGH OZONE DAYS 2000-2002[1]

Parish	Wgt. Avg.	Grade
ASCENSION	3.2	D
BEAUREGARD	1.0	C
BOSSIER	3.8	F
CADDO	1.7	C
CALCASIEU	3.7	F
E. BATON ROUGE	12.5	F
GRANT	1.0	C
IBERVILLE	10.2	F
JEFFERSON	5.0	F
LAFAYETTE	3.3	F
LAFOURCHE	2.7	D
LIVINGSTON	5.7	F
ORLEANS	0.0	A
OUACHITA	1.0	C
POINTE COUPEE	0.7	B
SAINT BERNARD	1.7	C
SAINT CHARLES	3.3	F
SAINT JAMES	2.0	C
SAINT JOHN THE BAPTIST	3.3	F
SAINT MARY	1.7	C
W. BATON ROUGE	5.0	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
Parish	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CADDO	0.7	B	13.1	PASS
CALCASIEU	1.2	C	12.0	PASS
CONCORDIA	0.0	A	*	INC
EAST BATON ROUGE	2.0	C	13.6	PASS
IBERVILLE	0.3	B	12.9	PASS
JEFFERSON	0.7	B	12.5	PASS
LAFAYETTE	0.0	A	11.5	PASS
ORLEANS	1.7	C	12.8	PASS
OUACHITA	0.3	B	12.0	PASS
RAPIDES	0.0	A	12.0	PASS
SAINT BERNARD	0.0	A	11.3	PASS
TANGIPAHOA	0.3	B	12.0	PASS
TERREBONNE	0.0	A	10.9	PASS
WEST BATON ROUGE	1.0	C	13.1	PASS

Changes from SOTA 2003 to SOTA 2004 in Louisiana for ozone

- Caddo Parish, St. James Parish and St. Mary Parish had ozone grades improve from an F to a C.
- Ascension Parish and LaFourche Parish had ozone grades improve from an F to a D.
- Pointe Coupee Parish had its ozone grade improve from a C to a B.
- St. Bernard Parish had its ozone grade improve from a D to a C.

LOUISIANA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MAINE

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ANDROSCOGGIN	104,805	18,699	14,886	1,916	8,146	3,653	1,325	24,337
AROOSTOOK	73,122	11,709	12,689	1,241	5,859	2,684	1,074	19,199
CUMBERLAND	269,083	47,764	35,826	4,852	21,070	9,423	3,349	62,067
HANCOCK	52,359	8,306	8,456	875	4,221	1,924	748	13,518
KENNEBEC	118,244	20,387	16,747	2,126	9,304	4,191	1,541	28,229
KNOX	40,477	6,580	6,912	692	3,241	1,484	591	10,619
OXFORD	55,604	9,477	8,805	995	4,389	1,997	772	13,955
PENOBSCOT	146,015	24,345	19,264	2,524	11,553	5,156	1,813	33,582
PISCATAQUIS	17,203	2,731	2,983	296	1,382	636	257	4,592
SAGADAHOC	35,983	6,750	4,576	695	2,778	1,245	444	8,246
YORK	195,489	35,971	26,412	3,684	15,179	6,820	2,474	45,653
TOTALS	**1,108,384**	**192,719**	**157,556**	**19,895**	**87,124**	**39,213**	**14,388**	**263,997**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Maine
122 State Street
Augusta, ME 04330
(207) 622-6394 www.mainelung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CUMBERLAND	4.5	F
HANCOCK	8.0	F
KENNEBEC	2.3	D
KNOX	3.8	F
OXFORD	0.3	B
PENOBSCOT	3.3	F
PISCATAQUIS	*	*
SAGADAHOC	*	*
YORK	9.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ANDROSCOGGIN	0.7	B	10.5	PASS
AROOSTOOK	0.3	B	11.2	PASS
CUMBERLAND	0.7	B	11.3	PASS
HANCOCK	0.7	B	6.1	PASS
KENNEBEC	0.3	B	10.2	PASS
KNOX	0.0	A	*	INC
OXFORD	0.0	A	10.0	PASS
PENOBSCOT	0.3	B	9.8	PASS
YORK	0.0	A	9.5	PASS

Changes from SOTA 2003 to SOTA 2004 in Maine for ozone

- This analysis uses the shorter ozone season Maine adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Penobscott County's ozone grade dropped from a C to an F.
- Knox County's ozone grade dropped from a D to an F.
- Kennebec County's ozone grade dropped from a C to a D.
- Oxford County's ozone grade dropped from an A to a B.
- Piscataquis County no longer has sufficient ozone data to receive a grade.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MARYLAND

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ANNE ARUNDEL	503,388	104,791	50,857	10,460	30,881	16,651	5,423	103,596
BALTIMORE	770,298	148,795	111,532	14,969	48,166	26,458	9,757	178,431
CALVERT	80,906	18,433	7,053	1,879	4,771	2,561	806	15,576
CARROLL	159,025	34,487	17,174	3,488	9,568	5,197	1,750	33,003
CECIL	90,335	19,950	9,574	2,000	5,419	2,929	976	18,489
CHARLES	129,040	29,662	10,148	2,995	7,618	4,043	1,218	23,872
FREDERICK	209,125	46,815	19,914	4,682	12,504	6,693	2,137	41,022
HARFORD	227,713	51,045	23,961	5,117	13,583	7,373	2,470	46,746
KENT	19,613	3,148	3,823	326	1,277	721	299	5,256
MONTGOMERY	910,156	192,333	102,871	19,072	55,621	30,363	10,385	195,556
PRINCE GEORGE'S	833,084	187,148	66,236	18,405	50,111	26,489	7,914	155,251
WASHINGTON	134,246	25,492	18,897	2,573	8,434	4,598	1,662	30,633
BALTIMORE CITY	638,614	133,463	82,202	13,238	39,171	21,133	7,386	136,933
TOTALS	**4,705,543**	**995,562**	**524,242**	**99,204**	**287,125**	**155,209**	**52,182**	**984,363**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Maryland
1840 York Road, Suite M
Timonium, MD 21093-5156
(410) 560-2120 www.marylandlung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ANNE ARUNDEL	24.2	F
BALTIMORE CITY	*	*
BALTIMORE	15.2	F
CALVERT	*	*
CARROLL	8.5	F
CECIL	19.7	F
CHARLES	10.2	F
FREDERICK	10.3	F
HARFORD	25.5	F
KENT	13.3	F
MONTGOMERY	8.2	F
PRINCE GEORGE'S	17.3	F
WASHINGTON	8.0	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ANNE ARUNDEL	4.5	F	15.8	FAIL
BALTIMORE	6.8	F	15.1	FAIL
CECIL	1.7	C	13.4	PASS
HARFORD	1.5	C	*	INC
MONTGOMERY	1.3	C	13.4	PASS
PRINCE GEORGE'S	3.0	D	17.4	FAIL
WASHINGTON	2.8	D	14.8	PASS
BALTIMORE CITY	12.0	F	17.0	FAIL

Changes from SOTA 2003 to SOTA 2004 in Maryland for ozone

- Calvert County had insufficient ozone data to grade.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MASSACHUSETTS

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
BARNSTABLE	228,577	35,299	53,029	3,614	15,689	8,694	3,911	67,737
BERKSHIRE	133,462	22,311	23,959	2,319	9,177	4,851	1,959	34,885
BRISTOL	543,434	105,708	75,339	10,593	36,924	18,518	6,673	123,130
ESSEX	735,606	149,274	101,065	14,879	49,350	24,959	9,089	167,443
HAMPDEN	459,116	93,375	64,985	9,449	30,568	15,438	5,662	103,705
HAMPSHIRE	153,399	22,434	18,472	2,325	11,298	5,467	1,793	33,437
MIDDLESEX	1,474,160	272,726	188,901	27,009	102,703	50,839	17,617	329,151
NORFOLK	656,486	125,077	94,169	12,423	44,867	22,819	8,409	154,465
PLYMOUTH	485,747	101,769	57,293	10,223	32,451	16,217	5,636	105,580
SUFFOLK	689,927	116,123	75,449	11,435	50,120	23,368	7,133	137,817
WORCESTER	770,321	155,900	97,834	15,620	51,970	25,803	9,021	167,960
TOTALS	**6,330,235**	**1,199,996**	**850,495**	**119,888**	**435,117**	**216,975**	**76,904**	**1,425,309**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Massachusetts
One Abbey Lane
Middleboro, MA 02346-3230
(508) 947-7204 www.lungusa.org/massachussets

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BARNSTABLE	9.8	F
BERKSHIRE	7.2	F
BRISTOL	9.0	F
ESSEX	9.7	F
HAMPDEN	7.5	F
HAMPSHIRE	8.7	F
MIDDLESEX	7.7	F
NORFOLK	*	*
SUFFOLK	7.2	F
WORCESTER	5.2	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BERKSHIRE	0.8	B	*	INC
BRISTOL	0.8	B	*	INC
ESSEX	1.3	C	*	INC
HAMPDEN	5.0	F	13.8	PASS
HAMPSHIRE	0.0	A	8.8	PASS
MIDDLESEX	0.5	B	*	INC
NORFOLK	1.3	C	*	INC
PLYMOUTH	0.7	B	*	INC
SUFFOLK	3.0	D	*	INC
WORCESTER	1.8	C	12.2	PASS

Changes from SOTA 2003 to SOTA 2004 in Mssachusetts for ozone

- This analysis uses the shorter ozone season Massachusetts adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Ozone monitoring has begun in Norfolk County, although there is insufficient data to grade.

MASSACHUSETTS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MICHIGAN

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALLEGAN	109,336	24,598	12,022	2,503	6,935	3,508	1,189	22,358
ALPENA	31,026	5,552	5,486	580	2,114	1,107	449	7,989
BAY	109,672	21,442	16,249	2,167	7,340	3,796	1,436	26,134
BENZIE	16,818	3,107	2,920	319	1,141	596	240	4,282
BERRIEN	162,285	33,867	23,345	3,415	10,637	5,488	2,062	37,535
CASS	51,284	10,050	6,972	1,040	3,406	1,765	653	11,988
CHIPPEWA	38,898	6,549	4,938	667	2,698	1,352	458	8,576
CLINTON	66,668	14,345	7,301	1,467	4,298	2,195	752	14,130
GENESEE	441,423	99,876	52,305	9,912	28,217	14,336	4,990	93,113
GRAND TRAVERSE	81,263	15,803	10,731	1,624	5,412	2,769	995	18,385
HURON	35,422	6,564	6,978	682	2,396	1,266	541	9,473
INGHAM	281,362	54,739	26,782	5,457	18,801	9,243	2,807	53,978
KALAMAZOO	241,471	48,013	27,719	4,783	16,067	8,030	2,658	49,926
KENT	587,951	137,046	60,374	13,647	37,004	18,435	5,969	113,581
LENAWEE	100,145	20,252	12,654	2,071	6,594	3,367	1,194	22,116

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Michigan
25900 Greenfield Road, Suite 401
Oak Park, MI 48237
(248) 784-2000 www.alam.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALLEGAN	11.3	F
BENZIE	5.0	F
BERRIEN	8.2	F
CASS	11.7	F
CLINTON	2.7	D
GENESEE	7.3	F
HURON	3.5	F
INGHAM	3.0	D
KALAMAZOO	4.7	F
KENT	5.3	F
LENAWEE	6.0	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALLEGAN	3.3	F	12.3	PASS
ALPENA	0.0	A	*	INC
BAY	0.3	B	*	INC
BERRIEN	0.3	B	12.6	PASS
CHIPPEWA	*	*	*	INC
GENESEE	0.7	B	12.9	PASS
GRAND TRAVERSE	0.0	A	*	INC
INGHAM	0.3	B	13.5	PASS
KALAMAZOO	0.7	B	15.0	PASS
KENT	4.7	F	13.9	PASS

Changes from SOTA 2003 to SOTA 2004 in Michigan for ozone

- Cass County replaces Muskegon County as the most ozone-polluted county.
- Missaukee County had its ozone grade improve from an F to a C.
- Lenawee County had its ozone grade drop from a D to an F.
- Ozone monitoring data are no longer available for Grand Traverse County.

MICHIGAN

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
MACOMB	808,529	160,202	109,729	15,997	53,960	27,477	9,874	182,587
MASON	28,879	5,490	4,755	566	1,941	1,015	403	7,225
MISSAUKEE	14,950	3,076	2,166	320	974	501	189	3,429
MONROE	149,253	31,640	16,738	3,235	9,669	4,920	1,684	31,637
MUSKEGON	171,765	37,895	21,695	3,838	11,000	5,597	1,990	36,819
OAKLAND	1,202,721	249,075	136,817	24,809	79,254	40,370	13,831	260,286
OTTAWA	245,913	56,471	25,138	5,678	15,509	7,727	2,498	47,331
SAGINAW	210,087	45,206	28,690	4,547	13,629	7,004	2,581	47,253
SAINT CLAIR	167,712	35,472	20,584	3,604	10,897	5,555	1,955	36,371
SCHOOLCRAFT	8,778	1,536	1,661	158	605	319	133	2,356
WASHTENAW	334,351	61,777	27,651	6,109	22,720	11,092	3,186	62,646
WAYNE	2,045,540	482,691	242,639	47,497	129,004	65,269	22,655	422,856
TOTALS	**7,743,502**	**1,672,334**	**915,039**	**166,695**	**502,220**	**254,099**	**87,371**	**1,634,360**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Michigan
25900 Greenfield Road, Suite 401
Oak Park, MI 48237
(248) 784-2000 www.alam.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MACOMB	11.5	F
MASON	7.0	F
MISSAUKEE	1.0	C
MUSKEGON	6.5	F
OAKLAND	6.7	F
OTTAWA	5.7	F
SCHOOLCRAFT	*	*
SAINT CLAIR	7.0	F
WASHTENAW	6.2	F
WAYNE	7.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MACOMB	1.0	C	13.5	PASS
MISSAUKEE	*	*	*	INC
MONROE	2.0	C	15.6	FAIL
MUSKEGON	0.7	B	12.2	PASS
OAKLAND	1.7	C	*	INC
OTTAWA	0.7	B	13.5	PASS
SAGINAW	0.3	B	10.8	PASS
SAINT CLAIR	1.7	C	14.0	PASS
SCHOOLCRAFT	*	*	*	INC
WASHTENAW	0.7	B	13.4	PASS
WAYNE	14.5	F	19.9	FAIL

MICHIGAN

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MINNESOTA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ANOKA	309,790	70,503	23,277	7,082	16,742	9,710	2,862	56,577
CARLTON	32,577	6,126	4,908	634	1,855	1,126	424	7,705
CROW WING	56,903	10,654	9,613	1,092	3,252	1,995	790	14,151
DAKOTA	368,972	85,681	27,908	8,586	19,791	11,508	3,415	67,354
DOUGLAS	33,520	5,903	5,950	615	1,945	1,190	477	8,508
FREEBORN	32,092	5,829	6,080	606	1,840	1,146	479	8,446
HENNEPIN	1,122,259	222,025	121,886	22,068	63,971	37,545	12,291	234,011
ITASCA	44,144	7,781	7,484	826	2,516	1,585	638	11,397
KANDIYOHI	40,832	8,148	6,206	843	2,280	1,390	531	9,603
LAKE	11,094	1,800	2,222	191	649	411	175	3,082
MC LEOD	35,403	7,368	4,890	765	1,957	1,168	426	7,816
MILLE LACS	23,628	4,635	3,649	486	1,327	800	304	5,499
NICOLLET	30,267	5,566	3,236	579	1,745	1,014	326	6,144
OLMSTED	128,961	27,304	14,136	2,756	7,152	4,209	1,398	26,468
OTTER TAIL	58,039	10,356	10,963	1,102	3,319	2,072	866	15,253
RAMSEY	510,568	106,577	60,096	10,650	28,615	16,803	5,686	106,616
SAINT LOUIS	199,983	33,160	31,676	3,456	11,766	7,171	2,727	49,194
SCOTT	103,681	25,838	6,120	2,533	5,522	3,073	813	16,685
STEARNS	135,867	26,498	15,063	2,720	7,782	4,445	1,428	26,941
WASHINGTON	210,270	47,994	16,541	4,843	11,252	6,667	2,039	39,843
WRIGHT	98,083	23,193	8,410	2,344	5,243	3,009	913	17,791
TOTALS	**3,586,933**	**742,939**	**390,314**	**74,777**	**200,522**	**118,037**	**39,011**	**739,083**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Minnesota
490 Concordia Avenue
St. Paul, MN 55103-2441
(651) 227-8014 alamn.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ANOKA	0.3	B
CARLTON	*	*
DAKOTA	0.3	B
LAKE	0.0	A
MILLE LACS	0.0	A
SCOTT	*	*
SAINT LOUIS	0.0	A
WASHINGTON	1.0	C

Changes from SOTA 2003 to SOTA 2004 in Minnesota for ozone

- Mille Lacs County improved its ozone grade from a B to an A.
- Dakota County's ozone grade dropped from an A to a B.
- Washington County's ozone grade dropped from a B to a C.
- Ozone monitoring has begun in Scott County, although there is insufficient data to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CROW WING	*	*	*	INC
DAKOTA	0.7	B	10.9	PASS
DOUGLAS	*	*	*	INC
FREEBORN	*	*	*	INC
HENNEPIN	1.8	C	11.1	PASS
ITASCA	*	*	*	INC
KANDIYOHI	*	*	*	INC
LAKE	*	*	*	INC
MC LEOD	*	*	*	INC
MILLE LACS	0.0	A	*	INC
NICOLLET	*	*	*	INC
OLMSTED	0.0	A	*	INC
OTTER TAIL	*	*	*	INC
RAMSEY	3.0	D	12.6	PASS
SAINT LOUIS	0.0	A	8.5	PASS
SCOTT	0.0	A	10.9	PASS
STEARNS	0.0	A	*	INC
WASHINGTON	*	*	*	INC
WRIGHT	*	*	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MISSISSIPPI

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADAMS	33,573	6,982	5,366	710	1,558	1,145	451	8,086
ALCORN	34,733	6,864	5,089	688	1,635	1,195	448	8,180
BOLIVAR	39,839	9,142	4,305	926	1,738	1,250	412	7,729
DESOTO	118,458	27,429	10,649	2,724	5,176	3,714	1,150	22,333
FORREST	73,465	14,876	8,270	1,470	3,346	2,385	760	14,392
GRENADA	22,915	5,070	3,213	504	1,038	757	280	5,123
HANCOCK	44,673	8,952	6,309	906	2,093	1,533	572	10,469
HARRISON	190,936	41,228	21,701	4,102	8,599	6,197	2,069	38,941
HINDS	249,579	56,589	27,019	5,659	11,023	7,944	2,630	49,560
JACKSON	133,259	29,476	14,283	2,956	5,967	4,322	1,446	27,337
JONES	65,053	13,638	9,105	1,364	2,990	2,175	796	14,558
LAUDERDALE	77,600	16,850	10,869	1,676	3,524	2,559	937	17,121
LEE	77,220	17,680	8,829	1,759	3,426	2,482	850	15,945
LOWNDES	60,978	14,197	7,065	1,410	2,680	1,936	660	12,354
MADISON	77,872	18,185	7,745	1,808	3,398	2,443	785	14,996
PEARL RIVER	50,473	10,742	6,480	1,088	2,300	1,675	601	11,086
RANKIN	121,577	25,002	11,969	2,519	5,540	3,992	1,274	24,482
SCOTT	28,338	6,528	3,490	655	1,253	910	322	5,960
WARREN	49,443	11,531	5,740	1,147	2,189	1,592	556	10,361
TOTALS	**1,549,984**	**340,961**	**177,496**	**34,071**	**69,474**	**50,205**	**17,000**	**319,014**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Mississippi
731 Pear Orchard Road, Suite 18
Ridgeland, MS 39157
(601) 206-5810 www.lungusa.org/mississippi

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADAMS	1.7	C
ALCORN	*	*
BOLIVAR	1.0	C
DESOTO	4.3	F
HANCOCK	2.7	D
HARRISON	3.7	F
HINDS	1.0	C
JACKSON	3.5	F
LAUDERDALE	0.7	B
LEE	1.7	C
MADISON	0.3	B
WARREN	0.3	B

Changes from SOTA 2003 to SOTA 2004 in Mississippi for Ozone

- Lee County improved its ozone grade from an F to a C.
- Hancock County improved its ozone grade from an F to a D.
- Bolivar County improved its ozone grade from a D to a C.
- Lauderdale County improved its ozone grade from a C to a B.
- Hinds County's ozone grade dropped from a B to a C.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADAMS	0.3	B	11.6	PASS
BOLIVAR	1.0	C	13.2	PASS
DESOTO	0.0	A	13.1	PASS
FORREST	0.3	B	13.8	PASS
GRENADA	*	*	*	INC
HANCOCK	0.0	A	10.7	PASS
HARRISON	0.3	B	11.7	PASS
HINDS	1.0	C	13.8	PASS
JACKSON	0.0	A	12.2	PASS
JONES	1.0	C	15.0	PASS
LAUDERDALE	0.3	B	13.7	PASS
LEE	0.3	B	13.1	PASS
LOWNDES	1.3	C	*	INC
PEARL RIVER	0.3	B	*	INC
RANKIN	0.3	B	13.6	PASS
SCOTT	0.3	B	12.1	PASS
WARREN	0.3	B	12.8	PASS

MISSISSIPPI

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MISSOURI

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BOONE	139,492	25,942	12,157	2,585	9,434	4,572	1,312	25,668
BUCHANAN	85,313	16,574	12,695	1,679	5,487	2,898	1,070	19,500
CASS	87,310	19,333	10,338	1,952	5,447	2,833	981	18,326
CEDAR	13,825	2,573	2,753	273	865	492	213	3,713
CLAY	191,381	40,105	20,635	4,009	12,300	6,295	2,080	39,487
COOPER	17,007	3,028	2,476	308	1,125	586	210	3,839
GREENE	243,355	43,877	33,271	4,390	16,185	8,397	2,949	54,530
HOWELL	37,280	7,498	6,280	766	2,337	1,280	510	9,113
JACKSON	660,773	140,548	81,270	13,963	42,006	21,797	7,559	141,118
JASPER	107,073	22,702	14,518	2,253	6,774	3,548	1,274	23,445
JEFFERSON	203,993	44,440	19,010	4,495	12,965	6,576	2,089	40,222
MARIES	8,700	1,721	1,329	178	550	299	115	2,079
MERCER	3,669	632	797	65	235	135	59	1,030
MONROE	9,262	1,809	1,601	186	584	323	131	2,321
PLATTE	77,655	15,790	6,891	1,595	5,072	2,579	812	15,737
SAINT CHARLES	303,030	68,789	27,617	6,918	19,020	9,579	3,004	57,974
SAINTE GENEVIEVE	18,104	3,595	2,635	373	1,147	615	231	4,205
SAINT LOUIS	1,018,102	203,430	143,169	20,575	65,135	34,782	12,867	235,450
STODDARD	29,828	5,421	5,142	572	1,911	1,048	418	7,473
SAINT LOUIS CITY	338,353	72,443	43,862	7,148	21,444	11,062	3,852	71,501
TOTALS	**3,593,505**	**740,250**	**448,446**	**74,282**	**230,024**	**119,694**	**41,738**	**776,731**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Missouri
1118 Hampton Avenue
St. Louis, MO 63139-3196
(314) 645-5505 www.lungusa.org/missouri

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CASS	1.3	C
CEDAR	3.3	F
CLAY	7.3	F
GREENE	1.0	C
JEFFERSON	7.0	F
MONROE	1.7	C
PLATTE	3.7	F
SAINT CHARLES	13.3	F
SAINT LOUIS CITY	8.0	F
SAINT LOUIS	12.2	F
SAINTE GENEVIEVE	4.5	F

Changes from SOTA 2003 to SOTA 2004 in Missouri for ozone

- Monroe County improved its ozone grade from a D to a C.
- Platte County's ozone grade dropped from a D to an F.
- Cass County had sufficient ozone data to be graded for the first time. It received a C.
- Ozone monitoring data are no longer available for Jackson County.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BOONE	*	*	*	INC
BUCHANAN	0.3	B	12.6	PASS
CASS	0.0	A	11.4	PASS
CEDAR	0.0	A	11.7	PASS
CLAY	0.3	B	13.0	PASS
COOPER	*	*	*	INC
GREENE	0.3	B	12.4	PASS
HOWELL	*	*	*	INC
JACKSON	0.3	B	13.9	PASS
JASPER	0.3	B	14.0	PASS
JEFFERSON	2.0	C	14.9	PASS
MARIES	*	*	*	INC
MERCER	*	*	*	INC
MONROE	0.0	A	11.2	PASS
SAINT CHARLES	0.3	B	14.6	PASS
SAINTE GENEVIEVE	0.3	B	14.1	PASS
SAINT LOUIS	0.3	B	14.5	PASS
STODDARD	*	*	*	INC
SAINT LOUIS CITY	5.0	F	15.7	FAIL

MISSOURI

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

MONTANA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
CASCADE	79,389	15,946	11,428	1,616	5,261	2,702	1,006	18,336
FLATHEAD	77,240	14,900	10,093	1,541	5,203	2,681	983	18,091
GALLATIN	71,206	12,323	5,985	1,244	4,920	2,402	697	13,703
LAKE	26,908	5,560	3,882	582	1,758	912	349	6,314
LEWIS AND CLARK	56,554	10,822	6,718	1,119	3,827	1,960	695	12,922
LINCOLN	18,665	3,300	2,993	355	1,283	678	273	4,895
MISSOULA	98,102	17,337	9,861	1,783	6,733	3,348	1,061	20,339
RAVALLI	37,868	7,060	5,981	739	2,570	1,349	535	9,615
ROSEBUD	9,273	2,302	854	242	568	289	98	1,851
SANDERS	10,367	1,662	1,797	186	726	387	161	2,857
SILVER BOW	33,403	6,079	5,415	620	2,281	1,186	463	8,338
YELLOWSTONE	131,622	26,143	17,589	2,654	8,766	4,479	1,621	29,862
TOTALS	**650,597**	**123,434**	**82,596**	**12,679**	**43,894**	**22,375**	**7,942**	**147,122**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of the Northern Rockies
825 Helena Avenue
Helena, MT 59601-3459
(406) 442-6556 www.lungusa/northernrockies

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
FLATHEAD	0.0	A
MISSOULA	*	*

Changes from SOTA 2003 to SOTA 2004 in Montana for ozone

- Ozone monitoring has begun in Missoula County, although there is insufficient data to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CASCADE	0.0	A	6.0	PASS
FLATHEAD	0.0	A	8.3	PASS
GALLATIN	1.2	C	9.2	PASS
LAKE	1.2	C	10.0	PASS
LEWIS AND CLARK	2.3	D	8.6	PASS
LINCOLN	5.3	F	16.4	FAIL
MISSOULA	3.5	F	11.4	PASS
RAVALLI	4.7	F	10.7	PASS
ROSEBUD	0.0	A	7.1	PASS
SANDERS	0.3	B	6.5	PASS
SILVER BOW	2.2	D	*	INC
YELLOWSTONE	0.0	A	7.5	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NEBRASKA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
CASS	24,839	5,363	3,057	544	1,307	822	293	5,427
CEDAR	9,264	1,968	1,870	207	479	314	138	2,382
CHERRY	6,167	1,287	1,089	131	325	212	87	1,545
DEUEL	2,065	323	473	36	115	77	35	603
DOUGLAS	472,744	103,831	51,161	10,329	25,044	15,245	5,023	95,217
HALL	53,613	11,796	7,354	1,173	2,822	1,769	648	11,887
LANCASTER	257,513	50,162	26,382	4,982	14,247	8,509	2,660	51,035
LINCOLN	34,390	6,922	5,305	709	1,840	1,178	455	8,211
SARPY	129,319	31,487	9,364	3,136	6,624	3,910	1,122	22,305
SCOTTS BLUFF	36,764	7,450	6,366	756	1,964	1,266	511	9,094
WASHINGTON	19,211	3,868	2,462	398	1,031	646	231	4,245
TOTALS	**1,045,889**	**224,457**	**114,883**	**22,402**	**55,796**	**33,947**	**11,202**	**211,950**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Nebraska
7101 Newport Avenue, Suite 303
Omaha, NE 68152
(402) 572-3030 www.lungnebraska.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
DOUGLAS	0.0	A
LANCASTER	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Nebraska for ozone

- Douglas County improved its ozone grade from a B to an A.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CASS	0.0	A	10.3	PASS
CEDAR	0.0	A	*	INC
CHERRY	0.0	A	*	INC
DEUEL	0.0	A	*	INC
DOUGLAS	1.3	C	11.0	PASS
HALL	0.0	A	8.6	PASS
LANCASTER	0.0	A	9.9	PASS
LINCOLN	0.0	A	7.0	PASS
SARPY	0.0	A	*	INC
SCOTTS BLUFF	0.0	A	6.1	PASS
WASHINGTON	0.0	A	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NEVADA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
CLARK	1,522,164	344,506	163,089	33,493	83,925	49,054	16,174	307,227
DOUGLAS	43,189	7,883	6,882	832	2,551	1,557	624	11,193
WASHOE	362,325	78,155	37,991	7,704	20,444	11,939	3,960	75,170
WHITE PINE	8,689	1,687	1,253	171	500	300	112	2,048
CARSON CITY	54,311	10,687	8,189	1,070	3,115	1,883	717	13,018
TOTALS	**1,990,678**	**442,918**	**217,404**	**43,270**	**110,535**	**64,733**	**21,587**	**408,657**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Idaho/Nevada
6275 Neil Road, Suite 300
Reno, NV 89511
(775) 829-5864 www.lungusa.org/idaho_nevada

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CARSON CITY	*	*
CLARK	2.7	D
DOUGLAS	0.0	A
WASHOE	0.0	A
WHITE PINE	0.0	A

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CLARK	1.3	C	10.9	PASS
DOUGLAS	0.3	B	*	INC
WASHOE	1.2	C	9.5	PASS

Changes from SOTA 2003 to SOTA 2004 in Nevada for ozone

- Washoe County improved its ozone grade from a B to an A.

NEVADA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NEW HAMPSHIRE

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BELKNAP	59,112	10,580	8,905	1,093	3,916	2,093	794	14,466
CARROLL	45,344	7,766	8,124	815	2,966	1,656	681	12,121
CHESHIRE	75,206	13,441	10,357	1,394	5,040	2,622	948	17,363
COOS	33,100	5,714	6,105	599	2,167	1,199	495	8,782
GRAFTON	83,411	14,023	11,281	1,445	5,715	2,950	1,049	19,256
HILLSBOROUGH	392,410	83,858	41,537	8,400	25,536	12,849	4,251	80,820
MERRIMACK	141,245	27,320	17,003	2,794	9,345	4,801	1,663	31,094
ROCKINGHAM	287,869	60,465	29,849	6,099	18,671	9,572	3,202	60,897
STRAFFORD	116,106	21,796	12,951	2,206	7,925	3,887	1,259	23,809
SULLIVAN	41,253	7,589	6,465	781	2,702	1,458	564	10,220
TOTALS	**1,275,056**	**252,552**	**152,577**	**25,626**	**83,982**	**43,087**	**14,906**	**278,828**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of New Hampshire
9 Cedarwood Drive, Unit 12
Bedford, NH 03110
(603) 669-2411 www.nhlung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BELKNAP	*	*
CARROLL	0.3	B
CHESHIRE	1.0	C
COOS	2.0	C
GRAFTON	0.3	B
HILLSBOROUGH	6.2	F
MERRIMACK	1.7	C
ROCKINGHAM	7.0	F
STRAFFORD	2.5	D
SULLIVAN	1.3	C

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BELKNAP	0.3	B	*	INC
CHESHIRE	0.5	B	*	INC
COOS	0.3	B	*	INC
GRAFTON	*	*	*	INC
HILLSBOROUGH	0.5	B	*	INC
MERRIMACK	0.3	B	*	INC
ROCKINGHAM	0.3	B	*	INC
SULLIVAN	0.5	B	*	INC

Changes from SOTA 2003 to SOTA 2004 in New Hampshire for ozone

- Rockingham County became the most ozone-polluted county.
- Merrimack County and Sullivan County had their ozone grade drop from B to a C.
- Strafford County had its ozone grade drop from a C to a D.
- Grafton County had its ozone grade drop from an A to a B.

NEW HAMPSHIRE

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NEW JERSEY

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ATLANTIC	259,423	54,554	34,969	5,423	14,832	8,672	3,133	57,705
BERGEN	895,091	172,311	134,731	17,092	52,122	31,311	11,863	216,027
CAMDEN	511,957	111,768	63,220	11,260	28,731	16,777	5,912	109,779
CUMBERLAND	147,768	30,742	18,927	3,087	8,495	4,896	1,719	31,913
ESSEX	798,301	178,259	93,167	17,526	45,100	25,917	8,849	165,864
GLOUCESTER	262,049	54,173	30,652	5,511	14,944	8,692	2,984	55,850
HUDSON	611,439	117,833	68,242	11,613	36,701	20,381	6,556	125,278
HUNTERDON	125,795	26,158	12,784	2,613	7,053	4,275	1,453	27,534
MERCER	359,463	72,493	44,706	7,197	20,897	12,095	4,198	78,026
MIDDLESEX	775,549	155,749	93,772	15,397	45,422	25,971	8,836	165,690
MONMOUTH	629,836	135,929	78,327	13,501	35,340	21,066	7,534	139,679
MORRIS	478,730	100,538	56,439	9,892	27,142	16,206	5,683	106,227
OCEAN	537,065	103,445	115,589	10,278	31,463	19,042	8,337	144,858
PASSAIC	496,646	111,416	58,627	10,918	28,088	16,093	5,503	103,030
UNION	530,766	113,498	70,210	11,157	30,316	17,674	6,334	117,069
WARREN	107,537	22,798	13,450	2,269	6,097	3,595	1,275	23,684
TOTALS	**7,527,415**	**1,561,664**	**987,812**	**154,734**	**432,743**	**252,665**	**90,169**	**1,668,215**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of New Jersey
1600 Route 22 East
Union, NJ 07083-3410
(908) 687-9340 www.lungusa.org/newjersey

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ATLANTIC	8.0	F
BERGEN	10.2	F
CAMDEN	25.0	F
CUMBERLAND	13.7	F
ESSEX	*	*
GLOUCESTER	19.0	F
HUDSON	5.3	F
HUNTERDON	13.7	F
MERCER	18.8	F
MIDDLESEX	18.5	F
MONMOUTH	10.5	F
MORRIS	16.8	F
OCEAN	24.2	F
PASSAIC	7.5	F

Changes from SOTA 2003 to SOTA 2004 in New Jersey for ozone

- Bergen County had sufficient monitoring data to receive its first grade: an F.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ATLANTIC	*	*	*	INC
BERGEN	1.2	C	*	INC
CAMDEN	2.5	D	*	INC
ESSEX	2.2	D	*	INC
GLOUCESTER	2.2	D	14.2	PASS
HUDSON	2.3	D	15.5	FAIL
MERCER	1.8	C	14.5	PASS
MIDDLESEX	2.2	D	12.7	PASS
MORRIS	2.2	D	*	INC
OCEAN	1.5	C	*	INC
PASSAIC	0.8	B	*	INC
UNION	8.0	F	15.9	FAIL
WARREN	1.5	C	13.6	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NEW MEXICO

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BERNALILLO	573,675	118,903	66,710	11,881	33,820	19,039	6,473	121,513
CHAVES	60,177	13,602	8,859	1,393	3,409	1,959	747	13,443
DONA ANA	178,664	42,265	19,754	4,238	10,073	5,553	1,843	34,564
EDDY	51,139	11,444	7,438	1,163	2,910	1,687	644	11,625
GRANT	30,237	6,108	5,256	628	1,772	1,052	433	7,656
LEA	55,655	12,983	6,790	1,329	3,122	1,752	614	11,330
SANDOVAL	96,071	22,209	10,497	2,254	5,406	3,060	1,041	19,539
SAN JUAN	120,367	30,686	11,024	3,132	6,501	3,603	1,148	21,892
SANTA FE	134,525	25,422	15,041	2,579	8,059	4,679	1,614	30,337
VALENCIA	67,578	15,980	7,199	1,617	3,774	2,130	718	13,500
TOTALS	**1,368,088**	**299,602**	**158,568**	**30,214**	**78,847**	**44,516**	**15,274**	**285,398**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Arizona/New Mexico
102 West McDowell Road
Phoenix, AZ 85003-1299
(602) 258-7505 www.lungusa.org/arizonanewmexico

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BERNALILLO	0.3	B
DONA ANA	2.3	D
EDDY	0.0	A
SAN JUAN	0.7	B
SANDOVAL	0.0	A
VALENCIA	0.0	A

Changes from SOTA 2003 to SOTA 2004 in New Mexico for ozone

- Sandoval County improved its ozone grade from a B to an A.
- Doña Ana's ozone grade dropped from a C to a D.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BERNALILLO	0.0	A	6.4	PASS
CHAVES	0.0	A	6.7	PASS
DONA ANA	1.0	C	11.2	PASS
GRANT	0.0	A	6.0	PASS
LEA	0.0	A	6.7	PASS
SANDOVAL	0.8	B	4.9	PASS
SAN JUAN	0.0	A	6.4	PASS
SANTA FE	0.0	A	4.9	PASS

NEW MEXICO

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALBANY	296,173	53,347	41,587	5,405	18,178	10,292	3,702	67,918
BRONX	1,354,068	335,583	135,907	32,868	75,028	41,303	13,147	251,267
BROOME	200,324	36,094	32,595	3,678	12,259	7,028	2,695	48,440
CHAUTAUQUA	138,332	25,855	21,979	2,668	8,358	4,800	1,843	33,166
CHEMUNG	90,614	17,361	13,966	1,765	5,460	3,129	1,187	21,510
DUTCHESS	287,752	57,265	34,623	5,770	17,209	9,677	3,326	62,122
ERIE	945,049	182,442	149,750	18,433	56,904	32,682	12,548	226,650
ESSEX	38,935	6,520	6,267	684	2,420	1,392	534	9,665
HAMILTON	5,295	788	1,064	81	343	205	88	1,546
HERKIMER	63,741	11,708	10,634	1,209	3,878	2,245	885	15,879
JEFFERSON	108,160	23,158	12,613	2,298	6,294	3,484	1,151	21,695
KINGS	2,488,194	547,268	286,979	54,178	144,091	80,288	26,928	507,412
MADISON	69,789	13,057	8,780	1,350	4,222	2,382	831	15,293
MONROE	738,422	152,036	96,425	15,286	43,687	24,740	8,827	162,910
NASSAU	1,344,892	270,282	202,264	26,861	80,661	46,393	17,648	320,623

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of New York State
3 Winners Circle, Suite 300
Albany, NY 12205-2804
(518) 453-0172 www.alanys.org

American Lung Association of the City of New York, Inc.
432 Park Avenue South, 8th Floor
New York, NY 10016
(212) 889-3370 www.lungusa.org/newyork

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALBANY	4.5	F
BRONX	3.2	D
CHAUTAUQUA	13.7	F
CHEMUNG	2.3	D
DUTCHESS	7.0	F
ERIE	12.7	F
ESSEX	6.8	F
HAMILTON	2.3	D
HERKIMER	0.7	B
JEFFERSON	11.3	F
MADISON	2.7	D
MONROE	5.7	F
NEW YORK	*	*
NIAGARA	9.8	F
ONEIDA	3.0	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALBANY	1.5	C	10.8	PASS
BRONX	9.5	F	16.1	FAIL
BROOME	0.7	B	11.5	PASS
CHAUTAUQUA	1.0	C	11.3	PASS
DUTCHESS	0.3	B	11.3	PASS
ERIE	2.7	D	15.0	PASS
ESSEX	0.8	B	6.4	PASS
KINGS	2.3	D	14.6	PASS
MONROE	1.8	C	11.6	PASS
NASSAU	1.2	C	12.3	PASS
NEW YORK	8.3	F	17.6	FAIL
NIAGARA	1.3	C	12.6	PASS
ONEIDA	0.7	B	12.0	PASS

Changes from SOTA 2003 to SOTA 2004 in New York for ozone

- Bronx County improved its ozone grade from an F to a D.
- Ulster County improved its ozone grade from a D to a C.
- Chemung County, Hamilton County, Madison County, and Oneida County had their ozone grades drop from a C to a D.
- Onondaga County had its ozone grade drop from a D to an F.
- Sufficient ozone data are no longer available to grade New York County.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
NEW YORK	1,546,856	230,660	190,475	22,456	100,033	55,390	18,102	344,894
NIAGARA	218,099	42,031	33,375	4,292	13,117	7,530	2,864	51,942
ONEIDA	234,966	43,672	37,925	4,470	14,246	8,184	3,152	56,823
ONONDAGA	460,776	95,220	63,463	9,582	27,182	15,431	5,611	102,797
ORANGE	356,773	82,358	36,033	8,219	20,327	11,323	3,699	70,316
OSWEGO	122,932	25,291	14,059	2,578	7,240	4,056	1,371	25,667
PUTNAM	98,257	20,752	9,408	2,067	5,832	3,277	1,074	20,570
QUEENS	2,237,815	424,158	286,378	41,777	136,192	76,267	26,218	491,340
RENSSELAER	153,299	29,139	20,539	2,957	9,273	5,251	1,875	34,561
RICHMOND	457,383	94,516	53,033	9,386	27,169	15,263	5,198	97,816
ST. LAWRENCE	111,173	19,717	14,673	2,036	6,808	3,827	1,334	24,558
SARATOGA	207,135	40,645	24,116	4,093	12,475	7,025	2,401	45,126
SCHENECTADY	147,120	28,875	24,045	2,904	8,827	5,089	1,987	35,714
STEUBEN	99,313	19,733	14,809	2,025	5,917	3,402	1,293	23,481
SUFFOLK	1,458,655	312,284	174,345	30,802	85,855	48,416	16,786	314,003
ULSTER	179,986	32,932	23,615	3,360	11,026	6,260	2,231	41,315
WAYNE	94,078	20,166	11,719	2,047	5,490	3,119	1,113	20,628
WESTCHESTER	937,279	195,902	129,955	19,262	55,639	31,724	11,647	213,909
TOTALS	**17,291,635**	**3,490,815**	**2,217,398**	**346,852**	**1,031,637**	**580,872**	**203,297**	**3,781,554**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of New York State
3 Winners Circle, Suite 300
Albany, NY 12205-2804
(518) 453-0172 www.alanys.org

American Lung Association of the City of New York, Inc.
432 Park Avenue South, 8th Floor
New York, NY 10016
(212) 889-3370 www.lungusa.org/newyork

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ONONDAGA	4.7	F
ORANGE	5.8	F
OSWEGO	*	*
PUTNAM	10.8	F
QUEENS	4.5	F
RENSSELAER	*	*
RICHMOND	14.2	F
SARATOGA	4.7	F
SCHENECTADY	1.8	C
SUFFOLK	12.3	F
ULSTER	1.7	C
WAYNE	5.3	F
WESTCHESTER	9.0	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ONONDAGA	1.0	C	11.8	PASS
ORANGE	0.5	B	11.7	PASS
QUEENS	4.5	F	*	INC
RICHMOND	1.8	C	14.4	PASS
SAINT LAWRENCE	1.0	C	8.6	PASS
SCHENECTADY	0.8	B	11.0	PASS
STEUBEN	3.0	D	9.9	PASS
SUFFOLK	1.5	C	12.5	PASS
WESTCHESTER	0.8	B	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NORTH CAROLINA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALAMANCE	135,893	27,647	18,901	2,742	6,652	4,573	1,652	30,351
ALEXANDER	34,400	7,116	4,160	709	1,692	1,157	404	7,566
AVERY	17,610	2,828	2,785	285	916	634	236	4,290
BUNCOMBE	211,201	38,903	32,469	3,907	10,704	7,438	2,821	51,306
CABARRUS	140,182	31,081	15,481	3,075	6,685	4,527	1,508	28,577
CALDWELL	78,513	15,724	10,618	1,560	3,905	2,691	979	18,089
CAMDEN	7,465	1,463	967	150	370	254	91	1,685
CASWELL	23,555	4,445	3,136	448	1,192	821	297	5,502
CATAWBA	146,690	30,611	18,080	3,023	7,180	4,906	1,711	31,963
CHATHAM	53,893	10,191	7,768	1,013	2,704	1,864	681	12,548
CUMBERLAND	303,328	75,200	25,041	7,319	13,787	9,129	2,672	52,434
DAVIDSON	151,238	30,811	19,703	3,065	7,455	5,119	1,829	33,941
DAVIE	36,734	7,493	5,047	745	1,818	1,256	463	8,517
DUPLIN	50,800	11,319	6,387	1,121	2,418	1,655	582	10,828
DURHAM	234,199	47,741	21,744	4,640	11,452	7,613	2,284	44,573
EDGECOMBE	55,007	12,551	6,506	1,256	2,615	1,792	633	11,778
FORSYTH	314,933	65,589	39,625	6,442	15,415	10,536	3,684	68,562
FRANKLIN	50,449	10,689	5,261	1,062	2,445	1,649	536	10,231
GASTON	193,443	40,528	24,434	4,024	9,450	6,475	2,290	42,616
GRANVILLE	50,946	10,166	5,655	1,022	2,508	1,697	561	10,661
GUILFORD	430,937	88,467	50,668	8,699	21,143	14,357	4,852	91,114
HAYWOOD	54,831	9,529	10,395	957	2,833	2,011	838	14,849
JACKSON	33,763	5,219	4,709	527	1,778	1,217	430	7,879
JOHNSTON	133,159	30,462	12,346	2,957	6,311	4,221	1,310	25,436

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of North Carolina
3801 Lake Boone Trail, Suite 190
Raleigh, NC 27607
(919) 832-8326 www.lungnc.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALEXANDER	10.3	F
AVERY	1.3	C
BUNCOMBE	5.0	F
CALDWELL	5.3	F
CAMDEN	*	*
CASWELL	10.5	F
CHATHAM	4.3	F
CUMBERLAND	9.2	F
DAVIE	16.8	F
DUPLIN	2.0	C
DURHAM	9.3	F
EDGECOMBE	8.8	F
FORSYTH	13.7	F
FRANKLIN	9.7	F
GRANVILLE	10.7	F
GUILFORD	11.2	F
HAYWOOD	9.7	F
JACKSON	3.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ALAMANCE	0.3	B	14.4	PASS
BUNCOMBE	1.5	C	14.2	PASS
CABARRUS	0.7	B	15.1	FAIL
CASWELL	1.7	C	14.0	PASS
CATAWBA	1.0	C	16.4	FAIL
CHATHAM	0.0	A	12.8	PASS
CUMBERLAND	1.2	C	14.7	PASS
DAVIDSON	1.0	C	16.7	FAIL
DUPLIN	0.3	B	12.6	PASS
DURHAM	1.0	C	14.7	PASS
EDGECOMBE	0.0	A	*	INC
FORSYTH	2.8	D	15.6	FAIL
GASTON	0.3	B	14.7	PASS
GUILFORD	3.7	F	*	INC
HAYWOOD	0.8	B	14.6	PASS
JACKSON	0.3	B	*	INC

Changes from SOTA 2003 to SOTA 2004 in North Carolina for ozone

- Duplin County improved its ozone grade from an F to a C.
- Lenoir County improved its ozone grade from an F to a D.
- Avery County's ozone grade dropped from a B to a C.
- Chatham County and Martin County had their ozone grades drop from a C to an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
LENOIR	59,073	12,499	8,862	1,255	2,878	2,007	773	14,004
LINCOLN	66,598	13,986	7,873	1,387	3,261	2,226	771	14,463
MCDOWELL	42,880	8,237	6,244	822	2,151	1,489	554	10,153
MARTIN	25,062	5,134	3,909	524	1,230	862	338	6,089
MECKLENBURG	737,950	163,594	61,870	15,926	35,261	23,406	6,933	136,586
MITCHELL	15,844	2,693	2,952	275	821	582	240	4,267
MONTGOMERY	27,288	5,909	3,761	582	1,323	914	337	6,189
NEW HANOVER	165,712	29,456	21,314	2,924	8,464	5,771	1,994	37,257
NORTHAMPTON	21,803	4,344	3,779	438	1,081	763	310	5,528
ONSLOW	149,003	36,314	10,285	3,469	6,742	4,371	1,120	22,688
ORANGE	120,458	20,042	10,496	2,015	6,190	4,093	1,185	23,152
PASQUOTANK	35,445	7,138	4,872	722	1,729	1,188	427	7,842
PERSON	36,610	7,437	5,024	738	1,811	1,250	458	8,438
PITT	137,240	27,880	13,156	2,745	6,678	4,445	1,344	25,976
RANDOLPH	134,217	28,590	16,531	2,829	6,531	4,469	1,568	29,271
ROBESON	125,351	30,755	12,414	3,029	5,762	3,883	1,258	23,975
ROCKINGHAM	92,778	18,369	13,771	1,828	4,626	3,214	1,215	22,164
ROWAN	133,359	27,705	18,299	2,761	6,494	4,470	1,621	29,841
SWAIN	13,137	2,673	2,100	268	647	453	177	3,188
UNION	139,611	33,682	12,059	3,293	6,477	4,323	1,323	25,799
WAKE	675,518	147,660	49,424	14,442	32,417	21,371	6,051	121,032
WATAUGA	42,857	5,498	4,778	566	2,306	1,538	472	8,919
WAYNE	112,954	24,855	13,444	2,489	5,386	3,671	1,266	23,676
YANCEY	17,959	3,209	3,301	321	924	655	271	4,814
TOTALS	**6,071,876**	**1,283,432**	**662,404**	**126,398**	**294,616**	**199,006**	**65,354**	**1,240,613**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of North Carolina
3801 Lake Boone Trail, Suite 190
Raleigh, NC 27607
(919) 832-8326 www.lungnc.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
JOHNSTON	7.7	F
LENOIR	3.0	D
LINCOLN	15.5	F
MARTIN	3.7	F
MECKLENBURG	21.5	F
NEW HANOVER	1.0	C
NORTHAMPTON	5.0	F
PERSON	8.2	F
PITT	5.5	F
RANDOLPH	*	*
ROCKINGHAM	9.5	F
ROWAN	23.7	F
SWAIN	0.0	A
UNION	8.3	F
WAKE	13.8	F
YANCEY	4.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
LENOIR	0.0	A	12.0	PASS
MCDOWELL	1.2	C	15.6	FAIL
MECKLENBURG	3.5	F	15.8	FAIL
MITCHELL	0.7	B	14.8	PASS
MONTGOMERY	0.0	A	13.0	PASS
NEW HANOVER	0.0	A	11.4	PASS
ONSLOW	0.0	A	11.6	PASS
ORANGE	0.0	A	13.6	PASS
PASQUOTANK	0.3	B	12.0	PASS
PITT	0.3	B	12.9	PASS
ROBESON	0.0	A	*	INC
SWAIN	0.7	B	13.4	PASS
WAKE	1.3	C	14.6	PASS
WATAUGA	*	*	*	INC
WAYNE	0.3	B	14.6	PASS

NORTH CAROLINA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

NORTH DAKOTA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BILLINGS	842	125	117	15	47	30	11	208
BURKE	2,143	302	550	32	123	85	40	688
BURLEIGH	71,080	13,095	9,054	1,342	3,991	2,432	844	15,724
CASS	125,117	22,909	12,227	2,294	7,186	4,167	1,262	24,534
DUNN	3,542	671	605	71	190	126	52	917
GRAND FORKS	64,920	12,049	6,406	1,209	3,729	2,136	641	12,373
MC KENZIE	5,708	1,233	863	133	292	191	76	1,367
MERCER	8,542	1,600	1,229	181	452	295	114	2,055
OLIVER	1,911	330	253	38	101	69	27	486
STARK	22,147	4,208	3,513	436	1,222	762	292	5,254
STEELE	2,093	373	426	41	114	76	33	578
TOTALS	**308,045**	**56,895**	**35,243**	**5,792**	**17,447**	**10,369**	**3,394**	**64,186**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of North Dakota
212 North 2nd Street
Bismarck, ND 58502
(701) 223-5613 www.lungusa.org/northdakota

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BILLINGS	0.0	A
CASS	0.0	A
DUNN	0.0	A
MC KENZIE	*	*
MERCER	0.0	A
OLIVER	0.0	A
STEELE	*	*

Changes from SOTA 2003 to SOTA 2004 in North Dakota for ozone

- No changes to North Dakota's ozone levels or monitors.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BILLINGS	0.0	A	*	INC
BURKE	0.0	A	5.6	PASS
BURLEIGH	0.0	A	6.6	PASS
CASS	0.0	A	7.9	PASS
GRAND FORKS	*	*	*	INC
MC KENZIE	*	*	*	INC
MERCER	0.0	A	6.0	PASS
STARK	*	*	*	INC
STEELE	*	*	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
ALLEN	108,120	22,997	15,139	2,319	5,920	3,599	1,328	24,241
ASHTABULA	102,515	21,686	14,804	2,199	5,629	3,445	1,299	23,638
ATHENS	63,256	9,381	5,860	951	3,746	2,156	604	11,642
BUTLER	340,543	72,558	36,618	7,259	18,578	11,089	3,643	68,833
CLARK	143,416	29,498	21,000	2,974	7,970	4,883	1,847	33,538
CLERMONT	183,352	41,706	17,684	4,159	9,798	5,859	1,890	36,207
CLINTON	41,090	8,731	4,939	881	2,243	1,350	466	8,687
CUYAHOGA	1,379,049	288,755	212,428	28,717	76,361	46,642	17,837	322,741
DELAWARE	125,399	28,002	9,833	2,790	6,718	3,963	1,173	23,120
FRANKLIN	1,086,814	236,454	106,012	23,130	59,065	34,864	10,865	209,633
GALLIA	31,301	6,247	4,270	636	1,748	1,064	388	7,122
GEAUGA	92,980	20,640	11,873	2,100	5,039	3,110	1,155	21,193
GREENE	149,964	28,413	18,312	2,896	8,475	5,105	1,757	32,652
HAMILTON	833,721	177,490	112,108	17,820	45,615	27,590	9,951	183,126
JEFFERSON	72,402	12,611	13,374	1,280	4,240	2,636	1,085	19,232
KNOX	56,037	11,136	7,496	1,126	3,130	1,892	677	12,401
LAKE	229,004	44,739	32,686	4,520	12,929	7,911	2,947	53,922
LAWRENCE	62,172	12,241	9,013	1,234	3,500	2,137	797	14,559

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Ohio
1950 Arlingate Lane
Columbus, OH 43228-4102
(614) 279-1700 www.lungusa.org/ohio

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALLEN	6.2	F
ASHTABULA	14.7	F
BUTLER	12.0	F
CLARK	11.3	F
CLERMONT	7.8	F
CLINTON	12.3	F
CUYAHOGA	11.3	F
DELAWARE	8.2	F
FRANKLIN	12.0	F
GEAUGA	18.8	F
GREENE	6.5	F
HAMILTON	10.2	F
JEFFERSON	7.3	F
KNOX	10.2	F
LAKE	13.2	F
LAWRENCE	7.8	F
LICKING	7.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ATHENS	0.3	B	*	INC
BUTLER	6.7	F	16.7	FAIL
CLARK	0.7	B	*	INC
CUYAHOGA	19.0	F	19.1	FAIL
FRANKLIN	9.0	F	17.1	FAIL
GALLIA	*	*	*	INC
HAMILTON	13.0	F	18.6	FAIL
JEFFERSON	11.0	F	18.2	FAIL
LAKE	1.7	C	13.8	PASS
LAWRENCE	2.3	D	16.7	FAIL

Changes from SOTA 2003 to SOTA 2004 in Ohio for ozone

- Geauga County replaces Clinton County as the most ozone-polluted county.
- Sufficient ozone data are no longer available to grade Logan County and Union County

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
LICKING	148,731	31,419	17,872	3,168	8,163	4,942	1,728	32,167
LORAIN	288,360	62,587	36,276	6,228	15,748	9,544	3,392	62,807
LUCAS	453,506	99,821	57,957	9,931	24,595	14,852	5,271	97,531
MADISON	40,365	8,012	4,498	815	2,244	1,343	446	8,433
MAHONING	253,308	49,176	44,538	4,960	14,368	8,883	3,599	64,080
MEDINA	158,439	34,663	16,976	3,494	8,589	5,187	1,754	33,118
MIAMI	99,596	20,673	13,291	2,102	5,501	3,361	1,231	22,633
MONTGOMERY	554,470	114,700	77,203	11,407	30,783	18,695	6,842	125,486
PORTAGE	153,886	29,271	17,239	2,960	8,678	5,180	1,706	32,103
PREBLE	42,680	8,691	5,724	894	2,362	1,440	527	9,679
SCIOTO	78,041	15,313	11,711	1,562	4,370	2,658	996	18,115
STARK	377,940	77,303	56,791	7,784	21,053	12,910	4,926	89,285
SUMMIT	546,382	113,508	76,685	11,330	30,286	18,437	6,801	124,607
TRUMBULL	223,518	44,048	35,661	4,452	12,608	7,769	3,037	54,718
WARREN	175,133	39,630	16,255	3,918	9,375	5,561	1,740	33,670
WASHINGTON	62,561	11,574	9,622	1,182	3,582	2,198	839	15,195
WOOD	122,387	22,644	13,725	2,314	6,922	4,113	1,339	25,102
TOTALS	**8,880,438**	**1,856,318**	**1,165,473**	**185,489**	**489,928**	**296,368**	**105,882**	**1,955,212**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Ohio
1950 Arlingate Lane
Columbus, OH 43228-4102
(614) 279-1700 www.lungusa.org/ohio

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
LORAIN	8.5	F
LUCAS	8.7	F
MADISON	8.3	F
MAHONING	6.8	F
MEDINA	8.3	F
MIAMI	7.0	F
MONTGOMERY	7.2	F
PORTAGE	10.0	F
PREBLE	4.3	F
STARK	11.3	F
SUMMIT	12.3	F
TRUMBULL	13.0	F
WARREN	8.7	F
WASHINGTON	8.2	F
WOOD	7.8	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
LORAIN	1.7	C	*	INC
LUCAS	5.3	F	14.9	PASS
MAHONING	6.7	F	15.7	FAIL
MONTGOMERY	7.7	F	15.6	FAIL
PORTAGE	1.7	C	15.1	FAIL
PREBLE	0.3	B	*	INC
SCIOTO	4.8	F	17.5	FAIL
STARK	3.3	F	17.9	FAIL
SUMMIT	9.3	F	16.9	FAIL
TRUMBULL	7.0	F	15.6	FAIL

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADAIR	21,361	5,253	2,475	528	1,054	666	232	4,308
CADDO	30,000	6,456	4,439	672	1,541	989	376	6,791
CANADIAN	91,441	19,358	9,062	2,001	4,702	2,982	976	18,594
CARTER	46,199	9,570	7,422	970	2,426	1,573	618	11,092
CHEROKEE	43,419	8,951	5,229	911	2,285	1,425	485	9,027
CLEVELAND	215,652	40,873	18,954	4,157	11,620	7,137	2,142	41,693
COMANCHE	113,414	26,338	11,525	2,594	5,813	3,514	1,101	20,961
CUSTER	25,188	4,564	3,512	470	1,380	858	303	5,550
DEWEY	4,609	782	938	82	254	170	73	1,279
ELLIS	3,967	655	863	67	222	150	67	1,163
GARFIELD	57,246	11,566	9,223	1,161	3,046	1,960	762	13,713
JEFFERSON	6,579	1,219	1,343	123	360	236	101	1,768
KAY	47,680	9,987	7,937	1,011	2,497	1,623	648	11,547
LATIMER	10,537	2,072	1,701	210	565	361	140	2,492
LINCOLN	32,264	6,706	4,512	690	1,676	1,088	408	7,424
LOVE	8,911	1,685	1,479	174	478	315	126	2,247

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Oklahoma
2805 East Skelly Drive, Suite 806
Tulsa, OK 74105
(918) 747-3441 www.oklung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADAIR	*	*
CANADIAN	*	*
CARTER	*	*
CHEROKEE	2.3	D
CLEVELAND	1.0	C
COMANCHE	1.7	C
DEWEY	*	*
JEFFERSON	3.7	F
KAY	1.3	C
LATIMER	*	*
LOVE	*	*

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CADDO	0.0	A	*	INC
CANADIAN	0.0	A	*	INC
CARTER	0.0	A	10.3	PASS
CHEROKEE	0.0	A	*	INC
COMANCHE	0.0	A	9.4	PASS
CUSTER	0.0	A	9.0	PASS
ELLIS	*	*	*	INC
GARFIELD	0.3	B	10.2	PASS
KAY	0.0	A	10.6	PASS
LINCOLN	0.0	A	*	INC

Changes from SOTA 2003 to SOTA 2004 in Oklahoma for ozone

- Kay County improved its ozone grades from an F to a C.
- Cherokee County, Marshall County and Oklahoma County improved their ozone grades from an F to a D.
- Sufficient ozone data are no longer available to grade Latimer County and Pittsburg County.
- Ozone monitoring data are now being collected in Adair County and Canadian County, though not yet enough to grade.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
MC CLAIN	28,236	5,784	3,578	592	1,476	950	340	6,280
MARSHALL	13,547	2,478	2,567	251	741	487	203	3,586
MAYES	38,858	8,033	5,931	821	2,034	1,317	507	9,150
MUSKOGEE	69,979	14,561	10,566	1,462	3,684	2,364	898	16,254
OKLAHOMA	672,487	142,925	81,637	14,152	35,315	22,137	7,605	142,124
OTTAWA	33,040	6,917	5,589	692	1,741	1,126	450	8,003
PAWNEE	16,831	3,459	2,432	355	877	575	219	3,977
PAYNE	69,915	10,695	7,412	1,076	4,046	2,388	707	13,569
PITTSBURG	44,006	7,980	7,452	819	2,398	1,563	620	11,098
POTTAWATOMIE	66,740	13,636	9,127	1,381	3,526	2,234	807	14,787
SEMINOLE	24,735	5,207	4,047	528	1,292	841	334	5,969
TULSA	571,348	124,440	67,038	12,317	29,707	18,693	6,392	119,788
TOTALS	**2,408,189**	**502,150**	**297,990**	**50,266**	**126,756**	**79,721**	**27,640**	**514,232**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Oklahoma
2805 East Skelly Drive, Suite 806
Tulsa, OK 74105
(918) 747-3441 www.oklung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MARSHALL	2.7	D
MC CLAIN	1.3	C
OKLAHOMA	2.7	D
OTTAWA	*	*
PITTSBURG	*	*
TULSA	6.8	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MAYES	0.0	A	11.9	PASS
MUSKOGEE	0.0	A	12.1	PASS
OKLAHOMA	0.7	B	10.7	PASS
OTTAWA	0.0	A	11.9	PASS
PAWNEE	0.0	A	*	INC
PAYNE	0.0	A	10.2	PASS
PITTSBURG	0.3	B	11.4	PASS
POTTAWATOMIE	*	*	*	INC
SEMINOLE	0.0	A	*	INC
TULSA	0.3	B	12.6	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

OREGON

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BENTON	78,618	12,806	8,221	1,321	5,326	2,713	850	16,190
CLACKAMAS	351,815	72,640	38,787	7,369	23,142	11,872	4,099	76,996
COLUMBIA	45,313	9,457	5,129	971	2,959	1,521	532	9,938
DESCHUTES	125,258	24,304	16,195	2,473	8,326	4,307	1,547	28,649
HARNEY	7,339	1,524	1,139	157	484	254	101	1,818
JACKSON	186,430	35,695	29,619	3,654	12,443	6,531	2,554	45,955
JOSEPHINE	77,496	13,824	15,458	1,430	5,304	2,834	1,224	21,438
KLAMATH	64,363	13,475	9,694	1,362	4,201	2,200	853	15,386
LAKE	7,444	1,347	1,343	142	510	270	113	2,002
LANE	326,666	59,317	43,380	6,025	22,001	11,386	4,061	75,100
LINN	104,941	21,768	15,129	2,196	6,825	3,562	1,342	24,423
MARION	293,155	65,928	34,715	6,561	18,307	9,442	3,241	60,492
MULTNOMAH	677,626	130,501	72,019	12,813	44,805	22,888	7,396	141,536
UMATILLA	71,428	16,183	8,725	1,611	4,483	2,317	815	15,120
UNION	24,484	4,655	3,671	482	1,633	853	326	5,894
WASCO	23,667	4,776	4,011	486	1,563	826	336	5,973
WASHINGTON	473,263	107,476	41,419	10,521	29,583	15,003	4,588	89,433
TOTALS	**2,939,306**	**595,676**	**348,654**	**59,575**	**191,895**	**98,781**	**33,976**	**636,345**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Oregon
7420 SW Bridgeport Road, Suite 200
Tigard, OR 97224-7711
(513) 924-4094 www.lungoregon.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CLACKAMAS	0.3	B
COLUMBIA	0.0	A
JACKSON	0.0	A
LANE	0.0	A
LINN	*	*
MARION	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Oregon for ozone

- Clackamas County's ozone grade dropped from an A to a B.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BENTON	0.0	A	7.6	PASS
COLUMBIA	0.0	A	6.5	PASS
DESCHUTES	1.2	C	*	INC
HARNEY	0.0	A	9.4	PASS
JACKSON	10.5	F	12.0	PASS
JOSEPHINE	1.0	C	*	INC
KLAMATH	16.2	F	11.8	PASS
LAKE	4.0	F	7.7	PASS
LANE	25.2	F	13.7	PASS
LINN	0.7	B	8.5	PASS
MARION	0.3	B	8.4	PASS
MULTNOMAH	3.5	F	9.0	PASS
UMATILLA	2.7	D	9.0	PASS
UNION	0.3	B	6.8	PASS
WASCO	0.3	B	8.3	PASS
WASHINGTON	1.5	C	9.8	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

PENNSYLVANIA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ADAMS	94,437	18,282	13,141	1,862	5,727	3,221	1,171	21,484
ALLEGHENY	1,269,904	226,336	222,128	22,847	78,013	45,349	18,050	322,858
ARMSTRONG	71,673	12,711	12,765	1,311	4,359	2,568	1,039	18,538
BEAVER	179,351	32,072	32,900	3,276	10,892	6,445	2,643	46,931
BERKS	382,108	75,909	56,499	7,641	23,001	13,025	4,859	88,491
BLAIR	127,840	22,956	22,208	2,334	7,809	4,559	1,818	32,501
BUCKS	610,440	123,557	77,354	12,516	36,440	20,696	7,396	137,281
CAMBRIA	150,452	24,716	29,280	2,536	9,335	5,521	2,294	40,456
CENTRE	138,524	19,682	14,602	1,989	9,477	4,810	1,418	27,300
CHESTER	450,160	94,237	53,677	9,449	26,781	15,047	5,246	97,919
CLEARFIELD	83,203	14,504	14,293	1,491	5,121	2,972	1,174	21,071
CUMBERLAND	217,743	37,807	32,592	3,854	13,570	7,708	2,860	52,089
DAUPHIN	252,933	50,387	35,802	5,054	15,179	8,677	3,215	58,990
DELAWARE	553,435	110,609	84,482	11,215	33,116	18,826	7,128	129,019
ERIE	280,370	55,887	39,954	5,663	16,858	9,500	3,492	63,727

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Pennsylvania
3001 Old Gettysburg Road
Camp Hill, PA 17011
(717) 541-5864 www.alapa.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ADAMS	*	*
ALLEGHENY	16.0	F
ARMSTRONG	11.5	F
BEAVER	13.8	F
BERKS	9.2	F
BLAIR	4.8	F
BUCKS	18.0	F
CAMBRIA	5.3	F
CENTRE	6.8	F
CHESTER	17.7	F
CLEARFIELD	7.7	F
DAUPHIN	11.3	F
DELAWARE	13.3	F
ERIE	7.7	F
FRANKLIN	16.3	F
GREENE	9.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADAMS	4.3	F	13.3	PASS
ALLEGHENY	39.8	F	21.4	FAIL
BEAVER	2.7	D	16.0	FAIL
BERKS	3.7	F	16.7	FAIL
BUCKS	1.8	C	*	INC
CAMBRIA	1.7	C	15.8	FAIL
CENTRE	3.8	F	*	INC
CHESTER	*	*	*	INC
CUMBERLAND	7.7	F	*	INC
DAUPHIN	10.5	F	15.6	FAIL
DELAWARE	2.2	D	15.7	FAIL
ERIE	3.3	F	*	INC

PENNSYLVANIA

Changes from SOTA 2003 to SOTA 2004 in Pennsylvania for ozone

- Chester County had sufficient ozone data to be graded for the first time. It received an F.
- Lycoming County's ozone grade dropped from a C to an F.
- Tioga County's ozone grade dropped from a D to an F.
- Ozone monitoring data are being collected again in Adams County, though not yet enough to grade.
- Sufficient ozone data are no longer available to grade Monroe County.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
FRANKLIN	131,598	25,387	21,438	2,560	7,925	4,578	1,785	32,149
GREENE	40,520	7,026	6,096	717	2,524	1,437	535	9,767
LACKAWANNA	210,711	36,356	40,071	3,710	12,967	7,607	3,131	55,354
LANCASTER	478,561	104,063	67,587	10,400	28,038	15,849	5,869	107,151
LAWRENCE	94,104	17,208	18,115	1,762	5,665	3,363	1,409	24,814
LEHIGH	317,533	61,608	50,011	6,207	19,156	10,978	4,209	76,149
LUZERNE	314,643	51,728	60,737	5,341	19,516	11,500	4,756	84,137
LYCOMING	119,000	21,752	19,109	2,235	7,257	4,172	1,607	28,993
MERCER	119,514	21,903	21,301	2,250	7,228	4,229	1,710	30,362
MONTGOMERY	766,517	150,672	113,231	15,089	46,227	26,390	9,887	180,435
NORTHAMPTON	273,324	50,299	42,102	5,107	16,739	9,559	3,613	65,496
PERRY	43,876	8,697	5,433	895	2,621	1,493	531	9,881
PHILADELPHIA	1,492,231	314,519	204,085	31,279	89,378	49,285	17,632	324,579
TIOGA	41,461	7,462	6,661	776	2,526	1,459	563	10,130
WASHINGTON	204,110	36,151	35,844	3,655	12,492	7,356	2,956	52,797
WESTMORELAND	368,428	63,629	67,227	6,510	22,536	13,405	5,487	97,626
YORK	389,209	76,271	52,762	7,718	23,472	13,337	4,849	89,427
TOTALS	**10,267,913**	**1,974,383**	**1,573,487**	**199,247**	**621,942**	**354,922**	**134,332**	**2,437,900**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Pennsylvania
3001 Old Gettysburg Road
Camp Hill, PA 17011
(717) 541-5864 www.alapa.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
LACKAWANNA	7.7	F
LANCASTER	13.8	F
LAWRENCE	2.3	D
LEHIGH	11.5	F
LUZERNE	6.5	F
LYCOMING	3.5	F
MERCER	13.2	F
MONTGOMERY	15.5	F
NORTHAMPTON	12.8	F
PERRY	6.8	F
PHILADELPHIA	16.0	F
TIOGA	4.5	F
WASHINGTON	11.3	F
WESTMORELAND	6.2	F
YORK	9.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
LACKAWANNA	5.5	F	12.4	PASS
LANCASTER	3.7	F	17.1	FAIL
LEHIGH	7.2	F	14.3	PASS
LUZERNE	3.0	D	12.9	PASS
MERCER	4.0	F	*	INC
MONTGOMERY	1.8	C	14.2	PASS
NORTHAMPTON	9.3	F	*	INC
PERRY	1.2	C	12.7	PASS
PHILADELPHIA	9.7	F	16.8	FAIL
WASHINGTON	6.8	F	15.7	FAIL
WESTMORELAND	4.7	F	15.6	FAIL
YORK	4.7	F	17.1	FAIL

PENNSYLVANIA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

RHODE ISLAND

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
KENT	170,499	30,650	25,339	3,099	11,857	6,019	2,246	41,204
PROVIDENCE	634,827	120,684	89,449	12,053	43,671	21,587	7,697	141,936
WASHINGTON	127,126	22,498	16,464	2,281	8,924	4,458	1,571	29,118
TOTALS	**932,452**	**173,832**	**131,252**	**17,433**	**64,451**	**32,065**	**11,515**	**212,257**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Rhode Island
298 West Exchange Street
Providence, RI 02903-3700
(401) 421-6487 www.lungusa.org/rhodeisland

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
KENT	11.2	F
PROVIDENCE	7.8	F
WASHINGTON	8.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
KENT	0.8	B	9.0	PASS
PROVIDENCE	1.8	C	11.3	PASS
WASHINGTON	0.0	A	8.8	PASS

Changes from SOTA 2003 to SOTA 2004 in Rhode Island for Ozone

- Kent County replaced Washington County as the most ozone-polluted in the state.

RHODE ISLAND

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
ABBEVILLE	26,422	5,218	3,875	523	1,157	910	341	6,212
AIKEN	145,276	29,290	19,083	2,958	6,361	4,918	1,767	32,669
ANDERSON	170,578	33,414	23,348	3,324	7,553	5,877	2,140	39,455
BARNWELL	23,407	5,062	3,022	512	1,000	774	279	5,153
BEAUFORT	127,977	24,740	20,910	2,431	5,656	4,408	1,682	30,273
BERKELEY	145,274	31,520	12,568	3,184	6,383	4,633	1,413	27,388
CHARLESTON	316,559	60,362	37,528	6,021	14,338	10,715	3,597	67,706
CHEROKEE	53,524	11,134	6,673	1,097	2,350	1,796	630	11,740
CHESTER	34,212	7,205	4,389	719	1,482	1,150	414	7,655
CHESTERFIELD	43,206	9,049	5,209	904	1,884	1,448	507	9,474
COLLETON	38,804	8,180	4,973	828	1,670	1,303	472	8,709
DARLINGTON	67,931	14,282	8,273	1,409	2,966	2,291	809	15,074
EDGEFIELD	24,868	4,551	2,703	464	1,137	849	278	5,302
FLORENCE	127,237	25,567	15,185	2,581	5,618	4,288	1,484	27,758

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of South Carolina
1817 Gadsden Street
Columbia, SC 29201-2392
(803) 779-5864 www.lungusa.org/southcarolina

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ABBEVILLE	5.0	F
AIKEN	7.0	F
ANDERSON	10.0	F
BARNWELL	4.7	F
BERKELEY	0.7	B
CHARLESTON	1.3	C
CHEROKEE	6.2	F
CHESTER	6.3	F
CHESTERFIELD	*	*
COLLETON	1.7	C
DARLINGTON	4.3	F
EDGEFIELD	3.3	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BEAUFORT	0.0	A	11.4	PASS
BERKELEY	*	*	*	INC
CHARLESTON	1.7	C	12.4	PASS
CHESTERFIELD	0.3	B	12.7	PASS
COLLETON	*	*	*	INC
EDGEFIELD	0.0	A	13.3	PASS
FLORENCE	0.3	B	13.3	PASS

Changes from SOTA 2003 to SOTA 2004 in South Carolina for ozone

- Berkeley County improved its ozone grade from a C to a B.
- Colleton County's ozone grade dropped from a B to a C.
- Edgefield County and York County had their ozone grades drop from a D to an F.

SOUTH CAROLINA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
GEORGETOWN	58,263	11,335	9,045	1,148	2,535	2,039	792	14,329
GREENVILLE	391,334	76,895	45,966	7,656	17,543	13,226	4,485	84,384
GREENWOOD	67,461	13,667	9,262	1,354	2,966	2,279	822	15,126
HORRY	206,039	35,355	31,379	3,527	9,422	7,355	2,735	50,059
LEXINGTON	222,897	45,327	23,454	4,540	9,905	7,467	2,478	47,159
OCONEE	67,918	12,137	10,929	1,217	3,040	2,436	945	17,110
ORANGEBURG	91,190	18,141	12,196	1,836	4,007	3,091	1,112	20,411
PICKENS	113,097	19,996	13,375	1,985	5,261	3,875	1,270	23,840
RICHLAND	329,086	62,620	32,158	6,320	15,070	10,902	3,363	64,655
SPARTANBURG	259,322	50,786	32,596	5,059	11,567	8,844	3,096	57,727
UNION	29,482	5,526	4,806	553	1,301	1,041	407	7,339
WILLIAMSBURG	36,491	7,849	4,822	803	1,548	1,218	449	8,229
YORK	173,755	35,674	17,873	3,587	7,712	5,740	1,867	35,616
TOTALS	**3,391,610**	**664,882**	**415,600**	**66,540**	**151,431**	**114,875**	**39,633**	**740,552**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of South Carolina
1817 Gadsden Street
Columbia, SC 29201-2392
(803) 779-5864 www.lungusa.org/southcarolina

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
GREENVILLE	*	*
OCONEE	3.0	D
PICKENS	6.7	F
RICHLAND	11.0	F
SPARTANBURG	12.2	F
UNION	1.7	C
WILLIAMSBURG	0.3	B
YORK	5.0	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
GEORGETOWN	0.0	A	13.5	PASS
GREENVILLE	2.0	C	15.3	FAIL
GREENWOOD	0.0	A	14.1	PASS
HORRY	0.0	A	*	INC
LEXINGTON	0.7	B	14.6	PASS
OCONEE	0.3	B	11.6	PASS
ORANGEBURG	*	*	*	INC
RICHLAND	0.3	B	13.8	PASS
SPARTANBURG	1.8	C	14.5	PASS
YORK	*	*	*	INC

SOUTH CAROLINA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

SOUTH DAKOTA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BROOKINGS	28,392	4,676	3,066	470	1,359	958	289	5,487
BROWN	34,999	6,556	5,752	662	1,591	1,222	474	8,500
JACKSON	2,873	798	329	83	111	84	30	550
MEADE	24,472	5,441	2,609	550	1,059	782	258	4,886
MINNEHAHA	152,545	32,397	16,791	3,248	6,735	4,946	1,624	30,789
PENNINGTON	90,856	19,306	10,901	1,951	3,985	2,987	1,033	19,273
TOTALS	**334,137**	**69,174**	**39,448**	**6,963**	**14,840**	**10,979**	**3,708**	**69,485**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of South Dakota
1212 West Elkhorn Street, Suite I
Sioux Falls, SD 57104-0233
(605) 336-7222 www.lungusa.org/southdakota

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MINNEHAHA	0.0	A
PENNINGTON	*	*

Changes from SOTA 2003 to SOTA 2004 in South Dakota for ozone

- No changes to South Dakota's ozone levels or monitors.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BROOKINGS	0.0	A	9.1	PASS
BROWN	0.0	A	*	INC
JACKSON	0.0	A	*	INC
MEADE	*	*	*	INC
MINNEHAHA	0.0	A	9.6	PASS
PENNINGTON	0.0	A	7.9	PASS

SOUTH DAKOTA

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ANDERSON	71,627	13,335	11,766	1,345	4,579	2,545	1,003	18,046
BLOUNT	109,849	20,262	15,478	2,049	7,012	3,847	1,413	25,976
DAVIDSON	570,785	109,801	63,364	10,707	35,968	19,220	6,231	118,559
DICKSON	44,231	9,568	5,223	958	2,680	1,453	503	9,402
DYER	36,984	7,695	4,937	771	2,278	1,246	453	8,343
HAMBLEN	58,623	11,475	8,000	1,136	3,695	2,022	734	13,546
HAMILTON	309,321	58,703	43,058	5,890	19,607	10,740	3,926	72,157
HAYWOOD	19,655	4,423	2,647	438	1,181	646	237	4,348
JEFFERSON	45,801	8,571	6,039	862	2,904	1,580	560	10,372
KNOX	389,327	72,198	49,350	7,181	24,781	13,413	4,641	86,507
LAWRENCE	40,463	8,533	5,914	854	2,476	1,359	510	9,282
MC MINN	50,051	9,735	7,218	971	3,157	1,735	646	11,818
MADISON	93,367	19,739	11,352	1,958	5,705	3,084	1,063	19,780
MAURY	71,600	15,004	8,619	1,522	4,375	2,380	832	15,515

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Tennessee
1 Vantage Way, Suite C250
Nashville, TN 37228
(615) 329-1151 www.lungtn.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ANDERSON	11.2	F
BLOUNT	16.5	F
DAVIDSON	1.7	C
DICKSON	*	*
DYER	*	*
HAMBLEN	*	*
HAMILTON	12.5	F
HAYWOOD	5.0	F
JEFFERSON	14.5	F
KNOX	13.7	F
LAWRENCE	1.0	C

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BLOUNT	2.7	D	*	INC
DAVIDSON	2.7	D	15.3	FAIL
DYER	0.0	A	12.7	PASS
HAMILTON	2.5	D	16.9	FAIL
KNOX	9.7	F	18.4	FAIL
LAWRENCE	0.8	B	12.6	PASS

Changes from SOTA 2003 to SOTA 2004 in Tennessee for ozone

- This analysis uses the longer ozone season Tennessee adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Davidson County and Lawrence County improved their ozone grades from an F to a C.
- Meigs County had sufficient ozone data to be graded for the first time. It received an F.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
MEIGS	11,310	2,352	1,303	235	699	381	133	2,488
MONTGOMERY	138,241	34,303	11,137	3,340	7,913	4,142	1,196	23,630
OBION	32,394	6,218	4,954	622	2,055	1,136	435	7,895
PUTNAM	64,300	11,867	8,595	1,182	4,080	2,202	767	14,201
ROANE	52,316	9,282	8,612	948	3,387	1,888	747	13,441
RUTHERFORD	194,934	42,576	14,740	4,192	11,693	6,123	1,730	34,487
SEVIER	74,456	13,841	9,859	1,394	4,752	2,603	938	17,378
SHELBY	905,678	212,237	89,116	21,018	53,344	28,609	9,259	176,768
SULLIVAN	153,051	26,999	24,971	2,728	9,937	5,522	2,163	39,034
SUMNER	136,170	28,383	14,727	2,873	8,346	4,519	1,521	28,739
WILLIAMSON	136,889	31,363	11,067	3,171	8,144	4,392	1,385	26,830
WILSON	93,079	19,535	9,031	1,961	5,711	3,081	1,003	19,188
TOTALS	**3,904,502**	**807,998**	**451,077**	**80,307**	**240,460**	**129,867**	**44,026**	**827,729**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Tennessee
1 Vantage Way, Suite C250
Nashville, TN 37228
(615) 329-1151 www.lungtn.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
MEIGS	16.5	F
MONTGOMERY	*	*
OBION	*	*
PUTNAM	7.0	F
ROANE	*	*
RUTHERFORD	4.7	F
SEVIER	27.5	F
SHELBY	12.0	F
SULLIVAN	9.8	F
SUMNER	8.8	F
WILLIAMSON	6.7	F
WILSON	4.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
MC MINN	1.0	C	16.1	FAIL
MADISON	0.3	B	13.5	PASS
MAURY	0.0	A	13.6	PASS
MONTGOMERY	0.0	A	13.3	PASS
PUTNAM	0.7	B	14.4	PASS
ROANE	2.0	C	15.4	FAIL
SHELBY	3.5	F	14.9	PASS
SULLIVAN	2.3	D	15.7	FAIL
SUMNER	0.0	A	14.3	PASS

TENNESSEE

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BEXAR	1,446,333	342,331	148,787	34,039	62,409	45,150	14,672	278,392
BOWIE	89,894	18,200	12,265	1,828	4,081	3,039	1,102	20,271
BRAZORIA	257,256	59,884	22,817	5,997	10,977	8,070	2,519	48,680
BREWSTER	9,009	1,577	1,291	161	425	317	115	2,100
CALDWELL	35,050	7,976	4,145	811	1,532	1,110	380	7,094
CAMERON	353,561	99,902	39,044	9,856	14,345	10,245	3,488	64,891
COLLIN	566,798	137,022	30,037	13,393	23,865	17,219	4,557	93,887
DALLAS	2,283,953	545,274	184,644	53,346	98,629	70,113	20,602	405,849
DENTON	488,481	114,327	24,110	11,247	20,966	14,787	3,738	77,994
ECTOR	122,312	30,104	13,566	3,031	5,155	3,786	1,290	24,099
ELLIS	120,052	28,456	10,763	2,898	5,041	3,730	1,181	22,663
EL PASO	697,562	184,843	70,498	18,370	28,804	20,727	6,783	128,103
GALVESTON	261,219	57,094	28,628	5,720	11,387	8,556	2,901	54,597
GREGG	113,255	24,937	15,137	2,493	5,028	3,711	1,341	24,614
HARRIS	3,557,055	866,290	266,495	85,194	150,508	108,735	31,767	628,093
HARRISON	62,534	13,016	8,058	1,337	2,769	2,085	750	13,767
HIDALGO	614,474	182,960	58,449	17,913	24,466	17,069	5,426	103,043
HOOD	44,149	8,181	8,031	837	2,054	1,578	651	11,545

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Texas
5926 Balcones Drive, Suite 100
Austin, TX 78731-4263
(512) 467-6753 www.texaslung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BEXAR	7.5	F
BRAZORIA	7.0	F
BREWSTER	0.0	A
CAMERON	0.0	A
COLLIN	13.8	F
DALLAS	11.3	F
DENTON	15.7	F
EL PASO	4.2	F
ELLIS	8.8	F
GALVESTON	6.8	F
GREGG	6.3	F
HARRIS	42.8	F
HARRISON	*	*
HIDALGO	0.7	B
HOOD	3.7	F

Changes from SOTA 2003 to SOTA 2004 in Texas for ozone

- Kaufman County had sufficient ozone data to be graded for the first time. It received an A.
- Nueces County improved its ozone grade from an F to a D.
- Hood County, Johnson County, Parker County and Rockwall County had sufficient ozone data to be graded for the first time. They received an F.
- Orange County's ozone grade dropped from a C to an F.
- El Paso County's ozone grade dropped from a D to an F.
- Ozone monitoring data are now being collected in Marion County, though not yet enough to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BEXAR	0.3	B	*	INC
BOWIE	0.0	A	14.3	PASS
BRAZORIA	0.3	B	*	INC
BREWSTER	*	*	*	INC
CALDWELL	0.7	B	*	INC
CAMERON	0.0	A	9.7	PASS
COLLIN	0.3	B	11.6	PASS
DALLAS	1.0	C	13.6	PASS
ECTOR	0.0	A	*	INC
ELLIS	*	*	*	INC
EL PASO	6.3	F	10.1	PASS
GALVESTON	1.0	C	11.1	PASS
GREGG	1.0	C	12.6	PASS
HARRIS	2.7	D	14.1	PASS
HARRISON	*	*	*	INC
HIDALGO	0.0	A	*	INC
JEFF DAVIS	*	*	*	INC
JEFFERSON	2.8	D	*	INC

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
JEFF DAVIS	2,211	375	367	43	98	80	33	585
JEFFERSON	248,890	52,241	33,861	5,278	11,206	8,261	2,989	54,891
JOHNSON	136,332	31,018	13,587	3,154	5,844	4,326	1,412	26,854
KAUFMAN	77,954	17,827	7,869	1,821	3,324	2,472	815	15,445
LUBBOCK	247,574	52,506	27,577	5,248	11,225	7,973	2,593	48,901
MC LENNAN	217,713	47,503	27,643	4,782	9,773	7,019	2,437	44,954
MARION	11,081	1,998	2,138	204	516	405	173	3,038
MONTGOMERY	328,449	77,215	28,609	7,761	13,807	10,338	3,264	62,961
NUECES	314,696	73,526	35,810	7,337	13,542	10,026	3,439	64,233
ORANGE	84,364	18,075	11,064	1,847	3,703	2,800	1,019	18,730
PARKER	94,618	20,068	9,974	2,068	4,105	3,106	1,043	19,709
POTTER	116,093	28,129	13,647	2,747	5,052	3,629	1,236	23,080
ROCKWALL	50,858	11,897	4,187	1,208	2,131	1,592	493	9,571
SMITH	181,437	39,324	25,764	3,954	8,095	6,001	2,227	40,551
TARRANT	1,527,366	362,367	126,051	35,739	65,418	47,306	14,223	278,316
TRAVIS	850,813	176,173	57,795	17,134	38,820	27,001	7,227	147,170
VICTORIA	84,932	19,938	10,367	2,007	3,639	2,712	962	17,786
WEBB	207,611	64,276	15,776	6,248	8,064	5,599	1,640	32,035
TOTALS	**15,905,939**	**3,816,830**	**1,398,851**	**377,053**	**680,805**	**490,672**	**150,489**	**2,918,490**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Texas
5926 Balcones Drive, Suite 100
Austin, TX 78731-4263
(512) 467-6753 www.texaslung.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
JEFFERSON	6.7	F
JOHNSON	5.3	F
KAUFMAN	0.0	A
MARION	*	*
MONTGOMERY	9.3	F
NUECES	2.7	D
ORANGE	3.3	F
PARKER	7.7	F
ROCKWALL	3.3	F
SMITH	3.3	F
TARRANT	26.3	F
TRAVIS	5.7	F
VICTORIA	1.0	C
WEBB	0.0	A

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
KAUFMAN	*	*	*	INC
LUBBOCK	0.0	A	7.5	PASS
MC LENNAN	0.3	B	*	INC
MARION	*	*	*	INC
MONTGOMERY	0.0	A	*	INC
NUECES	0.0	A	*	INC
ORANGE	0.7	B	*	INC
POTTER	0.0	A	*	INC
TARRANT	1.0	C	12.3	PASS
TRAVIS	1.3	C	11.5	PASS
WEBB	0.5	B	10.8	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

UTAH

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
BOX ELDER	44,032	11,963	4,718	1,217	2,319	1,280	430	8,010
CACHE	93,695	24,083	6,785	2,360	5,261	2,678	711	14,285
DAVIS	249,224	68,375	19,052	6,842	13,354	7,093	2,075	40,563
SALT LAKE	919,308	227,405	74,737	22,461	51,909	27,642	8,134	159,473
SAN JUAN	13,781	4,031	1,237	410	702	384	123	2,321
TOOELE	46,032	12,930	3,167	1,283	2,458	1,285	358	7,106
UTAH	387,817	109,981	24,832	10,666	20,966	10,556	2,693	54,600
WEBER	204,167	51,270	20,782	5,071	11,350	6,181	1,988	37,755
TOTALS	**1,958,056**	**510,038**	**155,310**	**50,309**	**108,319**	**57,099**	**16,512**	**324,112**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Utah
1930 South 1100 East
Salt Lake City, UT 84106-2317
(801) 484-4456 www.lungusa.org/utha

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BOX ELDER	*	*
CACHE	0.0	A
DAVIS	2.8	D
SALT LAKE	4.5	F
SAN JUAN	0.0	A
UTAH	0.3	B
WEBER	1.7	C

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BOX ELDER	2.5	D	*	INC
CACHE	8.0	F	*	INC
DAVIS	4.0	F	10.0	PASS
SALT LAKE	23.7	F	14.6	PASS
TOOELE	1.0	C	8.1	PASS
UTAH	12.0	F	11.2	PASS
WEBER	4.5	F	10.3	PASS

Changes from SOTA 2003 to SOTA 2004 in Utah for ozone

- Davis County's ozone grade dropped from a C to a D.
- Utah County improved its ozone grade from a C to a B.

UTAH

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

VERMONT

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
BENNINGTON	37,153	6,500	6,340	676	2,462	1,338	535	9,577
CHITTENDEN	148,916	27,498	14,503	2,779	10,183	5,019	1,566	30,113
RUTLAND	63,250	10,913	9,491	1,138	4,231	2,263	858	15,614
WASHINGTON	58,837	10,315	7,598	1,068	3,955	2,078	743	13,772
TOTALS	**308,156**	**55,226**	**37,932**	**5,660**	**20,831**	**10,698**	**3,701**	**69,076**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Vermont
30 Farrell Street
South Burlington, VT 05403-6196
(802) 863-6817 www.lungusa.org/vermont

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BENNINGTON	2.3	D
CHITTENDEN	1.0	C

Changes from SOTA 2003 to SOTA 2004 in Vermont for ozone

- This analysis uses the shorter ozone season Vermont adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Bennington County's ozone grade dropped from a C to a D.
- Chittenden County's ozone grade dropped from a B to a C.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BENNINGTON	0.5	B	10.2	PASS
CHITTENDEN	0.7	B	9.3	PASS
RUTLAND	0.8	B	11.6	PASS
WASHINGTON	0.3	B	10.6	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ARLINGTON	189,927	27,532	17,551	2,630	11,452	6,750	1,972	39,243
CAROLINE	22,622	4,456	2,911	453	1,227	770	274	5,090
CHARLES CITY	7,239	1,190	1,067	122	411	264	99	1,809
CHESTERFIELD	271,142	60,430	21,096	6,175	14,352	8,698	2,685	52,288
FAIRFAX	997,580	213,621	82,510	21,152	54,123	32,910	10,283	200,175
FAUQUIER	59,245	12,397	6,088	1,265	3,180	1,968	659	12,502
FREDERICK	62,971	13,361	6,629	1,340	3,373	2,070	686	13,037
HANOVER	92,050	19,442	10,241	1,986	4,900	3,044	1,042	19,554
HENRICO	268,270	56,048	32,802	5,520	14,424	8,936	3,089	57,854
LOUDOUN	204,054	52,197	11,152	4,996	10,520	6,060	1,590	32,868
MADISON	12,947	2,301	2,058	240	712	460	179	3,225
PAGE	23,310	4,311	3,650	437	1,277	819	314	5,693
PRINCE WILLIAM	311,892	78,762	15,625	7,769	16,011	9,240	2,412	49,845
ROANOKE	85,937	15,347	13,557	1,576	4,750	3,086	1,203	21,730
ROCKBRIDGE	20,777	3,561	3,334	369	1,157	750	292	5,277
STAFFORD	104,823	26,026	5,941	2,621	5,361	3,125	850	17,284
WYTHE	27,790	4,799	4,427	493	1,546	994	382	6,926

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Virginia
9221 Forest Hill Avenue
Richmond, VA 23235
(804) 267-1900 www.lungusa.org/virginia

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALEXANDRIA CITY	6.5	F
ARLINGTON	12.2	F
CAROLINE	3.3	F
CHARLES CITY	8.2	F
CHESTERFIELD	5.8	F
FAIRFAX	17.7	F
FAUQUIER	1.7	C
FREDERICK	5.3	F
HAMPTON CITY	7.0	F
HANOVER	*	*
HENRICO	8.7	F
LOUDOUN	11.3	F
MADISON	5.0	F
PAGE	2.7	D
PRINCE WILLIAM	5.2	F
ROANOKE	4.0	F
ROCKBRIDGE	0.3	B
STAFFORD	7.2	F
SUFFOLK CITY	7.5	F
WYTHE	3.0	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ARLINGTON	1.3	C	14.9	PASS
CHARLES CITY	0.3	B	13.3	PASS
CHESTERFIELD	0.3	B	14.2	PASS
FAIRFAX	2.3	D	13.9	PASS
HENRICO	0.3	B	14.0	PASS
LOUDOUN	1.3	C	13.8	PASS
PAGE	1.2	C	13.4	PASS
BRISTOL CITY	1.7	C	15.3	FAIL
CHESAPEAKE CITY	1.0	C	13.0	PASS
HAMPTON CITY	0.3	B	12.9	PASS
LYNCHBURG CITY	0.3	B	*	INC
NEWPORT NEWS CITY	0.3	B	12.4	PASS
NORFOLK CITY	0.7	B	13.3	PASS
RICHMOND CITY	3.3	F	*	INC
ROANOKE CITY	0.8	B	15.1	FAIL
SALEM CITY	1.0	C	15.3	FAIL
VIRGINIA BEACH CITY	0.3	B	12.8	PASS

Changes from SOTA 2003 to SOTA 2004 in Virginia for ozone

- Fauquier County improved its ozone grade from an F to a C.
- Page County improved its ozone grade from an F to a D.
- Rockbridge County improved its ozone grade from a C to a B.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ALEXANDRIA CITY	130,804	20,586	12,391	1,910	7,793	4,606	1,362	27,028
BRISTOL CITY	17,118	2,875	3,687	289	943	630	273	4,763
CHESAPEAKE CITY	206,665	47,569	18,931	4,804	10,754	6,511	2,060	39,669
HAMPTON CITY	145,921	29,412	15,776	2,931	7,934	4,793	1,541	29,296
LYNCHBURG CITY	64,616	12,030	10,854	1,201	3,517	2,236	858	15,291
NEWPORT NEWS CITY	180,272	43,593	18,450	4,272	9,236	5,572	1,789	34,152
NORFOLK CITY	239,036	50,154	24,804	4,863	12,913	7,627	2,326	44,660
RICHMOND CITY	197,456	37,736	26,235	3,667	10,890	6,681	2,294	42,633
ROANOKE CITY	93,873	18,868	15,394	1,826	5,056	3,241	1,255	22,677
SALEM CITY	24,836	4,089	4,105	423	1,393	891	342	6,145
SUFFOLK CITY	69,966	15,915	7,399	1,586	3,654	2,235	739	14,015
VIRGINIA BEACH CITY	433,934	98,476	38,589	9,822	22,788	13,592	4,142	80,619
TOTALS	**4,567,073**	**977,084**	**437,254**	**96,739**	**245,646**	**148,559**	**46,991**	**905,348**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Virginia
9221 Forest Hill Avenue
Richmond, VA 23235
(804) 267-1900 www.lungusa.org/virginia

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
ALEXANDRIA CITY	6.5	F
ARLINGTON	12.2	F
CAROLINE	3.3	F
CHARLES CITY	8.2	F
CHESTERFIELD	5.8	F
FAIRFAX	17.7	F
FAUQUIER	1.7	C
FREDERICK	5.3	F
HAMPTON CITY	7.0	F
HANOVER	*	*
HENRICO	8.7	F
LOUDOUN	11.3	F
MADISON	5.0	F
PAGE	2.7	D
PRINCE WILLIAM	5.2	F
ROANOKE	4.0	F
ROCKBRIDGE	0.3	B
STAFFORD	7.2	F
SUFFOLK CITY	7.5	F
WYTHE	3.0	D

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ARLINGTON	1.3	C	14.9	PASS
CHARLES CITY	0.3	B	13.3	PASS
CHESTERFIELD	0.3	B	14.2	PASS
FAIRFAX	2.3	D	13.9	PASS
HENRICO	0.3	B	14.0	PASS
LOUDOUN	1.3	C	13.8	PASS
PAGE	1.2	C	13.4	PASS
BRISTOL CITY	1.7	C	15.3	FAIL
CHESAPEAKE CITY	1.0	C	13.0	PASS
HAMPTON CITY	0.3	B	12.9	PASS
LYNCHBURG CITY	0.3	B	*	INC
NEWPORT NEWS CITY	0.3	B	12.4	PASS
NORFOLK CITY	0.7	B	13.3	PASS
RICHMOND CITY	3.3	F	*	INC
ROANOKE CITY	0.8	B	15.1	FAIL
SALEM CITY	1.0	C	15.3	FAIL
VIRGINIA BEACH CITY	0.3	B	12.8	PASS

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

WASHINGTON

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Cardiovascular Diseases
ADAMS	16,434	4,459	1,659	448	975	485	162	3,043
BENTON	150,366	34,370	15,472	3,503	9,549	4,798	1,601	30,244
CLALLAM	66,302	10,855	14,246	1,137	4,621	2,472	1,088	18,918
CLARK	370,236	85,919	34,301	8,541	23,619	11,743	3,747	72,008
COWLITZ	94,514	20,167	12,467	2,032	6,172	3,163	1,154	21,224
GRAYS HARBOR	68,470	13,323	10,280	1,374	4,572	2,363	901	16,325
JEFFERSON	26,761	3,971	5,658	415	1,906	1,045	463	8,074
KING	1,759,604	326,417	182,840	32,485	120,883	60,043	19,345	370,867
KLICKITAT	19,381	3,971	2,721	414	1,266	666	255	4,624
LEWIS	69,710	13,867	10,923	1,441	4,610	2,392	933	16,765
MASON	51,008	9,066	8,313	945	3,488	1,813	709	12,751
PIERCE	732,282	162,300	73,938	16,273	47,403	23,429	7,560	144,152
SKAGIT	106,906	21,940	15,438	2,229	7,056	3,616	1,355	24,650
SKAMANIA	10,049	1,976	1,109	205	667	344	120	2,246
SNOHOMISH	633,947	139,366	58,020	13,978	41,146	20,357	6,400	123,579
SPOKANE	427,506	87,257	52,399	8,828	28,352	14,247	4,941	91,942
STEVENS	40,556	8,344	5,558	884	2,630	1,385	528	9,580
THURSTON	217,641	42,824	24,624	4,381	14,544	7,352	2,504	47,072
WALLA WALLA	56,149	10,662	8,277	1,090	3,798	1,909	698	12,688
WHATCOM	174,362	33,143	20,324	3,346	11,844	5,891	1,971	37,012
WHITMAN	40,631	5,686	3,761	575	2,995	1,386	378	7,373
YAKIMA	224,823	57,919	25,112	5,758	13,735	6,846	2,342	43,673
TOTALS	**5,357,638**	**1,097,802**	**587,440**	**110,283**	**355,833**	**177,746**	**59,155**	**1,118,811**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Washington
2625 Third Avenue
Seattle, WA 98121-1213
(206) 441-5100 www.alaw.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
CLALLAM	0.0	A
CLARK	0.0	A
KING	0.7	B
KLICKITAT	0.0	A
LEWIS	*	*
MASON	*	*
PIERCE	0.0	A
SKAGIT	0.0	A
SPOKANE	0.0	A
THURSTON	0.0	A
WHATCOM	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Washington for Ozone

- This analysis uses the shorter ozone season Washington adopted for all years reviewed. No grades were affected by the difference in season length, but comparisons of weighted averages with previous reports may be affected.
- Pierce County improved its ozone grade from a B to an A.
- King County improved its ozone grade from a C to a B.
- Ozone monitoring data are now being collected in Mason County, though not yet enough to grade.
- Ozone monitoring data are no longer being collected in Cowlitz County.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ADAMS	0.0	A	*	INC
BENTON	0.0	A	7.2	PASS
CLALLAM	*	*	*	INC
CLARK	2.0	C	10.1	PASS
COWLITZ	*	*	*	INC
GRAYS HARBOR	*	*	*	INC
JEFFERSON	*	*	*	INC
KING	4.3	F	11.8	PASS
LEWIS	0.0	A	*	INC
MASON	*	*	*	INC
PIERCE	10.8	F	11.7	PASS
SKAGIT	0.0	A	*	INC
SKAMANIA	*	*	*	INC
SNOHOMISH	3.3	F	11.8	PASS
SPOKANE	3.0	D	10.4	PASS
STEVENS	*	*	*	INC
THURSTON	2.7	D	9.8	PASS
WALLA WALLA	*	*	*	INC
WHATCOM	0.0	A	7.8	PASS
WHITMAN	0.0	A	*	INC
YAKIMA	2.3	D	*	INC

WASHINGTON

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

WEST VIRGINIA

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
BERKELEY	81,262	16,885	8,884	1,704	5,577	2,690	901	17,066
BROOKE	25,179	4,101	4,619	420	1,821	929	378	6,721
CABELL	95,266	15,677	15,431	1,561	6,934	3,439	1,301	23,599
GREENBRIER	34,453	5,858	6,166	596	2,474	1,264	514	9,171
HANCOCK	32,082	5,366	5,995	541	2,313	1,185	489	8,682
HARRISON	67,856	12,340	11,087	1,264	4,781	2,408	943	16,975
KANAWHA	195,790	34,220	32,727	3,438	14,033	7,096	2,800	50,399
MARION	56,433	9,285	9,947	937	4,087	2,061	818	14,653
MARSHALL	34,898	6,261	5,706	641	2,475	1,256	497	8,940
MERCER	62,207	10,711	10,876	1,073	4,467	2,264	905	16,202
MONONGALIA	82,895	12,302	8,761	1,228	6,225	2,896	875	16,791
OHIO	46,126	7,701	8,564	796	3,302	1,683	689	12,180
RALEIGH	78,899	13,446	12,030	1,371	5,688	2,838	1,072	19,543
SUMMERS	12,526	1,982	2,499	203	911	473	202	3,550
WOOD	87,306	16,004	13,461	1,622	6,175	3,098	1,189	21,571
TOTALS	**993,178**	**172,139**	**156,753**	**17,397**	**71,263**	**35,579**	**13,573**	**246,043**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of West Virginia
415 Dickinson Street
Charleston, WV 25301
(304) 342-6600 www.alawv.org

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BERKELEY	*	*
CABELL	8.8	F
GREENBRIER	1.7	C
HANCOCK	6.8	F
KANAWHA	3.7	F
MONONGALIA	2.3	D
OHIO	6.3	F
WOOD	8.5	F

Changes from SOTA 2003 to SOTA 2004 in West Virginia for ozone

- Ozone monitoring data are now being collected in Monongalia County, though not yet enough to grade.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
BERKELEY	3.0	D	16.2	FAIL
BROOKE	2.3	D	16.8	FAIL
CABELL	2.7	D	17.3	FAIL
HANCOCK	4.3	F	17.5	FAIL
HARRISON	1.3	C	14.5	PASS
KANAWHA	3.0	D	17.8	FAIL
MARION	1.7	C	15.7	FAIL
MARSHALL	1.0	C	16.0	FAIL
MERCER	0.8	B	13.4	PASS
MONONGALIA	2.3	D	15.0	PASS
OHIO	1.7	C	15.3	FAIL
RALEIGH	1.0	C	13.5	PASS
SUMMERS	0.7	B	10.4	PASS
WOOD	2.3	D	17.0	FAIL

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

WISCONSIN

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
ASHLAND	16,827	3,286	2,697	339	1,089	573	221	3,957
BROWN	232,185	48,852	24,589	4,894	14,769	7,563	2,458	46,742
COLUMBIA	53,374	10,200	7,650	1,053	3,480	1,832	678	12,402
DANE	443,110	81,447	41,085	8,155	29,360	14,843	4,489	87,381
DODGE	86,820	16,191	11,920	1,687	5,678	2,956	1,059	19,536
DOOR	28,101	4,573	5,350	480	1,918	1,044	437	7,736
DOUGLAS	43,738	8,093	6,148	827	2,888	1,518	555	10,185
FLORENCE	5,032	838	868	89	340	183	74	1,320
FOND DU LAC	97,809	18,740	13,974	1,946	6,357	3,334	1,227	22,418
GRANT	49,320	8,562	7,725	897	3,288	1,718	642	11,564
GREEN	34,081	6,866	4,960	707	2,188	1,155	434	7,901
JEFFERSON	75,179	14,772	9,423	1,512	4,869	2,540	891	16,575
KENOSHA	154,433	33,955	17,353	3,394	9,687	4,986	1,671	31,456
KEWAUNEE	20,422	3,960	2,978	417	1,317	695	260	4,739
MANITOWOC	82,481	15,977	12,744	1,661	5,348	2,838	1,090	19,715
MARATHON	126,728	26,108	16,491	2,676	8,079	4,229	1,516	28,005
MILWAUKEE	937,136	208,054	117,503	20,598	58,764	30,325	10,546	195,984
ONEIDA	36,860	6,028	7,023	639	2,503	1,357	567	10,029
OUTAGAMIE	166,148	36,096	18,327	3,653	10,417	5,352	1,778	33,582
OZAUKEE	83,915	16,950	10,715	1,758	5,381	2,863	1,046	19,264

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Wisconsin
13100 West Lisbon Road, Suite 700
Brookfield, WI 53005-2508
(262) 703-4200 www.lungusa.org/wisconsin

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
BROWN	2.7	D
COLUMBIA	1.3	C
DANE	0.7	B
DODGE	2.0	C
DOOR	7.0	F
FLORENCE	0.3	B
FOND DU LAC	2.0	C
GREEN	0.7	B
JEFFERSON	3.0	D
KENOSHA	13.0	F
KEWAUNEE	5.8	F
MANITOWOC	5.8	F
MARATHON	0.3	B
MILWAUKEE	7.5	F
ONEIDA	0.0	A
OUTAGAMIE	1.3	C
OZAUKEE	8.5	F

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ASHLAND	*	*	*	INC
BROWN	1.7	C	11.6	PASS
DANE	1.3	C	12.8	PASS
DODGE	0.3	B	11.4	PASS
DOOR	0.0	A	7.6	PASS
DOUGLAS	0.0	A	8.0	PASS
GRANT	0.3	B	11.7	PASS
JEFFERSON	0.7	B	11.8	PASS
KENOSHA	0.3	B	11.9	PASS
MANITOWOC	0.0	A	10.1	PASS
MILWAUKEE	4.5	F	13.7	PASS
OUTAGAMIE	0.3	B	11.1	PASS
OZAUKEE	0.0	A	11.3	PASS

Changes from SOTA 2003 to SOTA 2004 in Wisconsin for ozone

- Oneida County, Vernon County and Vilas County improved their ozone grades from a B to an A.
- Sauk County improved its ozone grade from a C to an A.
- Outgamie County, Waukesha County, and Winnebago County improved their ozone grades from an F to a C.
- Brown County, Jefferson County, Rock County and Walworth County improved their ozone grades from an F to a D.
- Dane County, Florence County, and Marathon County improved their ozone grades from a C to a B.
- Columbia County, Dodge County and Fond Du Lac County improved their ozone grades from D to a C.
- Green County had sufficient ozone data to be graded for the first time. It received a B.

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
RACINE	191,012	41,179	23,297	4,162	12,041	6,284	2,205	41,028
ROCK	154,092	32,708	19,586	3,305	9,766	5,097	1,809	33,504
SAINT CROIX	68,122	14,377	6,458	1,468	4,304	2,205	698	13,444
SAUK	55,632	10,790	8,172	1,117	3,608	1,902	712	12,989
SHEBOYGAN	112,480	21,664	15,497	2,235	7,312	3,827	1,388	25,525
TAYLOR	19,650	3,999	2,956	419	1,249	660	251	4,540
VERNON	28,346	6,021	4,671	622	1,788	959	386	6,883
VILAS	21,636	3,312	4,960	349	1,498	825	372	6,444
WALWORTH	97,003	18,161	12,203	1,860	6,363	3,283	1,127	20,910
WASHINGTON	120,899	24,975	13,818	2,539	7,721	4,021	1,376	25,862
WAUKESHA	370,554	75,054	46,012	7,691	23,804	12,564	4,493	83,330
WINNEBAGO	158,401	29,731	19,839	3,028	10,402	5,369	1,841	34,318
WOOD	75,174	14,651	11,751	1,516	4,872	2,584	997	17,994
TOTALS	**4,246,700**	**866,170**	**528,743**	**87,695**	**272,450**	**141,487**	**49,291**	**917,260**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of Wisconsin
13100 West Lisbon Road, Suite 700
Brookfield, WI 53005-2508
(262) 703-4200 www.lungusa.org/wisconsin

HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
RACINE	6.8	F
ROCK	3.0	D
SAUK	0.0	A
SHEBOYGAN	13.7	F
SAINT CROIX	0.3	B
VERNON	0.0	A
VILAS	0.0	A
WALWORTH	2.3	D
WASHINGTON	2.7	D
WAUKESHA	2.0	C
WINNEBAGO	2.0	C

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
ROCK	0.3	B	*	INC
SAINT CROIX	0.3	B	9.9	PASS
TAYLOR	*	*	*	INC
VILAS	0.0	A	5.8	PASS
WAUKESHA	2.3	D	13.4	PASS
WINNEBAGO	0.0	A	10.8	PASS
WOOD	0.0	A	10.4	PASS

WISCONSIN

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

WYOMING

AT-RISK GROUPS[1]

County	Total Population	14& Under	65& Over	Lung Diseases: Pediatric Asthma	Lung Diseases: Adult Asthma	Lung Diseases: Chronic Bronchitis	Lung Diseases: Emphysema	Cardiovascular Diseases
CAMPBELL	36,110	8,159	1,904	855	1,912	1,118	308	6,236
CONVERSE	12,433	2,590	1,416	272	664	417	148	2,746
FREMONT	36,113	7,433	4,935	775	1,933	1,223	457	8,336
LARAMIE	82,894	17,110	9,690	1,726	4,529	2,757	945	17,703
SHERIDAN	26,908	4,643	4,135	499	1,502	967	376	6,786
TETON	18,586	2,918	1,333	293	1,111	657	190	3,812
TOTALS	**213,044**	**42,853**	**23,413**	**4,420**	**11,651**	**7,139**	**2,424**	**45,621**

(1) Adding across rows does not produce valid estimates, i.e. summing pediatric and adult asthma and/or emphysema and chronic bronchitis.

American Lung Association of the Northern Rockies
825 Helena Avenue
Helena, MT 59601-3459
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HIGH OZONE DAYS 2000-2002[1]

County	Wgt. Avg.	Grade
TETON	0.0	A

Changes from SOTA 2003 to SOTA 2004 in Wyoming for ozone

- No changes to Wyoming's ozone levels or monitors.

PARTICLE POLLUTION DAYS 2000-2002[2]

	24 Hours		Annual	
County	Wgt. Avg.	Grade	Design Value	Pass/ Fail
CAMPBELL	*	*	6.3	PASS
CONVERSE	*	*	*	INC
FREMONT	1.0	C	*	INC
LARAMIE	0.0	A	5.1	PASS
SHERIDAN	1.3	C	11.1	PASS
TETON	*	*	*	INC

WYOMING

(1) Grades for ozone are given only to counties with ozone monitors. (2) Grades for particle pollution are given only in counties with particle pollution monitors. See Appendix A for the methodology for grading. Asterisks (*) indicate that sufficient data were not available to grade that county.

Appendix A: Description of Methodology

STATISTICAL METHODOLOGY: THE AIR QUALITY DATA.

Data Sources

The data on air quality throughout the United States were obtained from the U.S. Environmental Protection Agency's Air Quality System, formerly called Aerometric Information Retrieval System (AIRS) database. The American Lung Association contracted with A.S.L. & Associates, Helena, Montana, to characterize the hourly averaged ozone concentration information and the 24-hour averaged $PM_{2.5}$ concentration information for the 3-year period for 2000-2002 for each monitoring site.

Design values for the annual $PM_{2.5}$ concentrations by county were collected from data previously summarized by EPA and were used as reported September 9, 2003 by EPA at http://www.epa.gov/airtrends/pm25_design_values_2000-2002.pdf.

Ozone Data Analysis

The 2000, 2001, and 2002 AIRS hourly ozone data were used to calculate the daily 8-hour maximum concentration for each ozone-monitoring site. The data were considered for a 3-year period for the same reason that EPA uses 3 years of data to determine compliance with the ozone: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels, which inaccurately reflect the normal conditions. The highest 8-hour daily maximum concentration in each county for 2000, 2001, and 2002, based on the EPA-defined ozone season, was identified.

Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the ozone level was within the ranges identified by EPA based on the EPA Air Quality Index:

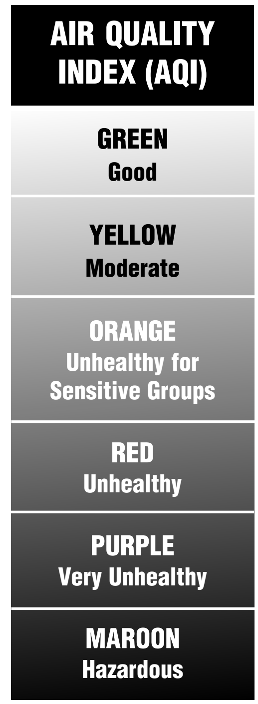
0.000 – 0.064 ppm	Good (Green)
0.065 – 0.084 ppm	Moderate (Yellow)
0.085 – 0.104 ppm	Unhealthy for Sensitive Groups (Orange)
0.105 – 0.124 ppm	Unhealthy (Red)
0.125 – 0.374 ppm	Very Unhealthy (Purple)

No data capture criteria were used to eliminate monitoring sites. All data within the ozone season were used in the analysis because it was the goal to identify the number of days that 8-hour daily maximum concentrations occurred within the defined ranges.

Following receipt of the above information, the American Lung Association identified the number of days each county, with at least one ozone monitor, experienced air quality designated as orange, red, or purple.

Short-term Particle Pollution Data Analysis

A.S.L. & Associates identified the maximum daily 24-hour AIRS $PM_{2.5}$ concentration for each county in 2000, 2001, and 2002 with monitoring information. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the maximum of the ***daily*** $PM_{2.5}$ concentration was within the ranges identified by EPA based on the EPA Air Quality Index:



from 0.0 µg/m³ to 15.4 µg/m³	Good (Green)
from 15.5 µg/m³ to 40.4 µg/m³	Moderate (Yellow)
from 40.5 µg/m³ to 65.4 µg/m³	Unhealthy for Sensitive Groups (Orange)
from 65.6 µg/m³ to 150.4 µg/m³	Unhealthy (Red)
from 150.5 µg/m³ to 250.4 µg/m³	Very Unhealthy (Purple)
greater than or equal to 250.5 µg/m³	Hazardous (Maroon)

No data capture criteria were used to eliminate monitoring sites. All data were used in the analysis because it was the goal to identify the number of days that the maximum in each county of the ***daily*** AIRS $PM_{2.5}$ concentration occurred within the defined ranges.

Following receipt of the above information, the American Lung Association identified the number of days each county, with at least one $PM_{2.5}$ monitor, experienced air quality designated as orange, red, or purple.

Description of County Grading System.

Ozone and short-term particle pollution (24-hour $PM_{2.5}$)

The grades for ozone and short-term particle pollution (24-hour $PM_{2.5}$) were based on a weighted average for each county calculated using the Air Quality Index as noted above. The number of orange days experienced by each county was assigned a factor of 1; red days were assigned a factor of 1.5 and purple days were assigned a factor of 2. By multiplying the total number of days within each category by their assigned factor, a total was determined. Because the monitoring data was collected over a 3-year period, the total was divided by three to determine the weighted average. Each county's grade was determined using the weighted average. Counties were ranked by weighted average. Metropolitan areas were ranked by the highest weighted average among the counties in the Census Bureau-defined Metropolitan Statistical Area. In 2003, the U.S. Census Bureau published revised definitions for the nation's Metropolitan Statistical Areas. Therefore, comparisons between MSAs of previous reports and the ***State of the Air: 2004*** should be made with caution.

All counties with a weighted average of zero (corresponding to no exceedences of the 8-hour standard over the 3-year period) were given a grade of "A." Counties with a weighted average of 0.3 to 0.9 (corresponding to 1 to 2 orange days) received a "B." Counties receiving a "C" had only 3 to 6 days over the standard, including at most one red day, scored a weighted average of 1.0 to 2.0. Counties received a "D" if they had a weighted average of 2.1 to 3.2, which meant they had 7 to 9 days over the standard. Counties with weighted averages of 3.3 or higher (corresponding to approximately the 8-hour standard) received an "F." These counties generally had at least 10 orange days or 9 days over the standard with at least one or more days in the red or purple category.

Grading System

Grade	Weighted Average	Approximate Number of Allowable Orange/Red/Purple Days
A	0.0	None
B	0.3 to 0.9	1 to 2 orange days with no red
C	1.0 to 2.0	3 to 6 days over the standard: 3 to 5 orange with no more than 1 red OR 6 orange with no red
D	2.1 to 3.2	7 to 9 days over the standard: 7 total (including up to 2 red) to 9 orange with no red
F	3.3 or higher	9 days or more over the standard: 10 orange days or 9 total including at least 1 or more red or purple

Weighted averages allow comparisons to be drawn based on severity of air pollution. For example, if one county had 9 orange days and 0 red days, it would earn a weighted average of 3.0 and a D grade. However, another county which had only 8 orange days, but it also had 2 red days, which signify days with more serious air pollution, would receive a F. That second county would have a weighted average of 3.7.

Note that this system differs significantly from the methodology EPA uses to determine violations of both the ozone standard and the 24-hour $PM_{2.5}$. EPA determines whether a county violates the standard based on the 4^{th} maximum daily 8-hour ozone reading each year averaged over three years. Multiple days of unhealthy air beyond the highest four in each year are not considered. By contrast, the system used in this report recognizes when a community's air quality repeatedly results in unhealthy air throughout the three years. Consequently, some counties will receive grades of "F" in this report showing repeated instances of unhealthy air, while still meeting EPA's 1997 ozone standard or the 1-hour ozone standard set in 1979.

Long-term particle pollution (Annual $PM_{2.5}$)

Since no comparable Air Quality Index exists for long-term particle pollution (annual $PM_{2.5}$), the grading was based on EPA's determination of violations of the national ambient air quality standard for annual $PM_{2.5}$ of 15 $\mu g/m^3$, as reported September 9, 2003 by EPA at http://www.epa.gov/airtrends/pm25_ design_ values_2000-2002.pdf. Counties that EPA listed as being in attainment of the standard were given grades of "Pass." Counties EPA listed as being in nonattainment were given grades of "Fail." Where insufficient data existed for EPA to determine attainment or nonattainment, those counties received a grade of "Incomplete." Counties were ranked by design value. Metropolitan areas were ranked by the design value among the counties in the Census Bureau-defined Metropolitan Statistical Area as of 2003. The design value is the calculated concentration of a pollutant based on the form of the national ambient air quality standard, and is used by EPA to determine whether or not the county meets the standard.

Calculations of Populations-at-Risk

Presently, state (with the exception of adult asthma) and county-specific measurements of the number of persons with chronic and acute lung disease are not available. In order to assess the magnitude of lung disease at the state and county levels, we have employed a synthetic estimation technique originally developed by the U.S. Bureau of the Census. This method uses age-specific national estimates of self-reported lung disease to project the prevalence of lung disease within the counties served by Lung Association constituents and affiliates.

Population Estimates

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2002. The Census Bureau also estimated the age specific breakdown of the population by county.

Prevalence Estimates

Chronic Bronchitis, Emphysema and Pediatric Asthma. In 2002, the National Health Interview Survey (NHIS) estimated the nationwide annual prevalence of diagnosed chronic bronchitis at 9.1 million; the nationwide lifetime prevalence of emphysema was estimated at 3.1 million. The NHIS estimates the prevalence of diagnosed pediatric asthma to be over 6.0 million under age 18.

Due to the revision of the Health Interview Survey questionnaire, prevalence estimates from the 2000 *State of the Air* Report cannot be compared to later publications. Estimates for chronic bronchitis and emphysema can be compared to the 2001, 2002, and 2003 *State of the Air* Reports. However, estimates for chronic bronchitis and emphysema cannot be summed since they represent different types of prevalence estimates.

Pediatric asthma prevalence estimates from this year's report cannot be compared to previous estimates, due to another change to the National Health Interview Survey. Pediatric asthma prevalence estimates found in this report represent current asthma prevalence, not asthma attack prevalence as was depicted in the past three *State of the Air* Reports. Subsequently, pediatric asthma estimates will be much higher in this report than in previous ones due to the nature of the question.

Local area prevalence of chronic bronchitis, emphysema and pediatric asthma are estimated by applying age-specific national prevalence rates from the 2002 NHIS to age-specific county-level resident populations obtained from the U.S. Bureau of the Census web site. Prevalence estimates for chronic bronchitis and emphysema are calculated for those 18-44, 45 to 64 and 65+. The prevalence estimate for pediatric asthma is calculated for those under age 18.

Adult Asthma. In 2002, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 7.5% of adults residing in the United States reported currently having asthma. The information on adult asthma obtained from the Behavioral Risk Factor Surveillance System survey cannot be compared with pediatric asthma estimates that come from the National Health Interview Survey.

The prevalence estimate for adult asthma is calculated for those 18 to 44, 45 to 64 and 65+. Local area prevalence of adult asthma is estimated by applying age-specific state prevalence rates from the 2002 BRFSS to age-specific county-level resident populations obtained from the U.S. Bureau of the Census web site.

Cardiovascular Disease Estimates. All cardiovascular disease estimates were obtained from the *American Heart Association: Heart Disease and Stroke Statistics – 2004 Update*. According to this report, 64.4 million Americans suffer from one or more types of cardiovascular disease.

Local area prevalence of cardiovascular disease is estimated by applying age-specific prevalence rates from the 2004 American Heart Association Report to age-specific county-level resident populations obtained from the U.S. Bureau of the Census web site.

Limitations of Estimates. Since the statistics presented by the NHIS and the BRFSS are based on a sample, they will differ (due to random sampling variability) from figures that would be derived from a complete census, or case registry of people in the U.S. with these diseases. The results are also subject to reporting, non-response and processing errors. These types of errors are kept to a minimum by methods built into the survey.

Additionally, a major limitation of both surveys is that the information collected represents self-reports of medically-diagnosed conditions, which may underestimate disease prevalence since not all individuals with these conditions have been properly diagnosed. However, the NHIS is the best available source that depicts the magnitude of acute and chronic lung disease on the national level, and the BRFSS is the best available source for adult asthma information.

The conditions covered in the survey may vary considerably in the accuracy and completeness with which they are reported.

Local estimates of chronic lung diseases are scaled in direct proportion to the base population of the county and its age distribution. No adjustments are made for other factors that may affect local prevalence (e.g. local prevalence of cigarette smokers or occupational exposures) since the health surveys that obtain such data are rarely conducted on the county level. Because the estimates do not account for geographic differences in the prevalence of chronic and acute diseases, the sum of the estimates for each of the counties in the United States may not exactly reflect the national estimate derived by the NHIS or state estimates derived by the BRFSS.

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National Center for Health Statistics. Raw Data from the National Health Interview Survey, United States, 2002. Calculations by the American Lung Association Research and Scientific Affairs Division using SPSS and SUDAAN software.

Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System, 2002.

Population Estimates Branch, U.S. Bureau of the Census. County Resident Population Estimates, by Age, Sex, and Race: July 1, 2002.

American Heart Association: Heart Disease and Stroke Statistics – 2004 Update.

Appendix B: Regional Differences in Sources for Ozone and Particle Pollution

Introduction

Ozone requires the right mix of two essential groups of gases: volatile organic compounds (VOCs) and nitrogen oxides (NO_x). When those gases are combined in sunlight with the right amount of heat, ozone forms. Particle pollution ($PM_{2.5}$) can be formed directly by mechanical processes, such as dust is formed by wind action on soil and rocks, but it is frequently formed by chemical reactions in the atmosphere. For more discussion on the formation of these two pollutants, see the chapter "Health Effects of Ozone and Particle Pollution."

However, the sources of these pollutants, the success at reducing them and the complications of pollution transported by the winds vary from region to region. The following analysis looks at the sources, trends and transport of ozone and particle pollution in each of the ten regions that EPA uses to group the states.

National Sources of Ozone and Particle Pollution

All the data on emissions of VOCs, NO_x and $PM_{2.5}$ in this appendix were obtained from the U.S. EPA's National Emissions Trends Tier reports for 1999 inventoried data. Those data include emissions not only from individual facilities (called point sources), but also from so-called area sources that include many small, individual sources (like cars or residences) and sources that cover a large geographic area, such as wildfires. The data are estimated annually, but the sources are inventoried only every three years. The 1999 data are the most current based on inventories of sources. The data are available at http://www.epa.gov/air/data/nettier.html?us~USA~United%20States.

The National Emissions Trend Tier data were sorted by region, by major source category, and by pollutant for this discussion. A brief description from EPA follows to explain each of the major source categories. Omitted from this discussion are those sources that are not anthropogenic, or not generated by human activity,[1] including fugitive dust in the discussion of particle pollution and isoprenes from vegetation in the discussion of VOC sources.

What do the categories in these pie charts mean?

Category	**Includes these activities or sources**
Electric Utility Fuel Combustion	Power plants that produce electricity
Industrial Fuel Combustion	Boilers and other processes that burn fuel at industrial plants
Other Fuel Combustion	Residential woodstoves and fireplaces; other processes burning fuel in residential, commercial and institutional settings
Chemicals and Allied Products	Industries that produce chemicals and related products
Metals Production	Industries that produce metals and metal products
Petroleum and Related Products	Rubber and plastics production; oil and gas production; petroleum refining
Other Industrial Production	Agriculture, food, and related products; wood, pulp, and paper; machinery, mineral products
Solvent Use	Graphic arts, dry cleaning, surface coating, degreasing processes, pesticide applications
Storage and Transport	Storage and transport of petroleum and petroleum products, including service stations and bulk terminals and plants and organic chemicals, rail and tank car cleaning
Waste Disposal and Recycling	Wastewater treatment; treatment, storage and disposal facilities; incineration, open burning; scrap and waste materials; landfills
Highway Vehicles	Cars, trucks, buses
Off Highway Vehicles	Recreational vehicles, construction equipment, marine, rail
Miscellaneous	Cooling towers, firefighter training, engine testing, forest fires, slash/prescribed burning

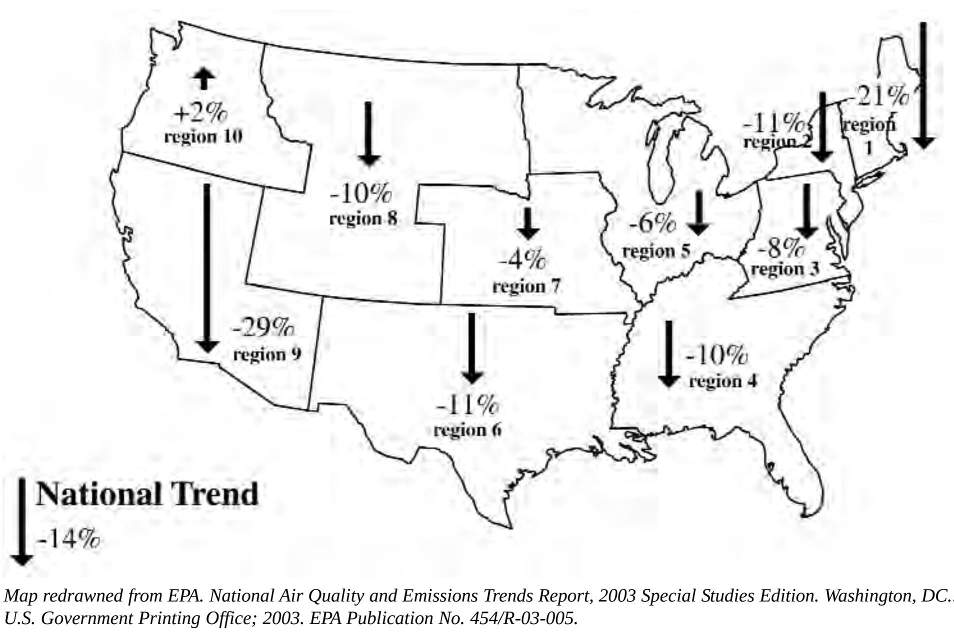
Source: EPA, *Handbook for Criteria Pollutant Inventory Development: A Beginners Guide for Point and Area Sources*, 1999.

Ozone Trends

Nationally, we have seen a significant improvement in the past 20 years in monitored ozone levels with a decline of 14 percent between 1983 and 2002.[2] The EPA map below shows that the success has varied greatly by region. The most successful improvement is Region 9, with the steepest drop of 29 percent led by California's stringent controls. The most surprising trend is the increase of 2 percent in the Northwest in Region 10. More ominously, if this map depicted trends for the period 1990-1999 only, EPA reports a 4 percent **increase** in ozone levels between 1993 and 2002 across the nation, though they report that this increase is not statistically significant. Even accepting EPA's determination that this is not a significant change, the stagnation in the ozone trend is clear. Furthermore, when EPA analyzed the 1983 to 2002 trend for 53 metropolitan areas and adjusted the data for the influences of local weather patterns, the trend remained flat.[3]

The trend data by region covers 1991-2000, which is the latest made available by EPA in its annual Trends report. The largest decline in ozone concentrations between 1991 and 2000 came in Region 1, with a decline of nearly 22 percent, followed by Region 2 with a 17.4 percent drop, and Region 9 with 14.4 percent decline. Region 6 had the largest increase in that decade, with 8.9 percent increase in monitored ozone levels, while two other regions (7 and 8) also increased monitored 8-hour ozone emissions. Compared to the trend findings reported in the ***American Lung Association State of the Air: 2003***, several regions showed a positive turn-around: for example, Region 4 which had increased by 9 percent between 1990-1999, showed a drop of 12 percent between 1991 and 2000. Region 5 had increased ozone levels by 7 percent between 1990-1999, showed a drop of 11.5 percent between 1991 and 2000. Some of this monitored volatility is likely due to meteorological changes.[4] For more discussion of the differences in 8-hour ozone trends, see the descriptions below for each region.

Trends in 8-hour Ozone levels, 1983-2002, averaged across EPA regions, based on the annual fourth maximum 8-hour average.



Map redrawn from EPA. National Air Quality and Emissions Trends Report, 2003 Special Studies Edition. Washington, DC.: U.S. Government Printing Office; 2003. EPA Publication No. 454/R-03-005.

Note on Regional Trends

Because air quality monitors are concentrated in urban locations, it is not possible, strictly speaking, to describe accurately average ozone or $PM_{2.5}$ concentrations across as large an area as an EPA Region. EPA includes this reminder in its discussion of the trend data: "These trends are influenced by the distribution of monitoring locations in a given region and, therefore, can be driven largely by urban concentrations. For this reason, they are not indicative of background regional concentrations."[5] For more discussion on regional trends, see EPA's annual National Air Quality and Emissions Trends Report, 2003, at http://www.epa.gov/oar/aqtrnd03/.

The Transport of Pollution

By their nature, ozone and much of the particle pollution are created in the atmospheric mixing bowl and carried by prevailing winds to areas often far beyond their sources. Section 110 of the Clean Air Act recognizes the impact of pollution transported across political boundaries, by requiring communities to prevent sources from "contributing significantly" to downwind areas. When that doesn't work, Section 126 of the Act allows downwind states to petition EPA to step in and act to reduce industrial pollution from upwind sources.

The most comprehensive effort to reduce transported ozone is currently in progress. Years of study in the 1990s had identified significant sources of NO_x, largely from electric power plants, which were contributing to the ozone levels in much of the Northeast. At the request of 8 Northeastern states, EPA issued a rule in September 1998 targeting most of the eastern United States, a requirement commonly referred to as the NO_x SIP call.[6] This rule required 22 states and the District of Columbia to significantly reduce NO_x emissions by May 1, 2003, a date that was later extended to May 31, 2004 by court action for most of the states.[7] The states included in the requirement are: Alabama, Connecticut, Delaware, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia.

Pollution is also transported across national borders. For example, ozone is produced south and west of the New England states in the Ohio Valley and in the Canadian "Windsor-Quebec Corridor." In those two areas, heavy concentrations of power plants and transportation corridors produce ozone, which is carried into New England and the Mid-Atlantic states (EPA Regions 2 & 3), as well as into New Brunswick and other Canadian provinces.[8]

Not only does pollution move into a state from the outside, it also moves within the state. For example, some air pollution episodes have been followed hour-by-hour as they move up downwind from city to city within Pennsylvania.[9] In many cases, the highest levels of ozone will show up in suburban areas downwind of larger communities. For example, even though an area such as San Francisco County in California may not be experiencing high ozone readings, it may be contributing to poor air quality in outlying areas such as the Sacramento and San Joaquin Valley areas to the East and other parts of the Bay Area to the south.[10]

There are some regions that are notable as sources of transported pollutants affecting cities and states within the region and outside it. The Southeast (EPA Region 4) and the Midwest (EPA Region 5) are two. The Southeast is home to some of the most polluting power plants in the nation[11] and to cities with extremely high driving rates. Atlanta residents average 37.6 miles per day; Birmingham, 35.6; and Asheville, North Carolina, 47.5 — all of them much higher than the traditionally car-dependent Los Angeles, whose residents average only 22.2 miles each day.[12] As a result, the Southeast produces more NO_x emissions (5.4 million short tons in 1999), VOC emissions (4.15 million short tons) and particle pollution (830,992 short tons) than any other section of the country.

The Midwest (EPA Region 5) is another region with many of the nation's most polluting coal-fired power plants, including 8 of the top 20 NO_x emitting facilities in the nation in 1999.[13] This region produces the second highest NO_x emissions, 4.98 million short tons, the second highest VOC emissions, 3.5 million short tons, and the second highest particle pollution emissions, 679,792 short tons, in 1999.[14]

National Sources of VOC Emissions

According to the 1999 inventory of emissions, which is the latest inventory data available, transportation sources accounted for the bulk of emissions of VOCs, totaling nearly half (47%) of the emissions between the highway vehicles and the off-highway vehicles. Solvent use accounted for over one-quarter (27%) of VOC emissions. All other categories made up the remaining quarter, led by storage and transportation uses at 7 percent.

National Sources of NO_x

Transportation also comprised over half the sources of NO_x emissions in the 1999 inventory as well, with highway vehicles producing 33 percent and off-highway generating another 22 percent. However, electric utilities generated nearly one-quarter of the total, at 23 percent. The remaining quarter was led by industrial fuel combustion at 12 percent.

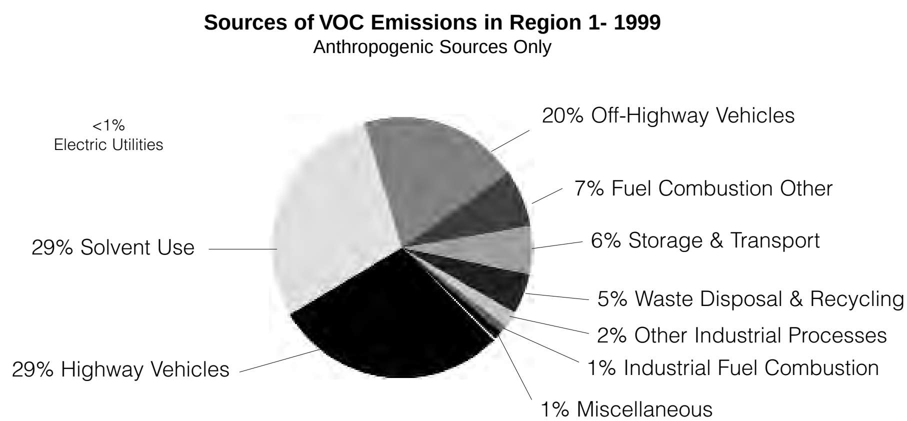
National Sources of Particle Pollution ($PM_{2.5}$)

Not including fugitive dust sources, over 4.5 million short tons of particle pollution were produced nationwide in 1999. Categorized as *miscellaneous*, together, other combustion, and agriculture and forestry comprised 47 percent of all particle pollution or nearly 2.2 million short tons, the largest source of particle pollution emissions in the nation. Nationwide, the next largest categories of particle pollution emissions sources are other fuel combustion (12%), waste disposal and recycling (10%), off-highway vehicles (7%), and industrial fuel combustion (6%).

Region 1: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont

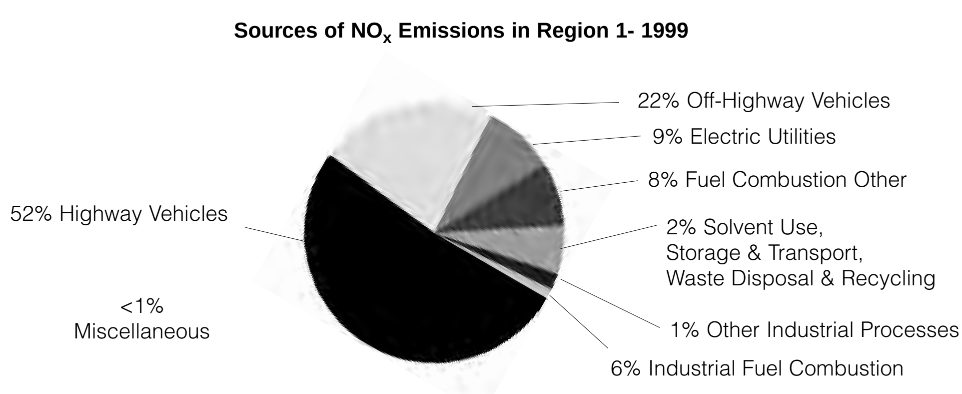
Local sources of VOCs

VOC sources in this region are very similar to those in the nation as a whole. The largest sources generated by human activity are highway vehicles and solvent uses, which make up 29 percent each. Off-highway vehicles make up 20 percent. The next largest categories are other fuel combustion (7%), storage and transport (6%) and waste disposal and recycling (5%). Total tons generated by human activity in 1999 were 747,249, the lowest of all the 10 regions.



Local sources of NO_x

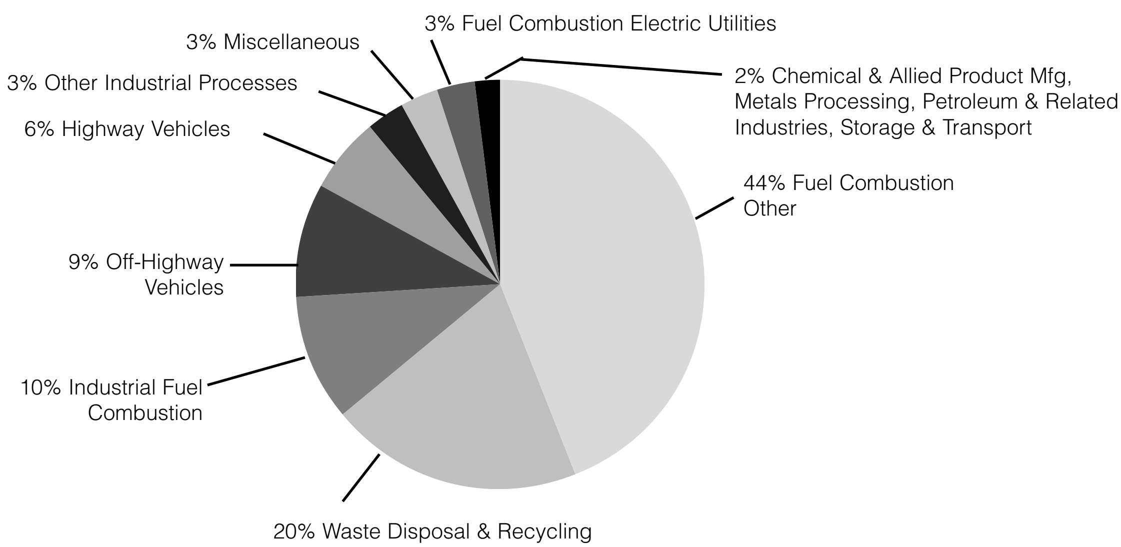
Highway vehicles make up a much larger percentage of NO_x emissions in New England than in the nation as a whole. Off-highway vehicles are the same percentage as the nation (22%). However, cleaner power plants in the region result in electric utilities contributing only 9 percent of the region's NO_x emissions. Other fuel combustion (8%) generates a slightly higher percentage of NO_x than the nation as a whole, while NO_x from industrial fuel consumption is much lower than the nation at 6 percent. Total tons generated by human activity in 1999: 745,050, the lowest of all the regions.



Local sources of Particle Pollution ($PM_{2.5}$)

Other fuel combustion sources from residential woodstoves and fireplaces and other processes burning fuel in residential, commercial and institutional settings comprised the largest source of particle pollution in New England (44%); this figure exceeds the national average for particle pollution by other fuel combustion by 36 percent. Particle pollution from waste disposal and recycling (20%) was twice the national average. Other major sources of particle pollution in the region stem from industrial fuel combustion (10%), off-highway vehicles (9%), and highway vehicles (6%). Miscellaneous sources of particle pollution emissions were a mere 3 percent, compared to the national average of 47 percent. Region 1 identified 126,024 short tons of particle pollution in the 1999 inventory; it produced the least particle pollution nationwide.

Particulate Matter in Region 1



Trends

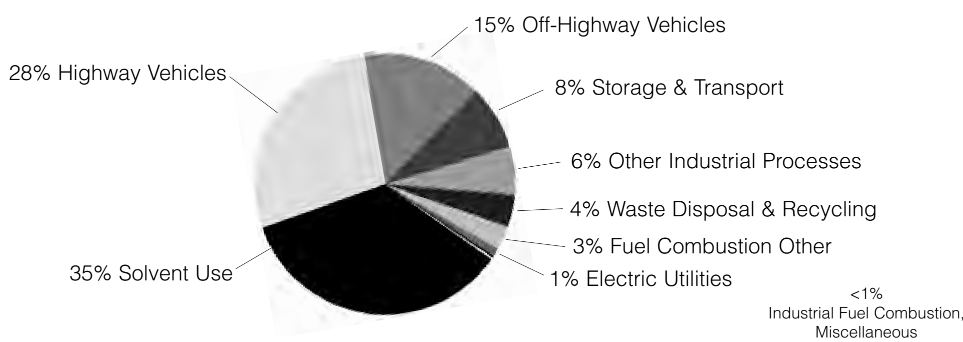
Ozone levels have declined significantly in Region 1, more than in the nation as a whole. Region 1 has seen more reductions in ozone levels than all other regions except Region 9. Levels have declined by 21 percent from 1983 to 2002, compared with the national levels, which have dropped by 14 percent in that time frame.[15] Furthermore, ozone levels in the region declined the most of any region during the period 1991 to 2000, dropping by 21.9 percent. Comparable trend data are not available for $PM_{2.5}$ levels.[16]

Region 2: New Jersey, New York and Puerto Rico

Local sources of VOCs

In Region 2, more than one-third of human-created VOCs come from solvent use, compared with the nation as a whole, where only 27 percent come from those sources. The region's vehicles, both highway and off-road, generate about the same portion of VOCs in these states as they do in the nation (28% and 15% respectively in the region, versus 29% and 18% nationally). Industrial sources, including chemical, metals, petroleum and other industries, comprise 6 percent, which is comparable to the national rate of 7 percent. In 1999, Region 2 produced 1.149 million tons of VOCs.

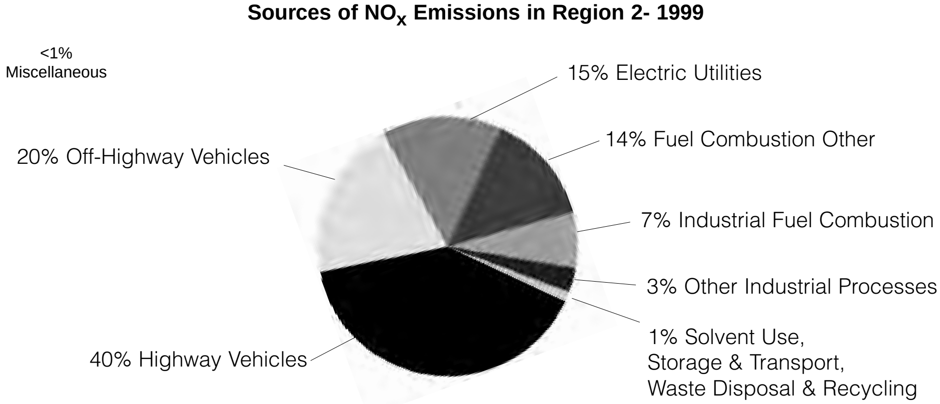
Sources of VOC Emissions in Region 2- 1999
Anthropogenic Sources Only



Local sources of NO_x

Highway vehicles represent a much higher portion of NO_x emissions in Region 2 (40%) than the nation as a whole (33%). The portion from off-highway vehicles is slightly lower in the Region, at 20 percent, than the national percentage (22%). Significantly, emissions from electric utilities are much lower, at 15 percent, than nationally (23%). Industrial fuel combustion is also much lower, at 7 percent than the national percentage (12%), but combustion from other sources is significantly higher (14% versus 5%), so the percentage of total fuel combustion from all three sources (electric utilities, industrial and others) is slightly less in the region (36%) than the national rate (40%). In 1999, Region 2 produced 1.305 million tons of NO_x.

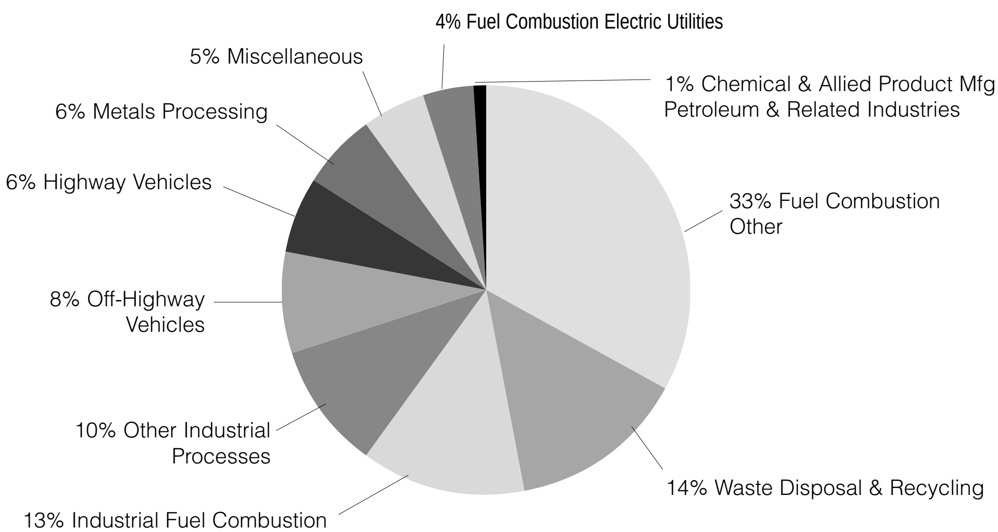
Sources of NO_X Emissions in Region 2- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

In New Jersey, New York and Puerto Rico, other fuel combustion was the largest source of particle pollution (33%), stemming from residential woodstoves and fireplaces, including other processes burning wood in residential, commercial and institutional settings. This category exceeds the national average for particle pollution by other fuel combustion by 21 percent. Fourteen percent of particle pollution emissions in Region 2 can be attributed to waste disposal and recycling; other major sources include industrial fuel combustion (13%) and other industrial processes (10%). Region 2 produced 211,026 short tons of particle pollution counted in the 1999 inventory.

Particulate Matter in Region 2



Trends

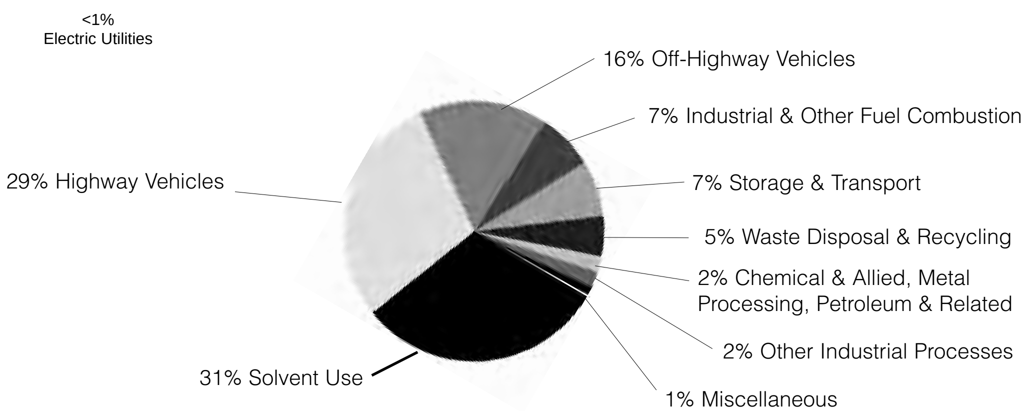
Ozone emissions in Region 2 declined by 11 percent from 1983 to 2002, a rate slightly slower than the nation as a whole, which dropped 14 percent in the same period. Greater progress was seen between 1991 and 2000, when the regional ozone level declined by 17.3 percent. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 3: Delaware, Maryland, Pennsylvania, Virginia, Washington, DC, and West Virginia

Local sources of VOCs

According to EPA's emissions inventory, human activity in Region 3 in 1999 put 1.51 million tons of VOCs into the air. Once again, the transportation sector accounted for the single largest contribution to the inventory — 45 percent of the Region's emissions, 29 percent from highway vehicles, and 16 percent from off-road vehicles. Transportation generates a similar percentage nationally (47%), but Region 3's off-road vehicle sector is slightly smaller than the national highway vehicle sector (16% v 18%). The other significant source was the use of solvents, comprising 31 percent, nearly a third, of Region 3's emissions of VOCs, higher than the national percentage of solvent use (27%).

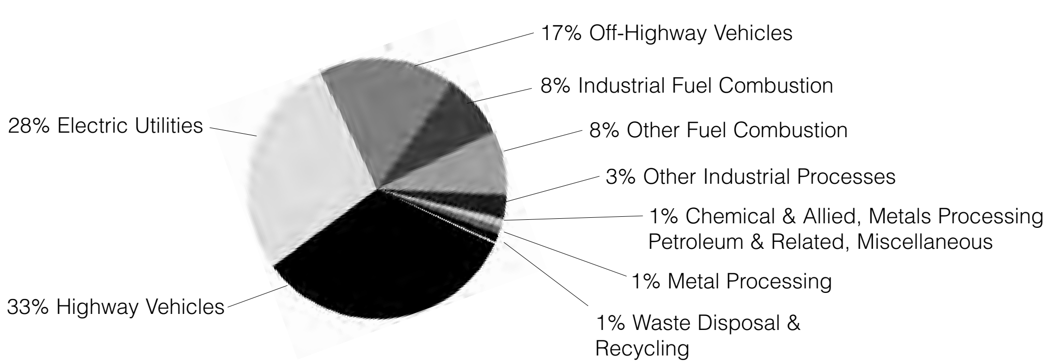
Sources of VOC Emissions in Region 3- 1999



Local sources of NO_x

According to EPA's emissions inventory, human activity in Region 3 in 1999 put 2.43 million tons of NO_x into the air. Fully half (50%) came from highway vehicles and off-highway vehicles. The other significant contributor was fuel combustion, comprising over 44 percent of Region 3's NO_x emissions. Contributions from electricity generation by utilities accounted for nearly two-thirds of this sector and over one-quarter of the whole (28%). Compared with the nation as a whole, Region 3 has a higher percentage from electric utilities (28% v 23% nationally) and a lower percentage from off-highway vehicles (17% v 22% nationally).[9]

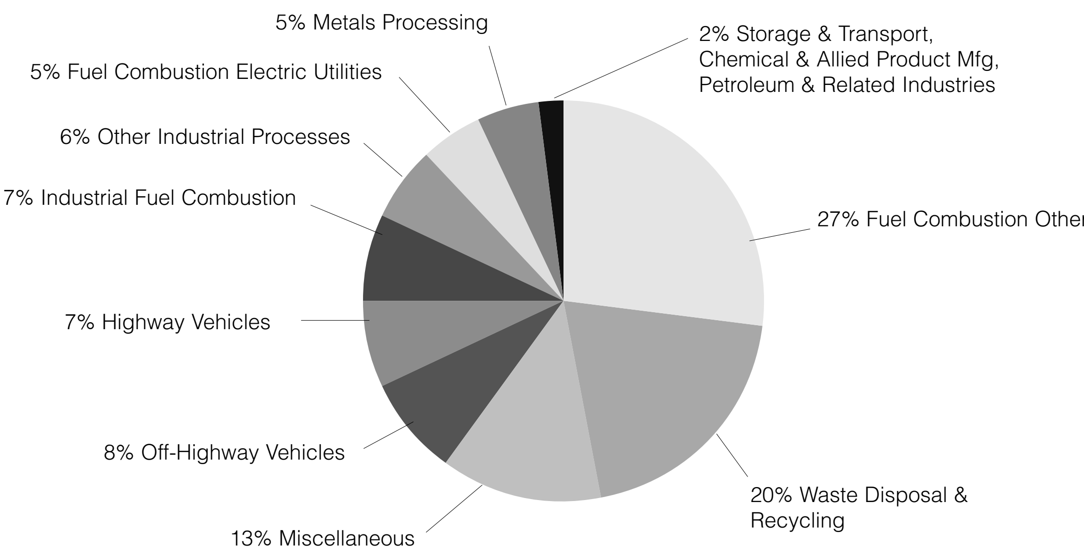
Sources of NO_X Emissions in Region 3- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

The Mid-Atlantic produced 259,183 short tons of particle pollution in 1999. Other fuel combustion was the largest point source of particle pollution (27%), stemming from residential woodstoves and fireplaces, including other processes burning wood in residential, commercial and institutional settings. Waste disposal and recycling followed closely at 20 percent and miscellaneous sources (13%) of particle pollution followed third, stemming from other combustion, agriculture and forestry. Other sources of particle pollution in the region include off-highway vehicles (8%), highway vehicles (7%), industrial fuel combustion (7%), other industrial processes (6%), fuel combustion from electric utilities (5%), and metals processing (5%). Storage and transport, chemical and allied product manufacturing, petroleum and related industries produced a combined total of 2 percent of particle pollution emissions in the region.

Particulate Matter in Region 3



Trends

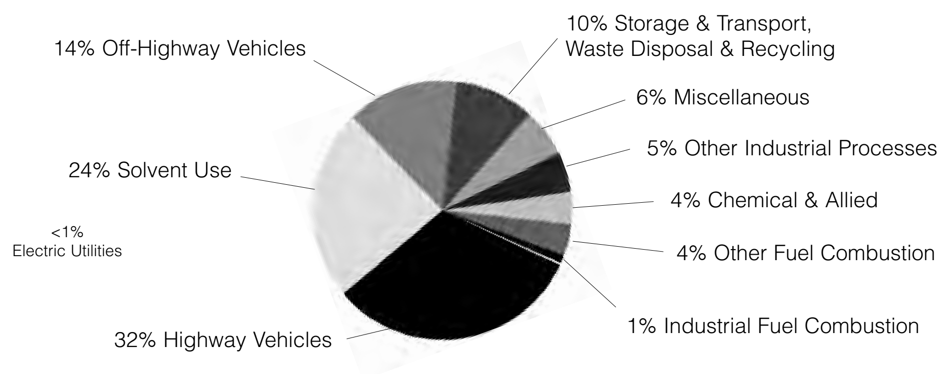
Monitored ozone levels dropped by 10.8 percent between 1983 and 2002, a trend much lower than the nation as a whole, which dropped 14 percent during the same period. However, during the period 1991-2000, the region's ozone levels dropped by 11.6 percent, fifth best drop among the regions. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 4: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee

Local sources of VOCs

Region 4 produces more VOC emissions (4.15 million tons in 1999) than any other section of the country. The largest sources generated by human activity are transportation, which accounts for 46 percent, almost the same as the nation as a whole, which is 47 percent. Of these sectors, the percentage from highway vehicles is greater in the Southeast than it is in the nation (32% v 29% nationwide). Off-highway vehicle sources are lower in the Southeast than nationally (14% v 18%). Solvent use contributed 24 percent of VOCs in the Southeast, compared with 27 percent nationally.

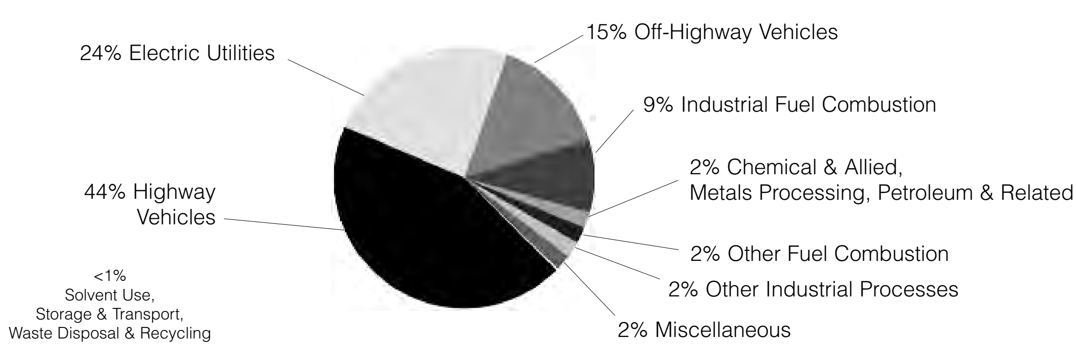
Sources of VOC Emissions in Region 4- 1999
Anthropogenic Sources Only



Local sources of NO_x

Region 4 produces more NO_x emissions (5.4 million tons in 1999) than any other section of the country. The transportation sectors make up a larger portion of the NO_x sources in the Southeast (59%) than they do in the nation as a whole (55%). This is largely due to highway vehicles, which produce a much larger portion of the total in the Southeast (44% v 33%). The next largest sources are emissions from electric utilities, at 24 percent, which is about same as nationally. Industrial fuel combustion makes up a lower percentage in the Southeast than nationwide (9% v 12%).

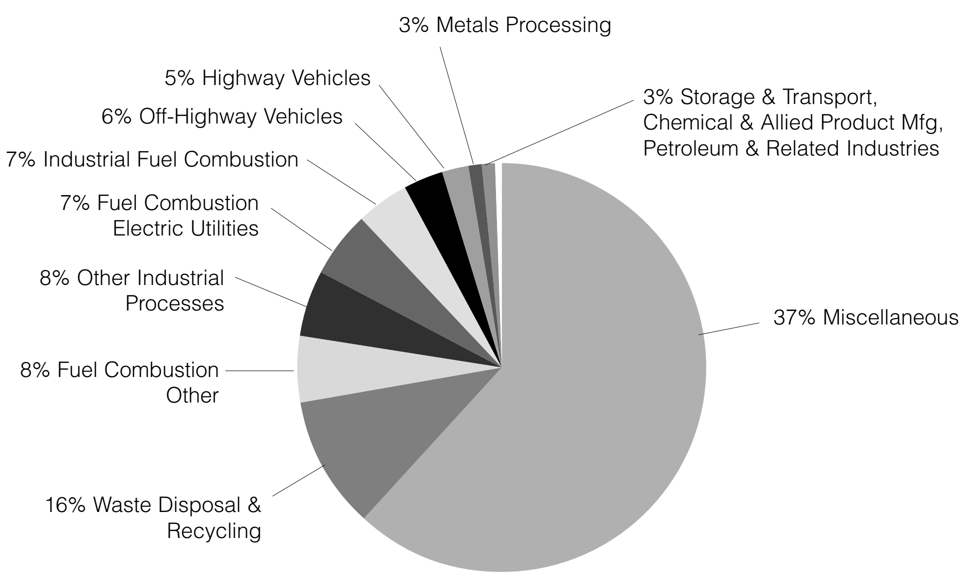
Sources of NO_X Emissions in Region 4- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

The Southeast produced 830,992 short tons of particle pollution emissions in the 1999 inventory; it produced the most particle pollution nationwide. Sources of particle pollution resembled the national composition, with miscellaneous sources of particle pollution stemming from other combustion, and agriculture and forestry at 37 percent; waste disposal and recycling (16%), other fuel combustion (8%), other industrial processes (8%), fuel combustion from electric utilities (7%), industrial fuel combustion (7%), off-highway vehicles (6%), highway vehicles (5%), metals processing (3%). Together, storage and transport, chemical and allied product manufacturing, petroleum and related industries, and solvent use comprised 3 percent of particle pollution emissions in the Southeast. Waste disposal and recycling in this region produced 131,314 short tons of particle pollution emissions in 1999; this figure represents over 29 percent of all particle pollution emissions stemming from waste disposal and recycling in the nation.

Particulate Matter in Region 4



Trends

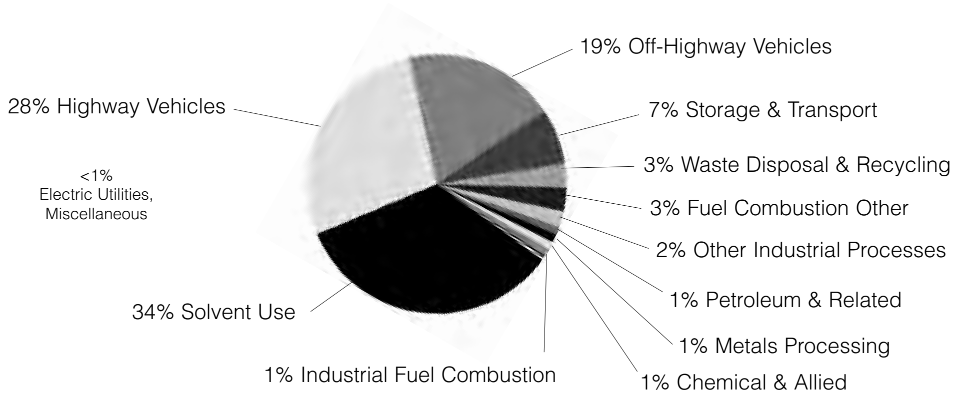
Monitored data show ozone levels in the Southeast have declined, but not as swiftly as the nation as a whole. The ozone levels dropped in the region by 10 percent from 1983 to 2002, but by slightly less than the nation as a whole which dropped by 14 percent. However, during the period 1991-2000, ozone levels in the Southeast dropped by 12 percent, fourth best performance by any national region. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin

Local sources of VOCs

The Midwest produced the nation's second highest VOC emissions — 3.5 million tons — in 1999. The largest human activity generating VOCs in the Midwest is the use of solvents, which contributes 34 percent, much higher than the U.S. nationally (27%). Highway vehicles and off-highway vehicles are about the same as the nation as a whole (28% and 19% respectively, compared to 29% and 18% nationwide). Other sources are about the same as nationwide, with industry contributing 3 percent, fuel combustion contributing 3 percent, storage and transport 7 percent, and waste disposal and recycling 3 percent.

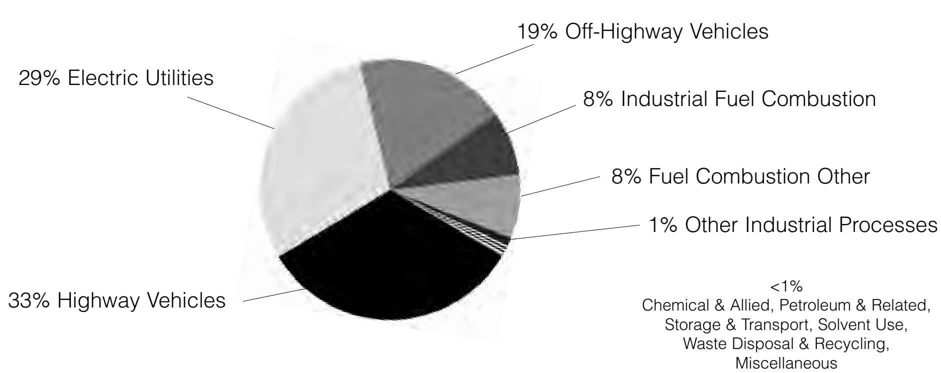
Sources of VOC Emissions in Region 5- 1999
Anthropogenic Sources Only



Local sources of NO_x

The Region produced the nation's second highest NO_x emissions — 4.98 million tons — in 1999. Highway vehicles generate the largest amount of NO_x in the Midwest, followed by electric utilities and off-highway vehicles. Highway vehicles generate about one-third of the NO_x, similar to their percentage nationwide. However, electric utilities generate 29 percent of the region's NO_x, compared with only 23 percent nationwide. Off-highway vehicles produce 19 percent, slightly less than the nation as a whole (22 percent). Contributions from industrial fuel combustion make up a third less in Region 5 than they do in the nation (8% compared to 12%).

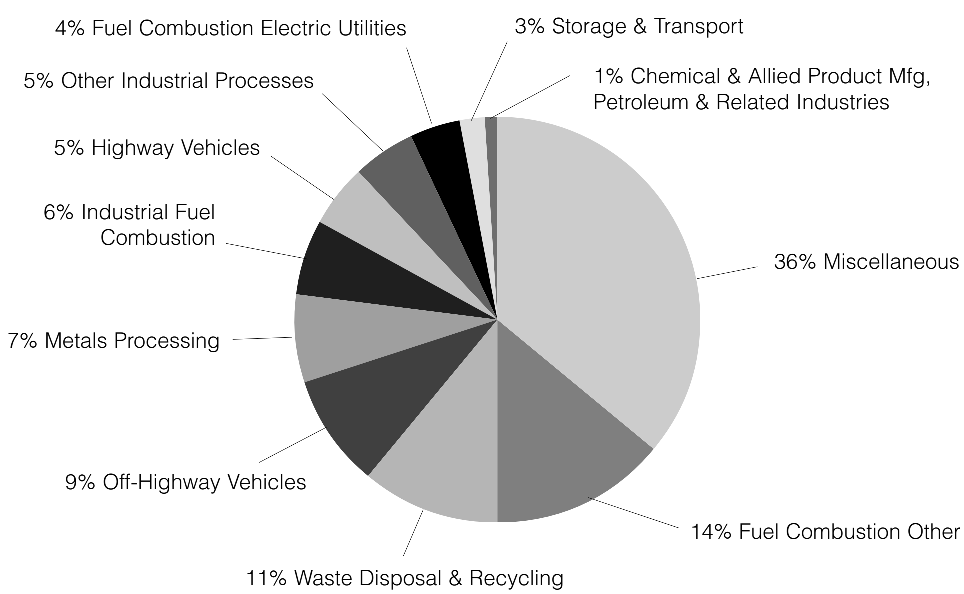
Sources of NOx Emissions in Region 5- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

The Midwest identified 679,792 short tons of particle pollution in the 1999 inventory; the region was the second largest producer of particle pollution nationwide. Miscellaneous sources of particle pollution from other combustion, and agriculture and forestry contributed 36 percent of the particle pollution in Region 5. Other fuel combustion from sources such as residential woodstoves and fireplaces comprised 14 percent of the particle pollution in the region, and waste disposal from open burning and recycling contributed 11 percent. Region 5 also produced the largest amount of particle pollution in the nation stemming from other fuel combustion sources, at 96,188 short tons. Particle pollution from transportation was similar to the nation as a whole, off-highway vehicles (9%) and highway vehicles (5%). Producing 7 percent of particle pollution emissions in the region, metals processing produced 46,914 short tons of particle pollution, more than any other region in the nation.

Particulate Matter in Region 5



Trends

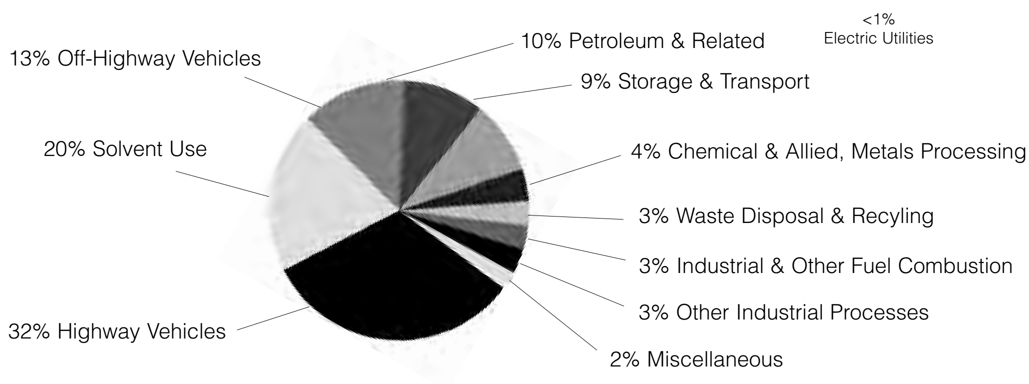
Monitored ozone levels dropped by 6 percent between 1983 and 2002, a trend far behind the nation as a whole, which dropped 14 percent during the same period. However, during the period 1991-2000, levels declined by 11.5 percent, 6th best regional decline in the nation. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 6: Arkansas, Louisiana, Oklahoma, New Mexico, and Texas

Local Sources of VOCs

VOCs generated by human activity in this region include highway vehicles (32% compared with 29% nationally); off-highway vehicles (13% compared with 18% nationally); and solvents (20% regionally compared with a national rate of 27%). Region 6 had a higher rate of VOCs from petroleum and related products (10% regionally compared with 2% nationally), and storage and transport (9% regionally, compared with a national rate of 7%). This difference probably reflects the concentration of the petroleum industry in the region. Total VOCs inventoried in 1999 in Region 6 were 2.5 million short tons in 1999, the third highest.

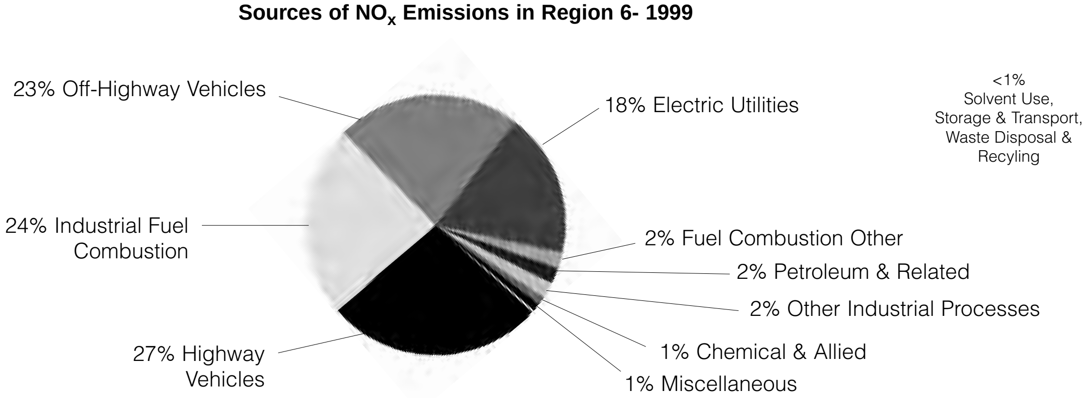
Sources of VOC Emissions in Region 6- 1999
Anthropogenic Sources Only



Local Sources of NO_x

Highway vehicles represented the largest source of NO_x in this region at 27 percent, lower than national rate of 33 percent. The next highest source of NO_x in the region is industrial fuel combustion, which, at 24 percent, is very high compared with the national percentage (12%). Off-highway vehicles produce 23 percent of NO_x regionally, compared with 22 percent nationally. Electric utilities represented 18 percent regionally, compared with 23 percent nationally. Petroleum and related NO_x, at 2 percent, is twice the national rate (1%), and probably reflects concentration of the petroleum industry in the region. Total NO_x produced in Region 6 was 4.2 million tons in 1999 (the third highest region).

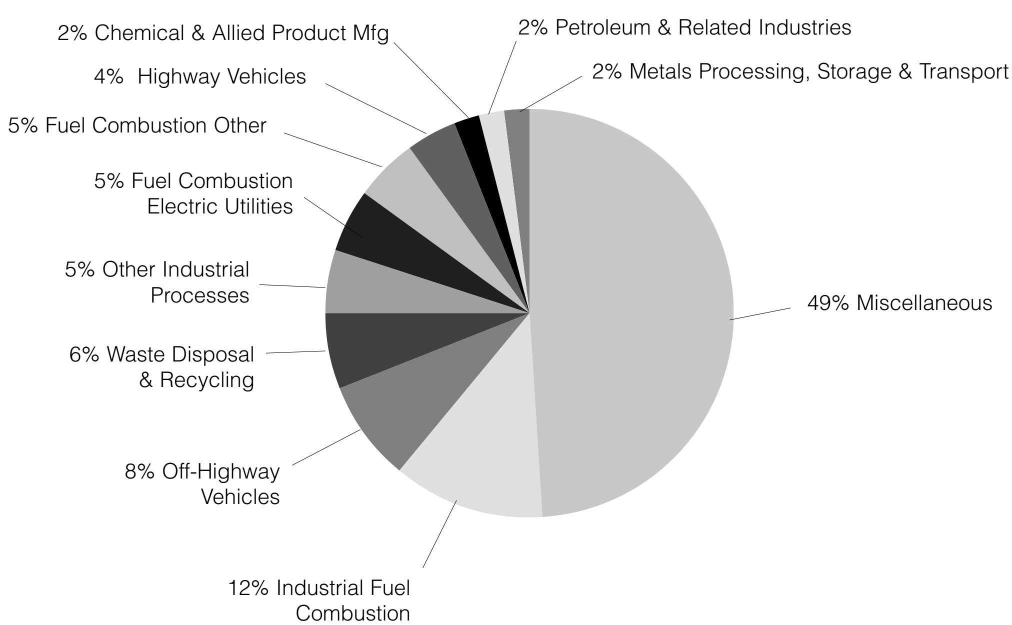
Sources of NO_x Emissions in Region 6- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

Agriculture and forestry, and other combustion were the major sources of particle pollution in Region 6 (49%), only 2 percent above the national average for miscellaneous sources of particle pollution. Industrial fuel combustion (12%) was the second largest source of particle pollution emissions in the region. Other major sources of particle pollution in the region include off-highway vehicles (8%), and waste disposal and recycling (6%). Other fuel combustion, other industrial processes, and fuel combustion from electric utilities each contributed 5 percent of particle pollution in the region. Region 6 reported 571,036 short tons of particle pollution during the 1999 inventory.

Particulate Matter in Region 6



Trends

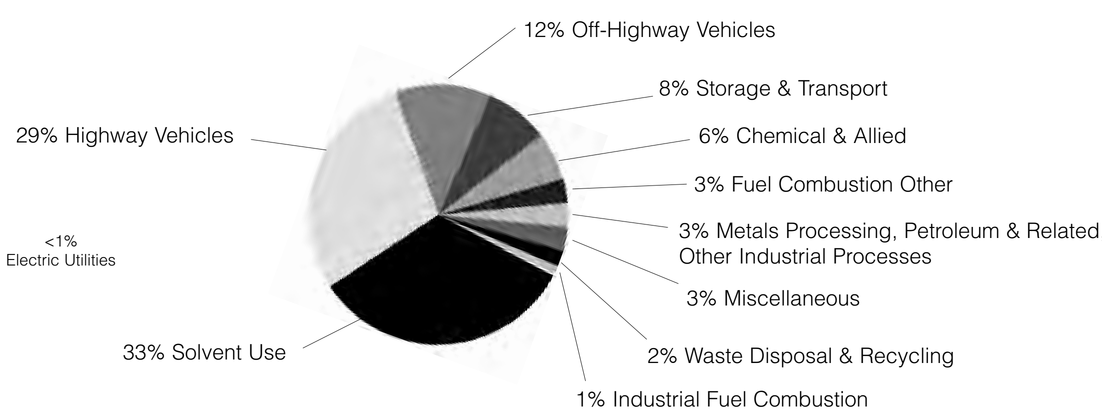
Monitored ozone levels dropped by 11 percent between 1983 and 2002, a trend slightly behind the nation as a whole, which dropped 14 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels increased by 8.9 percent from 1991-2000. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 7: Iowa, Kansas, Missouri and Nebraska

Local sources of VOCs

Human activity generated 979,660 tons of VOCs in Region 7 in 1999, the third lowest amount in any region. It is unusual that the largest sources are solvents at 33 percent, higher than the national rate of 27 percent, which may reflect the greater rural nature of large parts of the region. Highway vehicles generate the second highest amount of VOCs, which at 29 percent is the same as the nationwide rate. Off-highway vehicles generate 12 percent of VOCs regionally, which is one-third lower than the national rate of 18 percent. VOCs from chemical and allied industries are also three times higher in this region than nationally (6% v 2%).

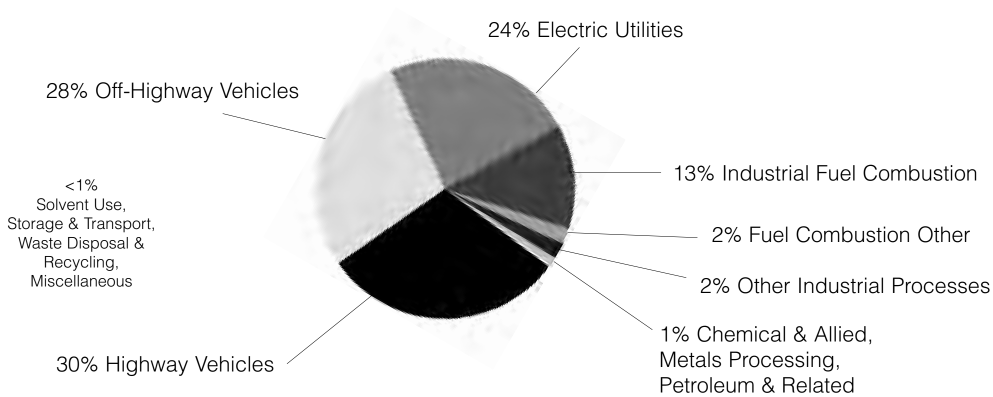
Sources of VOC Emissions in Region 7- 1999
Anthropogenic Sources Only



Local sources of NO_x

Highway vehicles, at 30 percent, are the largest source of NO_x emissions in this region — but they account for less in Region 7 than nationally (33%). NO_x from off-highway vehicles is significantly higher here than nationwide (28% v 22%). Electric utilities produce about one-fourth of NO_x here, about the same as nationwide (24% v 23%). Industrial fuel combustion is about the same, though other fuel combustion is less than half the percentage nationwide. Total NO_x in 1999 in Region 7 was 1.6 million tons.

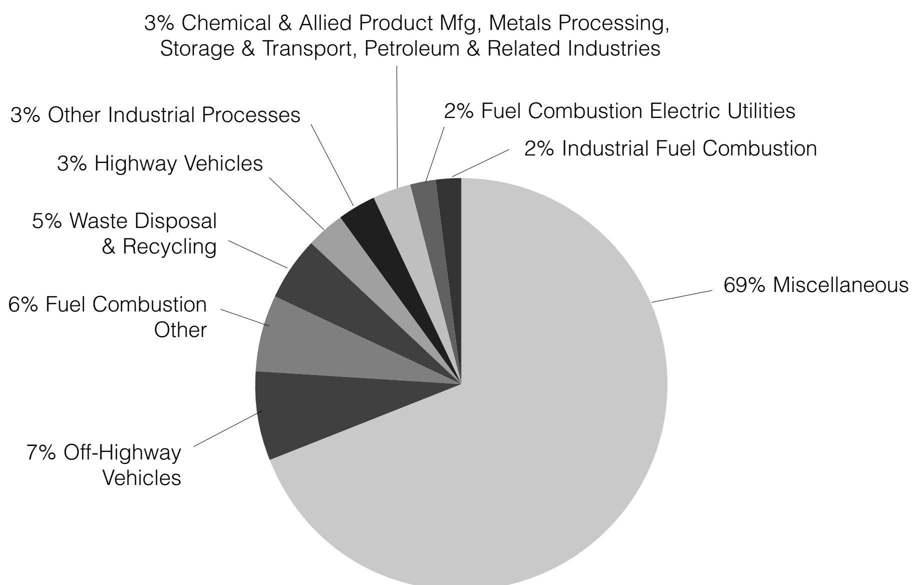
Sources of NO_x Emissions in Region 7- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

Agriculture and forestry, and other combustion were the major sources of particle pollution in Region 7 (69%); well above the national average of 47 percent for miscellaneous sources of particle pollution. Off-highway vehicles are the second largest source of particle pollution emissions at 7 percent. Other fuel combustion was the third largest source of particle pollution emissions at 6 percent, waste disposal and recycling followed at 5 percent. Region 7 measured 388,757 short tons of particle pollution during the 1999 inventory.

Particulate Matter in Region 7



Trends

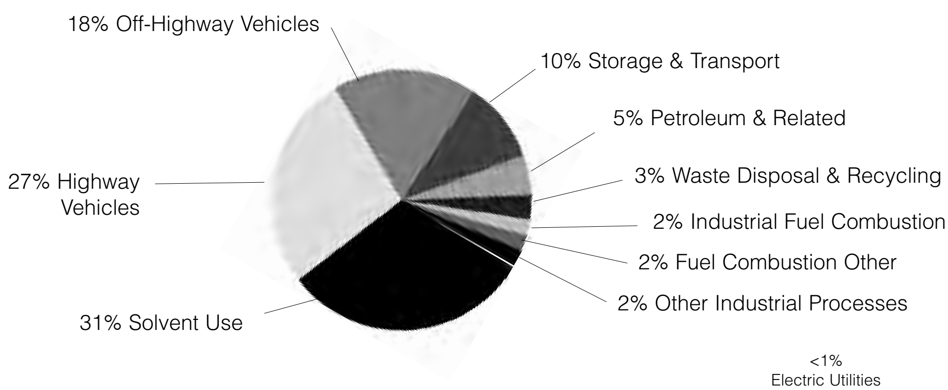
Monitored ozone levels dropped by 4 percent between 1983 and 2002, far behind the nation as a whole, which dropped 14 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels gone up by 2.7 percent from 1991-2000, the 3rd worst increase in any region during that decade. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 8: Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming

Local Sources of VOCs

The largest human-generated source of VOCs in Region 8 is solvent use, at 31 percent, higher than the nation as a whole. Highway vehicles contribute just over one-fourth at 27 percent, lower than the 29 percent produced nationally. Off-highway vehicle use, the third largest source, is 18 percent, the same as the national rate. In 1999, Region 8 produced 778,485 tons of VOCs, the second lowest of all the regions.

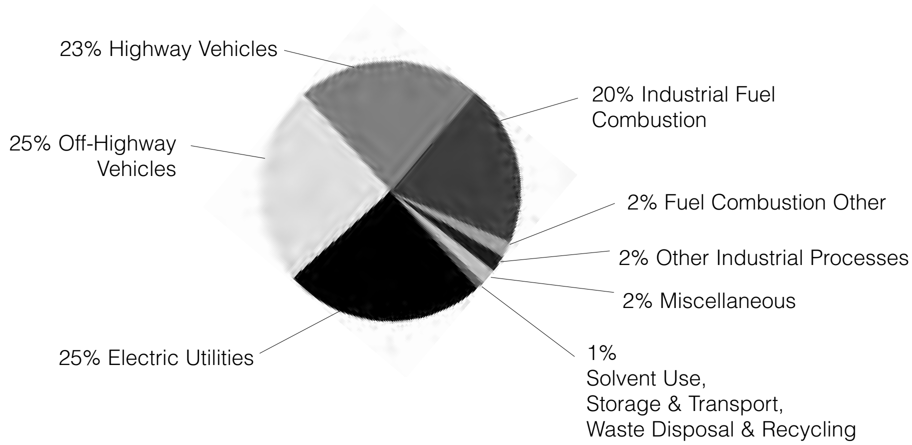
Sources of VOC Emissions in Region 8- 1999
Anthropogenic Sources Only



Local Sources of NO_x

The largest sources of NO_x emissions in Region 8 were electric utilities and off-highway vehicles, which each generated one-fourth of the total of 1.5 million tons in 1999. Nearly another fourth came from highway vehicles (23%). While the electric utility and off-highway contributions are higher than the nation as a whole, the highway vehicle contribution is lower by ten percent (23% v 33%). Industrial fuel combustion in the region makes up a much larger proportion at 20 percent than it does nationwide (12%). Other industrial sources are less of a factor than in the nation as a whole (2% v 4%).

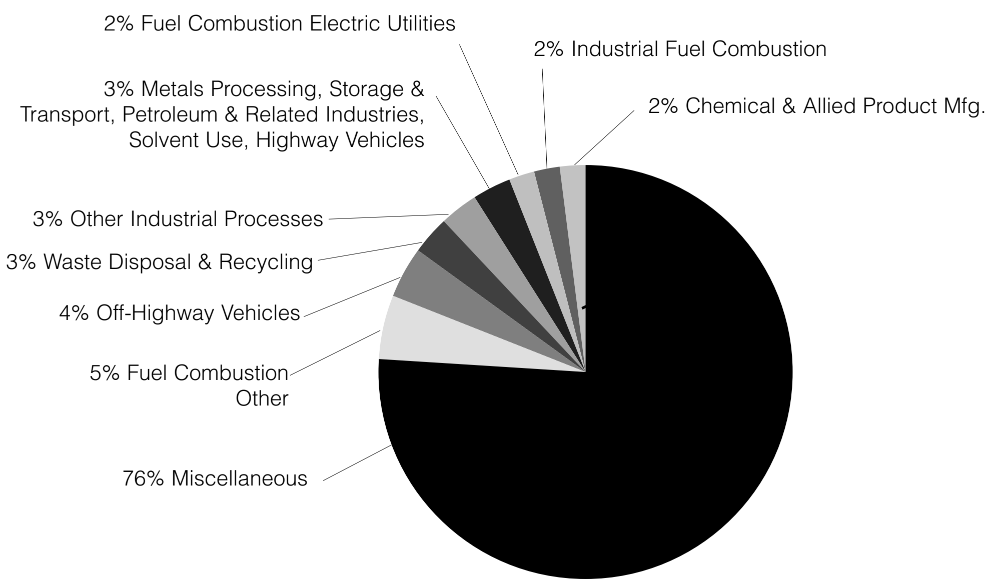
Sources of NO_X Emissions in Region 8- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

Seventy-six percent of particle pollution in Region 8 can be attributed to agriculture and forestry and other combustion; Region 8 exceeds the nationwide average for miscellaneous sources of particle pollution by 29 percent. Other fuel combustion from residential woodstoves and fireplaces contributed the second highest source of particle pollution emissions at 5 percent. Other emissions sources include: off-highway vehicles (4%), waste disposal and recycling (3%), other industrial processes (3%), chemical and allied product manufacturing (2%), fuel combustion from electric utilities (2%), industrial fuel combustion (2%). Metals processing, storage and transport, petroleum and related industries, solvent use, and highway vehicles contributed a combined total of 3 percent for particle pollution emissions in Region 8. Region 8 reported 507,054 short tons of particle pollution in 1999.

Particulate Matter in Region 8



Trends

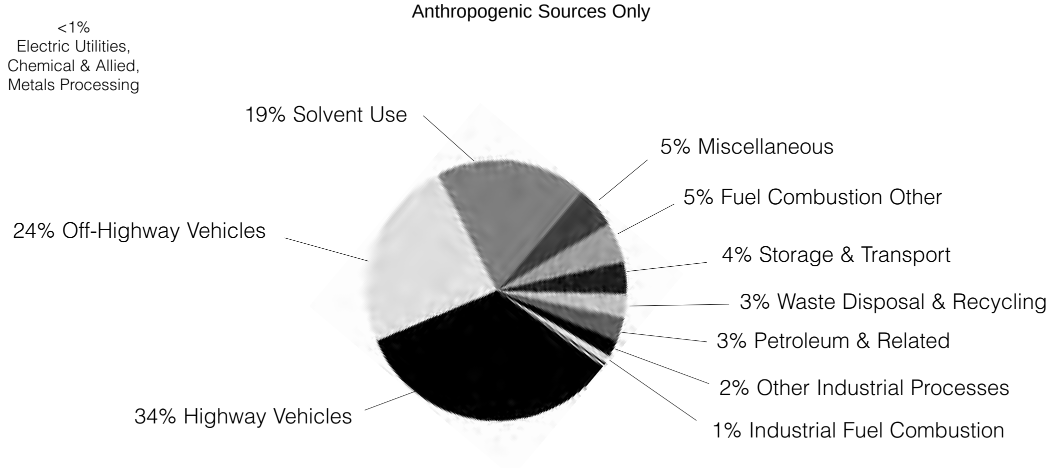
Monitored ozone levels dropped by 10 percent between 1983 and 2002, a trend slower than the nation as a whole, which dropped 14 percent during the same period. Furthermore, the long-term decline could have been greater had not the region's ozone levels risen by 3 percent between 1991 and 2000. Comparable trend data are not available for $PM_{2.5}$ levels.

Region 9: Arizona, California, Hawaii and Nevada

Local Sources of VOCs

The largest source of VOCs generated by human activity was highway vehicles, at 34 percent, compared with the national rate of 29 percent. Off-highway vehicles generated 24 percent of VOCs regionally, compared with 18 percent nationally. Solvents generated less than the national rate (19% v 27%). Other fuel combustion sources generated about the same regionally and nationally (5%). Storage and transport generated much less VOCs regionally compared with the national rate (4% v 7%). Total VOCs emitted in 1999 in Region 9 was 1.51 million tons.

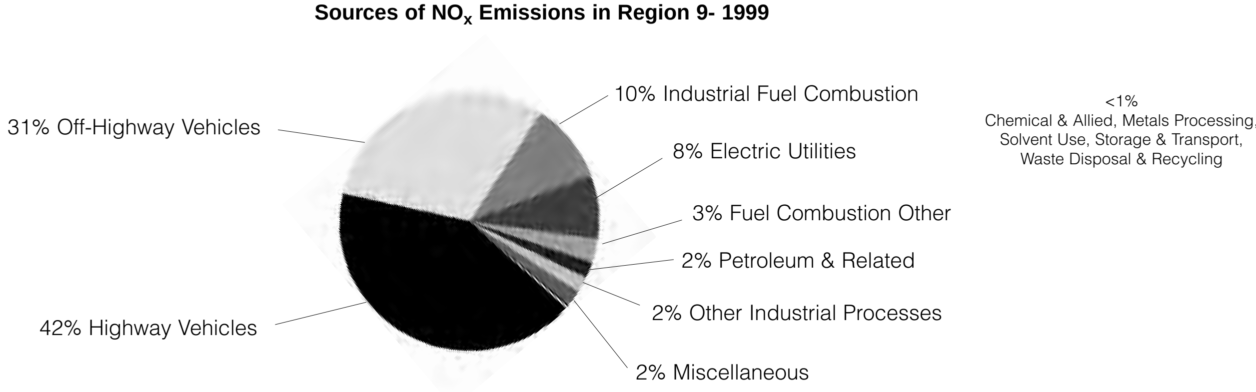
Sources of VOC Emissions in Region 9- 1999
Anthropogenic Sources Only



Local Sources of NO_x

Highway vehicles generate a much greater percentage of NO_x in Region 9, 42 percent versus 33 percent nationally. This is not surprising, given the highway presence in California. NO_x generated off-highway is greater in Region 9 than nationwide (31% v 22%). By contrast, electric utilities are much less of a source of NO_x in the region (8% v 23%.) Industrial fuel combustion is slightly less regionally (10% v 12% nationwide). NO_x emissions in Region 9 totaled 2.25 million tons in 1999, the fourth highest in the nation. Two-thirds of the NO_x in Region 9 is produced in California.

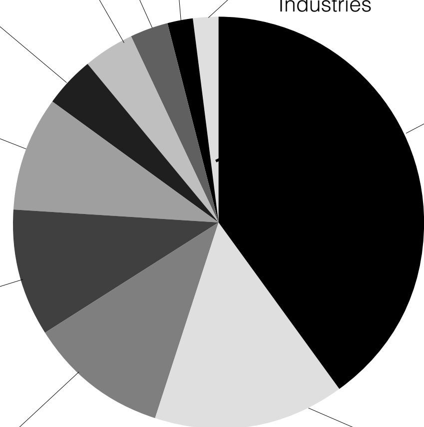
Sources of NO_x Emissions in Region 9- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

Region 9 produced 445,590 short tons of particle pollution in 1999, as reported in its inventory. Lower than the national average of 47 percent, miscellaneous sources of particle pollution from other combustion and agriculture and forestry contributed 40 percent of the particle pollution emissions in this region. Other fuel combustion from activities such as residential wood burning comprised the second largest source of particle pollution at 15 percent. Other major sources of particle pollution include off-highway vehicles (11%), other industrial processes (10%), and waste disposal and recycling (9%).

Particulate Matter in Region 9



Trends

California has historically led the way in reducing ozone levels in the nation. Their success is reflected in the steep decline in Region 9's ozone levels from 1983 to 2002, when the monitored levels dropped by 29 percent, the greatest reduction in any region of the nation and over twice the national rate (14%). Furthermore, between 1991 and 2000 when 3 of the 10 regions increased ozone levels, this region had the third highest rate of decline, reducing ozone levels by 14.4 percent in that decade.

Growth and dependence on the car will continue to challenge the region in reaching clean air. In California, for example, the population grew by 39 percent between 1981 and 2000. That growth was far outstripped by increased driving: the average daily number of vehicle miles traveled grew by 91 percent in that same period.[17]

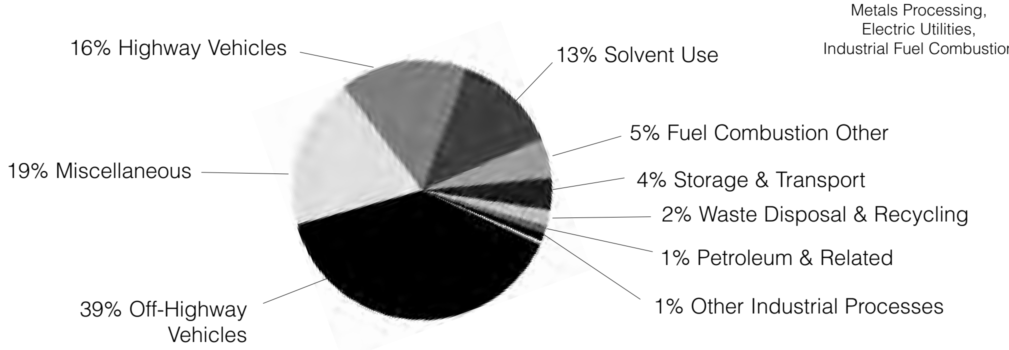
Comparable trend data are not available for $PM_{2.5}$ levels.

Region 10: Alaska, Idaho, Oregon, and Washington

Local Sources of VOCs

In this section of the country, off-highway vehicles dominate the VOC sources from all human activity, contributing nearly two-fifths (39%) of the total. By contrast, the nation's off-highway section is less than half that at 18 percent. Highway vehicles represent only 16 percent, about half the national rate of 29 percent. Solvent use also contributes less than half the rate seen nationally, at 13 percent versus 27 percent. Other VOC sources are more similar to the national rates, though storage and transport sources are about half (4% v 7%) of the nationwide rate. Region 10 produced 1.3 million tons of VOCs in 1999.

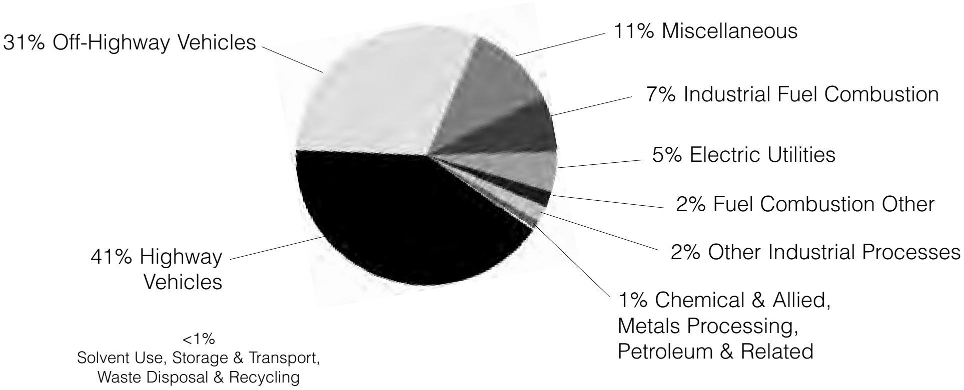
Sources of VOC Emissions in Region 10- 1999
Anthropogenic Sources Only



Local Sources of NO_x

Highway vehicles contribute the largest amount of NO_x in the region — 41 percent of the 892,073 tons generated in 1999. This is the second lowest NO_x total of all regions in the nation. The percentage of highway vehicle NO_x emissions in Region 10 is higher than it is in the nation as a whole, where it makes up 33 percent of emissions. Off-highway vehicles contribute 31 percent of NO_x, higher than the national rate of 22 percent. Electric utilities emit only 5 percent of total NO_x in this region, compared with 23 percent nationwide. Miscellaneous sources are an unusually high percentage at 11 percent. Industrial fuel combustion is only 7 percent compared with 12 percent nationally. Industrial emissions that are not fuel combustion account for 3 percent, slightly less than the national rate of 5 percent.

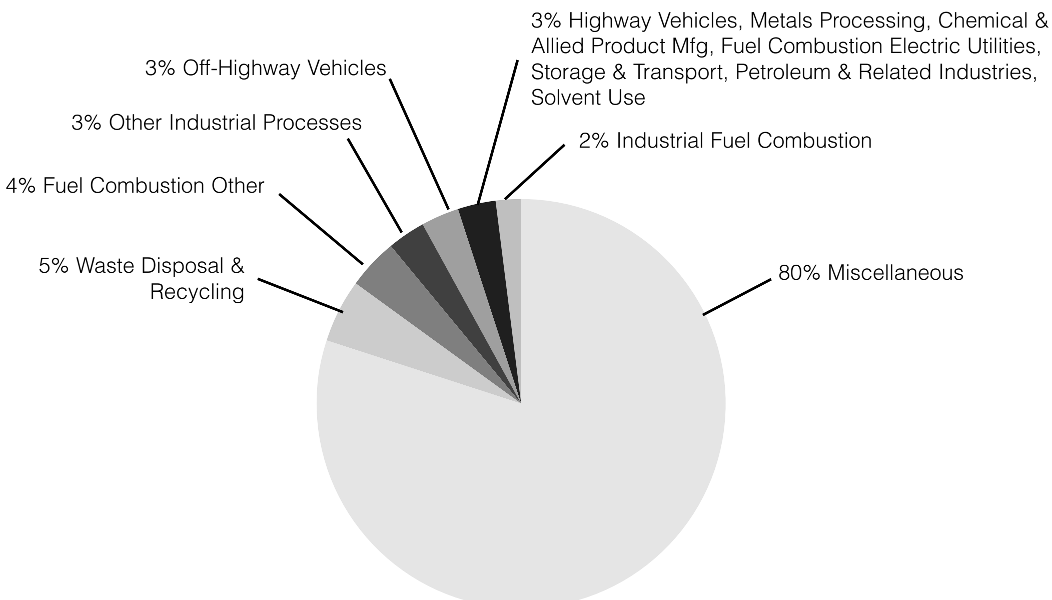
Sources of NO_X Emissions in Region 10- 1999



Local sources of Particle Pollution ($PM_{2.5}$)

Eighty percent of particle pollution emissions in Region 10 can be attributed to agriculture and forestry and other combustion; this figure exceeds the national average for miscellaneous particle pollution emissions by 33 percent. Waste disposal and recycling was the second largest source of particle pollution at 5 percent; other sources of particle pollution in the region include other fuel combustion (4%), other industrial processes (3%), industrial fuel combustion (2%), and off-highway vehicles (3%). Highway vehicles, metals processing, chemical and allied product manufacturing, fuel combustion from electric utilities, storage and transport, petroleum and related industries, and solvent use contribute a combined total of 3% of the particle pollution emission sources for Region 10. Region 10 produced 536,476 short tons of particle pollution according to its 1999 inventory.

Particulate Matter in Region 10



Trends

Ozone monitors show a surprising 2 percent increase in ozone readings in Region 10, the lone up-tick among the 10 regions in the nation during the period 1983-2002. During the same period the nation declined by 14 percent. However, between 1991 and 2000, the northwest and Alaska reported a decline of 8 percent. Comparable trend data are not available for $PM_{2.5}$ levels.

[1] Considerable debate exists over which sources are truly generated by human activities and which are not. The available inventory database did not allow finer discernment of those sources within larger categories. Therefore, the miscellaneous category contains some sources that some might label natural in origin, rather than the product of human action. However, the large categories of fugitive dust and VOCs from vegetation are excluded.
[2] EPA. National Air Quality and Emissions Trends Report, 2003 Special Studies Edition. Washington, DC.: U.S. Government Printing Office; 2003. EPA Publication No. 454/R-03-005. http://www.epa.gov/oar/aqtrnd03/.
[3] EPA Trends Report 2003.
[4] EPA Trends Report 2003. Table A-13: National Air Quality Trends Statistics by EPA Region 1991-2000.
[5] EPA Trends Report 2003.
[6] US EPA, Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transportation of Ozone, 40 CFR Parts 51, 72, 75 and 96.
[7] EPA. Section 126 Rule: Revised Deadlines. 2002. 40 CFR 97 63:21522-30.
[8] Notes from the New Brunswick Lung Association, 2003. One of the groups working to reduce cross border ozone transport, is the Lung Associations' International Centre for Air Quality and Human Health created by the American Lung Association of Maine and the New Brunswick (Canada) Lung Association. The Centre promotes actions to reduce emissions and improve air quality for the people in the six New England states and in five eastern Canadian provinces. Actions high in the Centre's priorities are assessing the region's air quality and health impacts, facilitating research and educating the public.
[9] Correspondence from Kevin Stewart, American Lung Association of Pennsylvania, February 5, 2003.
[10] Communication from the American Lung Association of California, January 2003.
[11] EPA, National Environmental Trends Database, 1999 data.
[12] Office of Highway Policy Information, Federal Highway Administration, *Highway Statistics 2001.*
[13] EPA, National Emissions Trends database, 1999 data,. http://www.epa.gov/air/data/index.html.
[14] All data on sources of VOCs, NO_x , and $PM_{2.5}$ by region are from the EPA, National Emissions Trends database, 1999 data.
[15] All data on 1983-2002 trend analysis are from EPA Trends Report 2003.
[16] All discussion of trends in ozone is from the same source, EPA Trends Report 2003. Table A-13: National Air Quality Trends Statistics by EPA Region 1991-2000.
[17] California Air Resources Board. Air Quality Almanac, 2002.

Celebrating its 100th anniversary, the American Lung Association works to prevent lung disease and promote lung health. Lung diseases and breathing problems are the leading causes of infant deaths in the United States today, and asthma is the leading serious chronic childhood illness. Smoking remains the nation's leading preventable cause of death. Lung disease death rates continue to increase while other leading causes of death have declined.

The American Lung Association has long funded vital research on the causes of and treatments for lung disease. It is the foremost defender of the Clean Air Act and laws that protect citizens from secondhand smoke. The Lung Association teaches children the dangers of tobacco use and helps teenage and adult smokers overcome addiction. It educates children and adults living with lung diseases on managing their condition. With the generous support of the public, the American Lung Association is "Improving life, one breath at a time."

For more information about the American Lung Association or to support the work it does, call ***1-800-LUNG-USA*** *(1-800-586-4872) or log on to* ***www.lungusa.org****.*

AMERICAN LUNG ASSOCIATION®
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